

AUSTRALIAN

Wood

REVIEW

96

2017 STUDENT
AWARDS
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THE MINIMALIST WORKSHOP With Vic Tesolin

WAYNE MAVIN
Good Honest Joinery

PROJECTS

- CABINET FOR HANDPLANES
- BANDSAW BOXES
- JAPANESE KUMIKO
- STEAMBENT HOLLOW FORM

TESTED

- 18" BANDSAWS: LAGUNA VS JET
- SCHEPPACH THICKNESS-PLANER
- ARBORTECH BALL GOUGE
- VERITAS COMBINATION PLANE
- FELDER SILENT-POWER CUTTERS



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Editor's Letter

Made to last

Walk into an antique store – if the one near you still exists – and it's possible you'll find what you, as a woodworker, will recognise as possibly hundreds of hours of painstaking hand detailing. Mouldings, flutings, carved ornaments, veneered and shaped surfaces – the work of the unknown craftsman took skill and a lot of time to make, but not a lot of people want furniture like this any more. Brown furniture, as it is unappetisingly called, can often be picked up for a song.

The lone maker can't compete with big businesses on price, so to sell there needs to be a point of handmade difference – detailing, a 'story' or customisation – and you might need a look that's 'in fashion' and yet feels true to your own aesthetic. Ironically that brown furniture style used to feel good and on-trend for a lot of makers and buyers, not so many any more.

It amazes me how passionate some people get about what's in and what's out, because fashions really do come and go, and some even come back again. Buyers and end-users will vote for what they're willing to pay for and hang on to. Makers need resilience to follow their own design preferences, but there really is just one starting point – only well made things survive, even if they don't stay in fashion.

Enjoying challenges

Geometric staircases can be visually stunning. For the woodworker, appreciation is deeper because creating staircases and handrails involves some serious mathematics and 3D thinking. And yet those who can do this kind of work are now virtually carrying on a rare trade.

A while back I caught up with master staircase and handrail builder Wayne Mavin, the man on the cover. Waiting outside a Sydney café, the van passing by with JOIN3R on the numberplate had to be his! Wayne talked about his work and what inspires him in the story on p.26.

Many woodworkers will tell you that the essence of the craft is about problem solving. Like Wayne Mavin, Melbourne maker Liam Thomas also thrives on challenges and not only that, enjoys sharing his know-how with others. Read about Liam on p.78.

Making kumiko

Kumiko are the lattice motifs that appear in Japanese shoji screens and have gained popularity as feature details. Des King is at the western forefront of disseminating the techniques for creating them via his books. Having done a weekend workshop with Des and gone home with an (almost finished) asa-no-ha panel I can say that this is an enjoyable, rewarding and potentially addictive kind of woodworking. All you need is some patience directed at accuracy... and several jigs of course. See p.44.

Call for entries

2017 Student Awards are open for entry. In its fourth year this competition remains Australia's only national online showcase for woodwork by secondary students in years 11 and 12. After the December 14 deadline you can see the entries on our website and vote for Popular Choice Award on our Facebook page. If you are a student, teacher, parent or friend and know a younger woodworker, please let them know they can enter via www.woodreview.com.au

PS: Big congratulations to the winner of the fabulous Timberbits subscriber prize draw: Bryan Russell from Highfields, Qld!

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Wayne Mavin in his Hornsby, NSW workshop.

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Scheppach Plana 3.1C planer/thicknesser

Reviewed by Raf Nathan

This machine, to my eye, mirrors the design of many high-end European planer/thicknessers. The operating modes, placement of handles and switch gear reminded me instantly of, say, the Hammer brand. However this machine comes from a Chinese factory and that is not a bad thing.

Pitched to the part-time woodworker market it will get you planing and thicknessing for half the price of European machines with similar specs. The trade-off is less refinement in some components and a lower resale value, but not lower performance.

The main tables are 250mm wide x 1050mm long and are made from machined cast iron. Maximum thicknessing depth is 180mm, enough for most workshop jobs. Set-up is straightforward and operation is easy. The cutterguard is a bit light duty although it worked well and while the fence is on a par with other similarly priced machines it could be more rigid. In the past, on machines like this I have attached a wood sub-fence to the supplied aluminium fence for improved performance.

Change-over from planing to thicknesser mode, a key point with a combination machine, is pretty fast. Lower the thicknesser table to the 130mm mark and lift both tables as one, a nice touch. There are a few levers and fiddly tabs to move to effect this which does reflect the lower price, but not the useability. The feed rollers on the thicknesser are rubber-coated which Scheppach claim eliminate feed marks on planed wood. I noted no such marks on my test planing.

With 3hp there is plenty of power and the feed speed of 8 metres/minute combined with a high motor speed gave a clean consistent cut finish. The three HSS cutters were not quite sharp enough ex-factory and from personal experience it would be best to buy better aftermarket cutters to avoid being a slave to sharpening them. TCT cutters would be a good option as these are readily available.

Dust connection was pretty standard and effective with a 100mm port.

Overall, at a hefty 210kg weight, this is a solid machine that performed well with sufficient power. Worked within its limits, this machine should last forever.

Review machine supplied by Hare and Forbes: www.machineryhouse.com.au



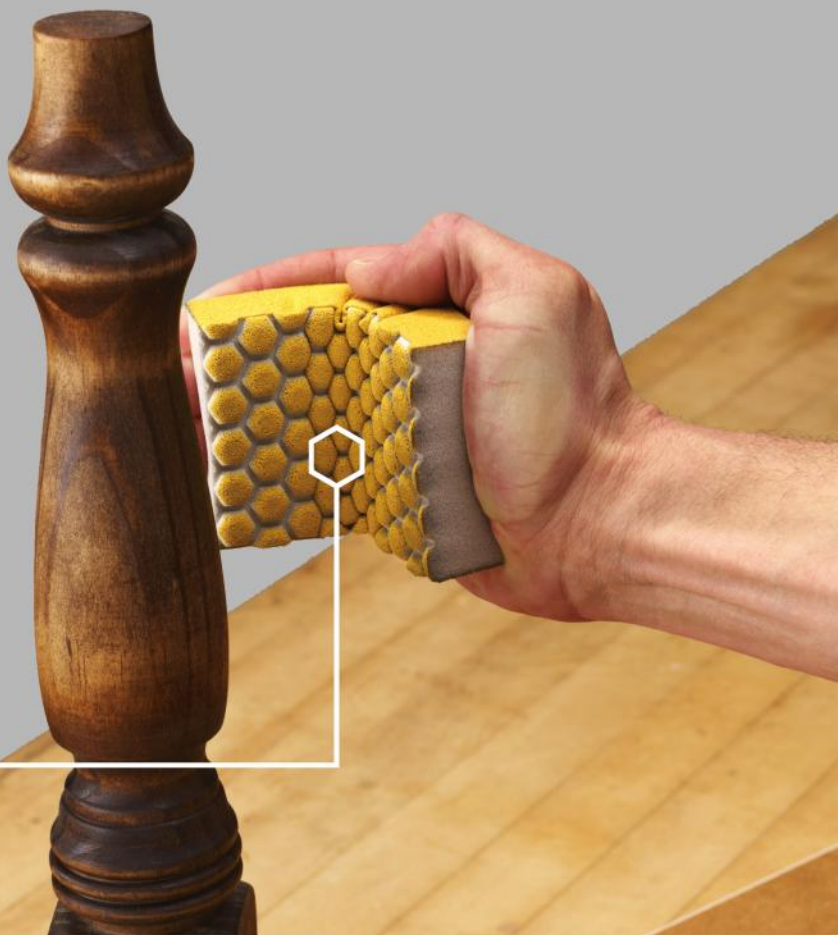
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Veritas Combination Plane

Reviewed by Troy McDonald

Re-engineered and upgraded to benefit from innovative research and modern materials, the evolutionary links of the Veritas combination plane to the Stanley 45 are clearly evident. This version has however a smaller more compact feel with the designers also choosing to eliminate the inclusion of a front knob.

Combination planes have polarised woodworkers for more than a century. Their supporters typically enjoy the versatility these planes offer whilst their detractors despise the fussiness and complexity that invariably results when a single tool is designed to perform a multitude of tasks.

The plane is shipped with a single 1/4" ploughing blade and can be used to perform a number of joinery and moulding tasks such as beading, reeding, tongue and groove, fluting and rebating via a range of optional cutters.

The standard plough and tongue cutting blades are in A2 tool steel whilst the remainder are produced in PM-V11 steel for longer cutting life. Blades from the right handed Veritas small plough plane will also fit this plane as will original blades from the Stanley 45.

Like its Stanley predecessor, the plane consists of three main parts; body, sliding section and fence held together by short (125mm) or long (200mm) rods. The long rods allow cuts to reach

up to 125mm from the edge of the board. Because of its symmetrical design, both right or left hand use is possible which can be handy when considering grain direction. The sliding section and body incorporate cross grain spurs and depth stops which allow for a cutting depth of up to 20mm. The quality of manufacture is outstanding with all controls via knurled brass knobs and critical adjustments such as the fence position including micro adjusters. But how does it perform?

For most operations set-up consists of installing the desired blade before positioning the sliding section to align with the outside edge of the cutter. The fence can then be set as desired and finally the depth stop adjusted to limit

the cutting depth. As one would expect from Veritas, the blades arrived sharp with only a quick hone required.

Both beads and flutes cut effortlessly, however the Veritas bead blades cut a quirk of 1.5mm which I find too large for a nicely proportioned bead. I also found the reeding cutter challenging to use as the blade had been profiled slightly off square. By design, a plane like this has a very open mouth, so using the moulding cutters in straight grain material is always going to be recommended for acceptable results.

Whilst the inevitable fussiness in set-up that results from a multipurpose plane like this remains evident, it is a credit to the designers how conveniently the knobs are to access. With the exception of the reeding cutter, I found the plane pleasant to use and although its performance was good, it could not compete with that of its companion tools such as the Veritas small plough and rebating planes.

For hand tool enthusiasts that regularly need to perform joinery tasks I anticipate the inevitable set-up time with a plane like this will be enough to justify the purchase of dedicated planes designed for ploughing, rebating and beading operations. For those that can't justify the cost of individual tools or those that desire the occasional use of a hand plane like this, the versatility of the plane will far outweigh the minimal set-up time and the plane will provide a lifetime of enjoyable use.

Photos: Troy McDonald

Available from www.carbatec.com.au



Above: The Veritas combination plane can perform a variety of joinery and moulding tasks.

Right: Showing plane disassembled with a sample of moulding and joinery blades.

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Festool HKC55 Cordless Circular Saw

Reviewed by Damion Fauser

Adding to their growing range of 18V cordless tools, last year Festool released the HKC55 circular saw.

This is an extremely versatile saw, able to be used in the traditional freehand mode, with the proprietary Festool guide rail, or with the new specific FSK crosscut guide rail system. This rail system enables accurate and repeatable long mitre cuts that are beyond the capacity of a mitre saw, however I didn't have access to one of these rails for the purpose of this review.

Either the 4.2 or 5.2Ah battery from the Festool system powers the 18V EC-TEC brushless motor. There is a good range of job and material-specific 160mm tooling available and changes are fast, simple and tool-less with the FastFix system. The electric brake system brings the tool to a fast clean stop so you can place the tool down quickly to set up for the next cut.

Cut depth is easily and accurately changed with a maximum 90° (freehand) cutting depth of 55mm. Mitre cuts are possible, with a range of 0–50°. Plunge cuts are also possible, and Festool have cleverly designed the guide wedge (riving knife) into the spring-mounted hinge cover to ensure all style of cuts can be conducted safely and free of obstruction.

Other clever features include the handle-mounted rotation of the blade cover, giving a clear line of sight to the sawblade at the start of the cut, as well

as the clearly visible battery charge indicator on the body.

A pivoting dust port (27/36mm inner/outer diameter) will connect to Festool extractors. An in-use mass of 4.2kg is more than acceptable and the very cleverly balanced distribution of this mass should allow long fatigue-free use.

The versatility of this tool is its primary strength, and it should appeal to carpenters, cabinetmakers and furniture makers alike. I've had mine for a while now and I use it primarily for breaking down sheets and on-site sizing.

The price shown is for the bare tool without battery or charger. At face value this is expensive for a small cordless circular saw, however I firmly believe it is well worth the money. If you only use a handheld saw for breaking down sheets, then perhaps the traditional Festool plunge-cut saws are for you. If you're planning to use your saw for both sheets and solid stock, then this one is well worth looking at.

Information from www.festool.com.au



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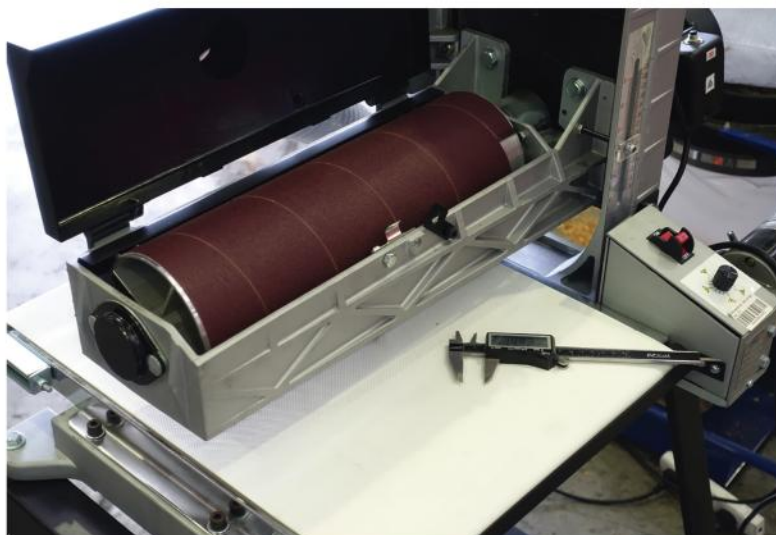
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Hafco Drum Sander DS-1632

Reviewed by Raf Nathan

Made in Taiwan this is a fairly rugged machine that comes equipped with a steel stand. This is a generic design based on the original Povermatic sander, and to me all drum sanders in this style are the same, albeit with different capacities, materials, and levels of refinement and build quality. As for all drum sanders of this type, winding and securing the abrasive on the drum is a skill you will develop, and once learnt it is a quick process.

The large drum is supported by a 6mm thick aluminium frame, and rise and fall is via a top mounted winder. There is some adjustment of the drum to the table, a critical point as this distance needs to be constant over the width so it will sand evenly. With this machine I sanded 200mm wide boards and found the thickness varied negligibly over the width, so ten out of ten for this key element. It will sand 400mm wide, or 800mm wide in two passes.

There is a height gauge to read sanding thickness but really an aftermarket digital gauge would be a boon. Otherwise it's a bit of a hit and miss operation.

The table has a rubberised mat to feed the wood through the drum. Some other brands use an abrasive as a feed mat and arguably this may be a better option. A 1/8hp motor with variable speed of 0.6m–3m per minute drives the feed mat. The main motor driving the drum is 1hp (0.75kw) which appears adequate. Thickness capacity is 127mm maximum down to 3.2mm minimum. Be warned that wood can be flung back towards the operator, so stand to the side when using it.

These sanders are not thicknessers, the common mistake it to try and hog off too much material which will stall the motor. I could though take up to 1mm off with an 80 grit belt on the drum which is pretty much the limit. In my opinion,



Top left: Changing the abrasive belts is not hard. The table has a rubberised surface.

Above: The DS-1632 comes with the metal stand shown.

120 grit and higher is ideal to run on this machine. Small 5mm thick parts, a difficult size to hand sand or plane on the bench, were sanded very well and efficiently. A small frame and panel door that I would normally have had to plane and hand/power tool sand was perfectly leveled in about 60 seconds!

For \$990 you are getting a good drum sander including a metal stand at around half the price of the other more refined makes. This machine appears well suited for light to medium duty use sanding of boards, cabinet doors and components of various sizes.

Review machine from Hare and Forbes, www.machineryhouse.com.au

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Arbortech Ball Gouge

Reviewed by Raf Nathan

Yet another innovative woodcarving attachment from Australian toolmakers Arbortech. The Ball Gouge is a clever round-headed cutter that is designed to carve mostly concave surfaces. Beautifully made, it has a 30mm diameter head with a reversible ring tungsten cutter that carves small and medium sized areas quite quickly.

It will fit pretty well all angle grinders, screwing straight onto the shaft, although you may need the included adaptor depending on the shaft diameter your grinder has. As it is a rather long tool there is quite a bit of leverage generated so a good quality grinder is essential.

The manufacturers claim it is self sharpening however I was unable to verify this. The cutting ring can be easily loosened and moved to a new sharp edge as needed and with two faces available it should last for ages.

Like any tool you will need to learn to use it for best results. It will plunge cut but not that well. I found it best to have a low attack angle and this, to me, gave balance of control and waste removal. Having said that, a more vertical attack will remove less waste and hence allow even more control.

You can cut to a line with good control and accuracy so small bowls and spoon blanks are easily handled.

You can follow a drawn line quite easily. Endgrain will tear if the cutter is applied with the back edge. I found it best to have the cutter moving forward into the wood for cleaner results. For instance, when forming a bowl it was better to attack from say 9 o'clock arcing around to 3 o'clock, then turning the blank and repeating the process. After reaching about 25mm depth the cutter will then tend to follow the previous cut.

Hard and soft wood are both carved well, as long as you remember that this is a detail cutter rather than a tool for hogging off bulk waste. Having said

that you can carve a complete bowl internally with the tool. I tried plunge cutting into endgrain to attempt to hollow out a vessel but this is not the tool's forte, it was a slow process.

As with any power tool there is quite a lot of waste sprayed about, but this is shavings not dust. It does not tend to grab the wood, making it somewhat safe in use, but it is still a cutter spinning in a power tool so face protection and care in use are always essential.

Review tool supplied by Arbortech, www.arbortechtools.com





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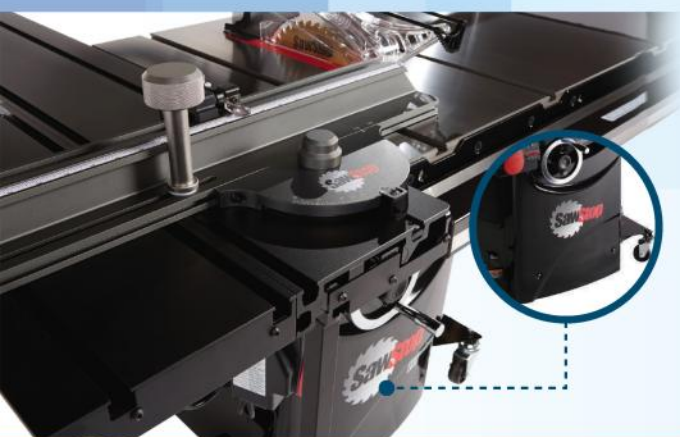
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Felder Silent-Power Cutterblock

Reviewed by Damion Fauser



Spiral cutterblocks for jointers and thicknessers are nothing new, having been commonly available for over a decade. I've used many of them, both here and in the USA, using a wide variety of woods and on a good range of machines, including 150 and 200mm jointers, 300mm benchtop and 450mm floor-standing thicknessers, through to retrofits on 600mm pre-WWII cast iron behemoths. Since moving back to Australia in 2014, I've used the Silent-Power cutterblock, available from Felder. I have a Hammer A331 and a Felder AD941, both combination machines.

This cutterblock is available as an option on new-order machines from the Hammer/Felder/Format4 catalogue. It cannot be retrofitted to their machines with a traditional

straight-knife cutterblock, nor can it be retrofitted to other brands of machines, but the staff at Felder tell me this is something they hope to rectify in the future.

There are some key differences between the Silent-Power and others on the market. The Silent-Power has a significantly larger gullet, which greatly improves dust collection. The cutters are aligned right next to each other, resulting in a continuous cutting action and larger number of cuts per inch at any given feed speed. And, according to literature available from Felder, there is on average a 20% reduction in power consumption.

Of course the proof is in the actual results. In my opinion, the Silent-Power cutterblock is by far the best on the

market. I base this comment on my experience with the surface finish result achieved on the many species of woods that I've put through a range of different machines. The Silent-Power leaves a surface that requires significantly less subsequent surface treatment prior to gluing or polishing.

The self-indexing carbide insert cutters have a very good working life. Between my own work and use by students, mine see an enormous amount of use. I track the dates that I rotate to a fresh edge and on average this occurs every 9 months. I could probably get a little longer out of each edge but I prefer to change sooner and maintain premium performance.

More information from www.felder-group-australia.com

LaSquare

Reviewed by Raf Nathan



This is a new take on the traditional combination square. Made in the USA, its main point of difference is the big cast and machined aluminium body.

With this patented design tool you can mark a square line on the face of a board as you would with a traditional square and the extra width of the tool allows you to extend this line down the edge. In fact you can edge mark up to 24mm.

Because of its comparative larger size it does not really suit thin boards, but for standard thickness wood of 19mm or so it is excellent.

The 2mm thick etched ruler is high quality and a bubble level is built into the body. Ruler to body was a highly accurate 90° when checked against a reference square. Arguably the aluminium body may not handle rough use as would a cast iron tool. This is a great innovation on the combination square that can speed up measuring and marking.

Review tool from nelcotrading@bigpond.com
See also www.lasquares.com

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LT14bx

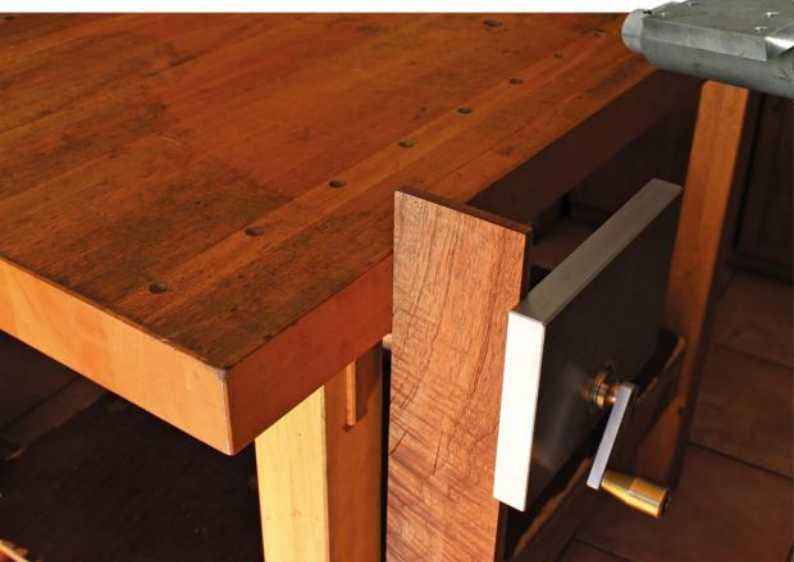


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Product news

A round-up of tools and products to take notice of.

Tool Trio ▶

New from Dremel is a three in one boxed DIY Maker Kit. The Dremel 3000 series rotary tool with its 130 watt motor cuts wood, metal and plastic, while the 290 Engraver has a reciprocating action for optimal control. Completing the trifecta is the 2000 VersaTip, an open flame torch which will join wire and heat materials. For \$199 this could be very handy. www.dremel.com.au



◀ Spray at Home

Portable, pops open without assembly and packs away in a carry bag – no it's not a tent but the principle is similar for this convenient spray booth solution. You can guard against overspray and drift for optimum spray conditions with this three-sided shelter with built-in floor. The small unit opens to 915 x 760 x 1000mm and the large unit takes up an area of 2700 x 1800 x 1680mm. Priced at \$69.50 and \$137.50. www.woodworksupplies.com.au



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www.heartwoodcreative.com.au



◀ Unplugged Power

When the lights go out and all the batteries are flat you'll still be in business with this hand powered Nobex Champion mitre saw. Plus or minus 0.08° accuracy is the measured claim with its precision ground table and fence. The blade guides are low-friction to closely support the blade. Pre-sets for six angles in both directions are fast to engage. The Champion has 'smart saw suspension', moveable height stops, telescopic length stop and comes with two fast-action clamps.

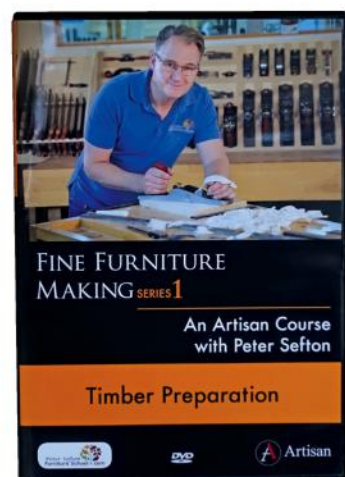
www.promac.com.au



Sefton Set ▶

Respected UK furniture maker and educator Peter Sefton has produced a set of five DVDs which cover some of the fundamental areas of fine woodworking. *Fine Furniture Making, An Artisan Course with Peter Sefton Series 1* covers sharpening and grinding methods for a variety of edges as well as timber preparation and selection, and guidance on handplanes and their usage. Available in Australia from Professional Woodwork Supplies.

www.woodworksupplies.com.au



◀ Light Up Your Work

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www.japanesetools.com.au

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www.toolworks.com.au



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Good Honest Joinery

As examples of what might be considered a rare trade, Wayne Mavin's complex handrail and staircase creations turn heads. Story by Linda Nathan.

Arcing up, twisting and turning like a headless snake, the end of one of Wayne Mavin's latest creations is trapped in his bench vice. It's a staircase handrail but not understanding how it will eventually be anchored makes it a 3D mystery.

There are curves and flowing lines that roll around. It's made in ovoid and moulded sections that need to be seamlessly joined on angled faces. 'You've got to sculpt it, but it's following a line, it's not freeform', explained

Wayne. 'And you can't fudge it, because if you do that your balustrading is not plumb. The centre line of the handrail has to follow down the string of the stairs and has to be a consistent height over the risers as it comes down.'

'There are formulas', says Wayne with a chuckle. 'A lot of it is just plane geometry I suppose, working off radiuses, drawing ellipses. Without complicating it too much, the theory of geometric handrail is taking a slice through a hollow cylinder at the pitch of the stairs, and then that



Main: Wayne Mavin in his Hornsby, NSW workshop. Machinery and hand tools are of equal importance.

Left: 'Like a headless snake with its tail caught in a vice', – an in-progress handrail in walnut by Wayne Mavin.

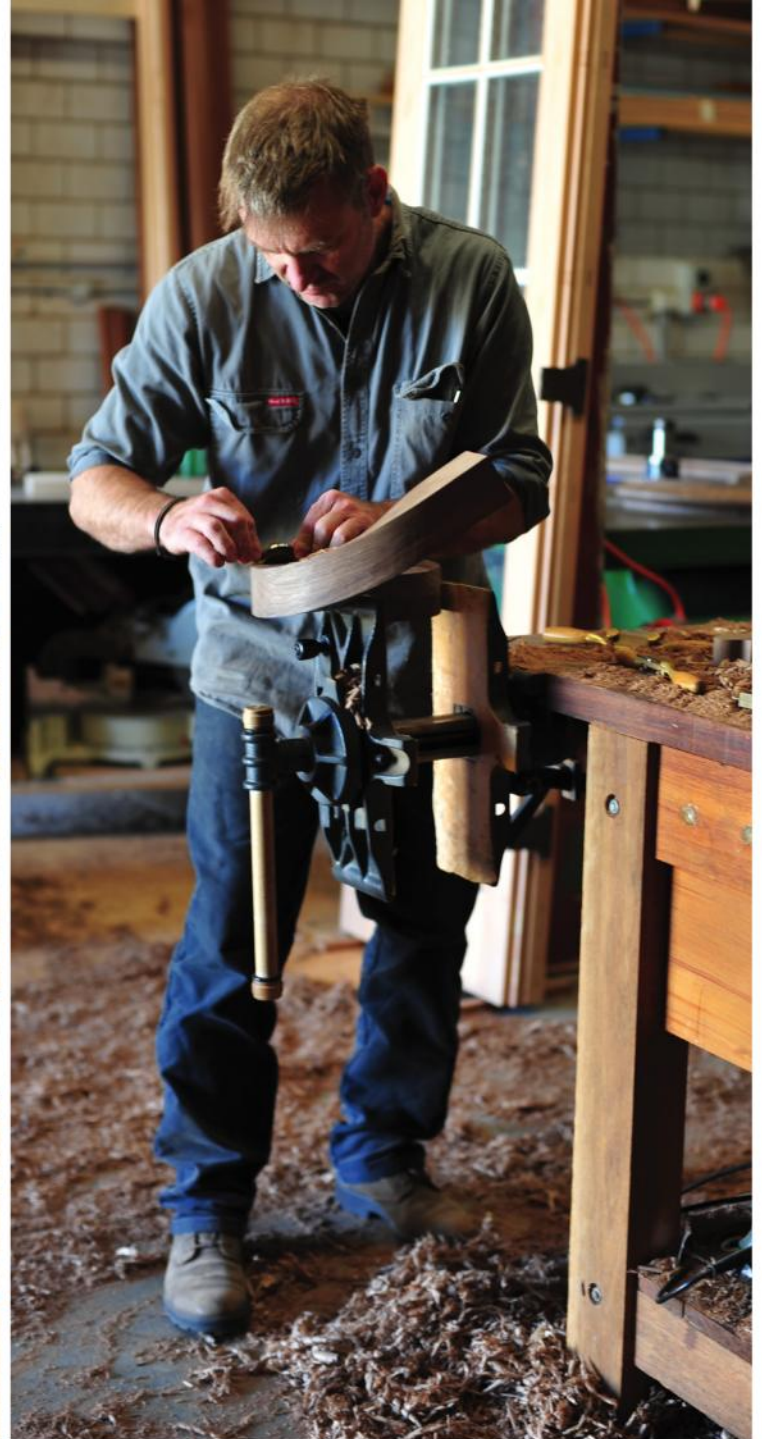
Below: Drilling holes into complex angles requires careful setup.

piece forms the wreath of the handrail. You've basically got to draw a stair in plan and then fold that plan out into elevation so that it's in one plane. And then you can see the pitch of the handrail and its true length.'

There are only a few makers in Sydney who can create traditionally made handrails for staircases. Specialised training for staircase building and handrailing no longer exists. 'You have to learn on the job now', Wayne explained, however with so few skilled in these specialties, finding your guru is not easy.

Wayne gets many requests to take on apprentices, but with an uneven cash flow, employing another could be challenging. 'On your own, you can only work on one job at a time, maybe a smaller one in the background, so you're really relying on payments coming through in a timely way to keep you going. My aim is though to have an apprentice,





Top: Handrails are joined and shaped in sections.

Above: Reference books like those of George Ellis are never far away.

Top right: Spokeshaves and hand tools such as the very small handplane Wayne is using here are used to create and smooth curves.

Right: Showing the oval and moulded profile of the handrail in progress. Lie Nielsen spokeshaves in particular are favourites.

Opposite page: Some of Wayne Mavin's hand tools: well housed, well cared for and well used.





because I'd really love to pass it on and have someone working with me.'

Grown up in the Manning Valley, Wayne still has a country vibe about him, and living in Sydney for over 20 years hasn't sped up the way he talks. Apprenticed in town, week-long study blocks in Newcastle – that was how he learnt the skills for two trades, wood machining and carpentry/joinery.

In Sydney, five years working in a joinery taught him the basics of staircase building. Not handrailing though, that he partly figured out while doing installations. Getting his head around the maths wasn't easy but he taught himself, reading books and working it out.

Many of the books in his now 'fairly decent library' were sourced online from antique bookstores in the UK. The style of 18th century English staircase building and handrailing appealed most. 'Geometric stairs were in their heyday in the English Georgian period – I think this was the pinnacle of timber staircases', said Wayne. 'Before that

geometric stairs tended to be built in stone and then it went into the time of the carpenter.'

On style, Wayne confesses: 'I'm a purist. I like Georgian architecture because the mouldings, compared to Victorian deep bolections and high skirtings, have been stripped back. It's all about form and creating lovely shapes with a line'.

Other work he takes on will include the custom joinery, doors and windows that a house extension or renovation might require. Mostly he will work to the plan of an architect or a designer and that can extend to other commercial installations such as the sinuous bartop edge railing made for Virtual Interiors.

Notably there are regular government jobs as well. 'Well, I do do a bit of work for the Department of Finance and they look after Kirribilli House and also the Lodge, so if anything needs to be done they usually get me to do it', said Wayne with characteristic understatement. 'There could be a couple of jobs a year.'



Q&A

Favourite hand tool?

I guess it's a spokeshave, a Lie Nielsen.

Favourite machine?

Spindle moulder, the heart of the workshop as far as I'm concerned.

Favourite wood?

Australian red cedar. Older growth is hard enough to be serviceable but not too hard to work, and I also like it for its history in Australian architecture.

What inspires you most?

The quality of work that English joiners in the early to mid-1800s were able to do. The work we aspire to do now was their bread and butter. The challenge of being given a complex job and making it work.

Favourite maker?

Furniture maker: Edward Barnesly.
Joiner: George Ellis, an author, a teacher at the Polytechnic whose books were based on his own work.

Worst thing about the job?

Dealing with clients' expectations.

Best thing?

Exceeding clients' expectations.

Wayne seems unflappable but one thing that can bother him is meeting clients' time expectations. 'I hate making people wait. You've got to try and sort that out before you engage in the job because lot of people don't understand how long things take', he explained. 'If you're designing and making you've got to source the right materials and that may not be from one yard. You've got to cut it and mill it and bring it all together; it takes time. There's as much work in the handrail as there is in the stairs, and you don't have a team of people working for you.'

It's understandable that many architects don't know the finer details of staircase design, it is highly specialised after all. There's maths and formulas that will deliver a safe and comfortable rise within a certain space, and there's artistry involved in getting one to look good, great even, because stairways can lend incredible visual impact to a home or building.

'One of the reasons I like stairbuilding is because there's so much handwork in traditional stairs. I just like it because it's good honest joinery. The only hardware in it is fastening it to the wall,' Wayne said.

It's clear the main thing that keeps Wayne Mavin in the game is somewhat intangible. 'You do a job and then you're pleased with it, but then you want to move on. You feel you've done that now, so you're hungry for the next step. I like jobs that make me think. At the end of every job I'm just looking forward to the next one...'

Photos: Jennifer Sage, unless otherwise noted

Contact Wayne Mavin via www.waynemavin.com.au or Instagram @waynemavin



Above left & right:
Geometric red cedar stair
case made for a commission
in rural NSW, 2013.
Photo: Justin Alexander

Right: Ebonised edge railing
for Virtual Interiors bar fitout.
Photo: Wayne Mavin

Below left: Detail of
European oak vestment press
made for St John's College,
Sydney University 2015.
Photo: Emilio Cresciani

Below right: Traditional
joinery door and fanlight
for a Sydney residence
by Wayne Mavin.
Photo: Emilio Cresciani

Opposite page: The spindle
moulder is the heart of this
workshop.





Woodworking In Small Spaces

Vic Tesolin explains why you don't need a big workshop full of tools to get started in woodworking.



Cleaning up your living room after a woodworking session is no problem when using hand tools.

I consider myself pretty fortunate when it comes to workshop space these days. I have just over 45m² in our new home and that is by far the largest shop I've ever had. Prior to this shop I was working in a one-car garage with about 16m², and the smallest shop I've ever woodworked in was my first one, which was under a set of stairs in a dark basement and it topped out at a whopping 3.7m².

The point is that you don't need a big shop full of tools to do woodwork. What you need is the desire to work with your hands and some basic tools. This is the first article in a series of four that will help you get started working in a small space.

The space

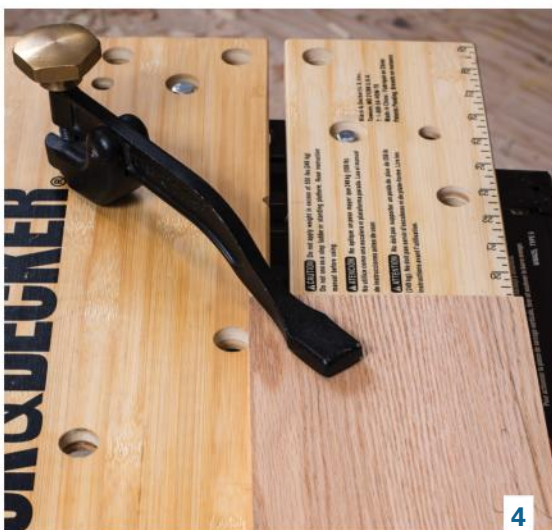
First things first, you need a space to work in. You need enough room for a workbench and a toolbox or two. The



2



3



4

2. Hand tool shavings are large and easy to clean up.
3. These portable workbenches are a great solution if you don't have a traditional workbench.

4. The holes are the answer when it comes to holding your work.
5. No need for an aircraft carrier of a workbench – 1500mm is plenty long for most work.



5

space can be in the house or outdoors under the cover of an awning or small portable tent. I've seen woodworkers who have a bench and tools in their living room, small bedroom or even in a walk-in closet!

Four square metres is about all you need; you won't be making king-sized beds but you'll be making. In Evan's apartment (**photo 1**), he can throw a tablecloth over his bench when he isn't using it and his main tool box acts as an end table beside his sofa. This is all proof that if you want to woodwork, you can do it almost anywhere.

Many people worry about dust, especially if you are working in your home, but you will see as this series progresses that I'm suggesting you work with hand tools in these small spaces. Hand tools create fairly coarse shavings which are easily swept up or managed with a vacuum (**photo 2**).

The work surface

For a workbench, you don't need anything fancy to get started. I've done a lot of work on the kind of portable folding workbenches that you can usually buy at local home centres like Bunnings for about \$100 (**photo 3**).

The nice thing about this set-up is the top comes with holes that are handy for simple workholding devices and it also has a built-in clamp. When working with hand tools you need to secure the work to a work surface (**photo 4**).

I don't recommend using this set-up forever, but it will certainly get you started. Eventually you will want a more sturdy bench and you can use the portable one to make it to your specifications. The first workbench you build doesn't need to be any longer than 1500mm. Most solid wood furniture components aren't much longer than this so you will just be taking up more space than you need to (**photo 5**).



6



7

See the light

Woodworking requires close focus work that certainly benefits from having good light. Ideally you want two types: overall light (**photo 6**) to illuminate the room you are in, and task lighting (**photo 7**).

Task lighting is the most important, especially at your bench. You will be often working with small details and components so a good amount of light is a necessity. If you have more experienced eyes, then adequate light plays an even bigger role in preventing eyestrain.

A space for your tools

Having worked in many small spaces I can tell you that one of the keys to success in these micro-shops is a combination of neatness and organisation. You can't afford to be messy in this environment because you need all the space you can muster.

Keeping your bench neat and tools stored is a necessary habit to get into. If you put your bench up against a wall then all of that wall space is yours to store tools. Wall storage also puts the tools close at hand so you won't have to travel far to get the ones you need (**photo 8**).

Another good storage option are tool chests. Tool chests do a great job at keeping your tools out of sight and organised (**photo 9**).

Being organised in any sized shop is just an efficient way to work. If every tool has its place and it gets returned there every time then you never have to waste time searching (**photo 10**).

You'd be surprised how easy it is to lose something as large as a handplane in a small space. Tool chests do take some floor space but they can do double duty for you. When closed they also offer a second surface that is lower than the bench. This works well for important tasks like sawing timber to size.

Small spaces don't always have the room for a dedicated saw bench so this fits the bill rather nicely. The height of a tool chest is also nice as a low work surface. You can cover the top with newsprint paper to keep it free from glue during assembly or to protect it from stray finish if you choose to use it for that. A small tool chest is a great beginner project that will teach you valuable lessons and techniques while also giving you a handmade storage solution for your tools.

Tools of the trade

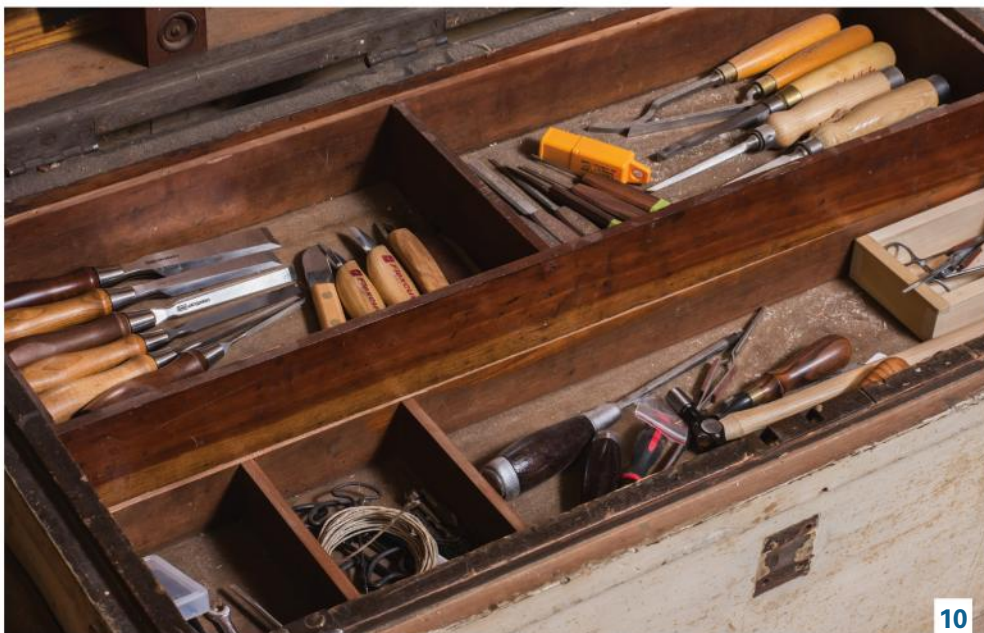
I will be going into more detail on tools in the next article so I won't get into specifics here. Understand that you don't need every tool and gadget that you see in order to do good work. Woodworkers 150 years ago plied their trade with only the tools that fitted into the tool chest of the kind shown.



8



9



6. They look like fluorescent tubes but these LEDs do a great job at flooding a room with light.
7. Task lighting helps reduce eye strain and makes close-focus work easier on you.
8. A simple shelf can go a long way to keeping your tools organised.
9. I inherited this chest from a family friend. Built in the mid-1800s, it does a fine job at keeping my tools organised.
10. The compartmentalised nature of a chest keeps tools organised.
11. These are two examples of tools that are versatile and can work hard in your small shop.
12. Be sure to use a synthetic brush when working with water-borne finishes.



Don't fill your precious space with useless jigs and limited use tools. Instead pick tools that can handle doing multiple tasks. For example, a good set of bench chisels will be enough to start with for general work and also moderate mortising tasks (**photo 11**).

Another spot to save space and money is forgoing a smoothing plane and using a jack plane. In fact, the next article will reveal the jack as the most versatile plane that you can have in your stable.

The finish line

Next to dust control, the issue of finishing is most concerning to woodworkers who operate in a small space. For the most part, I feel that sticking with water-based finishes is the best way to go. These are commonly available at hardware stores so you don't have to go searching far. They are fairly easy to apply with hand techniques like brushing and ragging and clean-up is simple requiring only some soap and water (**photo 12**).

The odours from water-based finishes are generally lower than solvent-based finishes and have lower VOC's (volatile organic compounds). This does not mean that you don't

have to take the necessary precautions when working with them. I still use a mask that filters organic vapour and I always make sure that I have a window open and a fan running to move the air out. Better yet, if you can do your finish application outside you'll be better off for it.

No excuses

It doesn't matter if you live in a small house or an apartment. You don't have to have an endless budget. Can't make noise or dust? This is not a problem when you choose to work with hand tools. There are no excuses now. You can make beautiful wooden objects no matter where you live or how much space you have. Your life will be enriched being surrounded by things that you have made with your own hands and when someone asks 'Where did you buy that?', you can proudly say that you made it yourself.

Photos: Vic Tesolin



*Vic Tesolin is a furniture maker and former editor of Canadian Woodworking magazine. He is also woodworking/technical advisor for Veritas/Lee Valley Tools. See also Vic's book, *The Minimalist Woodworker*, which was published last year. See www.minimalistwoodworker.com*

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Bandsaw Battle

Feature by feature, Damion Fauser compares two new-release 18" bandsaws.



Laguna and Jet have added to their fleet of machines with the release of two new bandsaws in the 18" class. I've recently had the fortunate experience of being provided one of each machine to thoroughly test and compare in my workshop.

Clearly, much thought has gone into both of these machines, based on a solid company legacy of quality

in both instances. I'm also reliably informed that Laguna went to great lengths to incorporate customer feedback from the other machines in their range.

Refreshingly, these are far from carbon copies of each other. Rather, they each have distinct stand-alone features that made this comparison both interesting and enjoyable to conduct.

The key dimensions of both, as you can see in the table, all hint at machines that are intended to make big cuts in large components. There are only minor differences in the resaw capacity, throat and table dimensions between the two.

Weight for weight

Whilst the Jet is 28kg heavier, I didn't notice any significant reduction in

vibration between the two. Both have dynamically balanced cast iron wheels, which will aid in generating enough flywheel effect to drive a good blade through the bigger cuts (**photos 1, 2**).

Power and braking

One difference of note is between the motors. The Jet has a 2hp, 10amp single phase motor that can be run from a standard domestic 10amp general power outlet. With an exceptional blade, this should be powerful enough to make the taller resaw cuts that the capacity of this machine allows. The Laguna has the more powerful motor at 3hp, but it requires a 20amp circuit as it draws substantially more (**photos 3, 4**).

Another key difference is the braking mechanism. The Laguna has a traditional foot-operated brake mechanism that drives a radical disc/caliper braking arrangement akin to that found on motor vehicles. The Jet has an internal electro-magnetic motor brake – simply press the button the turn the machine off and within seconds the blade is brought to a dead stop. Both are fast, powerful and effective (**photo 5**).

Blade tension and tracking

A further indicator of the quality of any machine is the ease and range with which necessary adjustments can be made and this is particularly true with bandsaws. Thankfully, both machines are very good in this regard. On both, blade tension is easily set with a large quick-release lever on the upper housing (**photos 6, 7**), and is indicated with a gauge viewed through a viewing window on the side of the upper housings.

Adjustment-wise, the primary difference between the two is with the tracking. With both machines, the position of the blade on the upper wheel is easily viewed through the glass window and adjusted and locked from the rear. With Jet's desire to have met European safety specifications for machines imported and sold in Australia, the electro-braked motor does not easily freewheel when the machine is off.

Opposite: JWBS18M and Laguna 18BX bandsaws.

1. Showing the Laguna wheel.
2. Jet wheel, also cast iron.
3. Jet motor. The kip-lock lever and handle are for moving the motor to adjust the tracking.
4. Laguna motor. You can also see the dual dust ports.





5



6



7

5. The disc/rotor brake of the Laguna seen behind the lower wheel.
6. Rear of the upper housing on the Jet. Showing the quick-release tension lever, tracking and post adjustments.
7. The rear of the upper housing on the Laguna tells a similar story in terms of adjustments.
8. Ceramic guide system on the Laguna.
9. Dual ball-bearing guides on the Jet.
10. Front view of the Jet fence system.
11. Front view of the Laguna fence system.
12. Dual dust ports on the Jet.
13. Dust collection box inside the lower housing on the Jet. The system is very similar on the Laguna.

Accordingly, to change the tracking, Jet have retrofitted a kip-lock handle near the motor. When unlocked, the motor can be pivoted upwards, releasing the tension on the pulley and therefore allowing the wheels to freewheel. Once the tracking is set, pivot the motor back down and re-lock the kip-lock handle (**photo 3**). Whilst I appreciate the intent behind this, I wasn't too fond of having to get down to floor-level to do this.

Guide systems

The guides are a further key difference. The Jet features dual ball-bearing guides, which are easy to set to very fine tolerances and

allow the blade to run true with little resistance. The thrust bearing is a slotted ball-bearing. Laguna have designed and installed proprietary 10-point ceramic guides. The ceramic is designed to run significantly cooler than traditional guide material and this guide system, with ceramic lateral and thrust guides both top and bottom, is easily and tool-lessly adjusted for optimum performance. Both guide systems are very good (**photos 8, 9**).

Both fences are adjustable to account for drift and can be removed and laid down flat to allow the user to bring the post down to a safe level

when cutting narrow stock (**photos 10, 11**). Both posts are smoothly adjustable with a solid and lockable pinion system. There appeared to be very little runout in the position of the post between the upper and lower settings, evidenced by the fact that I had no adjustments to make to the upper guides between the two positions on either machine.

Blades matter

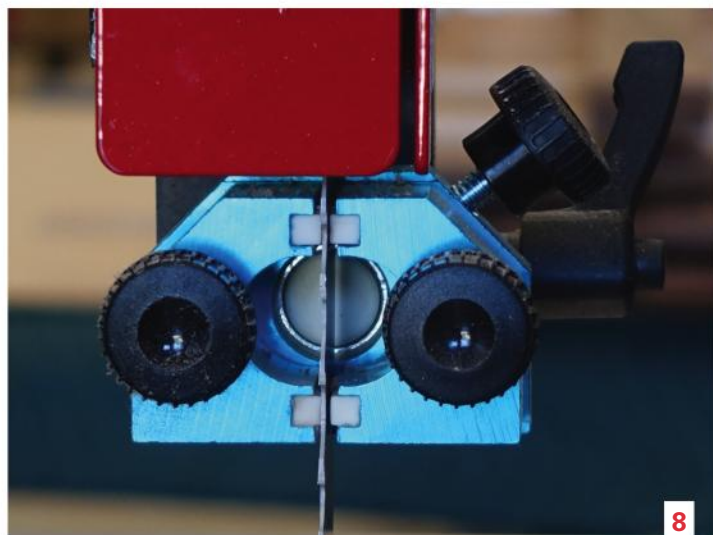
Of course a machine is only as good as the tool that is used on it and Laguna have a great range of quality blades to choose from. For those that prefer to get their own blades welded from custom stock, the blade length is 3683mm. I was provided with two Laguna blades with which to conduct this review – a 1" variable-pitch Resaw King and 1" x 3tpi Shear Force.

The Jet was supplied with some carbon steel blades of various widths and tooth-pitch and a Starrett bi-metal blade. Given the variation in tooling provided the performance of the machines for actual cutting couldn't be truly compared. There is a subtle difference in the blade range between these machines. The 2mm difference in the maximum blade size will mean that the Laguna is able to choose from the 1-1/4" blade size, opening up a larger pool of manufacturers and tooth configurations.

Blade changes are simple. The common table-locking pin has been replaced on the Laguna with a clever cam-lock nut assembly on the side of the table and the aluminium throat plate is easily removed by loosening the locking screw. Jet also has the cam-lock lever on the front of the table.

On test

To test the machines I made a series of cuts in both hard and softwoods, both narrow ripping cuts and a series of resaw cuts up to 250mm tall. In all cases the Laguna (and the blades...) easily and cleanly powered through each cut with a lovely resulting finish that would require minimal subsequent processing.



8



9

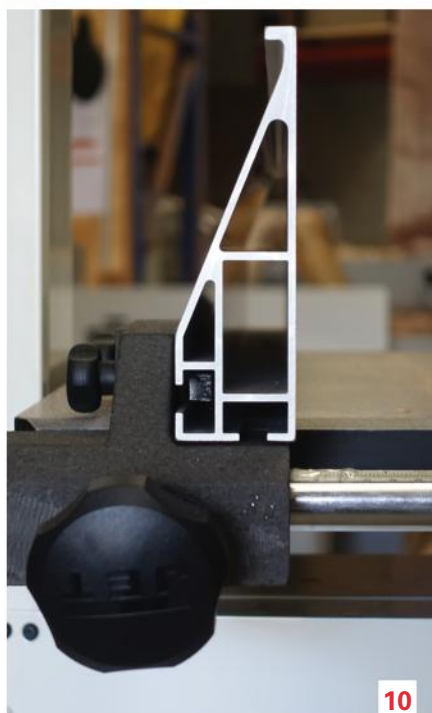
The Starrett blade on the Jet performed beautifully on the narrower cuts but the performance did noticeably drop on the taller resaw cuts. Please note I am putting this on the blade rather than the machine. I often gauge the value or usefulness of a tool or machine in terms of time it will save me in subsequent processes, and the Laguna blade/machine combination was a winner in the circumstances I was afforded.

Dust systems

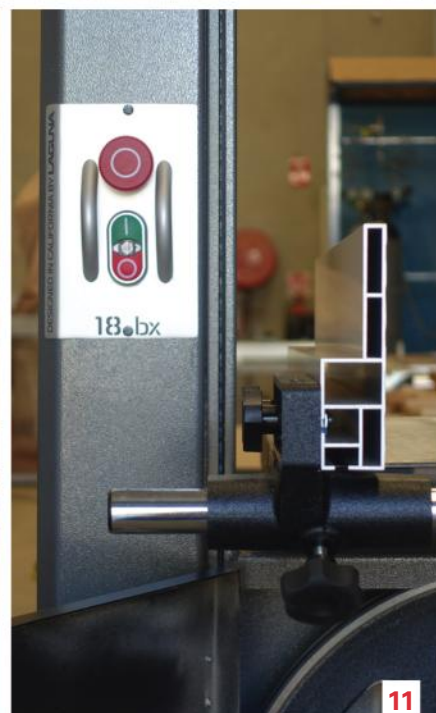
Dust extraction is excellent on both machines with a pair of 100mm ports, one directly under the table and another on the rear bottom. By running short lengths of ducting from both of these ports to a 45° elbow you can catch the vast majority of the waste with a single pipe. Both also have a neat collection box housed directly under the lower guides, with removable zero-clearance inserts to ensure the majority of dust is collected at the upper port (**photos 4, 12, 13**).

Extras

Additional features on the Laguna include the built-in mounting points for proprietary Laguna flexible lights and the accompanying power outlet for that light. Certainly not essential to performance, these are nice touches nonetheless (**photo 14**).



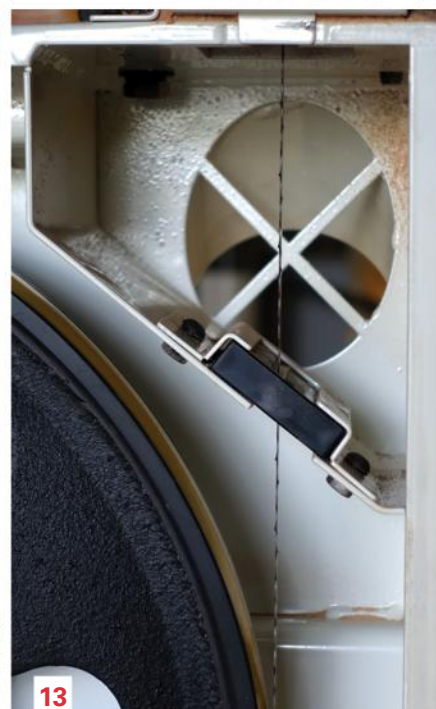
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11



12



13

14. The four holes at the top of the upper housing on the Laguna are pre-tapped to accept the proprietary Laguna flexible light system. There is another set of holes on the opposite side of the machine for versatility.
15. Side view of Laguna depth gauge and blade.
16. Jet depth gauge shown side-on.



The Jet also has a variable speed setting, with a choice of two pulley settings yielding a speed range from 580–890 metres/minute at full load.

Rating the two

Both machines are excellent bandsaws that will serve both the dedicated home woodworker or fulltime woodworker extremely well. With almost identical dimensional

capacities, I had to look deeper to distinguish the two. The Jet can be run from a standard domestic power outlet, which is a clear distinction between the machines, particularly for home-based woodworkers. The cost of that convenience is a less powerful motor. The primary drawback for the Jet is the requirement to get down to ground level to shift the motor to allow tracking adjustments to be made.

The guide systems are a clear distinction – both work extremely well and I believe this will come down to personal preference. Dust collection, such an important consideration when bandsawing, is nearly identical.

The Laguna has the more powerful motor and can run a wider range of tooling, but it does require the 20amp circuit.

	JET JWBS18M	LAGUNA 18BX
Motor	2hp (standard 10amp circuit)	3hp (20amp circuit required)
Table size	692 x 508mm	660 x 508
Wheel	balanced cast iron	balanced cast iron
Braking system	electro-magnetic	foot-operated mechanical disc (rotor)
Resaw capacity	406mm	400mm
Blade size range	3–30mm	3–32mm
Guides	dual ball-bearing	ceramic
Thrust guides	slotted ball-bearing	ceramic
Tension adjustment	three-position adjustment lever	quick-release lever
Fence	two-position extruded aluminium with micro-adjust	extruded aluminium
Table tilt	-5 – 45°, rack and pinion	-5 – 45°, rack and pinion
Mass (Net)	214kg	186kg
Blade length	3810mm	3683mm
Throat	457mm	463mm
Tracking adjustment	handwheel (unlock and lift motor to release brake)	handwheel
Tracking window	yes	yes
Post adjustment	handwheel, rack-and-pinion	handwheel, worm gear-and-pinion
Dust extraction	dual 100mm ports	dual 100mm ports
Price	\$3395	\$3385

With a view to being as objective as possible, if I were shopping for a saw in this class, I would choose the Laguna for two reasons – the additional motor power would allow better use of the full resaw capacity and the tracking adjustment is far more convenient.

I do hope that those reading this will take this for what it is, merely my opinion, and be able to use this comparison to accurately inform an important investment decision. Both saws are priced to be extremely good value for the performance they offer.

Photos: Linda Nathan
 Laguna from www.gregmach.com
 Jet from www.carbatec.com.au

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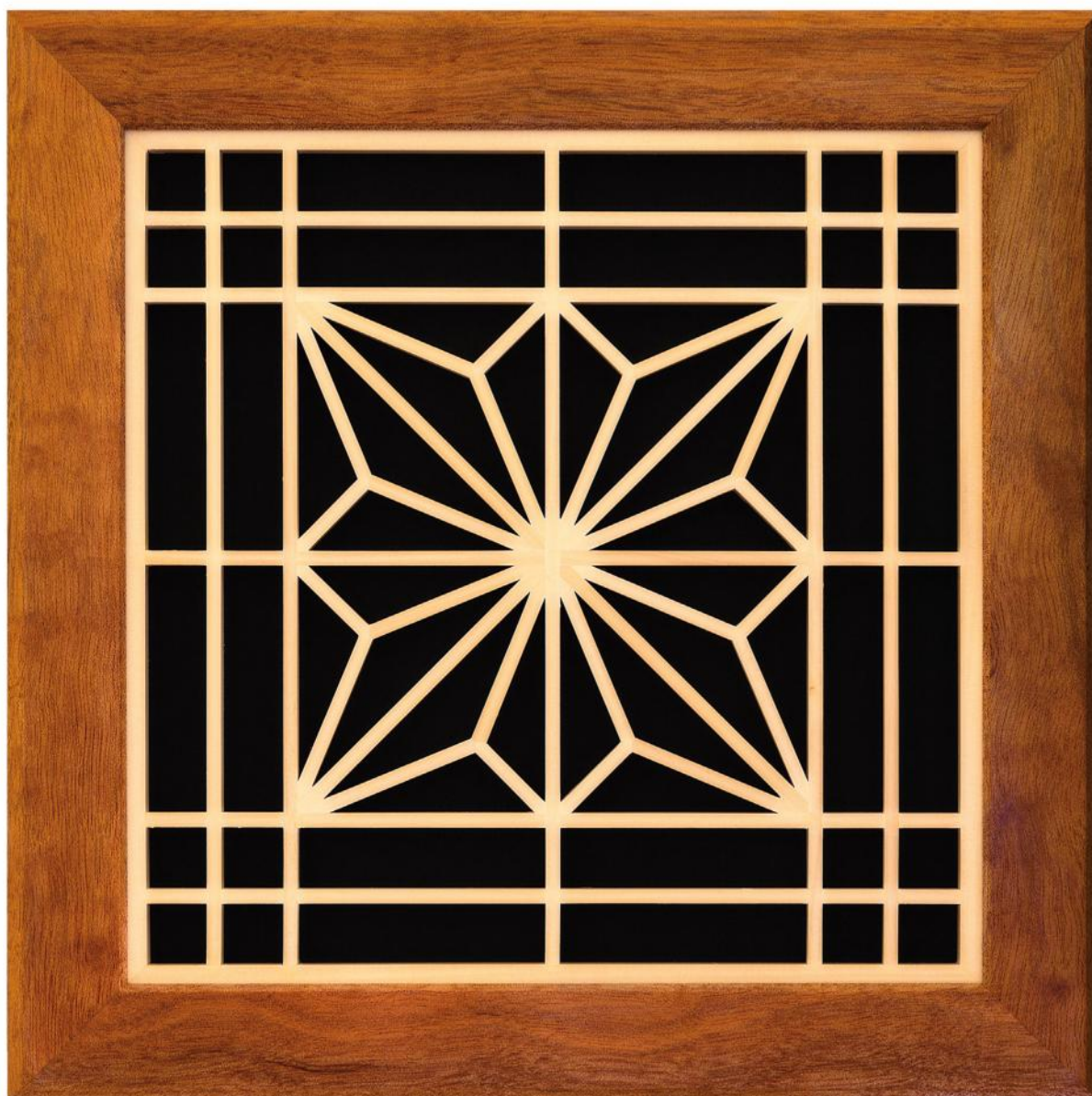
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The Art of Kumiko

A step-by-step guide to making a framed asa-no-ha kumiko panel. Story by Des King.

To the Japanese, shoji are a way of life, a constant that has been an integral part of their national character for almost a thousand years. Shoji underwent a significant evolutionary change in the latter part of the 16th century with the growing power of the samurai warrior class and the emergence of the shoin-zukuri architectural style. In the four centuries since then, shoji design has continued to be

further refined, and has risen to new heights of complexity and artistic expression. The advent of modern materials, tools and techniques, and the greater use of computers has also seen kumiko art reach new levels, and boundaries are constantly being pushed with every generation.

Square asa-no-ha

The project in this article is a single square asa-no-ha pattern in a frame

with a black paper background to highlight the lighter kumiko timber and the pattern itself.

The asa-no-ha (hemp leaf) is a simple and ancient design that has remained popular down through the centuries. The hemp plant grows quickly and straight, and the pattern has often been used in children's clothing in the hope that they also will grow healthy and strong.

Tools required

No special tools are required to complete the project. The hand tools you will need are a fine tooth crosscut saw (I use a Japanese saw but a good quality Western saw is just as effective), 3mm and 6mm chisels, a marking knife, a marking gauge, an accurate try square for 90° marking, a block plane to use on the trimming jigs, and, preferably, a chamfer plane. The chamfer plane is not essential, but will make chamfering the edges of the frame much easier.

Timber

Cut the sections required as per the cutting list. Kumiko are the pieces that form the lattice, while the tsukeko is the internal frame that holds the kumiko. In this project, I used Huon pine for the kumiko and Queensland maple for the frame, but any light-coloured timber will provide a good contrast against a dark background.

Kumiko base (jigumi)

Fig.1 shows the design and dimensions of the kumiko base (jigumi), and the design of the asa-no-ha pattern. The critical aspect in the kumiko base is what is referred to as the pitch. This is the measurement from the left-hand edge of the joint to the left-hand edge of the adjacent joint.

Here you see that the pitch is 18.5mm for the outer bordering kumiko (the first measurement is the pitch minus the kumiko thickness of 3.5mm to give 15mm), and 63.5mm for the kumiko that house the pattern. These measurements are crucial, and must be as accurate as possible. **Fig.2** shows the kumiko tenon and half-lap joint measurements.

Pattern kumiko

Fig.7 gives the dimensions for the asa-no-ha pattern kumiko. The pattern consists of three types of pieces: diagonal, hinge and locking. The important point to note here is that one end of the hinge piece is trimmed on the 67.5° jig to a ratio of about one-third to two-thirds. The one-third side

Fig.1 Kumiko base dimensions

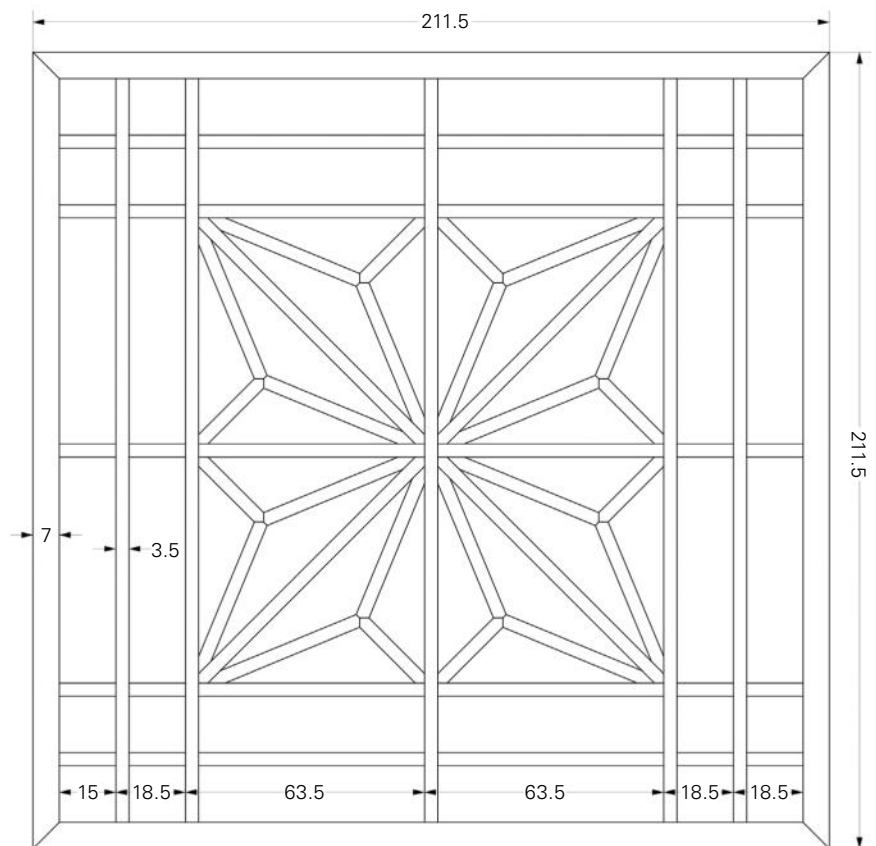
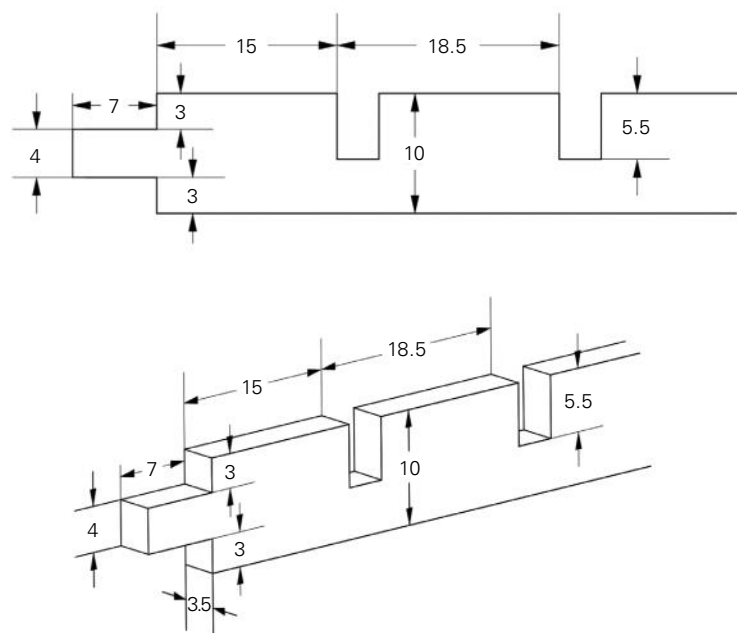


Fig.2 Kumiko details



CUTTING LIST (mm)

PART	NO.	THICKNESS	WIDTH	LENGTH
Kumiko	15	3.5	10	500
Tsukeko	4	7	10	500
Frame	4	30	21	350
Backing (MDF)	1	3	232	232

Fig.3 Kumiko cutting jig

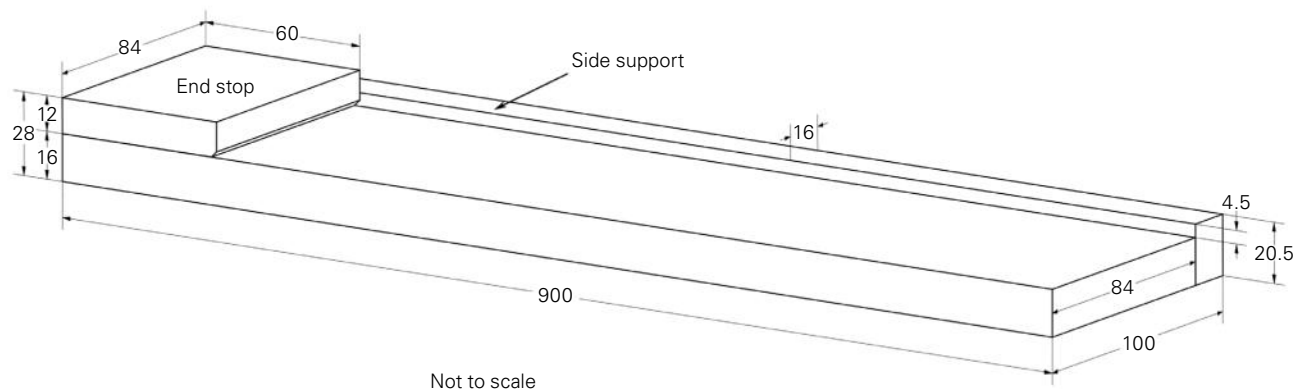


Fig.4 45° jig

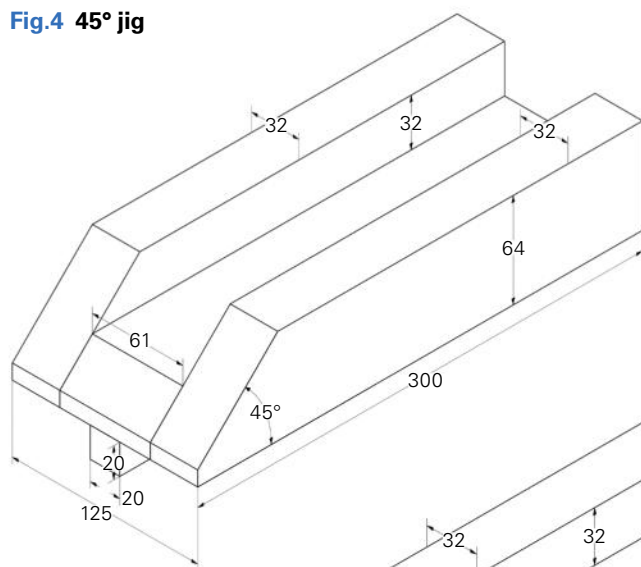


Fig.5 22.5° jig

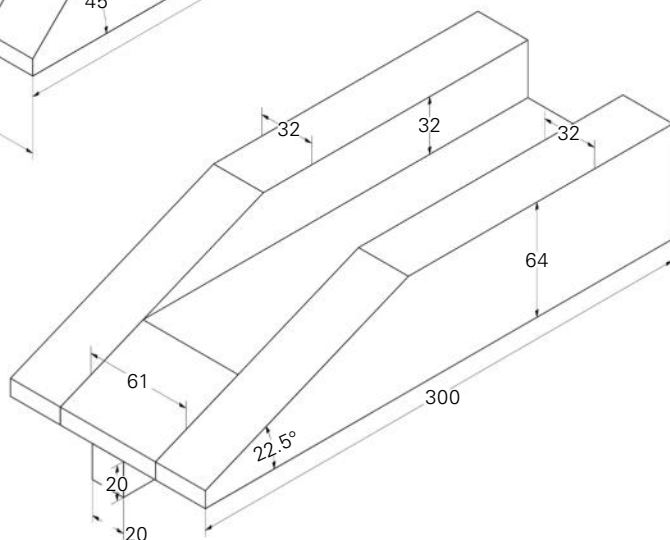
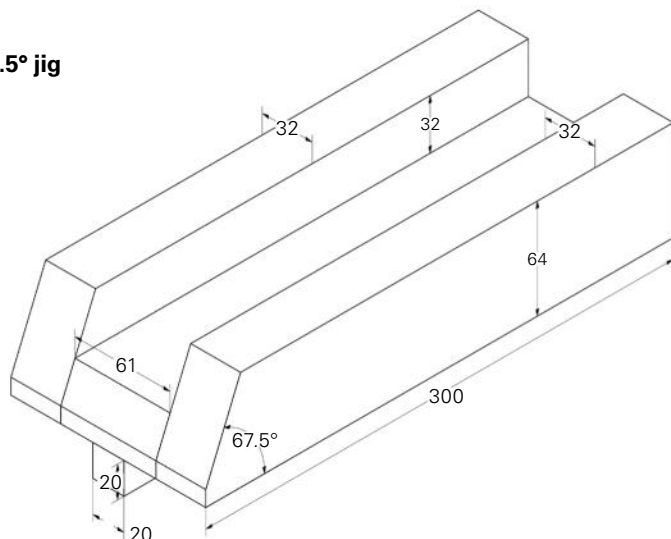


Fig.6 67.5° jig



forms the hinge and the two-third side houses the locking piece.

Outer frame

Fig.8 shows the dimensions of the Qld maple frame. The four tsukeko that frame the kumiko base fit into a 10mm groove in the Qld maple frame. **Fig.9** details the size of the groove in the frame that holds the tsukeko, and the rebate to which the backing board is attached.

Jigs required

You will need four jigs for this project: the kumiko cutting jig (**fig.3**), 45° jig (**fig.4**), 22.5° jig (**fig.5**), and 67.5° jig (**fig.6**). I attach a 20 x 20mm strip on the bottom of the three trimming jigs so they can be held securely in my workbench vice.

Cutting the kumiko

Once all the timber has been milled and the jigs made, it's time to begin work on the kumiko base.

The first step is to mark up a story stick with the dimensions shown in **fig.1**. For this, I normally use a kumiko that's less than suitable for the actual project. The marking knife marks are for the left-hand side of the joint, so place a pencil mark to the right of those marks to clearly indicate the joint position.

Next, transfer those marks to a master kumiko, and to one of the tsukeko. The master kumiko is cut with the other kumiko. Never cut into the story stick; you will need this if you make a mistake, or you intend to



make more than one piece. On the master kumiko, extend the marks for the tenon shoulders around to the back as well (**photo 1**).

Secure the master kumiko and ten other kumiko (one spare) in the kumiko cutting jig (**fig.3**), ensuring the ends are firmly against the end stop (**photo 2**). You can secure the kumiko with small brass clamps (called *hatagane*), or, as I normally do, with an old kumiko screwed into the base of the jig. If you make this piece 4.5mm thick, it acts as a guide for the depth of cut. Extend the marks from the master kumiko across all kumiko, and place a pencil mark to the right of that.

If you prefer, you can pencil a perpendicular line on each of the joints and cut on that line (**photo 3**). Mark down 3mm with your marking gauge on both ends to indicate the tenon cheeks. Do not change this depth setting.

With a relaxed stance, saw down 5.5mm on each of the marks you made in the kumiko (**photo 4**). These cuts are the left-hand side of the kumiko joint. Also saw down 3mm for the shoulders and ends of the tenons (these are cut 7mm from the tenon shoulders).

The next step will determine how gap-free the kumiko half-lap joints will be. For the initial marking and cutting, the end stop on your jig was on your left. Flip the jig around so that the end stop is now on your right (side support is facing you).

Place a marker kumiko of the same thickness against your square, and carefully move it and the square over until the right-hand side of the marker kumiko just hides the kerf (**photo 5**). This is the critical part in cutting kumiko joints. If you move the marker kumiko too far, the joint will be too tight, and the kumiko will



1. Make a story stick (top) by marking a kumiko according to dimensions in fig.1. Transfer these markings to another kumiko which becomes the 'master' (centre), and also to one of the *tsukeko* (bottom).
2. Secure the master kumiko and ten other kumiko in the cutting jig. Make sure they are firmly against the end stop. Extend

- the marks from the master kumiko across all kumiko, and place a vertical pencil mark to the right.
3. If you wish, pencil a perpendicular line from the joint mark and cut on that line.
4. Adopt a relaxed stance and saw to the line.



5. Use a marker kumiko to gauge the other side of the joint.
6. Finish cutting all of the joints.
7. Use a 3mm chisel to remove the waste.
8. Waste removed from joints and tenons.
9. Flip the kumiko over, cut the tenons and remove the waste.

quite possibly snap, and if you don't move it over far enough, you will have unsightly gaps in the joints.

Once it's properly lined up, remove the kumiko marker and mark along the square with your marking knife. This is the right-hand side of the kumiko joint. If the pencil mark you made earlier is not between the kerf and the mark you just made, you've made a mistake, and you'll have to retrace your steps to correct the error. Repeat this until all joints have been marked and cut (**photo 6**).

With your 3mm chisel, carefully remove the waste from the joints. I normally use a scrap piece of kumiko to provide support at the back when removing the waste (**photo 7**).

When you have removed all the waste from the joints and tenons (**photo 8**), flip the kumiko over so their backs are facing up, extend the tenon shoulder mark you made on the master kumiko at the beginning across all kumiko, then cut the tenons and remove the waste exactly as you did on the front (**photo 9**).

Next, remove the kumiko from the jig, mark the left-hand ends of the kumiko (in this project, I placed a number on the left-hand tenon), cut through at the ends of the tenons (*do not* cut at the shoulders), and chamfer the tenon ends (**photo 10**).

Cutting the tsukeko

Decide which sides of the four tsukeko will go on the inside, and mark the top/bottom and left/right tsukeko (I use the cabinetmaker's triangle for this). In all my kumiko work, I always work from the left or from the bottom. That is, the first mark for each joint is either to the left side or to the bottom side of the tsukeko (and kumiko). This way, any minor error that may creep in will be consistent through all kumiko and tsukeko, and will not show up as a kink.

From the tsukeko you marked using the story stick, extend the left-hand joint marks across all tsukeko. Next flip each tsukeko around and mark the right-hand side of the joint just as you did for the kumiko (**photo 5**). Using the marking gauge, which





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Fig.7 Pattern pieces

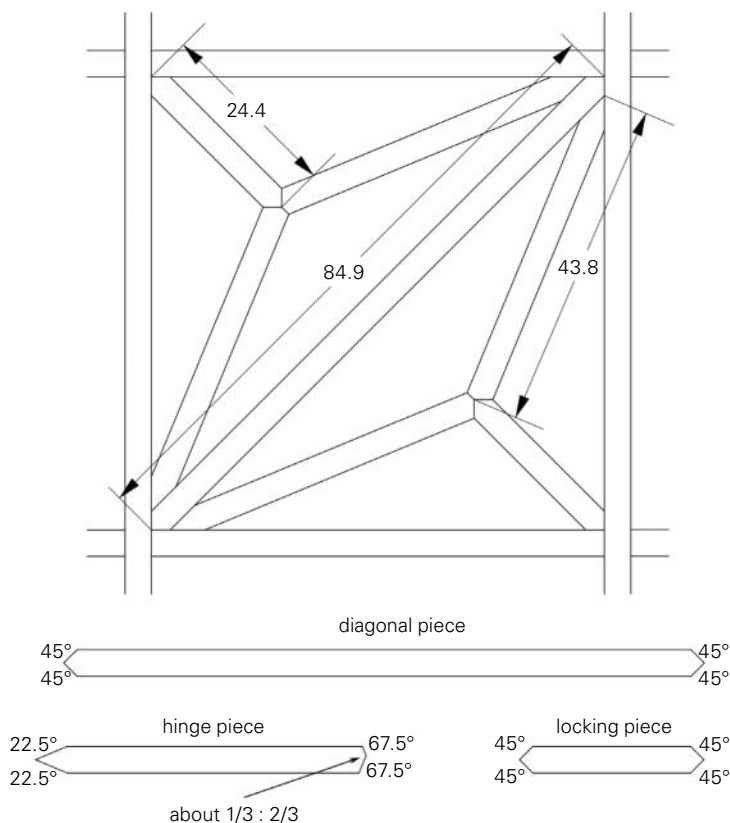
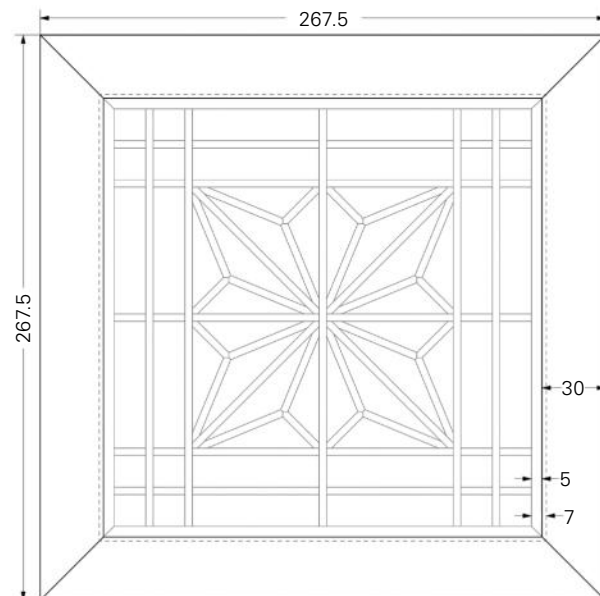


Fig.8 Outer frame



should still be set at 3mm, mark the front and back sides of each of the joints. These marks are the mortises for the kumiko tenons (**photo 11**).

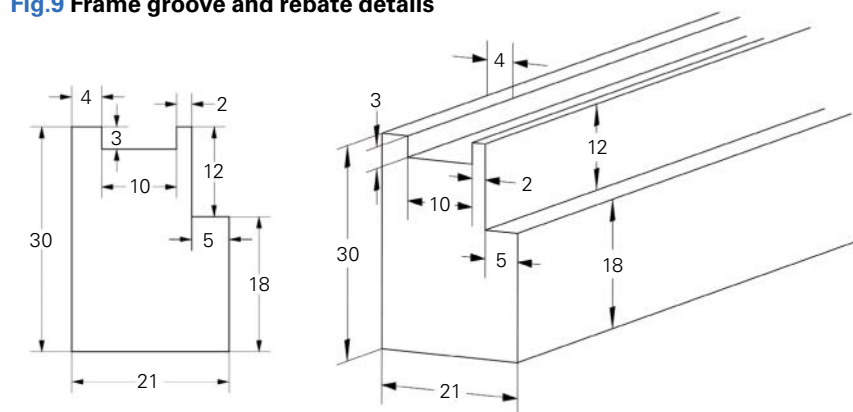
Carefully cut through mortises in the tsukeko (**photo 12**). A drill press or even a hand-held drill with a 3mm or 1/8 inch drill bit will speed up this process. Next, cut the 45° mitres in the ends of the tsukeko and trim to size on the 45° jig. Take careful note of which way the mitres are cut. The cutting is now complete and the pieces are now ready for assembling.

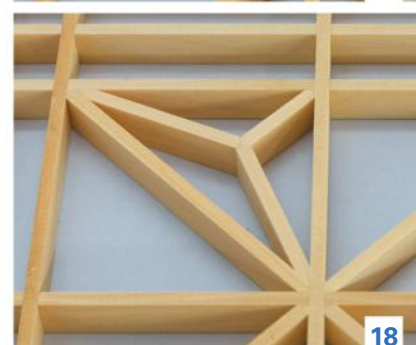
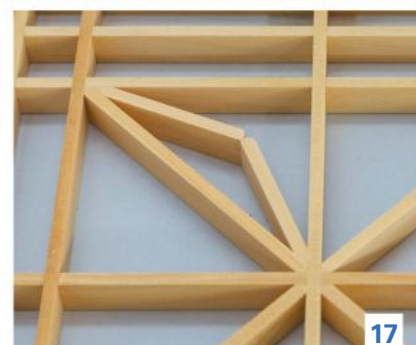
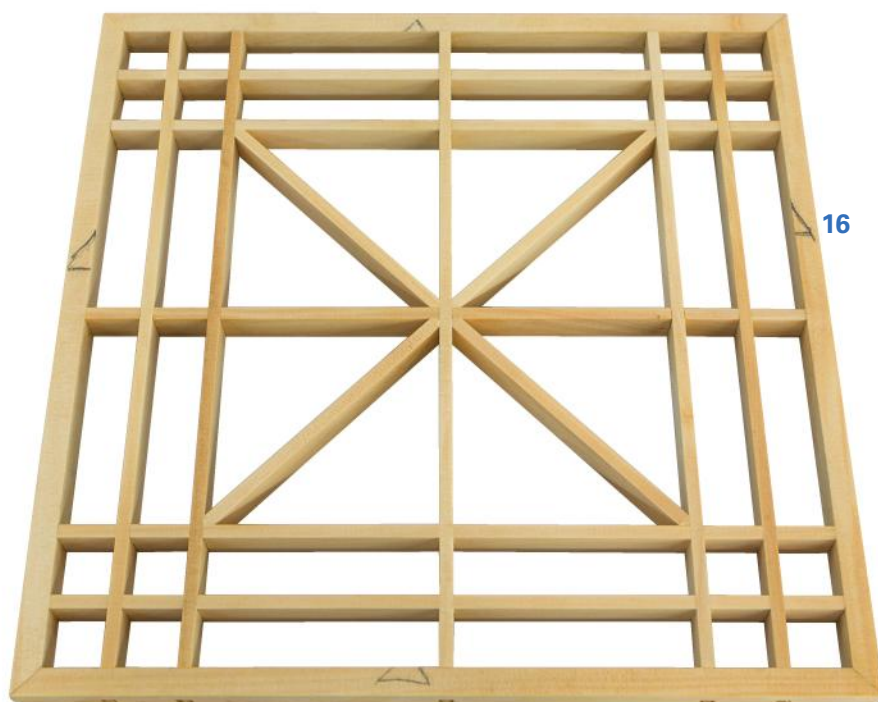
Assembling the kumiko and tsukeko

Choose the cleanest edges of the kumiko to face the front. Traditionally, vertical kumiko are on top of horizontal kumiko. Make sure the pencil marks/numbers you made on the left-hand tenons are to the left for the horizontal kumiko, and to the bottom for the vertical kumiko (**photo 13**). Place a small dab of glue in each of the joints as you assemble.

Add glue to the tsukeko mortises and the mitre joints, and attach the tsukeko to the kumiko base. A short tack or brad through one side of each of the mitres will hold the joints firmly. That completes the kumiko base (**photo 14**), and the fun part now begins.

Fig.9 Frame groove and rebate details





Making the asa-no-ha

First the diagonal pieces. **Fig.7** shows that these are 84.9mm long, so cut them slightly over-length, and trim to a firm fit on the 45° jig (**photo 15**). The actual length may vary slightly depending on how accurate your marking and cutting of the kumiko base was. Insert each diagonal piece as you trim it (**photo 16**). Do not add glue to these.

Next cut and trim the hinge pieces to size. Similar to the diagonal pieces, these may vary slightly from the length shown in **fig.7**. One end is trimmed on the 67.5° jig to a ratio of about one-third to two-thirds, and the other end on the 22.5° jig (**photo 17**).

I find it more efficient to trim the 67.5° end first, followed by the 22.5° end. When the pieces have been trimmed, insert them as shown. Add a dab of glue to the corner that holds the 22.5° end; there's no need to add glue to the 67.5° end at this stage. Make sure that the one-third sides join together to form the hinge, and the two-third sides open out to house the locking piece.

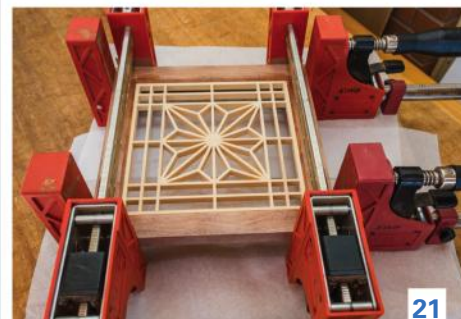
The final piece is the locking piece, and this is trimmed to size on the 45° jig. Add a dab of glue to the hinge opening and to the 90° corner at the other end. When inserting, the fit should provide enough tension to hold all pieces firmly in place (**photo 18**). Repeat this exact process for the next area (**photo 19**), and continue until the pattern is completed.

10. Cut and chamfer the ends of the tenons, and your kumiko should look like this.
11. Mark the mortise positions and mitres on all tsukeko.
12. Cut the through mortises and the mitre joints in the tsukeko.
13. Assemble the kumiko, making sure the marks on the kumiko are to the left or to the bottom.
14. Attach the tsukeko and glue the mitre joints.
15. Trim the ends of the asa-no-ha diagonals on the 45° jig.
16. Insert the diagonal pieces into the kumiko base without gluing.
17. Trim and insert the two hinge pieces.
18. Trim and insert the locking piece.
19. Repeat the process for the next group.



20

20. Cut the mitre joints, grooves and rebates in the frame pieces.
21. Insert the kumiko panel in the frame grooves, and glue and clamp the frame mitres.
22. Protect the kumiko when applying finish.
23. The back of the kumiko also needs protection.
24. Attach the backing board.



21

Cutting the frame and assembling

Cut the outer frame to size, and cut the end mitre joints according to the dimensions shown in **fig.8**. I used dominos (slightly shortened), but any other traditional method would be just as effective. **Photo 20** shows the frame components alongside the completed asa-no-ha panel.

Next, cut the groove and rebate according to **fig.9**, then chamfer the inside front edge. This chamfer can be as large or as small as you wish. Once the grooves have been cut, clean up the front of the kumiko panel and adjust the outside edges of the tsukeko so that the panel fits easily into the grooves. Give the chamfer, inside edge and grooves a couple of coats of your preferred finish and allow to dry—these are the areas that are difficult to access once the piece has been glued up. The piece is now ready for assembling.

When assembling, make sure the kumiko panel is oriented the correct

way, then add glue to the mitre joints, and clamp. **Photo 21** shows my clamping setup for small and simple projects such as this.

Finishing off

When the glue has dried thoroughly, remove the clamps, and after making sure that the piece is square, clean up the front and back either with a hand plane or sandpaper, or both, and give the outer edges a good-sized chamfer in preparation for your preferred finish.

Before applying any finish, cover up the kumiko panel on both sides so the finish doesn't spill on to the kumiko. I use low-adhesive masking tape and greaseproof paper (**photo 22**). **Photo 23** shows the back after I've applied a couple of coats of finish.

After the finish has dried, the final process is to attach a dark backing to one side of the 3mm MDF board. I use 300gsm black paper bought from the newsagent and attach it with spray adhesive. This provides

a striking contrast with the light coloured kumiko. On the other side, I glue an offcut of shoji paper that I've kept from larger projects.

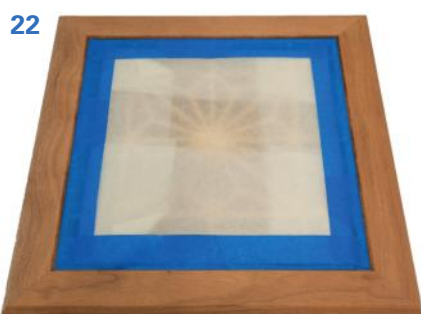
Once the glue has dried, I screw this board to the rebates in the frame with countersunk 12mm, #4 screws. The number of screws I use is probably an overkill for such a small project, but there is certainly no concern that the backing board may buckle (**photo 24**).

Having made the jigs described and worked through this process you should be able to adapt this attractive pattern to many other projects.

Photos and diagrams: Des King



In 2008 Des King was the first non-Japanese to complete full-time post-graduate studies in making shoji at Shokugei Gakuin in Toyama, Japan. He now lives and works in the Gold Coast, Qld. His comprehensive books, Shoji and Kumiko Design, Volumes 1, 2 and 3 may be obtained via his website at <http://kskdesign.com.au>



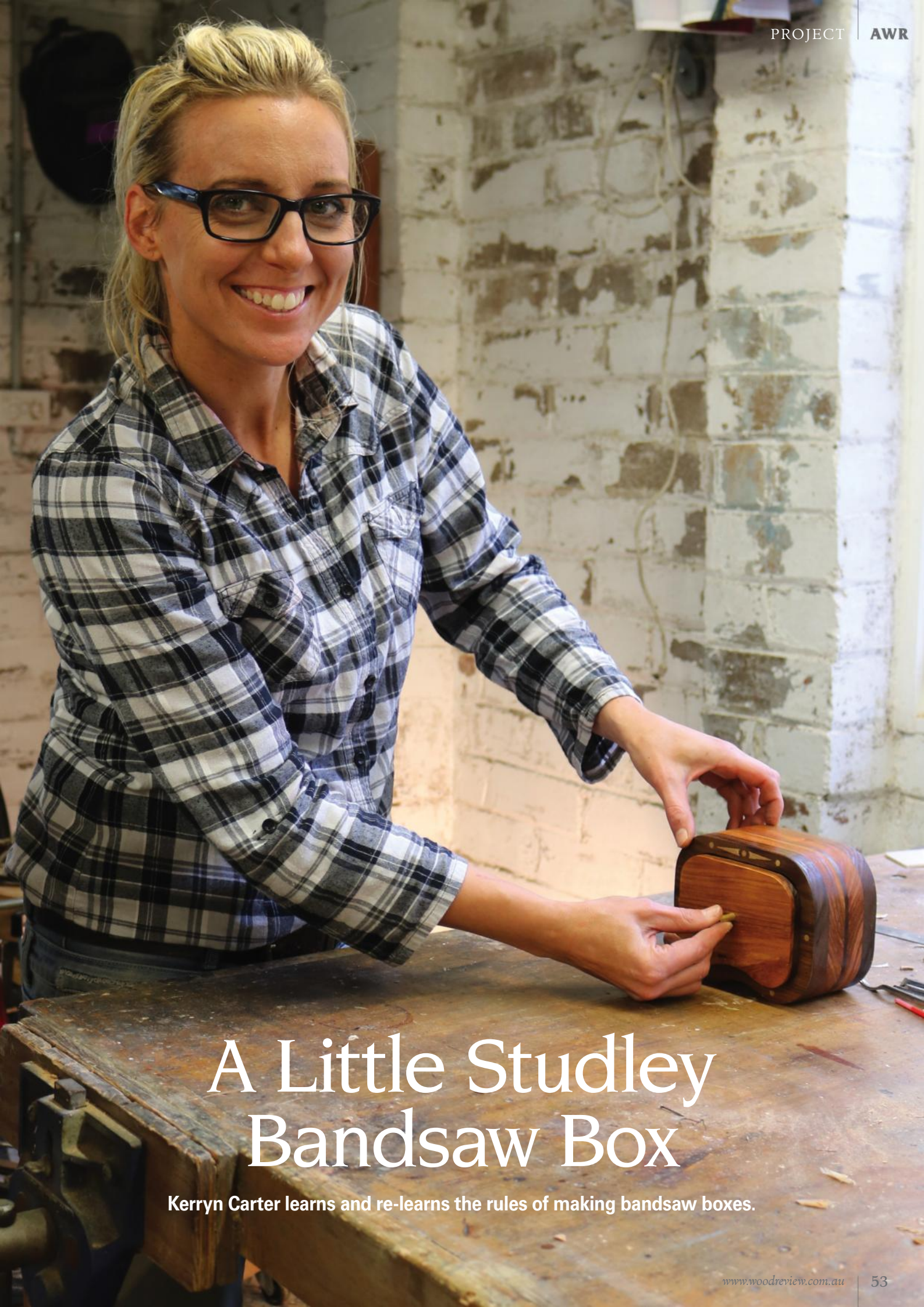
22



23



24



A Little Studley Bandsaw Box

Kerryn Carter learns and re-learns the rules of making bandsaw boxes.



Bandsaw boxes first grabbed my attention on social media. I find them borderline works of art with their countless artistic forms and clever use of exotic woods. I'm not alone. Photos of bandsaw boxes on social media regularly draw likes, comments and the sort of general fanfare usually only afforded to the woodworking equivalent of Handel's Messiah. My thoughts were...something this beautiful must be fiddly in all the ways I hate. Right? Wrong.

Fellow woodworkers assured me that bandsaw boxes were not fiddly but astoundingly easy and fast to make. This proposition is indeed borne out by their enduring popularity. Numerous books have been written on the subject over the decades.

So it was with great hope that I launched myself into bandsaw box making mode. A mode that lasted until I realised that bandsaw boxes require a fine bandsaw blade and that meant I had to once again face my greatest fear in woodworking...changing the bandsaw blade. More particularly, performing the potentially lethal bandsaw blade folding wrestle. That's when I remembered that besides owning a 14" Powermatic, I also have a little Ryobi bandsaw fitted with a 6mm blade...changing my bandsaw blade was for another day!

I was back in business so I launched into reading all the bandsaw box making rules. After this I went ahead and

made my first box, breaking every single rule. Which is why there isn't a picture of it here in this article. So now I can tell you from firsthand experience – heed the rules. What are the rules? I have covered each one in the step by step guide below.

But first, what is a bandsaw box? And what tools do I need to make one? A bandsaw box is a tiny drawer in a tiny carcass that is made easily from scrap wood predominantly using a bandsaw (fitted with a fine blade). Besides a bandsaw you will need wood glue, clamps and sandpaper. I used a disc sander but any sander will help. The inlay I did in my carcass was achieved with a drill press and 5mm drill bit and carving chisels.

Knowing your bandsaw's limitations will help you create a realistically achievable design. So take some scrap and cut the tightest curve you feel comfortable cutting on your bandsaw (**photo 1**).

Design (on paper) the outline of the box (the carcass) and the shape of the inner cut which becomes the drawer. Go for it. There are no limits other than the diameter of your smallest curve. An organic design (tear drop or leaf style) with no straight lines is the easiest because any mistakes you make along the way are easily disguised. More difficult boxes use straight lines which show any mistakes made, particularly on the delicate inner cut of the drawer.

1. Check the limitations of your bandsaw before settling on your design. A fine blade will achieve tighter curves.
2. Partially dress your wood or glue up your laminates before settling on your design. A fine blade will achieve tighter curves.
3. Cut the outside of the carcase.
4. Showing the outer cut completed.
5. Sanding the sides of the carcase on the disk sander.
6. Next step is to cut off the back, here 12mm thick.
7. Locate the best position for the entry point and complete the inner cut to separate what will be a drawer within the carcase.
8. Showing the drawer section and entry point for the blade.



4

Partially dress your wood block. You can work with a piece that is partially dressed i.e. jointed on its face and simply brought to thickness. You can use one single piece of wood or a laminated block of all your exotic offcuts (which is what I did).

Cut out your design and stick it to your block using spray adhesive (**photo 2**). Also, I would recommend that if you are considering an inlay (as I have done), decide now. All the wood supporting the inlay is about to be cut off, which makes fiddly inlay work more difficult later.

Cut the outer shape to form the carcase (**photo 3**). Go slowly because this is your practice for the all important inner cut (**photo 4**).

Sand the carcase (**photo 5**), before cutting off the back. I cut about 12mm off (**photo 6**). Set aside.

Cut the inner shape for the drawer. This is a crucial and delicate step so take your time. The first thing to do is look at your block and figure out the best place to hide the entry cut (which will be a hairline joint). I would recommend hiding it with the grain and towards the bottom of the box.

Take this cut slowly (**photo 7**). Any attempt to correct a wayward blade means there will be a gap between your



5



6



7



8



9

9. Apply glue to the entry cut and clamp the carcass to close the join.
10. Carcase with inlay completed and lightly sanded.
11. Bandsaw off the front and back of the drawer section.
12. The centre part of the drawer section is then bandsawn into a U-shape to form the drawer cavity.
13. Glue and reassemble the drawer components.
14. Sand, make and attach a handle and then apply your choice of finish.
15. The finished Studley box and the author's Acanthus Box, made from spalted pecan, walnut and eucalypt.



10



11



12

drawer and the carcass in that spot, so try not to reverse your blade. This is where it is easier to find success with an organic design where you just run with any mistakes. **Photo 8** shows both cuts complete and the placement of the entry cut.

Insert wood glue into the entry cut on the carcass and clamp to close the join (**photo 9**). A business card comes in handy getting the glue into the entry cut.



13

It is tempting to sand the drawer at this point. My tip is sand the front and back but don't touch the sides (**photo 10**). The more you sand the sides of the drawer the greater the gap between the drawer and carcass. I do sand the sides but I do it sparingly and by hand and towards the end of the process when I can see how the drawer looks in the carcass.

Cut the back and the front faces of the drawer off (**photo 11**). I cut about 10mm. Set aside.

The central drawer piece needs to be hollowed out to make a U-shape which will form the drawer sides and bottom (**photo 12**).



14



15

Glue the front and back faces onto the U-shape (**photo 13**). Clamp. Optional face switch: I switched the front and back faces but kept their orientation. This gives you the contrasting drawer look.

Glue the back onto the carcase, clamp and leave to dry. Give everything a final sand, being careful to not over-sand the drawer.

Use the remaining wood left over from the drawer to make a drawer pull which you can then glue on the face of the drawer (**photo 14**).

My choice of wood, inlays and drawer pull was a very small nod to the famous Henry Studley and his equally famous tool chest. The woods I used were Tasmanian blackwood, New Guinea rosewood and walnut. The inlays were done in kauri pine. The drawer pull is a simple brass pin. The finish is Danish oil.

The little Studley bandsaw box is my contribution to the bandsaw box genre and I can even hear a very faint Handel's Messiah playing when I look at it – even if I'm the only one listening.

Photos: Kerryn Carter



Kerryn Carter is a Sydney woodworker who runs classes for kids. Her last story was about making a fold-up workbench, see AWR#94. Email: kerryn@toolschool.com.au



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For Future Reference

Damion Fauser shows how marking systems can streamline your work and help prevent mistakes.





Main: There are different marking systems – choose a simple one and stick with it.

1. Traditional face side and edge markings.
2. Using a story stick to layout domino slots on a component for a case piece. The marked reference end of the stick is placed against the reference edge of the component.
3. Using a cabinetmakers triangle will safeguard your panel arrangement.

Using a reference marking system in your woodworking is as essential as knowing how to sharpen. It will increase your accuracy, greatly reduce your risk of making layout and cut errors, and simplify your work. Many marking systems exist, but they all have the same purpose.

What is a reference system?

Many professions and trades utilise reference systems. Cartographers and surveyors use datum points, such as the top of a distinct topographic feature. Stonemasons set and use a cornerstone. A reference system gives you a way of determining something tangible in your work that is both known and not subject to change.

With the systems I use, I can pick up any component and quickly identify what it is and how it's oriented in space (up, down, left etc) and in relation to other components. I will know from which face or edge to

accurately and consistently register layout tools and which surfaces to register against fences and jigs for cutting joinery and shaping. Just a few quick pencil strokes will save time and avoid having graffiti-like markings and descriptions all over your components.

Face and edge markings

Let's keep it simple to start with. When you dress your stock, you start by flattening a face side and then a face edge. When these are dressed correctly, you should mark them as reference surfaces. The traditional way of doing this is shown in **photo 1**. You'll notice I've also clearly marked my reference end. You can use different markings, as long as they are easy to recognise and consistent throughout your work.

These will now be the two clearly identifiable surfaces from which you will reference all of your layout, both measurements and when registering

layout tools such as squares and gauges. It will also be quick and easy to identify surfaces that need to be registered against machine fences and jigs and so on.

When laying out

Sometimes you need to be very conscious of referencing layouts on multiple pieces in a consistent fashion. Markings for cutting biscuit or domino slots should be done from the same reference surface on each component (for example the back edge of a case piece or the top of a leg) otherwise any deviation in your layout will be doubled when the two pieces are mated back together (**photo 2**).

Another example of this is when marking out mortise and tenon joinery. Care should be taken when gauging the walls of the mortise and the cheeks of the tenon. If you inadvertently flip one of the two components around, you will again double the error.



4

Similarly, when laying out dados for shelves in a case piece, if you don't register from a consistent reference edge the shelves will be uneven.

The cabinetmakers triangle

It never ceases to amaze me how powerful three pencil strokes can be. This marking system has been around for centuries and I use it in many aspects of my work.

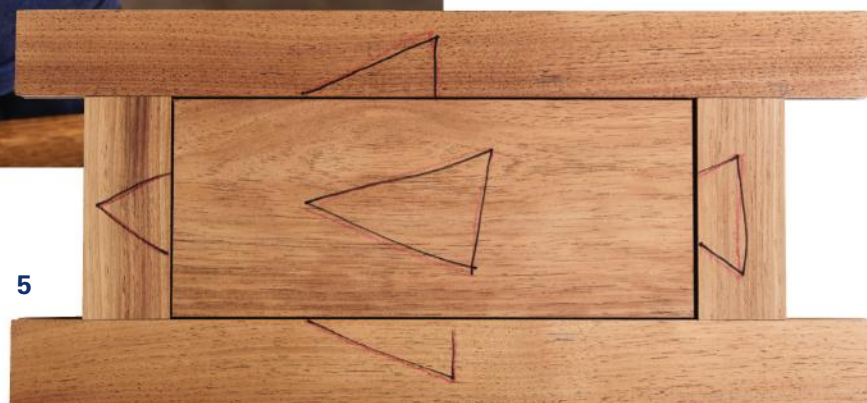
Panels

When laying out boards for a tabletop, I always arrange them carefully to take advantage of grain aesthetics and direction, and also to conceal minor defects. On larger panels with many boards, the

mathematical possibilities in terms of arranging your boards are daunting.

One board can be arranged in four possible ways. Add a second board, which can also be arranged four ways and you have a total of 16 possible combinations. Every time you add a board to the panel, you multiply the possibilities by four. So, when you've taken the time and effort to arrange a panel, you don't want to lose track of it once you start setting up for gluing.

4. A triangle across the top of the legs ensures they can only go back together one way.
5. The triangle system simplifies frame and panel assemblies.
6. Maintaining the orientation of box, drawer and case components.
7. Resawn laminates are kept in their correct orientation post sawing.
8. Using coloured dots for drawer and box assemblies.



5

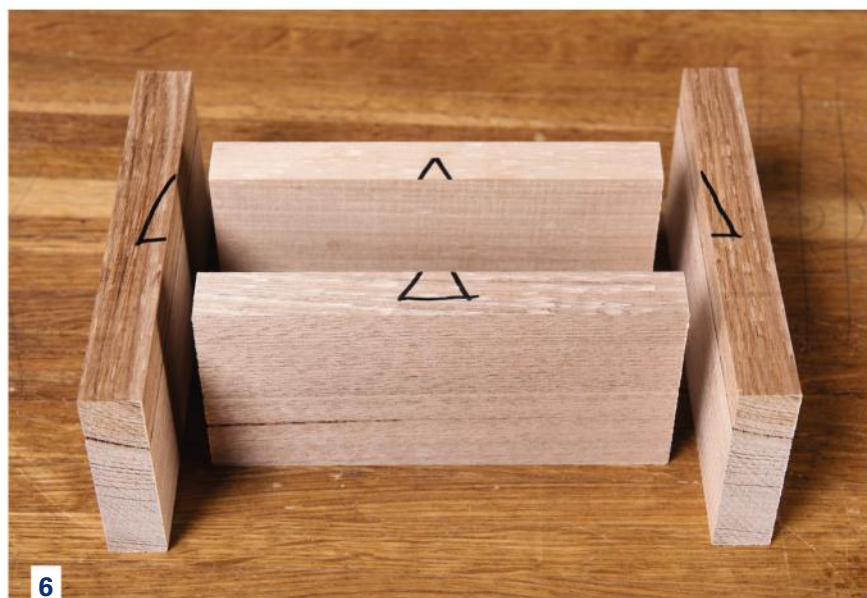
The simplest way to avoid this risk is to draw a bold triangle across the panel (**photo 3**). There is now only one possible way this panel can be reassembled.

Legs

Legs must also be carefully selected and oriented, and once so, it can be easy to mistakenly mark out mortises etc on the incorrect surfaces. Once I've selected and arranged my legs in space and in relation to each other, I gang them together and mark a triangle across the top, as in **photo 4**. Now each leg is quickly and easily identifiable, as are the inside edges from which I reference my joinery layout.

Frame and panels

I've seen frame and panel components that are so covered in markings they look like they've been graffitied. In **photo 5**, I've used three separate but simple triangles for a frame and panel assembly. Placing the two stiles together forms the first, placing the two rails together forms the second, and the third orients the panel to the frame.



6



Boxes and drawers

Box and drawer components are simple in principle but if you make the mistake of orienting one the wrong way when laying out dovetails, or when cutting a groove to accept the base, you can't simply swap the piece around, or you merely chase your mistake around to each corner of the box.

You can see in **photo 6** that I've carried over the theme from the frame and panel to form triangles by placing two opposite components together. I also do this on the back edges of case piece components, including their shelves and partitions.

Laminations and veneers

Woodworkers will often resaw their own veneers and laminations from a board to subsequently form decorative arrangements such as slip, book, quarter and radial matches. When discovering the possibilities, it is important to be able to re-orient the veneers back into their original position to maintain the optimal grain match. A simple triangle across the edge prior to resawing the veneers will allow you to place them back together with ease (**photo 7**).



Other marking systems

Many other marking systems exist for the same purpose. Some woodworkers use coloured dots (**photo 8**) or stickers while others use an alpha-numeric marking system (AA, BB or A1, B1 etc) which can be achieved either with a pencil or a set of steel punches.

In the end it doesn't matter what system you use in your own workshop, as long as it is consistent and you can easily identify it. My advice is to keep it simple – pick a method and stick to it until it becomes so inherent in your woodworking that you have the use of reference in your mind with every single process undertaken in your workshop. The epiphany for many comes post-error – I'm hoping that this article will assist many of you in not making that error to start with!

Photos: Donovan Knowles



Damion Fauser is a furniture designer/maker who lives in Brisbane. He teaches woodwork from his Darra workshop.

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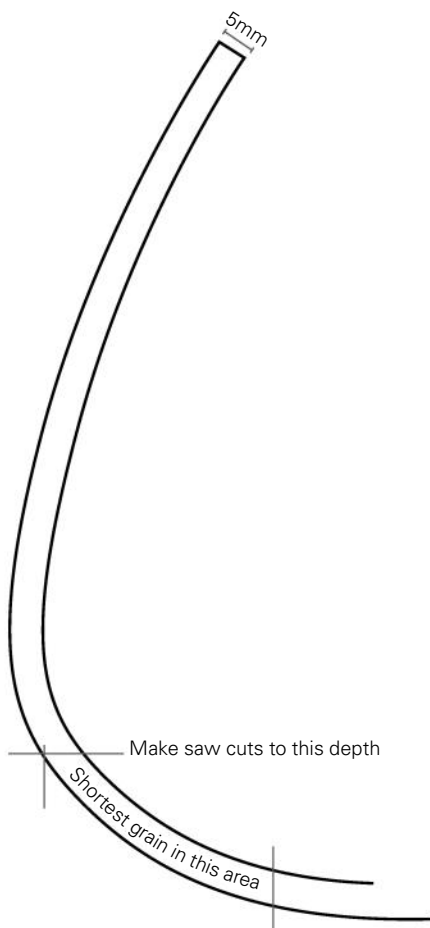
Turned, Steamed and Bent

Neil Turner shows how to create a delicate and flowing form by sectioning and steambending a turned hollow form.





Fig.1 Wall thickness



I was introduced to the concept of steambending during my Diploma of Arts (Fine Furniture) at the School of Wood in Dwellingup in West Australia. The notion of manipulating wood into different forms seemed appealing. Essentially, the process is about melting the glue (lignin) that holds the wood fibres together so we can re-align them.

Often when carving turned hollow forms I wondered if I could transform them using steam rather than carving them. The opportunity to explore this idea came when I attended the International Turning Exchange (ITE) in Philadelphia in 2014.

There are a couple of considerations to be mindful of when attempting to steambend round objects. For a start, you're trying to manipulate a compound curve which is extremely rigid, however potential areas of short grain may lead to breakages (see **fig.1**). For this reason an even wall thickness is paramount so the wood will steam evenly.

To make the bending process easier it's better to use timber that is not

completely dry, with say 15–20% moisture content. This is higher than I would normally use. You can use drier timber but you may need to steam it for longer to achieve the result you're after.

The shape shown here allowed me to deconstruct the top of the form while still maintaining its overall integrity. There are other shapes that would lend themselves to similar manipulation.

Having arrived at a suitable form the next consideration was how many cuts to make. I decided to use all 24 indexing points to create as many small fingers as possible. The wider the finger of wood the more difficult it will be to bend because of the compound curve.

My inspiration for this piece was a vision of floating seaweed or kelp and combining these techniques enabled me to achieve a freeform result. The steps described follow the numbered photos.

Photos: Suellen Turner



1. Select a suitable piece of timber, preferably a medium density straight-grained wood. It's important that it's free of cracks, voids and bark inclusions. For this piece I used a piece of jacaranda.

2. Turn a spigot to suit a set of shark jaws for extra holding strength on the base end. Turn the outside shape. No need to refine yet, we can do that when it's in the chuck.

3. Refine the outside shape. Drill a pilot hole to required depth, and then hollow with your favourite hollowing tool, ensuring an even wall thickness of 5mm all over. The hollowing tool I use is homemade: 3/4" mild steel shaft, the cutter is a piece of 3/16" high speed steel with an electrical tie as a depth gauge.

4. Once the hollowing is complete and while the piece is still a solid piece, it's time to sand the inside. I use a drum sander for the sides, a flapper sander for the curve and a velcro sanding pad for the base, using an extension for all.

5. Mark the 24 indexing lines. Using a platform to rest the pencil on, I achieve accurate lines for the saw cuts.

6. Using a fine tenon saw, cut just to the bend, any further will expose the short grain to the bending process.

7. Turn a thin shaft that will fit inside the form and is long enough to be used as a drive. Tape some form of friction material on the end – I used some rubber matting.

8. Locate the form on the shaft using the tailstock, finish turning the form and remove the spigot. Cut off the remaining nib and finish the base.

Cut 16 pieces of veneer 1mm x 20mm long and 16 pieces of wood that are 5 x 5 x 20mm long. These are used to separate the fingers.

9. I didn't use any high tech gear to make this unit. What you see are a wallpaper steamer, a 20 litre steel container with a lid sporting a 8mm hole to let out the pressure, three pine legs and a fitting placed in the base to attach the steamer hose too. Just turn the unit on and get the bucket steaming.

10. Place your turned hollow vessel upside down over the hole in the bottom

where the steam will be injected into the container. Leave it for 10–15 minutes depending on the type of timber used.

11. Using veneers first to initially spread the 'fingers', one forward, one back and so on. Reheat the form and then replace the veneers with the 5mm pieces as shown. I will repeat this process as many times as needed just pushing the small pieces of wood further down to splay the fingers more. You have to work quickly and you need to wear protective gloves as the wood is extremely hot.

When you have reached the desired distortion allow the wood to cool and then remove the wedges. The fingers will have now reached their resting position. Take care not to leave the piece in a draughty area to dry because the moisture you have added to the wood needs be removed slowly to avoid splitting.

For me the fun now begins. The canvas has been made and now it's time to go to work and shape the fingers.

12. Here I'm using a spiral cutter to carve the fingers, using my thumb as a support.

13. The finer carving is completed with a 2.5mm CCF cutter.

14. The base of the segments was smoothed with a flapper sander and then refined with a rat-tail rasp wrapped in velcro sanding grit.

15. The final shaping and sanding was carried out with a 25mm sanding disc, which is a transformed silicon rubber carbide polisher with velcro attached to the bottom. I normally sand to 400 grit. The radiating pattern on the base was handcarved with a small V-tool. You can use either oil or lacquer to seal and polish the wood.

Once you've tried it out, you could certainly experiment with this technique to achieve other effects.



Neil Turner is a wood artist who lives in Stratham, WA. Contact him via www.neilturnerartisan.com.au





Tool Cabinet for Handplanes

Raf Nathan uses some of his favourite tools to create a workshop storage cabinet with sliding doors.

If you like handwork then this project may interest you. I made this cabinet to house my working plane collection and now they are all housed together and dust free. Obviously a piece like this can be made to store anything at all inside your home or workshop. For the carcass, back and door frames I used some lengths of oregon or Douglas fir, a species I like the look and feel of. The door panels are made of celery top pine.

To establish the final dimensions of your cabinet you need to allow for its intended contents as well as the thickness

of material and size of dovetails. With your measurements finalised the wood can be planed and sawn to final length. We are working here with two short side panels, base and top, an internal shelf and two doors.

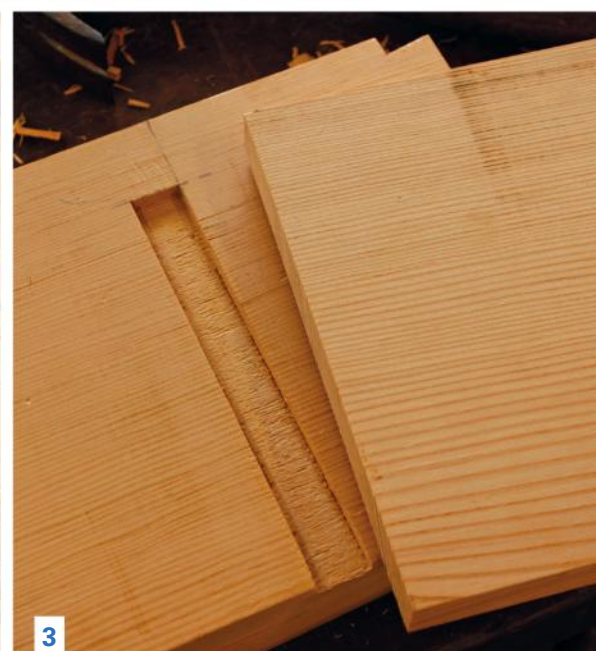
The dovetails were laid out on the sides first, meaning the tails were marked first. I spent time figuring out the placement of the tails and settled on tighter spacing at the corners. For me 6mm is the measurement I prefer for pretty well all pin sizes, so the tails on the edges start 6mm back from the corner.



1



2



3

The tails were all sawn with the aid of a Barron magnetic dovetail saw guide (Veritas also make a similar product). Using the jig assures me of pretty consistent straight and square saw cuts. You can still muck up using a guide but they help.

Photo 1 With dovetails all cut and the fit checked, the shelf and its trench can be prepared. I laid the two sides together and drew in where the shelf would be.

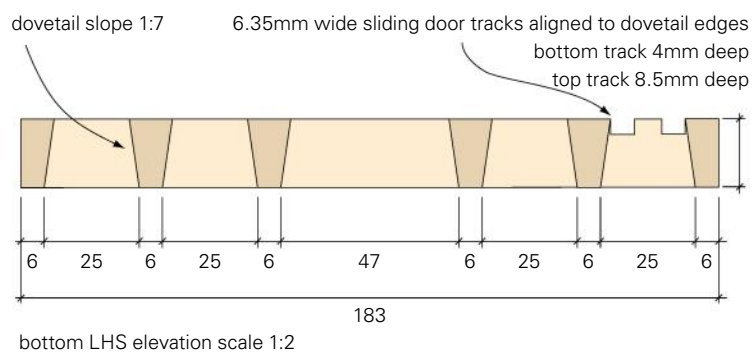


Fig. 1 Dovetail arrangement (mm)

Photo 2 To make the trench I first scored the line with a knife then sawed as much as I could to the line. Next I defined the line with a chisel and got to work with the router plane to remove the waste. You could also use a power router to make the trench.

Photo 3 The shelf and trench are now prepared. Make sure that there is enough clearance for the door to slide past the shelf.

Photo 4 You can rout the grooves for the doors with a power tool, or plane them in as I did with a plough plane. Plan them in relation to the doors. These have a rebate top and bottom that fits in a 1/4" (6.35mm) wide groove that is 4mm deep on the base and 8.5mm deep on the top.

The tongue of the rebate will be 1/4" wide to match the groove in the box. The top rebate will be longer than the bottom one so the door can be lifted up into the 8.5mm groove for removal of the door from the box.

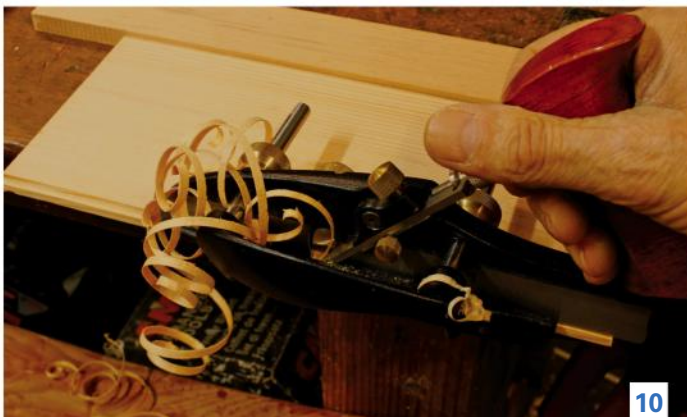
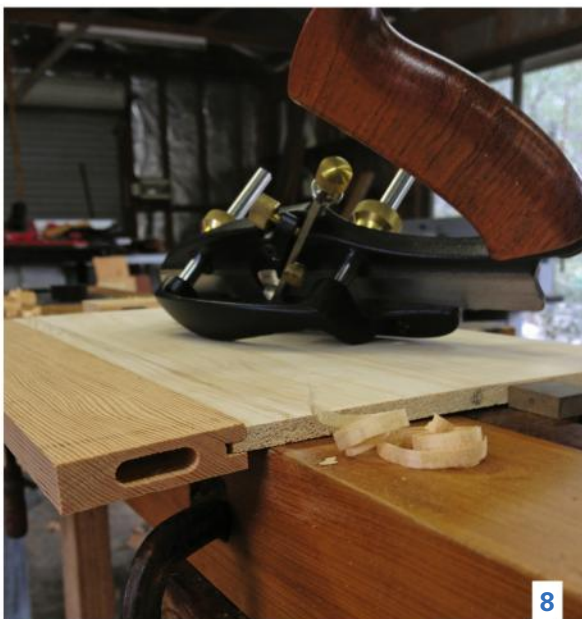
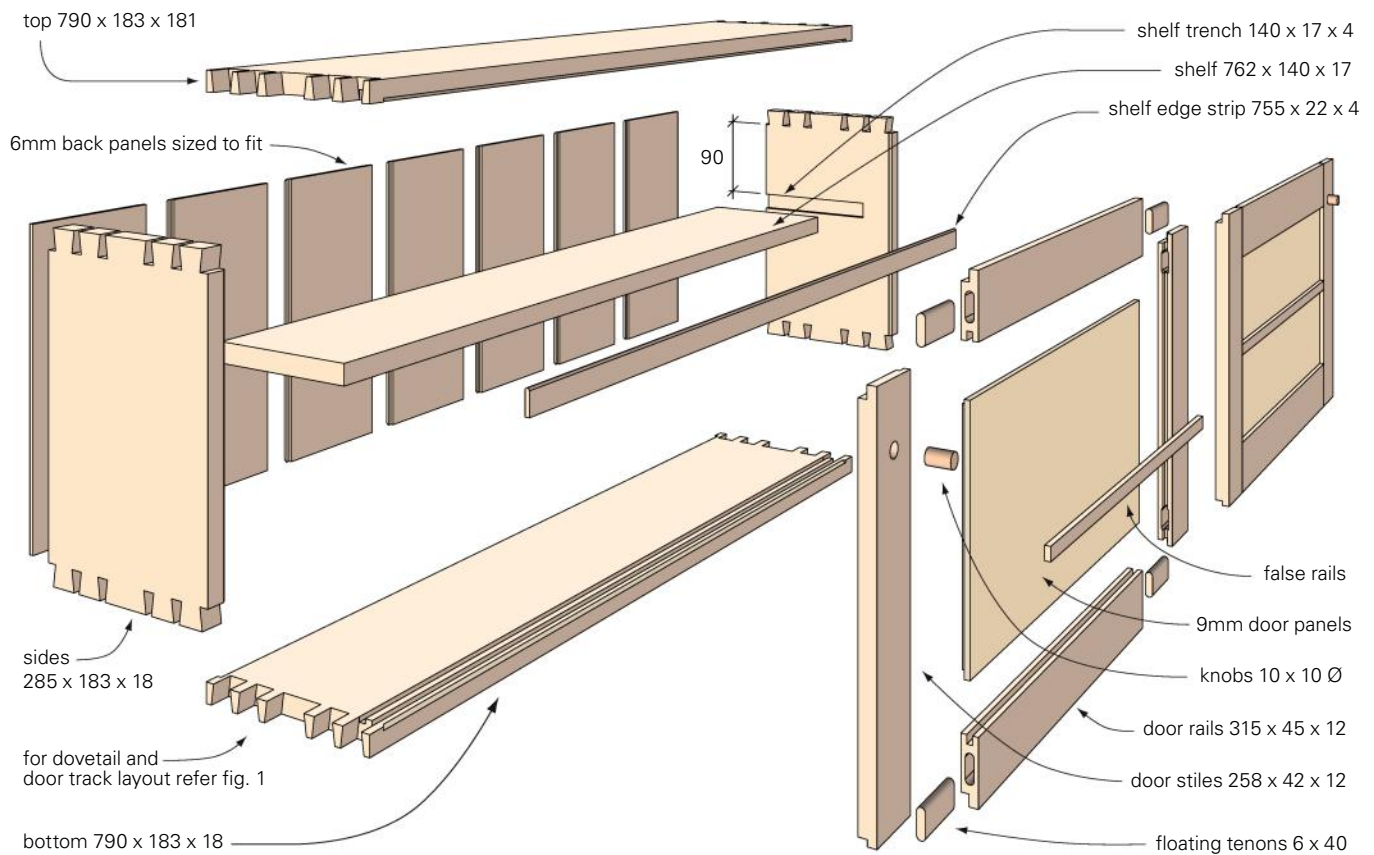
Photo 5 With the grooves made, and after a test fit, the box can be glued up. I sand inside the box before glue-up, but only lightly; if you sand too heavily the dovetails will end up with a gap showing.

Photo 6 Note the notched cauls that were used to press the joints together so the pins would go in all the way. Measure the diagonals to ascertain squareness. Sometimes, even after a successful test-fit, things won't be perfectly square. One corner usually is the culprit and if it's too late then adjust clamps and make a considered compromise. This one was out about 0.5mm at one corner.

Photo 7 The doors are frame and solid panel. You can dowel or mortise and tenon the doors together. The door sizes need to be carefully thought through. I am having the doors meet so the stiles in the middle overlap. Visually there will be three stiles showing when the doors are closed. Importantly the size of the rebates on the top and bottom of the doors need to be allowed for. The grooves are 4mm deep; therefore 4mm of the doors will not be visible. If the stiles and rails are the same width when the doors are fitted, the rails will look narrower as wood is disappearing into the groove. So I made the stiles 42mm wide and the rails 45mm wide.

The solid wood panel sits in a groove and this is cut on the router or saw table. I sawed the groove on the tablesaw, quick and easy. But this means the groove is visible at the end of the stile. To cover the exposed groove a small plug will need to be glued in after the doors are glued up.



Fig. 2 Components (mm)



With a plunge router you can stop the groove in the stile so it is not visible. A rule of thumb is that the groove for the panel can be around a third of the thickness of the door frame. Here the door frame is 12mm thick and the panel is 7mm thick, so the panel is rebated all around on one side to have a 4mm tongue that sits in the groove. The rebate faces the back of the door.

Photo 8 shows the way the panel sits in the door rails.

Photo 9 After glue-up the doors need to be flushed level and the rebates cut in the top and bottom edges. The cleanest way to make the door rebates is on a router table. I used a plough and shoulder plane.

With the doors now mostly complete they can be fitted into their respective grooves. You can plane them to fit neatly in the spaces so the stiles meet cleanly with the sides of the box.

Photo 10 The back of the box uses solid wood panels sitting in a 4mm deep rebate. The rebate can be made with a small router and rebate cutter or hand plane the rebate in and clean up with a chisel. The panels meet with a half-lap joint. I prepared the 6mm thick boards for this and planed in the half-lap. You could also use a router with a rebating cutter to do this.

Photo 11 Here you can see how the back panels meet with the half-lap joint.

Photo 12 The back fitted and held in place with small countersunk brass screws.

Photo 13 Now the outside can be cleaned up and sanded. I used a block plane to level the dovetails. After that a 120 grit random orbit sander was used for most of the clean-up, followed by hand sanding with a block to 320 grit. A small chamfer was cut into the inside front edges of the carcass. For the knobs, small dowels were glued into holes in the stiles of the doors and the ends bevelled over with a chisel.



Photo 14 The box had three coats of hard wax oil. I laid the finish on quite thick initially and let it dry well between coats. After the first coat I wasn't happy with the rather plain look of the doors. So I added in a false rail, that is, I prepared a small thin piece of wood and glued this onto the panels with the grain running in the same direction. Where the false rail sits was scraped first to remove wax for the glue to adhere to.

Internally the edge of the shelf has a small lip added on as well. This is a 4mm thick strip of wood glued to the shelf edge. The top edge of the lip is rounded over. Cabinetmakers wax was later applied over the hard wax for a smoother feel to the finish.

Mostly this small cabinet now resides on my bench, with my handplanes cleanly stored and within easy reach.



Photos: Raf Nathan

Diagram: Graham Sands

Raf Nathan is a furniture designer and maker who lives in Brisbane. Email: raf@interwoodshop.com.au



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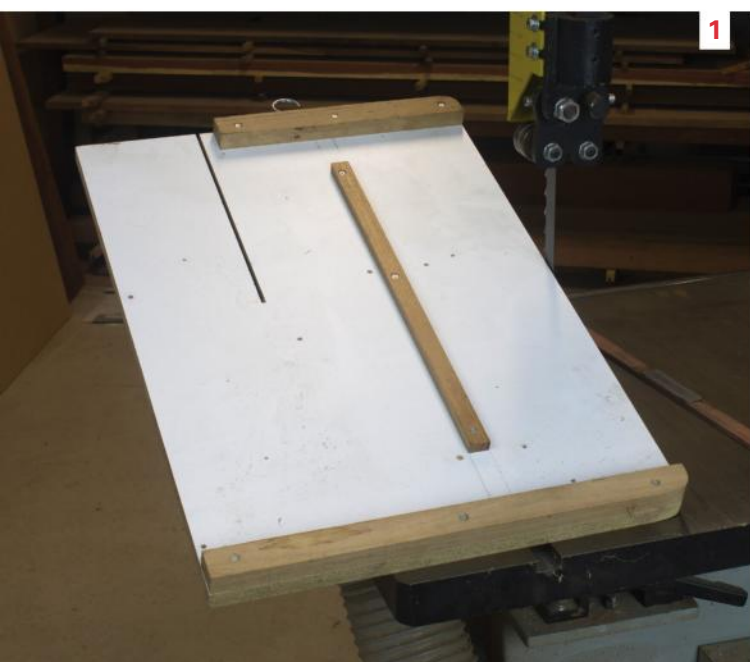
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Sharpening Your Bandsaw Blades

Darren Oates makes a low cost and low tech jig for sharpening carbide tipped bandsaw blades.



In 2008, when I was undertaking my Certificate IV at Sturt School for Wood, the late Tom Harrington, then head instructor, told me about Lenox Woodmaster CT carbide tipped bandsaw blades. They were three times the cost of the high steel blades I was using, however Tom assured me carbide tipped blades would last at least three times longer.

I do a lot of curved laminations – they are in just about every piece of furniture I make – however the biggest advantage of changing over to this new blade was its very small kerf of 1.3mm compared to the high speed steel blade of around twice that at least and with a much rougher cut. This meant getting many more laminations from a set width piece of timber.

When I bought the blade I was told that it couldn't be resharpened as the carbide tips were too small. Me being me thought that there had to be some way of sharpening and therefore extending its life.

I knew that being carbide tipped a diamond stone would have to be used, so all I had to do was make a jig that would hold this to the face of the blade at a constant angle, so the jig in these photos is what I came up with.

I purchased a DMT 3" DiaSharp – Coarse credit card sized diamond stone from Carbatec which was wide enough to make a pair of sharpening stones for these blades.

The underside of the jig is shown in **photo 1**. It's a simple affair using a piece of laminated particle board with hardwood on the edges to lock it onto the saw table – of course you can use any sort of substrate that you have lying around your workshop.

To fix the base into the correct position I fitted a piece of hardwood onto the underside that would sit into the bandsaw mitre track. I then marked a line where the blade would be and cut this on my panel saw so the jig could envelope the bandsaw blade.

The adjustable sub-base is mounted onto a pair of hinges to hold the sub-base with no sideways movement (**photo 2**). I then drilled and threaded a hole for a bolt to adjust the angle of the sub-base to match the face of the blade tooth. Use something durable for the sub-base as the track for the stone to slide back and forth in will wear otherwise. I had a scrap of bakelite and used that. This was sawn in the middle to envelop the blade.

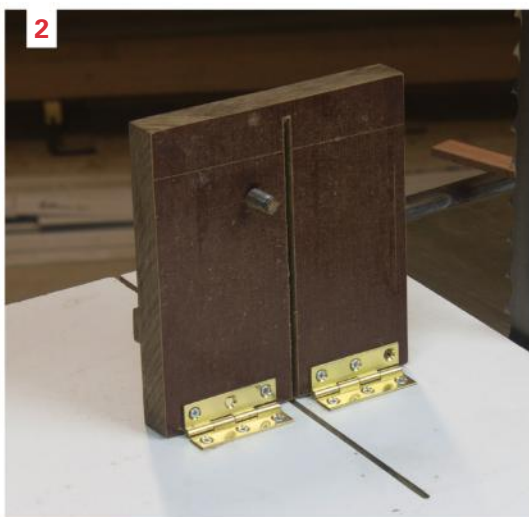
The top face of the sub-base has a hardwood fence that the diamond stone sits against (**photo 3**). The bolt is adjusted to the correct angle to match the face of the tooth. The diamond stone was cut in two with a grinder and then epoxied onto hardwood strips that were machined to slide on the sub-base in between the blade and the fence.

Cutting the diamond stone into this gives four cutting surfaces from the one stone as you can turn the hardwood strip around to use both edges. When cutting the stone, which is diamond particles bonded to a metal card, take your time and don't try to cut it in one go. If you induce too much heat into the metal card you could heat up the bonding material for the diamond particles. I used a 1mm cutting disk to induce less heat than a wider one, and took about five minutes to completely cut through the metal card. At no stage did the card get hot to the touch.

Photo 4 shows the relationship between the face of the blade tooth and the diamond stone once the correct angle has been set on the sub-base. Once this angle is set you won't need to adjust it again unless for different blades.

To use the jig, I mark a starting point on my blade and then while pulling the blade down onto the diamond stone, I slide it back and forth about five or six times to touch up the tooth. It takes about half an hour to touch up all the teeth on my blade for my 24" bandsaw, and then it cuts like a new blade again.

By making this simple jig I have greatly extended the life of these fantastic blades and saved a lot of money in the process.



Photos: Darren Oates

Darren Oates is a studio furniture maker in NSW who sometimes teaches workshops at Sturt School of Wood. Email darrenoates@gmail.com



Routing With Templates

John Kennedy explains why time spent making jigs and templates is well spent.



Whenever projects require components which are identical or mirror images of each other, the use of well designed templates and jigs will make the processes involved safer and more accurate.

There are many pieces of furniture that require making the same thing over and over; chair legs, curved back rests and in the case of my shoe rack (*see p.77*), four legs with compound curves.

If each leg was even slightly different from the others the rest of the joinery would become a nightmare to complete. This would apply equally to any other project where components must look identical and allow batch manufacturing.

There are times when freeform 'do it by eye' woodworking is what we're aiming for. This article, however, will focus on the times when making things look the same for both form and function is the goal.

Once a design has been finalised, the time comes to work out how to go about actually making components, and this is where plywood templates come into their own. By making a full scale silhouette template of the component first, any design flaws come out immediately, and changes can be made before any valuable timber is committed to the saw.

Photo 1 shows my plywood template in the process of being made. The outline of the leg is marked, as is where I expect the mortises to go and two small holes where I intend to put attachment screws through the plywood and into the timber.

Where to put these holes takes a lot of thought. I don't want to leave obvious holes in my components when they are finished, yet for safety reasons want to make sure the template is securely fastened to the timber. Further, I don't want screws anywhere near the edge of the component where the router bit might hit. In this case, I've put the screws out of the way in the middle of the mortise joint. That way I can make use of the hole (when everything else is finished) to put a securing peg through the joint and no one will ever know the screws went there in the first place.

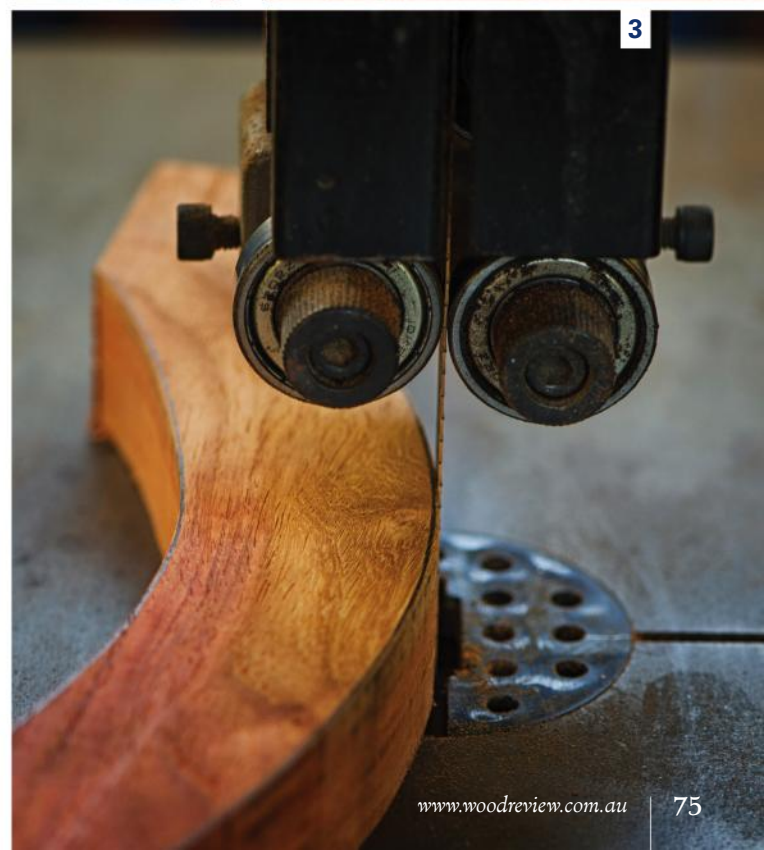
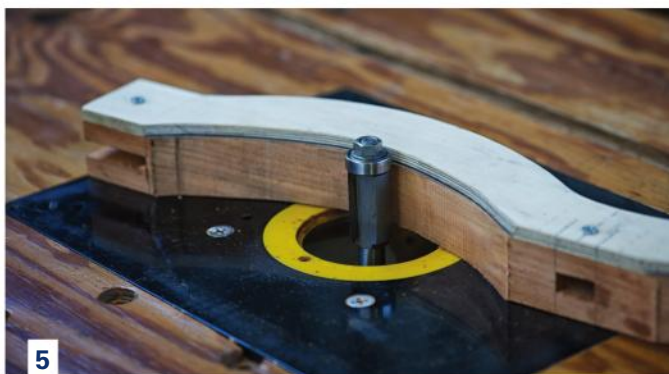




Photo 2 now shows the template screwed to the workpiece. Note how the template and leg are exactly the same length and the width of the timber exactly matches the maximum width of the template. No additional attachment is needed as the template will be removed and reattached several times during the process. While it is attached it is a good time to put a heavy pencil line along the sections that will be bandsawn away.

Now that the shape has been drawn on to the timber any mortises or other joinery are completed before I lose all my square sides. This is the value of marking out where these joints are to go on the template itself. It follows that if you use the template to mark out exactly where the edges of the joint are to go, each leg will have the mortise (in this case) in exactly the same place. This can also be done by careful measurement, but putting two tiny notches on the side of the template and transferring it directly to the timber increases accuracy and consistency.

Photo 3 shows how carefully I follow the pencil lines drawn onto the timber. This is because a flush cut router bit is safest when it is shaving off a minimal amount of timber. The more waste you leave at this stage the riskier it makes the trimming later. The trick is, *never* cut inside the line. Doing that is much worse than leaving a little too



much waste because you'll likely ruin the component. The flush cut bit can take waste off, but nothing I know of can put it back on.

Photo 4 shows the four legs made using the one template. Notice the mortises in the middle of the legs are all in place as are the bridle joints at the top. These legs already look identical and if you wanted to go for a more rustic 'handmade' appearance you could now take out the spokeshave and round the legs over. Here, however, I wanted the legs to be as identical as possible so took them to the next stage.

Photo 5 shows the template screwed back on to the blank and the top bearing flush cutting router sitting in relation to the plywood. The bearing on the cutter will push on to the plywood and in the process skim away any excess timber left on the leg blank.

Please note: this is *not* how I would go about skimming off the timber. This photo was taken to show how the bearing bit works and for clarity only. Using your fingers to hold on to the template while you push it along the spinning router bit is a dangerous practice. A safety jig should be used because that bit is spinning at colossal speed. If your fingers slip off the template or come anywhere near that blade the damage to your fingers or hand will be instant.



Photo 6 My concerns over safety were vindicated, as shown. The template has been taken off to show what happened. There must have been a tiny flaw in the timber, or the router bit has bitten into the end – I don't know which – but there was a bang in the workshop, a piece of the leg came out and an ashen-faced student was left holding the safety jig. The jig protected fingers and hands and was also heavy enough to prevent the whole assembly from being flung across the workshop.

Photos 7, 8 Two views of the safety jig. It has two toggle clamps which push down on any template I want to use and so sandwich the template / blank assembly on to the jig. The jig has a convex and a concave side to accommodate both types of curve. To use the jig, clamp the toggles down and hang on to the thick blocks of timber supporting the toggle clamps while pushing the edge of the template along the router bit bearing. Hands and fingers are well away from the router and there is a mass of hardwood separating the two.

Using the safety jig will require the router bit height to be adjusted accordingly so the bearing makes good contact with the template. The height should ideally be set so the bearing contacts the plywood such that the bottom of the bearing sits about half a millimetre below the ply.

In this position the bit will trim the timber flush all the way to the top but is unlikely to go completely under the



timber and throw the assembly up into the air. If this particular jig doesn't fit, I mess around making one that will. It doesn't take all that long and the safety benefits, while maybe never realised, are great for peace of mind and a confidence boost to the user.

Photo 9 shows the completed shoe rack that the components machined on the jigs shown were made for. Designing and making up jigs like these is time well spent. Your woodworking life will be safer and you'll get better results.

Photos: John Kennedy



John Kennedy lives in Cairns, Qld. His philosophy is that if someone goes out into a forest and kills a tree on his behalf it's then his responsibility to turn that timber into something that will last at least 50 years to give nature a chance to replace what was taken. Email John at meggjohn@tpg.com.au

Liam Thomas at the bandsaw in his Melbourne workshop.

Opposite page top: PVC pipe and marine ply together form a low cost and effective resawing fence for the bandsaw.



Holistic Woodworking

**Processes and their outcome are one and the same.
A visit to the Melbourne workshop of Liam Thomas.**

The meaning behind the intriguing name of Liam Thomas's Melbourne-based business becomes clear after talking to him. It signifies an approach to the craft where the journey and the outcome are one and the same. We Eat The Sun* is a name that also leaves the door open to doing other things, said Liam, who designs, makes, restores and remakes furniture, fittings and more.

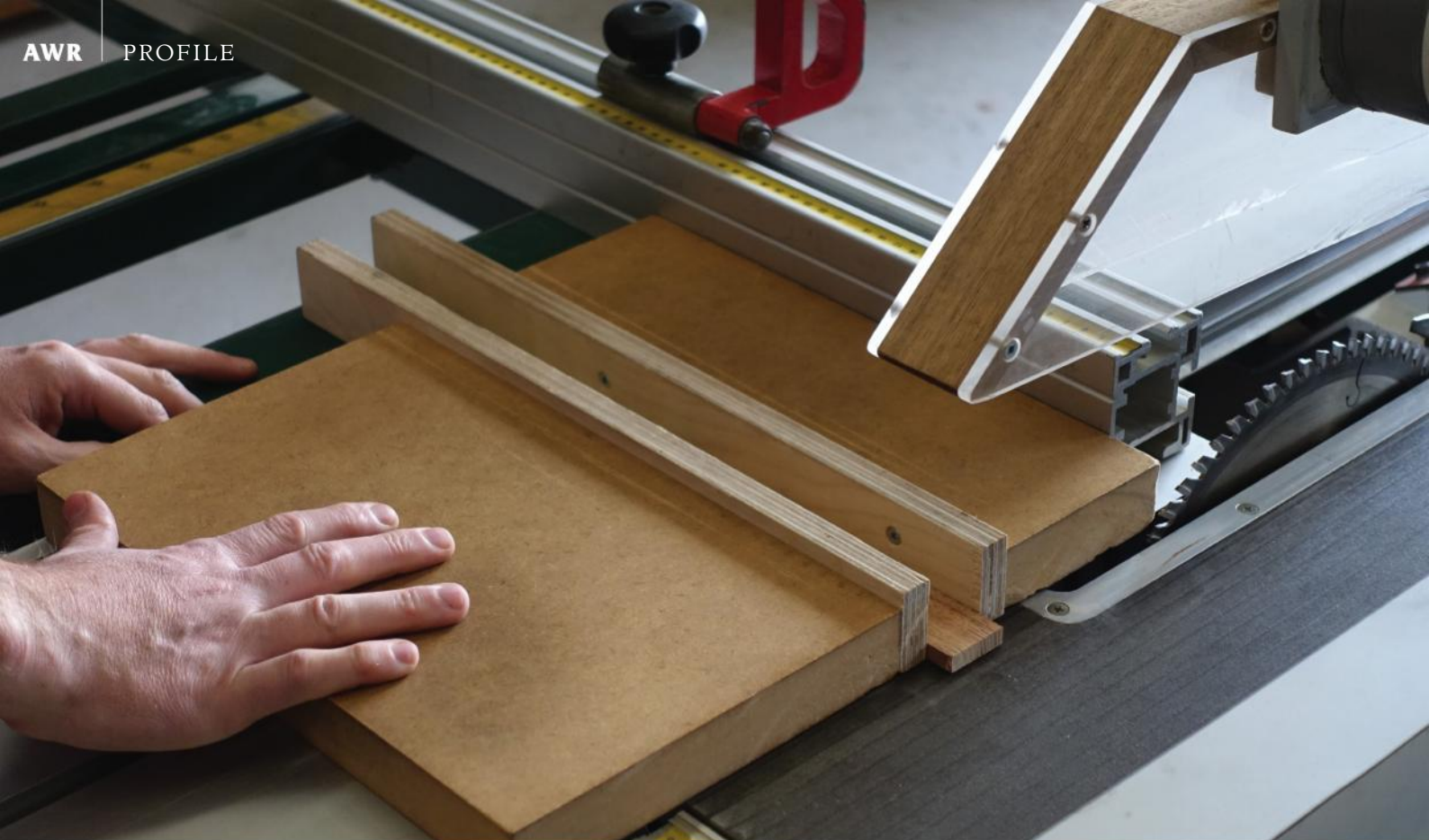
Liam comes at every question and idea from all sides, seeing where it came from and where it might end up. He's well read and spends time thinking things through, planning ahead in terms of set-ups and processes. Before a 'career crisis' in his 20s, academic training and the work he did in IT developed the skills in problem solving that are essential for woodwork and for the self-guided learning he refers to as the 'modern apprenticeship'.

Technically speaking Liam can pretty much make whatever custom job comes his way, but the best are those that offer a challenge. 'In some ways I seem to make the things that others don't want to make', he said. 'I lot of what I do is unusual requests.'

An ex-woolstore fleece sorting table complete with rollers on top was literally falling apart but was converted into a glass topped dining table to fulfill the client's desire to preserve its history in a renewed structure. Another table had become too big for its owners' lifestyle so Liam artfully remade it to be smaller. Reproducing some mid-century Featherston chair bases with their splayed and taper-turned legs was 'challenging but enjoyable nevertheless'. 'Crafting all things wood', is the byline he lives up to.

For Liam, making effective jigs and supports for machining, assembly and finishing is always time well spent. There are shopmade pushsticks, featherboards and guards everywhere that reflect his attitude of care, and more so the 'specific rules' for machine operation learnt while studying for a City & Guilds in cabinetmaking at London Met University when he lived in the UK for eight years. Completing a diploma in furniture design at RMIT after returning to Australia reinforced that training.





Q&A

Favourite wood?

Celery top pine. It's a fantastic timber.

Favourite hand tool?

The scraper— so simple, so versatile and gets you out of all sorts of problems. Without spending \$500 on a plane a \$10 cabinet scraper can give you the best result.

Favourite machine?

My tablesaw for the flexibility and repeatability it's given me over the last 10 years.

Book?

Alan Peters, *Cabinetmaking, a Professional Approach*. It's more than a book about making, it's also about his life and teaching. It's not a glossy furniture book – he talks about a lot of hard things.

Maker?

John Makepeace because his breadth of work is phenomenal and really cutting edge. He developed so many new making techniques. Back in the 70s making fine furniture out of ply was an unheard thing. And he set up Parnham house for a whole generation of studio makers.

What inspires you?

Each unusual piece that comes into workshop. Furniture re-making pushes a lot of the boundaries and not making something from the ground up requires thinking in such a different way. It's the challenge that's inspirational for me.

Best thing you've made?

...is the last thing I've made, and the further back I go the less I remember about it. It's more the imperfections I remember and these help me to improve the next one, and the next one.



Safety is a state of mindfulness that Liam highlights to students on the day each week he teaches at Handsome & Co. 'The first thing you always want to be aware of is where your hands are. It's fundamental to woodworking', he tells them.

Safety has also been learnt the hard way. Shattering the tip of finger ('...kickback is often talked about, but until you experience it...') and 'a run-in with the stroke sander' truly brought the hand awareness thing home, as did witnessing a colleague lose a finger on the tablesaw. And in any case safety is also 'tied up with accuracy and repeatability', as well as the knowledge that when you're working on your own there may be no one around to help if the worst happens.



Clockwise from top left: Making these mid-century Featherston chair bases was challenging but enjoyable.

Drawer detail and full view of Sixty-Six One table in blackwood, Huon pine and MDF.

Detail of upcycled Wool Shed table in Douglas fir and steel.
Photos: Liam Thomas

Opposite top: Two-part 'Fritz and Frans' jig holds small, narrow and short lengths for accurate and safer machining.

Opposite: Making use of pushsticks and pushpads is routine for all machining processes.

In this day and age where there are fewer avenues for learning, teaching is one way of honouring the 'importance of passing on the craft', as is offering insights into his processes via his popular Instagram page. 'Some makers keep "trade secrets" that they will never divulge. That's the worst thing for the craft,' Liam says, because 'knowledge is one thing, but application is another'. You can explain things to people, Liam extrapolates, but it takes experience and muscle memory to truly understand how to hold a saw or use a chisel. For this reason withholding knowledge in this way benefits no one.

In fact sharing knowledge via teaching has taught him things too. He noticed an improvement in his own skills after having to repeatedly describing basic processes such as holding and using a saw or a chisel.

Liam's holistic approach extends through to his business practices. Making non-lathe based components for a local woodturner for four or five days a month provides some bread and butter income. 'There's no get rich quick

scheme in furniture making – cashflow is the thing that is critical to a small business', said Liam. 'Studio woodworkers can take on often complex commissions where it's difficult to judge the profitability and timings. You can take on a boardroom table that might take months to make, but you still need a cashflow.' Bread and butter work also allows Liam to take on jobs that might not be hugely profitable but offer the challenges he enjoys.

The end result is equal to what you put into it. Time spent refining techniques, tools and work practices can result in not only better outcomes in terms of things made, but also a much more satisfying and sustainable working life.

Learn more about Liam Thomas at www.weeatthesun.com.au, or Instagram @weeatthesun

Words: Linda Nathan

Photos: Raf Nathan

* 'We eat the sun' is a line taken from a short story published within *Tales of Ordinary Madness* by Charles Bukowsky,

A table made by the author from 25 year old mountain ash (*Eucalyptus regnans*) stands amongst 29 year old high-pruned trees of the same species. Photo: Cormac Hanrahan



Growing Trees For Profit

After thirty years of putting his scientific knowledge into practice, Rowan Reid is able to explain why it's possible to grow native species for quality timber on farms.

Wood density, tension wood, tangential shrinkage, live knots, natural durability and fiddleback. Experienced woodworkers are familiar with these terms, particularly when working a piece of timber on their saw bench. But what about in the standing tree? How do growth rate, tree management and age affect wood quality in different tree species?

These are questions I have been working on for more than 30 years. In 1987, I was a young forest scientist when I bought a degraded farm in the Otway Ranges in southern Victoria. Having studied the science, my aim was to learn more about growing timber by doing it myself. I also wanted to see if I could make tree growing, particularly the act of cutting them down for timber, attractive to the farming community. If farmers could see value in trees, then they might plant more and that would help control land degradation, improve water quality, enhance biodiversity and lock up carbon for all of us.

Over the years, we have planted thousands of trees of more than 50 different timber species including English oak, coast redwood, blackwood, poplar, sheoaks, black walnut, Australian red cedar, silky oak and, of course, many species of eucalypt. I have also hosted more than 10,000 visitors who have come to our farm to learn about integrating trees into the farming landscape.

I planted trees for conservation, but then I managed them for high quality timber. I pruned the lower branches to eliminate the knots and thinned the trees to promote diameter growth. We continue to graze sheep between the trees to control the fire hazard, or plant an understorey for biodiversity. The result is more like a parkland than a plantation. After 30 years, we are now selectively harvesting sawlogs for on-farm milling and drying using a chainsaw, PTO-driven tractor logging winch, portable bandsaw and solar kiln. And, I am still learning.



Above: Over 10,000 people have visited Rowan Reid's farm to learn about his experience growing and milling native specialty species.

Right: The cover of Rowan Reid's latest book which has 304 pages and is colour throughout. The book features 15 of the specialty timber species that the author has grown and technical sections on tree growth, management and processing.





There are so many myths about growing timber and many opinions about what affects wood quality in a tree. As a scientist working with farmers, I need to rely on evidence so I make a point of testing theories using my own trees. For example, when a visitor told me that Australian blackwood doesn't form heartwood until it is at least ten years old, I immediately cut down a 4-year-old tree. It was only 100cm in diameter but it already had band of the dark coloured heartwood running up the stem.

The science tells us that the transition of sapwood to heartwood has very little to do with the age of the tree. The width of the sapwood band simply reflects the water requirements of the canopy. More leaves = higher water requirement = wider sapwood.

There are many other examples. We often hear that young fast-grown eucalypts are no good for timber because the boards bend like bananas when sawn and the wood has a low density. The accepted wisdom amongst many

foresters and sawmillers is that it takes at least 60 years to grow a eucalypt suitable for milling.

We started producing clear grade, quartersawn eucalypt timber when our trees were just 16 years old. Although the growth rings were more than a centimetre apart, the logs had less tension wood than 65 year old trees of the same species harvested from a native forest. And, the density of the wood produced in the years leading up to our harvest was no different to that from the mature trees. The logs in that trial were only 50cm in diameter. We are now milling 30 year old trees that are over 75cm in diameter from which I can cut 6–8" wide quartersawn boards that are clear of knots.

Again, the practice confirms the science. Once eucalypts reach about 20 metres in height, well spaced and pruned trees of any age will produce mature timber on their lower stem. Juvenile wood only forms close to the active canopy; pruning for timber increases the density of the stem wood.



When we started milling our eucalypts we did notice there was a lot of fiddleback showing up on the quartersawn face. This alone was proof that fiddleback is not caused by slow or twisted growth. We reviewed the science. Although I can't be sure, my current view is that pruning live branches off the stem can initiate a reaction in the cambium that spreads down the trunk resulting in a wavy grain that persists for many years.

Science is about testing ideas, building knowledge and being willing to change your view when the evidence proves otherwise. The art of tree growing, like the art of woodworking, is more personal. It's about the application of the science and practice in ways that create something unique, such as a beautiful and productive landscape. Also, like woodworking, a master tree grower will never boast that they know it all. There is always more to learn.

In Heartwood: the art and science of growing trees for conservation and profit I share my own experience and that of hundreds of researchers, farmers and tree growers that I have met over the years. I hope the book inspires farmers to plant and manage trees for high quality timber and encourages woodworkers to use Australian farm-grown timber in their next building project or furniture piece. It is only by doing and sharing that we will learn.

Rowan Reid is a forest scientist and over the last 30 years has grown more than 50 special timber species on his farm. During this time he has also written eight books on agroforestry and hosted over 10,000 visitors to his farm. His book 'Heartwood – the art and science of growing trees for conservation and profit', is due for release in September 2017 and is available from bookshops or via his website at www.agroforestry.net.au



Above: The author describes his experience grown Australian red cedar to a group of visitors to his property.

Right: The author shows the clear timber milled from a 28 year old shining gum (*Eucalyptus nitens*) grown from his pruned trees.

Photo: Cormac Hanrahan

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21 AUGUST

Wood Review Live

Passion2Profit
1:30pm–6pm
SMC Conference & Function Centre
66 Goulburn St, Sydney
www.woodreview.com.au

Until 27 AUGUST

Work by Simon Parsons

Gallows Gallery
53 Glyde St, Mosman Park, WA
www.spfurniture.com.au

9–11 SEPTEMBER

Timber & Working With Wood Show

Caulfield Racecourse, Vic
www.timbershows.com.au

14 SEPTEMBER – 1 OCTOBER

Fringe Furniture

Melbourne Fringe Festival
Abbotsford Convent, 1 St Heliers Street,
Abbotsford Vic
www.melbournefringe.com.au

Until 17 SEPTEMBER

Catherine Truman:

No Surface Holds

JamFactory Icon 2017 series
JamFactory, Adelaide
www.jamfactory.com.au

23–24 SEPTEMBER

Ballarat Wood Show

Ballarat Sports and Events Centre
Cnr Norman & Dowling Streets,
Wendouree, Ballarat, Vic
Kerry Pask: Kerry.pask@gmail.com

30 SEPTEMBER–1 OCTOBER

Spoonies in the Tweed

Spooncarving weekend with
Robert Howard
Uki, Tweed Valley
www.tweedspooncarving.com.au

7–8 OCTOBER

Lost Trades Fair

Cobb & Co Museum, Toowoomba
www.rundellandrundell.com.au

6–7 OCTOBER

Illawarra Festival of Wood

Bulli Showground/Raceway
Local artisans and wood industries
www.woodworkschool.com

18 OCTOBER–11 NOVEMBER

Double Take in Wood, featuring Create

From a Crate and Fine Woodworking

Victorian Woodworkers Association
Manningham Gallery, Vic
www.vwa17.org.au

27–29 OCTOBER

Timber & Working With Wood Show

& Woodcraft Guild ACT Annual

Exhibition & Competition

Canberra Racecourse, ACT
www.woodcraftguild.org.au

11–12 NOVEMBER

30th Annual Exhibition & Demonstrations

Eltham & District Woodworkers
Eltham Community & Reception Centre
Geoff Oliver 03 9432 9047

18 NOVEMBER–3 DECEMBER

Graduating Exhibition

Sturt School for Wood
Mittagong, NSW
www.sturt.new.edu.au

25–26 NOVEMBER

27th Annual Woodcraft Exhibition

Barwon Valley Woodwrights

The Masonic Hall
25 Regent St, Belmont, Vic
www.barwonvalleywoodwrights.com

25–26 NOVEMBER

Woodturners Society of Qld Exhibition

Mt Coot-tha Botanic Gardens, Toowoong, Qld
Rob McKee 07 3397 8156



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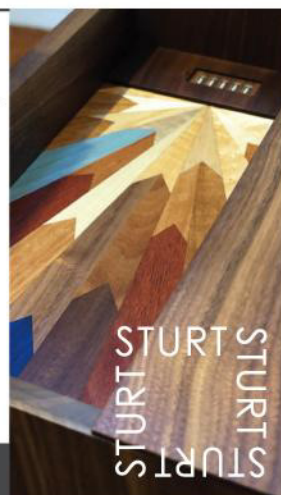
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Breathe Easy

After after experiencing a reaction to wood dust, Richard Vaughan researches brands and buys a powered air respirator.

I'd love a dollar for each of the times I've heard how 'good' wood smells, particularly from visitors to my shedudio. So 'natural', so 'organic', so 'reminiscent of childhood' and so on. For almost 40 years I've been making sawdust for a living but had no romantic notions and have always been aware of the risks of breathing it.

For this reason I've always had dust extraction on power tools and machines as well using a mask in cases where extraction is insufficient. And by mask I mean the type with cartridges and a silicone face seal rather than the disposable version.

So it was a very surprising and truly frightening experience earlier this

year when I was barely able to breathe and had to lie in an air conditioned room, resist panic and relax into gentle breaths for about half an hour in order to recover.

My wake-up call

I had been bandsawing Tasmanian blackwood into laminates for about three hours with dust extraction on



Main: Using the Sundstrom SR580 helmet with SR500 motor. Airflow is 175 and 240 litres/minute.

Left: The 3M Versaflo has 170 litres/minute airflow.

the saw, a powerful extraction fan from the machine room plus two fans behind me to blow any dust out of breathing range. I thought I'd be okay so I wasn't wearing my helmet with built-in fan and filters as it is really uncomfortable after twenty minutes or so. But I was very wrong.

I had another couple of months ahead for this commission so I immediately had to find a more effective solution for maintaining my breathing habit. Sensitivity can develop over time so it made sense to go for maximum precautions, as I probably should have right from the start.

I looked to the powered air respirators with the battery and motor on a belt to keep minimal weight on my head as well the eye protection a mask doesn't give.

The options

Comfort can't be determined from online images and even the major distributor in Brisbane didn't have demo models. But fit is very much a personal choice. As far as I could determine, the choice in Australia for units suitable for woodworkers and my own requirements came down to versions by 3M and Sundstrom.

I was given use of demo models for several days so I set about testing them to see which would work best for me, with comfort in the long term being a top priority. I used them in alternating bouts of two or three hours while I used powercarving tools to shape Tasmanian blackwood seats. I also used them as I turned a couple of silky oak platters.

My assessment

It was a delight to have full face protection and fresh air over my face without the irritation of motor noise, or that weight. Although the Versaflo helmet was noticeably lighter the positioning of the strap at the back on the Sundstrom held it comfortably in position so the weight wasn't an issue.

The weight in the Sundstrom is due to the impact resistant helmet. They do have a lighter soft helmet but the different back strap design doesn't hold it securely enough for me to want to test it further. The Versaflo motor is heavier but despite that and the simple belt support it wasn't noticeably less comfortable than the broader support for the lighter Sundstrom.

Use, as in access to switches, putting equipment on and off, visor lifting and

so on are matters of familiarity and neither unit was obviously awkward.

Although both are excellent I paid the extra and bought the Sundstrom because the finer filter makes it the choice of companies dealing with asbestos, and opted for the greater airflow of the SR500 rather than the SR700 shown in the photo. Both are rated P3, the maximum rating in Australia, but the Sundstrom filter is even finer.

The primary focus of manufacturers and suppliers is unsurprisingly on company contracts for large and ongoing sales so you may need to organise your club or a group to arrange demos rather than expect individual attention, and perhaps even negotiate a better price.

I hope you are encouraged to take more care of your lungs and that this comparison is helpful.

Photos: Richard Vaughan



Richard Vaughan is a furniture designer/maker in Brisbane who also runs woodwork classes. See richardvaughan.com.au



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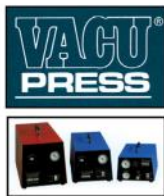
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Tools of the Artisan

With its vast collection of hand tools dating back centuries, the Maison de L'Outil et de la Pensée Ouvrière in France opens a window into the lives and trades of artisans.

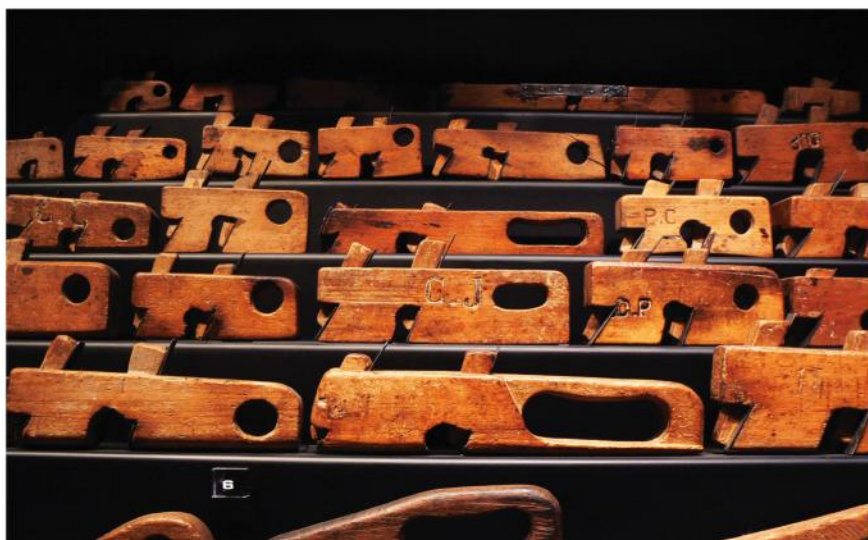
From the time a human infant picks up a rattle or spoon, he or she becomes a hand tool user. Over the millennia the shape and function of the objects we manipulate for a purpose has varied in a multitude of ways.

There are museums and galleries all around the world that feature hand tools, but perhaps none with such a specialised and large collection as the Maison de L'Outil et de la Pensée Ouvrière (MOPO) in Troyes, France*. Translated, the name refers not only to the hand tools employed by artisans, but also to their way of thinking.

Over 11,000 tools from the 1600s through to the 1800s are displayed in the most creative and visually stunning way – some are even suspended in cascading waves with lighting that permits 360° viewing. In fact the collection includes another 20,000 tools some of which are brought out for temporary exhibitions.

Grouped according to function, the tools bear witness to the ingenious permutations and modifications that human activities have attuned them to. In modern parlance they are all 'users', and the evidence of that





usage makes them all the more fascinating. 'In those days tools were often made by the user and the attitude towards them was different', explained MOPO communications manager Simon Dodane. 'They were often engraved with the owner's name and were passed down through generations', he said.

Two of the 65 permanent displays are generic collections of files, rasps, hammers and axes. The other tools are grouped by profession. On the first floor are the wood-based tools of trade used by woodcutters, sawyers, clogmakers, joiners, chairmakers and more. The second floor houses the tools of those who worked in stone, metal and other materials – blacksmiths, engravers, locksmiths, clockwrights, plumbers, plasterers and masons. Other trades represented include butchers, tanners, furriers, saddlers, glovemakers and many others.

The museum is housed within a building that has its own historical significance and connection to its current usage. The Hotel Mauroy was destroyed by fire in 1524 but rebuilt in 1556, upon which it was repurposed as a hospital and orphanage where young people were taught trades.

The founder of MOPO was Paul Feller (1913 – 1979), a priest who collected books and tools with the aim of preserving the history and knowledge of trades. With around 32,000 books, many of which are very rare, the collection now constitutes France's second largest technical library. Before he died, Paul Feller passed the ownership of the tool and book collection on to the Compagnons du Devoir, an organisation of artisans dating back to the Middle Ages who continue to safeguard and administrate it. In 1969 the Hotel Mauroy was bought by the City of Troyes and five years later the museum was established within it.



Tools are more than objects, as they reflect the thoughts, lives and skills of those who invented, made and used them to create and shape other things. The purpose of the museum is not only to preserve history and objects but also to educate and enlighten current generations as to the value of learning trades.

'In recent decades in France, learning a trade has been seen as a second option for students who aren't as academic', explained Simon who himself wanted to be a leatherworker, but with high grades was directed instead by his family into tertiary study. 'In a sense, it's not the tools themselves which are important', he said. 'They are a window that allows us to see the people who used them, and they highlight the vast knowledge that was gained and passed on through masters and apprentices.'

Photos courtesy of MOPO

** Situated on the Seine river in the north-east of France, the medieval city of Troyes is around 150km from Paris and rates as a tourist destination in its own right.*

See www.mopo3.com for more information.



Opposite, top to bottom: Tools for masonry, stucco work, joinery and carpentry.

Top: Display of files and rasps.

Above: The museum is housed within the Hotel Mauroy in Troyes, France.

Celebrated Chairs

Denis Lake uncovers the life and times of two 18th century Tasmanian chairmakers.

Tasmania in the 1800s had a unique culture of chairmaking. Around Deloraine, 'Jimmy Possum' was the name given to kind of stick chair made locally. Not much more than 100k south-west in Nabowla, and further south in Hobart however, the industry of making Windsor chairs, which the Jimmy Possum chairs resembled, was developed to a much greater degree.

In *The Men Who Made The Celebrated Chairs* (Pagunta Press, 2016), Denis Lake charts the course of Windsor chairmaking in Tasmania. In the 1800s, George Peddle migrated to Australia, and was followed a little later by his brother-in-law Henry 'Harry' Hearn. Both were trained in the Windsor chairmaking style that emanated from High Wycombe in Buckinghamshire, England. From 1884–1909, George and Harry used local Tasmanian blackwood to make variations of what are now collectively known as Peddle chairs. During that time these chairs were commonly found in government offices, schools, railway stations, libraries and also homes.

Denis Lake trained at the London College of Furniture in the 1970s and has lived and worked as a furniture restorer in Tasmania since 1994. As well as revealing the subtle differences

between the chairs created by Peddle and Hearn, the author gives a personal account of the makers' lives which also serves as an insight into Tasmania in the colonial years. Lake details some of the history of the Windsor chair, and how it fared in the local chairmaking industry which was then under pressure from imports – some things never change.

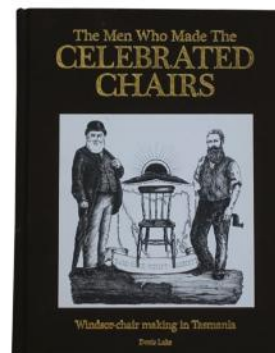
George Peddle lived and worked in Hobart and went on to establish a sawmilling business. Harry Hearn worked as a chairmaker in Nabowla and remained there until his death. As similar as the chairs they produced were, the wealth of historical documents and images presented in the book show how the personalities and lives of the two makers were markedly different.

Peddle chairs are now highly collectible, a testament to their

popularity and sturdy construction. In the course of his research and work as a restorer, the author has examined hundreds of them in minute detail. So how do you tell the difference between chairs made by George and Harry? You'll have to get the book to find out!

The book has 173 pages, is printed in black and white and is cloth-bound in hardcover. Five hundred copies, numbered and signed were produced.

Contact Denis Lake by email at celebratedchairs@gmail.com



Top left: Nabowla pattern fancy chair by Harry Hearn.

Top right: Peddle Hobart-pattern dining chair made by George Peddle.



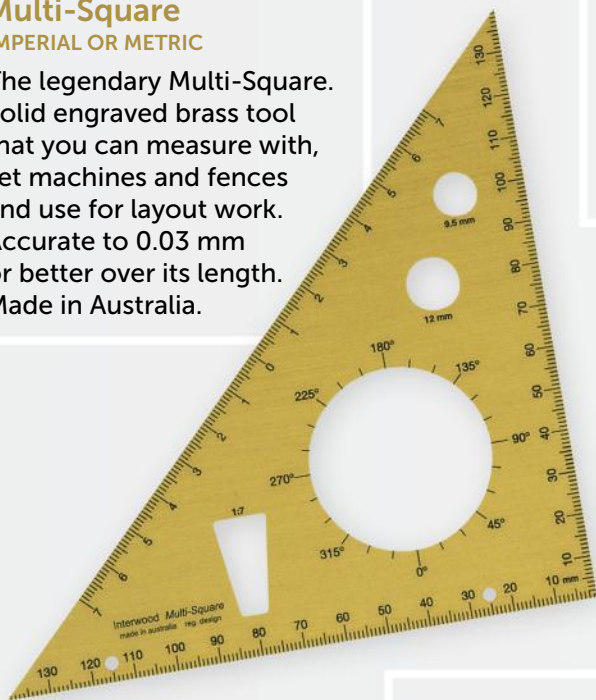
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