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Jointing, resawing and replicating can, to a degree, all be performed on the tablesaw.
Story by Charles Mak.

Editor's Letter

If this issue has a theme, it's inspiration. It's all about the things people draw their ideas from, and how they express them in their work. And there are people in this issue that I personally find inspiring.

I met Duncan Meerding about five years ago in Melbourne while doing a wrap-up of designer makers at an interiors trade show event. Since then his designs have gained a following, and attracted attention and awards.

Those things are enough to warrant a feature in this magazine, but the fact Duncan does this as someone who is legally blind inspires me. I can't fathom how he can even get around and travel all over the world, let alone operate panel saws and all kinds of tools to produce and market award-winning work of his own design. But that's what he does. Find out more about Duncan on p.62.

Again speaking of inspiration, we take a closer look at some of the works that were exhibited in AWR Studio Furniture 2018. For his coffee table design, Bryan Cush looked to the celestial skies and captured a moment when the earth literally sat and watched in unison. Not only did he literally embed his concept in the piece he made, he even 'took it home' to complete his own experience. Read about *The Dish* on p.96.

When making *Doryanthes*, a side table with an inbuilt lamp, Mark Lenny took a more local view by harvesting fallen timber from his own environs and sculpting it into a piece that was inspired by plant forms. Achieving this involved a mind-blowing amount of handfitted joinery.

On the other hand, Shinobu Kobayashi's *Iki* gateleg table carries a hidden message in the way it embodies a philosophy of craftsmanship. Concealed dovetails in the frame and an articulated construction with understated complexity portray a modest and enduring approach. It's not necessary for furniture to 'show' all of the maker's skills, Shin explains. Made well, furniture will last for generations, and yet there is humility in being mindful of future craftspeople who may be called on to repair it.

Lastly, and most visibly of course is the piece shown in-progress on this issue's cover. A sensitively textured and sandblasted form is presented on a simple base that was ebonised to allow it to visually recede as it elevates its view of another planet. From p.68 Terry Martin explains how he and Zina Burloiu created their award-winning *Moon Table*.

Now in their fifth year, our Student Awards continue to shine a light, and last year's competition shone just as brightly, if not more so. Carol Russell and Darren Fry spent time over their summer holidays giving much thought to the award winners they selected – by all accounts it wasn't easy.

A big thanks go to the generosity of our sponsors who believe in the value of supporting younger makers, to the teachers and communities who enable them, to our judges, and lastly of course to the students who entered.

Student Awards 2019 will open for entry in June. If you haven't already, check out all the 2018 entries on www.woodreview.com.au/student-awards

And finally, just a reminder that news to hand, upcoming events and much more are published almost daily on our website. Sign-up to receive our fortnightly newsletters on www.woodreview.com.au and stay in touch by joining our Wood Review communities on Instagram and Facebook.

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AUSTRALIAN
Wood
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SUBSCRIPTIONS:

WWW.GREATMAGAZINES.COM.AU
CALL: 1800 807760
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SUBSCRIPTION RATES:

1 year / 4 issues \$47
1 year PLUS (print + digital) \$52
Overseas 1 year NZ \$58
ASIA \$58 ROW \$72

NATIONAL SALES MANAGER:

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CUSTOMER SERVICE MANAGER:

Martin Phillpott

PRODUCTION DIRECTOR:

Matthew Gunn

PUBLISHED BY:

Yaffa Media Pty Ltd
ABN 54 002 699 345
17-21 Bellevue Street, Surry Hills 2010
Tel: (02) 9281 2333 Fax: (02) 9281 2750
ALL MAIL TO:



GPO Box 606, Sydney NSW 2001

RECOMMENDED RETAIL PRICE:

\$11.95

ISSN:

1039-9925

COVER:

Texturing the surface of Terry Martin and
Zina Burloiu's Moon Table.

COVER PHOTOGRAPHY:

Terry Martin

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Left: Arbortech's Mini Carver offers new developments.

Below: Comparing the new Mini Carver with the author's old Mini Grinder behind it.



Arbortech Mini Carver

Reviewed by Andrew Potocnik

Arbortech's media release touts this product as 'the next generation Mini Carver' and 'the newest version of the Mini Grinder', so I wondered how the cutting disc could be improved. Little did I realise that the whole product has been upgraded from the ground up, arriving in a suave black carry case containing the tool and all associated extras.

I have one of the old Mini Grinders that already performs very well, so I wondered what could make this product even better. Well, the manufacturers have made a number of improvements that provide users with an advanced tool which not only improves function, but also reduces noise and dust.

The angle grinder now has extra power (710 watts), a variable speed switch which allows slower speeds for sanding, a soft start which eliminates kick (and somehow helps the motor emit less noise), a sturdier housing, a vibration reducing handle, and tungsten carbide cutters on the blade. That's a lot of development on a product that already does a great job.

Surprised with how many innovations have been developed I put the tool to use and was immediately impressed with how comfortable it is to use – the

soft start, reduced noise and clean finish off the cutter on both green and seasoned redgum.

Change over from cutter to sanding discs is still quick and easy requiring the Allen key provided and a screwdriver.

Lowering the speed to recommended settings and hooking up my turbo charged shop vac minimal dust escaped the new cover, providing you're sanding on the right side of the disc which pushes dust into the chute. Using the left side of the disc, dust may escape, depending on the strength of extraction generated by your vacuum system, but keep in mind, lower sanding speeds reduce the chance of burning both wood and sanding discs.

The kit includes five pads of 80, 180 and 320 grit, which I thought was an unusual progression, but following recommended speed settings I found they worked perfectly, and best of all, the 320 grit left a surface beyond anything I expected of a grinder powered sander, thanks partially to the new flexible rubber backing pad which allows discs to conform to curved forms. Sanding a tablesawn surface smooth took a matter of moments.

Being a natural right hander, the pre-set angle of the carver attachment,

supporting anti-vibration handle and vacuum hose outlet allowed me to access workpieces without hindrance. During the period of testing I did not find developments in the new handle to be of significant aid, but this could be of assistance when using the tool for extensive periods of time and especially when making heavy cuts.

Obviously I had to see how well the dust chute collected shavings directly from the cutter and although there were shavings emitted, associated dust was reduced.

Developments in this product have made it a far more versatile tool in the sculpting and sanding armoury of any woodworker who shapes their work. For me, the key improvements are the cutter's performance, soft start and variable speed operation, followed by the dust collection, thanks to the extraction hood.

*Review tool supplied by
www.arbortechtools.com*

*Andrew Potocnik is a wood artist who lives in Melbourne, see
www.andrewpotocnik.com*

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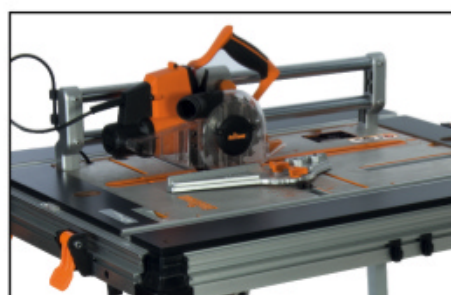
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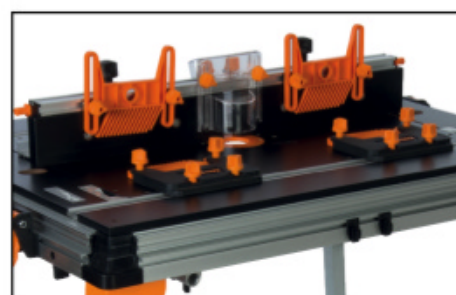
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Unplugged Woodshop Two-Handed Rasps

Reviewed by Damion Fauser

Anyone who likes to involve some shaping in their work will know the worth and versatility of files and rasps in the workshop.

Traditionally, rasps are designed to be used by grasping the handle in one hand and holding the tip of the cutting surface in the other. Many of you will know that extended sessions like this can become uncomfortable and, like me, have attempted to solve this by wrapping tape etc around the cutting tip.

The team at The Unplugged Workshop, a hand-tool-only school in Toronto, Canada approached master rasp maker Noel Liogier in France to assist in getting around this issue by custom-making these two-handed rasps.

Designed with a spokeshave in mind, users can choose between three grades of cut – a coarse No.6, a medium No.9 and a fine No.13. With beautifully

shaped walnut handles and brass ferrules these tools are exquisite to use.

The cutting surfaces are approximately 4" x1" (100 x 25mm) and each tool has a flat and half-round face. On a traditional rasp, the teeth are oriented to cut along the length of the blade, but on these tools the hand-stitched teeth have cleverly been rotated by 90° to allow for cutting across the tool.

The overall length is 12-3/4" (324mm), so these tools are wonderfully balanced in the hand and ideal for shaping work held in the vice or shavehorse. Just like a spokeshave, users can easily switch between pushing and pulling the tool, something that is more difficult with a traditional rasp.

It is clear that serious thought has gone into the development of these tools, and



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the fit and finish is of the highest quality. I consider them to be extremely good value for the quality and performance.

For anybody who likes to shape with hand tools, these rasps are a truly exciting development and I'm sure you'll find yourselves reaching for them time and time again.

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Damion Fauser is a designer maker in Brisbane who also teaches woodworking. See www.damionfauser.com

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Bubostyl Reverse Bowl Chuck

Reviewed by Neil Turner

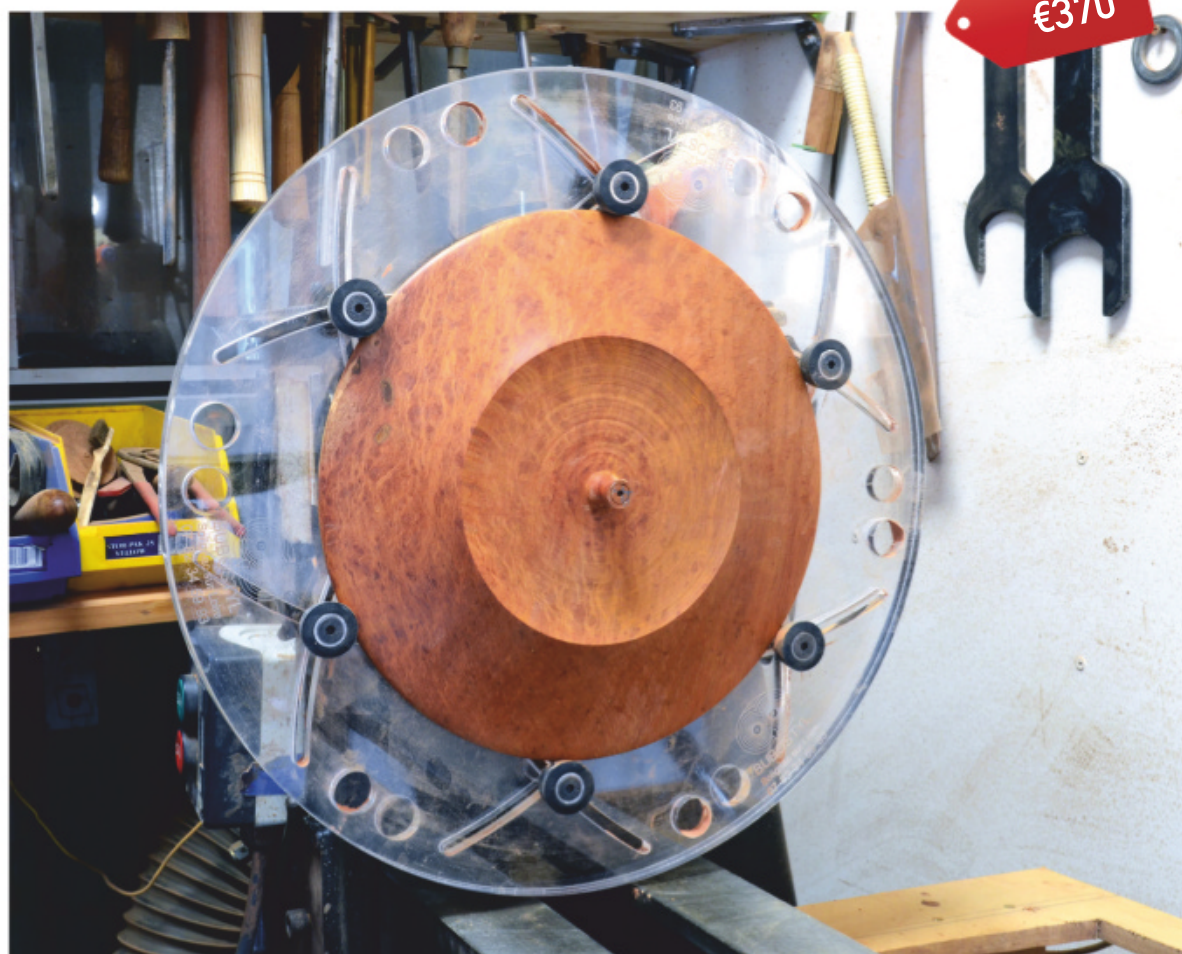
On a recent visit to France to teach at the Escoulen School in Aiguines, one of my students was selling a reverse bowl chuck, the likes of which I had never seen. The chuck is based on the Longworth system and made of acrylic. What really attracted me was the quality (it is all laser cut providing superb accuracy) and the flexibility (any thread size can be fitted to the chuck to suit most lathes).

Two size options are available; an outside diameter of 295mm (with a 105–246mm holding capacity), or an outside diameter of 400mm (with a holding capacity of 165mm to 345mm). Seeing the benefits I ended up buying both.

The maximum speed of rotation when using the chucks is 1000rpm, however it is recommended to start slow and then increase to the desired speed (somewhere between 600 to 800rpm). The rubber holding buttons are round, so the chance of catching yourself during the turning and sanding process is minimal, however you still need to be mindful of the potential risks they pose.

When the chucks arrived I was keen to see how they performed. With two 270mm diameter plates and a maple bowl 280mm diameter and 120mm deep to finish, I had the perfect opportunity to investigate how the chuck operated when working at different distances from the faceplate and whether the black stoppers would mark light coloured wood.

Set-up entails undoing the holding nuts on the back of the disc – I found these easy to hang on to and turn. This allows the two discs to move independently and freely without restriction. Using the tailstock to hold the plate in position I rotated the two



discs in opposite directions (using the holes on the outside of the disc). This gave enough gripping friction to hold the plate in position when all the nuts were tightened on the back of the disc.

To get some more pressure on the rubber buttons I locked the headstock and only had to rotate the outside disc to tighten the buttons onto the plate. This was easier as it freed up one hand to tighten up the locking nuts. The holding bolts are recessed into the rubber buttons and have an Allen key recess for extra tightening if required.

I was able to remove the waste where the tailstock centre had been cutting with the grain and then sand to finish without any problems.

Moving on to the deep maple bowl, I kept the tailstock in place for as long as possible until I finished turning the

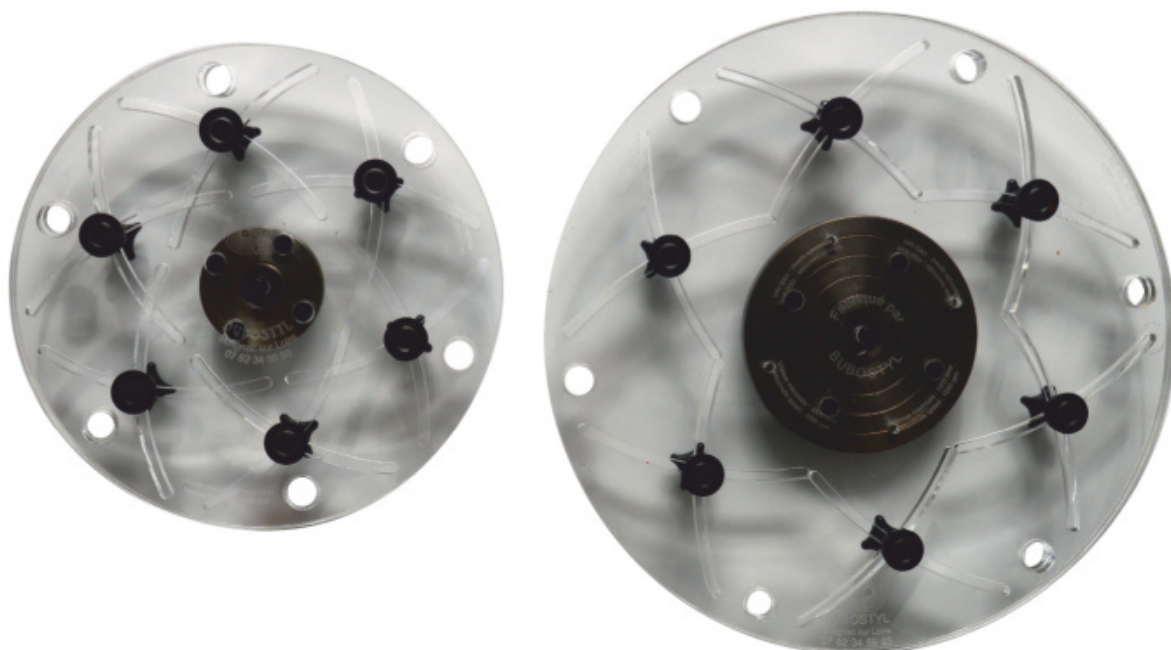


base of the bowl. My preference is to do as much turning and sanding with the tailstock in position. Then with the tailstock removed, I turned away the remaining timber (cutting with the grain). Working 120mm from the face of the chuck I expected some problems, however with the bowl rotating slowly the remaining timber was removed easily with light cuts.

Overall I was very impressed with the chucks and the results achieved. The discs rotated accurately and the holding buttons ran true. It was able to hold the plates and bowl securely even when working a long way from the chuck's faceplate, and there were no visible marks from the buttons. I highly recommend this product as a great addition to a turning workshop.

Available from www.bubostyl.fr

Neil Turner is a wood artist who lives in West Australia. See www.neilturnerartisan.com.au



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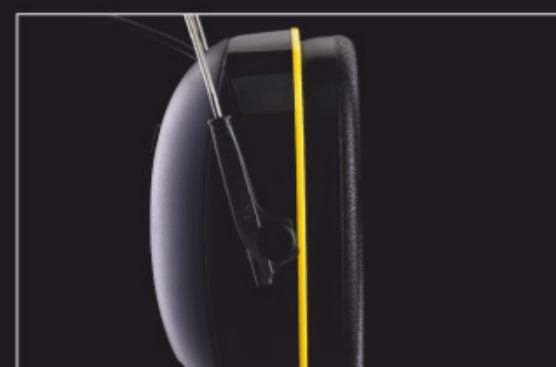
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Scheppach Deco XL Scroll Saw

Reviewed by Andrew Potocnik

There's a whole community of woodworkers out there who specialise in scroll saw work. They create two dimensional drawings cut into thin boards and need a machine capable of delicate cuts with negligible tear-out, plenty of support for large workpieces, and blades fine enough to provide a very fine pencil-thin saw kerf capable of cutting tight curves.

With these requirements in mind I was keen to see how this German saw manufactured in China performed, especially with a number of features highlighted on the packaging and website.

Weighing 11.8kg this saw is easy enough to move from its packaging to the workbench, whilst having enough weight to sit firmly on four rubber feet which absorb the minimal vibration generated as the saw is set in operation. The 240 volt motor hums along without generating excessive noise, which in short bursts for me didn't require hearing protection.

Sized 630 x 320 x 380mm high, it's ideal for a small workshop. The variable speed switch provides a range of 550–1600 strokes per minute. The length of stroke is 20mm, although clearance between the table and top of the vibrating arm is 50mm. In all reality saws of this type are generally designed to cut material of up to about 10mm before compromising quality of cut and accuracy.

The kit features a foot-operated switch which lets you use both hands to hold down work before engaging the saw to cut safely and accurately. This is an advantage, no matter your level of expertise in using a tool of this type. Keep in mind, this is only an on/off switch, the variable settings need to be manually altered on the main variable speed setting on the machine's body.

This saw includes a screw-on flex drive that is easily fitted to the motor, and this is where the foot switch is most practical. Although the flexdrive appears quite lightweight at first



glance, it is capable of gripping a variety of cutters, grinders and sanding attachments mounted to a 3.2mm shaft. The collet can be changed to grip smaller diameter shafts, but most of the attachments were 3.2mm in diameter and looked like standard kits available with other products.

When I switched to my own heavy duty burrs, the motor stood up and just kept going, but remember to go gently. A shortfall of this dual purpose set-up is that you cannot disengage the saw when using the flex drive, therefore the saw will run whilst you're grinding or sanding away.

The saw uses pinned blades of 127mm length which are quick and easy to change. If you prefer non-pinned blades a pair of couplings allow for these to feed through narrow holes, however you'll need to experiment to see just how fine a blade will tolerate the power of this saw.

Although I found the clear plastic safety guard intrusive it's better for manufacturers to be safe rather than sorry. It's worth noting that safety glasses should always be worn

whenever using machinery, no matter how timid it may seem.

Tilting and locking the table from 0–45° to the left of the blade is easy enough, and while the saw generates minimal dust, there is a 35mm diameter vacuum connection below the blade while a pump action links to a hose which blows dust away from the blade.

In use I found the saw ran smoothly at all speeds, sitting firmly on my bench and emitting a low level of noise. The blade cut cleanly without tear-out on the underside of the 3mm Huon pine I was working on. The result was similar on some 6mm thick maple I had on hand.

Tight curves were a breeze to negotiate, and while the battery powered LED light is quite okay for general work, a more powerful light would be appreciated when performing intricate cuts.

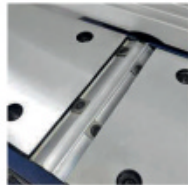
Review machine from
www.machineryhouse.com.au/W350

Andrew Potocnik is a woodworker and teacher who lives in Melbourne, see www.andrewpotocnik.com



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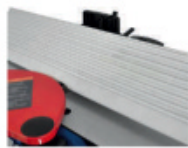
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Kunstmade Folding Brass Ruler

Reviewed by Raf Nathan

We tend to take a simple tool like a ruler for granted and yet a whole piece can be ruined if the measurements are out.

Christian Groves in Melbourne developed his Kunstmade 600mm folding ruler following a request from Wellington Steelworks in Tasmania who were looking for a high quality metric ruler for blacksmiths. Made from brass it won't discolour when heated, and it's easy to find in the dark environment of a blacksmith's shop.

For woodworkers this ruler is also highly valid. An accurate 600mm long ruler is perfect for layout work and precise set-outs in the workshop, and that length does cover most workshop jobs.

Examining the ruler, I paused to consider how hard it is to get a ruler to fold over and still be exact in

its length. Made of solid brass the Kunstmade ruler is crisply engraved and finished. Critical is the very neat screw hinge that it pivots on, and the fully extended ruler was perfect over its entire length when checked against a reference ruler. Having a centre hinge means you can't lay it flat but you can use it on its edge for a precise marking, and for quick measuring laid flat it is fine.

The Kunstmade ruler is very well made, perfect in fact, although if the engraving was paint filled it would be better for woodwork. Each ruler is hand finished by the maker. This locally made tool is the total package – well designed and well made.

Review tool from
www.kunstmade.com.au

Raf Nathan is a tool reviewer and designer maker in Queensland, see
www.interwoodshop.com



The Craft Of Veneering, Craig Thibodeau

Reviewed by Raf Nathan

Craig Thibodeau is a professional furniture maker in the USA who specialises in veneering and decorative inlay, as well as complex mechanical furniture. He has written articles on creating parquetry and marquetry patterns for Australian Wood Review.

Using veneer can be a bit daunting for the beginner. Study is needed to learn the art and help is here with this fantastic book. *The Craft of Veneering* is a comprehensive guide to veneering that covers everything from using, selecting and laying wood veneer, along with everything in-between.

In the early chapters the author introduces the material and the basic processes of working with it, outlining the tools, glues and substrates used. He then takes the beginner from creating simple

panels through to advanced patterns, curved work, bent laminations, edgings and crossbandings.

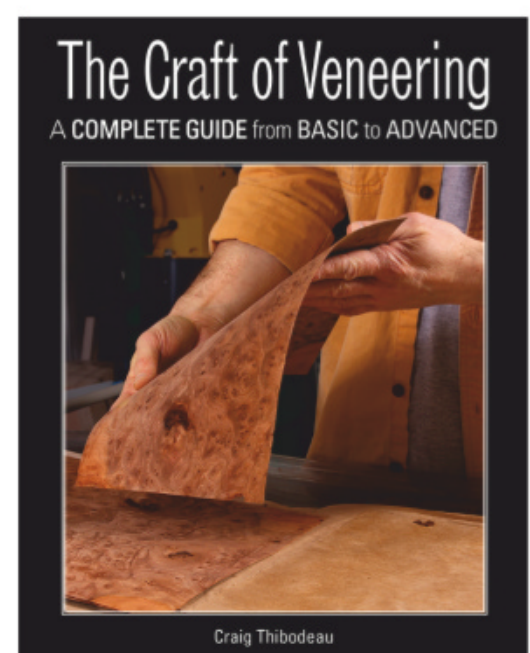
Traditional and modern techniques including laser engraving and cutting are covered. Advanced processes include decorative veneer matchings such as radial sunbursts, along with detailed guides to creating parquetry and marquetry.

Throughout the book there are numerous photographs of furniture made by the author and also work by many other masters to both inspire and illustrate other styles. The latter include Australian makers Damion Fauser, Darren Fry, Gray Hawk and Peter Young. The gallery of work presented is almost enough to warrant buying the book.

Whether you want to veneer up a chessboard, a round radial matched top,

or if you are looking to make high level marquetry and parquetry, this highly readable and well illustrated book has you covered.

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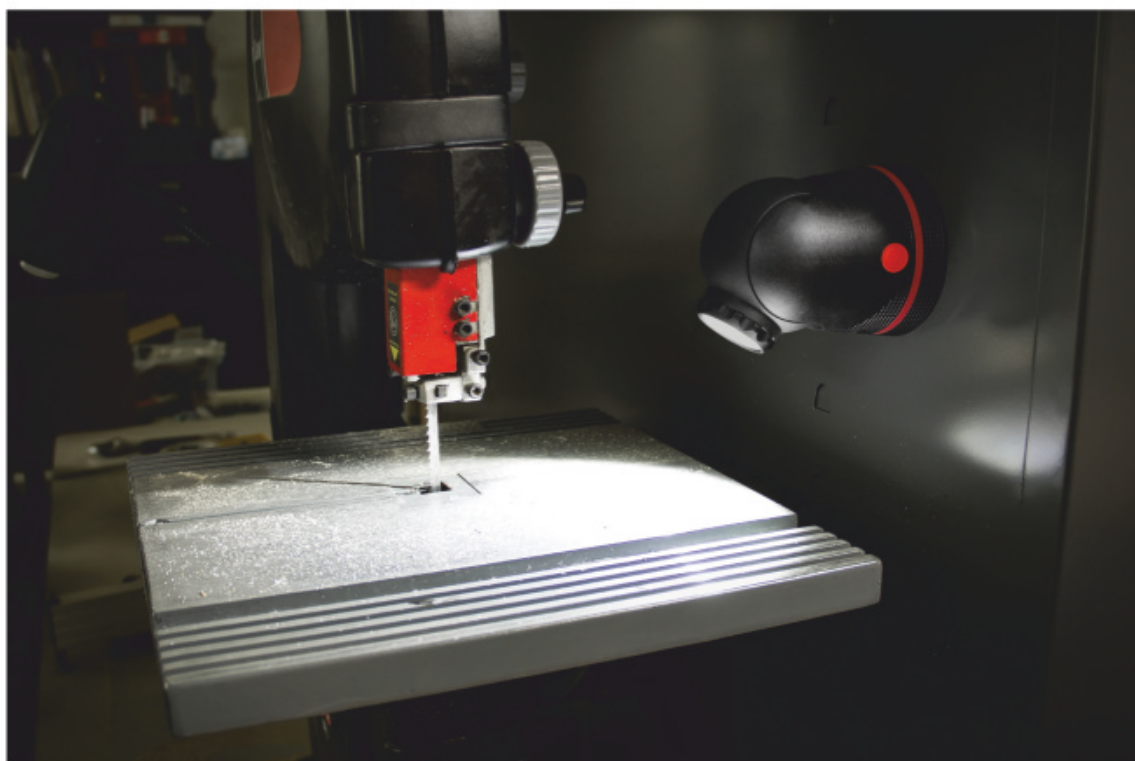
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www.whiteint.com.au/coast

Product news

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

Personal Protection ▶

Convenient, comfortable, effective – 3M's Paint Project Respirator 6211 is the PPE that covers you when spraying paint, solvents or even the weeds. And of course for the woodworker the priority is keeping wood dust out of your airways. The 6211 kit includes a facepiece and quality 3M 6001 cartridges. Your lungs are priceless but the mask is affordable at \$65. Get one at Bunnings.

www.bunnings.com.au



◀ Premium Well Priced

Arden is known globally for the quality router bits it manufactures for a range of brands. In Taiwan the company's new purpose built manufacturing plant sports the latest equipment, and even the building itself is shaped like it has been cut with a profiled router bit! From this factory now comes a large range of premium and well priced quality bits marketed under their own Arden brand which is now available in Australia from Carbatec.

www.carbatec.com.au



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Promac are now launching three new Tormek diamond wheels and a Multi Base for edge tool sharpening. Both the Multi Base and Diamond Wheels are designed for use with the Tormek Water Cooled Sharpening System and will give woodworkers the perfect conditions for always having sharp tools in their work.

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DF-250 Fine – Grit 600



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DE-250 Extra Fine – Grit 1200



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The world's first 12 volt brushless planer from Bosch launched in January 2019 with a full range of 12V tools specialising in wood, metal and measuring tools. The GHO 12V-20 brushless planer is designed to be well balanced, ergonomic and especially compact with a cutting depth of 2mm and a cutting width of 56mm. It's comparable to a traditional hand-held planer in both size and weight, offering precision and easy handling. The brushless motor provides a high power, lightweight tool for hard and soft timbers. Run time on the Bosch 12V platform is secured with high performance lithium-ion batteries ranging from 2.0ah to 6.0ah. Available from Total Tools.

www.bosch-pt.com.au



▲ Square, No Doubt

These new clamping squares from WoodRiver are just the ticket for keeping cabinet corners lined up while installing fasteners. Moulded from specially formulated resin, the squares are strong, accurate and easy to keep clean. Supplied in packs of 4 x 150mm for \$47.50 each 'leg' is 35mm wide for use with a variety of clamp types.

www.woodworksupplies.com.au

▼ Pocket Plane

Made from African *Azelia quanzensis*, New Zealand planemaker Philip Marcou's latest offering is the Pocket Plane, designed for general carpentry rather than finer woodworking. To set up, place the plane on a flat wooden surface, insert the supplied O1 steel blade and tighten the screw for a light to medium cut. Some lateral adjustment is possible. The finely knurled knob and generous cap are signature to this maker's work. The planes sell for \$185.

www.piranhatools.co.nz



◀ Sawmilling Success

This year Lucas Mill, an Australian family owned and operated business, celebrate 25 years producing portable sawmills and dedicated slabbers. Transport a Lucas portable sawmill almost anywhere to selectively harvest timber with minimal impact to the surrounding environment. You can cut wood efficiently and conveniently for private fencing, building or furniture making. A testament to this popular brand is the fact that since 1994, over 18,500 Lucas Mill portable sawmills have been sold into more than 100 different countries around the world. Details on models and sizes from the website.

www.lucasmill.com





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Handmade for Handwork ►

Things of beauty in their own right, travishers like the mulga one shown here are made by US furniture and toolmaker Claire Minihan. These are traditional tools for hollowing surfaces by hand, as for example when saddling Windsor chair seats. Two different sweeps (radiuses) may be ordered from her website. You can also learn to make one from Claire in person when she is in Australia in March for the Lost Trades Fair in Victoria.

www.cminihanwoodworks.blogspot.com



Pégas, Now Local ►

The new blades on the block will soon be the much-lauded Pégas range of scroll saw blades and accessories. Crafted for over 50 years in Vallorbe, Switzerland there is a huge range of sizes and styles that are said to outperform and outlast their competition. As well as blades, sanding strips for scroll saws and scroll saw heads are now on offer from Carbatec.

www.carbatec.com.au



▼ Handy Helper

This T-track clamp could be the third hand you sometimes wish you had, and best of all you only need one hand to operate it. Made by WoodRiver it functions as a quick hold-down and has non-marring clamp pads. Secure it to your bench or assembly table. It has an 83mm throat and accommodates a 228mm thick workpiece.

www.woodworksupplies.com.au



◀ For Tight Spots

Bessey Quick Action GearKlamps can get you into the tight spaces where your regular F and G style clamps can't go. The new gears are housed along the length of the clamp, just twist to action. Press the quick-release button to shift and slide into position. All sizes (150, 300, 450 and 600mm), have 60mm throats. Available from Carbatec for \$58 to \$75.

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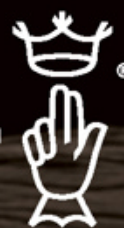
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Variations on a Side Table

Traditional or contemporary, with or without drawers, shelves or embellishments, this design can be tailored to your needs. Story by Peter Young.



This small side table is one of my favourites and one of my best sellers. It is useful as a bedside table or as an occasional table beside a sofa. Although the design is deceptively simple, there are a large number of design variations which can be used to make it look more traditional or more contemporary.

It can be of solid wood or veneer covered plywood construction and can be made with or without a drawer or shelves. The top can be solid wood or a veneered panel with solid wood edging. The veneered panel could even incorporate marquetry or parquetry designs.

Species and sawn sections

Here I'll show how to make one in solid Tasmanian blackwood but I've also made this design in southern mountain ash, New Guinea rosewood, American ash, Queensland maple and cedar. Other possibilities are cherry and walnut.

When selecting material remember that you do not want highly figured material for the legs and the aprons.

Rather we are looking for rift sawn material for the legs and either rift or quartersawn for the aprons.

When possible I like to buy timber in 50mm thicknesses and 150mm or greater widths. This allows me the best chance to get rift sawn material for the legs (**photo 1**) with near vertical lines running down each face of the leg. Ripping a 150 x 50mm board on the bandsaw to give 30mm leg blanks allows me to use the remaining material for 16mm thick aprons.

With quartersawn leg material one face will have vertical lines but the adjacent face will have face grain which in some species can be figured and visually distracting. While you could use decorative face grain for the aprons you need to be very careful as it can be extremely distracting and it's much safer to use straight grain material.

A case can also be made for using straight grain material for the top so the finished piece sits quietly in its place waiting to be discovered. In some locations it is possible to talk to a timber merchant and tell them what you are looking for, but that is becoming increasingly uncommon. I usually make these side tables in pairs so remember to mill enough stock for

two tables, and always allow for spare legs and aprons, just in case.

Dimensions and sizings

The simplest form is without a drawer, so just four legs, four aprons and a top. If there is no drawer then it's possible to reduce the width of the aprons down to about 70mm. For the drawer version I usually make the aprons about 120mm wide so the drawer is deep enough to be useful.

The final size of the legs is about 30 x 30mm, tapering to about 20mm at the toe or for a more delicate look you could go as small as 15mm as in the main image. The final length of the legs can vary quite a lot giving further design options. I usually opt for an overall table height of about 625mm which is quite useful for either a bedside table or a table to sit beside a lounge or armchair.



Main: One of the author's side table variations made without a drawer but with parquetry featuring on the top, and legs and frame made from Tasmanian blackwood.

Other variations shown left to right in solid blackwood, blackwood with marri top, New Guinea rosewood with sycamore top panel, sides and drawer front.

Opposite top: Close-up of drawer joinery

Photos: Andrew Porfyri



1



2



3



4



5

1. Choose rift sawn material for the legs, as in the left side of this board. This will provide straight grain down all four sides of the leg. If you use the right hand side of the board you can see that one side of the leg will have straight grain but the adjacent side will have face grain.
2. To keep track of the orientation of the leg blanks as they are being thickened to square, I use a soft red marker on the endgrain.
3. I mark the top of each leg with a number starting clockwise from the left front. I also mark the outside edge which will not be tapered with an 'X'.
4. I use a similar numbering system for the aprons so I can tell at a glance which is the outside and top of each apron and what leg each part fits to.
5. To lay out the position of the leg and apron mortises I use painters tape and a combination square to mark out from the top of each component – this ensures a good fit between the legs and aprons.

Layout and preparation

The rift sawn parts for the legs are bandsawn and then jointed and thickened to final size. To keep track of the orientation of the legs as they go through the thicknesser I mark one end with a soft red marker (**photo 2**).

Each leg is then inspected carefully because I want to make sure that any longitudinal grain runout will be towards the outside corner which will not be tapered. I mark this corner with an 'X' (**photo 3**) and use that mark when I'm laying out the joinery and also when I'm cutting the taper.

I find it is useful to number each leg, starting from the left front and going clockwise around to the right front leg. I use a similar numbering system for the aprons/drawer front so I can tell at a glance where each component fits (**photo 4**).

I now use the soft red marker to indicate on the face of each leg where the mortises will be cut and if the side will receive a side apron or a rear/front apron. This might all seem like overkill but I need to make sure that the layout is

Peter-proof to reduce the likelihood of mistakes occurring.

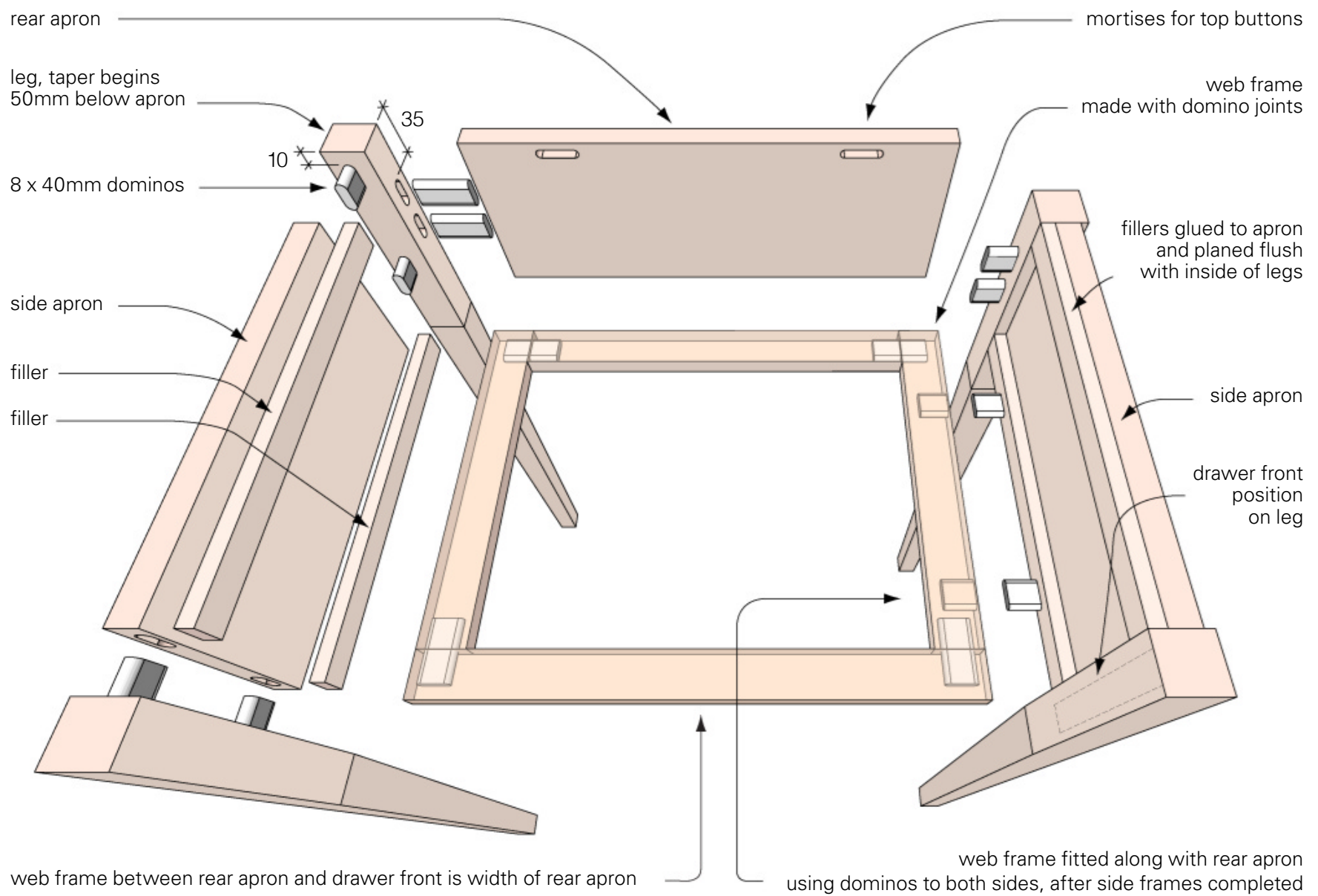
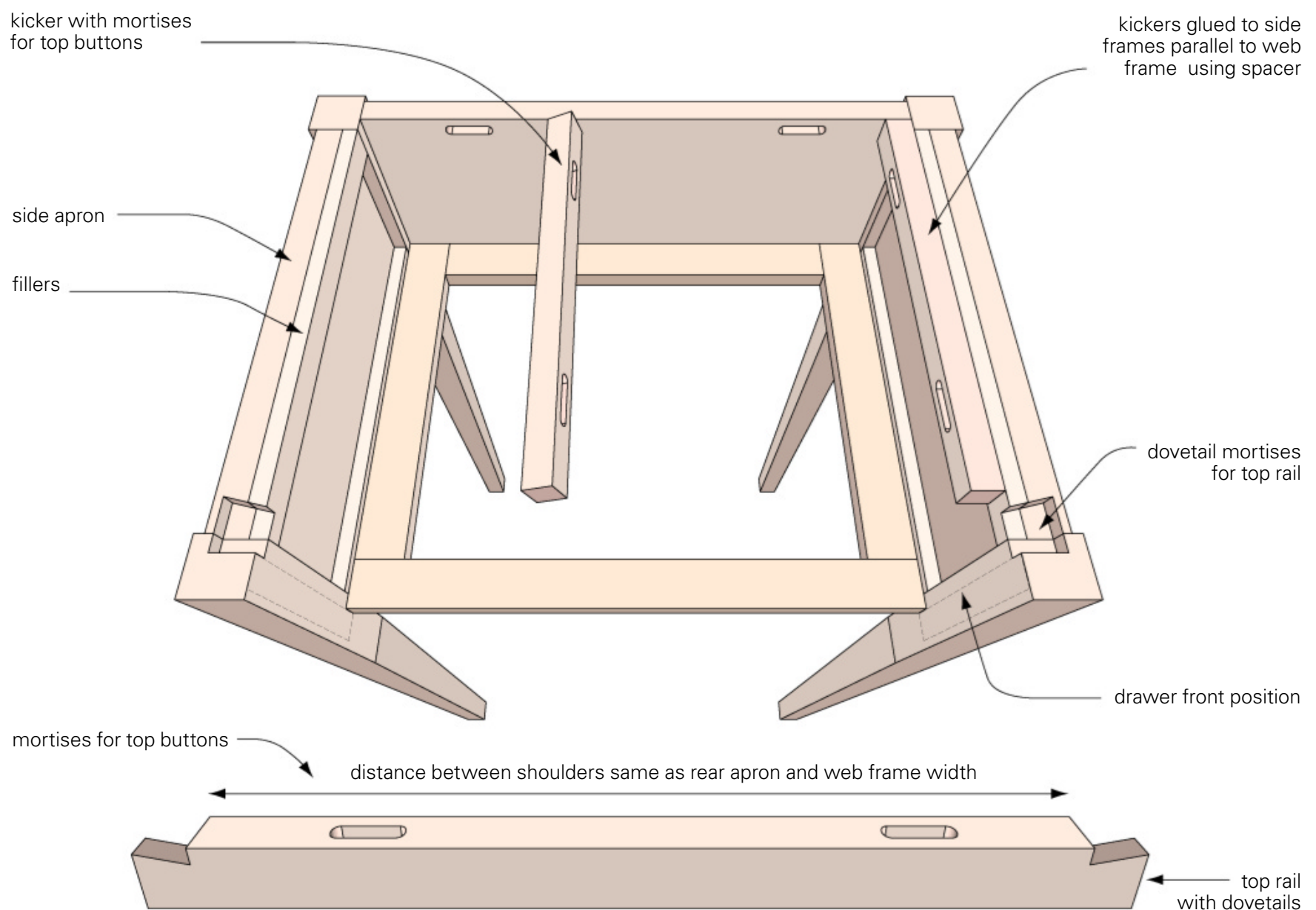
Joinery

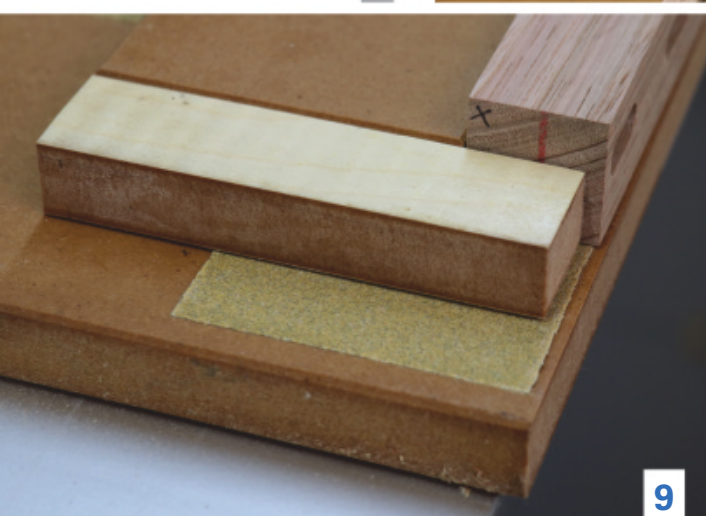
The leg-to-apron joinery could be traditional mortise and tenon but I now use the loose tenon domino system. It is quick and easy and quite strong enough for this purpose. Because the mortises are 20mm deep and the legs are 30mm thick it is necessary to offset the positions of the mortises for the side and rear/front aprons.

For 70mm aprons I use two tenons for the side aprons and one central tenon for the rear/front aprons. For 120mm aprons it is possible to use two tenons in all the leg-to-apron joinery.

To lay out the position of the mortises I use painters tape on both legs and aprons (**photo 5**) and mark the location using a combination square, always measuring down from the top of either the leg or the apron. For the legs remember that the mark you need is on the face adjacent to where the mortise will be cut.

There is an offset between the leg and the apron which can be 4–6mm.

Fig. 1 Stage 1 assembly**Fig. 2 Stage 2 assembly**



6. There is an offset between the leg and the apron so for the aprons I use a domino setting of 16 and for the legs a setting of 25 giving me a 4.5mm offset.
7. To allow for wood movement I use a wider mortise setting for the lower mortise in the leg. This keeps the top of the leg-to-apron fixed while allowing movement in the lower part of the apron. Shown is a narrow 70mm apron.
8. To cut the taper on the legs I use a jig on the sliding tablesaw. A similar jig can be used on a bandsaw. For a cabinet saw the leg would need to be positioned on the left hand side of the jig.
9. To maintain correct orientation of the leg in the jig, I position the outside corner (marked with an X) as shown for the first cut, then rotate the leg anticlockwise for the second cut.

There are two methods to allow for this when cutting the mortises. You could either use a shim or change the settings on the domino. If using a shim the thickness would be the same as the offset, say 5mm. The apron mortises are cut with the shim in place (under the registration plate of the domino) and the leg mortises are cut without the shim.

The other method is to use the adjustment on the machine. Selecting the 16mm setting will place the centreline of the mortise in the middle of a 16mm thick workpiece, or 8mm from the surface the registration plate is placed on to cut the mortise.

Using the 25mm setting will place the centreline of the mortise 12.5mm from the registration surface. So if we use the 16 setting for the aprons (**photo 6**) and the 25 setting for the legs the offset will be the difference between the two centrelines. That is 12.5 minus 8 equals 4.5mm.

For solid wood aprons the other factor to think about is wood movement. You need to allow up to 2% for seasonal movement, so for a 120mm apron the movement could be as much as 2.4mm certainly enough to cause the wood to crack over time. I use a wider mortise setting for the lower mortises in the leg (**photo 7**) so the apron is fixed at the top but can move over the lower part.

With the leg-to-apron joinery completed the legs can now be tapered. I use a simple jig (**photo 8**) for this on my sliding tablesaw. You could use a similar jig on a bandsaw, but on a cabinet saw the right hand side of the jig runs against the fence so the leg needs to be positioned on the left hand side of the jig. I use a tablesaw because it gives a relatively smooth surface which only needs a small amount of work with a plane or a cabinet scraper to get the surface ready for finishing.

I start the taper about 50mm below where the bottom of the apron meets the leg. Using the jig it is only necessary to lay out the taper lines on one leg and then all the other legs can be cut in the same position. I make sure that the leg is in the correct orientation for the first cut by placing the X mark at top left (**photo 9**). For the second cut I then rotate the leg anti-clockwise.

Benefits of pre-finishing

Before gluing up the leg-side apron assemblies I like to apply finish to the aprons and to the legs (**photo 10**). (*Ct'd p.32*)

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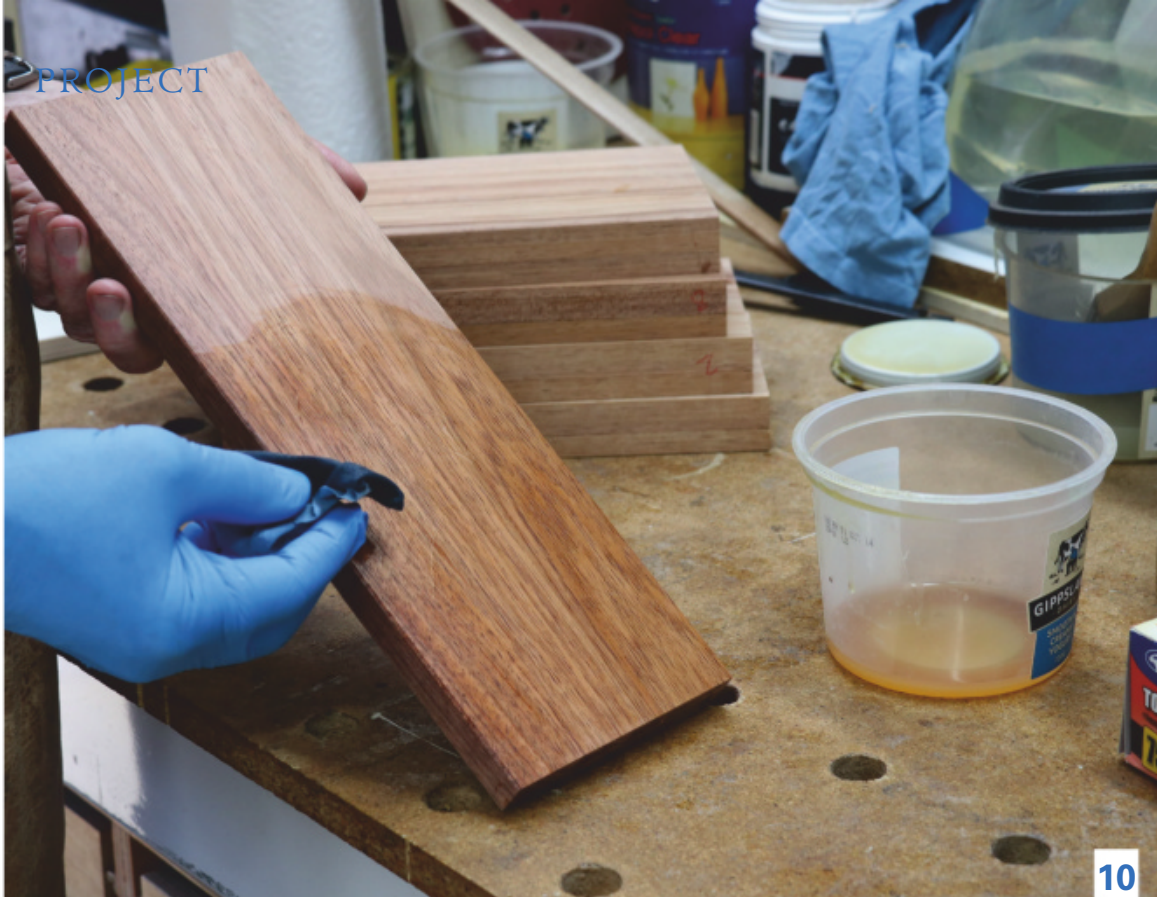
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10

10. Before glue-up I like to pre-finish the aprons and the legs. This makes control of excess glue very easy and also means I don't have to worry about sanding and finishing in corners created by the offset between the legs and aprons.
11. Gluing the leg-apron assembly. By controlling the pressure on the two clamps I can make sure that the legs remain parallel.



11

12



Pre-finishing makes it very easy to deal with glue squeeze-out, you simply wipe off the excess glue with a paper towel followed by a damp rag. It also makes finishing so much easier, especially where there is an offset between components. Another benefit is that any missed defects or tear-outs become much more obvious when finish is added and it's much easier to repair these defects before assembly than after.

There are lots of choices of finishes. I usually use a wash coat of shellac followed by wipe-on polyurethane but recently I have been using Osmo oil-based finish.

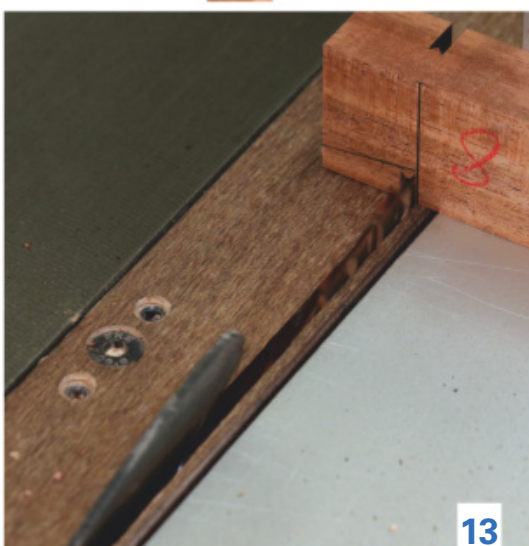
Glue up in stages

I do the glue-up in two stages, the first being the leg-side apron assemblies (**photo 11**). I place one clamp near the top of the legs and the other clamp in line with the bottom of the apron. I tighten up the top clamp first and then apply pressure to the second clamp so the outside leg to outside leg distance at the bottom of the legs is the same as at the top of the legs thus making sure that the non-tapered outside edge of the legs are parallel.

When the assemblies are dry, I glue in place top and bottom filler pieces which provide the side runners for the drawer. These fillers are about 30mm wide and just a bit thicker than the inside leg to apron offset so they can be planed level with the inside of the leg when the glue is set.

A side table with a drawer is a good option for a bedside table. In a traditional build an upper and a lower rail are used creating two horizontal components above and below the drawer front (as in far right table shown on p.27). The top rail is usually dovetailed into the top of the two front legs while the bottom rail is mortised into the side of the legs.

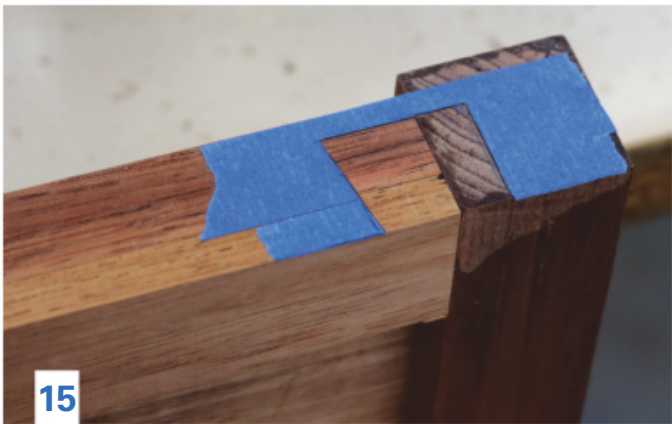
These horizontal elements provide a very traditional look but can be visually distracting and I now prefer



13



14



to have the drawer front looking the same as the aprons. You can then choose to add a drawer pull or not depending on whether you want to disguise the drawer or not.

I still use a dovetailed top rail but I move it back so the rail actually dovetails into the apron as well as the leg. I incorporate the bottom rail into a rectangular web frame which connects with the side aprons using loose tenons (**photo 12**).

Because the grain of the side aprons is running horizontally I don't have to account for wood movement in making this rigid web frame and it becomes a very strong connection between the left and right side of the cabinet as well as providing runners for the drawers. The top rail and the front of the web frame are both covered by the drawer front and act as drawer stops so it's important that they are vertically aligned.

Making the web frame

The next step is to construct the web frame using loose tenons. I make it a few millimetres oversize and then trim to size on the tablesaw after glue up. It is really important that the side to side dimension of the web frame is exactly the same as the shoulder to shoulder dimension of the rear apron and so I use the rear apron to locate the stop on the cross cut fence before making the final cut.

Similarly I use the rear apron to locate the shoulders of the top drawer rail half lap dovetail. When it is cut out (**photos 13, 14**) I mark the location on the top of the leg-apron assembly using a knife. Using blue painters tape is a good idea as it gives



CUTTING LIST				
PART	QTY	LENGTH	WIDTH	THICKNESS
Legs	4	600	30	30
Aprons	2	260	120	16
	1	340	120	16
Drawer front	1	340	120	16
Web frame	1	340	30	12
	2	280	30	12
	1	240	30	12
Spacers	4	260	30	8
Kickers	2	275	20	18
Drawer	2	270	75	10
	2	430	75	10
Drawer base*	1	330	260	10
Top	1	480	400	25

*Ply or MDF veneered on both sides

12. Completed assembly showing dovetailed top rail, web assembly and kickers.
Photo: Andrew Porfyri
13. Cutting the lap dovetail shoulders using a crosscut blade.
14. Finishing off on the bandsaw.
15. Use painters tape and a knife to lay out the joint which will go into the top of the leg and the adjoining apron.
16. A trim router removes the bulk of the waste. Clamp blocks around the joint to lessen the likelihood of splitting the side grain when chiselling out the rest of the waste.
17. Showing the completed joint.
18. A spacer block makes sure the kicker is parallel to the runner during glue-up.



- 19.** The 25mm thick top with a 40mm overhang is undercut at about 60°, leaving a 6mm square edge.
- 20.** A 20mm thick square edge top showing how the chamfer on the top and the beading strip on the bottom of the apron can make small visual highlights.

with commercial veneer. The drawer bottom is glued into a full width groove in the drawer sides, cut at the tablesaw as outlined in the last issue on p.31. This method gives a lot of strength and rigidity to the drawer assembly.

The final step is to make the top. There are a number of different variations possible here as outlined in the introduction. There are also a number of different edge treatments. I usually make the top about 25mm thick with an overhang of about 40mm and use an undercut of about 60° (**photo 19**) with a square edge of about 5–6mm. This gives the visual appearance of a light thin top. Another option is to leave the edges square but in this case the top needs to be around 20mm thick otherwise it looks too heavy.

Details add more

Small details can make a big impact. By making a heavy chamfer on a square edge table you can create a surface which catches the light differently from the rest of the top resulting in an interesting horizontal line along the edge of the top (**photo 20**). The effect is enhanced if you also add a bead strip to the bottom of the apron, now creating two horizontal lines which catch the light differently from the other surfaces.

With different combinations of timber species, joinery and detailing it's possible to create an infinite number of variations based on this basic design.

*Photos this page: Andrew Porfyri
Process photos: Peter Young
Diagrams: Graham Sands*

Peter Young is a studio furniture designer and maker who lives in Brisbane. In issue 93

a very good visual layout of the top of the joint (**photo 15**).

The next step is to remove as much of the waste as possible with a small handheld router. The depth of cut is set from the dovetail. I use a 6mm bit and carefully remove as much of the waste as possible before using a chisel for the final clean up (**photo 16**). By placing a chisel in the knife line and cutting downwards it should be possible to get a nice tight fit (**photo 17**).

Now the rear apron, the web frame and the top rail can be glued into the two leg-to-apron assemblies, checking the top and bottom measurements as before. If you are using buttons to hold down the top it is a good idea to cut the mortises in the inside of the rear apron and the inside of the front rail before assembly. I use the domino at the widest setting and position the centreline of the mortise 10mm below the top of the apron or rail.

I like to wait until everything else is glued up before gluing in the two kickers, using space blocks to make sure that the kickers are parallel with the runners (**photo 18**). Again, cut the mortises for the buttons before gluing the kickers in place. I could incorporate the top filler piece and the kicker into one component but I would be nervous about ensuring that the kicker was parallel to the runner so I prefer to use this two-step method.

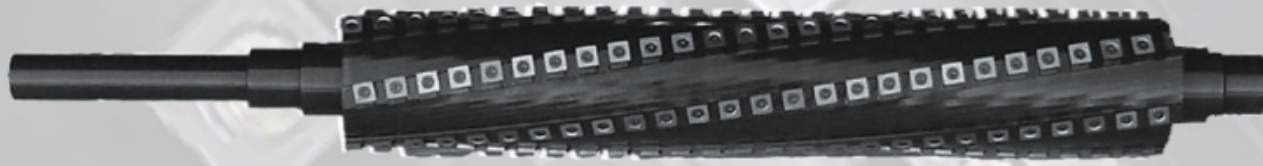
Drawer variations

There are many different ways of making drawers for these side tables and I have used a number of different variations. Currently I am using a tongue and dado method with an applied drawer front but in the past I have used dovetails, mitres and lock mitres.

I typically use ply or MDF for the drawer bottom and cover both sides



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Making A Wooden Grooving Plane

Vic Tesolin makes a customised
tool to suit his needs.

verita
Innovation in tools



Main: Making your own tools is a way to create personal tools for specialised tasks.

1. Stout hardwoods are great for this plane.
2. Have the blade in hand before getting started.



When I was a student at Rosewood Studio, one of the most memorable weeks for me was when we were introduced to toolmaking. There is something quite powerful about making tools that you can then use to make objects out of wood. All of a sudden, you can make custom tools to do special tasks in your shop and they can be made to suit your own personal methods of work.

That is the case with this wooden grooving plane. I've realised over the years that I cut many 6mm grooves, 6mm deep and 6mm from the edge of a board. Most often, this is seen in a drawer, box or in small cabinet construction. So I decided to build a single task plane that will do exactly what I need it to do.

This plane was inspired by Japanese woodworking tools in that it is designed to work on the pull stroke. I find pulling joinery planes easier because now I only need

a stop to work against instead of having to clamp the workpiece to my bench. Now I can use my dominant hand to pull the plane, while my off-hand holds the work on the bench.

I made this plane out of white oak (*Quercus alba*) for the body components and Indian rosewood (*Dalbergia sissoo*) for the skate. However, you can make the plane out of any hard, long-wearing timber – if you can locate any down under...

Start by taking a good look at the drawing and cutting list for this project. Being able to visualise what you are making will help you keep track of the parts. Begin by breaking out the timber according to the list (**photo 1**).

It is essential that the skate material be exactly the same thickness as the blade so be sure to have the

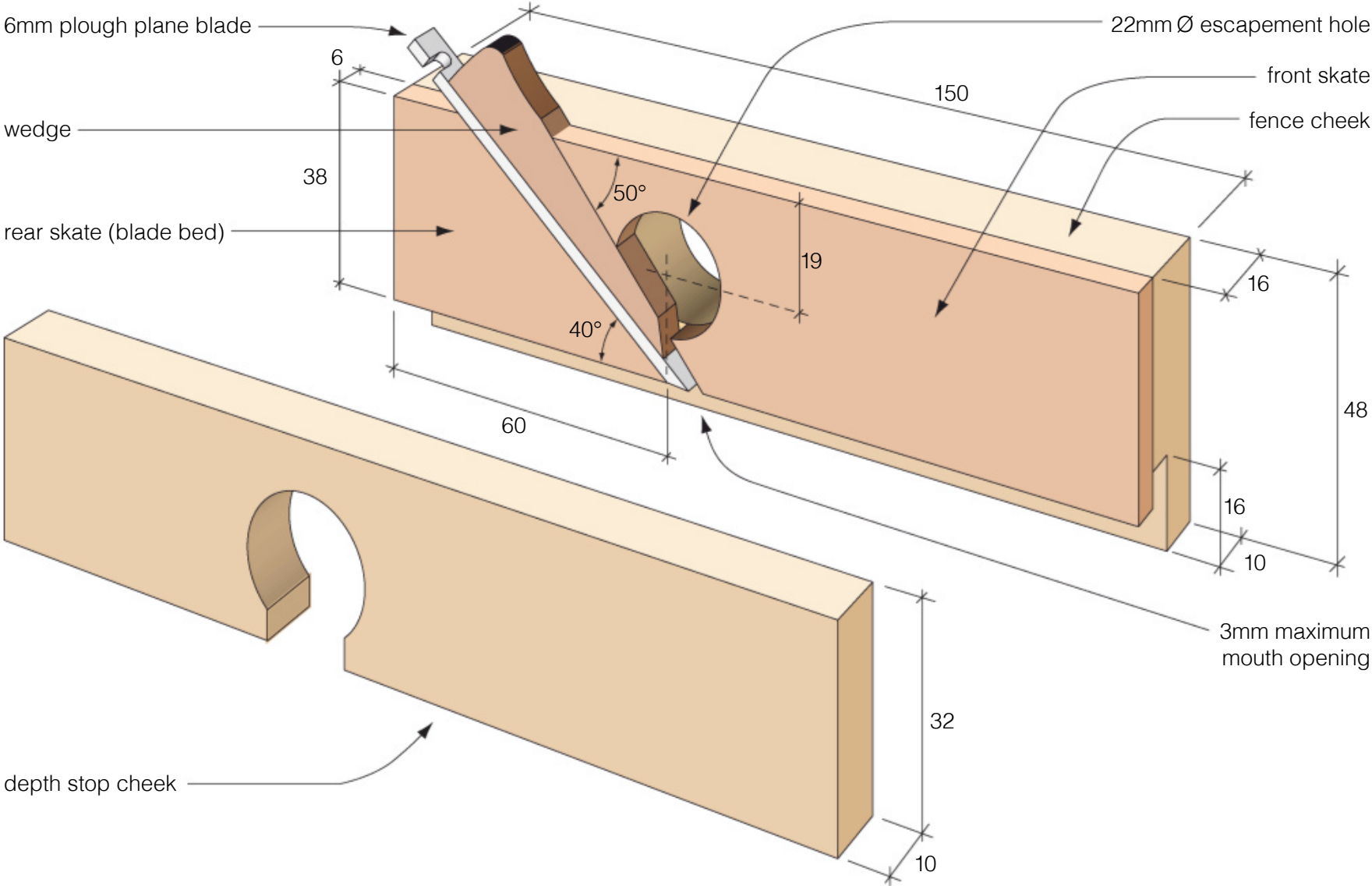
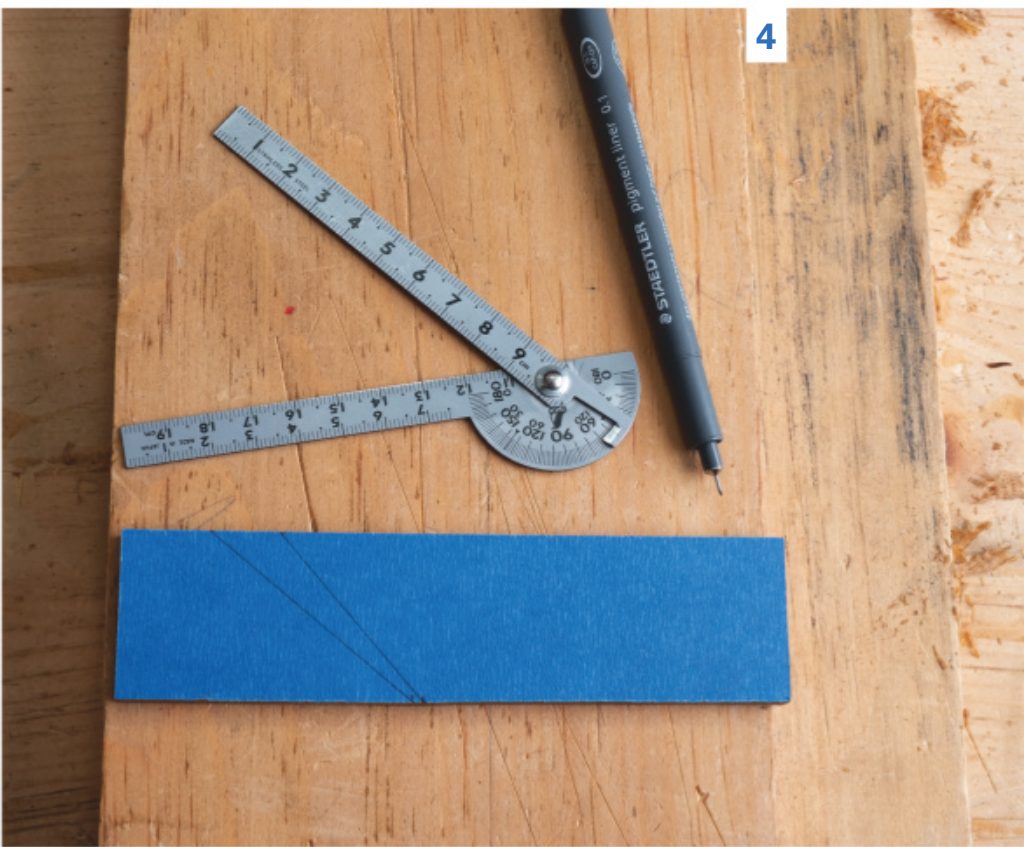


Fig.1 Arrangement and dimensions (mm)

CUTTING LIST (MM)			
Part	Length	Width	Thickness
Fence cheek	150	48	16
Depth stop cheek	150	32	10
Front and rear skate	150	38	6 (blade thickness)
Wedge*	75	20	6
* Cut wedge overlength and shape to final size			

3. The rebate creates the fence for the plane.
4. Yet another use for blue tape.
5. The knife and the high contrast tape make the cutting easier.
6. I nailed a square nail to my bench hook to help hold the angle.
7. Flip your plane over in a vice to handle small parts easily.
8. Double check that all is good with the rear skate.

blade in hand before you start. I'm using a 6mm plough plane blade made by Veritas (**photo 2**). I found these components a bit small to safely send through machines so I started with double the length on all the parts. I ended up making two planes and giving one away to a friend. Although, you could also make a left and right plane for yourself.

Cut a 6mm deep x 16mm wide rebate into the lower edge of the fence cheek. There are more ways to cut a rebate than a beach has sand, so I will leave it up to you to choose your method of choice (**photo 3**).

Now move on to the skate material. I chose a fairly dark hardwood so I layed a piece of blue tape down so that I could see my layout lines easier (**photo 4**). Mark the bed angle at 40° and the wedge angle at 50° according to the positions specified in the drawing.

Follow up with a knife to score the tape and cut lightly into the material. Once you remove the tape, it is quite clear as to where you are meant to cut (**photo 5**).

Use a wide chisel to create a small knife wall to give your handsaw a good start. Once you have cut the two angles, you can clean up the cuts with a shooting or block plane (**photo 6**).

Move on to the wedge. You may have noticed that the wedge material is cut longer than the finished size. This is done intentionally to make it easier to fit. Lay out the 10° angle for the wedge and cut to the line. You can refine the cut with a few hand plane passes (**photo 7**).

The glue-up for this plane is a multi-step affair that takes some patience, but I assure you it will be worth it in the end. Start by gluing the rear skate (blade bed) to the fence cheek using the top of the plane as a reference surface (**photo 8**). Place a couple of spring clamps on this assembly and let it set for about 30 minutes. Don't go overboard with the clamping for this project. A little light pressure should give you glue squeeze-out if your surfaces are flat and clean.





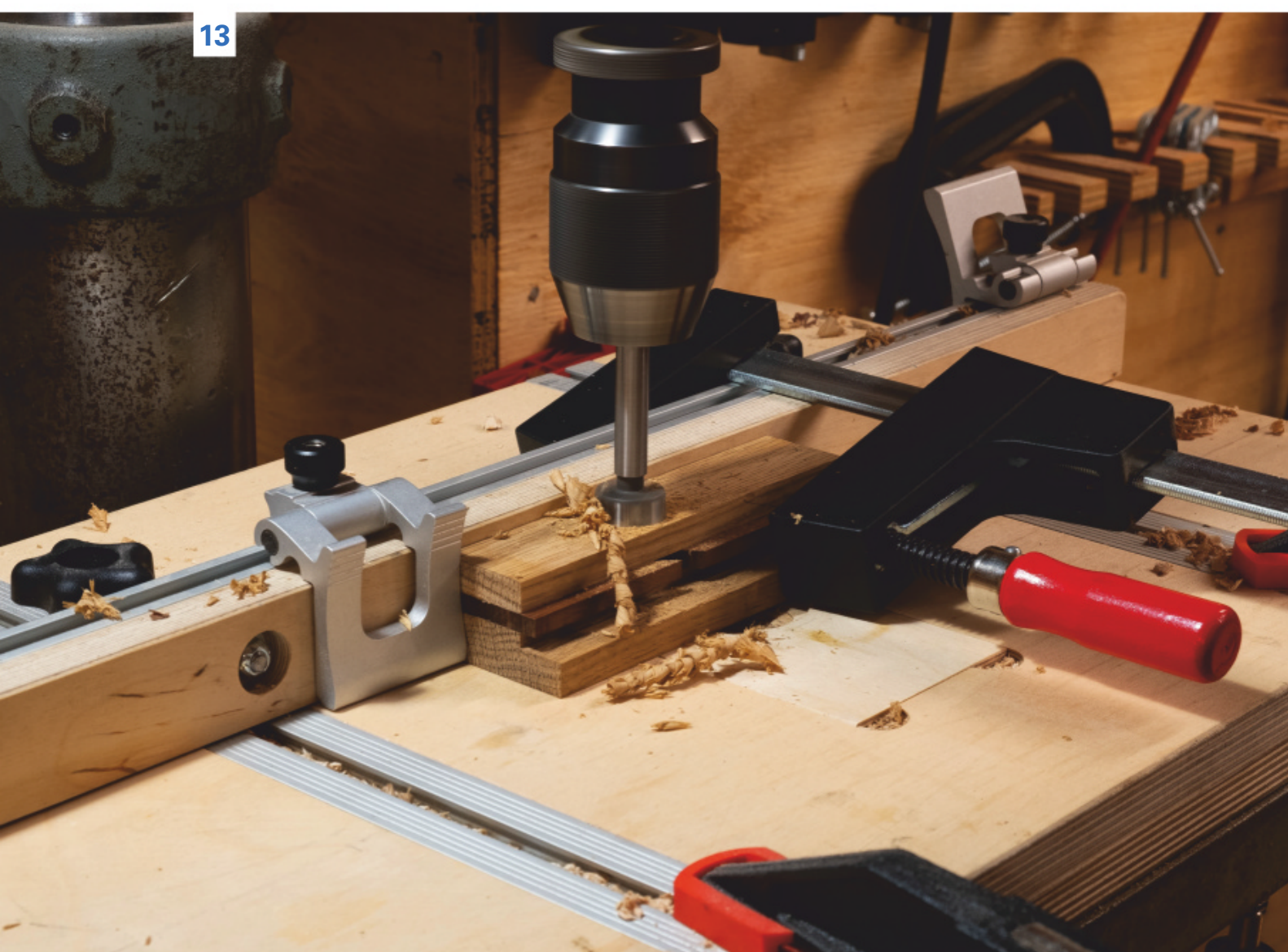
Remove the clamps and then lay the blade and wedge in place, then bring the front skate into position against the wedge. You can move the wedge up and down to change the mouth opening. You should shoot for approximately 3mm as a maximum mouth opening. Once the front skate is in place, put a few spring clamps on to hold it in place and let it set for another 30 minutes (**photo 9**).

Now you can remove the clamps and do a final check on the fit of the wedge. It's much easier to do this now than once the plane is fully assembled. A bit of sandpaper on your bench should be fine to tune up the wedge (**photo 10**).

Now you can shorten the wedge so that it is approximately 12mm from the tip of the blade. You can also trim the top of the wedge so it is about 5mm from the end of the blade. Glue the depth stop cheek to the rest of the plane, again using the top of the plane as a reference point (**photo 11**).

While the glue is drying, you can start the final shaping of the wedge. The shape on the top of the wedge is ideal for removing it and you have a bit of leeway here as to its shape (**photo 12**). Just be certain not to shape it so the portion of the wedge that lives in the plane is affected.

Finally, sand the sides of the wedge a little to make it a bit narrower than the skates and lightly remove the arrises so that it slides easily in and out of the plane.



9. Use the blade and wedge to help place the front skate.
10. Fine tune the wedge to get a gap-free fit.
11. This marks the final glue-up for this plane.
12. Simple is always better when it comes to wedge shapes.
13. Don't try to hand-hold this one – work safely.
14. Use the smallest saw you have for these delicate cuts.
15. This Marcou chamfering plane makes short work of easing the corners.



Almost there. Locate the escapement hole on the fence cheek then remove the waste with a 22mm forstner bit (**photo 13**). Go slowly as you drill through the multiple layers of this plane. Connect the escapement hole with the skate using a fine saw (**photo 14**).

To finish off this build I hand plane all the outside surfaces then put a light chamfer on all of the corners and soften the arrises with a bit of 220 grit sandpaper (**photo 15**). I don't like heavy finishes on my tools so a bit of soft wax is all I use. You could also use a coat of tung or linseed if you prefer.

All that's left is to give your new tool a go. Start the cut at the end of the board closest to you and incrementally start the plane further with each pass until you are at

the far end of the board. Then, continue making passes until the depth stop cheek contacts the wood and you're done. This groovy little plane will be your new favourite, not only because it works well, but because you made it yourself (**photos 16**).

Photos: Vic Tesolin

Diagram: Graham Sands



Vic Tesolin is a furniture maker and also woodworking/technical advisor for Veritas/Lee Valley Tools. He lives in Canada and teaches workshops all over the world. Learn more at <http://victesolin.com>



Friendly Fire

Shou sugi ban is the Japanese technique of burning wood to preserve and enhance it, explains Patrick Szewczuk.

Shou sugi ban is the dramatic technique of burning timber to a dark char to preserve it, making it fire, weather and pest resistant.

The technique originates from Japan, a country where ritual and process are paramount to their culture and trade skills are an artform. It is easy to imagine a time pre-industrialisation the whole world over when the price of carpentry was high and the dividends on any process of preservation equally high.

Shou sugi ban, also known as *yaki-sugi*, translates literally to 'heat cypress with fire'. Thermally modifying timber is uniquely

Japanese compared with other treatments which have emerged from other traditions from around the world which may use steam or oils or more recently arsenic and copper.

Timber selection

Small serving boards and coasters are an ideal project to experiment with a new technique such as this and here I'm using pine.

When selecting timber you may want to keep in mind that by its nature the process is destructive and involves burning and scraping with a steel brush. Hardwoods with a tighter grain are more resistant to the effect

as it is the softer material between the annual rings which after burning is scraped out first. Soft woods such as the plantation pine shown here have annual rings that are wider apart, resulting in a more distinct pattern of light and dark. The finish here is also more textured and thus highly tactile as the softer sapwood is the first to go after scraping with a steel brush.

A hard wood like oak with compact and dense annual rings and less sapwood in-between has more resilience to the scraping action. Thickening treated surfaces would likely be easier with a harder wood as the treated side stays more intact.



Main: Keep in mind that you are not trying to penetrate all the way through and burn the timber to ash and dust.

1. Serving platters and coasters are ideal projects for experimenting with a new technique such as shou sugi ban.
2. Ensure you have a fire extinguisher or water at the ready in case sparks and embers spread.



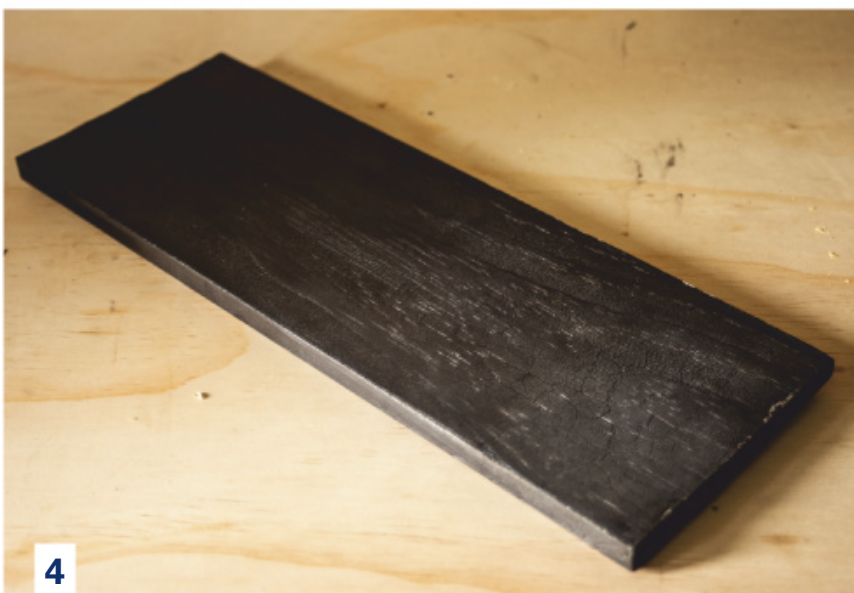
Equipment and safety

To get started you will need your timber shaped and sized, and you will also need some fire. A blowtorch with the ability to adjust and control the intensity of the flame is a real advantage however if that feels too far removed from tradition an open fire is just as good. Regardless of your method be sure to keep the right safety equipment ready at hand, namely a fire extinguisher and/or water.

You will also need a brush. Wire brushes are more effective than a stiff plastic brush but both can work. As you can expect, the wire brush will clear char and debris quicker, but it's



3. Light, even burning can produce this kind of effect with contrasting tones.
4. This sample is fully burnt. Let it cool, then scraping is next.
5. Who would believe this richly coloured wood is plantation pine, now scraped after charring?
6. Go easy with endgrain. Torch the wood from various angles for an even burn.
7. Now oiled, a range of serving platters and coasters.
8. Shou sugi ban – now served on a platter.



all about pressure. Too much force will unnecessarily scratch your timber; ideally the char should come away with little effort. A stiff plastic brush will take a bit more time but is the safer bet. After brushing you will need a cloth to wipe the surface clean.

Most importantly, be sure to wear personal protective equipment while working, including gloves, goggles and an appropriate dust mask.

The burning process

When torching the timber, keep in mind that you are not trying to penetrate all the way through and burn the timber to ash and dust. If heat is applied for too long to a single area you may end up losing too much of the sapwood between the annual rings, leaving excessive corrugation. Obviously excessive burning will ruin your work. Watch out for signs of white ash forming as a sign of going too far.

As the timber burns the softer material will turn a bright orange and then crack and scorch like dry desert ground. This is about as far as you want to take the technique. Anything more will not result in a deeper or richer colour as the timber will have the same colour all the way through.

Timber has low heat conductivity and here lies the appeal of the log cabin in the cold winter woods; as an experiment put metal and wood in the freezer and feel which one is colder. With this in mind it won't take the workpiece long to cool after torching but wait a while to avoid burning yourself. Handle the timber once cool, hold or clamp your piece down and brush the charred material away from you with your chosen brush. A dust mask is crucial during this stage to avoid breathing in soot.

Take extra care and time with the endgrain and if using a blowtorch burn into the grain from multiple angles to ensure the heat penetrates into the grain.

Brushing

It's important to brush with the grain rather than across or risk ruining the finish. Be consistent in your brush strokes, both in direction and pressure and regularly clear the loose material off to monitor your progress.

As a suggestion, brush the endgrain first as the brush may overlap onto the top of the project and leave some cross-hatching close to the ends, these can be covered up when it comes to brushing the primary surface.

After brushing all the soot and loose material away you can give the timber a proper clean with a cloth.

Finishing

To finish the project off rub a quality oil into the surfaces and, as with the burning and brushing, take a little bit of extra care with the endgrain, working the oil into the ends well. For homewares be sure to use a food safe oil. For a unique finish a pigmented stain can also work.

Final notes

When working with thinner dimensions be aware that this technique can lead to cupping and warping due to the excess heat and rapid removal of moisture from within the timber. In some cases this can be fixed by turning the timber over and torching the reverse side.

Shou sugi ban has its drawbacks. As mentioned, it is destructive by nature and may not be suitable for fine joinery. Hardwoods are less susceptible to the destructive process.

While timber treated in this way is said to last many times longer than untreated weatherboards, for larger projects such as cladding on homes check to see that you comply with the Building Codes of Australia as well as your local council where applicable, particularly in areas with strict design requirements. Taking all this into account, there is no denying the beauty and drama of the final burnt finish.

Photos: Patrick Szewczuk



Patrick Szewczuk spent his university days working construction sites and bars until graduating with a psychology degree. He then worked in the mental health industry before returning to his previous path as a carpenter. He is now a licensed builder and is currently completing an interior design course. Email patrickszewczuk@gmail.com



A Field of Excellence

For competition judges Carol Russell and Darren Fry, singling out the award winners for AWR's Student Awards 2018 was an enjoyable but challenging task.

Now in their fifth year, AWR's Student Awards hold a unique place as Australia's only online platform for showcasing woodwork created by secondary school students in years 11 and 12. As such, they are an opportunity for the wider community to see and appreciate the efforts of younger woodworkers.

Even in an increasingly digital world, it is clear that skills and an appreciation of designing and making beautiful and functional forms are being passed on by our industrial and design technology teachers. For our 2018 awards, the 88

entries received from all over Australia demonstrate that the future of woodworking is in very good hands indeed.

In particular, we pay tribute to our sponsors for their incredible support and thank them for offering a generous prize pool exceeding \$9,000 in value.

Award winning and highly commended entries are presented here. You can see all entries at www.woodreview.com.au/student-awards and on our Facebook and Instagram pages.





OVERALL BEST

Armchair, blackwood, leather.

**Riley Nichols, Year 12,
Freshwater Senior Campus, NSW.
Teacher: Ben Percy**

'I set out to design and manufacture an armchair with a sleek modern aesthetic for my HSC major project. My design was prototyped using both traditional and computer based methods and went through constant evaluation to ensure the chair functioned as intended. The motivation for my project was to demonstrate high level skills and explore timber bending techniques. Completing this chair was no easy feat. It required a well formulated plan of action and time management.'

Photos: Andrew Lai

Carol Russell: Riley has designed and crafted a sophisticated, original chair, the simplicity of form belies the meticulous planning and skill that

went into its creation. The work in the chair displays a very high skill level and includes curved laminations, steam bending and leather upholstery. His efforts have resulted in a beautifully resolved design that displays an aesthetic maturity that we believe wouldn't be out of place on a podium beside the work of our finest makers.

Darren Fry: I was continually drawn back to the contemporary styling and flowing lines of Riley's Armchair. It is a beautiful and eye-catching piece with a strong aesthetic appeal from all angles, and a chair one would be drawn to sit and feel comfortable in. A further highlight was the transition between the front and back leg with all its complexities flowing and seamlessly integrating into the smooth aesthetic and ergonomic shape of the backrest. Crafted beautifully and documented impeccably, this piece is truly a well deserved winner.



Gift card, value \$4000

FROM OUR JUDGES

Carol Russell, woodworker, Qld



There's a lot of heart and emotion that goes into creating a major piece, it's a roller coaster of a process at any age. Often what makes objects special, are the stories connected to them. I've really liked reading how the candidates went about meeting their design brief and the pitfalls and breakthrough moments that they experienced.

So often, an elegant solution to a problem or mistake may be one of the strongest features of a project. In the finding of these solutions and the repairing of mistakes, innovative new ground can be broken. Through this process a real resilience and a deep understanding of the tools and materials can develop.

I was really impressed to see that many pieces were made from Australian native species. Some of the processes such as veneering or steambending are not traditionally used with some of these species, so there's no well-trodden path to follow. Trial and error can teach us a great deal, and an awareness of the differing nature of particular timber species is one of the key points in creating pieces that will endure into the future. Wood isn't an inert material, it changes constantly, it can work with you or against you depending on how it's handled. Whether you're using hand tools or CNC machines, an understanding of its properties and workability is essential.

Of course, many other materials were employed in the making of these projects. Resins, metal, plastics, paint, textiles and natural fibre, mechanical and electrical fittings as well. Each one requiring the acquisition of different skills. If there was a theme, it may have been: No Limitations. A very sound approach I think.

One thing that really stood out was the extraordinary standard of teaching and support that students had received. A huge congratulations to all who entered and thank you for sharing your images and stories of how you went about designing and making them.

Carol Russell is a woodworker and teacher based in Brisbane. www.carolrussellwoodwork.com.au

Darren Fry, designer maker, SA



It was my honour to be involved in the process of this competition. When viewing the works, my initial feelings were of amazement and excitement due to the calibre of entries. When it was time to choose winners however, the task was challenging due to the overall excellence.

Careful thought and consideration were given to all entries. The bright and reverent passion of the youth shone through in so many of the works produced, and in the varied techniques applied to woodwork in its many forms.

As the competition is based on visual presentation of words and images, it must be noted that it is certainly a comprehensive task to not just make something great but also to capture the essence of the creative process accurately in words.

Further, producing a set of images that reflects the excellence of your work is pivotal in consolidating a professional path in the modern world. The creative work itself, coupled with the words that describe it, along with professional images that are often the first point of contact with a prospective client, are a necessity for the modern day craftsman to prosper.

The use of native timbers displayed in many of the entries was quite extensive and included sustainably sourced and salvaged timbers, as well as timbers with ties to family and country. The acknowledgment and appreciation of materials was strongly evident throughout the works and words produced; it resonated through the competition that in the woodworking community, we are all in some way captivated by the beauty of timber as we engage with it.

It was an absolute joy to see a body of work so large and varied, created by such a young and bright pool of talented students. The efforts and support of their educators must be appreciated and acknowledged. Finally, it is the entire cohort of entrants that is to be truly commended; I sincerely wish you all the best for your future paths and, as you travel them, may you inspire, be inspired and may your creativity know no boundaries.

Darren Fry is a designer maker in Adelaide. His Constance Chest was featured last issue as an award winning piece in Studio Furniture 2018. www.darrenfry.com



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BEST DESIGN

Fern Chair, Jesse Seymour, Year 12, Freshwater Senior Campus, NSW. Teacher: Ben Percy

'For my design I aimed to create a unique egg chair inspired by the elegance and beauty of nature, using elements of biomimicry found within the design structure of ferns. 'Through extensive research, professional advice and utilisation of innovative CAD programs I was able craft together my ideas and create my final Fern Chair. When constructing my chair I based all the curves in the design on one radius. Then using compound joinery I was able to combine the different components to create the 'fern' like structure. The design was challenging and did test my limits but in turn has led me to discover a whole new approach to working with timber that will benefit me for the rest of my career.'

Photos: Andrew Lai

Carol Russell: We were very impressed with how the design mimics the structure of ferns. In using this pattern to create an egg chair, it is both familiar in form but completely

original. The repetition of the radius of the curves and the unobtrusive way the seat fits within the structure makes this a very strong piece. The finished chair demonstrates a very high level of skill and validates a well thought out design.

Darren Fry: The Fern Chair's mimicry of nature as a focal point was successful and not disturbed by the complicated joints that bring this piece to life. This feat of imagination exhibits a playful joy in its design and one can imagine being engulfed by the leaves of the fern while falling comfortably into the chair. The importance of paying homage to the pure beauty that occurs only in nature is apparent in this wonderful, brave and thoughtfully created design.

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BEST HAND SKILLS

**Hollow Body Archtop Guitar,
Tom Heggen, Year 12,
Tyndale Christian School,
Blacktown, NSW
Teacher: Allan O'Connor**

'I built this guitar for my year 12 major work. It took around 400 hours to complete. The guitar has a handcarved arched front and a completely handcarved neck. I used Australian timbers throughout as the body is Australian white cedar, the neck is

red mahogany and the fretboard is Queensland ebony. It required me to work with many luthiers to learn new skills such as bending timber for the sides of the body.'

Carol Russell: Tom's guitar featured steam bending and laminating, while the neck and the arched top are entirely shaped using hand tools. It's apparent that many hours went into creating the arched top, even thickness and shape being crucial. The project displayed a high degree of difficulty and skill required to bring all the elements together.

Darren Fry: As a furniture maker, I am fascinated by the intricacies and complexities of instrument making, and for Tom to undertake such a task is exemplary. Shaping the arched top and carving the neck by hand, integrating the body with these well crafted components, Tom is able to delicately complement his love of music through his excellence in woodwork. It can easily be seen how successful this project has been by witnessing the smile displayed in the image of Tom as he strums his exquisite creation.



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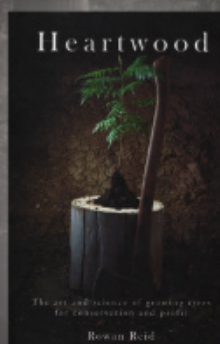
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BEST USE OF NATIVE TIMBERS

Outback Banjo, Finn Johnson, Year 11, Haileybury College, Vic. Teacher: Stephen Hughes

'The Outback Banjo was inspired by famous bluegrass designs, however an Australian theme was integrated into the design as it is made only from native species. The resonator is a river redgum burl sourced from central NSW, and the neck and head of the banjo are fiddleback ironbark. The redgum used in the body and the burl were all sourced from my grandpa's farm and were gathered by the local woodcutter. The instrument has a natural twang to it; the distinctive metallic sound that is found in bluegrass, folk and country music. I am extremely pleased with how it looks and how it sounds, and look forward to playing in the years to come.'

Carol Russell: There were so many pieces that featured beautiful native



timbers but Finn's banjo really stood out for us. The use of a river redgum burl for the resonator was a highly original choice. It's rare to see burls used this way as a solid piece and not veneered, particularly in an instrument. The bookmatching on the back creates an exquisite effect. Coupled with the fiddleback ironbark, the finished piece is very striking and evocative, and beautifully made.

Darren Fry: Finn has sourced some exquisitely figured timbers and thoughtfully given them a home within this striking piece. He has created something beautiful that is bound to produce music, atmosphere and enjoyment to any musician fortunate enough to play this remarkable instrument. Procuring wood from 'grandpa's farm' creates a sentimentality which we can all connect to. These stories and timbers melt into a fusion of what can be described as an iconic Australian instrument.



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POPULAR CHOICE

**Joe Cornish, Electric Violin,
Year 12, Nuriootpa High School, SA
Teacher: Rainer Kahl**

Judged by Facebook reactions

'As a student of music, I have designed an electric violin to make as my year 12 major project as it is a new instrument I would like to learn. Construction techniques involved steam bending, laminating different species of timber, woodturning and shaping of timber using traditional tools such as a spokeshave.



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HIGHLY COMMENDED

**1 Remy Kovacevich, Dining Table,
Year 12, Freshwater Senior
Campus. Teacher: Ben Percy**

Photo: Andrew Lai

**2 Darius Sachinwalla,
Trumpet With Case, Year 12,
Turrumurra High School, NSW.
Teacher: Andrew Green**

Photo: Kamran Sachinwalla

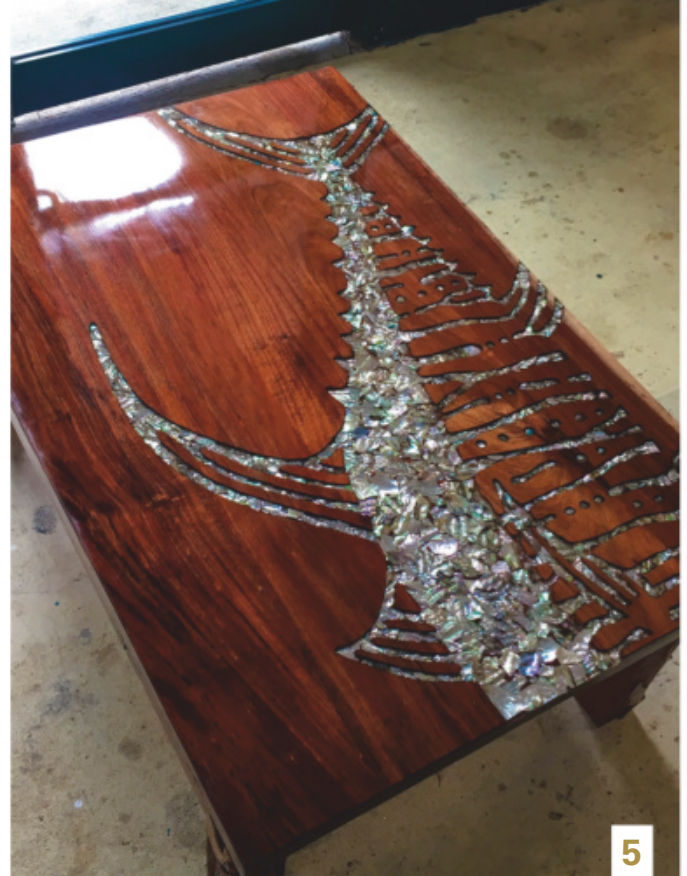
**3 Jamieson Davis, Bluetooth
Speaker System, Year 12,
St John's Grammar School SA.
Teacher: Ian Armitage**

Photo: Blue Razoo Photography





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4 Patrick Sindler, Decorative Cabinet with a Small Jewellery Box, Year 12, Pennant Hills High School, NSW. Teachers: Matthew Dwight, Brad Wilson and Lucas Ctercteko

5 Georgia Poyner, Marine Themed Coffee Table, Year 12, Narooma High School. Teacher: Peter Zideluns

6 Charlie Colman, Entertainment Unit, Year 12, Haileybury College, Vic. Teacher: Stephen Hughes

7 Tanika Goodman, Steam Bent Timber Bath, Year 12, Jindabyne Central School, NSW. Teacher: Simon Rudd

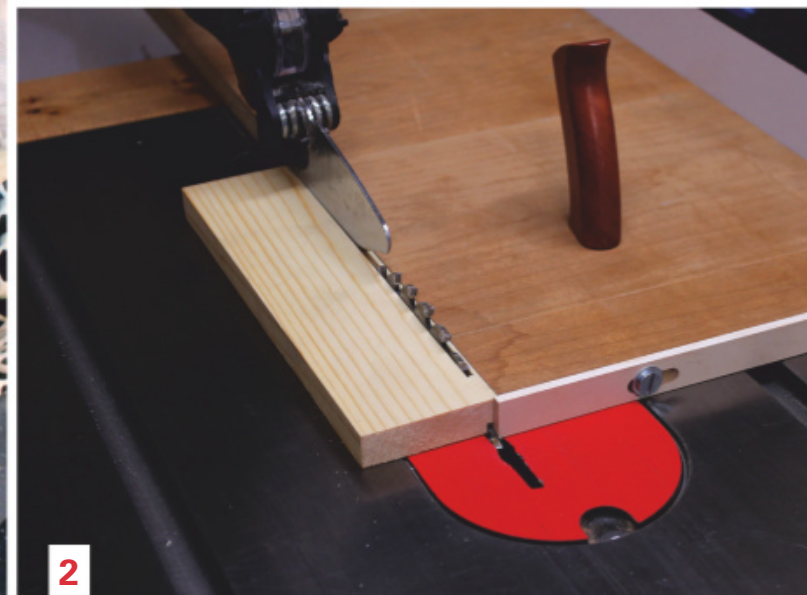
8 Emily Kelly, Mid-Century Modern Cabinet, Year 12, Trinity College Senior, SA. Teacher: Anthony Balayance

9 Ethan McDonald, Cedar Strip Canoe, Year 12, The Scots College. Teacher: Patrick Barker

More From Your Tablesaw

Charles Mak shows how to perform a variety of machining operations on the tablesaw.





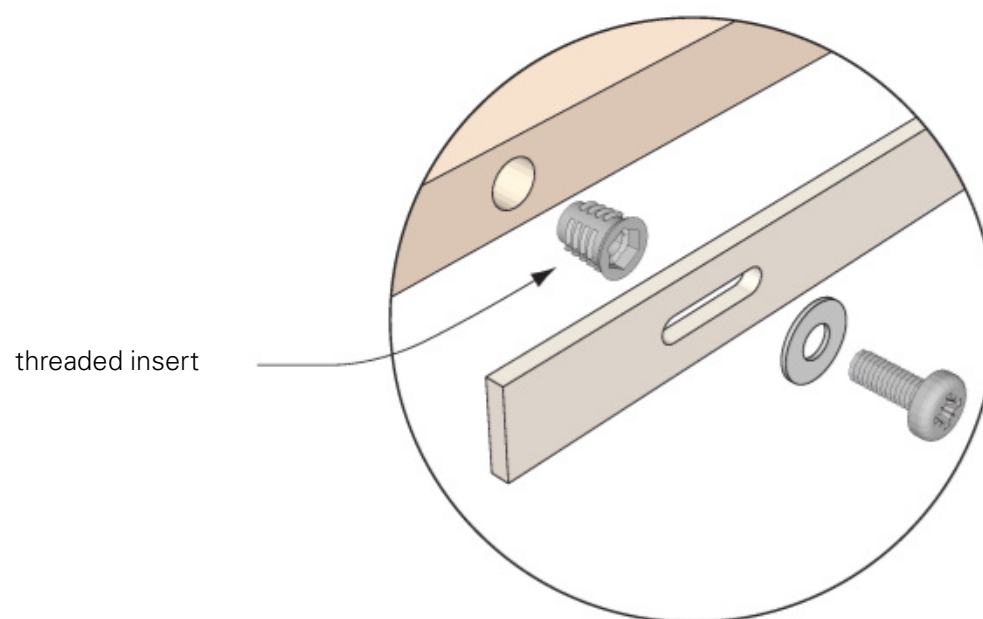
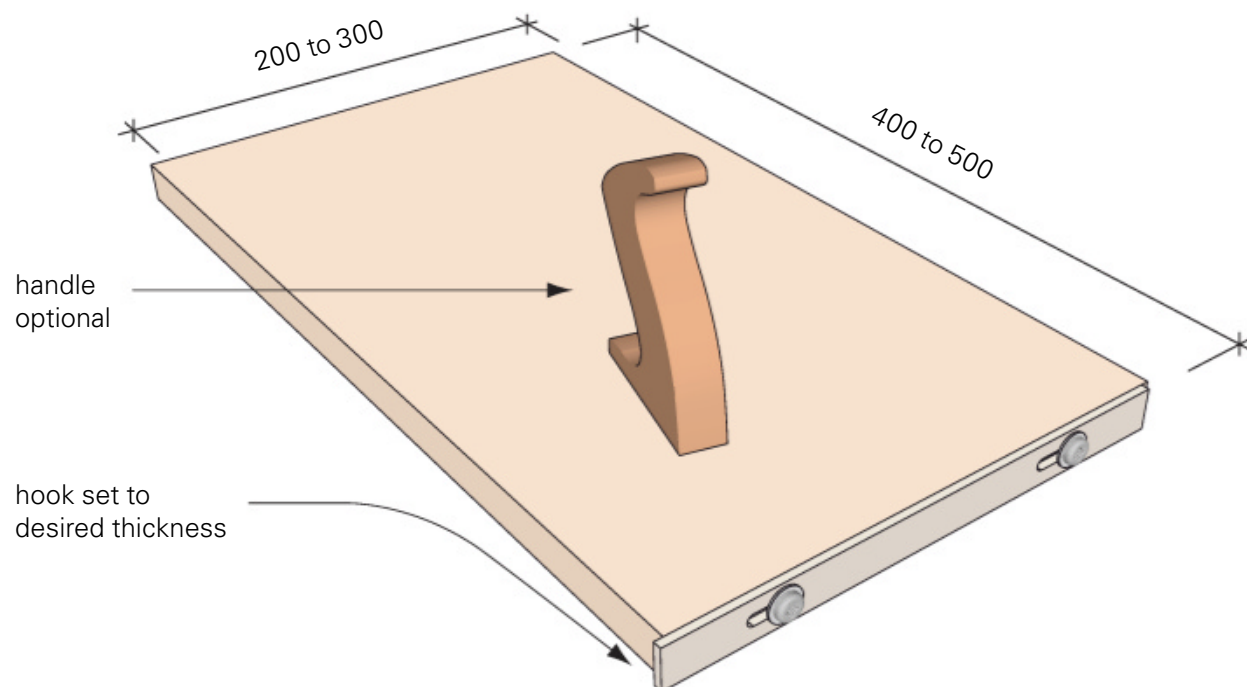
1. With a snug-fit block in the mitre slot, you can quickly turn your saw into a planing station.
2. Simply set the adjustable hook on the sled to the desired distance, and you can handle thin strips of any thickness.
3. The author uses the corner of a featherboard as a stop block on the off-side of the blade to set the desired ripping thickness.
4. The thin strip falls off on the waste side of the cut,

- eliminating any kickback concerns.
5. After the first rip, butt the workpiece against the stop block to reset the saw fence for the next cut.
 6. Run a tape on the good side of the board covering the cutline, and make the cut as usual.
 7. Remove the tape to reveal a tear-out free edge on the show face. Apply tape to both sides if clean edges are desired on both faces.





Fig. 1 Adjustable strip cutting sled (mm)



The cabinet saw is frequently the centre of action in my workshop for furniture projects I undertake. I use the tablesaw not just for ripping or cross-cutting. For example, the tablesaw is the tool of choice when I cut circles, such as the round table featured in AWR#94.

I also often use the saw as a flat platform for assembly, or as an instant bench for handplaning work (**photo 1**). In this article, I will show you how you can use the tablesaw to tackle various machining challenges, with both quality and safety in mind.

Ripping thin stock

Ripping a thin strip can lead to a kickback if the strip gets trapped between the saw fence and the blade. The first fool-proof technique I use to safely rip tiny pieces is a strip-cutting jig, composed of a sled and an adjustable hook (**fig.1**). It can handle strips, like splines, in any desired thickness.

To use the jig, set the saw fence to the width of the sled (10" in my case)

plus the thickness of strip to be cut. For example, to cut 1/16" strips, I set the fence to 10-1/16". After adjusting the sled hook to the desired thickness, butt the workpiece against the sled and engage the hook against the end of the workpiece.

Push both the sled and workpiece together through the blade as if they were one wide piece (**photo 2**). This method is best for producing shorter, identical strips as the saw fence setting stays unchanged throughout until all the strips are cut.

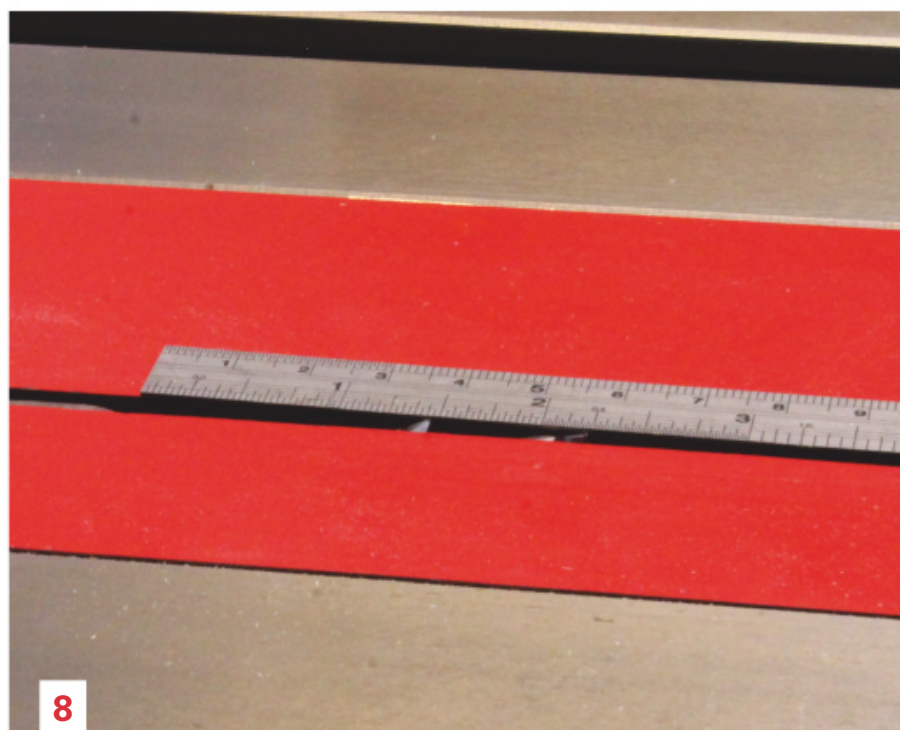
For long strips, I have a different solution: I set up a stop block on the off-side of the blade so strips are cut without kickback worries. After the

stop block is put in position, register the workpiece against the stop block, and lock down the saw fence when the fence is in contact with the workpiece (**photo 3**).

Rip the first strip piece and reposition the workpiece as well as the fence for the next cut (**photos 4, 5**). Rip in the same manner with the same workpiece to produce strips until the workpiece gets too narrow.

Cutting plywood boards

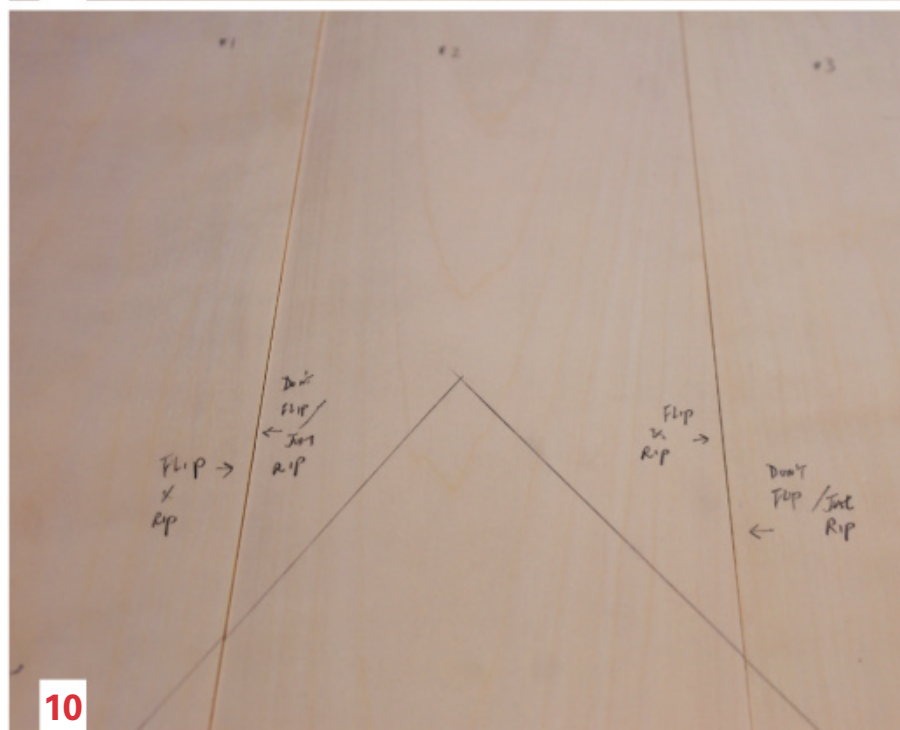
Tear-out can occur in cutting plywood boards when the blade exits the top side, ripping the veneer. The simplest solution to remedy this is to use a zero-clearance insert with the good side facing down on the table. When a



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8. Set the blade's depth of cut to 0.5mm or so, about the thickness of the veneer on the board, to make a scoring cut.
9. With the good side facing down, make a first pass to score the board. Then raise the blade past the thickness of the board and make a second pass to complete the cut.
10. After deciding on how the boards should be joined, mark out the orientation on their top faces.
11. It is easy to tell if you need to flip the board side to side before you rip by asking one question: Can I rip the edge without flipping?
12. The first board on the left is ripped with its good side facing down.
13. The first edge on the second board can be ripped like a normal cut, while the second edge is cut like the first board, with the board flipped over first.
14. The last board requires no flipping, just a simple rip-cut on its edge with its best side facing up.
15. Position the fence to rip the board at half its thickness.

zero-clearance insert is not available, I have a couple of other techniques to give me clean edges with no tear-out.

The first method is to tape the good face of the board along the cutline before making the cut (**photos 6, 7**). This method, which requires the taping and subsequent removal of the tape (sometimes on both faces of the board) for every cut, is obviously more time consuming.

Another way to cut plywood is to make two rip cuts instead of one. The first cut is a scoring, shallow cut on the good face (**photo 8**). The blade is then raised for a full cut to make the second pass, finishing the rip with clean edges (**photo 9**). I like this method, except when the panel is a large sheet. I would prefer to make a

full pass just once using the taping method, when having to handle a large panel all by myself.

Edge-jointing on the tablesaw

I no longer have a jointer, and in its place, I use the tablesaw to do all the edge-jointing functions. To edge joint with a tablesaw, set the blade to 90° as accurately as you can. Then orient the boards positioned the way you want them joined, and mark the boards with a cabinetmaker's triangle (**photo 10**). For the usual left-tilt saw, start with the left, outside board, and flip the board over to make a straight edge-cut (**photo 11**).

For the second board (the middle board in this example), rip its left edge like any regular rip-cut, but flip it over to finish the other edge (**photos 12,**

13). Finally, rip the left edge of the last board without any need to flip the board over (**photo 14**).

By alternating the cuts as illustrated, the mating edges will complement each other, and any non-perpendicular cuts will cancel each other out. I have used this edge-jointing technique for the past decade to make panels for doors, tabletops, or anything that a single plank is not wide enough for.

Resawing on the tablesaw

The bandsaw is typically the machine of choice for resawing wide boards. But with the proper set-up and techniques, you can safely resaw dressed stock on the tablesaw. For safety reasons, avoid resawing green wood or pieces with defects (such as knots) with the tablesaw. In addition, always use a riving knife or splitter as well as featherboards in the resawing operation, which can be summarised in the following five-step process:

1. Set the fence to cut to half the thickness of the stock (**photo 15**).
2. Raise the blade slightly above half the width of the stock (**photo 16**).
3. Position two featherboards, one at the front and one at the back of the sawblade (**photo 17**).
4. Make the first pass to rip half of the stock.
5. Flip the stock end to end, and make a second pass to rip the board in half (**photos 18,19**).

To keep burn marks to a minimum, use a clean, sharp blade as well as good dust collection. A thin kerf blade will also make the resawing a little easier, especially for an underpowered saw.

Replicating on the tablesaw

A router with a pattern bit is what most woodworkers will use to

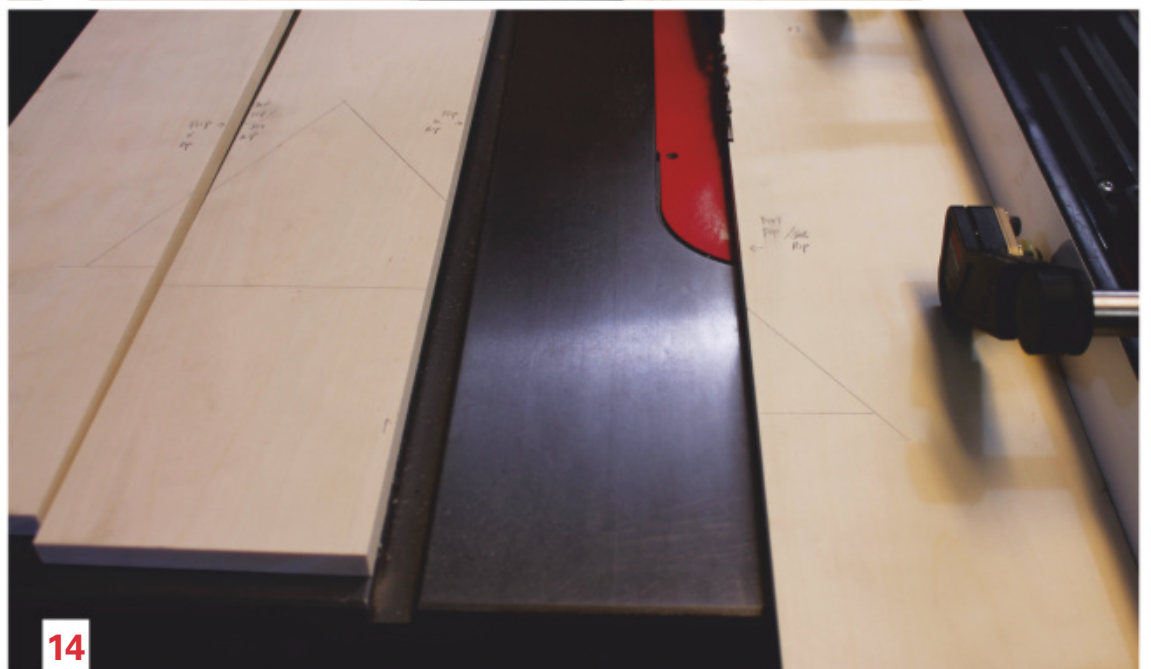
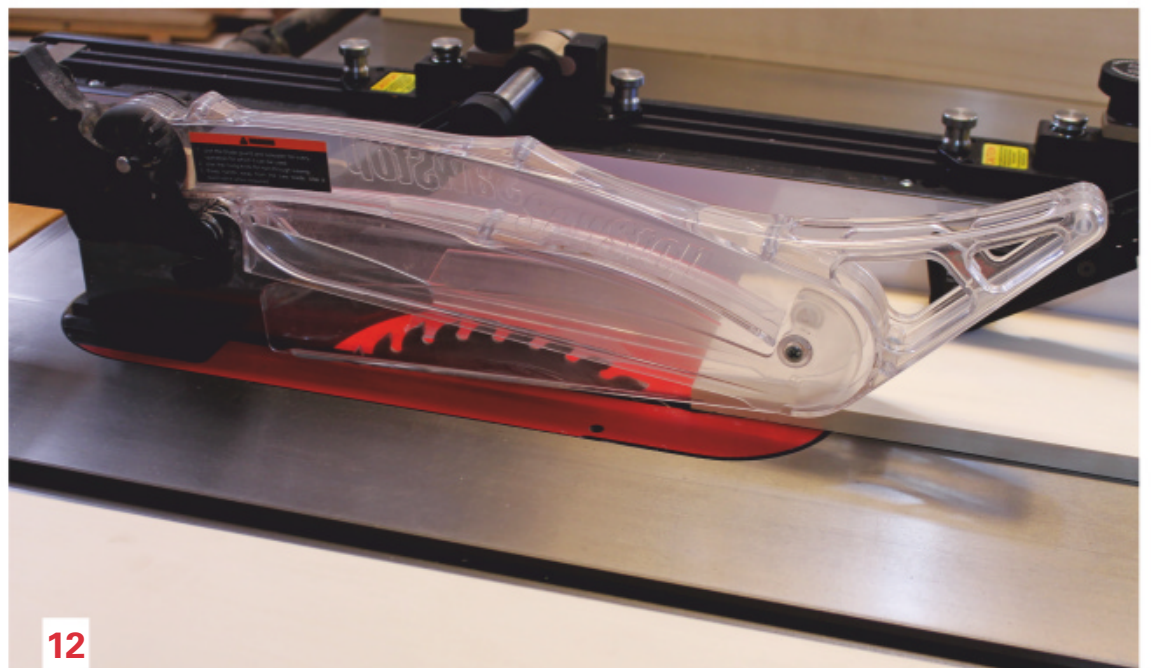
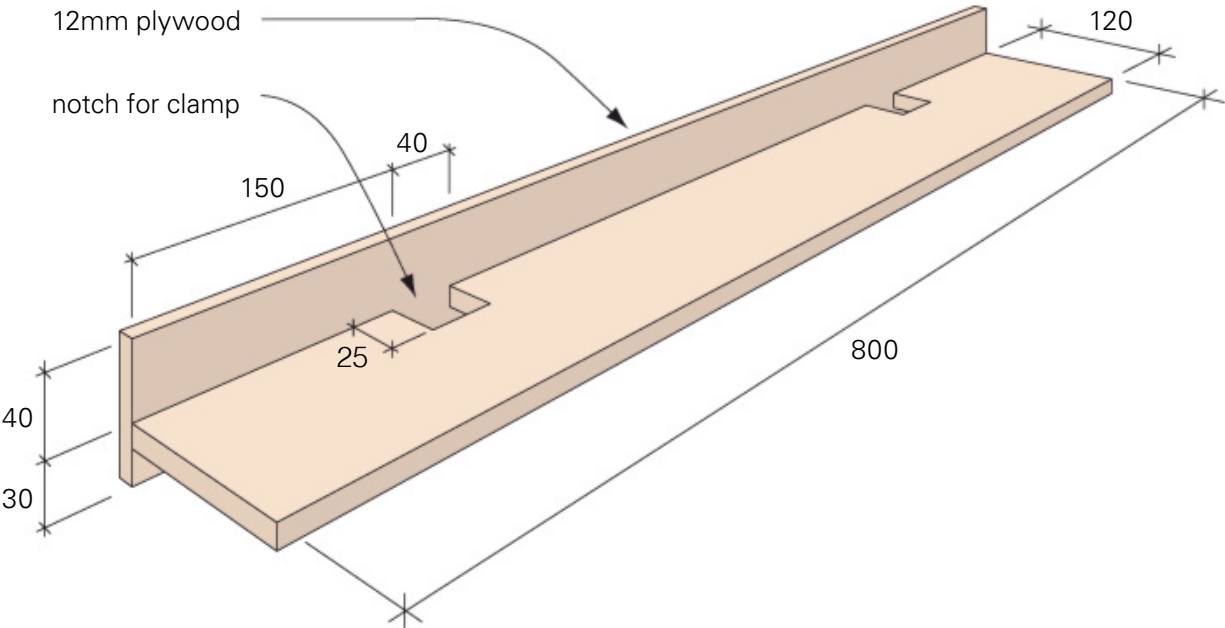




Fig. 2 L-fence (mm)



make replicates from templates. But you can also replicate straight-edged patterns on a tablesaw with a simple shop-made jig that American woodworker Bob Van Dyke calls an L-fence. The jig, clamped to the saw fence when in use, consists of one board screwed perpendicularly to another (**fig.2**).

Here is how you use the jig with the tablesaw. First, clamp the jig to the saw fence, such that the jig's fence (the horizontal board) is slightly above the workpiece, and set the blade height slightly above the workpiece without cutting into the jig. Slide the saw fence to position the jig with the jig's fence edge flush with the outer edge of the blade, and you are ready (**photo 20**).



When you have the desired template made, attach it to the workpiece, and trim the workpiece by running the template along the L-fence (**photo 21**). Hold the stack tight to the edge of the jig with steady pressure and remove the waste after each pass before working on the next edge (**photos 22, 23**).

The L-fence jig can also be used to rip a straight edge on roughsawn timber by attaching a straight template to the wood, or cut rebates, or mitre an edge (with the blade set at 45°). With this jig and the other field-tested techniques covered above, you can use your tablesaw to handle a lot more tasks than just ripping – and use your saw like a pro.

Note: In many of the photos the guard has been removed for photo clarity.

Photos: Charles Mak

Charles Mak enjoys writing articles, authoring tricks of the trade, teaching workshops, and woodworking in his shop. Email: thecanadianwoodworker@gmail.com

16. Set the depth of cut to slightly more than half the width of the workpiece if the workpiece is wider than the saw's cutting capacity.

17. Use two featherboards, one at the front and one at the exit end, to keep the workpiece tight against the saw fence during ripping.

18. After the first pass, flip the workpiece end to end, and finish the resawing on the second pass.

19. The resawn pieces only need some sanding or planing to remove the machine marks.

20. Align the L-fence flush with the outer edge of the blade. The blade height is set to cut through the workpiece but not into the L-fence.

21. Attach the template to the top side of the workpiece with double-sided tape.

22. Guide the template along the edge of the L-fence to trim the workpiece flush to the template.

23. Remove the waste after each pass, as you work your way around the pattern.



In Sight

Duncan Meerding's lighting designs
portray his vision of the world. Story



Life's ironies don't let up. Left legally blind with only five percent of his vision some 15 years ago, Duncan Meering, 32 has become a leading light.

Duncan is a lighting and furniture designer/maker. He operates his own business producing his own designs and commissions, predominantly in timber. He has a workshop, machinery, power and hand tools, and like many others makes, markets and sells things.

Last year was a watershed. His *Stump Light* design won Best Floor Light at the 2018 London DARC Awards over and above entries from lighting designers from all over the world. And that was the judgement of not one small judging panel, but of a strictly vetted peer-to-peer system where only lighting and interior designers as well as architects are allowed to vote. Over 6000 industry professionals voted for Duncan's design. That's what you call validation.

But it gets better. Duncan was able to accept the award in person because he was already in Europe for the opening evenings of the Venice Design 2018

exhibition, as part of the Venice Biennale. He was one of 60 invited to display work in an exhibition featuring designers from around the world. To put that into perspective, the last edition of Venice Design had over 200,000 visitors. Last year, Duncan's *Stump Lights* were installed in Google's new offices in Singapore and in the Choktaw Cultural Centre in the USA, and some of his other designs featured in projects in Switzerland, Sweden, Denmark and Bahrain.

Duncan's lights are shining all over the world and perhaps people are captivated by them because of the innate and personal message his designs convey.

Main: Duncan Meering's *Stump Lights*: 'The relationships between light and shadow and light dispersion are also integral to my design process.'
Photo: Jan Dallas

1. Duncan Meering preparing stock for *Log Knife Blocks* in the Designed Objects Tasmania (DOT) facility.
Photo: Jenny Davson-Galle
2. *Lily Lamp*, Tasmanian eucalypt, Southern Ice porcelain.
Photo: Jan Dallas
3. *Cracked Log Pendant Lights*, made from salvaged logs.
Photo: Jan Dallas

With its randomised light patterns that disperse and throw light to the side through its cracks the *Stump Light* reflects his own situation. Just as Duncan's remaining vision is concentrated around the peripheral fields, much of his work reflects the alternative sensory world in which he operates, with an interest in expressing how light performs through and around objects.

Another side to the story of Duncan's work is his commitment to sustainability in design – all of his log-based designs are made from salvaged wood which would otherwise have been burnt.

Sound construction is another of his priorities: 'Furniture and

lights should be designed to stand the test of time. Anything less is irresponsible and is bad design', he says.

But what about the human side of sustainability? It's common to talk of the difficulties of making a woodworking based business financially and physically viable. On this ground Duncan is a success, no matter how little he or anyone else may recognise that in the throes of their daily life slog. He is an award-winning designer and maker whose work is becoming internationally known through trade and consumer shows, public speaking, consulting and high profile commissions.

This year in March Duncan will speak at the Sydney Design festival. In the following month he will exhibit at Euroluce, the world's largest decorative lighting trade show alongside such people as David Trubridge and companies such as Greypants and Ango Lighting. He will go on to the UK University College London to consult on workshop facilities for visually impaired people.

It must go back to his endurance, persistence and inner strength. It also goes back to the authenticity of his designs which truly portray his vision of the world.

In his youth Duncan was an avid maker. Skipping forward to 2007, while studying for a humanities degree at the University of Tasmania, he began taking elective units in furniture design. He was 'bitten by the designer maker bug', but it was, he admits, 'an unlikely career path' for someone diagnosed at 18 with Lebers hereditary optic neuropathy (LHON), someone who now is legally blind.

'When my vision first went I didn't think I was going to be able to make, let alone design anything ever again. So when I heard about the Vision Australia Assist program in 2006 I went over to Melbourne and did a





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crash course, learning some of the basic techniques of how to make things safely with low or no vision.

‘From this course I was able to enrol at UTAS, learning from Linda Fredheim, the head of the department at the time. It was through this course, with the open minds of the staff and the other students, that I continued to learn.’

After graduating, Duncan gained a Springboard scholarship to the Designed Objects Tasmania (DOT) facility in mid-2010. ‘This year-long program helped launch me into a career as a designer maker and I stayed on as a full time studio holder at the facility until the beginning of 2017. I learnt a huge amount of practical and business skills, from maintaining machines to marketing my work.

‘Being in a collaborative environment with open-minded people at DOT gave me the confidence to branch out. I now run my own workshop facility in North Hobart, creating a range of projects. I use all of the tools in my workshop and I am still heavily involved in the production of the Duncan Meerding Design range.’



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4. *Propeller Droop Pendant Light* in eucalypt.
Photo: Terence Munday
5. Sawing logs for *Stump Lights* on the big SCM at the DOT facility.
Photo: Jenny Davson-Galle
6. Close-up with magnifiers, Duncan checks his progress.
Photo: Jenny Davson-Galle
7. Sawing stock for *Stump Lights*.
8. *Light From Shadows*, 2014, eucalypt. The panel in the door portrays an impression of dappled light as seen through a forest canopy.
Photo: Jan Dallas
9. *Spiral 180 Pendant Lights*, hoop pine plywood.
Photo: Jan Dallas



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So what does it mean, in a practical sense, to be a legally blind designer/maker? 'Can I do everything that a skilled sighted maker can do? Well, I can't make in the same way, but I can work out other ways to do things. This often means extensive problem solving to come up with different ways to make something.

'I cannot see well enough to cut to a line. However, this does not mean that I cannot cut out more complicated shapes utilising jigs. I was taught early on to isolate the machine, through emergency stops and/or at the wall. This is not enough though. It is very important to make sure the blade is not spinning, especially when you can't see it, therefore I will often check with a scrap of wood that the blade is stationary.'

'As well as jigs there are a range of measuring devices and techniques for setting up machines or measuring a piece of wood. I often will use pieces of veneer as feeler gauges or machine some blocks of wood down to be able to set say the ripping fence on the tablesaw. Having these blocks helps immensely when you cannot read a ruler or gauge on a machine.'

However Duncan cautions others with low vision. 'I recommend that people seek training through places like Vision Australia, before jumping on a tool. Making things without training is theoretically possible, but having the correct training for safety is important, just as it is for those who can see.'

Learn more about Duncan Meerding at <https://www.duncanmeerding.com.au>

Links for the vision impaired:
Vision Australia www.visionaustralia.org

Woodworking for the Blind <http://ww4b.org>
WW4B is an online community you can join which offers a 100 page how-to manual on making things as a vision impaired/blind person.



10. *Propeller Droop Pendant Lights* in Tasmanian eucalypt are one of Duncan Meerding's regular lines which he markets in flat-pack form.
Photo: Jan Dallas

11. Working on a batch run of *Stump Lights*.
Photo: Jan Dallas

12. Lighting installation by Duncan Meerding at The Den in Salamanca, Hobart.
Photo: Jan Dallas



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Making the Moon Table

Terry Martin explains why making an award-winning piece of furniture was a new frontier for him and Zina Burloiu.



For the last few years my woodworking collaborator Zina Burloiu and I have felt that our creative path was set for years to come, but in 2018 we had a surprise opportunity that injected new life into our creative veins. In early 2018 we were invited to submit an entry proposal to Studio Furniture 2018, which would be one of the most significant exhibitions of its kind ever held in Australia.

For many furniture makers this would be an opportunity of a lifetime, but for us it was flabbergasting because neither Zina nor I are furniture makers! We decided that this had to be our strength – that we came with no preconceived notions of what would be successful and, more particularly, no set idea of how it should be done.

Zina and I believe that while technical matters are important, it is the idea behind a piece that makes it sing. The idea for *Moon Table* began as a conversation about what a piece of furniture is. Zina and I have 21 years' experience of working together and ideas flow so smoothly that words can hardly keep up.

Firstly we agreed that it should be functional, but certainly not conventional. We are very familiar with the space at Bungendore Wood Works, so we pictured the gallery filled with furniture on the floor. Perhaps we should consider a piece to go on the ample wall space?

'A sculpture? No, that's not furniture. Perhaps a mirror? That's the kind of thing people might expect from us. A clock? There are amazing clock makers out there and we can't compete with them. Alright, let's play with "clock". What would be a really unusual timepiece? How about a wall-mounted sundial? Not bad, but can we make it more unusual? A moon dial!? Why not? They probably don't exist, so let's make the first ever!

'Wait a minute, sundials are usually horizontal, so why not make a horizontal moon dial, like a small table with the pointer on one side?



Main: *Moon Table*, jacaranda and ebonised Tasmanian blackwood, 450 dia x 730mm

1. The blank on the lathe. The bark inclusion that we kept is on the left.
2. Turning the central area to start the flat table surface.
3. With the top of the rim shaped, the piece is reversed onto the spigot left in the centre.
4. The bottom is shaped and the recess for the leg structure is turned out.



That's interesting because it fits the furniture brief better. Just a moment, if it's like a table, why not just make it a table? A Moon Table!

Finally we had our idea, but how would it look and how would we make it? We left the idea to cook overnight. The next day we started to sketch ideas and when we looked at moon images online we found a crescent moon with deep shadows in the craters. It was stunning and we both agreed that we could frame the surface of the table on one side with a crescent.

The ideas started to flow as we sketched: 'But what about the legs? It needs to float so they should be very slender...Yes, but not vertical...I agree...Maybe set into the base very close to the centre of the table so they splay out...three legs, so it's always stable. What are we going to make the moon out of? It needs to be bony white...jacaranda is good if it doesn't have a finish on it...and the legs should be dark so that the moon looks like it's floating in space. Ebonised blackwood will be perfect.' Time to start.

As a small aside, when Zina and I exhibit our work, we find ourselves quickly pigeonholed – 'Terry turns and Zina carves'. While it is true that Zina is a better carver and I am a

better turner, we do swap roles and for this project we each took over at different stages, each of us turning, carving and taking photographs.

For the tabletop we selected a nicely figured slab 170mm thick from my large stock of jacaranda and cut a disk just under 600mm in diameter, the maximum that can be turned inboard on my Vicmarc lathe. There were several bark inclusions, some of which needed to be turned away, but there was one fissure that we decided to retain to remind people that it was once part of a tree, something we both enjoy.

Because it was a substantial weight we mounted it on a faceplate, but we had to select screws short enough so they would not cut through to the

other side. With this in mind, we brought up the tailstock for stability (**photo 1**).

The first stage of making the top was to establish the discus-like shape and to turn out the centre to the depth of the flat table surface (**photo 2**). After the unwanted faults were removed we ended up with a diameter of 450mm, which helped us establish the leg length, thickness and spacing. Much of the proud rim was to be cut away later. At the centre of the piece we turned a spigot so we could reverse the table to shape the bottom (**photo 3**).

Zina and I had decided to fix the legs to the top by making a separate insert and gluing it into a recess in the bottom. My drill press is not large, so



5. It was important to monitor the thickness.
6. The tapered plug for the legs is carefully turned to match the recess.
7. With the plug fitted into the recess it is turned to match the curve of the bottom of the table.
8. The spigot is left to allow removal of the plug.
9. Marking the arc of the crescent.
10. Victor Verrecchia levelling the rim of the table.



the smaller insert would make it a lot easier to drill the angled holes for the legs. When the curve of the bottom was established we marked the diameter for the recess and turned it out, which also removed the faceplate screw holes (**photo 4**).

It was important to check the thickness of the top as we went (**photo 5**). We tapered the recess slightly so that when we put the plug in the bottom it would tighten only when it was fully inserted.

When the recess was finished we turned a slightly oversized blank from Tasmanian blackwood. Then by removing very tiny shavings and constantly try-fitting it, we were able to get a snug fit in the tabletop

(**photo 6**). After remounting the tabletop on the lathe we fitted the blank into the base and turned it to match the curve of the table, but we left a spigot as a handle to make it easy to remove (**photos 7, 8**). It would be turned off later.

We found the next step quite interesting. How do you calculate and mark the curve of the crescent moon so that it blends naturally with the full diameter? We went through several methods, including both Zina's amazing mathematics skills, and eyeballing and marking it with a flexible rule, but the best solution was very simple: we measured the width of the rim and marked a new centre that distance from the original centre.

Then by drawing an arc with the same diameter as the original, we had the perfect complement to the original arc. We also found one way to solve the problem of not having a large enough compass – simply tape a pencil to the dividers (**photo 9**). The arc also had to include the portion of the natural fault that we wanted to retain.

Next we wanted to remove the majority of the rim down to the level of the flat tabletop, leaving the arc of the crescent moon. For this kind of work I usually use a die grinder held in a cross-side vice on my lathe, but we found this was not stable enough for such a large piece, so we had to think laterally.



11. Turning the legs.

12. The first try-fit of the whole piece.

13. Staining the legs.

14. We constantly went back and overlaid new craters on the surface, sandblasting between each stage.

15. The final tiny holes are ready for sandblasting. The tape protects the tabletop.

16. The finished top.

For thirty years one of my closest friends has been Victor Verrecchia, the founder of Vicmarc Machinery. I bought my first lathe from him in 1988 and since then we have regularly helped each other in many ways, so I knew I could ask him for assistance. He was happy to take on the challenge. Every time I visit his factory I drool over his massive machinery, so I was very happy when he suggested we use his venerable 50-year-old Rambauldi milling machine.

With a lifetime of machining experience his coordination with the twin wheel controls was amazing and he produced a perfectly flat top very quickly, so thank you Victor (**photo 10**). Back at home Zina and I sanded the surface smooth with a random orbital sander and blended the curve under the crescent overhang with a series of sandpaper flaps held in a split pin mounted in a Foredom flexi-shaft tool.

Finding the angle for the leg holes in the centre plug was simply a matter of cutting a stick to the leg length we wanted, eyeballing the outward lean from the insertion point in the plug, then measuring the angle. It was easy to clamp the plug to the drill press table, which was adjusted to the correct angle.



We used a 50mm sawtooth bit as we felt blackwood legs of that diameter would be strong enough. We drilled right through as the protruding segments of the legs could then easily be trimmed flush with the top of the insert.

Turning the tapered legs was basic spindle turning that only required a gentle touch and a supporting hand to dampen vibration (**photo 11**). With all the components finished it was time to try-fit everything to see if the proportions were what we had anticipated (**photo 12**). Success!

We then ebonised the blackwood with nails-and-vinegar solution. I keep a jar of this mix fermenting away in my workshop and regularly add steel wool and vinegar to keep the smelly mix potent. By applying with 0000 steel wool, it stains and finishes for a perfect result (**photo 13**). When a finish is applied, it darkens wonderfully, but still allows the grain to shimmer through.

The most important part of the process was the carving of the crescent. We agreed that the best way was to imitate what has happened to the moon itself. The layering of

craters has developed over millions of years as meteorites have pounded the surface, each impact overlaying previous ones. As well as the major impacts, there has been a constant shower of dust-like particles that have softened the whole to create that marvellous patina. So that is exactly what we did!

Using a rotary burr, we carved large craters first, then sandblasted the surface to make them 'ancient'. Then we repeated the process, overlaying more craters and sandblasting, progressively getting smaller and smaller till we were working down to craters only a few millimetres in diameter – all the time returning to the sandblasting cabinet between carving stages to erode and soften the edges (**photo 14**). It was important to protect the rest of the tabletop so we taped it securely (**photo 15**)

Once the bark was removed from the included fault, it looked like a geological fissure. The end result was exactly what we wanted, functional but ethereal, with the flat and polished surface embraced by the eroded raw wood crescent. The finished table floats on

dark-of-night slender legs, just as we envisaged.

On the opening night in October there was another surprise for us. We were delighted to learn that we had won Third Prize, which made us very proud considering the illustrious company in the show. We want to thank the judges and we also want to give special thanks to David Mac Laren and Linda Nathan. They challenged us and now we have a whole new set of ideas for our future work. It doesn't get any better than that.

Photos: Terry Martin and Zina Burloiu

Zina Burloiu is a wood artist who lives in Brasov, Romania. Last year she was in Australia creating work with Terry Martin for their collaborative exhibition, Shadow and Light, held at Bungendore Wood Works Gallery prior to Studio Furniture 2018.



Terry Martin is a Brisbane-based wood artist, author and curator. See www.terrymartinwoodartist.com

Our Southern Comfort

Growing blackwood in plantations requires long term faith, but the signs of success are encouraging. Story by Rowan Reid.



Australian (not just Tasmanian) blackwood (*Acacia melanoxylon*) is a native to our little Victorian tree farm. It grows naturally right around the south-east corner of the continent and up the east coast to Queensland. In most areas, it is a nondescript bushy shrub with a rounded canopy, multiple stems and heavy branches that wouldn't provide so much as a candlestick. But, on the right site – with deep soils, fresh water and shelter from drying winds – blackwood can develop into a good size tree with a large clean mill log.

The tallest blackwood I've seen were in the native swamp forests of north-west Tasmania. The largest I've measured were in a 100 year old plantation near Rotorua in New Zealand, which I took as evidence that blackwood could be domesticated; a journey I've been on for over 30 years.

I've felled and mill a few of our larger native blackwoods as they have died over the years. Mostly it is the longicorn grubs that get them in the end, but the real cause is the

dry summers we've been having. The sapwood of a healthy blackwood is saturated with water, drowning any longicorn larva. But, if the soil dries so too does the sapwood. The female longicorn beetle targets dry and cracked sapwood where her offspring can safely feast on the stored starch and sugars, eventually ringing the tree.

But it's the heartwood I want; the black wood

Opening the logs on our bandsaw mill revealed their colour: true to the rich chocolate hues that Robert Brown, the botanist for Matthew Flinders on the Investigator, drew on in his naming of the species in 1813 (in Greek *melas* means 'black' and *xylon* means 'wood').

The Tasmanian settlers just called it 'Black Wooded Acacia' as they loaded pit-sawn boards into the hulls of the returning supply ships to test its commercial potential back in the motherland. Before there was any wool to export, wood was used as ballast for the journey home, and that's how the strange dark timber was initially accepted in England.

Opposite: One of the 31-year-old blackwoods in our planted creek planting. We planted the trees for soil erosion control and we manage them for timber by pruning branches off the stem when they are young.

Clockwise from top left: Seeing a 103 year old plantation in New Zealand encouraged the author's own blackwood growing journey.

I measured this 20-yr-old blackwood growing in a plantation on a New Zealand farm as 525mm in diameter.

In native forests, large blackwoods are often seen growing under widely spaced eucalypts. This is the model we have been using in our mixed species plantations.



Clockwise from left:

Our 30-year-old pruned blackwood on the bandsaw showing fine colour and grain.

A cross-section of a four year old blackwood shows growth rings and the development of heartwood.

Lyctus borer damage in the sapwood of blackwood.



It wasn't until the 1851 Great Exhibition at the Crystal Palace that the Brits finally recognised blackwood, alongside red cedar (*Toona ciliata*), as our contribution to the world's premium furniture timbers.

Shades of black

But even then, there was a problem. Unlike the evenly coloured and predictably black African blackwood (*Dalbergia melanoxylon*) being shipped in from Mombasa, our blackwood was not always black; ranging in colour from a light tan to a chocolate brown, or even a deep purple, and often all in the same tree.

Subject to the fashion of the times, this colour variability has been both a strength and weakness of our blackwood. That this variability extends to its performance in plantations – it is a difficult tree to grow straight – makes blackwood one of the most challenging species in my farm tree catalogue.

What influences the colour variations in blackwood has long been a subject of debate. The rich colours of the heartwood come from the tannins

and phenolic compounds deposited into the inner sapwood cells as they are retired from their role in storing carbohydrates and carrying water up the stem. The process of heartwood formation is complicated; I don't fully understand it. But I am keen to learn what I can do to influence the process – even the resulting heartwood colour. Doing is the best way to learn.

When our trees were just four years old, I couldn't resist the temptation. I cut one of my perfectly good four-year-old blackwood trees off at waist height. I then turned the chainsaw upright and cut down through the centre of the stem to expose the full width of the trunk from its core out to the bark. It showed four clear circular growth rings and a band of dark coloured heartwood in the centre that was more than three centimetres wide. There were only two growth rings, or about two-and-a-half years' growth, within the sapwood band. I was on track, I just needed to keep pruning till I achieved a clean stem and then wait till the trees reached a suitable diameter.

Early research reports from South Africa, where Australian blackwood

has been grown in plantations for more than 50 years, suggest that the darkest wood is found in trees growing on sites with a definite cool dormant season, high spring rainfall and deep organic soils. More recently, Tasmanian researcher Gordon Bradbury analysed wood samples cut from 16 families of blackwood that were grown in pure plantations or mixtures. He found that blackwood growing amongst a dense eucalypt nurse crop produced lighter coloured heartwood, which may relate to increased moisture competition.

I was particularly interested in Gordon's finding that growth rate, per se, had no impact on wood colour or density. Genetically, the colour ranking of the families remained pretty much unchanged across different sites suggesting that there is some genetic control. That reminded me of something 'Old Bob', my neighbour, once told me: 'The blackwood that came off your farm was very dark'.

Last year, one of our 30-year-old planted blackwoods leaned over in a storm. I had pruned it up to four metres and it had grown to 400mm

in diameter. This was my chance to check if my pruning had produced clear, knot-free timber and inspect the colour variation over the years. I felled the tree and cut out two short lengths for milling on my bandsaw.

My aim was to produce backsawn boards to show off the cathedral grain. Blackwood has a low tangential shrinkage so it doesn't need to be quartersawn like our eucalypts (see Table 1). A high tangential shrinkage can cause cupping, warping and checking (fine cracks) on the backsawn face during the drying process. The heartwood looked great; as dark as any of our old native trees. I retained the white sapwood to allow me to make live-edge tops (maybe for a hall table).

But blackwood is susceptible to *Lyctus* borer, a grub that can eat out the sapwood of dry timber turning it to dust. A standard practice to preserve the sapwood of susceptible hardwoods is to dip the freshly sawn timber in a boron solution and allow the insecticide to infuse into the sapwood. I fill a trough with a 10% solution of disodium octaborate tetrahydrate (DOT), a form of boron that I'm told is more effective in getting into the sapwood than borax. After a week in the dip I transferred the boards to our solar kiln.

Blackwood is easy to dry without cracking or warping and this can be done outside in a well ventilated covered stack. I like our solar kiln as it uses the heat during the day to increase the rate at which moisture moves through the timber and condensation at night to ensure the outside does not dry too fast. It worked a treat on the blackwood, although the timber looked white when I took it out of the kiln. Fortunately the bleaching was only on the surface, masking the beauty I uncovered after running it through the thicknesser.

I have no doubt that we can grow large, clean blackwoods for fine furniture. It's exciting to think that we can plant a native tree for conservation, enjoy it for its aesthetics, biodiversity habitat, and stock shelter while it grows, and then harvest it for profit when it's ready. We continue planting so we'll have a perpetual supply for generations to come.

Photos: Rowan Reid

Rowan Reid is a forest scientist, tree grower and author of *Heartwood – the art and science of growing trees for conservation and profit*. He wrote about growing red cedar in plantation in AWR#98. See: www.agroforestry.net.au

Species	Radial Shrinkage (%)	Tangential Shrinkage (%)
Mountain ash	6.5	13
Manna gum	6	12
Southern blue gum	6	12
Messmate stringybark	5	11
Shining gum	5	9
Sydney blue gum	5	9
River sheoak	3	8
Red ironbark	3.5	7
Spotted gum	4.5	6
English oak	3	6
Poplar	2.5	5.5
Silky oak	2	5
Black walnut	3	4.5
Radiata pine	3	4.5
Blackwood	1.5	4
Australian red cedar	2	4
Coast redwood	1.5	2.5

Table 1. The shrinkage rates for a range of timber species we grow on our farm (Keith R. Bootle, *Wood in Australia – Types properties and uses*, 2nd Edition (Sydney: McGraw-Hill, 2005).

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Time Capsule

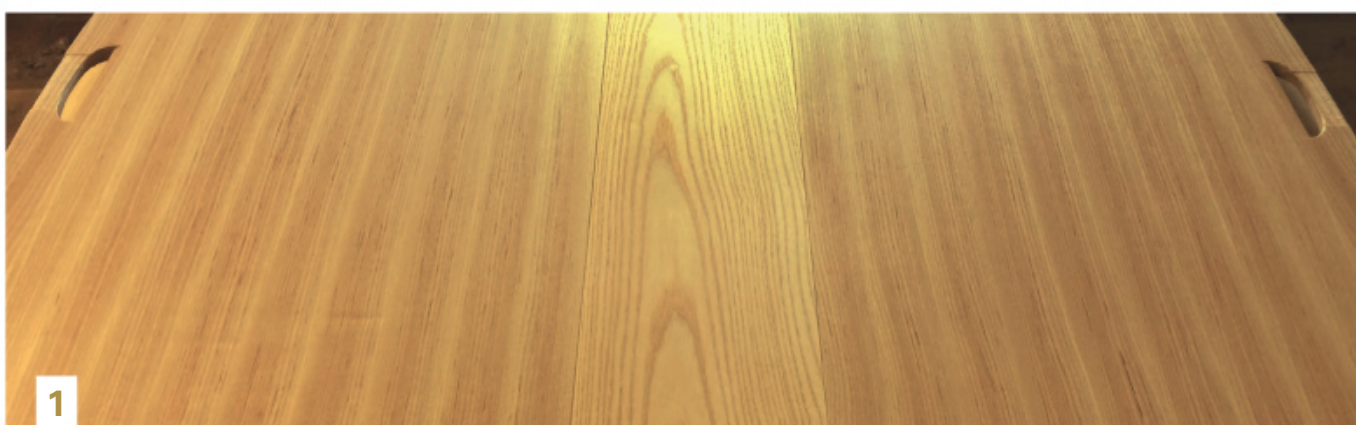
The hidden details of Shinobu Kobayashi's Iki gateleg table, are a message for future craftspeople.



The concept for this piece came from childhood memories of hide-and-seek games – crouching behind a door, inside a wardrobe, under a table... Somehow it made me calm when close to things made from wood, but I became addicted to seeing their details and construction from the inside.

It made me question how and why things were made the way they were. At age five, I was too young to learn the answer, but 30 years later I still enjoy looking inside drawers and underneath chair frames and tables. Most people might not care, however for me those parts show the personality and craftsmanship of their maker.

When I was studying furniture making in Sweden at Capellagården I found a faded sketch of Carl Malmsten's 1947 design in the basement of the building. I tried to



Opposite: Shinobu Kobayashi's *Iki* gateleg table in American white ash and walnut with bamboo cane detailing, 1200 x 800 x 760mm. The table can function as a side, hall or dining table.

1. The centre of the top is made from crown-cut ash while the sides were made from the same board cut quartersawn.
2. The *Iki* table has 30 handcut dovetails many of which cannot be seen. Shown here, the joinery for the base pedestals and top rail.
3. Showing the housings cut into the underside of the top for the walnut cleats that rest against the pedestal sides when folded down.

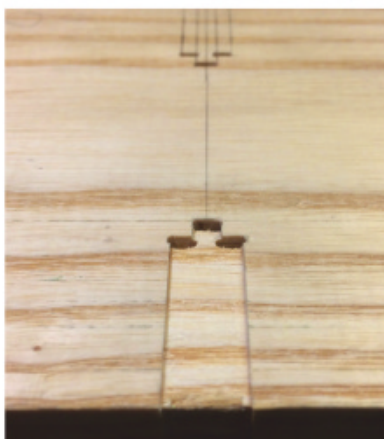
redesign it and blend in traditional Japanese joinery, weaving and dyeing techniques. Traditional materials such as steamed rice glue and bamboo cane would also be used.

The *Iki* table is made from part of a large board of crown-cut white ash that was over three metres long, 500mm wide and 50mm thick. Walnut was used for the smaller details.

The centre of the top and pedestal base were made from the crown-cut section however the fold-down sides of the top needed to be made from quartersawn timber to ensure flatness and minimise wood movement. To this end, vertical sections were sawn from the board and kept in order when glued up.

Using the open grain crown-cut timber along with the tighter grain quartersawn sections shows not only the





This page: Bamboo cane was woven onto recesses created for the handles and other details. The darker cane was dyed with kakishibu (Japanese persimmon extract) and then sealed. Shinobu learnt these techniques from his sashimono master in Japan. You can see the recesses that were cut for cane bindings on the base pedestals, top handle and top cleats.

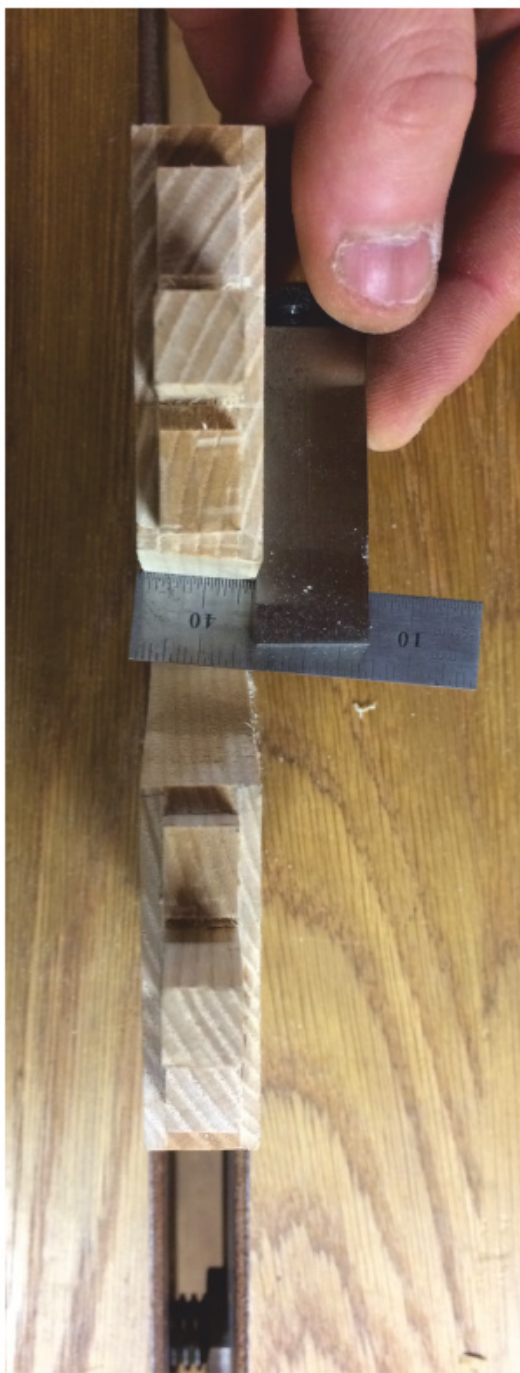
beauty of the natural wood grain, but also creates a different impression when the table is open or closed.

Many details were shaped and joined by hand. The brass hinges were shopmade and the bamboo cane was dyed with *kakishibu* (Japanese persimmon extract) before I wove it onto the handle and into the pedestal supports.

Shellac was first applied to preserve the light colour of the wood before using Swedish coldpressed linseed oil to give a very light lemon tint before finishing with beeswax.

One example of how Japanese traditional woodworking differs from the Western approach is the use of *ari-tsugi* dovetails.

The table has 30 handcut dovetails however many cannot be seen. Some might ask 'why', or think 'that's a waste of time' – but for me, they are a hidden message to future craftspeople. *Iki* means 'Japanese hidden beauty' or 'Japanese hidden craftsmanship' – the kind you may later discover.



Left: Hand cutting ari-tsugi (internal dovetail joinery) for the pedestal centre supports.

Below: Showing the underside and support structure for the table. 'I still enjoy looking inside drawers and underneath chair frames and tables.'



My master in Japan said that furniture doesn't always need to show all of the maker's skills on the surface. He also said that furniture should last for three generations and may need restoring or repairing at some stage. If someone then finds my 'hidden' work I will be happy with that...it's just like a time capsule from me to the next generation.

Photos: Shinobu Kobayashi

The Iki gateleg table along with two Wizu benches were made for AWR Studio Furniture 2018 and displayed at Bungendore Wood Works Gallery, NSW.



*Shinobu Kobayashi is a furniture designer maker who lives and works in Melbourne.
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Instagram @shino_bunny*





Materials like these can be used to build small scale mock-ups.

Opposite: Making mock-ups can fast-track designs and save time and money.

Designing With Mock-ups

Making models is an efficient way to develop your ideas and can save time, money and materials. Story by Martin Jones.

The artistry of furniture making is the ability to conceive an idea, nurture it and develop it over time in order to ultimately produce the most resolved and aesthetically pleasing piece that you can possibly make.

A simple way of achieving this goal is through the use of scale models otherwise known as mock-ups. Investing the time in creating a mock-up to explore and refine a design will save you time and money, improve your making efficiency and help you to create a beautifully resolved piece of furniture.

Transforming ideas into reality

So you have an idea for a piece of furniture that you would like to make. The idea could be in the form of a memory, a sketch or a computer

assisted design. You have a general sense of the size and materials that you would like to use for your final piece however it is very difficult to imagine the final piece and how individual components relate to one another. Essentially you're estimating measurements, angles and proportions and 'hoping' that they will all combine well to form a beautiful piece.

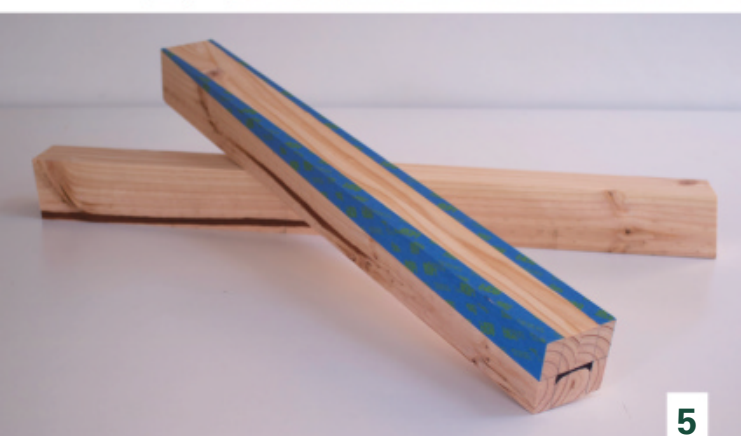
Begin the mock-up exercise by coming up with all sorts of ideas as you would a brainstorming session. This means that there is nothing bad or too crazy to consider. The aim is to create several mock-ups that can be built quickly and cheaply. Create multiple small scale versions, pushing the design each time even to the point where it might seem ridiculous. This allows you to explore, resolve and

refine all the elements of the design in a relatively short period of time.

Start small by using a scale of 1:4 or 1:10 depending on the size of the piece. For instance, a hall table measuring 1400 x 400 x 800mm high easily translates to 1:4, 350 x 100 x 200mm high. To obtain the correct perspective it is important to accurately replicate the dimensions of the various components and their position in relation to one another.

Viewing your design in mock-up can help you answer questions which are essential to refine and resolve the design. Questions such as: are the components too heavy, light, big, small, long, short, square or round? Are the proportions okay? Are the angles pleasing to the eye?





Once you're content with a small scale mock-up it is time to make an accurate full scale 1:1 mock-up using cheap and available materials and spend some time experimenting and shaping the various components. Ask yourself the same questions again and adjust your design as you see fit.

Model material

Be creative and use various materials, such as sheet polystyrene, MDF or ply to mock up cabinet doors and drawers. Paddle pop sticks or cardboard can be used for door handles. Foam and cardboard can easily replicate curves, whilst construction grade pine can be used for just about everything else. Be resourceful, scour your home and workshop and grab whatever is handy.

Grab a gun

Don't worry about cutting any joinery, by far the most convenient tool for constructing your mock-up is a hot glue gun; they are inexpensive, readily available and easy to use. The glue drying time takes only a few seconds so you can construct a mock-up within minutes.

Remelting the glue using a heat gun or even cutting through parts with a knife will allow you to simply remove or

reposition a component for your evolving design. Once you're constructing full scale mock-ups you might need a battery drill and a few screws.

Shaping components adds a huge amount of character to a piece of furniture. You might like to taper a leg, curve an armrest, round an edge or reduce the visual weight of a component. While you're still mocking up and exploring the design it's best not to remove actual material from the model as this is irreversible. Instead use tape or black marker to simulate the removal of material and only once satisfied should you actually remove the material. I suggest using tape to begin as it is easy to play with.

Assess and review

Take lots of photos as you develop your mock-ups – they are great reference points to the evolution of your design and become a precious resource for potential new ideas. Every now and then you can push a design too far, take it to a place it didn't need to go and by referring to the photos you can address where you went wrong.

Once you've designed a piece and you're satisfied with the full scale mock-up reflect on it for a few days,

a few weeks or even a few months. Once you have a full size 3D model to consider you'll be surprised how much a design can evolve given some time, revisiting things like size, shape, visual weight or the position of a component.

Presenting small scale mock-ups to a customer is a great way to communicate and can avoid potential misunderstandings on a design; it also helps the customer understand the dimensions and feel of a piece.

When it comes to actually making the piece you can collect so much data from a mock-up, angles, dimensions, proposed joinery methods, references for potential jigs and other factors that will assist you to make a beautiful piece of furniture.

Photos: Martin Jones



*Martin Jones is a bespoken furniture maker based in the Southern Highlands of NSW.
www.joneswoodstudio.com.au Email: martin@joneswoodstudio.com.au*



6

- 1, 2. Experimenting with the rail positions in 1:4 scale.
- 3, 4. Experimenting with alternative seat and rail designs
5. Full scale mock-up using tape to shape the legs.
6. From sketch to 1:4 scale to 1:1 scale mock-up.
7. The full scale model which can be used for further design development.



7



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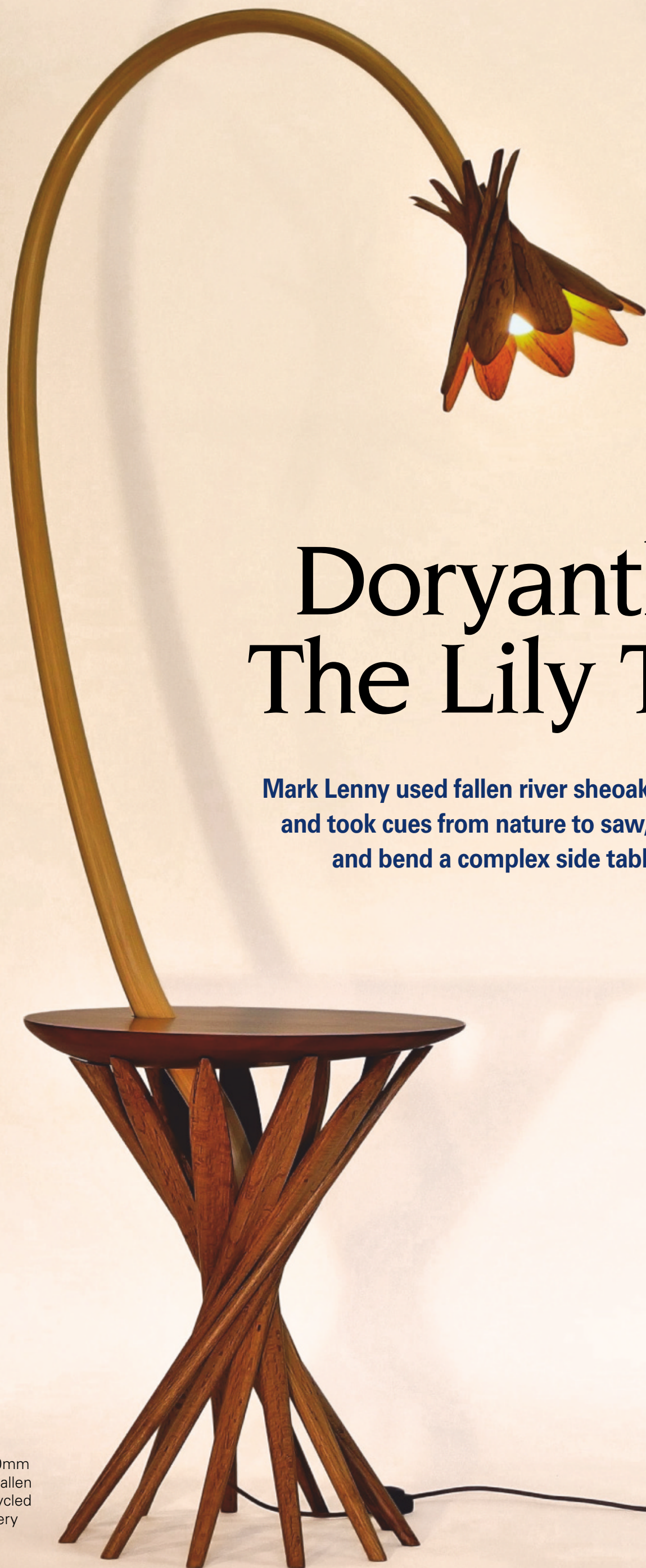


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Doryanthes: The Lily Table

Mark Lenny used fallen river sheoak from his property and took cues from nature to saw, sculpt, laminate and bend a complex side table with light.

Doryanthes, 1900mm high, made from fallen river sheoak , recycled red cedar and celery top pine.



Doryanthes is a genus of plants which comprises the gynea lily and giant spear lily – Australian native plants existing in some eastern coastal regions. Both are characterised by a base of long strappy leaves and a long flower stalk – straight for the gynea, bent over for the giant spear. Standing 1900mm high, *Doryanthes** takes its name and design cues from these.

The leaves have been given bit of a twist, the stalk has a bit more of a droop, and the rich red of the flowers is symbolically captured by the red cedar tabletop.

I designed it to be at home beside a lounge chair, providing a resting place for a book and a beverage with a conveniently directed light. It can be dismantled in the unlikely event of requiring repair, and uses a standard edison screw light bulb, commonly available worldwide.



1. Mark Lenny in his workshop.
2. The mighty river sheoak from which the fallen 'branch' was recovered and used for the base and lampshade.
3. Sections of spalted river sheoak branch used for the lampshades.
4. Sheoak was cut to nominal size for two bases, a 'prototype' and a 'mark II' version. The tapered sections were cut alternately to minimise wastage of timber.



5



6



7



8



9

5. Test fitting of the staves before shaping.
- 6, 7. Shaping the transitions between each successive stave was done in pairs using knives, gouges, rasps and scrapers. The base was assembled as a dry structure, with only the last elements glued with epoxy for security.
8. The prototype lampshade, shaped and assembled, with the fitted slats for mark II assembled and awaiting shaping in the background.
9. 'Clamping' the lampshade in order to glue in the final slat.

The cloth covered cable is continuous from the foot switch to the lamp holder with no intermediate connections. All metal components in the electrical path are covered, thus providing double insulation. The lampshade is easily removed by unscrewing a retaining ring.

While the function is straightforward, its construction was not. The method used for the base and lampshade has evolved over many years and is a signature element in many of my pieces. These are dry structures, with only the last element glued for security.

The staves of the base and the petals of the lampshade were joined with sliding dovetails, angled and canted at precise angles to achieve perfectly closed geometric structures. Using standard and specially profiled cutters, these dovetails are partly formed using a router table and a Felder tilting spindle moulder. They are then completed with hand planes in conjunction with appropriately angled fences and shooting boards.

Angled holes were drilled at the top of four of the staves for knock-down fittings to discreetly attach the top. Final shaping and blending of each element is done with spokeshaves, chisels, knives, rasps and scrapers.

The stalk is laminated in two stages, so that a groove can be formed to run the electrical cable. Shaping of the tapered stalk is by hand, using spokeshaves and scrapers to produce progressively smaller facets, until a round cross-section is achieved.

The bottom of the stalk, partly hidden under the tabletop, has a slight S-bend and a conical shaped end, so that it can sit snugly and vertically in the splay of the base structure. It is secured by tightening an opposing wooden conical bush under the structure onto a threaded tube which is epoxied into the stalk.

The two conical faces involved have been covered with leather, so that excessive tightening torques are not required. This holds the stalk securely and it can stand independently without additional support.



10



11



12



13



14

The tabletop was stack laminated from recycled red cedar and then shaped using drawknife, scrub plane, spokeshaves and scrapers. It is attached to the base using System-S knock down connectors.

With every surface shaped, virtually the only flat surface in this piece is the tabletop. Ultimately *Doryanthes* was a labour of love, an exploration of organic forms and materials shaped and fitted into a form inspired by nature itself.

Photos: Mark Lenny

* *Doryanthes* was made for and exhibited within AWR Studio Furniture 2018 at Bungendore Wood Works Gallery, NSW.

Email Mark Lenny at mark.lenny@bigpond.com or see Instagram @obliquesymmetry

10. After the dovetails are formed and fitted, the slats of the lampshade are shaped. Seated on a cobbled together carving horse (with a padded seat for extended sessions), I use an array of spokeshaves, knives, rasps and scrapers.

11. Laminations of celery top pine are glued and clamped to the form. The stalk is formed in two stages, with the first seven tapered laminations glued and then a groove routed in this to run a wire for the lamp, before the last four laminations are added.

12. The stalk is rounded in stages by creating smaller and smaller facets with spokeshaves. The final stage was taking off just a whisker with a scraper.

13. The red cedar tabletop was stack laminated from recycled red cedar. Witness holes were drilled at set depths on the contours, as a guide to shaping with hand tools.

14. Drilling the hole for the stalk at 53.5° (that's just what it happened to be) took almost a whole day – no practice run – the risk was high!

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

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Lost Trades Fair

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9–10 MARCH

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18 MARCH

Hand Tool Preservation Association of Australia Tool Sale

St Anthony's Parish Hall
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www.htpaa.org.au

22–24 MARCH

Timber Tools & Artisan Show

RNA Showgrounds, Bowen Hills, Qld
www.timbertoolsartisan.com.au

28–31 MARCH

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6 APRIL

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4–5 MAY

Lost Trades Fair Qld

Cobb & Co Museum, Toowoomba, Qld
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4–6 MAY

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27–31 MAY

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13 JULY

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Woodcraft Pavilion, Maryborough
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www.mwwwginc.squarespace.com

17–20 JULY

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www.awfsfair.org

23–25 AUGUST

Timber Tools & Artisan Show

Melbourne Showgrounds, Ascot Vale, Vic
www.timbertoolsartisan.com.au

8–11 SEPTEMBER

Shanghai International Furniture Machinery & Woodworking Machinery Fair (WMF)

National Exhibition and Convention Center
(NECC), Shanghai
www.woodworkfair.com

4–6 OCTOBER 2019

Oktoberfest Felder Group

Emu Plains, NSW
www.felder-group.com/au-en

5–6 OCTOBER

Hand Tool Event/Open Day Weekend

Melbourne Guild of Fine Woodworking
14 Cottage St, Blackburn, Vic
www.mgfw.com.au

5–6 OCTOBER

Lost Trades Fair NSW

Hawkesbury Showgrounds, NSW
www.rundellandrundell.com.au

12–13 OCTOBER

Illawarra Festival of Wood

Bulli Showgrounds, NSW
www.illawarrafestivalofwood.com

26–27 OCTOBER

Annual Woodshow

Goulburn Valley Woodworkers
MacIntosh Pavillion, Shepparton Showgrounds
High Street Shepparton, Vic
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1–3 NOVEMBER

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Australian Forest Woods

Robert Howard reviews the second in a series of books by Morris Lake on native species and their woods.



Australian Forest Woods (CSIRO Publishing, 2019), is the second book in this series by Morris Lake, following on from *Australian Rainforest Woods* (CSIRO Publishing, 2015), which was the cover story in AWR#88.

The first thing to note about these books is that both titles contain the word 'woods', rather than 'trees'. The subtitle of both books is the same: 'Characteristics, Uses and Identification', again referring to the

different woods, as well as the trees. In other words, both books are more than botany books, which usually have little or nothing to say about the wood produced by the various trees.

The correct identification of the various woods we deal with is likely to become increasingly important to us as woodworkers, as the cutting of the world's forests becomes more political. In the mid-1980s, when importing *Toona calantas* as a

replacement for our own *Toona ciliata* became a political issue in exporting countries, and had restrictions placed on it, I remember seeing slings of imported cedar arrive with 'mahogany' stencilled on their sides. As Morris has written, 'Knowledge and understanding go hand in hand in enhancing sustainability'.

This is particularly important to us, as Australian woodworkers, because our country has some of the oldest, and

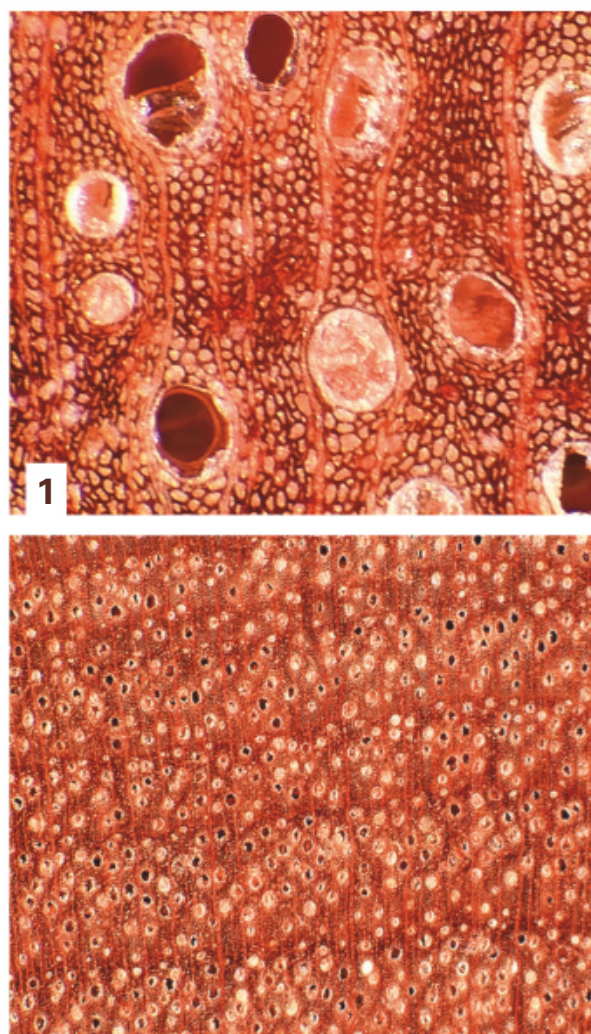
hence incredibly precious, families of woods on the planet (the *Podocarpus* and *Araucaria* species).

Both books begin with an overview of the evolution of trees in general, their botanical classification, and the current situation of our forests here in Australia. However, even though the points covered were roughly the same in both books, I was impressed to see that Morris resisted any temptation to cut and paste, and completely rewrote the material for this second book.

Both introductions repay careful reading. Here in Australia we are blessed with an estimated 5300 different wood-producing trees, but fewer than 250 of these have been commercialised. It really is quite extraordinary that there is such a large, unknown number of woods out there. It is probable that the best furniture timbers have been found and utilised, but when something like spoon carving suddenly becomes popular, we have no idea what riches remain undiscovered. These same riches, of course, can be used for small furniture elements and details, as well as for musical instruments, woodturning, knife making, and many other woodworking pursuits requiring small (and usually highly figured) pieces of wood.

This second book describes 130 species of wood, bringing the total for the two books to 271 species. Of those in this second book, 45 are *Eucalypts* (with a further nine *Corymbias*, and two *Angophoras*), while 22 are *Acacias*. In contrast, the first book, on rainforest woods, only has one *Eucalypt*, and two *Acacias*. Given their widespread dominance of the drier parts of the Australian landscape, this is only to be expected.

I find the 22 species of *Acacia*, in particular, to be very exciting. Terry Gordon (of HNT Gordon Planes) is showing the world the value of gidgee, for example, while small scale, individual timber suppliers like Pete McCurly (best seen on Instagram @curlytimbers) are showing the



extraordinary beauty, and potential for making musical instruments, of many of our dry climate woods, including many of the *Acacias* covered in this book. There is a wealth of potential waiting to be realised in these under-utilised woods.

This is a very useful book, beautifully produced, full of easy to read information, and peppered with lovely anecdotes (the author's candidate for the heaviest wood in the world; the stump that came back to life after standing 'dead' for over 40 years; how the tree 'dead finish' got its name – to name a few off the top of my head) which reflect Morris Lake's lifelong enthusiasm for and professional interest in his subject.

This book should join its companion on the small but ever-growing shelf of must-have books for all wood lovers and woodworkers everywhere.

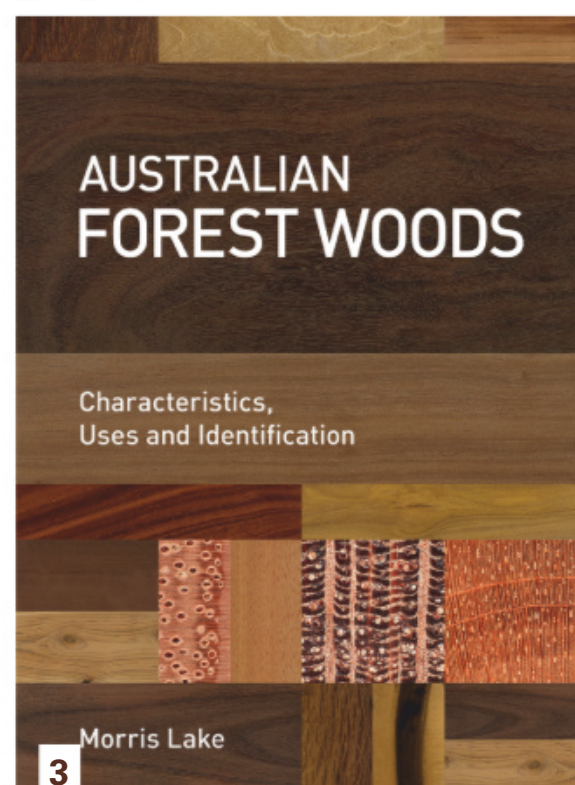
Photos supplied by Morris Lake

More information at www.publish.csiro.au

Robert Howard is a woodworker and sculptor who lives in Brisbane. He teaches regular woodwork classes from his studio. Email: howardrobert@me.com

Main: Images of the tree along with its bark, flowers and/or seedpods and wood are shown for each of the 130 species presented in the book. Shown opposite are those for dogwood (*Pomaderris apetala*).

1. The book also presents macrophotographs of selected species by Jean-Claude Cerre. These show the structure of native cherry (*Exocarpos cupressiformis*).
2. Morris Lake stands at the base of The Big Tree, a 400 year old stringbark (*Eucalyptus obliqua*) with a girth at its base of 16 metres.
3. The book is hardcover with 218 pages and over 900 images.



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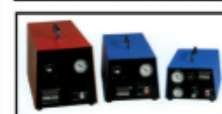
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The Dish

Bryan Cush made a coffee table that captured a moment in time.

The coffee table Bryan Cush made pinpoints a geographic and historical snapshot in time through the medium of a brass star map inlay.

The brass dots embedded into its surface simulate the exact stellar positioning of the southern sky at precisely 12.56pm AEST on July 21, 1969 as viewed from the rural,

central-west NSW town of Parkes. At that moment the 64 metre diameter radio telescope at CSIRO Parkes Observatory would be immortalised for broadcasting live TV footage of man's first steps on the moon to an estimated six million people tuning in back on earth.

This year marks the 50th anniversary of the lunar landing with the Parkes

radio telescope still leading the way in mapping and exploring space today; one of the greatest scientific achievements in Australian history. The now iconic observatory is one of the largest single dish telescopes in the southern hemisphere and with regular upgrades is still in use by NASA, CSIRO and other agencies. Bryan named the table *The Dish* in its honour.



The idea for creating star map inlay developed from a collaborative project undertaken four years ago with Gurindji artist Sarrita King which saw brass dots used to portray the crossover links between indigenous dreaming and the astrological understanding and mapping of the stars.

Starmaps are readily available online and Bryan used a combination of Shaper Origin¹ handheld CNC and a plunge router with an 1/8" upcut bit to transfer the chosen pattern before routing out the holes. 'The Shaper CNC got a solid workout. It handled

the density of spotted gum well in shallow passes', said Bryan.

The splayed legs are a nod to the angled support struts of the lunar module, while the moon rise is located as a solitary aluminium marker. The coordinates were also engraved on the legs with the Shaper tool using a 45° cutter.



Main: Dusky pinks and purples cloak *The Dish* star map table as it sits in the foreground of its namesake. 'It was a truly memorable experience taking this piece out to the incredible structure that inspired it.'

Top: Views of the captured leg to rail joinery designed and made for *The Dish* table.

Above: Showing the star map surface of the table which is 800mm diameter x 250mm



Left and centre: Coordinates for the star map are engraved on the legs of the table.

Below: 'It had always been in my mind to take the piece home', said Bryan, shown here with the table he made that was inspired by the Parkes Observatory's role in the 1969 lunar landing.

Over 900 pieces of brass rod of various diameters were epoxied in and flush trimmed with a multi-tool to reveal the star map pattern.

Bryan explained how there had been no problem sanding the brass and wood because 'the brass is roughly the same hardness as the spotted

gum, so the two sand relatively harmoniously together working through to 600 grit'. From start to finish it took around 18 hours to create the star pattern.

Bryan now makes star map tables to order to celebrate any desired moment in time. The *Dish Table* can also be reproduced for true 'space geeks' with an interest in the moon landing, says Bryan. As an architect as well as a furniture maker he admits to an obsession with structures and also an interest in the Parkes Observatory that was kickstarted by seeing the fictional movie called *The Dish* that was made in 2000.

Bryan designed and made the table specifically for AWR Studio Furniture 2018. Not content with merely delivering the table to Bungendore Wood Works Gallery in NSW, Bryan literally joined the dots by taking the table to Parkes for its final photo shoot.

'It had always been in my mind to take piece home', said Bryan, explaining it was 'only an extra 400 kilometres each way past the gallery'. I'd always assumed that Parkes was a dusty old place, but it's a lovely outback town and it was a great drive crossing the Murray and seeing a very different part of Australia.'

With a restriction on the use of wifi, the two days that Bryan spent staking out the Dish, waiting for it to turn for the video² and photos he shot, turned out to be a digital detox. 'Without a mobile phone it was good downtime sitting there on the road with a book amongst the kangaroos, blue tongue lizards...and also a very large snake', he said.

1. See Bryan's review of the *Shaper Origin* in AWR#100.

2. To see the video, search on YouTube for 'The Dish by Sawdust Bureau'.

Photos: Vivienne Wong

For more information about Bryan Cush see www.sawdustbureau.com



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