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Editor's Letter

Let's meet up

Following on from the buzz of our first AWR LIVE event last year, we're doing it again, and you are invited to join us in Sydney on August 4. We have an amazing crew of speakers (four have been on the cover of this magazine), and an exciting program of talks, visual presentations, Q&A discussion and the opportunity to network with like-minded others.

Design is the theme and it's all about making things that look and function better. It's a big topic for a Saturday afternoon, but our speakers are experts and looking forward to sharing their experience and ideas with you. Earlybird tickets are available until June 29 from www.woodreview.com.au/live. More information is on p.32, I hope you can make it!

Studio Furniture 2018, first prize now \$10,000

October 20, 2018 will see the opening of the third Studio Furniture exhibition, arguably now the richest woodworking awards in Australia. Jointly produced by Australian Wood Review and Bungendore Wood Works Gallery, the aim has always been to create a landmark exhibition that recognises and promotes fine woodworking. More than ever, the desire with SF18 is also to encourage the new generation of woodworkers to step forward.

In support of this, BWWG director David Mac Laren has boosted the cash awards on offer to \$15,000 with the first prize being \$10,000. Together with a Hammer N4400 bandsaw (value \$3,166) to be presented by major sponsor Felder Group Australia, a huge \$18,000+ in awards are offered.

All entries are featured on our website and social media. Work by shortlisted entrants will be exhibited from October 20, 2018 to January 31, 2019. The exhibition opens during the Wood Dust Australia festival. Please take this as your personal invitation to enter now via www.woodreview.com.au/studio-furniture. The deadline has been extended to June 22.

Native timbers are back

Fashions come and go. Light, red and dark toned woods have all been preferred in one decade or another. American walnut and oak are riding a wave of popularity and FSC ratings, consistency of colour, grain and supply contribute towards this. Part of the reason is also because native specialty species have become scarcer due to past overcutting which led to locking this resource away.

Controlled logging on private land in northern Queensland is now delivering supply of some rainforest species, see p.76. In northern NSW and south-east Qld supplies of a few local rainforest species sourced from farm forestry growers are also coming to market, p.90. Perhaps with access to sustainable supplies our local wood fashions may swing back to home grown.

Starting from scratch

One of the many things I love about woodworking is that there are so many styles, techniques and levels of mastery. Everyone is or was once a beginner after all. You can experiment and make mistakes as you learn – in fact you won't get to the next level if you don't.

Spoon carving typifies this perfectly and accounts for its ever-growing popularity. Just a few tools and a branch will get you started, read Barton Chesworth's story on p.26.

At the end of a different spectrum is the art and craft of toolmaking. Looking at some of the beautiful infill handplanes made by past and modern makers it seems unreal to me that making one yourself is within reach. Reading Ian Wilkie's story this issue certainly makes it sound totally achievable, see p.40.

And lastly, don't forget to sign up at www.woodreview.com.au for our fortnightly events and news coverage!

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REVIEW

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Felder AD941 planer/thicknesser

Reviewed by Damion Fauser

When I started signing more and more large-scale commission work a few years ago, I knew it was time to invest in some larger equipment to help me process the stock. I chose the Felder AD941 and it has totally transformed my working practices.

This is one of the largest production combination machines available. In jointing mode the table length is 2200mm, so any board that length or under will comfortably balance on both the infeed and outfeed tables without further support or intervention.

Boards longer than this are also easily processed with careful technique and diligent use of supports at each end of the machine. The Felder 400mm table extension can also be attached to the end of the outfeed table, making the somewhat difficult task of balancing longer boards at the end of a pass that much easier.

The table and available cutting width is a full 410mm/16" which is obviously advantageous. The fence assembly is 1300mm x 170mm, solid and robust, with a smooth lateral action via its mounting on a polished round solid steel guide bar. The fence tilts through 0–45° and has adjustable positive stops at each end of that range.

The table surface is ground to an immaculate finish, meaning these tables are nice and slick. Cut depth is adjustable through 0–5mm, although for boards 300mm or wider you may consider an accessory power feeder if taking any more than 2mm with each pass.

I opted for the upgrade to the Felder Silent Power helical cutterblock. I've written about this cutterblock previously so many of you will know that this was an easy, even essential, decision for me.

The conversion to thicknesser is fast and easy. Two Felder kip-lock handles are released at the front of the machine and then you lift the dynamically balanced tables in one go. Rotate the dust hood/safety shroud over the cutterblock and that's it. The conversion takes less than 30 seconds and despite the sheer mass of these tables, it takes surprisingly little effort.

In thicknesser mode, the available height range is from 3–250mm. The fact that this machine will cut to as thin as 3mm without the use of a supplementary sled is extremely valuable to me when I process thinner components such as box linings, shop-sawn veneers and kumiko components etc.





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Two speed settings are available, 6m/min and 12m/min. My old machine moved at a mere 4 m/min, so now that I can triple the feed speed, the time taken for me to process stock has drastically reduced.

The thickener table is 404mm wide, has guide bars on each side to keep the stock tracking well and is also beautifully ground, but like all ground steel tables, will need some additional lubrication periodically to assist with pitch and resin build-up from certain woods. It is supported on four columns,

giving it so much more structural support than the traditional single column found on many smaller machines.

The feed rollers provide strong yet subtle grip, with no visible markings on the wood surface. This machine will comfortably cut 4mm in one pass, and I have done this on 400mm wide panels in hardwoods – with the only limitation being the capability of your dust extractor. I have my machine connected to a dedicated Felder AF22 with pleated filter cartridge.

I decided on the upgrade to the electric rise/fall and digital display for the thickener. What a revelation this has been – no more winding and the ability to easily dial in a setting to 0.1mm accuracy. If you are going to invest in a machine of this calibre, then I would consider this upgrade to be a total no-brainer.

The standard motor is 3kw, which is powerful enough, but I opted for the 4kw motor. The electric brake is standard and stops the cutterblock within seconds.

The base price for this machine is \$14,958. The Silent Power cutterblock is \$1399 and the electric rise/fall for the thickener table is \$1683. I've had mine for over a year now and have made many large pieces including workbenches, dining tables and more. The speed and ease with which I'm now able to process stock, along with the quality of the surface from the Silent Power cutterblock, has meant this machine has been an extremely wise business decision for me.

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



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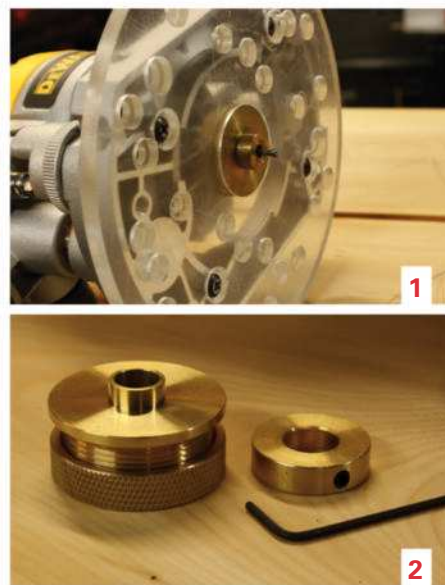
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Veritas and Whiteside Inlay Template Routing Kits

Reviewed by Raf Nathan



Adding inlay as a feature detail in your woodwork can be a way to lift an otherwise plain piece of work. Over the years I have often used 3mm thick square and rectangular pieces of wood as inlaid motifs on table- and desktops.

The first step is to size the inlay to final dimension, lay it in position and then trace the outline with a marking knife. The inlay recess can then be removed with a router and chisel and the inlay glued in place, preferably with it sitting proud by around one millimetre. After the glue is dry it can be planed and sanded flush.

However an alternative that offers an almost unlimited number of design options is to use a template routing kit. Inlay kits are made from brass and fit into a round base on a router.

If your router doesn't have a round recess in the base you can buy an aftermarket base.

The inlay kit will include a down cut spiral cutter, brass template guide, a centring pin and an offset bush that compensates for the cutter diameter.

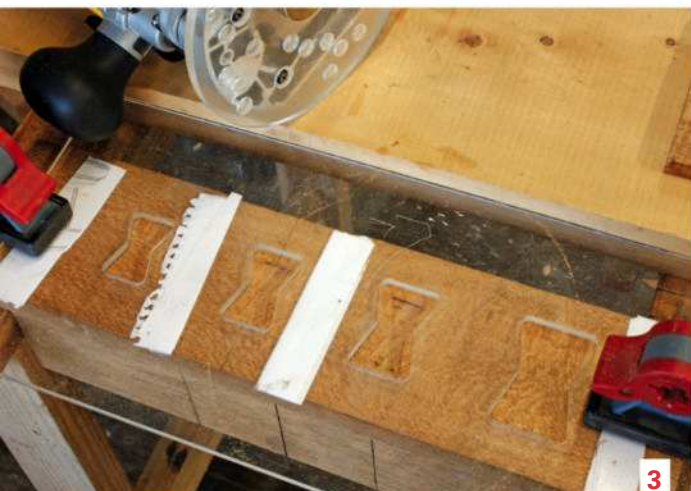
Fit the bush assembly into the router base and ensure it is perfectly centred by using the centring pin. You clamp your template to the workpiece and rout the recess with the offset bush in place to a depth of around 2mm. The offset bush is then removed and the inlay shape routed.

I find it best to have the inlay piece about 1mm thicker than the depth of the recess. I rout the inlay into thicker stock and saw it off with the bandsaw.

You will need to square out the corners of the recess with a chisel as this will be rounded to the diameter of the cutter.

Recently I trialled two inlay kits. The Whiteside inlay kit from Professional Woodwork Supplies comes complete with a 1/8" cutter for about \$53 (**photo 1**).

1. Showing the Whiteside kit mounted in a round base.
2. The Veritas 1/4" down cut router cutter is purchased separately. The offset bush is secured with an allen key.
3. An off the shelf dovetail key template mounted on a workpiece. Paper was used to pack out the thickness of the template to clear the brass bush. Two dovetail recesses are shown already made.
4. Routing the inlay piece.





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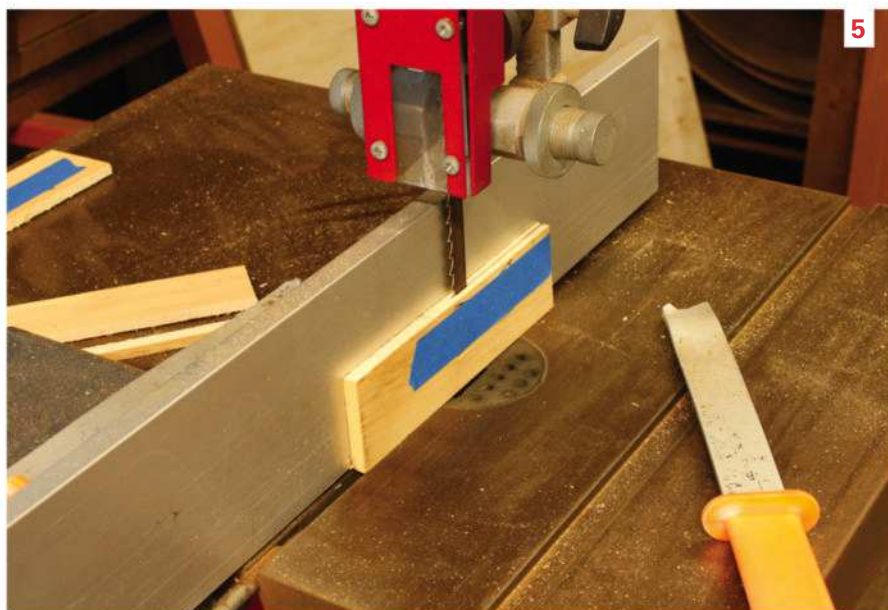
No matter whether you're sizing solid timber or panel material, the MiniMax sliding table saws are designed for you. Oversized sliding tables and support tables make material handling easy – particularly for those larger work pieces. Large blade capacities and motor sizes will make these machines the workhorse of your shop.



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The Veritas inlay kit from Lee Valley is bought as separate components costing around \$60 and uses a 1/4" cutter (**photo 2**). Both kits work very well with the Veritas being a little faster to use with its larger diameter cutter removing more waste with each cut.

The smaller diameter Whiteside cutter in my opinion gave a cleaner and neater cut, although it needs more care in use due to its smaller diameter.

Initially I tried a cheap dovetail key template that I bought over the internet. Although it looked good, it was too thin to use without packing out to allow for the brass guide, and the dovetail keys it made were not symmetrical (**photos 3, 4**). The lesson is here is don't buy cheap templates.

I then moved on to making my own templates by simply gluing up thin

wood to form the desired shapes. To make round inlay you will need a round hole and the best way I found to achieve this was with a quality adjustable hole drill. The main photo on p.12 shows the results gained from the kits.

*Whiteside inlay kit from
www.woodworksupplies.com.au*

*Veritas inlay cutting supplies
from www.leevalley.com*

5. Inlay pieces are bandsawn off after routing. The blue tape holds the key in place while sawing.
6. Recess prepared and inlay ready to be glued in place.
7. Dovetail key inlay completed.
8. 'Double hammer' template.
9. Double hammer inlay ready to be glued in place.



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Star-M Adjustable Circle Cutter

Reviewed by Raf Nathan

Carpenters and woodworkers often need to accurately drill holes for mounting items or other specialised purposes. For some building work a near-enough round hole may be sufficient, however my quest was for a large hole cutter that would be quick to use and leave a clean finish.

My first attempt was an adjustable drill tool purchased from eBay that turned out to be pretty useless. With steel cutters and solid construction it looked good, but struggled in 12mm plywood to drill a hole that was almost round.

The Star-M tool from Japan is ruggedly built with a thick pressed steel body that holds two tungsten tipped cutters which are mounted on adjustable arms running on thick threaded rod.

The arms can be dialled in to drill holes 25–75mm in diameter. A fairly accurate etched scale reads the diameter, although for precise work you will need to check the measurement setting with a ruler.

For safety I only test drilled with the tool in a drill press, but providing you use a



slow speed, hand drilling would be fine. For work in plaster board and cladding this is of course the only way to use it.

The tungsten cutters give a very clean cut and I found the walls of the hole to be square at 90°. The hole drill is quick to set up and the cutters can be locked tightly in place with large

knobs. I found the maximum depth of 28mm was perfectly adequate. A cheaper version is available with HSS cutters but I suggest going for the tungsten version for longevity and accuracy.

Review tool from www.japanesetools.com.au

Wixey Digital Angle Gauge

Reviewed by Raf Nathan



With a bright backlit LCD display the new Wixey angle gauge is ideal for setting mitre and tablesaws as well as workfences.

Simply turn on, zero in and relax, knowing that angles to 1° can be confidently set, plus there are magnets in the base to secure it to the workpiece.

Accurate to 0.1°, the Wixey uses a single AAA battery (not included) and also features auto shut-off.

Download the Wixey App on your phone (Apple or Android) however and a new function comes into play. The phone will now display the angle readings, with Siri able to talk you through it. This means if you are fixing

a cabinet to a wall for example, you can place the gauge on the cabinet and adjust it for vertical whilst the app reads out the actual angle. A great digital assistant indeed.

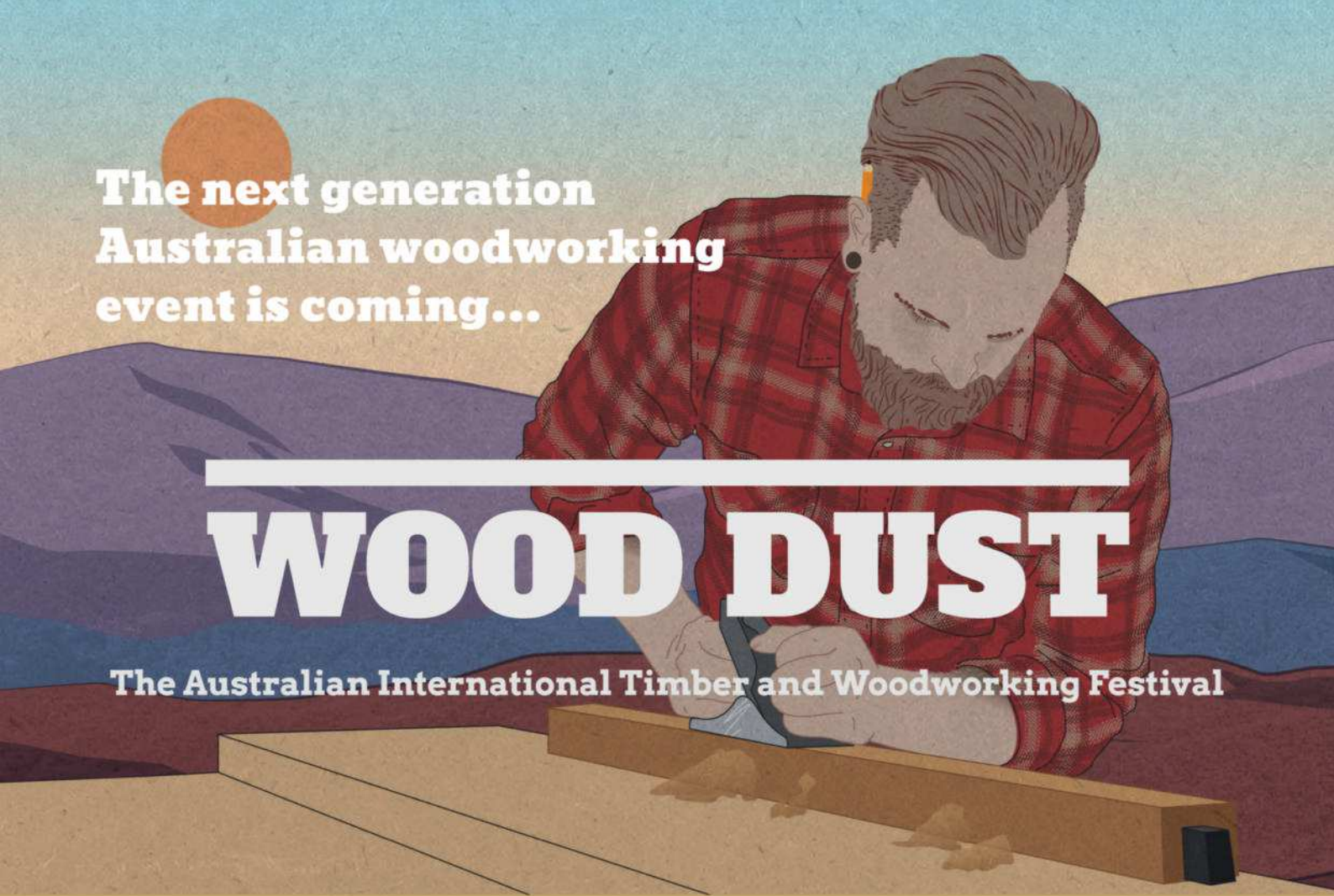
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Wood Dust Yarns at The Q talk series will take place at The Q Theatre in Queanbeyan and feature special guests Tom Lie Nielsen, Matt Kenny (Fine Woodworking), Terry Gordon, Vic Tesolin (Veritas) and many more from Australia and around the globe.

Wood Dust woodworking masterclasses are locked in at the Dunstone Design workshops in Queanbeyan. Stay tuned for our soon to be released masterclass short-courses featuring craftspeople and toolmakers alike.



17th–21st October 2018 Bungendore and Queanbeyan NSW

Bungendore & Queanbeyan NSW
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And as an extra treat, during Wood Dust the Australian Wood Review Studio Furniture 2018 exhibition of fine woodworking will open at the Bungendore Woodworks Gallery.

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◀ Diamond Quality

Tormek has just released three new diamond wheels and a multi-base for their water cooled sharpening system. Made from the world's hardest known material, these diamond wheels offer exceptional durability. A further great new development is that blades can also be sharpened on the sides of the wheels to give flat bevels as well. Coarse, fine and extra fine grade wheels will be available in Australia from June 2018.

www.promac.com.au

Product news

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

Woodwork Central ▶

Since its release in Australia late last year, Kreg's mobile project centre has been snapped up by those wanting an affordable but solid bench and assembly surface. The table opens to 800 x 700mm and supports up to 158kg. Set it up, pack it away or take it with you for convenience, and look to a range of inline and bench clamps for versatile holding capabilities. Currently \$299.

www.carbatec.com.au



◀ Nothing But the Best

Wenge (*Millettia laurentii*) is arguably one of the most expensive woods in world, but its density, colour and figure also make it one of the most sought after for fine work and detailing. The FSC certified wenge shown here is available, along with a range of other species, from Allwood Specialty Timbers.

www.allwoodspecialtytimbers.com.au



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Clever Combination ▶

Just in time for Hammer's 20 year anniversary, the popular C3 41 is back. Now in three configurations, these offer 410mm planing width and 900mm rip capacity on the saw table. With solid cast iron tables, quick and easy changeover along with multi-functionality, this could be the spacesaving answer you've been looking for.

www.felder-group.com



◀ Milled Not Stamped

Japanese made Iwasaki files are different. Their teeth are milled, not stamped, and they are chemically sharpened to act like an army of curved blades that shave rather than abrade wood surfaces. Flat, convex and concave files (around \$40 each) can achieve a smooth finish and there's also a crank necked chisel for flattening trenches.

www.japanesetools.com.au

Precision Guides ▼

In 2018 Vesper Tools is celebrating 20 years of fine toolmaking, and also now offering bandsaw guides made with the same dedication to precision that have built its reputation. The guides are made in-house with case hardened thrust wheels and guide blocks to the proven Wolfenden design. Complete guide assemblies or separate components can be fitted to most Wolfenden machines and with some mods retrofitted to Wadkin, Barker, Tannervitz and other brands. More information from

www.vespertools.com.au



Square Up ▲

Interwood's large 360 x 310mm Cabinetmakers Square is designed to let you check your glue-ups and machine setups are truly 90°. A hefty 6mm thick and made from CNC cut aluminium the square sells for \$195. The wood cheeks, which can be adjusted, let the tool work as a try square as well.

www.interwoodshop.com.au





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Your Turn? ▶

A new arrival on the mini wood lathe scene is the WL-14V with plenty of features and currently only \$539 from Hare & Forbes Machinery House. It has EVS with digital readout, 356mm swing, 470mm between centres, 0.75hp motor and reverse option all within a solid build. Up-scale it with the optional bed extension or stand and you could be looking at your entry into the world of woodturning.

www.machineryhouse.com.au



◀ Lighten Up With LED

Good lighting can be one of the woodworker's best tools when it comes to accurate work. For bench work, the articulated lamp shown in the centre will light up your wood world like no other – unless you up the ante with the 3X magnifier shown on the left. For machine work a gooseneck lamp with your choice of mounting is just the ticket. New LED versions give brighter light for cooler and lower cost running.

www.carbatec.com.au

Natural Shine ▶

Frankincense, copal and myrrh are just two of the exotic ingredients of this solvent-free wax and resin polish which nourishes wood and builds to a glowing finish. Pure, natural and pleasant smelling, a tin will set you back around \$21.

www.vespertools.com.au



◀ And Tuart Too

Workbench World has long been synonymous with jarrah workbenches but is now branching out to suit customer demand. The tuart top on the bench shown here is as hard as jarrah, but its blonde good looks can make the work area lighter and brighter. A large range of standard and custom benches are offered or get in touch to discuss your needs.

www.workbenchworld.com.au



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A selection of eater spoons carved by Barton Chesworth in various woods.

1. One of the author's axes used for green woodworking.
2. The author's toolkit. To get started, minimal hand tools are required.



The Green Wood Spoon

A few tools and branch timbers are all you need to get started carving eating spoons. Story by Barton Chesworth.

Years ago I stumbled across wooden spoons in a museum whilst living abroad in Sweden on a student inter-university exchange. At the time I remember thinking how cool and beautifully handcrafted they were.

A couple years later I felt a need to reconnect and pursue woodwork once again, however at that stage I was living in the top floor of a unit complex in Brisbane. Despite the limitations, spoon carving jumped into my life with full force.

Spoon carving requires few tools – axe, straight and bent knives (**photos 1, 2**) – and can be performed anywhere. It makes minimal noise, wood chips not dust, and utilises freely scavenged timber. These are the factors that have caused a boom in this craft around the globe in recent years.

Why green woodworking?

Spoon carving traditions mainly originate from Scandinavian, Celtic and Roman cultures. My interest in lies in green woodcarving that celebrates the use of readily accessible timber. Here, the biggest advantage of using green or wet timber is that it's much easier to work and less taxing on your tools.

In a country full of endemic hard timbers this is hugely beneficial. Apart from the experience of a handful of shingle cutters and chairmakers at the turn of last century, Australian green woodworking is an exciting realm to explore.

You can experiment with what's at hand. Native and exotic species I have had great success with include sheoaks, broad leaf paperbarks, native cherry, privet, sycamore, jacaranda and fruit woods.

Green branches from 80 to 150mm diameter are best for eating spoons, and offer the beginner quicker log-to-spoon carving time. Here I'll show one way of carving a spoon from straight branch wood.

Eating spoons

A simple spoon is really a three dimensional sculpture that should not only look good but also perform. Eating spoons are generally carved for either solid or liquid foods.

An understanding of grain direction and the properties of timber must be developed, as a structurally weak spoon will fail in time. The ultimate goal is to carve the thinnest, strongest spoon possible.



3



4



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3. From branch to blank. A sawn length is split, then bark and side faces are removed to create a rectangular section blank.
4. On the top blank a 10mm sawcut defines the crank. The top of the central blank has been axed to induce the crank. The next stage shows the plan view outlined.
5. Showing the crank shaped top and bottom on a blank, and below an almost finished spoon with depth left in the neck to ensure strength.
6. Axing the back of the spoon.
7. Showing further stages in the marking out and shaping of an eater.
8. Take care when axing into the handle to not shear the side of the bowl off. Holding the axe up high gives greater control here.

Axe work

A basic kit for green spoon carving is a chopping block, a saw, an axe or hatchet, a straight knife and a bent knife.

If you feel comfortable using a carving axe, saw your branch into around 250mm lengths. If you are new to carving cut them longer to allow more room between the axe and the hand you're holding the billet with. Typical eating spoons fall between 150 and 210mm in length but always leave a little extra in case you have to navigate knots, and to buffer for checking.

Identify the pith in the cut end and mark a line through it. Place your axe over the line and lightly strike the back of your axe with a wooden mallet or piece of discarded branch. Only sharp light force is required, the aim is to safely split the branch into two pieces.

Inspect each half for any knots or any other possible issues, and only proceed with nice clear grained timber with minimal defects. Next, remove the pith and the first few growth rings from the split half, this is a critical step that will significantly reduce the likelihood of your spoon cracking or checking later on.

The half branch semicircle is now turned into a long rectangular brick shape (**photo 3**). This is achieved by taking two cheeks off the semicircle, splitting the bark off and truing up the outer edge. This step may seem unnecessary, but if you work in a methodical way and keep the timber square to the eye, your spoons will be more symmetrical.

Rule of thirds

Start to plan your spoon by measuring its desired length. Mark the ends, then draw two more lines across the blank, a third from each end (**photo 4**). From here you can



6

begin to visualise the basic spoon proportions, one third will become the bowl of the spoon and the remaining two thirds will become the handle. Then divide the bowl section into thirds – this will mark where the 'crank' is required in the next step.

The crank angle

A spoon made from a flat piece of timber is fine for using an overhand grip and stirring a pot, but not for eating. A crank or angled bend enables room for your hand and keeps the spoon bowl level to ensure no food is lost on the journey to your mouth (**photo 5**).

The angle of crank varies – for example soup will require a spoon with a larger crank than a spoon designed for dry foods. Next time you pick up a metal spoon study it and notice the crank angles vary according to purpose.

The deepest part of the crank should be two thirds down from the tip of the spoon bowl: saw a 10mm deep cut at this point across your blank as shown on the top blank in **photo 4**.

Now, using your axe, carve down at a gradual angle from the handle tip down to the cut line and depth. Turn the blank around and and carve a gradual angle from the spoon tip back down to the cut line.

Now flip your spoon blank over and shape the back of the spoon (**photo 6**). The aim is to mirror the top side profile onto the bottom. Hence you will carve from the deepest part of the bowl (top of the mountain) back down to the tip of the handle and then again down from the mountain to the spoon tip.

The outline

Now design and draw your spoon top view outline, ensuring the widest part of the bowl is two thirds down from the spoon tip (**photo 7**). If you are looking for design inspiration, use your favorite metal spoon as a template and keep designs simple and flowing.

Remove the waste wood from each side of the handle (**photo 8**). Focus is required here as an axe blow misplaced here will shear off half your spoon bowl. A little trick here is to saw stop cuts on each side of the thinnest part of the handle neck where the bowl meets the handle.

To be safe, hold the tip of spoon and carve down from the stop cuts as close to the lines as possible. Then flip the spoon on its tip and lightly carve back to the stop cuts. Alternatively, if you are feeling confident with an axe, you can cut V-notches instead of the stop cuts.





9



10



11



12

9. With the tip resting on the block, take small cuts to shape the end of the bowl.
10. Knifing begins by paring away to the outline. You need to develop holds that will keep your thumb out of the way.
11. Use the bent or spoon knife to take smooth cuts against the grain to shape the bowl.
12. Allow spoons to dry for a day or two before finish cutting and applying a food grade oil.
13. No longer an apartment dweller, Barton Chesworth now has a small workshop for his woodworking.

Shape the bowl outline. Place the tip end of the spoon bowl on the chopping block and using a straight down carving action, carve the tip of the bowl shape by rotating the blank slowly (**photo 9**). You now have a spoon blank roughed out ready for knife work – time to put the axe down.

Knife work and finishing

Use your straight knife to carve right up to your pencil outline (**photo 10**). If you are new to carving with a slojd knife I highly encourage you to study different knife grips, these are well published in Jögge Sundqvist's recent DVD and explained well in Barn the Spoon's book, *Spon*.

The side profile will ultimately determine the strength of your spoon. Dimensions that are wide in plan view can be thin on side view, and vice versa. This means the handle end can be carved thin and gradually thickens all the way to the base of bowl. The critical section, that is, the weakest point, is the neck of the handle where it meets the bowl. I like my eating spoons to be at least 10mm deep here to ensure strength (**photo 5**).

Time now to switch to the spoon or bent knife to start hollowing the bowl. Attempt to make many shallow cuts across the grain (**photo 11**), ensuring you pull the blade out of the cut. Avoid taking deep short cuts, you will create a ridge that will require chasing out and make carving far less enjoyable.

Work with the grain where possible, rotating your spoon around until you create smooth cuts. Mouth feel is a critical element when designing an eating spoon. Eating spoons are best carved at a maximum depth of around



13

7–8mm, this mirrors the top lip and ensures a nice and comfortable mouth feel.

Once you are happy with the inside of the bowl change back to your straight knife and thin down the back of the bowl. Proceed to finish carving the handle, removing as much timber as possible without compromising strength. When you're 95% finished, it's now time to stop carving and allow your spoon to completely dry or season.

Seasoning usually only takes one or two days (**photo 12**). To finish carve the spoon remove any sharp edges, and note your blades need to be razor sharp in this step to achieve an overall nice knife finish. Lastly, apply a light coat of a food grade drying oil: linseed, walnut, tung or sunflower oils are my preferences.

Regardless of your woodworking journey I encourage you to try spoon carving. There is something immensely satisfying about taking a branch from your garden and turning it into a useful object within hours, utilising only few tools in a dust free, quiet and transportable woodwork style.

Spoon carving has much to offer the pondering philosophical woodworker and designer. I can safely say you are only as good as your last carved spoon, and your last spoon is never good enough, and that will keep you hungry for a lifetime.

Photos: Barton Chesworth

Barton Chesworth is a green woodworker and spoon carver who lives in Brisbane. Email barton.chesworth@gmail.com or see Instagram @bartonchesworth



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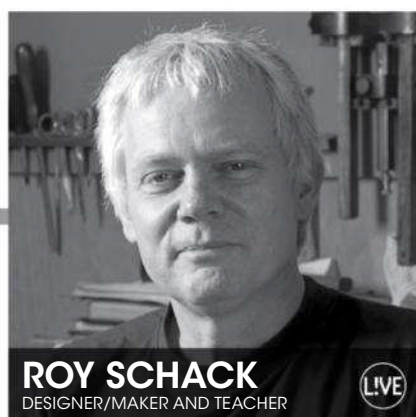
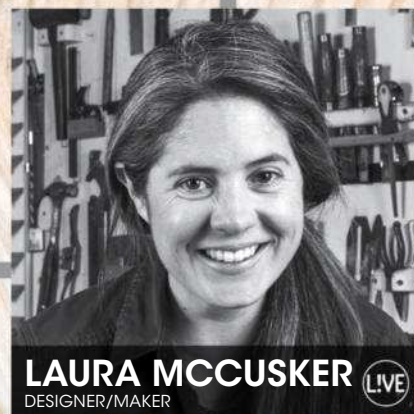
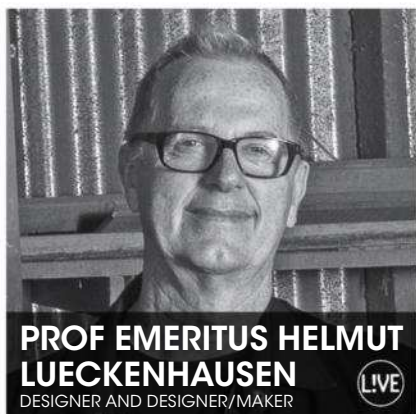
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Ben Percy in the Freshwater Senior Campus workshop in Sydney where he teaches. Photo: Jack Bussell

Elemental Design

Refinement is the design ethos that Ben Percy upholds and communicates to others. Story by Linda Nathan.

Designing is not easy but it's a skill you can learn. It's something I've been practising and working on for the last ten years, constantly drawing and observing', said Ben Percy, 31 when I met up with him recently in Sydney.

Ben is a maker and also a teacher, one who enables others to discover the confidence in themselves that they too can imagine and create. His capabilities and communication skills have made him sought after as a teacher wherever he has been a student. It's the things he has designed and made however, that initially brought attention from the press.

The Pod, a student piece that became a long-term project, was 256 pieces of wood, each tapered and shaped from solid wood by handplane and spokeshave



Mantis hall table, Tasmanian blackwood, koto. 'I'm always designing around that hero shot.'
Photo: Jack Bussell



Q/A

Are you more of a designer or a maker?

One package. Some people are exceptionally good at creative designing but that's where they stop and haven't produced. Being a designer maker is a strong asset especially when it comes to designing for production, understanding how the material works and what you can and can't do.

What's your design aesthetic?

I tend to look at much more organic shapes, flowing clean lines, joints merged together, everything seeming to have a purpose. I look at the negative space, so that what is there, is there for a reason.

How important is the medium itself to you?

A lot of the time the material will dictate certain aspects. Sometimes the design will grow from what the material's telling me.

Hand tools or machines?

Both. I'll remove waste and get something close, but then it's a case of finessing a joint to be as clean as possible. I do lot of hand shaping because I really enjoy it.

Favourite tools?

I think the spokeshave is one of my favourite tools and I love the texture it leaves. Such a nice connection between maker and piece. And patternmakers rasps. Those two, along with machines.

Most important thing you do with Year 12 students?

Dedicate time to sit down and plan with them: deadlines are us!

What do most woodworkers overlook?

I see a lot of woodworkers who rush the finishing of their projects. Attention to detail in sanding and finishing is what can make or break a project.

Your most often made mistake?

Taking too much on at once.

Biggest woodworking disaster?

I wasted \$400 worth of timber when prototyping one of my *Flex* chairs out of some incredibly figured yet cranky American black walnut as the laminates kept snapping on me when bending. Took me four goes but I eventually got there by reducing the thickness of the laminates and building a new former.

Final word on woodworking?

Never stop learning.



in a homage to Eero Aarnio's *Ball Chair*. Ben is adept at CAD and CNC but this labour of hand tooled love has become a signature piece. Would there ever be a Pod 2? 'I'd probably jig that one up', grinned Ben.

At the University of Newcastle, halfway through degrees in teaching, design and technology, Ben realised the practical subjects were kindling more of a passion. 'I just wanted to learn as much as I could and challenge myself, step out of my comfort zone and focus on learning skills that I could also then teach better.' The result was a follow-up year studying full time at Sturt School For Wood. Several of his recognisable designs, including *The Rocker* and *Flex Chair*, were developed during that time.

Being one of six designers invited to design a piece for American Hardwood Export Council's Seed to Seat project put him in the company of high profile industrial designers such as David Trubridge and Adam Goodrum. The theme was to audit the environmental impact of design

and the resulting work was shown at Sydney InDesign in 2016. In the same year he was invited to create work for Treecycle 2017 from wood salvaged from Royal Botanic Garden Sydney.

Where some makers arrive at teaching as a way to make their lives more financially sustainable Ben's interest was there from the start. 'I've come at it from a different angle to a lot of other furniture makers that have been running businesses successfully for a long time and then share their knowledge through teaching. From an early age I knew that I wanted to be a teacher. My brother is a teacher. I saw what he did, and he was really good at it.'

While studying Ben also taught. At university he was offered a job as a technician in the architecture school. At Sturt he was able to supplement his material and living costs by teaching at a local high school that wanted him to stay on.

Ben's students are also attracting attention. One of his year 12 students



Clockwise from opposite page:

Arlo Dining Table, American black walnut, private commission. Photo: Jack Bussell

The Pod. A homage to Eero Aarnio's 1960s *Ball Chair*, Ben used boatbuilding and patternmaking techniques in a piece-by-piece build for his final project at uni. 'No surprise I didn't finish in the 50 hours allocated. I was highly ambitious – but that's the story of my life. It ended up going to Sturt with me. I turned up with a toolbox...and *The Pod*. It sat there, living in the workshop and became a doorstop, a very elaborate and massive one. But in between my other projects I continued to finish it.'

The Rocker, Queensland silver ash, macrosuede. A modern take on the traditional rocking chair which Ben now makes to order. Photo: Muller-Maher Photography

Interior view of *The Pod*.



Top and above: *White Oak Coffee Table* and detail of decorative frame joinery, 2016, American white oak. Photo: Carol Gibbons

Left: *Undergrowth Coffee Table*, made from African olivewood for Treecycle 2016. 'The grain was next level with this wood so I had to get curvaceous with the joints to keep with the theme.' Photo: Carol Gibbons

in 2016 was the outright winner of AWR's Student Awards and several were commended this year. In 2017, his year 12 industrial technology students were first, second and tenth in NSW's top ten, while another won first prize at Shape 2017 for a piece that was exhibited at MAAS Museum, Sydney.

When Ben started teaching at Freshwater Senior Campus, design and technology had floated as a lower performing area of the school for around 10 years. There are now students who specifically enrol at Freshwater to study design.

'The students that are coming now know what they're in for. They start their major year 12 works in term four of year 11', said Ben. 'Some are already crack makers, but I've still got those that haven't done any woodworking'. In fact this year's cohort shows a serious range of skills, including one who had already built eight hollow timber surfboards. 'I've got students that have their own 3D printers and come into class: "Sir, I've printed another prototype...". One has a dad who has a CNC router so he'll come in with CNC-cut templates – and then there are some that I

feel like they haven't turned on a computer in their life. There's the whole spectrum.'

Digital skills are nowadays important but not a solution in their own right. 'Students are taught to use CAD but still start fundamentally from hand drawings because if they're not expert at CAD the designs they produce will tend to be clunky and heavy looking.

'One of the first things I tell my students when we start designing is that we are stepping as far away as we can from "chunk". It's often like they have only ever been taught how

to draw a square and then bulk it out to a rectangle. I like to introduce circles and curves, and they like it. The idea is, we're going to create something sexy.'

'With my own work I try and strip away what's unnecessary. I like the stick figure way of drawing. I start designing with just single lines because you can't get any more elegant than that, and you can always add width to it.'

Giving feedback is important but there's an art to it. 'When I was at uni there were lecturers that were extremely brutal. Constructive criticism can bring it back down to aesthetics and suggest simple changes, or sometimes I'll suggest a designer or maker that has a piece with a similar aesthetic and tell students to look them up. It's case by case though, there are some students that I can stir up a little bit and say, "come on, you can park a truck on that thing!"'

Ultimately it's about knowing your students, not only how they learn but also what makes them tick and how to get the best out of them. 'It's nice to be able to push the ones that have a competitive edge about them, but we're pushing quality, not necessarily who's the best', Ben said.

Maintaining a design practice and teaching full time is a big load, but in Ben's case it's clear that one pursuit fuels the other. Does he need to choose? 'I wonder that myself. It's something that I wouldn't want to give up. My own furniture work is a major influence in my teaching and for my students. Students ask me: would I want to work as a full time furniture maker? And I say yes... but I'd still be teaching.'

Ben Percy also teaches part time at Heartwood Creative Woodworking in Sydney. Contact Ben Percy via www.benpercydesigns.com



Left: Treecycle Corner Cabinet. 'As most of the furniture makers who worked with African yellowwood for the Treecycle 2016 exhibition found out, this timber knows how to party! Due to relentless timber movement and splitting as the timber stabilised, this piece took an two extra years to complete.' Photo: Jack Bussell

Below: American tulipwood acoustic wall for the Northern Beaches Secondary College Performance theatre. Photo: Jack Bussell



Making an Infill Shoulder Plane

Ian Wilkie shows you how to saw, file, sand, peen and refine brass and wood to make your own shoulder plane.

Although they may not be your first priority in woodworking tools, shoulder planes are very handy for traditional hand work. Nineteenth century infill shoulder planes were minor works of art, with bronze or steel bodies 'stuffed' with exotic woods, but they are relatively simple in construction and do not require any special skills to make. The combination of spectacular wood and brass can make a very attractive tool.

There are several ways to make the metal body, but perhaps the easiest way is to cut brass pieces from stock bar and rivet them together. This requires only basic tools and a little care to make a strong, neat plane body.

The plane I will describe was fabricated from readily available, standard thicknesses of brass bar.

Sides of 1/8" (3.2mm) thick, plus core-pieces of 1/2" (12.7mm) thickness, make a body 19mm (3/4") wide, which suits the 19mm Qiangsheng shoulder plane blade I used.

The materials cost me around \$55 (\$30 for brass and \$25 for the blade) and it took me all up 12 hours to make. I didn't bother with a screw adjuster because they can be more bother than they are worth on this type of plane.

Setting is not difficult using a small hammer to tap the blade, and you rarely need to change it between sharpenings. The finished plane weighs just shy of a kilogram and has a nice heft.

The tools required include a hacksaw, a jewellers saw; a couple of flat files

(one fine, and one coarse for the rougher work); a chainsaw file around 7 or 8mm diameter for smoothing inside curves; a small, extra-slim triangular file (or needle file) for the corners; some small G-clamps, and a medium sized (6–8oz) ball peen hammer.

A drill press is desirable, but not essential. The straight cutting, particularly of the thicker material, can be done with a 1mm cut-off wheel in an angle grinder, but do ensure the work is held securely before using any power tool.

Blade-bed angles for shoulder planes vary between 15 and 20°. I opted for 15° because it suited the bar stock I used, but 20° works just as well in my experience. The side profile is copied from an old G. Millers plane that appealed to me.



A suite of shoulder planes made by Ian Wilkie.



A 25mm brass shoulder plane with ringed-gidgee infill.

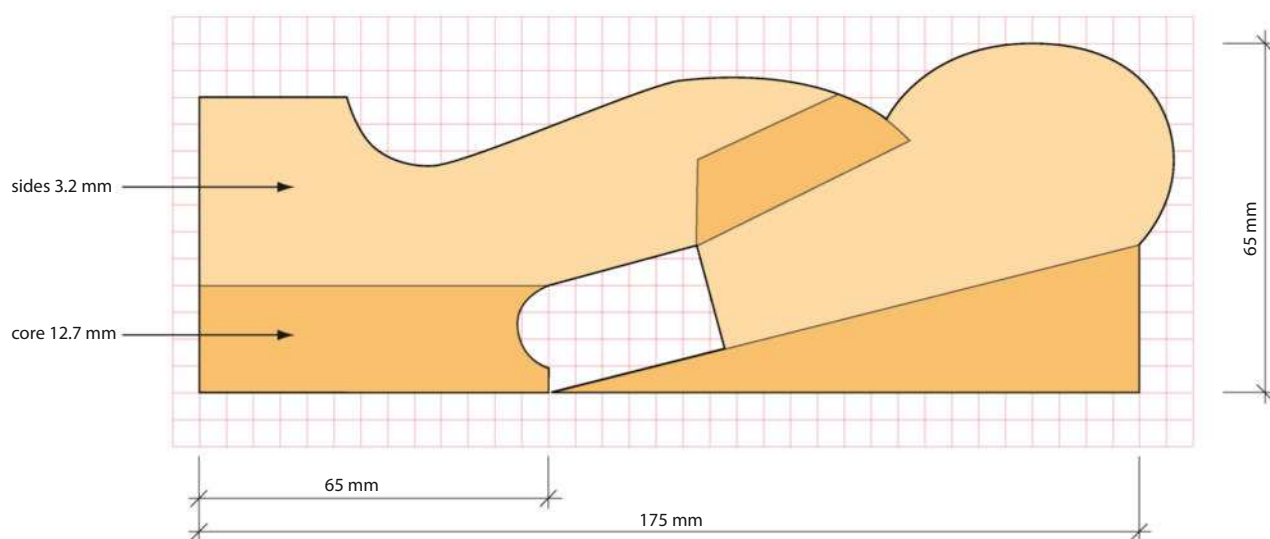


Fig.1 Brass body dimensions (scale to suit)

The dimensions are shown in **fig.1**, but there is no 'standard' shape for shoulder planes and you can choose whatever pleases you. If you use a different blade or side shape ensure the arch over the throat cut-out is deep enough to maintain body stiffness, and also allow for sufficient protrusion of the blade tang for adjustment. Note also that shoulder planes usually have a longer toe than regular bench planes (typically, more than a third, but less than half of the sole length). This helps to register it firmly on the work when starting the cut.

The shaded areas on the diagram represent the 1/2" thick core pieces through which the fixing rivets pass. The blade cannot be removed through

a fine mouth, so allowance must be made for it to be twisted vertically and withdrawn through the wedge slot.

Parts for the body were cut from two pieces of brass; the core pieces from a 140mm length of 13 x 39mm (1/2 x 1-1/2") bar, and the sides from 350mm of 75 x 3.2mm (3 x 1/8"). Rivets were cut from 5/32" (~4mm) brass rod. Some makers prefer steel rivets, so if you like the contrast, bullet-head nails are soft and easy to peen, and make excellent rivets.

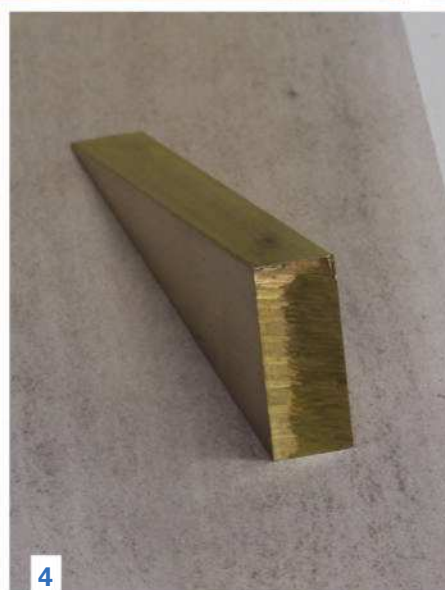
Saw, file and sand the shapes

Make accurate cardboard templates for your sides and core pieces, but before transferring to the brass,

draw-file the edges that will form the bottom of the sole to get rid of the slight rounding that occurs on the edges of drawn bar. I cut out the shapes on a crude 'bird-mouth' clamped to the bench (**photo 1**).

A jewellers saw takes a little bit of time to master, but after a few broken blades you'll get the hang of it. Set a steady rhythm, and try to cut close to your layout lines to minimise cleaning up, but don't cut into your lines, especially along the sides of the blade bed.

It required a few different approaches to reach far enough into the cuts with my saw, but I managed it by making multiple cuts as shown in **photo 2**. I couldn't reach the top of the mouth



opening from any direction, so I used a broken hacksaw blade with some cloth wrapped around it for a handle – crude, but it did the job.

Clamp the cut out sides together (**photo 3**), and file to the lines. File the edges of the small triangular bits that form the sides of the blade-bed straight, but leave the lines just visible for reference when assembling the body.

The core pieces can be cut out with a hacksaw or a cut-off wheel. They need to be accurately squared up, and I find the best way to get them flat and square is to file close to the layout lines, then lap on some 180 grit paper stretched very tightly over a flat surface (**photo 4**). Check constantly with a try square and make any necessary corrections by leaning on the high side.

After a couple of hours of cutting, filing, and sanding, the parts are ready to join (**photo 5**). Sand all

mating surfaces smooth and clean. Leave the toe-piece square, it will be shaped to match the throat cut-out and form the mouth after assembly.

Mark, punch and drill rivet holes

Rivet spacing is not super critical, but you need to place them close enough to pull the sides tightly and evenly against the core pieces. I used six through the blade bed, five through the front piece and two for the wedge block (**photo 10**).

Mark out and centre punch the rivet hole positions on one side, then lightly clamp the sides to the blade bed and toe piece. Sit the clamped assembly on a solid, flat surface, and align the core pieces with the sides. Aim for minimal filing and cleaning up of this area after assembly, so you won't damage your nicely squared blade-bed. When all is shipshape, tighten the clamps firmly and drill the first rivet hole through the blade bed.

Each side of the rivet hole needs a countersink, but don't make these too deep, somewhere between a 0.5 to 1mm deep chamfer will do nicely. For this job, I use a tool I made from an old triangular file with the three faces ground at approximately 75° to form a sharp-edged point (**photo 6**). Four or five twists in brass are enough to produce an adequate, clean bevel – easy and safe.

Setting and peening the rivets

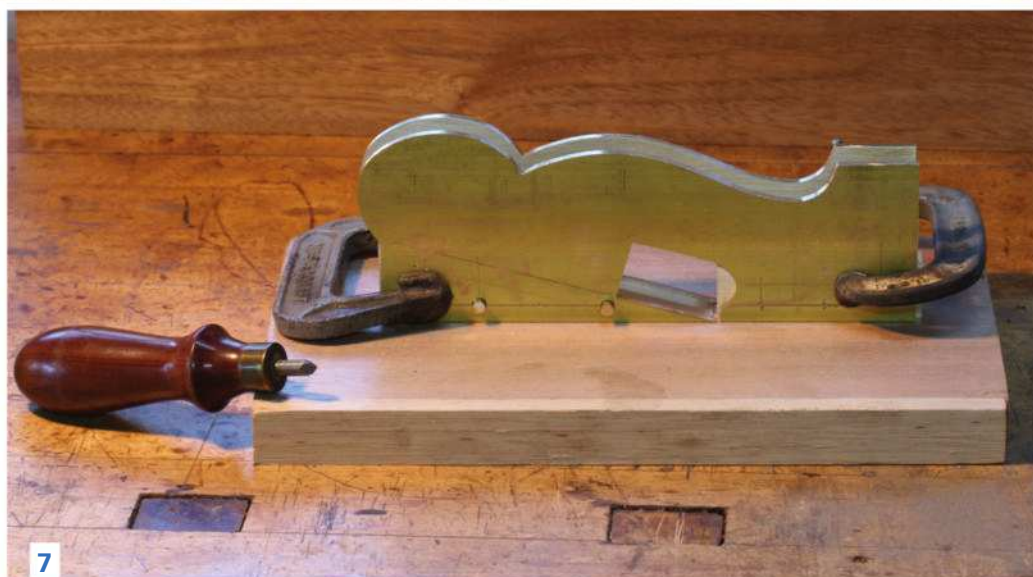
After forming the countersinks on both sides, cut a rivet to length, allowing about 1.5mm protrusion each side. Don't make them too long or you'll have trouble hammering them down enough to fill the countersink bevel. Tap it into the hole, check that everything is still in position, then drill a second hole and place its rivet (**photo 7**). Do the same for the toe-piece.



5



6



7



8

1. First stage in cutting out the sides.
2. Showing the saw cuts.
3. Smoothing sides to layout lines.
4. Squaring the core-piece for the blade bed.
5. Parts prepared and ready to assemble.
6. Crude but effective home-made countersinking tool.
7. First two rivets in position.
8. All rivets placed and set.



9. Projecting corners of sides soldered to blade-bed.
10. Rivet heads filed and ready to sand flush.
11. Side partially sanded, rivets disappearing.
12. Fitting the infill.
13. Test flight.
14. Full-width shaving, 0.01" thick.



If you've never set rivets before, practise by setting a few in some scrap pieces. File them flush and check that you have properly filled the bevels. Try prising the scraps apart when you've finished to see how well they hold. If you really mess a rivet up, don't panic, they can be drilled out and done again.

Any lump of heavy, flat steel will do for a peening block. Hold the hammer close to the head and use light blows, hitting the rivet head with the *ball* not the flat face. The rivet will slide back and forth at first, so work alternately from each side until it locks in place with roughly equal protrusion on both sides.

Strike near the centre at first, going round in a small circle and gradually working the metal out to round it over and push it down into the countersink. If you mis-hit, light dings will sand out, but if you find you have lots of misses, a couple of layers of duct-tape around the rivets will provide some protection to the sides. Once you have a pair of rivets in each piece, the remainder can be drilled and set.

Fitting the wedge block

Now fit the wedge block. To ensure it ends up in the right place and at the right angle, I make a temporary wedge from scrap wood (don't forget to allow for the blade thickness).

Position and clamp the wedge block against this, and drill for its rivets.

Photo 8 shows all rivets in place and hammered down. They don't look very pretty at this stage, but that will soon change.

To add some support to those thin projecting bits at the end of the blade bed, I silver-soldered them to the core, back to the first rivet (**photo 9**).

Cleaning up

To clean up the rivets, file off as much as you can without marking your sides (**photo 10**), then lap them smooth using sandpaper stretched over a



flat, solid surface like a tablesaw top. Begin with 120 grit, and the rivet heads should start disappearing quite quickly (**photo 11**).

File any projecting bits of core flush and square with the sides, and clean up the throat and mouth. I tidied up the sides with fine files (round, flat, and triangular), using them as you would a spokeshave, holding the files straight across the edges and pushing them away in a straight line.

Take special care smoothing the sides to the blade-bed, this is the heart of your plane and it needs to be perfectly flat, and square to the sole if you want your plane to function well.

All filed surfaces can be further refined with sandpaper wrapped around a small stick (or a bit of dowel for the inside curves). Sanding to 1500 grit will give you a very nice matte finish, or you can buff it to a high shine if you wish. Add any detailing as you see fit – I used varying width chamfers and some 'lambs-tongues' to give my edges a bit of interest.

Timber infill and wedge

Mulga was used for the infill and wedge, but any dense, dry wood should be suitable. I made a cardboard template off my drawing, cut it slightly oversize, then sanded and pared for a tight fit. Having the wood stand proud of the brass is traditional, so the visible edges were shaped and sanded (**photo 12**) before assembly. I then I glued it in place with epoxy, wiping off any squeeze-out with a rag soaked in methyalted spirits.

The final steps are lapping the sole flat and square to the sides and opening the mouth. Don't forget to have the blade in firmly (but not projecting) while you are lapping the sole, so the bed is tensioned as it will be in use.

Cut and file the mouth

A very fine mouth is desirable, so proceed very carefully with this step. I cut a small amount off (a bit more than a 1mm) the sharp end of the blade bed, then made a clean cut across the back of the toe-piece and checked if the blade would come through. It didn't quite, so I used a very thin, flat file and filed a little at

a time off the front of the mouth until the blade would project with a gap of around 0.25–0.5mm.

Take it slowly, because if you over cut the opening you cannot 'fix' it by using a thicker blade as you can with a bevel-up configuration. Don't despair if it ends up a bit wide, the plane will still cut endgrain very well, but with a wide mouth, the edge of the blade is a bit more likely to catch on the corner at the start of a cut.

Time for a test-run (**photo 13**). You may have to tweak the edge of the blade a little (mine was a degree or two off square as it came), but with a little fettling, your plane should be capable of taking full-width shavings of 0.025mm (0.01") (**photo 14**).

Finally, apply your favourite finish to the woodwork (I used Shellawax buffed with a cloth wheel), and the job is done...

Photos: Ian Wilkie



*Ian Wilkie is a Brisbane based woodworker and toolmaker.
Email iwwilkie@bigpond.com*



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IMAGE: LAURA MCCUSKER'S WORKSHOP. PHOTO: NATALIE MENDHAM

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A Dream Commission

Simeon Dux's recent breakfront bookcase commission was a challenging but enjoyable experience.

It's not often you get a client who keeps telling you to add more and more detail to a piece you're making for them. Yet, that's how it was for Melbourne maker Simeon Dux, 33 former carpenter and joiner turned fine woodworker.

'I had these wonderful clients with really lovely taste. They wanted a piece that would match the style of their other furniture and they kept asking me to add more and more decorative features,' said Simeon.

The brief was for a display cabinet to house an eclectic collection of books and other items. It would sit in a home office and was to have a 'library feel'. With a love of antique furniture and detailing, Simeon's clients were looking for a piece that would complement and not take away from their other treasured pieces.

The resulting breakfront bookcase was the product of research into Georgian, Regency and Federal styles with elements of each brought in and blended. The bookmatched door panels and drawer fronts came out of a 2.7m x 350mm x 38mm board of American black walnut. Extensive crossbanding, barred upper doors and built-up crown mouldings made this commission an exploration of traditional techniques.

Was he nervous at the outset of such a large commission? 'To be honest, no. I just divided the job into sections – but I did have to settle myself down, and I did underestimate what was involved.'

Getting it done over a three month period (less a few weeks on other jobs) kept the pressure on, as did the fact there was no material to spare. 'There were a few new things I was forced to do because of the design of the piece, but it was a good learning experience as well,' Simeon explained. 'Basically I had to get everything perfect first-off. I didn't have the materials or the time to muck anything up and have another go.'

'If I'd had to redo the crossbanding of the veneers on the doors it would have set me back another four or five days, getting



Breakfront bookcase in American walnut by Simeon Dux.



Above: The turned columns add some grandeur to the piece and visually support its weight.

Above right: Detail of crown moulding composed of four layers and crossbanding which also frames the doors.

Below: American poplar drawer sides allowed the handcut dovetails to pop.



the stock, machining it up, veneering it.' A few test pieces and prototypes later it was a matter of 'giving it a crack with the real stuff and hoping it panned out – and luckily it did'.

A considerable amount of handwork was involved. 'The dovetails were handcut throughout and there's no other way to do muntins on barred doors other than sit there with a nice sharp block plane and a shooting board to cut all those angles for the patterned bars', said Simeon.

One of the most challenging parts was the cockbeading on the doors and drawers. 'A lot of furniture of those times had pretty outrageous veneer on the front and they tended to protect the edges with cockbeading. I did it the traditional way where you piston fit the drawers, then rebate the fronts, then add the cockbeading over the top.'

The crown moulding also presented some difficulties. 'In theory it shouldn't be that hard but when

you're doing a stacked moulding and applying layers there's plenty of margin for error. If one is out a little bit, as soon as you try to mitre it with the next part there will be a lot of fiddly work to correct those minor issues.'

It was however the challenge of processes and fine detailing that led Simeon into cabinet and furniture making after 13 years of building, carpentry and joinery. 'Dad was a builder and never said no to a job, so if they also wanted a coffee table or some windows repaired we did that too. I found that I enjoyed the finer things like fitting doors and hinges.' After building his own house Simeon went on to make his own furniture. Soon after he decided 'it was probably best to go and get some lessons'.

Learning from Alastair Boell at the Melbourne Guild of Fine Woodworking (where he now teaches) took his furniture making skills to the next level. Was he a dream student? 'Well, not quite', laughed Simeon.

Clockwise from below: Making the muntins for the barred doors involved hand fitting each muntin.

Melbourne maker Simeon Dux stands with the completed piece.

The door and drawer panels were cut and bookmatched from the one board.



'I was probably overly enthusiastic, and because I was used to working at a quick pace I still expected to do that. When you're learning that can sometimes be a bit of a problem, you're better to slow down. I'm sure there were times when I drove Alastair a bit mad!'

Simeon has now been a full time maker for two and a half years. Before that there was a five year transition period where he still worked as a carpenter while refining his fine woodworking skills. Currently all his work is by commission, however creating a collection of pieces that he could one day exhibit is a long term goal.

Making the bookcase was a lengthy and complex commission however the result achieved was highly satisfactory and often it's through constraints of time and budget that a higher level of skills can be attained.

Words: Linda Nathan

Photos: Peter Tarasuik

Contact Simeon Dux via www.simeondux.com





Working With Curves, Part 3

The final in a series by Peter Young looks at techniques for making curved doors.

In issues 95 and 97 we looked at methods for joining curved elements and for making curved drawer fronts and rails. In this article we are looking at methods for making a curved door.

Two ways

The two most commonly used methods for making a curved door are coopering and lamination techniques. Coopering is a process where narrow battens are edge joined together. If the edge is less than 90°, the result will be a staggered curve which can be faired after glue-up.

If you intend to use this technique it is a good idea to make the door before making any of the carcass components of the cabinet as it can be quite difficult to accurately fit a coopered door to an existing curve. Much better to fit the curve of the carcass to the door.

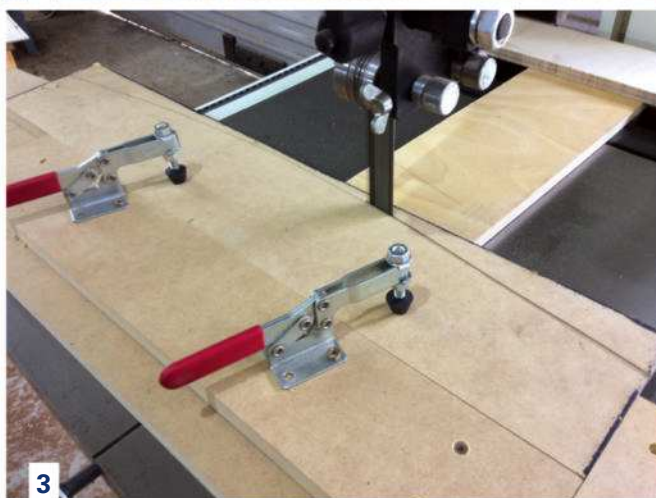
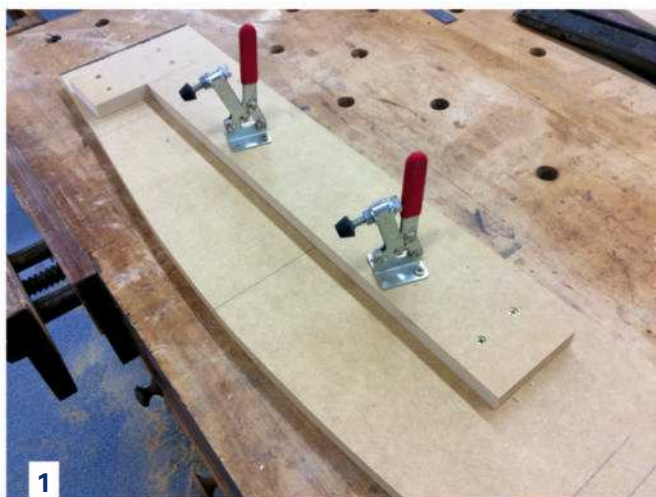
On the other hand, the laminating technique is very versatile. It can be used to make doors, or other components to existing curves, even when these curves have variable radii, for example a door with a sigmoid curve. However, the technique does

require an investment in time to make the necessary bending form which may not be justified for a one-off project.

Making a bending form

As with all work involving curves, the critical first step is making an accurate full size plan view drawing. The next step is to make a bending form which can be used in a vacuum bag to form the door.

A bending form is essentially a torsion box with the ribs spaced about 50mm apart and covered with 3mm MDF or bending ply. The convex curve of the



bending form must match the inside concave curve of the door. So before making the ribs of the bending form, you need to know what the door will be made from and its thickness.

Working from the drawing, I make an MDF template for the ribs of the bending form. This template is longer than each rib and also deeper, allowing for batons to be screwed onto it to hold the rib blanks (**photo 1**).

The template is used with a bandsaw template cutting guide (**photo 2**) to cut close to the final shape (**photo 3**) before finalising the cut on the router table (**photo 4**). This method allows quick and accurate production of the ribs.

A series of MDF spacer blocks are placed between the ribs to provide lateral support and an even distance between the ribs of about 50mm (**photo 5**). The ribs can now be

covered with bending ply which is tacked in place before a sheet of thin birch ply is glued over the ply in the vacuum bag. Locating battens are added so that when the door components are being glued up in the vacuum bag they do not move around and get distorted (**photo 6**).

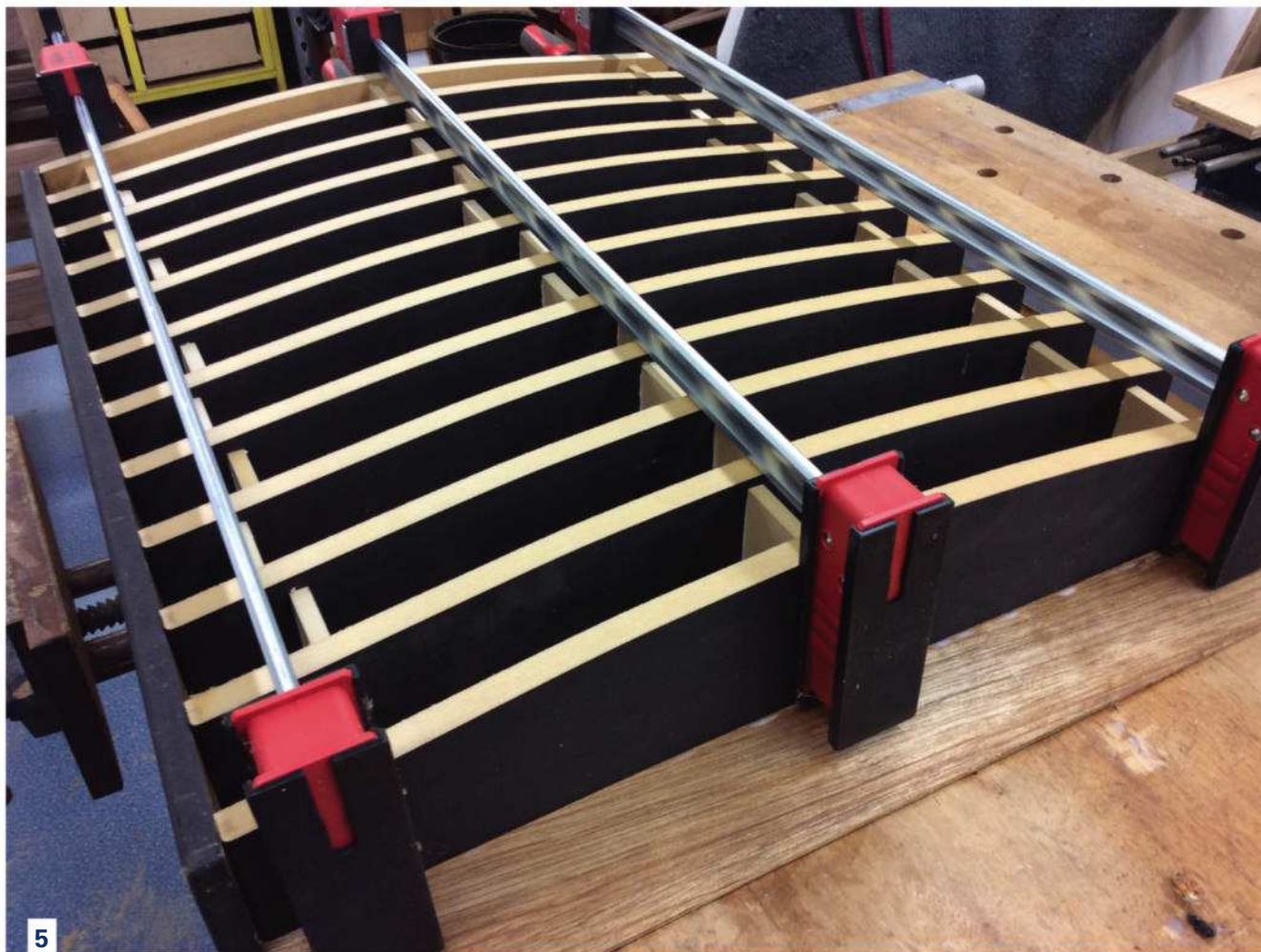
The material

There are a number of different options to use as laminations in a door, but bending ply is commonly used in this application. This is a commercial product where the plies are glued up with the grain direction running in the same direction in each layer whereas with regular ply, the grain of each layer runs at right angles to the layer above and below, adding considerable stiffness to the final product.

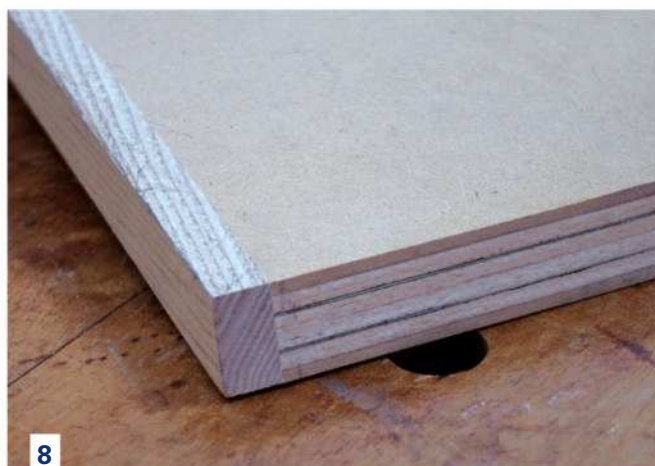
Bending ply can be purchased in 2400 x 1200mm sheets, with the bend either going across the sheet or along the sheet. For curved doors,

Main: Silver ash cabinet by Peter Young. Building curves into your cabinetry can add a subtle and distinctive design element.
Photo: Andrew Porfyri

1. Template for cutting the ribs for the bending form. For use on the router table, a long lead-in section is required as well as a method for securing and holding the rib blanks.
2. Showing a template following jig for the bandsaw, where the guide is below the part to be cut.
3. Cutting the rib component on the bandsaw.
4. The assembly is then taken to the router table for the final cut.



5. Assembled ribs with spacer blocks between, the ribs are about 50mm apart.
6. Completed bending form. The ribs have been covered with one layer of bending ply, and one layer of 1.5 mm birch ply. The batens have been added to make sure the door components do not move around during vacuum pressing.
7. Components of the door core; two layers of bending ply covered on each side by a layer of 3 mm MDF.
8. Core components have been glued up and solid American ash has been added to the top and bottom of the door to provide purchase for the knife hinges.
9. Silver ash veneer in place with a 'hinge' of blue painters tape along one edge.
10. Folding back the silver ash veneer prior to glue-up.



I commonly use two layers of bending ply covered by 3mm MDF (**photo 7**).

Choosing hingeware

Another consideration is the type and placement of hinges. It will be necessary to add solid wood edging to the doors to provide purchase for the hinge screws. For regular barrel hinges the solid wood edge needs to be along the long sides of the door, while for knife hinges the solid wood edge needs to be at the top and bottom of the door.

Layer by layer

The process that I use is to glue up the two bending ply layers first, then glue on the two layers of MDF. I now glue on the solid wood edging, making it oversize so I can shape it to the curve of the door after the glue has cured (**photo 8**).

The inner and then outer veneers are next glued on. To hold the veneer in place during glue-up, I make a hinge from wide blue painters tape running along the long edge of the door (**photos 9, 10**). This allows me to spread the glue on the door core and then quickly get the veneer into place and into the vacuum bag.

The final step is to add a 3mm strip of solid wood, the same species as the veneer, on all four edges of the door, to protect the veneer from damage.

There is quite an investment in time and effort when using the laminating technique for doors or other curved components, but the result is a stable door, with a curve which exactly matches the other curved components of the cabinet.

Experimenting with the techniques for curved work covered in these stories can give you the means to be much freer with your furniture design work.

Photos: Peter Young, Linda Nathan



Peter Young is a studio furniture designer and maker who lives in Brisbane. Email Peter at pydesign@tpg.com.au





Woodturning as a Living Craft

In the West, woodturning is mostly a hobby pursuit, however in Japan trade woodturners produce functional items for everyday use. Story by Terry Martin and Yuriko Nagata.

Woodturning is one of the oldest crafts in the world, but in many Western countries it survives mainly as the preserve of hobbyists. However, in Japan woodturning continues as a vibrant trade and almost every home contains many turned wooden objects. In fact there are whole regions and towns where the economy depends on woodturning.

It is not hard to find turned work in Japan, but you have to know that the term 'woodturning' is not familiar to most Japanese. If you go into a department store and ask to see woodturning, you will be met with a blank stare. But if you ask to see lacquerware, you will probably be guided to a rich selection of work – turned wooden bowls, dishes,

platters, trays, cups, lidded boxes and more – all finished with traditional urushi, or lacquer. They are mostly functional wares with no pretension to being art (**photo 1**).

Japanese turning technology came from China via Korea and grew into a strong industry that has survived Chinese turning, which has almost disappeared.



Main: A student at the Yamanaka Training Centre practices finishing a platter with a scraper. She is seated and controls the direction of rotation with foot pedals. Her uma is horizontal and easily moved on the flat table.

1. A display of turned wares in Japan
2. Mr Tanaka sits facing the headstock and his simple tool rest can be moved without changing hand positions.

Most Japanese don't know about the turners, but there are thousands of them still producing an astonishing quantity of work at a rate that would leave most Western turners gasping. A traditional Japanese apprenticeship is hard and the emphasis is on speed, efficiency and accuracy. Innovation is not usually prized and faithful reproduction is paramount.

Japanese turners are very protective of their 'trade secrets'. The importance of this conservatism is explained well by Endo Motoo in his book *Nihon Shokunin Shi* (A History of Japanese Tradesmen), published in 1967. He states: 'If you learned a trade in the past, what you learned was defined by the clan or community where you learned it. Technology was considered secret and never shared.'

The individual tradesmen were strictly bound by these traditions and if they attempted to step out of this arrangement, it meant they lost their livelihood'. This attitude still prevails. I asked one prominent leader of a turning community if he thought an amateur movement such as exists in the West could ever happen in Japan. He snorted with contempt and uttered one word: 'Never!'

Different regions sometimes specialise in certain products, so one town may specialise in dolls, another will specialise in lacquered bowls, while another might produce containers. The turning techniques also vary from place to place. The tool rest that most Japanese use is often called the *uma*, or horse, because it is free-standing and has four legs. Some

are inclined, some are horizontal, while some incorporate a space to wedge tools while sharpening.

For some turners the tool rest is a simple pole rested on a frame (**photo 2**). In many regions the turners sit at 90° to the axis of rotation, while in others they sit end-on, facing the headstock. The variations are many and they highlight how the woodturning populations value and preserve tradition.

Japanese turners forge their own tools using small air-blown kilns fed with charcoal. Simple rods of tool steel are hammered over rounded anvils and quenched when the colour is just right. The ends are forged into a tang and turned handles are fitted. Tools are generally of two kinds, hook tools



3. The hook tool slices very cleanly. Turners constantly sharpen with a quick flick on a whetstone.
4. The Japanese scraper is a very simple tool used with remarkable efficiency.
5. Revered master Torao Nakajima proudly holds a one-off platter that could be used, if you would dare.
6. Mr Suya in his gallery.
7. Eiko Tanaka turning in her coffee shop.
8. A nest of Eiko's bowls that both defy tradition and yet depend heavily on it. She believes her work has more feminine qualities than traditional work.



and scrapers. The hook tools cut with wonderful efficiency (**photo 3**), and the scrapers are a delight to watch (**photo 4**).

Japanese turning does look unusual to those trained in the Western tradition (**photo 5**). For example, the tools extend very far over the tool rest and the movable rest looks insecure compared to our locked-down device. But the speed and efficiency of Japanese turners can't be denied and, after all, they find our techniques just as strange.

Turned wares are marketed in many places. There are small galleries in turning regions where a range of souvenirs are sold, from chopsticks

to platters, and most department stores have a crafts department where lacquerware is sold. While the majority of turners work traditionally, when turners achieve enough status they might produce showcase pieces for sale to turning connoisseurs (**photo 6**).

There are also specialist galleries where high-end turning is available and Kihachi Gallery in the town of Kanazawa is one example (**photo 7**). The owner, Yoshiteru Suya, was born into a woodturning family, but didn't want to be a turner, so he decided to sell quality woodturning. He says that there is increasing interest in turned wood covered in clear lacquer that shows the grain, which he called *kijibiki*.

Yoshiteru sells a little work abroad, but says that it is difficult because if he pushes his individual marketing too much he will be cut out of the local network. In some ways the traditions that keep Japanese turning alive can stifle creative development.

While the strength of tradition explains the survival of turning in Japan, it is also one of the reasons for its decline because most young people don't want to undertake a lengthy apprenticeship and the population of turners is aging.

In response, the Yamanaka Training Centre was opened in 1997. They offer one-year basic and two-year



advanced courses that include turning, lacquer work, tea ceremony, flower arranging and more. Each year they only accept five students and with 28 teachers who are practising turners, they get very intensive training from the best in Japan.

One of these teachers is Master Torao Nakajima and he has influenced and encouraged a whole new generation of turners. Most significantly in an industry that used to be the exclusive domain of men, half of the graduates in recent years have been women. In the coming years Japanese woodturning will face many of the same challenges that caused the decline in Western turning, but there are grounds for optimism.

Eiko Tanaka was one of the first women graduates from the Yamanaka Training Centre. Eiko strongly believes she can bring a new attitude

to the making and selling of turned products and has opened a coffee shop/gallery called Faisons in restored merchant premises.

The shop was designed by her architect husband Masanori and they sustain each other professionally and creatively. He runs the coffee shop and she works quietly in her own glass-enclosed space while the customers sit drinking coffee and watching her work (**photo 8**). Eiko now sells her work through Sara gallery in New York City so she has already circumvented the traditional limits on style and marketing.

The challenges for Japanese turning are great, but the foundations are so strong and the culture so rich that it is unthinkable the Japanese turning communities will let it fade away. We should all hope they succeed.



Photos: Terry Martin

Yuriko Nagata is a researcher with the University of Queensland. Terry Martin is a Brisbane-based wood artist, author and curator. Email: eltel@optusnet.com.au



6 Tips For Better Glue-ups

Charles Mak shows how to de-stress your assembly and glue-up situations.

For some furniture projects, how well the final assembly or glue-up goes according to plan could determine their fate of success or ruin. Some glue-ups are more challenging than others, but seasoned woodworkers always approach each assembly with a great deal of care because they know from experience that some glue-up blunders are too costly to fix.

Dry-fitting, as we all know, is indispensable in each assembly job. In a complex glue-up like the speech bubble shelves shown in **photos 1 and 2** that included dovetails and angled joinery, I would go as far as drawing up and testing the order of dry-fitting before the final glue-up. If you tend to overstress with your glue-up tasks, I have some favourite glue-up tricks to share with you.

1. Laminating boards

To make a thicker stock, we often glue two or more pieces together. However, when two boards are applied with glue and clamped together, they tend to shift, bringing the pieces out of alignment. One simple solution is to place a few grains of coarse sand or salt on one of the mating surfaces and press them together in alignment before clamping. The sand or salt particles will bite in and prevent the boards from moving when clamping pressure is applied (**photo 3**).

2. Gluing up panels

My foolproof approach to panel glue-ups is multi-pronged. First, ensure the surface you're gluing your assembly on is flat, as a warped surface can transfer that warp onto your



1. Angled cauls are the answer to clamping oddly-shaped joints or parts.
2. The final shelf is glued up from two sub-assemblies.
3. The sand bites into the wood, preventing the mating pieces from slipping during clamping.
4. Notched blocks clamped over the glue lines along the ends help keep the boards flush and flat.



glue-up. Second, try to use similar types of clamps, thus keeping any unequal clamping pressure to a minimum. Lastly, break down a wide panel into sub-panels, gluing up two or three boards at a time. Once the sub-panels are cured, glue them up to form the final panel.

To edge glue two boards together, I use regular clamps with notched glue blocks like the ones shown in **photo 4** to ensure flatness. The notched glue blocks of varying lengths can be easily drilled in batches on the drill press and then ripped in half.

When joining, alternate the clamps over and under the workpiece to balance the clamping pressure (**photo 5**). Check for flatness and for any wind while the glue-up can still be adjusted. Finally, make sure you do not move the assembly right away, or lean it against a wall which could lead to warping. I prefer to let a clamped glue-up sit on a flat surface for no less than half an hour before removing the glue squeeze-out.

3. Gluing up dovetail joints

Many traditional woodworkers are taught to hand cut their through dovetails with the pins slightly proud. Custom clamping cauls are then needed to press the tail boards tight to the pin boards. I layout and cut dovetails using the method advocated by Ian Kirby, a British-trained furniture designer and teacher. His method dispenses with the use of clamping cauls for the dovetail glue-up.

Kirby's approach is to cut the joint such that the tail board sits slightly above the ends of the pin board. With no protruding ends, you can clamp the joints with just regular clamps (**photo 6**). Once cured, simply remove the clamps and sand or plane all the surfaces flush (**photo 7**).





5. This wide panel for a tabletop is made of two sub-panels, each of which, in turn, is two boards joined together.

6. The tail boards sit proud of the ends and therefore can be clamped directly to the pin boards.

7. Stop planing or sanding the tail board as soon as its surface is flush with the endgrain.

8. The rectangular panel back pulls the cabinet square and also keeps it from racking.

4. Squaring up a carcass assembly

To help assemble a carcass such as a cabinet dead square, I use what I call 'the back-panel trick'. The technique starts with carefully dry-fitting a carcass square, a task that is usually more stressful to do once glue is applied. Then take the time to size and cut a panel to fit exactly the back of the dry-fitted carcass (**photo 8**).

This method ensures that during the final glue-up, the carcass is clamped tight and pulled square with the back panel in place. You can use this squaring trick even if you have floating panels as the back: you square up the carcass with a sacrificial plywood panel back and once cured, replace the plywood back with the floating panels.

5. Handling glue squeeze-out

Another common gluing trouble is the removal of glue squeeze-out. Glue residue can ruin a meticulously applied finish. My usual way is to apply the glue and wait until the squeeze-out turns rubbery. I then peel off the squeeze-out with a sharp edge (**photo 9**).

I also use the wipe-with-a-wet-rag method. As always, don't apply too much glue, leaving only a thin bead of squeeze-out along the length of the joint. Wipe off a glue spot with the part of the rag that does not already have any glue on it (**photo 10**). Expose a fresh part of the rag to wipe off the next glue squeeze-out and keep the same procedure until the glueline is cleaned.

In some cases, I apply tape at the edge of the joint so the excess glue will go on the tape. I can then peel off the tape after wiping off the glue squeeze-out on the tape with a rag (**photo 11**).



6. Using a forgiving glue

Did you ever wish that you could recover effortlessly from a glue-up blunder with the push of an 'undo' button? Well, reversible glues – such as hide glue or liquid hide glue – do exist and are the closest version of an 'undo' button for woodworkers. For tricky or 'one-shot' glue-up deals, the slow-setting liquid hide glue is usually my adhesive of choice. Not only does it offer a long open time of 30 minutes, it is also reversible with heat and moisture (**photos 12, 13**). Its squeeze-out can also be easily removed with a damp rag.

On occasion, the best assembly tip is to get someone to help you in a glue-up. At other times, these proven tips are the next best thing to having an extra pair of hands – to help keep your blood pressure from spiking!



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9. I turned a broken-down block plane into a chisel plane for glue clean-up.

10. To avoid smearing, never use the part of a rag that already has glue on it.

11. During the dry run, apply the tape to the joint and slit it with a sharp knife. Then

disassemble the piece and apply the glue as usual.

12. One corner was not properly clamped, leaving a visible gap in the joint.

13. Using water and heat, I loosened the joint and applied new glue before re-clamping the joint.





Travelling Tool Box

Vic Tesolin makes a take-away tool box for his essential woodworking kit.

A place for everything and everything in its place is an old adage that couldn't be truer than in the workshop. It is a joy to work in a well organised shop. Workflow is improved, and you don't waste time looking for stuff. In my workshop I have a beautiful vintage Gerstner chest that is home to all my marking and measuring tools. However, I didn't have a smaller solution for travelling that housed my essential tools. These tools are different shapes and sizes with some tools being quite small. With that in mind, I set out to design and build a box that will keep my tools organised.

Start with design

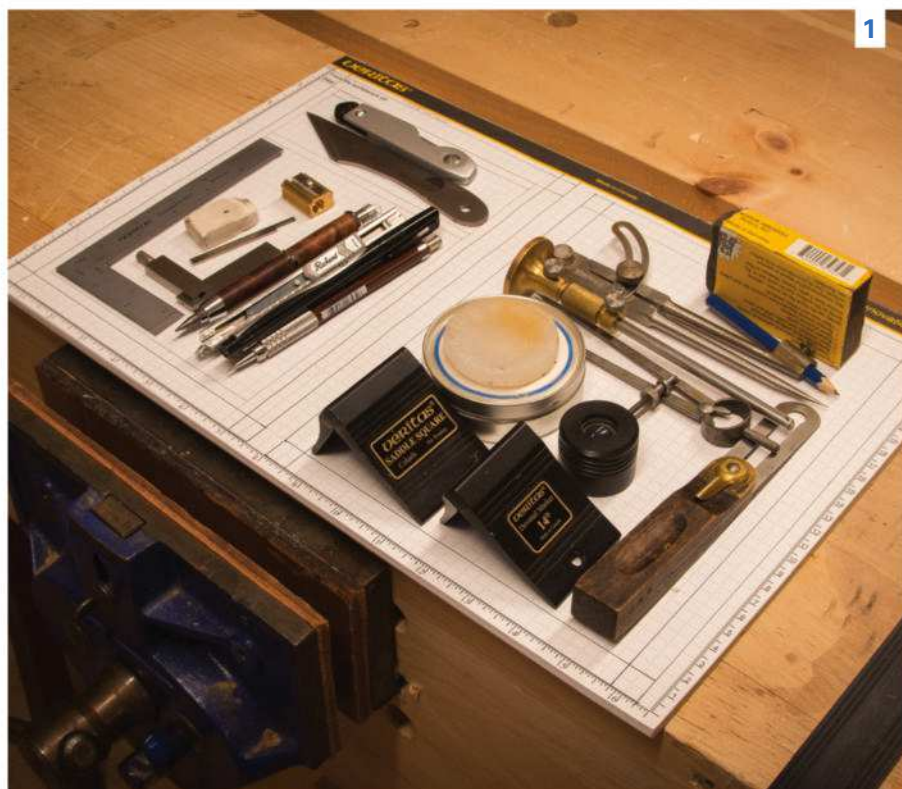
First things first, pile up all the stuff you want to store, and then play with the layout (**photo 1**). In my case, I had some size restrictions for the box because I wanted it to be

able to fit in my larger tool tote. I laid out my maximum size for the outside of the box, then figured out the thickness of my sides.

The sides can easily be made too thick, but this is largely an aesthetic point. I settled on 12mm thick sides for this box which is overall 255 x 200 x 125mm tall. I also decided to include a removable, shallow tray to store the things I use most. Things like pencils, markers and rules will live here. The tray side thickness will be half that of the outer box sides at 6mm.

Prep your material

All too often I see woodworkers buy the perfect width of board and just use whatever that board gives them. I prefer to start with wider boards so I have some choice



1. Some grid paper will make the layout easy, especially if you can work full-scale.
2. Chalk is a great marking tool for rough timber and initial layout.
3. The cabinetmakers triangle helps to keep your parts organised.
4. The handplane is still the fastest way to prepare the surfaces of these boards.

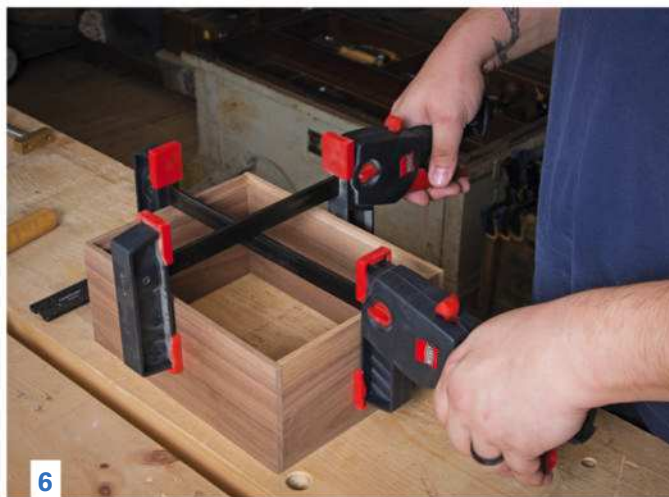
as to where I take out my parts. I'll do a rough layout using chalk so I can change the marks if I change my mind. A quick wipe with a damp cloth will erase the chalk (**photo 2**). I spend a lot of time at this stage of the process. To me, one of the best things about being a woodworker is having the ability to choose the grain, figure and colour of the wood so I can achieve visual harmony.

The box is made from black walnut (*Juglans nigra*) and the board I had was just over 50mm thick. I resawed the board at the bandsaw and finished at just over 12mm which left me some room for handplaning the sides and lid piece (**photo 3**). With the boards surfaced, I marked them with the cabinetmaker's triangle to lock in the orientation (**photo 4**). I like using a white pencil for darker woods because a regular pencil all but disappears on walnut.

Rebates all around

I decided to go with rebates bolstered with 3mm wooden pins to join this box together. I wanted a simple, plain aesthetic for this box and something like dovetails would have been a bit much. There are many ways to cut the rebates with either machines or hand tools. With only one box to make I opted for the hand tool method (**photo 5**). If I had to make multiples then I would have looked at a machine option.

With the rebates cut on the corners of the two long sides, I then cut the rebates for the 6mm Baltic birch plywood. The nice thing about using rebates in the corners instead of dovetails is that the bottom rebates are all through cuts. I chose to rebate the bottom in, just in case I have



5. A rebate block plane is perfect for this size of work.
6. A dry-run prior to adding glue can save you a lot of headaches and profanity.
7. Check the tray supports often as the glue sets in case they slip.
8. Don't be heavy handed with the glue so you won't have to worry about cleaning up.
9. Take the time to accurately lay out the pins for a refined look.
10. Peen the pins for a clean gap-free fit.
11. Better to hit forceps than your fingers.
12. I used a sharp plane with a light cut to smooth the exterior surfaces.

to replace it. Replacing a bottom that is sitting in a groove is impossible, so rebates it is.

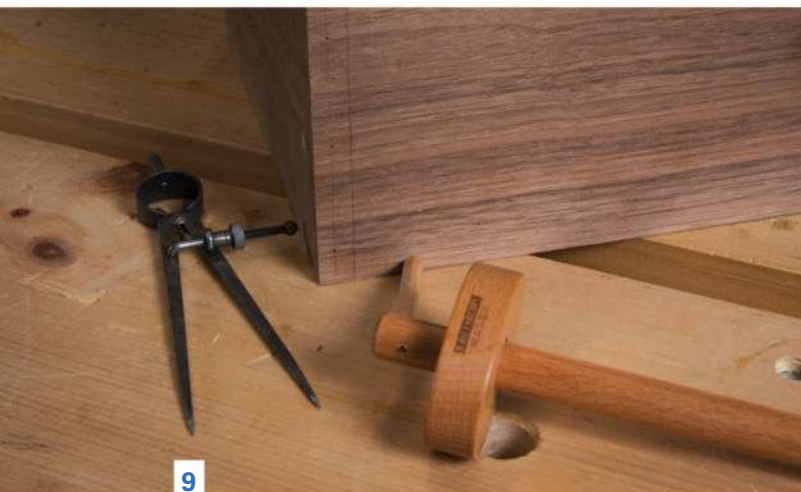
If you cut your joints accurately, two clamps should be all you need to clamp the box. Don't forget to do a trial run for your glue-up prior to getting the glue flowing. You would much rather discover an ill fitting joint before there is glue everywhere (**photo 6**).

Getting things together

Once I proved out the joinery, I glued in the small supports that the removable tray will rest on. It was much easier to do this with the sides apart because it allowed me access from all sides to get clamps on. I used a gauge to help keeps thing on the level and I rechecked as the glue set up (**photo 7**).

Little pieces like this have a nasty habit of skating around once glue is introduced. Once the glue dried, I finished the interior surfaces with wax. I do this for a couple of reasons: doing it now is easier when the parts can be laid flat, and the finish will act as a glue resist. Any glue squeeze-out on the inside of the box will just pop off.

With the wax applied, I moved on to the glue-up. Nothing special here, just some Titebond III applied to the rebates,



9



10



11



12

then clamp the box (**photo 8**). I use high quality pipe cleaners to apply the glue and I lay down some tape on my bench to act as a removable glue pallet. Once the glue cured I added the pins.

The pins are 3mm diameter birch dowels. I started by laying out some lines, then used dividers to step off the pin locations (**photo 9**). Next, I drilled the 3mm holes. I went about 25mm deep with the holes and simply used a flag of tape as a visual depth gauge. I put a small dab of glue into the holes then tapped the dowel home.

You should be able to tell once you've hit the bottom of the hole because the hammering sound should change. Next, I trimmed the pins so they were just a bit proud of the surface and gave them a couple extra hits to peen them slightly (**photo 10**). I do this so that the pin will fill the hole completely. You don't have to go overboard, just a few light hits should do it. The final step was to pare the pins flush with a sharp chisel.

The tray

The thickness of the tray sides is 6mm which I feel looks great nested with the 12mm sides of the outer box. No fancy joinery here, the parts are simply butt jointed together with some glue. The tray gets its strength from

the 0.8mm birch plywood bottom that is surface nailed on to it. I chose some super small nails for this job so that I didn't split the sides of the tray. No glue here because I want to be able to replace the bottom if I need to.

Do your fingers a favor and use a set of forceps to hold the nails to get them started (**photo 11**). While I had the hammer and nail set out, I also sized and attached the 6mm plywood bottom into the rebates of the main box. Again, no glue so that I can replace it if needed.

With the box and tray out of the clamps, I prepped the outside surfaces with a smoothing plane to level the joints (**photo 12**). I had to go easy with the plane on the short sides because there is unsupported endgrain there and I didn't want any nasty spelching to fix. I also did the outside surfaces of the tray to achieve a nice piston fit.

Time to top it off

The only thing left to do was to hinge the lid. I started by simply laying the hinges on the box to see how they looked. I experimented with their location until I found a pleasing location. I used a marking gauge to mark from either end of the box to be sure that the hinge locations were symmetrical (**photo 13**). With those lines marked, I laid the hinges against those lines and used a knife to



13



14



15



16



17

18



13. Locate the outside of the hinge with a marking gauge...

14. ...and the inside of the hinge with a knife.

15. The router plane gives you a flat hinge mortise.

16. Use a knife to transfer the hinge location from the box to the lid.

17. A bit of leather and more nails keeps the box closed.

18. A simple elegant home for the tools I use the most.



mark the length of the hinge (**photo 14**). Don't bother with measuring with this kind of stuff. A referential measurement will give you the best results.

I wasted out the majority of the mortise with a chisel then finished it off with a router plane (**photo 15**). This will ensure flat hinge mortises which will in turn allow the hinges to function smoothly. I then laid the lid onto the box, leaving it a bit oversized so I could trim it up after the hinges were installed. Again, the easiest way to locate the hinge locations on the lid was to simply reference the first hinge mortises I cut in the box (**photo 16**).

Finishing it off

I decided to try something different for the box closure and used two cut nails and a piece of leather (**photo 17**). I docked the nails short because to get the nail head size I wanted, the nail length would have been way too long.

A few strokes with a hacksaw sorted out the problem and a bit of epoxy holds the nails in place. The box was then finished on the outside surfaces with some more wax.

With the box finished it was time to see how things looked in their new travel home (**photo 18**). The box holds everything I need with some room to spare. If you have stuff to contain, I highly recommend building yourself a wooden box and leaving the plastic on the shelf in the store.

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. Vic's book *The Minimalist Woodworker* was published in 2016. See www.minimalistwoodworker.com

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Chatoyance

An exhibition of work by members of Studio Woodworkers Australia that celebrated the infinitely variable beauty of wood. Reviewed by Linda Nathan.





1

Chatoyance is that shimmer, that refraction of light that can occur when wood is viewed from different angles and in varying light. For members of Studio Woodworkers Australia, it was an opportunity to play with and present the effects gained through juxtaposing and sometimes contrasting the figure and grain patterns of wood.

Forty items of furniture and other objects were lovingly crafted by members of Australia's only association for professional woodworkers who have reached a juried level of expertise. As a departure from earlier exhibitions, work by both accredited and general members was presented.

Shown at Sturt Craft Centre from February 18 to April 9, 2018, *Chatoyance* was an eclectic mix of furniture, lighting and objects which spoke of contemporary interiors and styling.

Roy Schack's *Kyoto* cabinet sold at the opening. Dark wenge, scarified with bandsawn texture, was a moody backdrop to a glowing drawer front of figured blackwood. The interior was lit by a brush stroke of light

coming through a panel of urushi linen at the rear. This was a small cabinet with a large presence, and during the opening it was a focal point for many.

Damion Fauser's simply titled *Box* was anything but simple in design with sculpted sides that held and raised a compartment with inner trays and a lift-off lid. Contrasting woods, delicate stringing on the lid along with decorative wedged tenons into the lid handle made this a complex piece with an eastern influence. A red dot also appeared next to this piece during the opening.

Alby Johnston's *Botanical Tables* and Ruth Johnston's *Reading Chair and Footstool* formed a floral focal point, positioned centrally as they were. The small sculptural side tables tell a story as their dark and delicate 'tree stem' supports taper upwards and outwards from lighter Huon pine forest floor bases to support canopy tops above.

As part of SWA's mentoring program, Ruth Thompson was paired with founding and accredited member Leon Sadubin who gave feedback as the design of her *Reading chair and footstool* developed. Inspired by

Opposite page: Roy Schack, *Kyoto*, wenge, Tas blackwood, urushi lacquered linen, Japanese teapot by Yumiko Ihoshi. Photos: Jesse Smith

1. Peter Young, *Kumiko Cabinet*, northern silky oak and Qld silver ash. Photo: Andrew Porfyri
2. *Espresso Chair* by Michael Lau in American black walnut. Photo: Naman Briner
3. Thirston Morris, *Three's Company*, Outeniqua yellowwood, American oak. Photo: Roy Schack



2



3



Amy Howell's poem 'The Garden by Moonlight'. Bent laminations support an embroidered fabric seat, the patterns of which are mimicked in marquetry on the back. This was a piece that delighted with its details.

Phoebe Everill and Michael Lau made chairs. The provenance of Phoebe's *Drummond Chair* was complete as the blackwood was harvested from her own land and crafted nearby in her own workshop. With elegant proportions, softened with subtle curves and tapers it was designed for the intimacy and pleasure of everyday use.

Michael Lau was mentored by Damion Fauser and produced two chairs in contrasting timbers. *Espresso* and *Latte* had curves on every plane and were designed on a larger scale which gave them a strong presence. The vertical arrangement of grain on both the seat and backrest were a feature, as was the inclusion of glimpses of sapwood which danced, particularly in the black walnut, with the chatoyance theme.



Christopher Neal added a sculptural element to his *Ripple Tallboy* with the inclusion of CNC carved drawer pulls and motifs on the top which portrayed the dynamic interplay of droplets and a ripple effect. This was a functional piece with a playful side to amuse its eventual owners.

Thirston Morris's *Three's Company* bench sat powerfully on the perimeter of the display. A large slab of Outeniqua yellowwood was punctuated by narrow American oak backrests. Thirston was mentor to Kanun Onsel whose *Trestle Table Opus 1* sat on the opposite side of the room. The focal point of this hallway table was a glass top which laid bare the oak 'ribs' which supported it.

Textural and mysterious, Bailey McFarlane Farmer's *Haptic Table* was so-named for its tactile appeal in a world that is increasingly in the cloud. Wall-mounted it will serve as a display point and also a keepsafe for items hidden within its drawer.

Andrew Pinnock's *Dining Table* in walnut showed the sculpted and angled joinery which characterise this maker's work. Refinement is carried through to every edge, juncture and component to create totally worked surfaces.

Darren Fry's *Birdseye Jewellery Box* was an example of understated perfection. Select and figured timbers, immaculate joinery, quality

4. Andrew Pinnock, *Dining Table* in walnut; Yurpiya Lionel, *Anumara*, acrylic. Photo: Roy Schack
5. Stuart Faulkner, *Plan B Bench*, Australian white beech with plaited leather upholstery. Photo: Scott McGale
6. Damion Fauser, *Box*, jarrah, silver ash, lace sheoak, black butter suede fabric. Photo: Naman Briner
7. Leon Sadubin, *Vessels*, river sheoak, African olive, forest sheoak, Australian white cedar. Photo: Jon Harris
8. David Upfill Brown, *Outeniqua Table*, Outeniqua yellowwood, American oak. Photo: Jon Harris
9. David Springford, *Anterior Chair*, London plane. Photo: David Springford
10. Showing the marquetry rear of Ruth Thompson's *Reading Chair and Footstool* in kauri, eucalypt veneer, sycamore, Suzani fabric. Photo: Roy Schack
11. Kanun Onsel, *Trestle Hallway Table*. Photo: Ilana Nathan





hardware and elegant design were elevated by the finest Divina pure wool lining to ensure its functionality.

Stuart Faulkner's white beech *Plan B Bench* was also perfect in its sleek statement of purpose topped off with a handwoven leather upholstery.

David Upfill Brown's *Outeniqua Table* was a return to an earthier style, one that recalled the maker's past use of this African species in its country of origin. It was a piece that celebrated the live edges and pronounced natural features that others might have sawn away. Two live edged inward facing boards are set apart to reveal the almost human intimacy of its sculpted base.

With Chatoyance, members of Studio Woodworkers Association revealed the depth of their individual and diverse styles within a range of works that collectively gave a rich interpretation of the inner and infinitely variable beauty of wood.

Learn more about Studio Woodworkers Association at www.studiowoodworkers.or



12. Warwick Wright, *Apollo floor lamp*, Tasmanian blackwood and Huon pine. Photo: Greg Piper
13. Phoebe Everill, *Drummond Chair*, Victorian blackwood, ebony and Italian leather. Photos: Zan Wimberley
14. David Muston, *Occasional Tables* in blackwood, beefwood and silver ash.
15. Christopher Neal, *Ripple tallboy*, PNG rosewood, jarrah and maple. Richard Crosland, *Coopered Vases*, beech and Qld maple. Photo: Roy Schack
16. Bailey McFarlane Farmer, *Haptic Table*, ebonised congona, Huon pine.
17. Darren Fry, *Birdseye Jewellery Box*, NSW rose mahogany, birdseye Huon pine, ebony. Photos: Grant Hancock
18. Raf Nathan, *Jarrah Hall Table*, jarrah. Photo: Rebecca Nathan
19. Grant Vaughan, *Split form #8*, Australian white beech. Photos: David Young, Roy Schack





Native Timbers Are Back

Two years of groundwork have opened the way for limited but ongoing supply of northern Queensland specialty species.



In the 1980s, the wet tropics of Queensland were placed on the World Heritage List, and harvesting and milling of specialty species in those regions virtually ceased.

'Going forward from here', said Curly Tatnell, 68 and director of leading Queensland based hardwood timber millers Dale and Meyers, 'makers will again be able to buy quantities of red cedar, silky oak, or Qld silver ash.'

Curly Tatnell has been involved in businesses around Maryborough all of his life. From farming, developing and construction to grazing, transport and tile manufacturing, his experience is diverse. Around

18 years ago he was offered a share in Dale and Meyers, and since taking on the role of director, sawmilling has occupied much of his time.

With some 220 people employed in various capacities, Dale and Meyers supply power poles and cross arms to electrical utilities throughout Australia and overseas. They also produce decking and flooring, and use laminating and finger jointing processes to manufacture products that ensure maximum recovery from sawn timber and mill waste.

Two years in, Branch 95 is an initiative of Dale and Meyers that focuses on the sustainable harvesting of



specialty species from private land. The resource is sourced from an area in Queensland that runs roughly from Tully through to Daintree and up across the Atherton Tablelands.

Harvesting is subject to strict controls. 'Natural Resources, the EPA and Wild Rivers have all conducted checks and support our practices. We make sure that we have our i's dotted and t's crossed and that everything is in place,' said Curly. There are codes of conduct and harvest to observe, and each operation is duly notified before commencement.

Early on in the project, logs were sawn in Maryborough, even when trucked down from 2000 kilometres up north. Forging a partnership with Cape York Aboriginal communities now sees production take place in a Cooktown mill that now offers more jobs for the locals. Negotiations are currently underway with the Wik people in Aurukun to create another milling partnership with indigenous communities.



Main: Logs of some of the Branch 95 resource awaiting processing at the Cooktown mill.

Opposite: Curly Tatnell, Dale and Meyers director.

This page: Scenes from the Cooktown mill.

Right: Assessing logging viability is carried out on a tree by tree basis.

Below: The spectrum of native species that are now stocked include (clockwise from top left) Qld maple, northern silky oak, Qld silver ash, red cedar, black bean, black wattle, briar silky oak and silver quandong.



Making the venture work has required considerable input in terms of scoping the resource and creating harvesting and production systems which will allow ongoing supply. Over two years of groundwork and \$9 million are the investment that Dale and Meyers have made. Creating a reliable source also rests on paying landholders fair prices and royalties.

Sustainability is a long term aim. 'What we basically look for are trees that are damaged, and as you know they get a lot of cyclones up there', said Curly. 'We take older trees where

the growing life is all but over, and get value out of it before it's not worth anything to anyone. We are restricted to five trees per hectare and we look for the five trees that probably won't be there when we're back for another harvest in ten years time.'

'People in cities think we're knocking down trees and destroying the earth', said Curly. But to his mind supply will always be limited in order to maintain it and on top of that he also sees benefits: 'Where we have gone in and opened up the canopy and put our tracks in to snig the timber out, the regeneration of

young trees coming through is totally mind-boggling', he said.

A staggering range is now on offer including acacia cedar, black bean, black wattle, briar oak, damson plum, Darwin stringybark, maple silkwood, Miva mahogany, northern silky oak, Qld maple, Qld silver ash, red cedar, red silkwood, red tulip oak and silver quandong, as well as others when available.

See www.branch95.com.au

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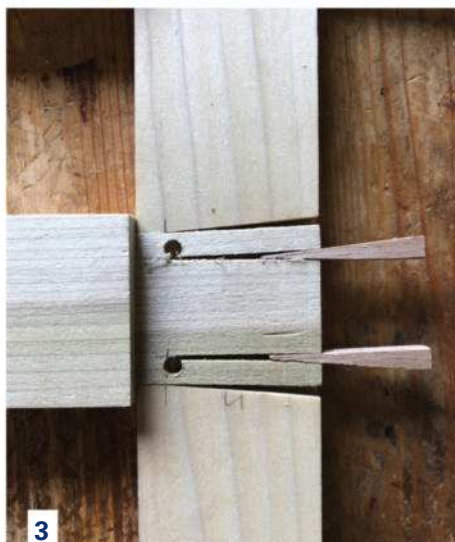
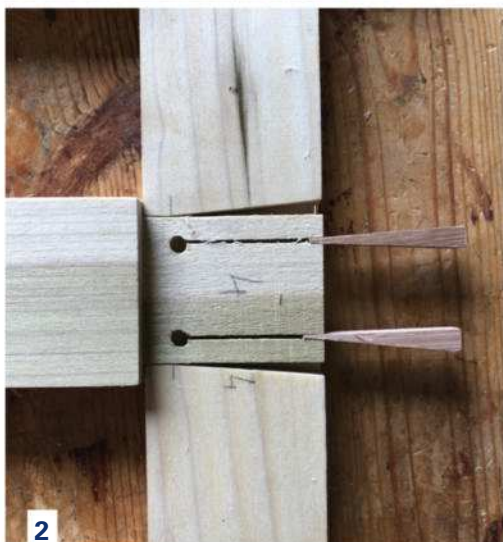


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BRANCH95
AUSTRALIAN SPECIALTY TIMBERS



The Thin Edge of the Wedge

Liam Thomas tests five ways of wedging through mortise and tenon joints.

If you're anything like me, and as you're reading this magazine there's a good chance you are, then you probably share more than a passing interest in joinery. There are numerous methods to join wood, each one with a number of variations to cover things like work efficiency, increased strength and decoration, or any combination thereof.

Wedged tenons

The focus of this article is the wedged, through mortise and tenon. Perhaps with the exception of through dovetails, there aren't many other joints that say 'handcrafted' like one of these.

More specifically the focus here is on tenons, particularly the kerfs for the wedges and the effect they have on the tenon. The method of wedging can be executed in many ways, and like other woodworking topics the preferences can be divisive, but is one method better than another?

Enter the fox

There's a variation of the mortise and tenon called the fox wedged tenon. Term four last year at Handsome & Co, where I teach, involved taking my students through a small project which incorporated this little used variation of a mortise and tenon.

The fox wedge is somewhat of an academic joint, often described in all the text books but little used. Although accuracy is an important part of all good joinery, the fox wedge takes this to a new level of exactitude.

It is not a joint that can be tested in the usual sense and any error in making the joint itself can result in failure, as once the joint starts to go together it is practically irreversible.

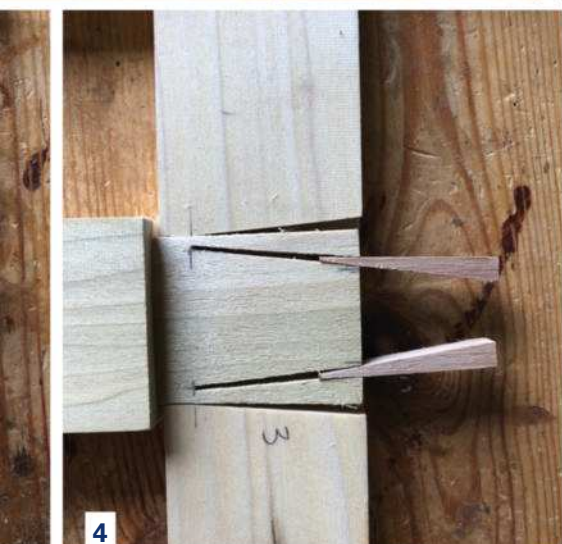
Having had no prior experience of the joint and needing to teach it to my students I set about testing the joint to determine the correct shape and length of wedge and corresponding kerf.

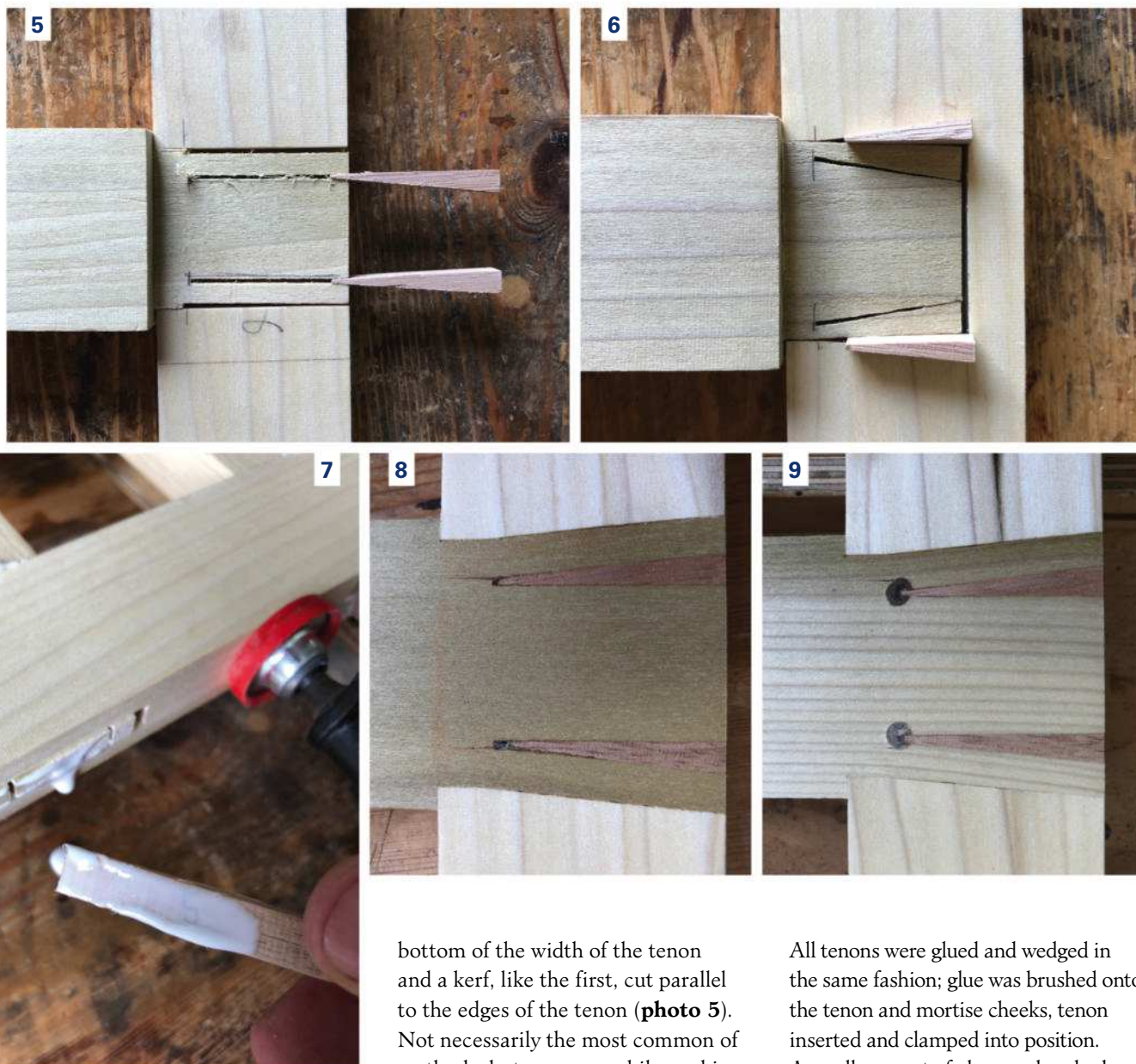
The results were shared on my Instagram page and attracted many comments, mostly about the kerfs for the wedges and the 'best' method of cutting them to avoid them splitting the tenon. I took note of all the suggestions shared as well as the textbook methods and then asked myself: what really is the best way to wedge a tenon?

Five ways

All told there are five different methods of cutting a kerf for a wedged through tenon. The first four have a flared mortise that corresponds to the wedge. First up, and of the English tradition from my training, is a tight mortise top and bottom for the first 6–8mm and kerfs cut parallel to the tenon edges (**photo 1**). The tight shoulders are designed to prevent any splits occurring from the wedges being hammered into the kerfs.

Method two requires two small holes to be drilled at the bottom of each kerf (**photo 2**). The theory here is that the holes prevent the kerf from splitting by transferring the stress of the wedge around the hole.





The third method, derived from the last, again relies on two holes at the base of each kerf, each offset to the edges of the tenon (**photo 3**). With the holes drilled in this position the outside kerfed part worked more like a hinge, moving freer with little stress on the kerf.

Method four, with kerfs cut at an angle from the top of the tenon and heading away towards the edge (**photo 4**), is somewhat similar to the third method. With less material in the tenon at the end of the kerf, the outside portion moves more freely, almost hinging at that point.

Method five does not employ any angle of the mortise. Instead, a small amount is removed from the top and

bottom of the width of the tenon and a kerf, like the first, cut parallel to the edges of the tenon (**photo 5**). Not necessarily the most common of methods, but one seen while working in the UK many years ago.

Testing process

To ensure consistency the mortises were cut in a somewhat unorthodox manner. Rather than produce a traditional mortise for each one and then cut the wedge relief afterwards, the mortises were cut as housings, the wedge relief parts carefully marked out and pared to a line with a chisel.

The outside cheek part was then glued back on to create the mortises. This method also allowed me to create accurate, matching hardwood wedges for each method. Whilst doing all this I decided to include another mortise for a fox wedged tenon, curious to know what happens inside this mysterious joint (**photo 6**).

All tenons were glued and wedged in the same fashion; glue was brushed onto the tenon and mortise cheeks, tenon inserted and clamped into position. A small amount of glue was brushed onto each face of the two wedges, then hammered into the kerf (**photo 7**). A small hammer is my preferred tool, making sure to evenly tap each wedge home. The glued and clamped up test mortises were left for 24 hours for the PVA to fully cure. The test piece was put through the thicknesser the following day to reveal the test results.

Method one shows definite splitting at the bottom of each kerf and while this was the most noticeable for all methods tried, neither split goes beyond the tenon shoulder (**photo 8**).

Method two, with the two centred holes at the end of each kerf also shows some splitting (**photo 9**). The third method, with the holes moved towards the outside of the tenon and

the kerf ending on the inner edge of the hole, showed some minor splitting on the outside of one hole (**photo 10**).

Two small splits were noticeable at the end of each angled kerf used for method four (**photo 11**). Finally, the last method, where no relief was cut in the mortise, showed no splitting in the kerfs. The trade-off here is much less surface area contact with the tenon and the mortise compared to the other methods (**photo 12**).

Differences?

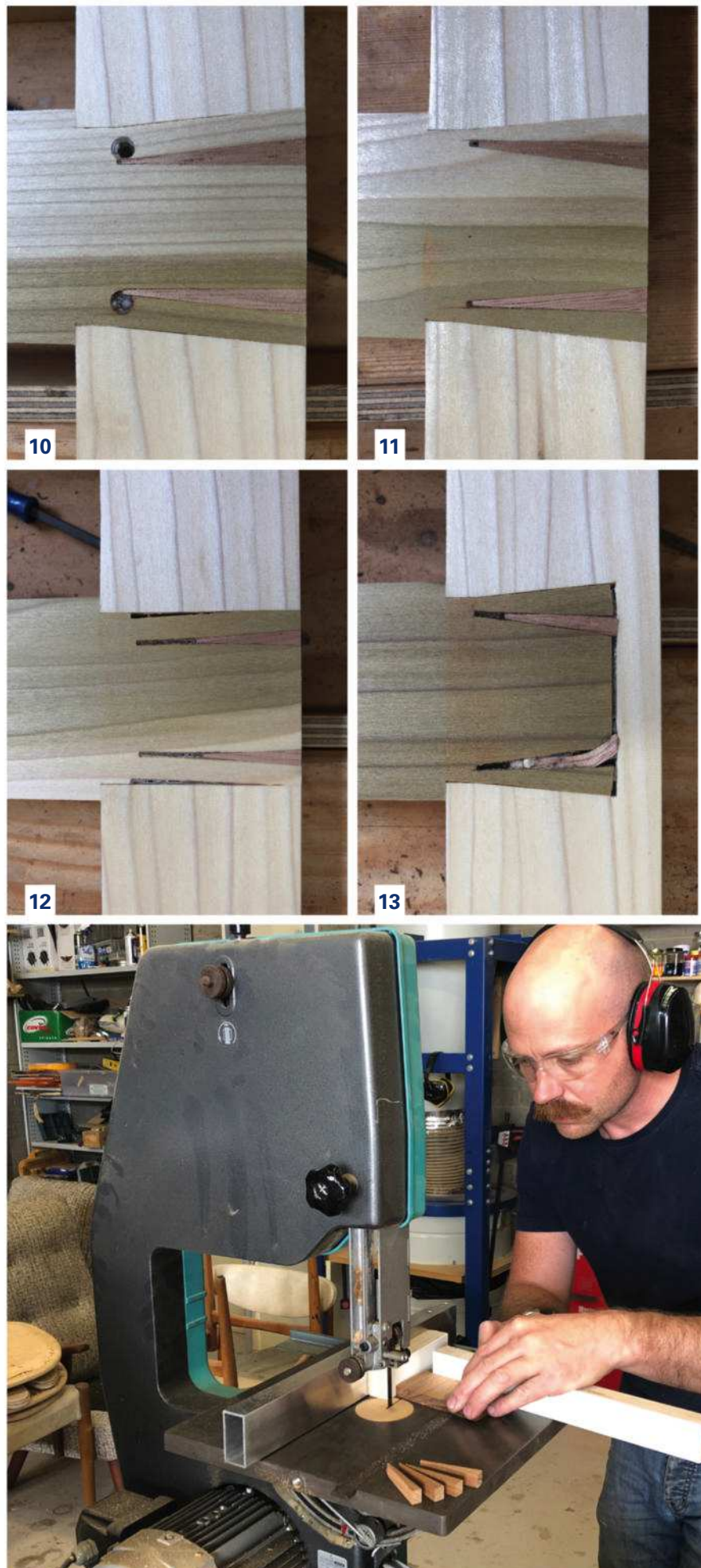
What conclusions can be drawn from these tests? There is definite reduction in splitting when an offset hole or angled kerf is used but it is interesting to note that it is not completely eliminated. Should you use either method for your next through wedged mortise and tenon? It depends. Timber is the main variable here, the soft poplar used to conduct these tests will behave very differently to a more brittle and dense timber like blackbutt.

And what of the fox wedged tenon revisit? The joint went together with relative ease. An angled kerf was used, although in retrospect an offset hole would be better as the wedges were a little tricky to fit when inserting the tenon into the mortise. The tenon flared correctly into the mortise relief, providing that (frustrating to future furniture restorers) almost unbreakable joint that is the benefit of the fox wedge. Interestingly, one wedge ended up at an odd angle but still worked as required (**photo 13**).

Some parting words of advice to anyone contemplating a fox wedged tenon in the future, there is great benefit and peace of mind to be had by doing an open mortise test before trying it out on your project.

Photos: Liam Thomas

*Liam Thomas is Melbourne based furniture designer maker and restorer.
Email weeatthesun@gmail.com
Instagram @weeatthesun*





In the Neoclassical Style

Working in antique restoration reflects Jamie Pappas's passion for classical furniture forms, but making this library table was a personal project.



Top: Library table in the Neoclassical style by Jamie Pappas. Core timbers of Euro beech and Old maple are veneered in Madagascar rosewood.

Above: Brass corner mounts were milled and reeded before letting into rebates and cavities.

My background is 40 years in antique restoration work, the last 15 years of which have included commissions dealing mainly with the English Regency period.

While not having undertaken a formal apprenticeship, I was privileged to work alongside a few skilled European tradesman for a time. However my personal knowledge grew over the years with considerable reading and research, as well as discussions with those highly qualified in their fields. All this has been translated into practical skills through much trial and error.

The inspiration behind the making of this library table stems from the influence of Neoclassicism on furniture design in France under Louis XVI during the late 18th century, a style I've always admired. Makers of the Empire period, during Napoleon's reign, continued to embrace



this classical style of elegant Parisian furniture, which was adopted by important makers in London (for example John McLean), such was its influence at that time.

For me the Neoclassical period represents the height of refinement in furniture making and remains unsurpassed. Design influences of this period were diverse and included the archaeological discoveries of the late 1700s such as Herculaneum and Pompeii, along with the works of Rome and ancient Egypt. In particular, works of this period feature exquisite detailing of veneers and marquetry inlay.

I began on this personal project about four years ago during out-of-work hours, although the idea had presented itself sometime before. Examples of Neoclassicism in English antique furniture catalogues formed the initial idea which was followed up with full scale drawings and measurements. Without having the actual dimensions it took time to draw the individual elements to scale with the correct proportions.

Library tables were often designed to be a focal point for display of rare or early manuscripts and publications. For this reason they were sometimes higher than conventional writing desks, which were on average, about 770–800mm. Thus the library table could be used from a standing position rather than a seated one, as is the case with this example.

The curved and ribbed brass corner mounts were hand cut on a milling machine, as were the tapered and reeded brass mounts for the splayed legs. Positioning these brass mounts proved challenging as did the placement of the 1.5mm U-shaped brass inlay on both sides of the lyre support. After the waste veneer had been chiseled and scraped

out, the brass sat snugly in its groove and both sides were pressed simultaneously with araldite.

The top section of the lyre with its central brass anthemion is connected to the lower U-shaped curve by two tenons. Here the core timber has its grain running horizontally while in the lower curved section it runs vertically. The veneering of all four faces of the curve gives much additional strength.

The centre block connecting the two splayed legs also has its core grain running horizontally. The sides of the block house the dovetailed joints in the legs. A steel brace 5mm thick and moulded to shape has been let in to the underside of the legs and centre block for added support.

The core timbers are made from steamed European beech and Queensland maple. The drawers are made from old cedar. All polished surfaces, except the turned stretcher elements, are veneered in 1.5mm bandsawn Madagascan rosewood (unstained), and finished with button shellac and Liberon beeswax. The brass handles were bought in France and were made using the lost wax method.

While this one-off project will not be repeated, it's one that has certainly deepened my understanding of a style of furniture I much admire.

Photos: Brian Rodgers

Learn more about Jamie Pappas at www.classicantiquerestoration.com.au



Above: The hide was hand coloured and embossed with gold by a UK artisan to the maker's design.

Right: The lyre symbolises Neoclassicism to the full. It was incorporated into furniture design in varying forms as a representative feature of the ancient regimes of Greece and Rome.

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16-17 JUNE

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27 JULY

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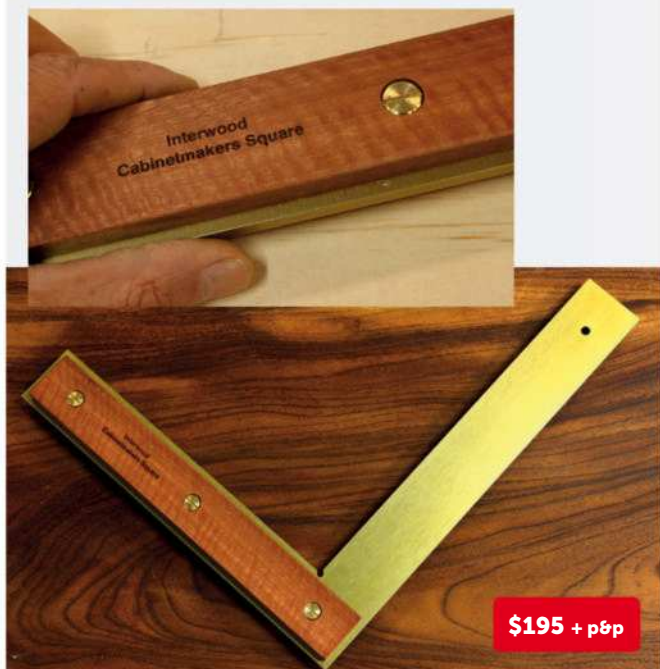


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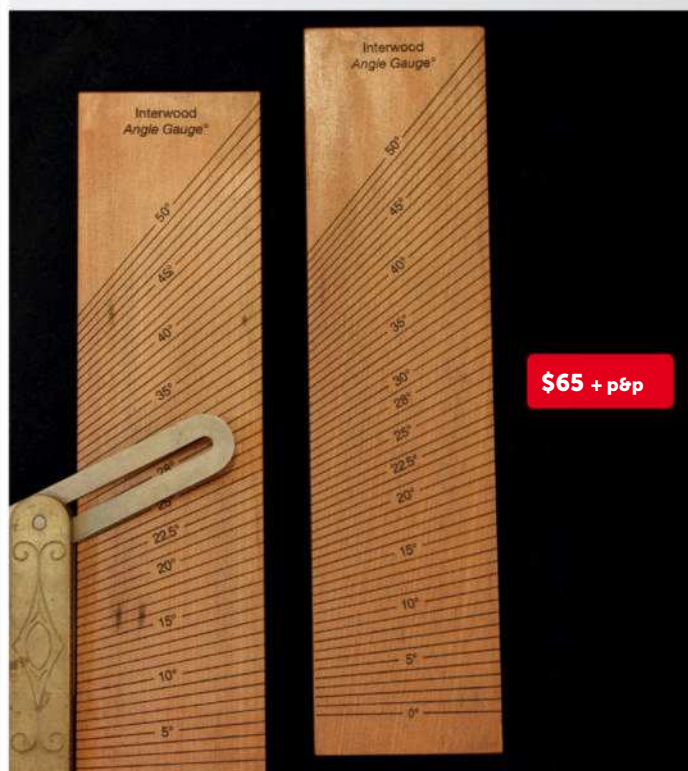


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From Seed to Tree to Product

A new collective of farm foresters is bringing its product to market.

The roughly triangular region that runs from Lismore to Ballina to Brunswick Heads was once described as The Big Scrub. Once subtropical rainforest, this 75,000 hectare area was largely cleared in the 1800s for dairy farming. Now, those forests are slowly returning, in the form of private plantings of the rainforest species that once grew freely there.

Sunday April 15, 2018 in Federal, NSW was a picture-perfect day. Blue skies, rolling hills, green and forested, it was the place that over 500 hundred people chose to gather.

The occasion was Woodfest, a celebration of native timbers that marked the creation of a new

collective of farm foresters known as Quality Timber Traders (QTT).

‘Woodfest is all about celebrating sustainably grown native timber’, said Kate Love, events manager for QTT. ‘It’s about bringing tree growers and woodworkers together so that we can create a local loop between seed to tree products and really showcase what we can do with our beautiful native timbers.’

Using these timbers locally is not new. Years ago the region was home to furniture making and boat building industries and there was once a plywood factory. Depleting, and then protecting the remnants of that once Big Scrub meant those rainforest

species were no longer available to harvest, mill and work with.

Quality Timber Traders is made up of groups of ‘environmentally biased’ farm growers, says Joe Harvey-Jones, who holds a PhD in subtropical forestry and has established several plantings on his property. ‘They love trees, love seeing them growing, and like the way they are sequestering carbon to make a better world for our grandchildren.’

Made into high value quality woodwork, carbon is locked up for hundreds of years, Joe explained. ‘It’s like the slow food movement, where locally sourced timber creates a sustainable industry’, he said. ‘Just

like “food miles” we can talk about “timber miles”, where in this case we don’t ship it off somewhere, have it made into low quality furniture, and then ship it back, only to see it go to the tip in five years time.’

Quality Timber Traders represents an alliance of two other groups, south-east Queensland Specialty Timber Growers and northern NSW Sub Tropical Farm Forestry.

Aiming to create a sustainable timber marketing and sales system, the project has been seeded by a \$250,000 grant from the federal government Farming Together Program. The grant was to kickstart the project over an eight month period, the end of which would be marked by Woodfest, an event which has now brought together growers, portable mill operators and end-users to showcase their products.

Verifying timber quality is seen as critical, and to this end backup technical support and analytical research has been carried out by Southern Cross University who are providing research data into strength and hardness properties of the sawn timber.

The project is ultimately about expressing the viability of farm forestry as measured by both environmental and commercial benefits. ‘Our members are conservation farm foresters who are passionate about restoring the landscape,’ says local grower, renowned furniture maker and QTT member Tony Kenway. ‘It’s about encouraging use of this timber so that people will plant more trees,’ he said.

‘We’re trying to demonstrate that it’s possible to generate a small income from this forestry to promote the idea that if you start planting these trees, you’re going to get sucked in, you’re going to get passionate about it’, said Joe Harvey-Jones who noted that even four to five hectare plantings of mixed species can be viable.

‘The beauty of this whole movement is that we’re specialising in the rainforest cabinet timbers that used to grow in the red soil of The Big Scrub and in the hinterland of the Sunshine Coast. What starts as just a simple idea with a limited range of species attempting to mimic to some extent what the original forest would have been like, ends up acting as corridors for animals and birds.’

Some growers, like Joe Harvey-Jones and Martin Novak, a farm forestry consultant, have 25–30 year stands that can now be selectively thinned. At the other end of the spectrum there are others who are at the start of the planting journey, or within it seeking support with best practices.

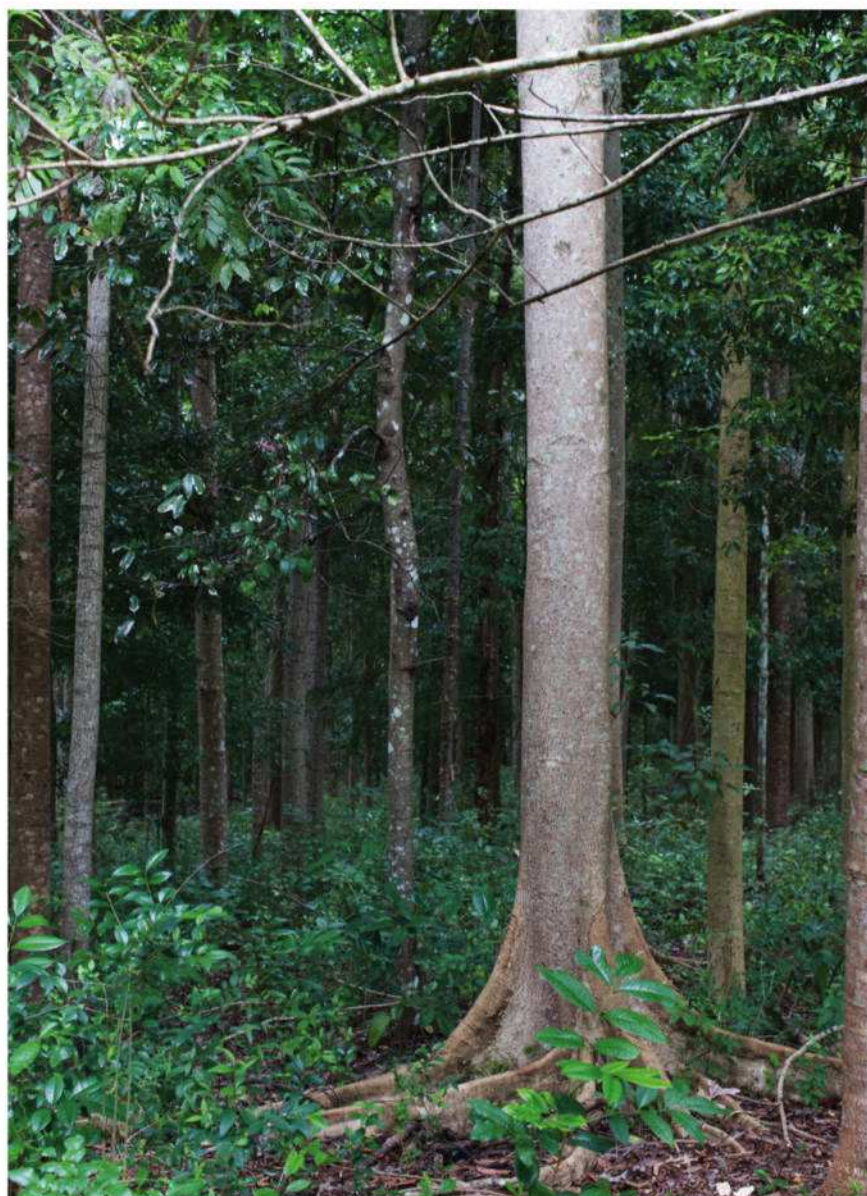
The main Northern Rivers species currently being harvested and which were showcased at the Woodfest event were silky oak (*Cardwellia sublimis*), silver quandong (*Elaeocarpus grandis*), and Queensland maple (*Flindersia brayleyana*).

With access to a mobile mill, a solar kiln and a storage facility the group is set to provide a resource that buyers can tap into. Membership from established and potential growers is invited, as are enquiries from those who wish to buy timber from association members.

Words: Linda Nathan

Learn more from www.qualitytimbertraders.com

Main: Quality Timber Traders board members Dr Joe Harvey-Jones (left) with Martin Novak.



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Shades of Jarrah

Raf Nathan makes a hall table that explores the figure and tone of jarrah.

This hall table was made for *Chatoyance*, Studio Woodworkers Australia's exhibition that was themed on the way that the grain patterns in wood can change from different viewpoints. My choice of wood for this was jarrah.

The wood

Two kinds of West Australian jarrah are used in this piece. The legs, top and lower rails are made from commercially available wood that in this case was dark and heavy with lighter coloured streaks.

The fiddleback rails and inlay pieces came from a paddock tree grown on private property. I purchased two large flitches of this and resawn them on the bandsaw, quartersawing to my own specifications.

Jarrah is structurally very strong and also has a powerful presence, so my design was for a lighter construction and

limited the use of the fiddleback sections. Plainer and darker jarrah was used to frame the striking fiddleback grain of the rails and detail sections. I am saying less is more, however don't forget the late and great Wendell Castle who said 'more is more'.

The angle

The legs are finished at 42mm square, a standard industry dimension. They are splayed at 5° at the front and back. The angle is important of course, as this is a key design point. I have tried using 3° for legs in other designs but it gives a more staid appearance. As a matter of interest, in my observation, the legs on traditional Chinese tables have a 3° rake, whilst Japanese tables seem to employ a 5° angle.

The front, back and lower rails needed therefore to be also sawn at 5°. Note however that the upper and lower side rails are sawn at 90°.



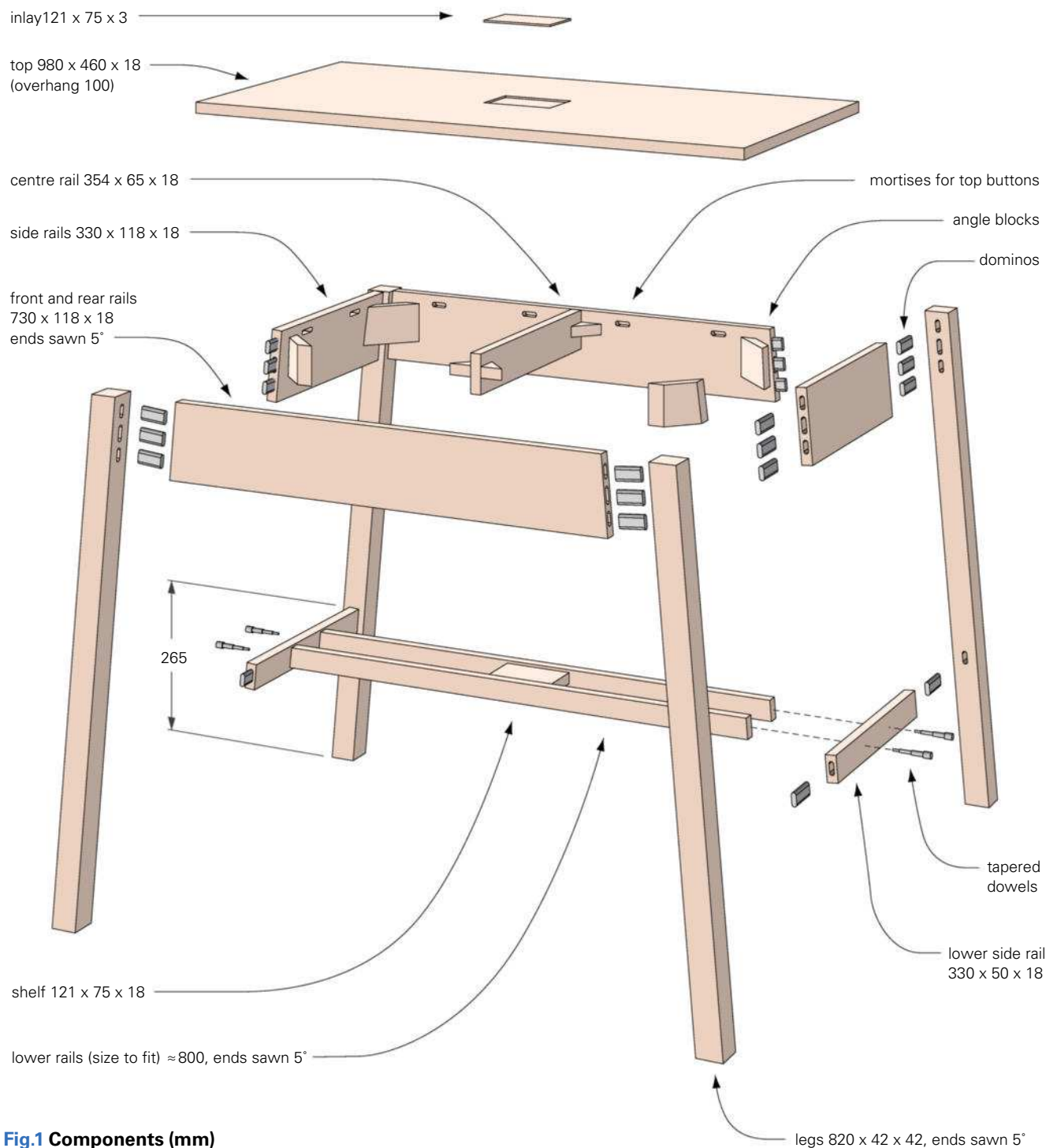


Fig.1 Components (mm)

CUTTING LIST (MM)

Part	Qty	Length	Width	Thickness
Top	1	980	460	18
Legs, ends sawn at 5°	4	820	42	42
Front and rear rails, ends sawn 5°	2	730	118	18
Side rails, ends sawn 90°	2	330	118	18
Lower front/rear rails, ends sawn 5°	~ 800	42	18	
Lower side rails, ends sawn 90°	~ 330	50	18	
Small lower shelf	121	75	18	
Top inlay	121	75	3	

Note: the measurement of the angled cuts can be taken as the longest length, being the lower edge.

Main: The author's hall table was made from straight grained jarrah with inlay and other details that used fiddleback sections of the same species.



1. Sometimes you need to straighten the grain, as shown on this section of maple.
2. The rails were joined with dominos, but dowels can be used.
3. The front and rear rails were sawn at 5° and glued up with packers.
4. Components for the table frame prior to glue-up.
5. Side rails glued in.
6. Centre rail glued in, corner blocks glued and screwed in and mortises for buttons cut.

Sawing

Legs and rails were all sawn with a mitre saw. Before cutting I marked each leg and rail carefully to retain the position they will be when assembled. It is easy to mix things up when sawing and find you have the legs upside down, or worse still, find you have cut the wrong angles and that parts need discarding.

Importantly, I looked at each piece before sawing so the best grain pattern would be shown. In fact I 'straightened' the grain with some boards. The sawmiller can't stop and select each board he saws at the mill. Some boards will come to you with the grain running pretty well parallel with the sawn edges, while others will have grain running at an angle along the board.

Often having the grain running parallel to the board looks far superior in a finished piece. The width of the board will dictate how much can be sawn away as waste to 'straighten' the board though – if you can't straighten the grain then at least you can improve it. **Photo 1** shows what I mean.

The secrets

The front faces of the legs were bookmatched. I used a wide board to saw the legs from so I could get the desired bookmatch on the face that is rip sawn. If you use 50 x 50mm square stock for the legs you will get a more random grain pattern on the leg faces.

Most people won't ever notice this detail, but some woodworkers will. The bookmatch makes the whole piece appear more balanced. Viewing one of Geoff Hannah's masterpiece cabinets a while back I noted that he had bookmatched pretty well everything on the cabinet. Legs, doors, panels, stiles and even stone inlay were all bookmatched. However only the front legs on this table were bookmatched.

Another thing to note is that there is a top and bottom to each board, meaning in relation to how the board was milled from the tree. Japanese woodwork theory has it that wood aligned with the growth of the tree will be less prone to bending and twisting. A door stile with 'the base of the tree' at the base will be more stable in use.

Now to be honest, I can't tell by looking at it which way up a board came from a tree, so my approximating method is to hold a piece of wood lightly at each end and feel which end is heavier. Heavy goes to the ground. So with each leg I did this first.

Joinery

The joints for the legs to rails can now be made, here using 8 x 50mm long dominos (**photo 2**). If you don't have a domino power tool then dowels are an option, as is making a mortise and tenon by hand. This is only a hall table so the stresses it faces are minimal. Four 9.5mm dowels will be sufficient.

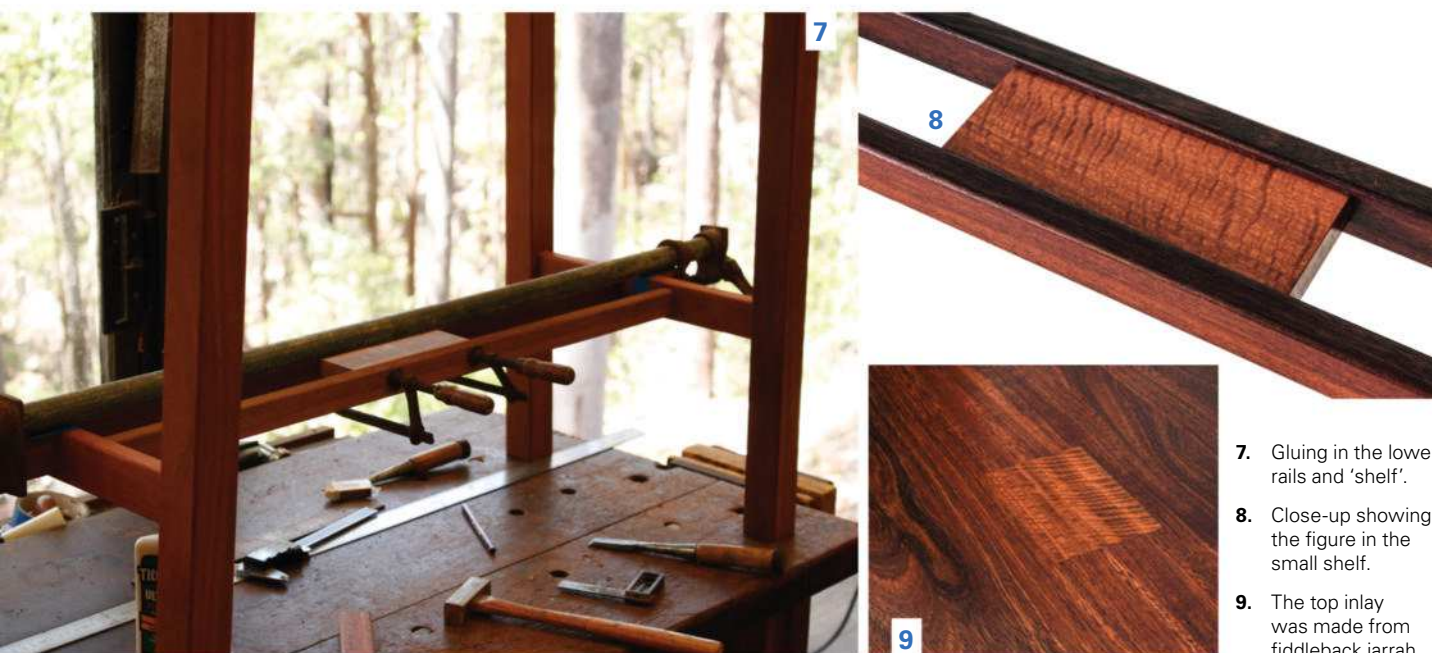


No matter how careful I am when cutting dominos there is always some tuning up needed for the tenons to slide neatly into the mortises. The middle mortise is wider to avoid having to tune this one. Legs and rails were all fine sanded prior to the glue-up and also the leg corners were rounded over slightly with a small router cutter.

The first glue-up is for the legs to the long rails. Note that a 5° angle packer is used between the clamp head and wood to apply force evenly (**photo 3**).

The short side rails meet the tops of the legs at an angle, due to the 5° cut on the leg ends, so this needs to be allowed for (**photo 4**). The upper edge of the rail has to sit proud enough so it can be planed at 5° level with the top of the rails later. The complete assembly was glued up and checked for square (**photo 5**).





- 7. Gluing in the lower rails and 'shelf'.
- 8. Close-up showing the figure in the small shelf.
- 9. The top inlay was made from fiddleback jarrah.

After gluing up I used the domino tool to make small mortises for the table buttons that would secure the top to the frame (**photo 6**).

Extras

Even though the jarrah top would be strong and heavy I wanted to have a centre rail underneath it. This allows for a table button below it to make the table very rigid. The centre rail is butt-glued in place and secured with 45° angle blocks that are glued and screwed in (**photo 6**).

Angle blocks are also fitted at all leg corners to triangulate the corner joints. Possibly overkill, but at least I know the table frame will never break.

Lower assembly

The long lower rails are cut to length next, also at 5°. They stiffen the legs and add weight to the design. Deciding where to position the lower rails was a matter of playing around to see what looked best. The small 'shelf' between the lower rails adds another detail (**photo 7**).

To determine the size of the shelf I would usually also play around until happy with the final length and width. In this case though for fun I used the Golden Mean, a traditional proportion of 1.62 to establish the size. I wanted it to be 75mm wide so multiplying by 1.62 gave me a length of 121mm (**photo 8**). The top inlay is the same size as the lower shelf (**photo 9**).

The lower rail lengths were thus established and sawn at 5°. The rails and shelf were first glued together and then this lower assembly butt-glued to the lower short rails. After the glue had dried I inserted a long dowel through the short rails into the long rails to secure everything. The dowel wasn't made of jarrah and so was stained to match.

The top

The top boards were selected and arranged for the best grain pattern. I work out my final dimensions so that on glue-up the panel is the final desired width but oversize in length.

The amount of overhang of the top over the frame is critical. I spent time experimenting to find what, in my eye, seemed the most pleasing overhang. Here that ended up being 100mm. With this length established, the top could now be sawn to final length.

Finishing

The top is fine sanded on both sides and the edges rounded over to match the edges on the legs. The top is fixed to the frame with table buttons. There was more work to do on the top but I didn't want to risk any cupping or twisting so it was secured to the frame as soon as possible. When the wood settles into its final resting place I want it all flat and straight.

The top inlay can be fitted now. I traced its outline on the top with a knife and routed and chiseled the waste out. When happy with the fit the inlay was glued in place, then planed and sanded flush.

A final sand and detail is now needed before the polish of choice can be applied. In this case five coats of Whittles hardwax oil were used, followed by buffing with a soft wax.

Photos: Raf Nathan

Illustration: Graham Sands



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