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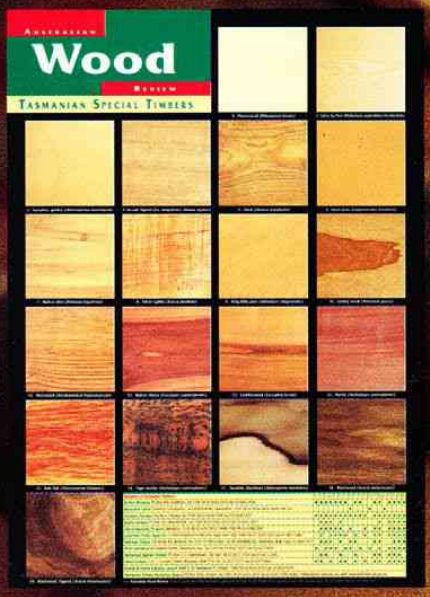

Tasmanian Timber Poster

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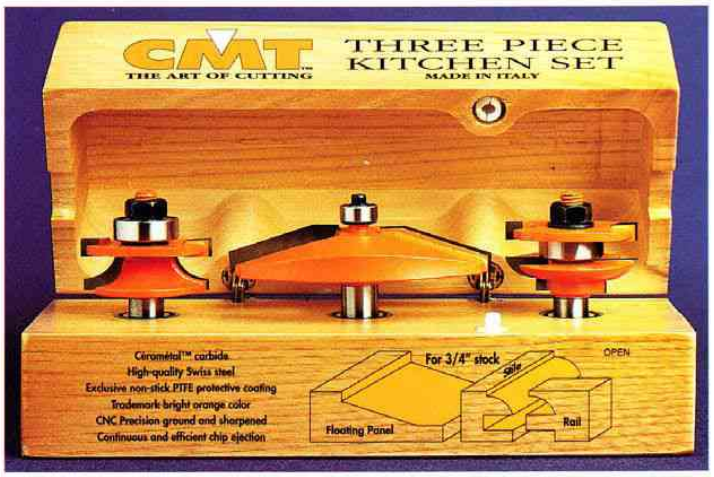
Big routers reviewed p.17

ITALIAN MASTERPIECES, NOT COUNTERFEITS.



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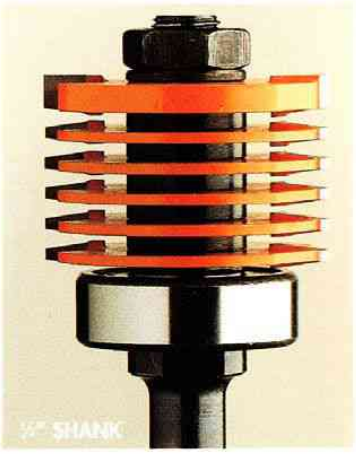

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TOOLS FOR WOOD

Australian Wood Review

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EDITORIAL

Milestones are worth celebrating and we've tried to make the 20th issue of Australian Wood Review worthy of being called a 'Collector's Edition' by including a full colour poster of 'Tasmanian Special Timbers'. Thanks are due to the sponsors who have made it financially possible for us to present you with this. These companies are suppliers of the species shown and their full contact details are included on the poster. Most of timbers on the poster grow only or predominantly in Tasmania—see the story on page 34 for more on Tasmania's forests and special species.

With this issue we are also launching our own website. We have had, for some time, a web page on 'Woodlink', the expertly managed website of the Victorian Woodworkers Association. The new website, located at www.woodreview.com.au will include some new features and avenues for interchange. In addition to sample pages of the current issue, our website will include a 'Wood Forum'. This is an opportunity for online exchange of ideas and information for people who work with wood. A listing of suppliers of timber, woodworking tools and equipment should also help you to find what you need.

In this issue Susan Wraight describes the process of creating one of her recent commissions. Susan is one of the world's most talented exponents of the traditional Japanese artform of netsuke. Her sculpted miniatures are held in numerous collections and I'm sure you'll find the insight into the way she works fascinating.

Chairs are a real test of woodworking skill. We've enlisted two of our contributors, Philippe Brooks and Neil Erasmus to describe some of the finer points of designing and making chairs that work both functionally and aesthetically.

Our story on the timber veneer manufacturers and suppliers should hopefully give you an idea of the way this industry works, as well as giving practical tips on sourcing and buying veneers. We also review some of the larger routers on the market, disc sanders, portable dust extractions systems and sharpening stones. It's all very well having the right machines but knowing how to maintain and operate them is another. Philip Ashley writes about ensuring you get the best possible results from your planer-thicknesser.

Last issue we announced Forestry Tasmania's Wood Productivity Award, specifically aimed at encouraging innovation in utilising Tasmanian wood. Joint winners were Red Rock Timbers Pty Ltd for a manufactured timber floor covering and Radcon Pty Ltd for a revolutionary sawing method which increases recovery—see Philip Ashley's story for details of the latter.

On reaching our 20th issue I would like to thank all our subscribers and readers for sticking with us. Your feedback and suggestions for stories are always welcome.

Linda Nathan, Editor

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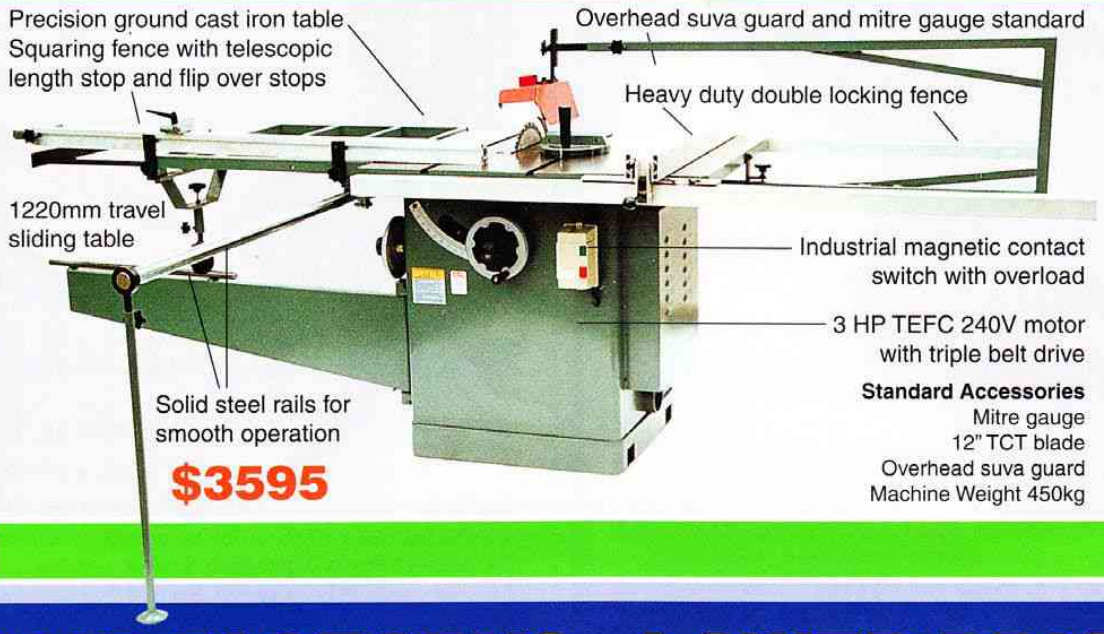

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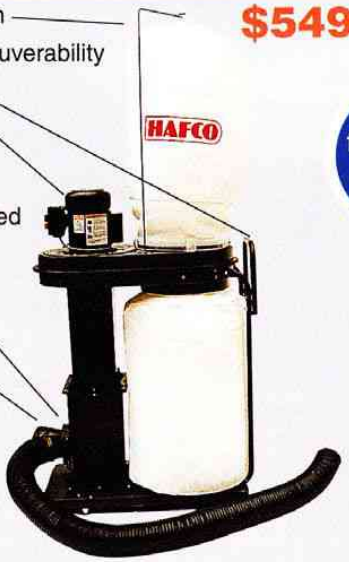

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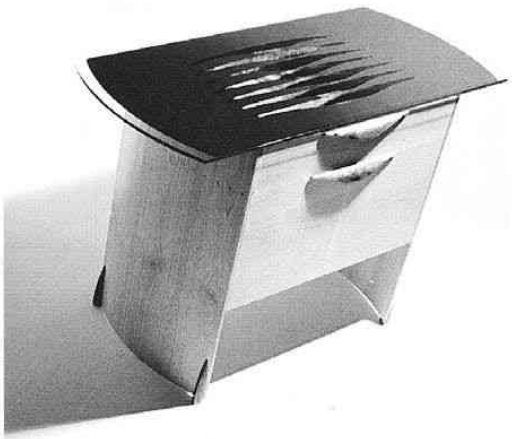
EXHIBITIONS



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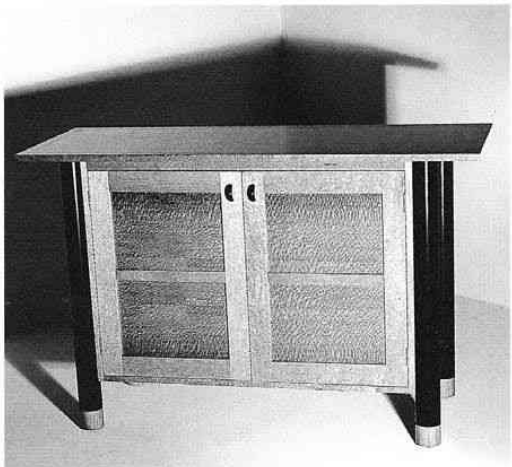

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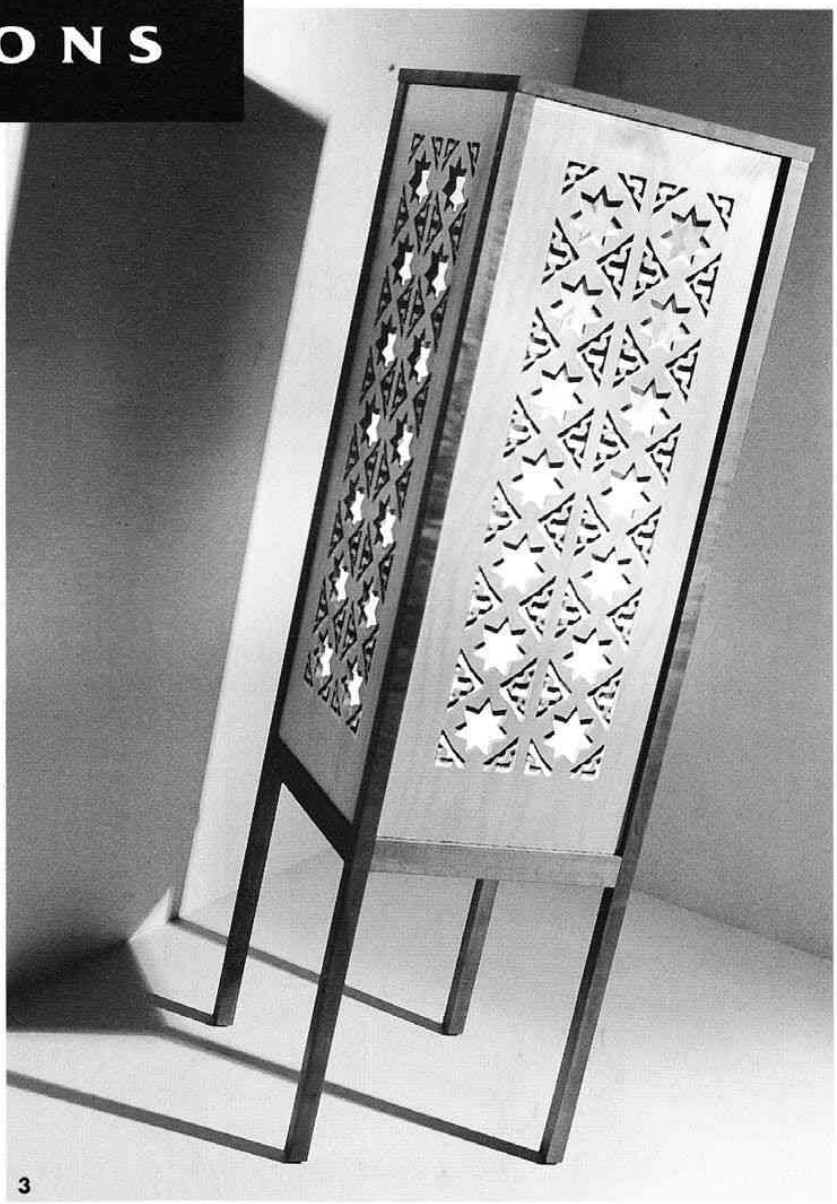

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Degrees of Latitude

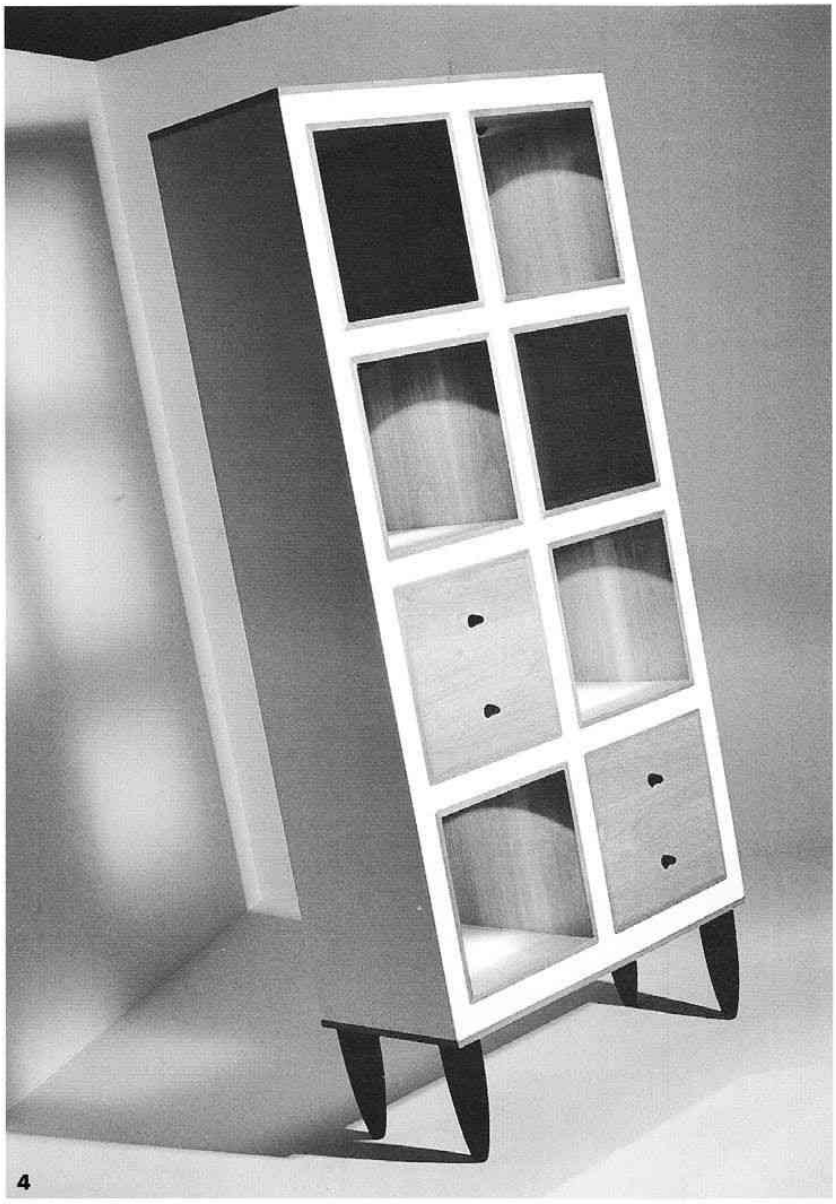
Brisbane City Gallery, July-August 1998
Reviewed by Kirsten Fitzpatrick

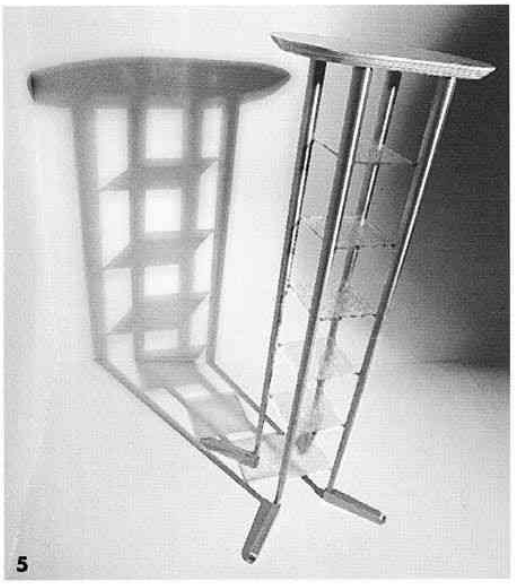
Degrees of Latitude was an exhibition of 28 contemporary cabinets designed by local architects, interior and industrial designers, fine woodworkers and visual artists. This diverse range of participants were invited to respond to a brief and design a cabinet for the climate of south-east Queensland. The exhibition was inspired by recent domestic architecture which successfully addresses the heat, humidity and geography of the region, and there was to be a conceptual link between the cabinets and this new architecture.

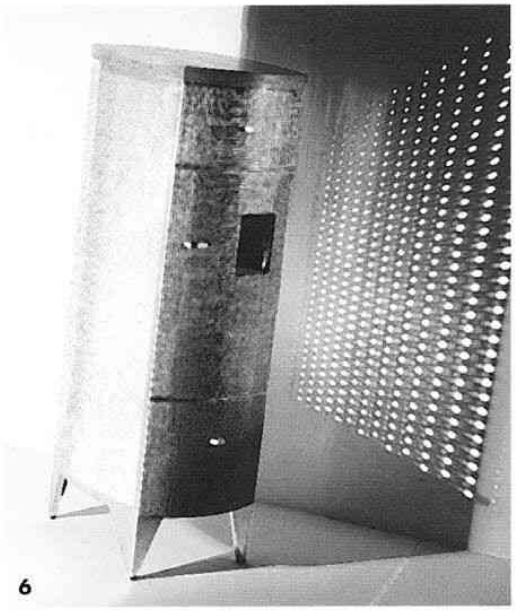
The exhibition title was devised to both refer to a specific geographical location and to encourage latitude in interpreting the brief. The latter was certainly evident in the form and materials of the cabinets which ranged from futuristic plastic to hi-tech steel. All of the cabinets were functional but they also commented upon contemporary cultural and environmental concerns and made insightful observations about architecture and furniture in Queensland.

To design a cabinet for the climate is a problematic brief as a cabinet is a functional but not habitable space. Many makers chose to incorporate woven, pierced or slatted surfaces to make a visual connection with the louvres and verandahs prominent in the new architecture. John Fuller's bedside cabinet combines perforated aluminium mesh with silky oak. This combination of materials, and the form of cabinet, evokes the meatsafe—a colonial item of furniture which emerged in response to the climate. Keith Ward and Steven Hall's cabinets reinterpret the meatsafe in a more direct manner, one as a cellaret for wine storage, and one as a sculptural piece.

An alternative response to the brief was to design cabinets specifically for the interiors of the new architecture rather than referring to vernacular architectural or furniture forms. The cabinets of Sipen Rojnavibul (architect), Carole Thretheway (interior designer) and Roy Schack (furniture maker) are freestanding space dividers intended for open plan interiors. Some of the cabinets had a more abstract connection to the brief. For example, the laser cut plywood walls of Bruce Carrick's cabinet refer to the decorative screens of south-east Asia. Carrick uses this device to highlight what he perceives as a continuing eurocentric approach to the built environment despite the







geographic placement of Queensland at the opposite end of the earth.

Degrees of Latitude included a good representation of cabinets by highly skilled local woodworkers. Most chose to work with sustainable timbers, reflecting current environmental concerns, and there was a prominent use of timber traditionally associated with Queensland, such as silky oak. For others, the exhibition provided the opportunity for the exploration of new techniques and materials. Richard Newport made a significant departure from his fine woodworking background to experiment with sailcloth and a lightweight aluminium structure held together by tension and screws. Marc Harrison's cabinet revives an obsolete industrial technique (from the aeronautical industry) in which painted canvas is stretched over a lightweight frame then doped with acrylic. The canvas has been painted yellow and combined with cherrywood veneers.

The miniature cabinet of Bill Haycock (stage designer) was inspired by memories of sun-bleached jetties on the Queensland coast and has a sense of nostalgia and fragility. He constructed the cabinet from driftwood and carefully weathered timber.

Furniture has always had meanings which extend beyond its physical appearance. The chair, for example, has become the barometer of twentieth century design innovation. However, for the preceding two centuries this role has been fulfilled by the cabinet. *Degrees of Latitude* is an exciting collection of contemporary cabinets which reveal the skill and integrity of the makers and the continuing potential of this furniture form.

Kirsten Fitzpatrick is Craft Curator at Brisbane City Gallery.
Photos: Peter Budd

1 Stephen Dyer, 'Endless Wave', silver ash veneer, hoop pine plywood, New Guinea rosewood, glass, epoxy paint, 900 x 1360 x 600

2 Rod Nathan, 'Silky Oak Cabinet', silky oak, silky oak veneer, Victorian ash, panel board, 830 x 1300 x 490mm

3 Bruce Carrick, 'Light Enclosure', hoop pine plywood, Tasmanian myrtle, glass, 2940 x 620 x 500

4 Marc Harrison, 'Stretch', cherrywood veneer, painted canvas, resin, 1860 x 820 x 3902

5 Carole Threthaway, 'The Cabinet', plywood, cast aluminium, glass, 1360 x 500 x 490

6 John Fuller, 'Eunuch Tallboy -girl', perforated aluminium, silky oak veneers, 1225 x 425 x 530

EXHIBITIONS

Earth Links—
Seating For Dialogue

Benches by Peter Michael Adams
Centre for Contemporary Craft, Sydney,
August-September, 1998
Reviewed by Linda Nathan

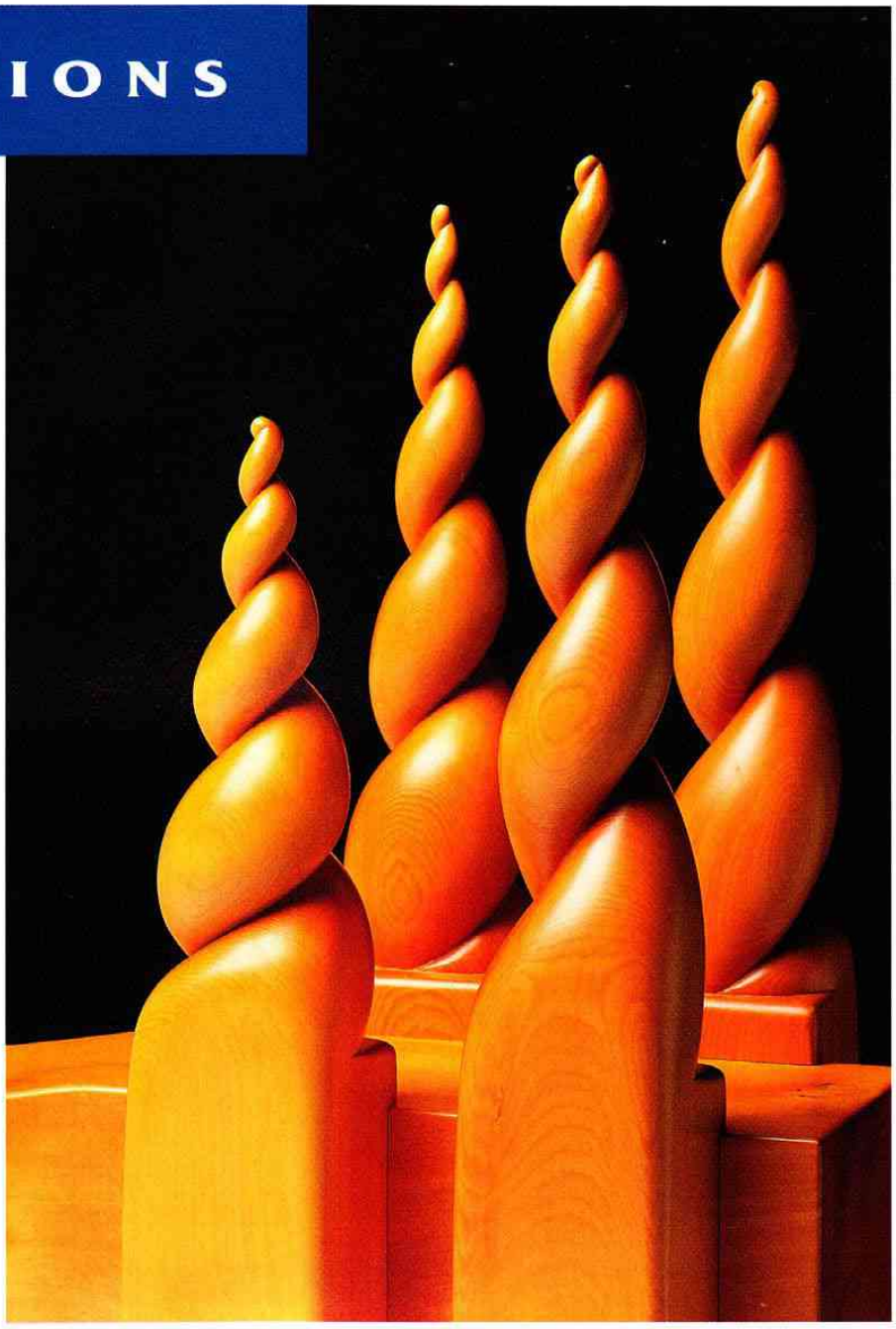
Peter Michael Adams makes environmental and philosophical statements in wood and stone. Substantial and occasionally massive pieces of timbers, generally sourced from near his remote Roaring Beach home in Tasmania, are finely crafted into symmetrical, sculptural forms which invite human interaction and response.

According to Adams his benches were made to be modern-day icons representative of the earth. 'In our secular society we still need things to look at which are beyond our ego selves', he explains. That is how these benches can function in homes or in public places, though 'visually', he adds, 'it doesn't really matter how you view them'.

Virtually every aspect of the thirteen benches which comprise the exhibition is symbolic. Most obvious to the observer are the inscriptions which seem to embody Adams's quest. *Sticks and Stones* bears the words 'In imagination is the preservation of wilderness', an allusion to the words of Thoreau which appear on *Thoreau's Secret*: 'In wildness is the preservation of the world.'

Used as a title for another bench, the words of Shakespeare *Tongues in Trees—Sermons in Stones—Books in Brooks* eloquently alliterate the sculpturally undulating form in sassafras and polished black granite. More subtle are the ideas conveyed by the voluptuous spirals, curls, waves and geometric grids which characterise his work. Ideas of balance and harmony are reflected in the symmetrical placement of stones, sculpted forms and reciprocating curves.

Adams's carved spirals in particular are expressions of a virtuosic technique. *Spiral Log* is just that, tapering at each end. *Cathedral* has four perfect spirals which reach upward at each



'Opus 18', Huon pine, beach stones, granite

end. The words 'cathedral' and 'chair' both share the same Latin root. 'A bench can simply be viewed as a joining of two or more chairs for a more communal sharing of the sacred act of sitting', writes Adams in the *Earth Links* exhibition catalogue.

In the same document he comments that his work is about 'inter-penetrating worlds: the melding of the human body and spirit with those of the tree and stone and whomever else is there'. The interaction of nature and humanity is expressed in the choice of materials, their placement and the treatments applied to their surfaces. Found sticks and branches bleached by the sun, and stones worn smooth by natural elements are combined with wood which has received the most skilful treatment which ground steel can impart.

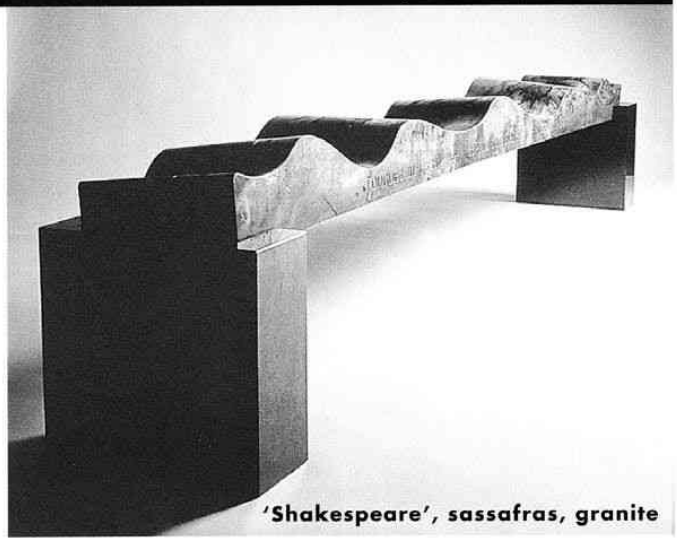
Born in Michigan, Adams graduated from Harvard University with a Bachelor of Arts. After that he travelled and lived all over the world, initially spending two years with the US peace corps in Korea. Returning to the States, he moved to Alaska where he took up an opportunity to study cabinetmaking. Moving on again to North Carolina he studied fine woodworking and eventually earned a masters degree in design. In 1985 Adams took up an appointment as a lecturer in woodwork at the University of Tasmania. In 1993 he was awarded an Australia Council Fellowship and, since 1994, has lived and worked as a self-employed sculptor.

In 1991 he resigned from the School of Arts at the University of Tasmania because he wanted to work on a major body of work which somehow visually encapsulated the link of the craftsperson with the environment. *Earth Links* harks back to the organic forms which Adams created in the US prior to living in Tasmania. While teaching at the University of Tasmania Adams experimented with a more avant-garde approach to design and the technology of making. He enjoyed the experiment but felt something was lacking in the works produced. *Forest No.1* signalled a return to a more sculptural way.

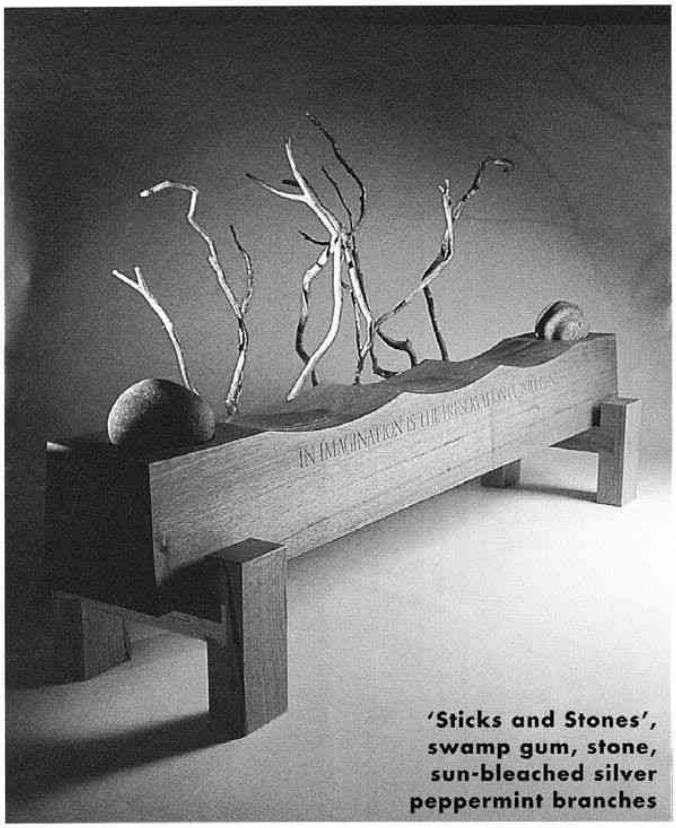
In 1991 he moved to isolated Roaring Beach, Nubeena about 100 kilometres south of Hobart. Initially he lived without running water or electricity, working largely with hand tools, excepting for stints at the powered workshops of friends. This total immersion seems to typify his search to create objects imbued with meaning.

The symbolism of Adams works may be too esoteric for some, however it is the mastery of their execution, the finely cut joints, the precisely and equally measured gaps, the cleanly cut edges and arrises, the sensitively carved spirals and curves which bespeak of his attempt to 'reveal a sense of the sacred within the functional' while recognising that, he says, 'the most impressive piece of art will always remain behind bark, standing within the dark of the living old growth tree'.

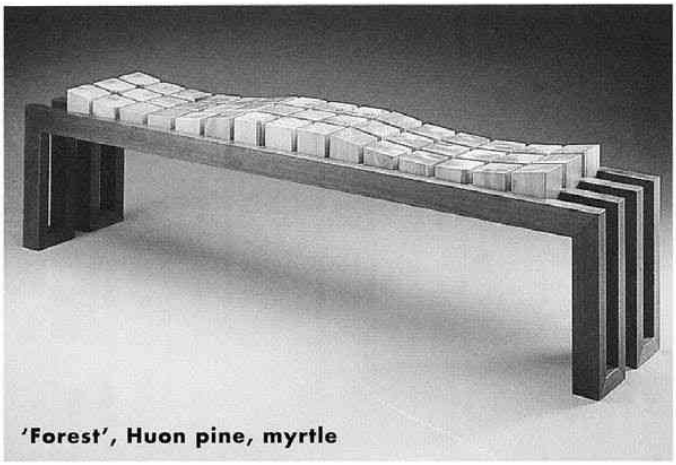
Peter Adams can be contacted on (03) 6250 1001



'Shakespeare', sassafras, granite



'Sticks and Stones', swamp gum, stone, sun-bleached silver peppermint branches



'Forest', Huon pine, myrtle

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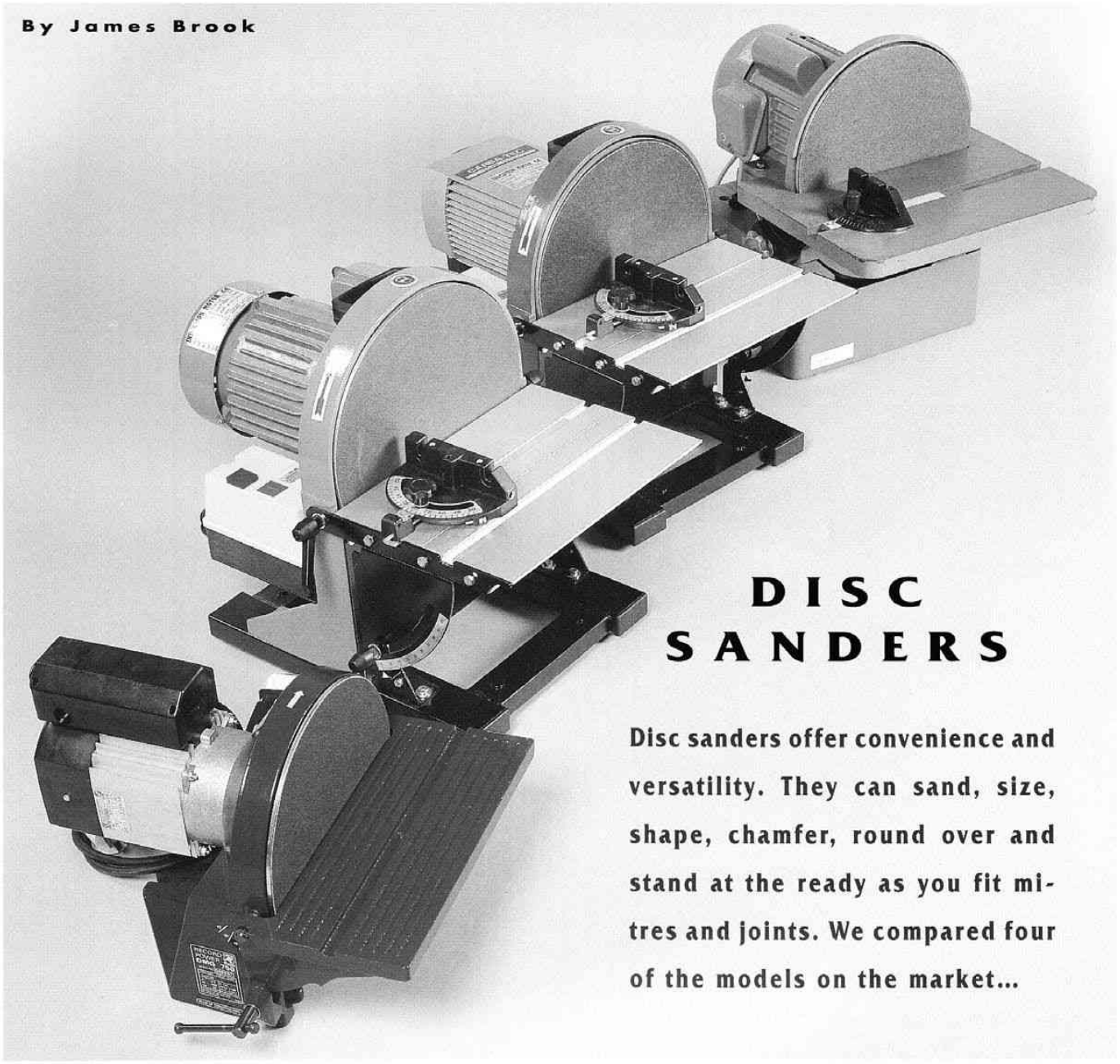
MULTICAM SYSTEMS

By James Brook



DISC SANDERS

Disc sanders offer convenience and versatility. They can sand, size, shape, chamfer, round over and stand at the ready as you fit mitres and joints. We compared four of the models on the market...

Disc sanders have been around for many, many years as both a trade and hobby machine. In simple terms they consist of a machined disc fitted with abrasive which is driven by a motor, while a tilting table supports the workpiece.

Set up properly these machines are accurate and can perform countless tasks. The circular motion and limited sanding area will normally confine their use to end grain and edge work. Many people swear by them for very accurate sizing of components and this includes angles and 90° cuts; in fact, armed with a bandsaw and disc sander you will be amazed what joinery you can accomplish. Apart from chamfering edges, easing corners, rounding over and shaping, this machine will help you fit mitres and other angled joins.

Size

Disc sanders are rated on the diameter of the disc, and here bigger does not necessarily mean better—it just means more sanding area. For most applications 250-300mm is adequate. Likewise with motor power, offer the timber up to the disc and let the abrasive do the work rather than trying to hurry up the process by forcing the cut.

Operation

Sanding takes place to the right of the disc so that all the force is directed down onto the table. Trying to sand on the left side will result in the wood being thrown up and around. Once again, don't force the cut, let the abrasive *cut* rather than *grind*. In addition, forcing the cut increases the danger, may burn the timber and strains the motor.

Disc sanders top to bottom: Woodman SA 212/1, Carba Tec, Hafco, Record DMG 750.

Set the table accurately to the disc, use a square or sliding bevel and ensure all adjusting knobs are tightened before use. There should be a gap of around 2mm between the disc and table edge.

Abrasive

The abrasive is supplied as pre-cut circles and are fitted to the disc by either velcro or peel-off sticky backing. The velcro backed discs are more expensive but can be re-mounted if

removed, unlike the sticky discs. Cleaning sticks are available to extend the life of the abrasive.

Dust

Like all woodworking machines disc sanders need efficient dust extraction so ensure you connect a dust extractor to the machine. Nowadays most machines are set up for dust extraction. A shroud covers the lower half of the disc which then leads to an extraction port. In use I found that sanding near the centre created dust blow-back (on me)—sanding nearer the right hand edge was fairly clean.

What's On The Market

We were sent four machines for trial and while they were only used for a limited amount of time the following observations were made. All prices quoted include tax.

Woodman SA 212/1
Size: 300mm
Motor: 0.75kw
Rpm:1420
RRP: $889

This is a very heavy and solid machine, in fact it takes two people to move it. The motor has plenty of power, the table is machined cast iron and the dust extraction set-up was the best of the four machines. On the down-side the switch is simple to operate but is not a no-volt-release (NVR) type which would be better. The mitre gauge was also a little too light duty.

Record DMG 750
Size: 250mm
Motor: 0.55kw
Rpm: 2850
RRP: $595

This was the smallest and lightest of the four machines, which at first I thought was a disadvantage. If, however, you need to move the machine single-handed this could be the one for you.

The disc size at 250mm probably won't bother those doing smaller scale work and the table is cast and machined. The NVR (no volt release) switch is good and has a flap which can be hit for quick stops. Power is acceptable although if you force the work through you will slow it down—of course you shouldn't be forcing it anyway.

The lack of a dust extraction port is a disadvantage and means you'll have to fabricate a shroud and outlet yourself. A mitre fence is not supplied as standard, however this machine does come with a five year warranty.

Carba-Tec
Size:300mm
Motor:1.1kw
Rpm:2850
RRP: $499

Hafco
Size:300mm
Motor:0.6kw (output)
Rpm:1420
RRP: $469

The Carba Tec and Hafco disc sanders come out of the same factory and are identical except for their motors and price tags. The Carba-Tec has a very smart looking alloy cased motor running twice as fast as the Hafco machine with its more traditional looking motor. Despite the difference in speed of operation there didn't seem to be any variation in performance between the two. Both have an alloy table with a nicely finished mitre fence which can be locked in place—a definite advantage.

Being alloy, the table may wear over a period of years. The dust extraction set-up worked well and these models are solid and heavy—one person can *just* move them around. The NVR switch seemed good with its simple push button operation. Power was certainly adequate, I noticed no drop in spinning under load from either machine when forced.

What To Buy

I thought the placement of switches on all the machines tested was not ideal, as you need to lean over the table to reach them. Of the four, the Record switch was better. Table adjustment was best on the Carba-Tec and Hafco models while the Woodman offered the best dust removal and the Record lacked in this regard.

Based on sheer mass and stability the Woodman appears best for heavy duty work. The Carba-Tec and Hafco models will suit trade or hobbyist and have the advantage over the Woodman that they can be moved around and adjusted with reasonable ease. The Record will suit those needing a smaller and lighter portable machine.

There are other models on the market which you may consider. The **Hegner HSM300**, made in Germany, has a very good reputation with its aluminium casing and anodised aluminium table with tilt. The machine has built-in dust extractor outlet and NRV switch. It has a 0.5kw motor operating at 1400rpm. The unit retails for around $1450.

The **Woodfast 350** Disc Sander is a heavy duty machine with a price to match at $2442. The 1kw motor spins at 1440rpm whilst the table is cast iron with tilt. NRV switch and dust extraction outlet are standard.

Suppliers of Disc Sanders

Carba-Tec Qld 1800 658 111, Vic 1800 653 777, NSW 1800 683 583

Woodman (02) 9708 3233, (03) 9555 5199, (07) 3844 4433, (08) 8346 4561, (08) 9272 3844

Hafco Hare & Forbes NSW (02) 9633 4099, Qld (07) 3849 1888, F.W.Hercus (08) 8346 5522, Fiora Machinery (08) 9356 1811

Hegner MIK Int. (08) 8333 2977

Woodworks Book & Tool (02) 9807 7244

Record Record Tools (02) 9748 6800

Power Tool Specialists (02) 6280 4966

MIGHTY BI

Richard Vaughan tests higher powered 'top end' routers, and finds that you do get more for your money.

Porter Cable Speedmatic PC-7539

A heavy 7.8 kg tool, but packed with features, especially low-down 'grunt'. An excellent 5 speed range of 10,000-21,000 rpm constant speed under load. The RRP of $795 puts it under the Festo but over the Makita and the Hitachi. If you want the extra attachments, which you no doubt will, then allow $73.87 for a straight-edge guide, $34.75 for a height adjustment knob (for inverted use) and $109 for a dust extraction base.

Though it has been popular for a long time, the router has become the star power tool in the last five years or so, and it's worth looking at what you can now get by way of refinements in response to all the attention.

You can pay over $2000 for a router and if you planned continual heavy use, as for the production of kitchen benches, you'd probably reckon that was a worthwhile investment. I worked with four models (well under $2,000) to get an idea of what is currently available in Australia in the 'more frills' versions. But first, some basic considerations.

The notion of 'grunt' is pretty appealing (after all they are power tools) but it's well down the list of priorities if you're choosing a quality router, simply because the better (and you do tend to get what you pay for) models have quite enough power to do the job. Just the same, it is useful to know what the salesperson is referring to when he or she talks of power.

The power rated in watts is simply amps x volts as specified on the plate on the tool. So a tool which draws 10 amps in the Australian 240 volt system can be rated at 2,400 watts power. Roughly 750 watts (745.7 in fact) is reckoned to be equivalent to one horsepower.

The difference between power input and output acknowledges the power lost in the process of turning the shaft: viz the efficiency of the motor. The factors affecting this also help define the quality of the machine.

The power rating is often much the same in tools widely different in price. Top quality high speed bearings offer less friction and so take less power than cheaper bearings or even the cheaper bushes. More importantly, they will run cooler and more smoothly, and so last longer. As routers are working at extreme speeds this is an important consideration.

G ROUTERS

Thin wire in the winding on the armature resists the flow of electricity, rather like a thin hose resists the flow of water. This resistance generates heat (think of a radiator element) and draws off power. It also makes the winding more prone to break down—result: a 'cooked' motor.

The quality of the bearings and the robustness of the armature are all but invisible, except in the price tag, but pretty well define the life of the tool. However, whatever you do pay for your router you will extend its life, and reduce your servicing costs, by:

1 Minimising dust getting into the workings, particularly when it's inverted as in a router table, by using effective dust extraction.

2 Blowing or vacuuming it clean after each use.

3 Reducing machine wear by culling with a couple of lighter passes rather than hogging out and straining the tool. (You'll also save time spent on cleaning up a rough or burnt finish.)

A very common misdemeanour which provides regular income for power tool repair shops is continuing the job when the tool gives off signs of ailing. Ignoring these symptoms is equivalent to driving on when the car temperature gauge goes into the red. The warning signs are just about as obvious. When you get familiar with the normal working temperature of your machine you will quickly notice overheating, which could be caused by a bearing breaking down. The next stage could be a grinding sound which is very obvious as the tool stops. 'Just finishing the job' will most likely cause major damage. If the motor stutters it's most probably time to change the carbon brushes, and of course you always have a spare set at hand. If that doesn't cure it then it's time for a check-up *before* continuing.

Hitachi M 12V

This router at 5.5kg is the second lightest of the models shown here and has fully variable 8,000—20,000rpm no load. Its 10 amp motor has plenty of power. At $519 retail it is very attractive and the price includes a straight guide (no frills) and template guide. The extra dust extraction unit sells for $41.70.

Now let's look for the beauty in the beasts, the refinements which make for comfort in use. All four have soft start, which eliminates the kick that has daunted many an early model router user. They also offer variable speed, essential for safer use of the larger router bits now commonly available, as well as helping with woods which are prone to burning. The *Porter Cable* has five distinct speeds (not to be changed while the motor is running) while the others are infinitely variable. All have handles positioned for comfortable grip and balance though the *Porter Cable* handles are outstanding. The *Porter Cable* also has the best designed on/off switch with the trigger and trigger lock built into the handle.

Makita 3612 C

Technically this tool offers similar features to its rival the Hitachi as it has 10 amps, weighs in at 6 kg and has fully variable 9,000—12,000rpm no load speeds. It is dearer than the Hitachi but arguably offers more extras such as straight guide (no frills), template guide, motor dust cover, height adjustment knob (for inverted use) all for the RRP of $578. A dust extraction unit is extra at $27.70.

All are plunge models (why would you bother with less?). The *Porter Cable* has the deepest plunge at 75mm. The *Festo* and *Hitachi* give 65mm, and *Makita* 60mm. I found the depth locking on the *Porter Cable* the easiest to use. There is a large and well-placed sprung lever which holds the depth wherever it is released. The *Makita* uses a no frills but adequate metal lever which is pushed against a spring to lock at depth. The *Hitachi* is similar but without a spring.

The *Festo* locking lever felt a little awkward and stiff and I found it easier to operate after I had removed the lever and replaced it pointing up rather than down. The depth adjustment and setting on the *Festo* however is distinctly superior, being easy to read, set and adjust in accurate increments as fine as 0.1mm. Such fine adjustment isn't possible on the other models tested.

Changing cutters should be hassle-free. I love the keyless chuck on my drill and look forward to an equivalent system for routers. For *Porter Cable* you can use one hand squeezing two spanners in opposition for locking or unlocking the bit—simple, effective and proof against the damaging slips of sudden release. The other three use a single spanner on a locked shaft. The *Festo*is smooth and easily controlled and has a neat safety feature in requiring a second pressure to free the cutter. *Festo* and *Makita* have an eight slot collet. *Porter Cable* and *Hitachi* have three and four respectively.

I have long admired the *Festo* for the refinement of its design and overall sweetness of its operation but welcomed the chance to use the *Porter Cable* which is well-known in America. I was impressed by it. It is comfortable

Festo OF 2000E Plus

Weighing in the lightest at 5.4kg the Festo has fully variable, 12,000—22,000rpm speed which is electronically maintained at a constant speed. Its RRP of $976 makes it the most expensive however it does include a superior straight-edge guide, template guide and dust extraction attachment. The robust Festo store/carry 'systainer' case will set you back another $60, but it's worth it if you intend to carry it about.

to use and has a heftiness which suggests durability. After using the *Porter Cable* for several hours of trimming 40mm redgum to a template it was barely warm. The collet of the *Festo* gets very hot very quickly. The weight of the *Porter Cable* is possibly an advantage for a tool which is generally fully supported by the workpiece.

The small opening (only 30mm) in the base of the *Porter Cable* is a surprising shortcoming in a tool which invites the use of larger bits and the current sole plate design would not conveniently allow for enlargement. It is apparently an American standard to suit the popular jigs. A base plate with a 65mm opening is available for $49 (sales tax included).

Some other observations: the *Porter Cable* is the loudest. The quietness of the *Festo* is a relief. The brake on the *Makita* gives a jolt which is troublesome for some precise applications. The clear plastic chip deflector on the *Makita* and the *Porter Cable* are handy (but no substitute for safety glasses).

All four machines offer the extras I strongly recommend stretching the budget for when considering buying such a core tool as a router. Choosing between the *Hitachi* and the *Makita* is probably a matter of your mood on the day and the best price you can negotiate.

The *Festo* is a really sweet machine to use, beautifully designed, but I suspect that the slightly less refined but seriously robust *Porter Cable* would prove more durable for constant heavy work.

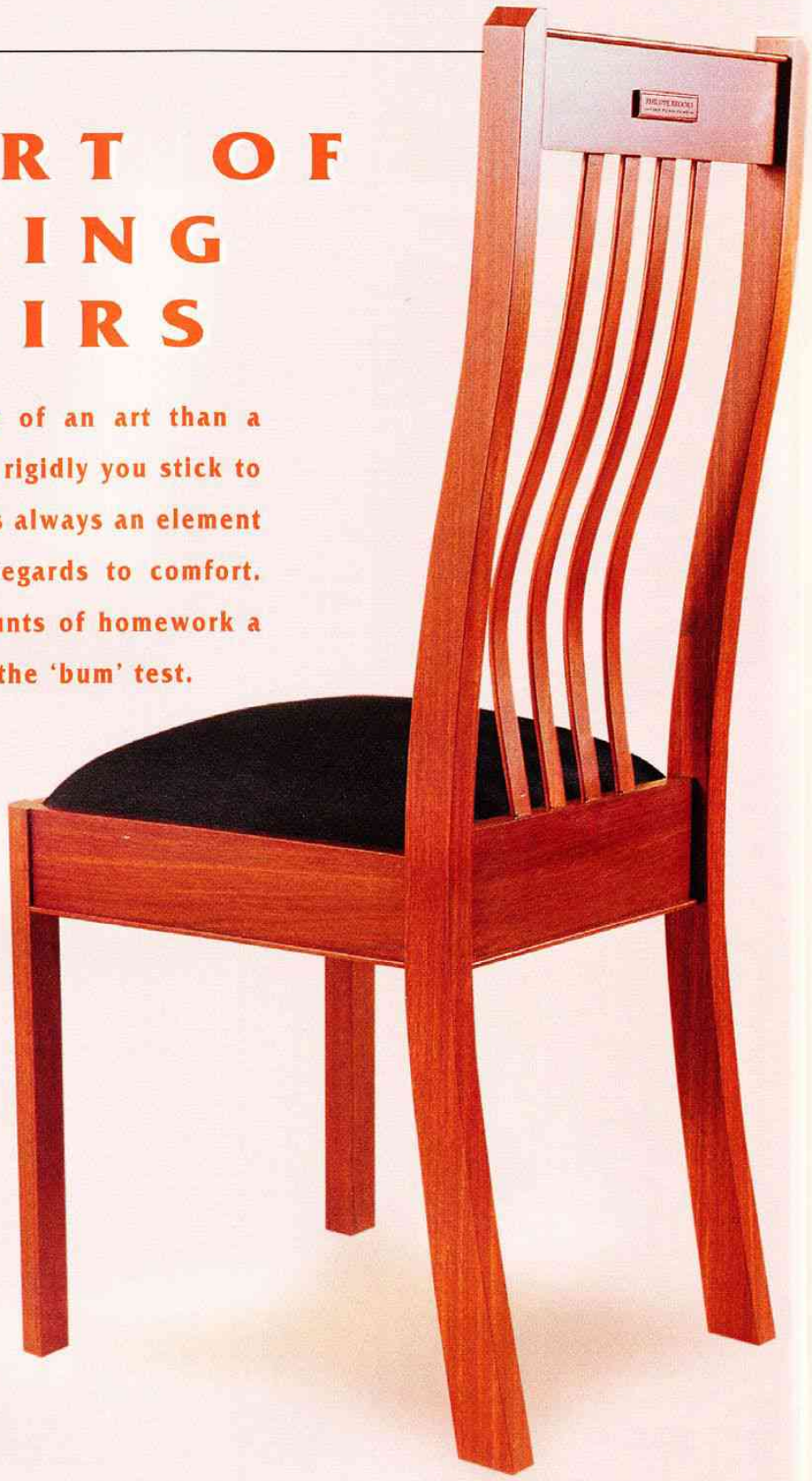
Recommended retail prices quoted include sales tax and, as with all power tools, you are advised to hunt and haggle for the best deal.

Richard Vaughan is a furniture maker and conducts workshops on router usage. He can be contacted on (02) 9818 1688.

By Philippe Brooks

THE ART OF MAKING CHAIRS

Making chairs is more of an art than a science: no matter how rigidly you stick to ergonomic rules there is always an element of the unknown with regards to comfort. Even with copious amounts of homework a chair must always pass the 'bum' test.



In my workshop we make a chair which we call our 'coathanger', simply because it is the one from which we hang our chair designs. A considerable amount of time was spent prototyping not so much a finished product or even an appealing design, but rather a chair that was presentable, comfortable and able to be modified.

It is important to understand the dual role of a dining chair. During the first part of a meal the sitter usually sits fairly upright—in this position it is the small of the back or the lumbar region that must be supported. Amazingly a lot of classic chairs provide no support in this area whatsoever. A chair must also be comfortable when the sitter reclines, supporting both the small and arch of the back. Dinner parties can go on for hours with people alternating between eating and reclining so it is important that both positions are as comfortable as possible.

Another important aspect of chair design is that people don't come in one size only. To this end we usually do a 'fitting'. The client is seated in the chair and raised or lowered by placing strips of 6mm MDF under the chair legs or the client's feet. The preferred rake can be ascertained in the same way by tilting the chair.

Chair height should relate to the client's stature and the height of the table. If the chairs are being made for an existing table, then you immediately have a reference point. Whilst we generally make tables around 735mm tall I have measured commercially made tables that are below 700mm and, at the other extreme, up to 785mm. Whether or not the table has a skirt is also a consideration as adequate clearance is important.

Construction

I find chairs one of the more difficult furniture items to make, largely because of the various angles involved. To this end I have tried to simplify the joinery—instead of cutting mortise and tenons with compound angles we use

loose tenons which allow us to simply dock the rails with their compound angles and then use an angled sled on the slot mortiser to cut the mortises in both the legs and the rails. We have also designed a number of jigs for use on the spindle moulder, but as with most aspects of woodworking there are different techniques for achieving the same result. Here is the way we construct our chairs.

Machining Legs and Rails

The stock for the back legs is dressed down to 30mm thick, while the front leg stock is milled to 38mm square. We use a template to lay out the shape of the back leg and then bandsaw to 1mm of the line. Often we use second grade timber; the curve of the back leg (and any other components under 500mm length) means that defects can be worked around. The slightly oversize back legs are then mounted in the shaping jig for the spindle moulder. These are simple template jigs which can also be used on a table-mounted router.

Another way to shape the legs is with a handheld router and a flush trim bit—the template is nailed to the stock and the waste routed away. Make sure you nail the template to areas (such as mortises) that will later be covered. Very strong double sided tape can also be used for this. If the front legs are also to be shaped, it is better to do this after the mortises have been cut, leaving a larger bearing surface for the mortising machine.

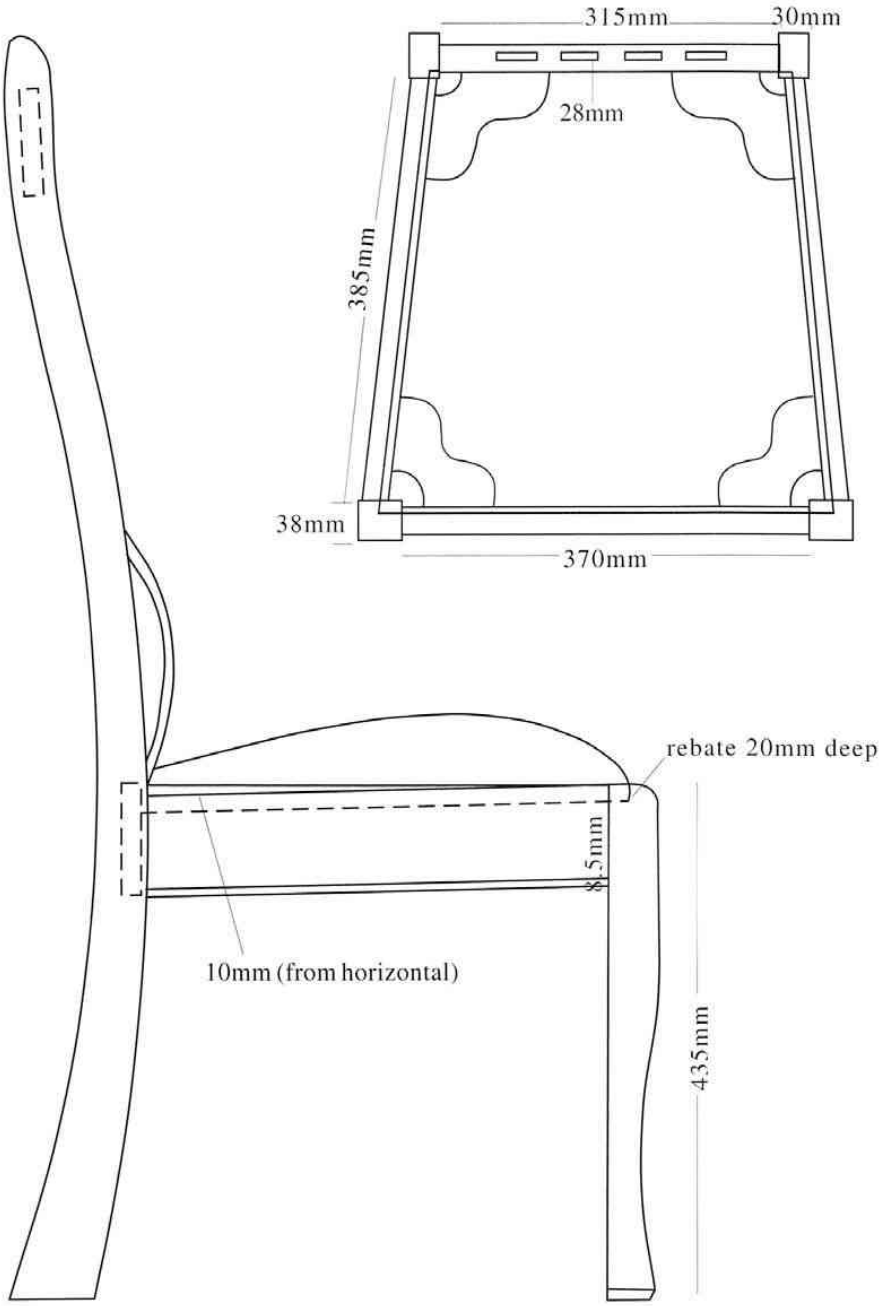
I next cut all the rails—the front, back, lower and upper and the two side rails that have compound angles. These are cut to finished size—once again leave any shaping until after the mortises have been cut.

Cutting the Mortises

First set out all the components and clearly mark their position on the chair. With all the angles and similarly sized components it is easy to cut twelve left hand legs instead of six. I group them in bundles, methodically checking as I go.

I use a slot mortiser with metalworking end mills mounted in the chuck—I find these most efficient. To get all

Top: Each splat is made up of two strips of wood which are glued together. Above: Sets of splats are clamped between the shaped blocks.



the angles it is necessary to build a ramp to hold the workpiece. This must be very solid with no flex and, most importantly, must be set up so the stock can easily be clamped. It may also be necessary to cut blocks with complementary angles to aid clamping. Sandpaper glued to the jig helps to stop any slipping. Set all your stops and away you go, keep all the components in their groups until assembly.

Laminating The Splats

Each splat is basically made up of two strips of wood glued and clamped together between some shaped blocks. This technique works for me—I have negligible failures and the result is strong and quite quick. Others spindle mould their splats from the solid and some would no doubt steam bend them. There is no right way, only the way that you find brings the best results as quickly as possible. With regards to the design of the splats I simply aim for a good amount of lower back support and a graceful curve. It is also vital that there are an even number of splats, an odd number would put a splat right where you spine would rest, a definite no-no.

When gluing up the splats I clamp up a set at a time. Each splat is 8mm thick by approximately 30mm wide so I assemble eight 4mm strips in the cauls to give me four splats or one set. I usually start this very early on in the making process and then leave each set in the cauls for a day. I use epoxy as a glue for this process. PVA must be avoided as its tendency to creep will eventually allow the splats to fail. It would be possible to use urea formaldehyde but its brittleness may be a problem at a later date.

Wax the caul to ensure the work doesn't remain bonded to it forever and then, working from the middle (very important), clamp up the set with sash clamps and leave for 24 hours. When dry I remove the glue squeeze out on the buzzer and then run them through the thicknesser. I apply a 3mm round-over to the edges, cut the splats to size and they are ready to install. Mortises are cut in the top and bottom rails to house the splats. Again we use a simple jig entailing a handheld router and a template collar for this job.

Assembly and Finishing

Once sanded everything is ready for assembly. The backs and fronts are tackled first and once these are dry the side rails are added. Clamping can be a little tricky here; generally we use sash clamps, sometimes with angle blocks to even things out a little. On occasion, ratchet web clamps come in handy too. It is important to check all angles are equal once clamps are in place before the glue is allowed to set.

To ready the chairs for upholstery we glue and screw hefty corner blocks to each corner. These also serve as a support for the upholstery frame although we generally rout a rebate in the rails for a more refined finish. The glue blocks are extra insurance, particularly for the joint where the side rail meets the back legs. Because people tend to lean back on chairs this would be the most stressed joint in furniture making.

We finish our chairs in lacquer as we find this is efficient for us and it is also liked by our clients. An alternative is an oil finish, which I also find attractive but is a little more time-consuming.

Traditionally seat frames were webbed, sprung and stuffed with horse hair for a long-lasting and comfortable result. A lower cost contemporary solution is a ply or chipboard cut-out which is simply covered with foam and then

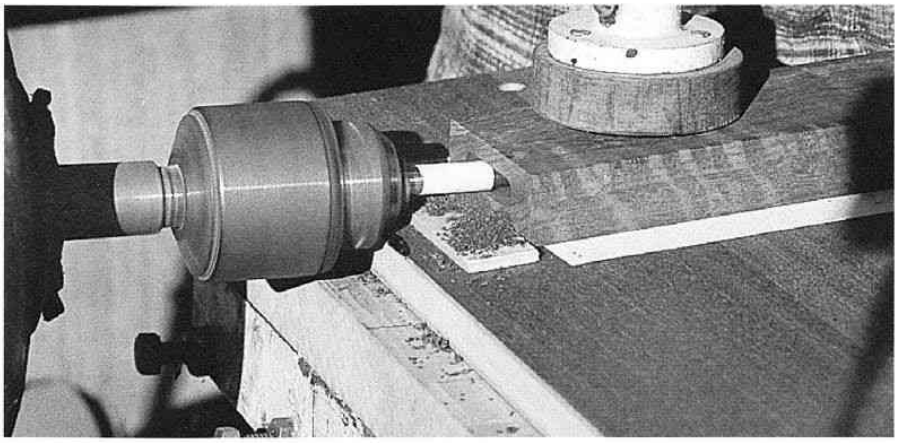
Here and centre: Mortising the components.

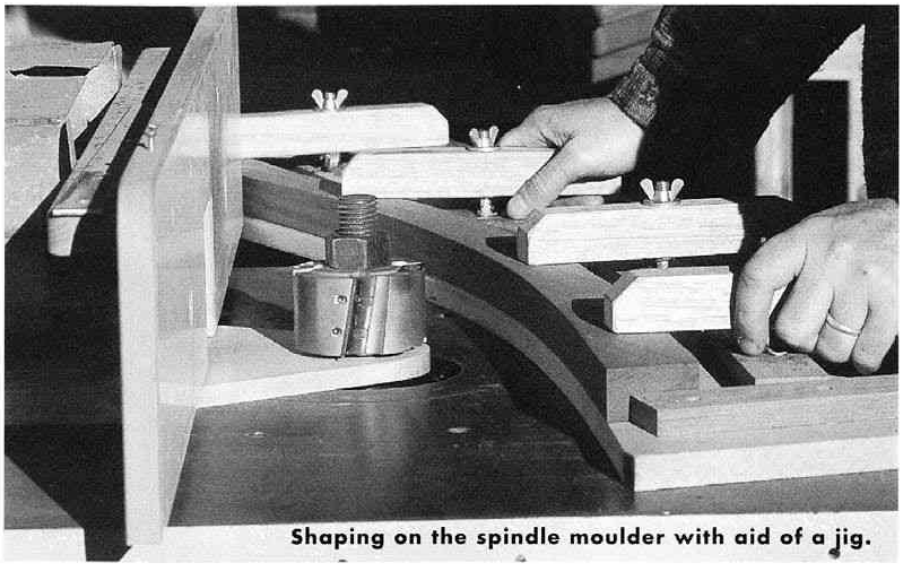
fabric. This can work reasonably well and two layers of foam (the lower one being a higher density foam) can minimise the risk of the seat 'bottoming out'. The top layer may be cut to a slight wedge shape making it higher at the front of the chair. This gives a feeling of sitting 'in' the chair rather than simply on it.

We get the upholstery done for us (around $30 per chair without the top fabric) and opt for a combination of old and new technologies. A frame made from 40 x 19mm stock is webbed and covered with foam. The webbing has more give than ply, increasing the comfort for the longer term.

If you can design and make a good chair then you are on your way to being an accomplished furniture maker. First time chair makers should not be deterred as a bit of thought and planning will get you there. I may also add that most of the furniture makers that I know are always planning their next chair—it gets to be quite addictive after a while.

Philippe Brooks is furniture/maker designer in Glen Forrest, WA and can be contacted on (08) 9295 6515.





Shaping on the spindle moulder with aid of a jig.

By Len Crane

ON THE EDGE

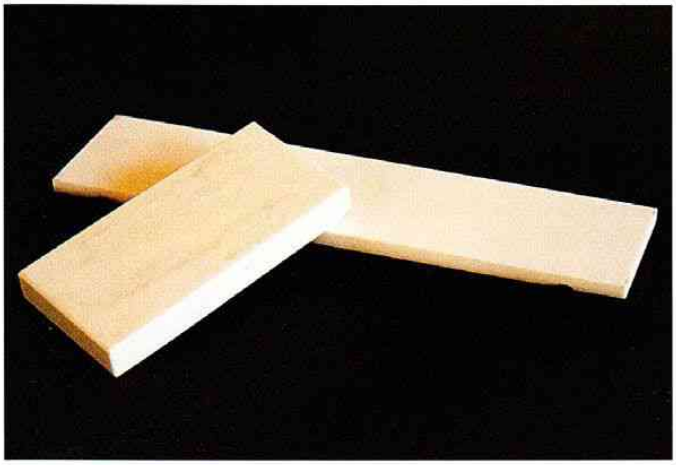
Len Crane compares the edges produced by a selection of sharpening stones on the market.

With the proliferation of sharpening stones and systems on the market the would-be purchaser has every right to wonder which product to purchase. I was recently sent six systems to evaluate and, to ensure a level playing field, six new tungsten vanadium blades to test them on. Each stone was allocated a blade which, though new, was checked for flatness and corrected where necessary. The bevel on each blade was ground to exactly 25° on a grinder using a 125mm diameter white aluminium oxide wheel. A jig, attached to the tool rest, was used to hold the blade at a regular and steady angle while the blade was traversed to and fro on the wheel. Tungsten vanadium does not heat up as much as carbon steel or HSS blades when being ground, nevertheless great care was taken to prevent even a hint of overheating by very frequent cooling in water.

During the honing cycle, the blades were held in a General No.810 honing guide, which has a steadying roller that does not roll on the stone, but on

Arkansas natural stones

***Super Fine Ceramic Sharpening Stones*, the longer is the 8000 grit stone tested.**



the bench, thus preventing damage to the stone surface. It is also fitted with an adjustment, so precise control of the honing angle is possible and this was maintained at exactly 30° in each case. The ease or otherwise of using each system was assessed as were all the edges produced.

Three *DMT Diamond Whetstones* of grits 325, 600 and 1200 were supplied and appeared to have an aluminium or similar substrate impregnated with diamond dust of the required grit size. This, mounted on a sturdy plastic base provided with mounting holes, is a very effective device indeed. The cutting action of each is extremely aggressive and it became obvious that the 325 and 600 grit laps were not conducive to preparing an edge for anything but very rough work, so I deleted these from the testing program. However the 1200 grit 'whetstone' ('lap' would perhaps be a better description) easily gave an edge of obvious practical use. I can see a vital need for these coarser diamond laps in an 'on-site' tool kit, where a good grinder may not be available, to repair and sharpen a damaged blade, or to maintain a tool in use.

The second system was made up of two stones, the coarser being labelled *Surgical Black*, and the other bearing the legend *Hard Arkansas*. These are oil stones and came supplied with a small bottle of suitable oil. The cutting action of these stones is gentle, to say the least. The *Surgical Black* was used to form the edge facet and the *Hard Arkansas* to polish it. And polish it did, to a nice mirror finish, giving promise of a good fine edge to come. On the coarser stone a definite 'wire edge' was formed with reasonable ease giving definite indication the edge was almost there. This was stropped and polished off with delicacy on the finer stone, and the blade was put aside for later testing.

The *Super Fine Ceramic Sharpening Stone*, rated at 8000 grit, came next, and was expected to produce a very fine edge. The cutting action was extremely slow and as I didn't have a coarser ceramic stone I decided to form the initial facet on a 1000 grit waterstone. This facet was then honed on the ceramic stone to a very high polish, promising good results in the practical testing.

Next came the double-sided (1000/6000 grit) *King Water Stone*. This type of stone is permanently stored in water. The instructions suggested that a slurry would form during the honing process. As this happens pressure should be reduced to a minimum as the slurry provides a very good polishing medium and gives a highly polished edge. And this is exactly what happened. The 1000 grit side cuts well and the 30° facet formed easily with a wire edge which was then polished off on the 6000 grit side. This blade too, was put aside for later testing.

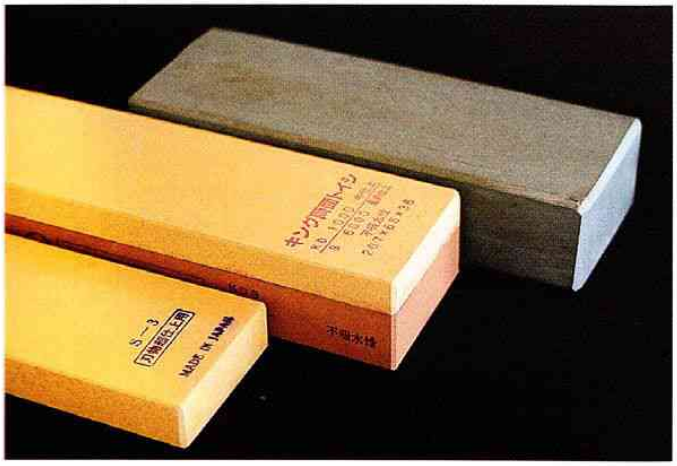
There was another stone branded *King* but of single grit and much thinner than the previously mentioned one, and labelled S-3. It had a grit rating of 8000. The 30° facet was formed on the 1000 grit side of the double-sided *King* stone. This S.3 stone gave nice looking mirror finish on the bevel and on the back of the blade.

Finally came the *Natural Waterstone*, a good-looking product made in Australia from an imported sedimentary stone called 'marl'. This stone is a light green colour and is quite thick, promising long life. It was not accompanied by a coarser stone, so its associated blade was treated in the same way as the preceding one with its initial facet formed on the 1000 grit *King* stone. This green stone did not appear to have an aggressive cutting action but a nicely polished back and bevelled face was obtained quite quickly.

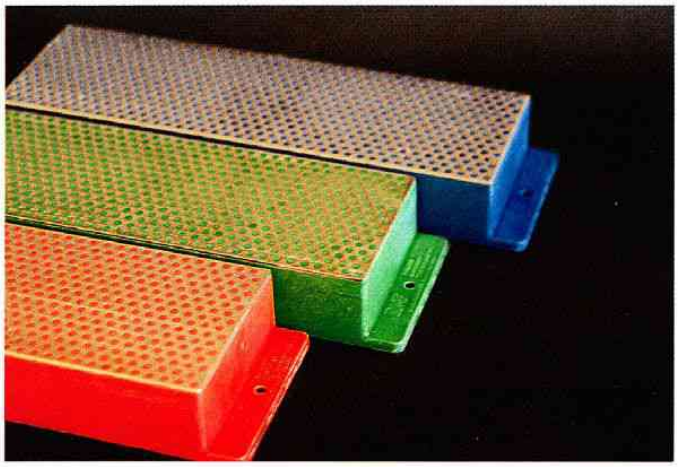
In issue 17 of this magazine I described a method I used to compare the 'sharpness' of blades of different brands which had each been sharpened in exactly the same manner and on the same stone. Here we are looking at blades of the same brand sharpened with the same technique on stones of different types and brands. The method of testing sharpness worked equally well here.

Briefly, I prepared a piece of wood (in this case a piece of very fine grained Queensland maple) so that the grain and texture of the workpiece would remain, as near as possible, the same throughout the testing procedure. Then, using a well-prepared iron plane, and fitting each blade in turn, I planed off a shaving, as thin as the blade would cut. The thickness of the shaving was measured and provided a very good guide to the sharpness of the blade.

Top to bottom: *Natural Waterstone* (800 grit), *King 1000/6000* grit waterstone, *King S-3 8000* grit waterstone.



DMT Diamond Whetstones, 800, 600 and 325 grits.



The testing and comparative stages began with the blade sharpened on the 1200 grit *DMT Whetstone*. Carefully fitted to the test plane, and with a negative blade setting, the blade was advanced in minute increments till it took a shaving full length and width of the workpiece. The shavings were too thin to measure by any available gadget so I wrapped the ribbon around a pencil five times and then flattened the roll thus getting ten thicknesses to measure. In this case I got a measurement of 400 microns, so the shaving was, in fact, 40 microns thick. This was very good result considering the coarseness of the stone.

I took the second blade, the one that had been sharpened on the two Arkansas stones, and set it up exactly as before. The shaving measured 18 microns! Delicate stuff, indeed. The next blade, the one sharpened on the 8000 grit *Superfine* ceramic stone returned a 14 micron shaving! I had not expected such an incredible result, and to make sure it was the best possible, I deliberately blunted the blade, resharpened it, and got the same result again! Marvellous!

Next came the blade that was sharpened on the double-sided *King* stone of 1000 and 6000 grit. The shaving that curled out of the plane was 14 microns. Things were hotting up. The *King S-3* stone and its blade showed 20 microns. Not such a good performance, and as I had been advised the stone was rated at 8000 grit I had expected better. This blade was reworked and tried again without any improvement.

Finally came the pale green *Natural Waterstone* which produced a 22 micron shaving. The texture and feel of this stone had promised better than this, so I reworked the edge to remove any doubt, set it up carefully and achieved a shaving of 18 microns. Much better.

In view of the variations in the results with the *Natural Waterstone* it became obvious that experimental variations must be investigated to remove all possible doubt, so I deliberately blunted all the blades, swapped them around at random, and repeated the entire exercise. There were one or two minor differences but these were so small that the results, for all practical purposes, were identical in both rounds.

So what we have here is several stones giving us, with one exception, almost exactly the same result, all very practical. The choice of stone comes down therefore to price, expected usage, and durability. It should be noted here that the waterstones by their very nature wear away, and, together with a certain wastage in routine reflattening, their life is finite, so this must be taken into account when considering the price.

It seemed that these tests would not be complete if the lasting qualities of these extremely fine edges were not examined. I happened to have on hand a commission, part of which required the edge jointing of quite a number of 1800mm long by 22mm thick boards of Sydney blue gum. This timber has a moderate blunting effect on edged tools, so by using the blade which had been sharpened on the double-sided *King* stone, and then with the one off the 8000 *Superfine Ceramic* stone, I tested them on this pile of boards and was delighted to find the edges remained very sharp for along time. This is also a good comment on the performance of the tungsten vanadium blades.

All of this clearly shows once again that craftspeople of today who practise their art primarily with hand tools, are very fortunate in the every-increasing quality and technology of tools and equipment available to them.

Tungsten vanadium blades supplied from Record Hand & Power Tools.

Suppliers of Sharpening Stones

(key to brands)

1 King Waterstones
2 Superfine Ceramic Sharpening Stones
3 DMT Diamond Whetstones
4 Natural Waterstones
5 Arkansas Natural Stones

Carba Tec (3, 4) 1800 658 111
Power Tool Specialists (5) (02) 6280 4966
MIK Int. (1, 3, 4, 5) (08) 8333 2977
The Woodworks Book & Tool Co (1, 2) (02) 9807 7244
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MBS 300 INDUSTRIAL 12" TILTING ARBOR TABLE SAW. Motor 3 hp /240v or 5 hp/415v fitted with 3 drive belts, 30mm arbor, cross cut 1270mm, square rail quick set fence system, no volt cut-out, overload switch, bump stop button and mitre gauge. Blade not included. Weight: 337kg. **CAT. MBS-300.....$2995**

OPTIONAL SUVA GUARD WITH 4" DUST EXTRACTION PORT. Weight: 20kg.**CAT. EXC-EXOA..$395** May be different from guard pictured.

OPTIONAL SLIDING TABLE ATTACHMENT. Sheet Capacity 8'x4'. Weight: 100kg. **CAT. MBS-ST.....$1000**

EASY-OFF STOP BUTTON. It's simple and instinctive, and it may save you from serious injury. To start, push the recessed green button. To stop, just "bump" the EASY-OFF panel with your knee. Weight: 5kg.

CAT. EZO-CR. For machines without magnetic switch. **$199**

CAT. EZO-MS. For machines with magnetic switch. **$199**

12" TILTING ARBOR SAW BENCH. 3 hp, industrial motor, features a magnetic switch with overload protection. The front guide rail has dual graduations for accurate readings when working on either side of the blade. Table surface (690 x 1330mm including extension wings). Arbor shaft - ⅝", depth of cut 104mm, and at 45°, 87mm. Sheet ripping width 765mm. Blade not included. Weight: 185kg. **CAT. TSC-12HK.....$1995**

DELTA 10" TABLE SAW.
With 2.3 hp., 240V motor, stand, mitre gauge, rip fence, 10" carbide-tipped saw blade. Max. depth of cut at 90°: 80mm; Max. depth of cut at 45°: 54mm; Max. rip to right of blade: 635mm. Table size with standard extension wings: 565 x 974mm. Weight: 70kg. **CAT. DE-36-600.....$799**

2 YEAR WARRANTY
DELTA
SINCE 1919

80mm DEPTH OF CUT

12" TILTING ARBOR SAW BENCH.
2 hp motor, improved guide rails offer rigid fence support. Cutting depth varies between 0 and 4", with a max. blade tilt of 45°. Ripping width: 765mm, arbor shaft: ⅝". Table area 690 x 1330mm. Blade not included. Wt: 116kg. **CAT. KS-12K.....$995**

AUSTRALIA'S LARGEST RANGE OF TOOLS FOR WOOD

BRISBANE: 44 Cambridge Street, Coorparoo. 4151. **Ph: 1800 658 111**
MELBOURNE: 370 Swan Street, Richmond. 3121. **Ph: 1800 653 777**
SYDNEY: Unit C1, 200 Coward Street, Mascot. 2020. **Ph: 1800 683 583**

CARBA-TEC
TOOLS FOR WOOD

PERFECT PLANING

By Philip Ashley

Overhead view of feeding position, standing to one side of the wood.

The panel planer or thicknesser is designed to plane a piece of timber to a precise width and thickness. Operation appears easy, however correct set up and usage will ensure peak performance and extended capabilities. If the cutters and feeding system are not set up correctly, there is no chance at all of getting the required finish.

Most panel planers have a bed or table to support the work, which also carries a set of rollers to make feeding the wood easier. Above the table is a rather complex set of rollers, cutters and hold-down devices, all of which need to be set accurately. Covers, which also act as guards, and a dust extraction hood complete the basic machine.

Some machines have a wide feeding belt instead of a steel table, like a wide belt sander. Machines with additional bottom and side cutters are referred to as 'four siders'. These feature a wide top or bottom cutterhead and are not really designed to do anything but plane wood from the rough. The planed timber will be smooth and square, but not straight. In recent years, planing heads have been fitted to wide belt sanding machines, and while it saves time, it may not suit every application.

The next step up is a full four side planing and moulding machine, with 4-8 or more cutterheads. These machines are able to cut straight, square (or moulded) timber on all four sides and most angles in between, but put your chequebook away because you won't be able to afford it, unless you have the work to run it pretty close to eight hours a day.

An Inside Look

Switch off the power before you open the machine. Later models won't start if the guard is removed, but that's not necessarily the case on older machinery. If you have a copy of the Australian standards for machine guarding (AS 1473-1991) you should follow these as far as possible.

The Table

The steel table can be accurately set to any height for the desired thickness of wood. The usual method of height adjustment is a system of chains and sprockets connected to gears which turn spiral columns.

The table slides vertically in slides fitted to the main frame. This table must be strong enough to resist the very high strain and pressures applied by the moving timber. Mounted into this table are two, and sometimes three, steel 'anti-friction' rollers. The table rollers are provided only to relieve the frictional resistance between the wood and the table, and if set too high or too low, will affect the quality of finish, or give you feeding problems. Table rollers are mounted directly under each of the upper feed rollers. The adjustment of these rollers can be quite time consuming, so change them only when absolutely necessary. Generally, a setting of half a millimetre above the table will be sufficient, but wet or very soft wood may require more.

The Infeed

At the top of the machine, under the hood, anti-kickback fingers may be fitted just before the infeed rollers. The anti-kickback fingers should be free to move up and down as the wood is fed into the machine. It is a good idea to check them every so often, as chips can get wedged between the fingers, and stop them from operating properly.

The infeed roller will have straight flutes (serrations), which may be

manufactured at a slight angle. The roller may be a one-piece fitting, or segmented into small sections which work somewhat independently of each other. The segmented roller is a better buy, as it holds down several pieces of wood with a uniform pressure. A single roller will only allow two pieces to be fed at the one time, and you cannot guarantee a consistent pressure on each piece. The infeed roller is spring-loaded, and can be adjusted on most machines. Following the infeed roller is a chipbreaker, which acts to hold the wood down near the cutterhead. The chipbreaker can be a solid bar or segmented like the infeed roller. As well as holding down the work at the cut, it also limits the chips to a certain size, and will assist in reducing splintering of the wood.

The Cutterhead

Next comes the cutterhead, which is usually circular, but on older machines can be a square, or lipped 3- or 4-sided block. The lips on a square head act as an additional chipbreaker. Two, three and sometimes four cutters are usually fitted. Cutters fitted spirally around a circular block (helicoidal cutters) will reduce the noise by up to 7 decibels when cutting. It reduces the impact of the cut by giving a slicing action, but this option is expensive, and requires specialist setting equipment.

The setting of the cutters on a circular cutterhead is usually done with a manufactured setting device, but can be done manually. On a well maintained machine this means the cutters will be parallel to the cutterblock and the machine table. A setting of only 2mm or so will be sufficient. On square cutter blocks, the cutters will need to be set far enough out to clear the large cutter retaining bolts.

The Outfeed

The cutterhead is followed by a hold-down pressure bar, mounted as close to the cutterhead as possible, and followed by a smooth outfeed roller. You may find you have an additional rubber roller at the outfeed, but this is an additional expense which should not be necessary if the machine is set up properly.

Adjustments and Guards

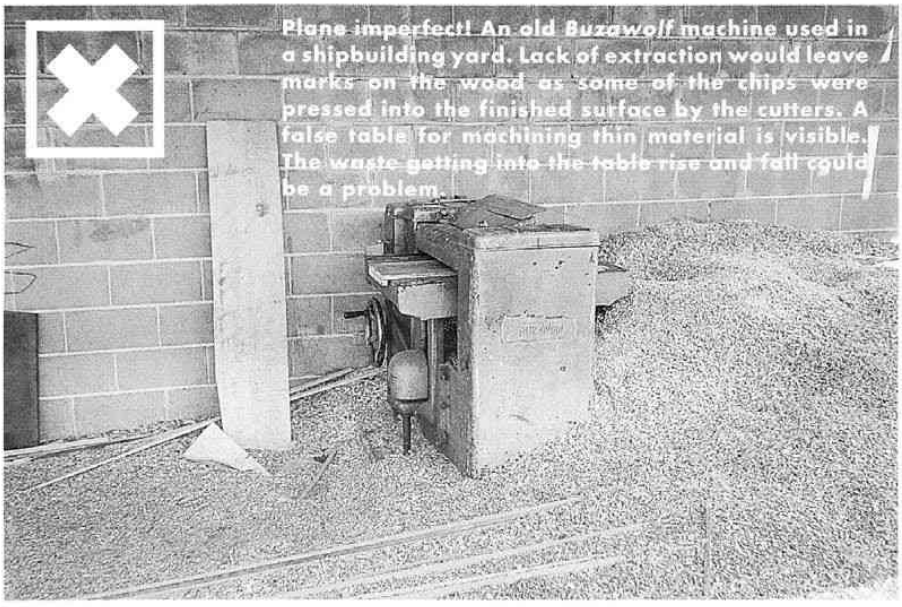
A handwheel for setting the thickness can be found on the front or side of the machine, or you may have the luxury of an electronic device which, if it works, will save effort. A removable top guard/extraction hood must be fitted to the machine for your safety.

Additional features are depth limiting bars, which limit the amount you are able to remove at any one time to a few millimetres, and cutter grinding equipment. Noise-reducing features are sponge rubber linings to the steel casing, and perforated metal strips fitted close to the cutters. The holes in these strips act to break up the airflow, and reduce the noise. Of course, all this is wasted if the cutters are not always sharp, as the noise will increase as your cutters get dull.

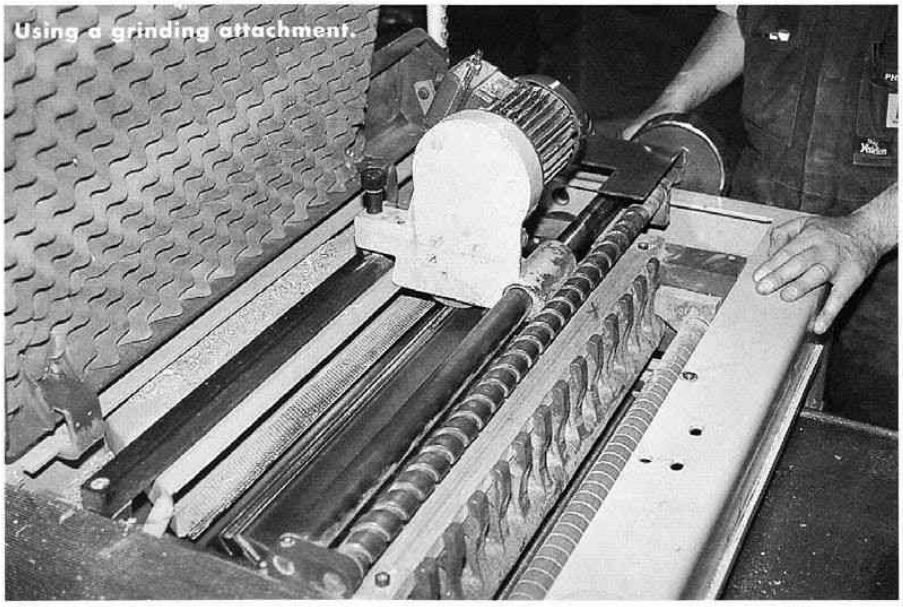
Some industrial machinery is pre-set at the factory, and may need little adjustment over the life of the machine. It is still important to know how to set the operating parts, because only in this way will you be aware of the effect they have on the operation of your machine.

Setting the Cutters

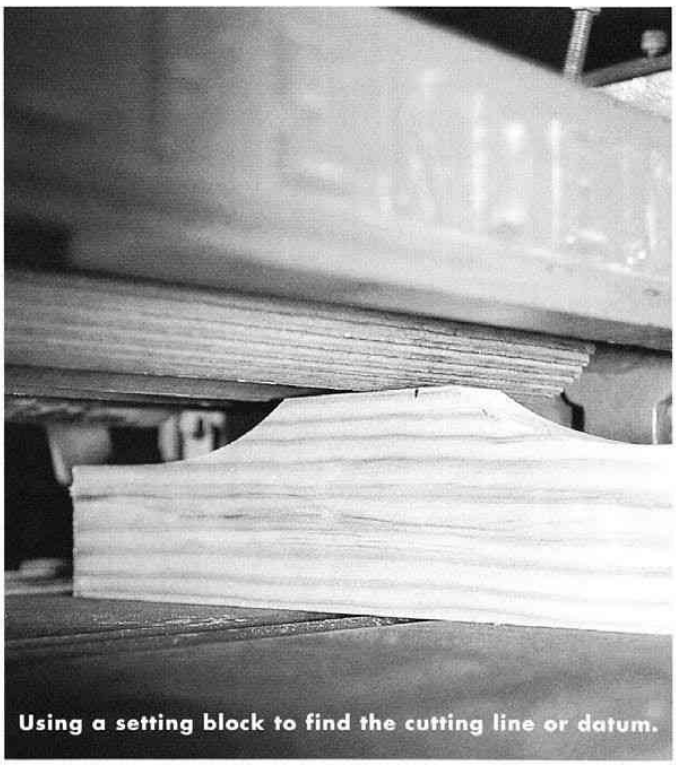
First, you should start by setting a sharp set of knives into the cutterhead. These knives must be balanced, or you will get some vibration when the machine is running. Balancing means each cutter weighs the same, and that the weight is located equally on each cutter. Your cutters will therefore have to be the same length, width and thickness. The cutters must also have the same grinding angles. It is a good idea to keep your cutters in marked



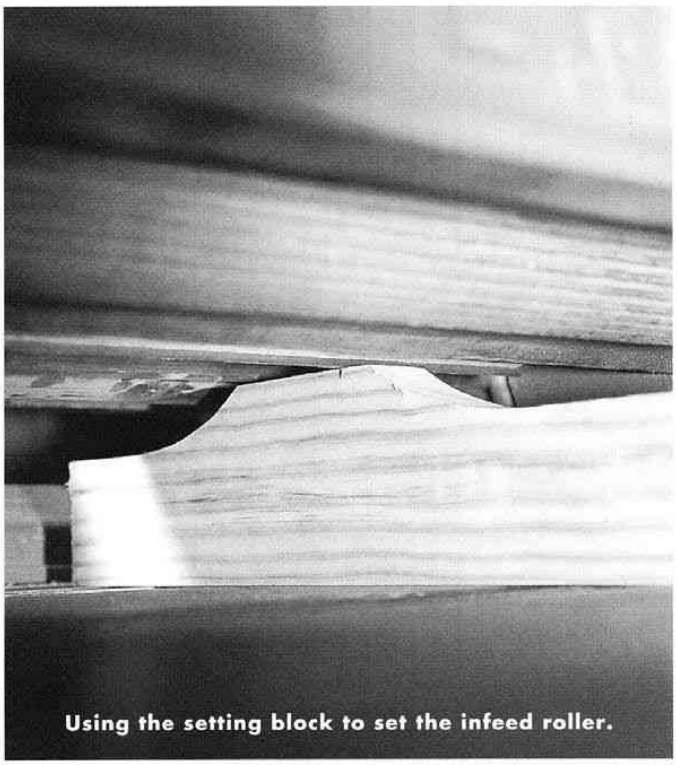
Plane imperfect! An old *Buzawolf* machine used in a shipbuilding yard. Lack of extraction would leave marks on the wood as some of the chips were pressed into the finished surface by the cutters. A false table for machining thin material is visible. The waste getting into the table rise and fall could be a problem.



Using a grinding attachment.



Using a setting block to find the cutting line or datum.



Using the setting block to set the infeed roller.

sets. If four cutters are used, you can have two different pairs of cutters, as long as they are mounted in opposite sides of the block to evenly distribute the weight.

Your cutters should preferably be set with a mechanical device, and these are well worth the extra investment. If you cannot obtain one of these, the cutters should be set out no more than 3mm from the outer periphery of the cutterblock. Care and patience are the key words here. Start with a straight, parallel piece of timber, I suggest 30mm thick, as wide as you can get it, and almost as long as the gap between the table rollers. After switching off the power, place this piece into the machine, under the cutterblock, and raise the table until you can no longer turn the block. Now lower the table the amount of the cutter projection, which must be less than 3mm. Set the cutters into the block and test them by rotating the cutters round to the setting block. Adjust the cutters until they just touch the block, which will give you the projection you want. The cutters will also be parallel to the table, where the setting block is resting. As most cutter blocks will be fitted with springs under the cutters, start with them set further out than you want, lightly tighten the cutter and after checking the projection on the wooden block, tap the cutter in with a plastic hammer. If you go too far, a wire hook is handy for lifting the cutter back out.

Whatever method you use to set your cutters into the cutter block, tighten each cutter starting from the centre bolt, and work your way to the ends of the cutterhead, tightening each one equally, but not up to full torque. If possible, rotate the cutterhead to a position where the cutters are hidden under the chipbreaker (or place a plywood strip over the cutters), then re-tighten each of the bolts or Allen screws to the recommended pressure. If you do not have a torque wrench, just tighten them firmly with the spanner provided, and this will be enough. On newer machines, the design of the wedge will prevent even loose cutters from coming out of the head. Never use a longer spanner as this can overtighten the bolts, resulting in failure under load. Some smaller cutter blocks, and some made from light alloys, could distort if you tighten just the one cutter. If this happens, you will have to tighten all the cutters equally.

Disposable cutters are inserted into a special cutterblock from the end, and then the machine is switched on. Centrifugal force keeps the cutters in place, until they removed by tapping them on the back with a rubber mallet. The cutters are double-sided and getting cheaper, explaining their growing popularity. If you work with mostly processed wood, a machine with these cutters may be worth looking into.

Setting the Feeding System

Setting the height of the pressure bars and rollers is not hard and will ensure smooth feeding and a healthy and safe environment. With the power switched off, place your setting block under the cutterhead and wind up the table until the cutters just touch the wood when they are rotated. You have now established the cutting or datum line (see photo above).

All of feeding components are located in relation to the datum line. Lower the table 1mm and set the pressure bar to the top of the setting block. Lower the table a further millimetre (now 2mm below the datum line) and set the chipbreaker and the outfeed rollers to the setting block. Lower the table a further millimetre (now 3mm below datum) and set the infeed roller to the setting block. These figures are starting points only, and a better feed may be obtained by varying these settings. Once the machine has been set, run a test piece and check that the material feeds properly. Adjust the depth scale pointer if it is found to be incorrect.

Operation

The material, which is generally solid

wood, is placed onto the table and allowed to be fed through the machine by the top feed rollers. As it passes through the machine, the cutterhead removes a pre-set amount of the stock from the top of the piece. The material is then fed out of the machine automatically.

You can feed even rough sawn timber into the panel planer, but for the best results, you will first have fed the wood over a surface planer. This will have given you a flat and square face and edge on which to work. The two faces need not be completely clear cut, but will need enough surfaced area to support the piece in the planing operation. Always plane the width first, to take advantage of the existing thickness of the wood. This means standing the piece up on end. Feed the wood with the grain and always stand to one side in case of kickback. Plane the other side of the board width at least once to remove the poorer surface produced by the hand fed surfacing operation. Continue planing the width, turning the board each time, removing 1-2mm per cut.

After the width has been planed to specification, plane the thickness, again planing both surfaces to remove the surfacing cut. The choice of cutting depth here is more critical, as the board is wider under the cutterhead, and more wood is being removed, which could stall the cutterhead on smaller machines.

Trouble-Shooting

Supporting the wood during the early and latter stages of the planing operation will assist in eliminating snipe-out. Snipe-out on the leading edge can be caused by table rollers or the chipbreaker set too high. Snipe-out on the trailing edge can be caused by the table rollers set too high, or the pressure bar failing to contact the wood. If the snipe-out is on both ends of the wood, chances are that the top pressures are all correct, but the table rollers are too high.

Don't use wax on the table as it prevents the later adhesion of stains and polishes. If the wood stops feeding and you can't get it moving again, stop the machine and wait until the cutterhead stops rotating before you lower the table to remove the jammed piece. Wood with a higher moisture content will probably be difficult to feed, and the table rollers may need to be raised. If this happens, try and keep the timber moving by exerting a continuous pressure on the wood, even after the rollers have taken control. Thin material is best planed on a false table, and simple jigs will allow the creation of splays and bevels. More complex jigs are required for tapering table legs.

Plane Perfection

The aim of rotary planing used to be to produce a flat surface with minimal cutter marks. This required well maintained machinery with well balanced and set cutters. Grinding the cutters in the machine helps achieve a better finish by getting all of the knives to actually cut.

A mirror smooth finish requires an extremely slow feed speed and guarantees short cutter life. You could also burn or glaze your timber, which may present additional problems when polishing or finishing the wood. The trend now is to take off a decent amount with each pass of the cutter. This may require an additional sanding operation, which the customer will expect anyway. You should be looking for a finish where the cutter marks are around 1.6mm long for cabinet grade timber. Framing grade would be around 2mm. If you can achieve this consistently, with no machining defects, you may be close to perfect planing. ☐

Suppliers of planer-thicknessers
Carba-Tec Q 1800 658 111, Vic 1800 653 777, NSW 1800 683 583
Craftmaster (02) 9534 4555
Felder Machinery (03) 9801 7728
Hare & Forbes NSW (02) 9633 4099, Qld (07) 3849 1888
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Power Tool Specialists (02) 62804966
Woodman Group (02) 9708 3233, (03) 9555 5199, (07) 3844 4433, (08) 8346 4561, (08) 9272 3844

Adjusting the infeed roller on an older machine.


Checking for snipe-out.

TASMANIA'S SPECIAL TIMBERS

Australia is a vast continent characterised by extremes of climatic and geographical conditions. Varied forests produce innumerable trees and shrubs which grow nowhere else in the world. Here is a brief description of Tasmania's forests and some of the species contained therein.

A reference poster with timber samples of most of the species described below accompanies this issue.

Tasmania's unique climate and geographical isolation has produced some of the world's most dense and varied forest. Around half the state is covered by forest of various types, influenced by climate, landform, geology and fire history. The main wood producing forests vary from cool temperate rainforest, through to blackwood dominated wet forest, and eucalypt wet and dry forests.

The state contains 95% of Australia's cool temperate rainforest. Most of this is situated in the west, where higher rainfall occurs. Dominant species include myrtle, sassafras, leatherwood and celery top pine. The famous softwoods Huon pine (*Lagarostrobus franklinii*) and King Billy pine (*Athrotaxis selaginoides*) are restricted to the west coast. Huon generally occurs as a dominant species along river banks while King Billy is found at higher elevations. Blackwood (*Acacia melanoxylon*) is one of Tasmania's most famous species and some of the best trees are found in the blackwood swamp forest of the north-west.

The remainder of the forest is dominated by eucalypt species and varies from mixed forest (mainly stringybarks with a rainforest understorey occurring in high rainfall areas with infrequent wildfire), wet sclerophyll forests with their dense understorey of soft leaved shrubs, and dry sclerophyll forests and woodlands containing twenty-six of Tasmania's eucalypts.

The dry forests are widespread in the low rainfall areas of the state, particularly in the north, east and central parts, and have a frequent fire history which has resulted in a variable understorey.

Tasmania is home to at least 120 woody species that grow large enough for woodworking purposes, thirty are eucalypts and many of the others grow to over 8 metres and can be classified as trees. Some of the shrubs which are smaller produce exceptional wood.

Since the early days of settlement Tasmania's forests were a vital resource of timber for all building, joinery and household purposes. Tasmania continues to be a major source of

eucalypt species for sliced veneer and building, joinery and furniture making timber.

The rarer species, once used for anything and everything from fence palings to railway sleepers, have in recent decades come to be highly sought after for fine cabinetwork, musical instrument making, sculpture and turning. Huon pine and blackwood, perhaps the most famous, have already received considerable press in this magazine, see issues 7, 13, 16. Below are some of Tasmania's special species, available, if at all, to varying degrees, but prized for their rarity, beauty and unique qualities.

King Billy Pine
(Athrotaxis selaginoides)

This tree was named after the partner of the 'last Tasmanian', Trugannini. King William or King Billy pine reaches heights of up to 30 metres in the high rainfall areas of Western Tasmania. It lacks the pale yellow colour typical of most of the 'pines' we are familiar with, having a pink to pale red heartwood. Related to the Californian redwood species, the tree is slow-growing, having in some cases, a lifetime of up to 500 years, with a growth rate of around 200mm per year. Like the pencil pine (*Athrotaxis cupressiodes*) which it is also related to, it grows only in Tasmania.

Its fine texture and straight grain help to make it easy to work and bend. However, it is not completely free of problems; harder latewood can interfere with the fine texture and the darker growth rings are more prominent in the durable heartwood. Compression wood is common and can cause considerable warping in drying, with increased lignin (that complex organic substance that makes the plant 'woody') affecting workability. Like Huon and celery top, King Billy was a popular choice for boatbuilders in the early years of colonisation.

This softwood measures 1.8kN (green) and 2kN (dry) on the Janka scale, that is, its measure of resistance to indentation. This is one of the factors contributing to its use for soundboards for pianos and violins. King Billy pine transmits sound much faster at 5,500 metres per second, than air which transmits sound (at freezing point) at 331.5 metres per second. Occasionally resin is exuded which does interfere with its use in musical instruments. In this case it has been used for vat making. The limited supplies on the craftwood market now are generally used for furniture and joinery.

Celery Top Pine
(Phyllocladus aspleniifolius)

With its characteristic foliage this tree resembles a vegetable more than a pine. Celery-top pine is related to the yew family and grows mainly in the west of Tasmania sometimes up to 30 metres in height. It grows slowly; a 600mm diameter tree may be around 400 years old and some members of its older generation are estimated to be around 800 years of age.

The wood is white when cut, mellowing to gold. It is durable, hard, straight grained and evenly textured with discernible growth rings. It has been used for vats because of its lack of taste and odour. Stable in cross-section the wood can shrink along its length during seasoning. This scarce timber, once used for railway sleepers, flooring, joinery and chemical vats is now sought after, but available only in limited supply for cabinetwork, turning or carving.

Horizontal
(Anodopetalum biglandulosum)

Generally found only in western Tasmania, horizontal 'scrub' grows low in thickets in the understorey of both wet eucalypt forest and rainforest. Regeneration occurs when older branches fall over and strike roots. For this reason it has been regarded as more of a curse than a resource by bushwalkers and past explorers. Harvesting the wood is not straightforward either

The small logs (up to 300mm diameter) yield a surprisingly attractive pink/honey-brown wood. Finely grained the wood turns well, and this feature, coupled with its small diameter sections have seen it used for spindles, broom and

King Billy Pine *(Athrotaxis selaginoides)*

Timber from this majestic subalpine tree is pink to reddish brown, very soft, fine textured and light in weight. It has excellent acoustic qualities, and as a timber for musical instruments, King Billy has been described as equal to or better than the traditional European timbers.

Boxes handcrafted from blackheart sassfras.

axe handles and some furniture componentry. Horizontal finishes well and can be steam bent. Larger sections can be sliced for veneer. The fact that the mottled light grey bark stays firmly attached to the timber makes it suitable for rustic-look furniture and woodware. Horizontal is in good supply and is readily available from specialist suppliers, where it is generally sold by the lineal metre.

Musk (Olearia argophylla)

Musk burl produces a highly decorative and attractive timber which has had a history of use in fine furniture from early settlement. The latter is no doubt due to the resemblance musk burl bears to walnut burl. The tree itself is somewhat mis-shapen and root burls (the source of the best timber) are common. While the larger musk are now gone, it is nevertheless a relatively common tree.

The sapwood shrinks dramatically upon drying, causing severe cracking of the heartwood. For this reason the timber is mainly used in veneer form, even though it is a popular turning timber and can be turned succesfully if care is taken. This is an under-utilised timber, often 'trashed' during logging operations. The burl timber can be totally stabilised by covering in sawdust and allowing to sprout for a couple of years.

Myrtle (Nothofagus cunninghamii)

Accounting for 1% of sawn timber production in Tasmania, myrtle is the signature tree of the cool temperate rainforests. The trees grow up to 30-40 metres in height, with diameters of 1.5 to 2 metres and longevity of up to 500 years. Dense, fan-like fronds of light and dark-green foliage make the tree highly attractive.

Oddly enough it is the tree's susceptibility to insect and fungal attack which result in the more unusual figurings and variations which this pink to brown timber is prized for. The grain is characteristically fine, even and occasionally wavy. The timber has moderate working properties, can be steam bent, glues well and dresses to a smooth surface. Myrtle, especially in its rarer figurings, is commonly sliced for veneer but is also favoured for use by furniture makers, carvers and turners.

'Tiger' myrtle is usually found in the old growth lighter coloured trees on the far north-west coast. The radiating black lines which are generally found in the lower 1-2 metres produce the characteristic tiger stripe figure when quarter sawn. This uncommon figure does not, as a rule, occur in the dark red myrtle forests of the north west. Identification is difficult during logging operations and unfortunately most trees are currently woodchipped, although efforts are being made to rectify this.

Eucalyptus Burl (Eucalyptus spp)

The best examples of true burl are found as growth around the base of the tree. They can be up to 3 metres high and weigh several tonnes. Eucalyptus burl of various species is usually sliced for veneer or used for turnings. The timber is very unstable and notoriously difficult to dry, however the superior appearance of the resultant veneer make the effort worthwhile. Other growths which occur on the trunk can yield timber with decorative gum streaks which may be used for fine woodwork.

Leatherwood (Eucryphia lucida)

This tree, endemic to Tasmania, is justifiably famous for the honey produced by the bees which feast upon its nectar. The tree is usually small (10-15 metres) but can reach 30 metres. It grows straight with greeny-grey bark which is often lichen-covered. The tree is so-named for the clear orangey-brown exudate which covers

the younger leaves and buds.

The wood seasons, works, glues and polishes well. The colour of the timber is pink to brown while the grain is usually fine, straight and even. Leatherwood which has suffered fungal attack is also highly prized for its 'blackheart' figuring. Although available only in limited supply and small sections leatherwood is nevertheless sought after by turners and woodworkers.

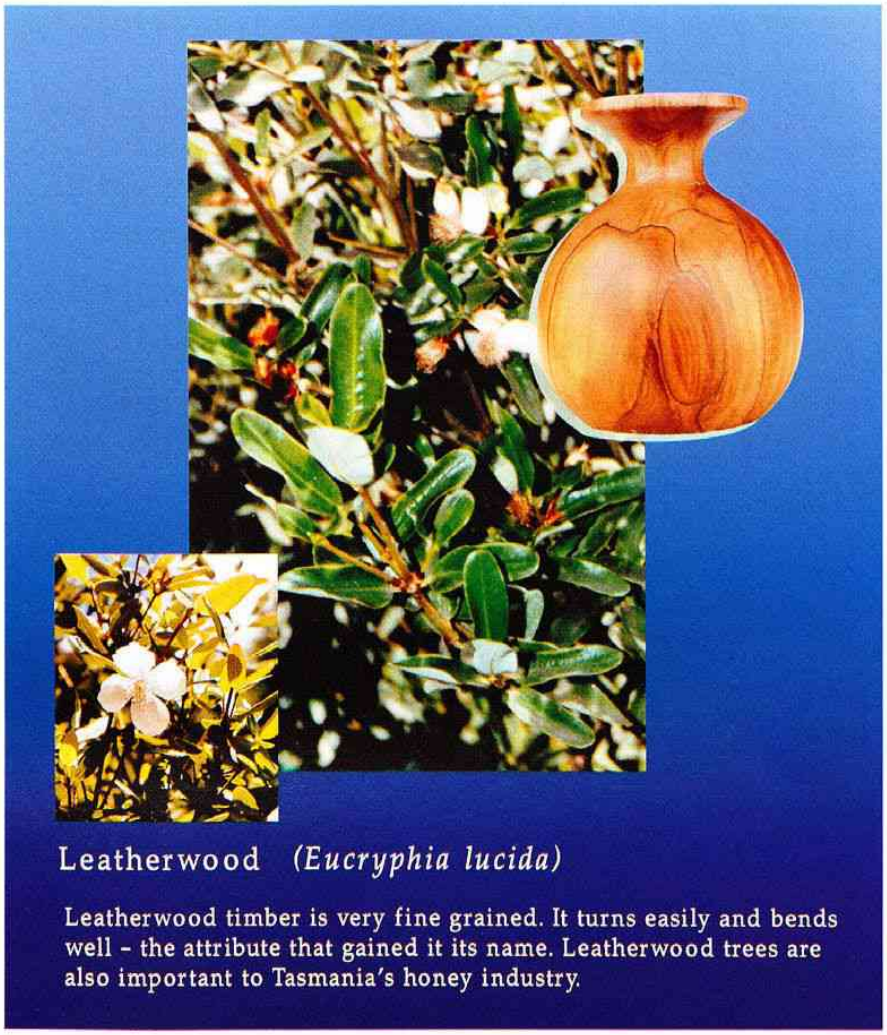
Southern Sassafras (Atherosperma moschatum)

Another cool temperate rainforest tree, sassafras grows in high rainfall areas to heights ranging from 10-25 metres. The light grey/brown bark, resin and oils have a spicy musk-like fragrance as the description 'moschatum' indicates. The colour of the wood ranges from white when cut and changes to a yellow-grey. The grain is generally straight. The grey/black streaks of blackheart sassafras are again the result of fungal attack and result in an attractive variation of this timber species.

Satin box (Phebalium squameum) is known locally as lancewood or tallowwood and has traditionally been used as fence posts as the heart wood is very ground durable. It grows to larger millable dimensions and is very dense, butter yellow in colour and has an amazing three dimensional lacy lustre. The ***tea trees (Leptospermum spp)*** and ***paper barks (Melaleuca spp)*** also produce some dense hardwood often with attractive colouring.

Native plum (Cenarrhenes nitida) grows up to 9 metres in height in west and south-west Tasmania in both rainforest and wet eucalypt forests. Aka 'Port Arthur' plum, the tree bears plum-like fruit, but gives off a foul smell when sawn, giving rise to the less flattering alias 'stinkwood' a name it shares with the less odiferous *Zieria arborescens*. Fortunately the aroma fades from the light to mid-brown coloured wood which has a fine and even grain. It is said to work, turn and finish well. Availability of this timber is limited and usually only through specialist craftwood suppliers.

The wood of ***native olive or doral (Notelaea ligustrina)*** resembles the timber of the Spanish olive tree. The smaller shrubbier trees are found along waterways and in gullies scattered throughout Tasmania while larger specimens of up to 800mm in diameter are found on the drier rocky ridges. The best stands are reputedly found in Macquarrie Harbour, not far from the infamous former convict colony, Sarah Island.



Leatherwood *(Eucryphia lucida)*

Leatherwood timber is very fine grained. It turns easily and bends well - the attribute that gained it its name. Leatherwood trees are also important to Tasmania's honey industry.

The dry forests occurring predominantly on private forest are home to a number of lesser known special timbers occurring in sizes and quantities which could become commercially available. These species include the light golden grained ***sheoak (Allocasuarina stricta)*** and the darker red-brown ***bull oak (Allocasuarina littoralis)***, both of which have predominant medullary rays. Both are valued as firewood due to their high calorific value and air dry basic density of 920kg/cum. ***Native cherry (Exocarpus cupressiformis)*** is a very attractive tree with dark green weeping foliage. This semi-parasitic tree with its attractive pinkish wood with some deeper heart staining also has commercial potential.

Other less common decorative species include goldey wood (Monotoca glauca), perhaps more of a tall shrub than a tree and cheesewood (Pittosporum bicolor) are both found in wet sclerophyll forest. The timber from the lesser known species is in many cases unstable, and difficult to season. Supplies of green timber are suitable for turners who are able to work the timber in this state, before allowing it to dry. Refer to the poster from this issue for a colour guide to some of the species discussed and sources of supply.

Thanks to Mark Leech and Chris Searle of Cockatoo Timbers for assistance with this article.

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Duncan F., Eucalypts in Tasmania's Changing Landscape *in Tasforest Vol 2/2 1990*
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Mesibov R., Tasmanian Wood No.1, *Forestry Tasmania 1983*

Inside Porter Cable's Triggered Power Tool Wet/Dry Vacuum extraction system.

WASTE REMOVAL ON WHEELS: PORTABLE DUST EXTRACTION SYSTEMS

Sanders and other power tools create volumes of dust even if they have dust bags. A portable dust extraction system may solve the problem—and then clean up the rest of your workshop. All power tools applied to timber generate dust in varying degrees. The health dangers associated with wood dust are well documented and range from irritation to the eyes, skin and respiratory system through to allergic reaction and, in some cases, cancer (see AWR#17, 18).

Occupational health and safety regulations operating throughout the country demand dust extraction units are not only installed but operate at an optimum level throughout the working day.

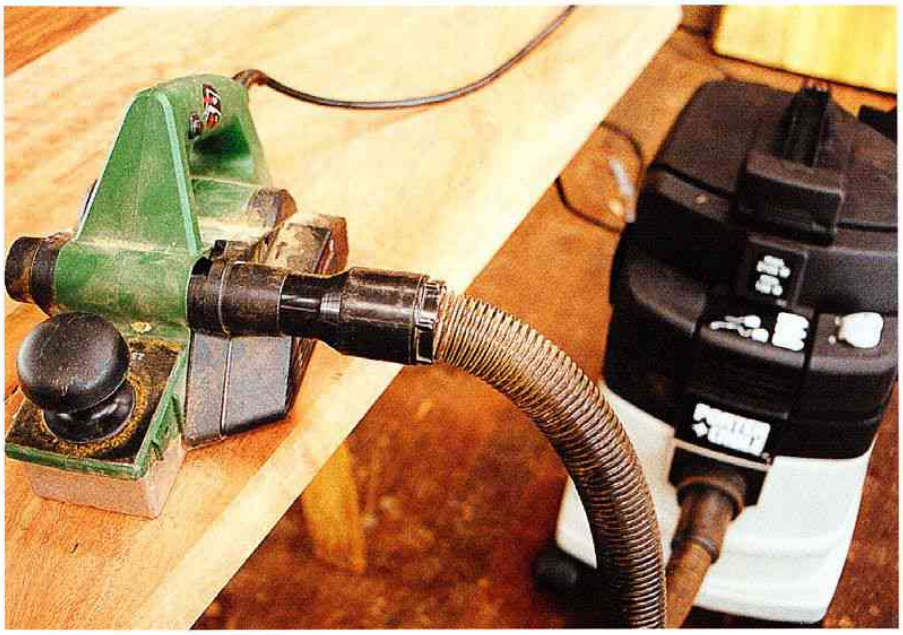
Other than the more obvious immediate symptoms, allergies to wood dust can be developed over time and you may suddenly find yourself allergic to the very air you have been breathing for years. If you are one of those people who have never given much thought to dust extraction systems and have been breathing wood dust for as long as you can remember, now is the time to do something about it.

The most effective way to purify your air is by eliminating hazards at the source. Sharp tools generate less dust, and should be used in conjunction with a dust extraction system, which will not only reduce dust, but also increase productivity in sanding and finishing. Sandpaper life will also greatly improve, especially on coarser grits, and when sanding finishes which normally clog the sandpaper.

Smaller portable systems on castors are compact and offer maximum flexibility by going where you go and connecting to most power tools and some smaller machinery as well. For fixed purposes (such as a lathe) some units come with wall-mounting attachments for floor-saving convenience.

Many systems double up as effective workshop vacuuming systems, another good reason for having one. However, most dust extractors are designed to clear fine dust particles rather than larger wood debris —larger particles will clog the hose and greatly reduce suction. There are models for not only wood fibres, but also for dust and particles from epoxies, paint, fibreglass and hazardous dusts.

The better systems boast an automatic switch start, where the tool can be directly connected to the unit, which is then plugged into the mains power. The unit will then switch on automatically with the tool. The more effective dust extractors will continue to run a few seconds after being switched off, to



fully clear the hose of dust particles. It saves time and protects your health when you may be otherwise occupied.

If price is a deciding factor, it is helpful to compare and contrast several models based on needs and space available. Some models are designed for the hobbyist and only possess small bag capacity, but regardless of needs, suction power (measured in litres per minute) should be of utmost importance. The higher the number of litres of dust it clears per minute, the more effective it is going to be. Dust extractors are also sales tax exempt, which is also of benefit if price is a consideration.

Perhaps the most important factor to consider when choosing the right unit for your needs is the how efficient the filtration system is, and whether or not it possesses disposable bags or filters. The benefits are obvious - disposable bags remove all contact with dust and do not allow for re-exposure when emptying. They are easy to manage and are readily available from the manufacturer.

As far as filters go, the best filter medium available can be reduced in efficiency by up to 60 per cent by fine dust impinging pores of woven material. If air cannot pass through the filter, the bag becomes pressurised—air that cannot escape creates back pressure against the fan and reduces the amount of dust-laden air that can be drawn into the machine. Reduction of air flow means that the dust is not being collected at the source, so the whole dust extraction exercise becomes futile. It's therefore always best to use a non-woven polyester material.

It is wise to follow the manufacturers guidelines exactly regarding how often filters and bags should be changed to get the most benefit from your system's suction power and life. It is also a good idea to stock up on extra bags and filters at the time of purchase to avoid trying to locate them later.

What attachments are available for the unit should also be a consideration, as most offer hose attachments, but those which are better value also offer other articles such as wall mounting brackets or disposable bags included in the price.

The advantages for both small and large operators are readily apparent. The models shown overleaf are only a small selection of what is available and there are more brands and models suited to different purposes and needs. The benefits of using a portable dust extraction system are clear from the point of view of making your woodworking activities safer and more pleasant to undertake.

Carba-Tec Q 1800 658 111, Vic 1800 653 777, NSW 1800 683 583
Festo 1800 063 900
Hare & Forbes (02) 9633 4099, (07) 3849 1888
MRH Woodworking Centre (07) 3283 1558
Power Tool Specialists (02) 62804966
Southern W/turning Supp (02) 6280 0620
Woodman Group (02) 9708 3233, (03) 9555 5199, (07) 3844 4433, (08) 8346 4561, (08) 9272 3844

Porter Cable Power Tool Triggered Wet/Dry Vacuum

Made in Italy/USA, rrp $750, 5 gallon bag capacity, 123cu ft/min suction power, 1000W motor, 99.85% filtration efficiency, auto switch start, re-usable paper filters, disposable 2-ply paper bags. Vacuums with attachments. Comes with 25' cord for extended reach. Has electronic shut-off when used for water pick-up and a corrosion-resistant polypropylene tank. When the unit is turned off a 15 second vacuum overrun clears the hose.

Record DX1500

Made in England, rrp $690, 75L bag capacity, 53L/sec suction power, 1000W motor, auto switch start, disposable paper filters (change annually) cost $26-29. Disposable poly bags are replaced monthly—a pack of 5 costs $12. Filtration efficiency is 0.5 microns. Comes with 102mm x 2m hose and doubles as a workshop vacuum. Stands free or wall mounts. Weighs 20kg and has a five year guarantee.

Bosch GAS 12-30 F Extraction Unit

Made in Germany, rrp $599, 2150 at 6 M BAR suction power, 1,200W, auto switch start, re-useable and replaceable filters ($48.70), disposable bags ($29.95 pack of five). Doubles as workshop vacuum and can extract both wet and dry material with no change of filter necessary. Can be used to extract wood chips and stone dust. Optional extras include a reducing ring, hose, a long-life filter and paper bag filters.

Festo SR151 E-AS

Made in Germany, rrp $650-$699, 40L bag capacity, 3,800 L/min, 1200W motor, auto switch start, disposable filters and bags, filters up to Mac value >1mg/m^3. Comes with 27mm dia., 3.5m anti-static hose and doubles as workshop vacuum with accessory kit. The unit has a 62dB(A) noise rating (at one metre) and also offers variable suction and is anti-static. Float valve for wet operation, double-walled filter bag with sliding closure. Suitable for heavy industrial use.

Jet JV-10 Stainless Steel Wet/Dry Vacuum Extraction Unit

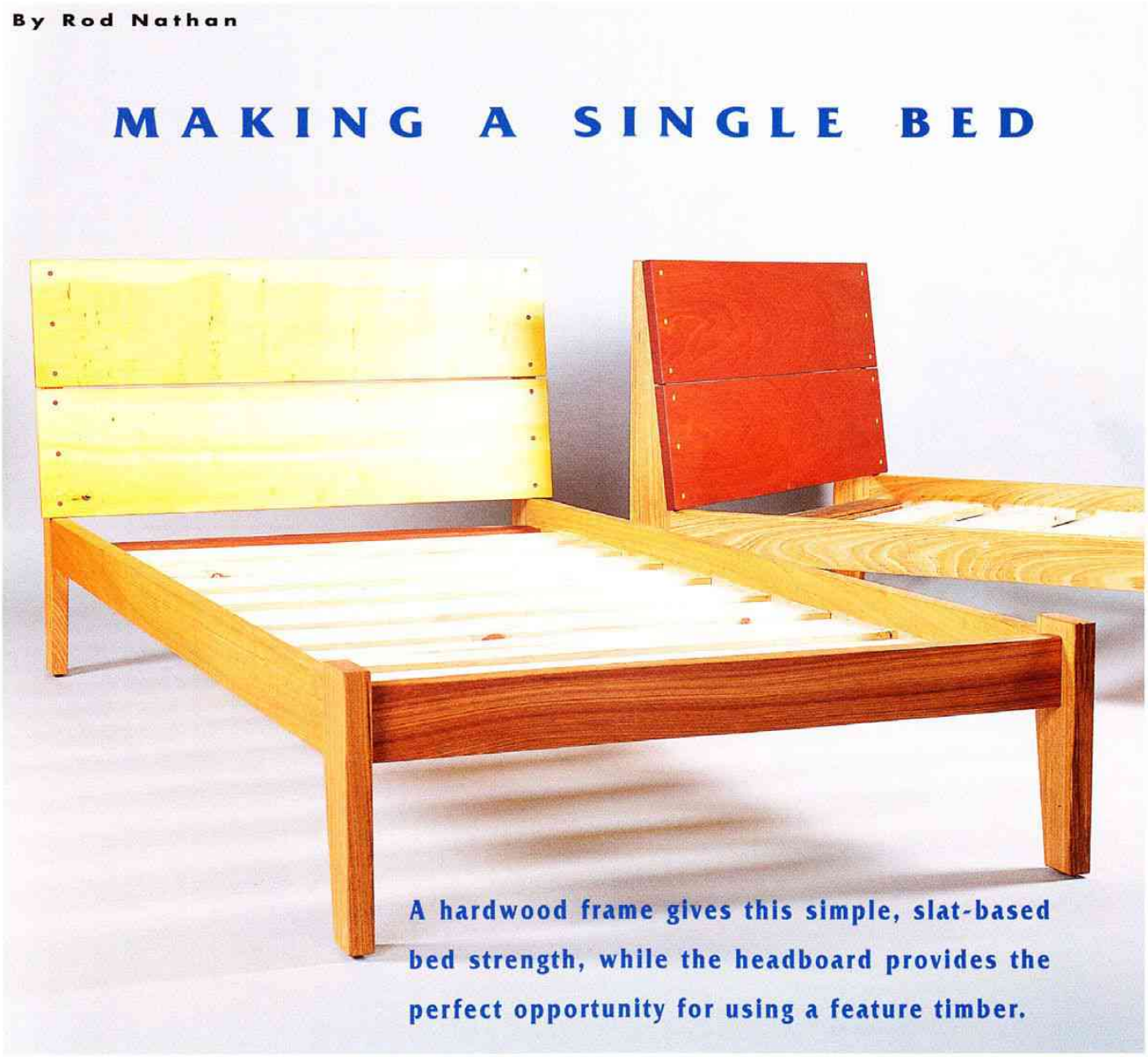
RRP $475, 10 gallon stainless steel tank capacity (thus no filters or bags used), 240V motor, no auto switch start. Attachments: 3.6mm hose, 400mm master nozzle, 400mm brush shoe, 400mm squeegee shoe, two interlocking chrome extension wands. Vacuums. 80dB noise rating. Shuts off automatically when liquid reaches full capacity. Double filtration system, 2 stage 1-3/4hp bypass motor. 18' safety power cord. Has hose storage basket.

Rupes S90EH

Made in Italy, rrp $1,123, 15L bag capacity, 2,083L/min suction power, 1000W motor, auto switch start, long-life filters, disposable bags ($10.30 each), filtration efficiency, 99.99%. Comes with Y-piece dust hose and and has a 77dB noise rating. High efficiency filters (HEPA) meet the filtration standards required for the collection of hazardous particulates. Weighs 9.2kg (with a double filter).

By Rod Nathan

MAKING A SINGLE BED



A hardwood frame gives this simple, slat-based bed strength, while the headboard provides the perfect opportunity for using a feature timber.

If you have children then you will understand the need for robust and lasting child-specific furniture. After all, a bed is sometimes a trampoline and often a landing pad, at least in our house. And with the current trend of children staying home longer, a bed needs to last, so strength is paramount.

Beds are large objects and care needs to be taken in the design process that they are either demountable or can fit through doorways in assembled form. Double and larger size beds should be knock-down and there are fittings available to simplify this. The actual making of a bed can be achieved with minimal tools, if that is your situation. Buying properly dressed and straight timber will make things easier, but be warned that there is a difference between properly 'square dressed' timber and wood that has only been put through a thicknesser. For this reason I like to dress my own timber.

PREPARATION

Basically there are four legs connected by four rails; two of the legs are longer and two boards are connected to these to form the headboard. Slats support the mattress.

The initial step is to check your mattress size—this dictates the base measurement. A standard single bed mattress generally requires a space of 920mm x 1900mm. The rails are very important because they take the load over a relatively great span. The natural tendency of the timber is to sag over such a span, however increasing the depth of the rails can reduce this. In this case I've used Victorian ash, a hardwood, with a rail measurement of 90mm x 32mm.

If you use pine you will need 120mm or 140mm x 35mm rails. Even at 90mm depth my hardwood rail may not be enough, we'll have to wait till the kids leave home to find out. For the headboards I used Huon pine for one bed and Brazilian mahogany for the other.

Joints

There are eight mortise and tenon joints to be cut for the rails and legs. I used a mortising table to make the joints, however anything goes as long as the end result offers neat, well fitting joints. Mortises can be cut with a drill and

chisel. You can cut your tenons with a saw and chisel or use a router for a fantastic result. A floating tenon is also acceptable—cut two identical mortises and make one long tenon. You could dowel the joints but they will not have the same strength.

Detailing

The tapers on the legs were marked out with a straight edge. The waste was sawn off with the bandsaw and the cut cleaned up with a plane. The tapers enhance the whole design by making the headboard comfortable and giving the bed a slight attitude.

Assembly

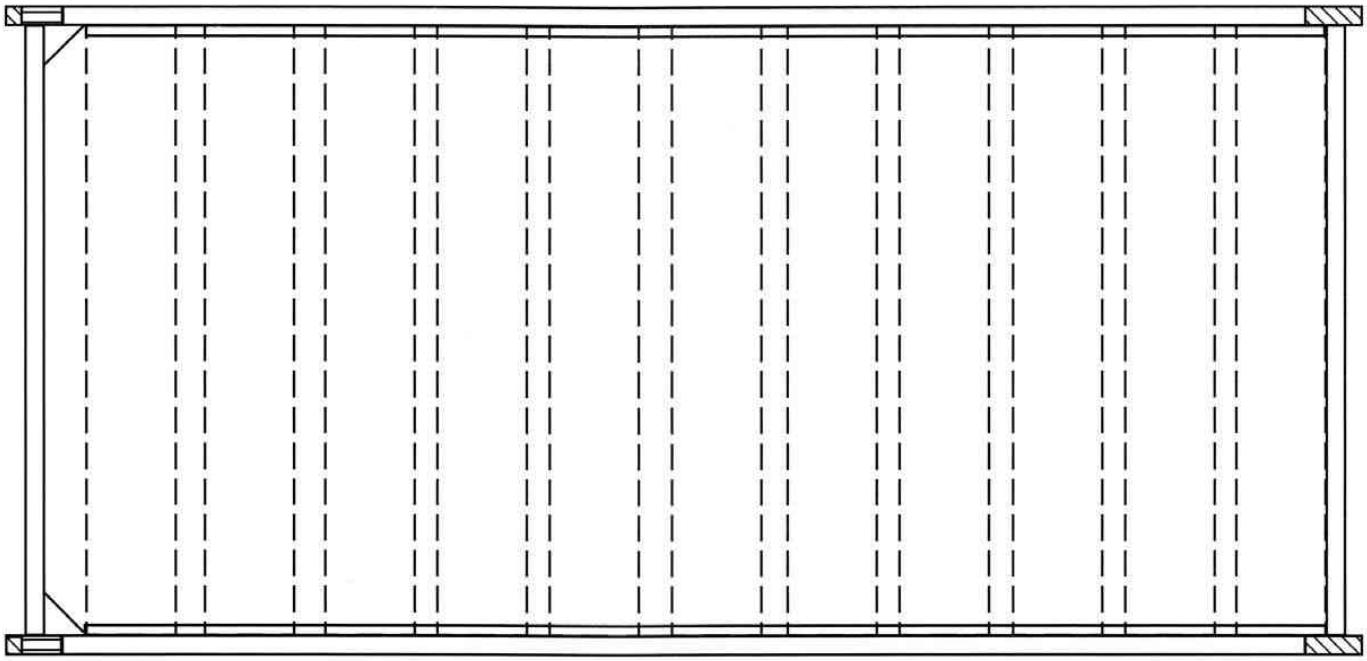
After sanding all the legs and rails, the long rails are glued to the legs. You'll need long clamps for this, so check if they will reach before applying the glue. After the glue has dried (overnight is better), and everything has been cleaned up and sanded, run a router with a small rounding-over bit over the edges to make the bed even more user-friendly.

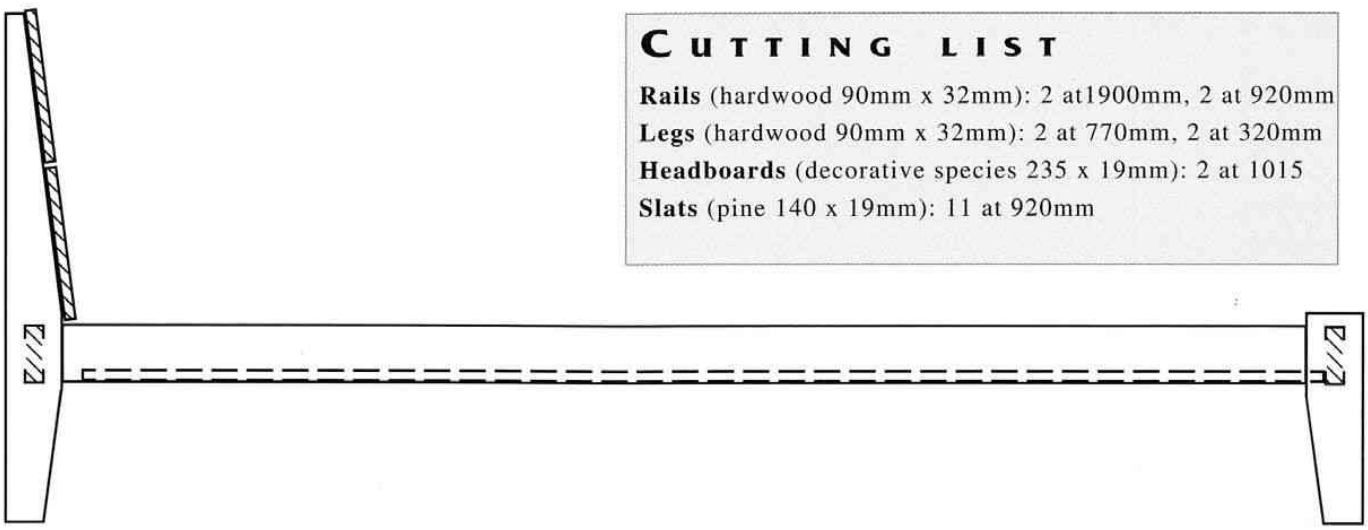
Supports for the slats should now be fixed in place. These are 19mm x 19mm hardwood lengths screwed and glued in place. The slats were pre-drilled and countersunk, an important step to protect the mattress from potentially damaging screw heads. I also eased the edges on all the slats.

I then assembled the whole frame by gluing in place the short rails at the foot and head and then checking for square. Once the glue has dried fit two glue blocks at the head. Next, glue and screw the slats in place.

There will be some flex in the assembly at this point but this will be remedied by the addition of the headboards. The headboards are also glued and screwed, but the screw heads are hidden under wooden plugs. I marked the positions of the screws first and then countersunk a 9.5mm hole before drilling a clearance hole for the screw.

The boards were fine sanded and then fixed to the legs, after which plugs of a contrasting timber were glued and tapped into place. The plugs are cut with an aptly named 'plug-cutter'—these can be purchased from tool suppliers. Once the glue has dried the plugs need to be trimmed flush and then the whole bed can be fine detail sanded and polished. *For more on making and designing beds see 'Making Beds' by John McLennan, AWR#15, p.32.*



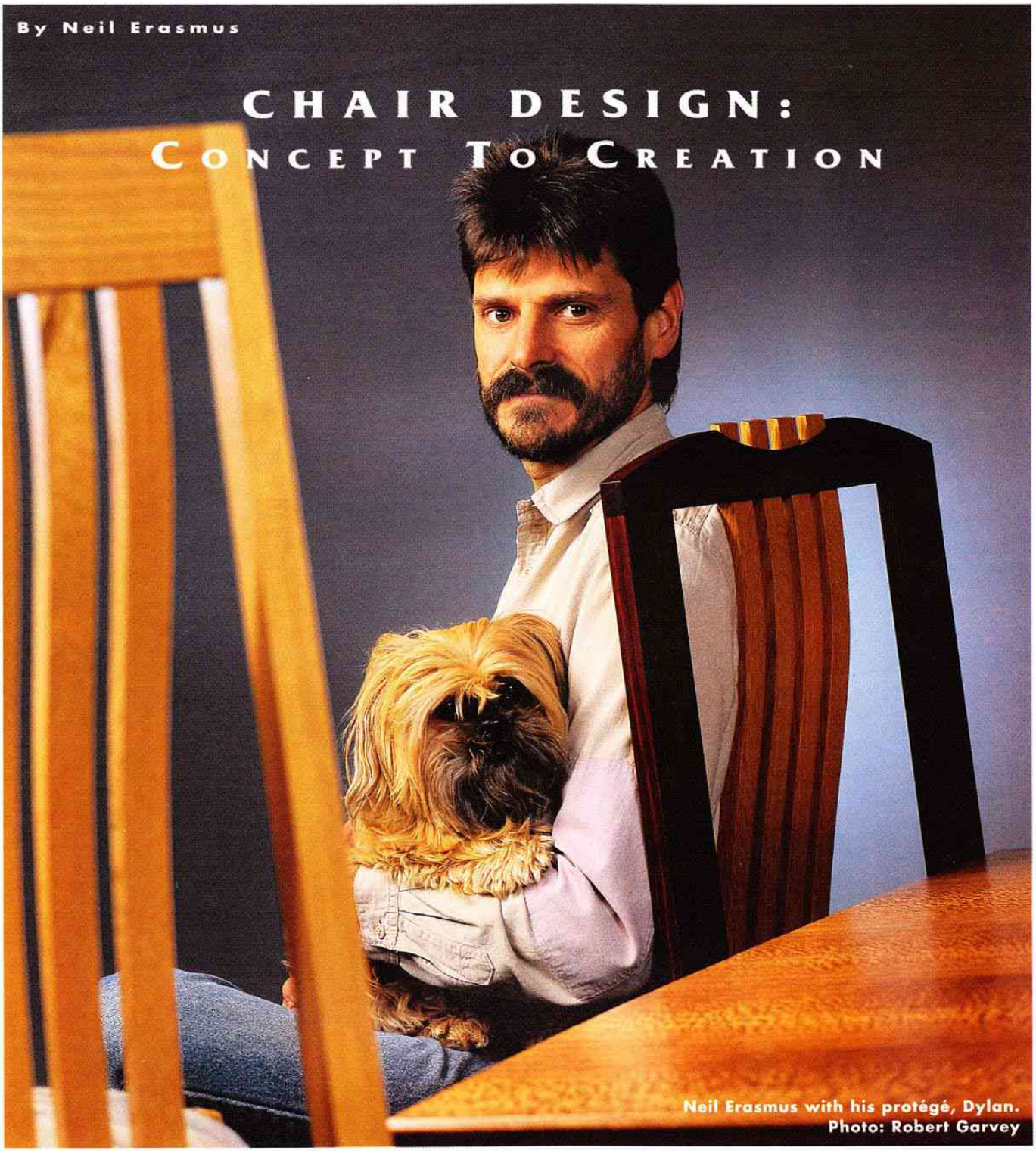


Cutting list

Rails (hardwood 90mm x 32mm): 2 at1900mm, 2 at 920mm
Legs (hardwood 90mm x 32mm): 2 at 770mm, 2 at 320mm
Headboards (decorative species 235 x 19mm): 2 at 1015
Slats (pine 140 x 19mm): 11 at 920mm

By Neil Erasmus

CHAIR DESIGN: CONCEPT TO CREATION



Neil Erasmus with his protégé, Dylan.
Photo: Robert Garvey

For many woodworkers, be they amateur or professional designer/makers, the thought of tackling the conceptualising and making of chairs is too daunting to even consider. It is for this reason that so many furniture makers buy in mass-produced chairs from specialist manufacturers to complement their own tables. As a designer/maker, I see this as an unnecessary compromise which has the effect of diluting one's own prestige in the marketplace, and blunting the edge of your marketing drive.

What with the complex curves, radii and compound angled joints, with even the most basic of chairs containing at least one of these elements, it is no wonder that some people feel this way. Yes, chair making throws a spanner into the works of the easy-to-understand order of straight, parallel lines and 90° joints in larger sections of timber. Added to this chaos is the fact that one often has to join two pieces of timber at different angles at one small junction area, using a combination of joint types.

Despite all these potential problems, chair making has always been a challenge I enjoy. Long periods of time can be spent drawing, designing and working out the nuts and bolts of construction, followed by moderating, fine-tuning or even changing entire elements of the original idea. We need a wooden structure that is comfortable for the average person to sit in for long periods of time, weighs no more than 7 or 8kg, is robust enough to withstand the forces exerted on its joints by large (and sometimes drunken)

people and, just to make life really interesting, is elegantly pleasing all at the same time!

So, let me try to demystify this art which many consider to be the very pinnacle of the woodworker's skill. Allow it to be a challenge that is fulfilling and fun.

Comfort

Comfort can't be left to chance; it must be carefully engineered while keeping construction in mind. Experience tells me that people have become far more knowledgeable and discerning regarding furniture and look for chairs that are comfortable, while still being stylish. Most antique and traditionally-inspired chairs are uncomfortable to sit in for any length of time, but there are those who are happy to sacrifice comfort for style. Most of my clients insist on comfort but want chairs which have an air of originality.

The comfort of a chair relies on a number of factors which all relate to body contact points, gravity and space. The seat, backrest and armrests (in the case of an armchair) are the body contact areas and need to flow gently and smoothly while offering support to the body.

The gravity part of this equation is worked out by allowing the body to rest comfortably without causing it to slide forward on the seat or for its torso to fall forward. Good chair geometry and proportion will not only prevent these problems but also those of pressure on sensitive arteries, muscles and bones.

The seat and backrest sizes are important as body weight needs to be evenly distributed over the entire body contact area. The most comfortable seat contour is the ever-changing one made by the sitter adjusting position on a cushioned seat.

A flat, hard seat is rarely comfortable for long sits, and a contoured one is only marginally better; the smallest shift in position causing misalignment of its carefully planned contours and the shape of one's bones and muscles.

Once you have fine-tuned your chair's ergonomics you are ready to work out how to join all these curved elements into one strong structure which is raised off the ground by about 430mm. While there are a number of jointing methods, you should first consider the engineering of the structure. Remember that you don't always have to rely solely on what you may consider to be the strongest joint type. If you choose to triangulate or use parallelograms in construction you will increase the strength of your chair enormously. Take for example a chair that has only one side rail on either side of it. You have only two joints keeping the back leg substructures together. If the same chair had only one more side rail on either side, forming a parallelogram, you would need to break eight joints

'Mantis' armchair, 1989, Neil Erasmus and Dave Street in American red oak. Photo: Peter Greenwood-Brown

simultaneously if enough pressure was exerted on either the front or back legs.

Clever engineering means you can use more slender and therefore elegant members to keep your chair together, and this together with mortice and tenon joints would make a very strong, yet light and mobile structure indeed. Be careful, however, not to over-engineer your chair, as you may defeat the object of the exercise by making the chair look too busy.

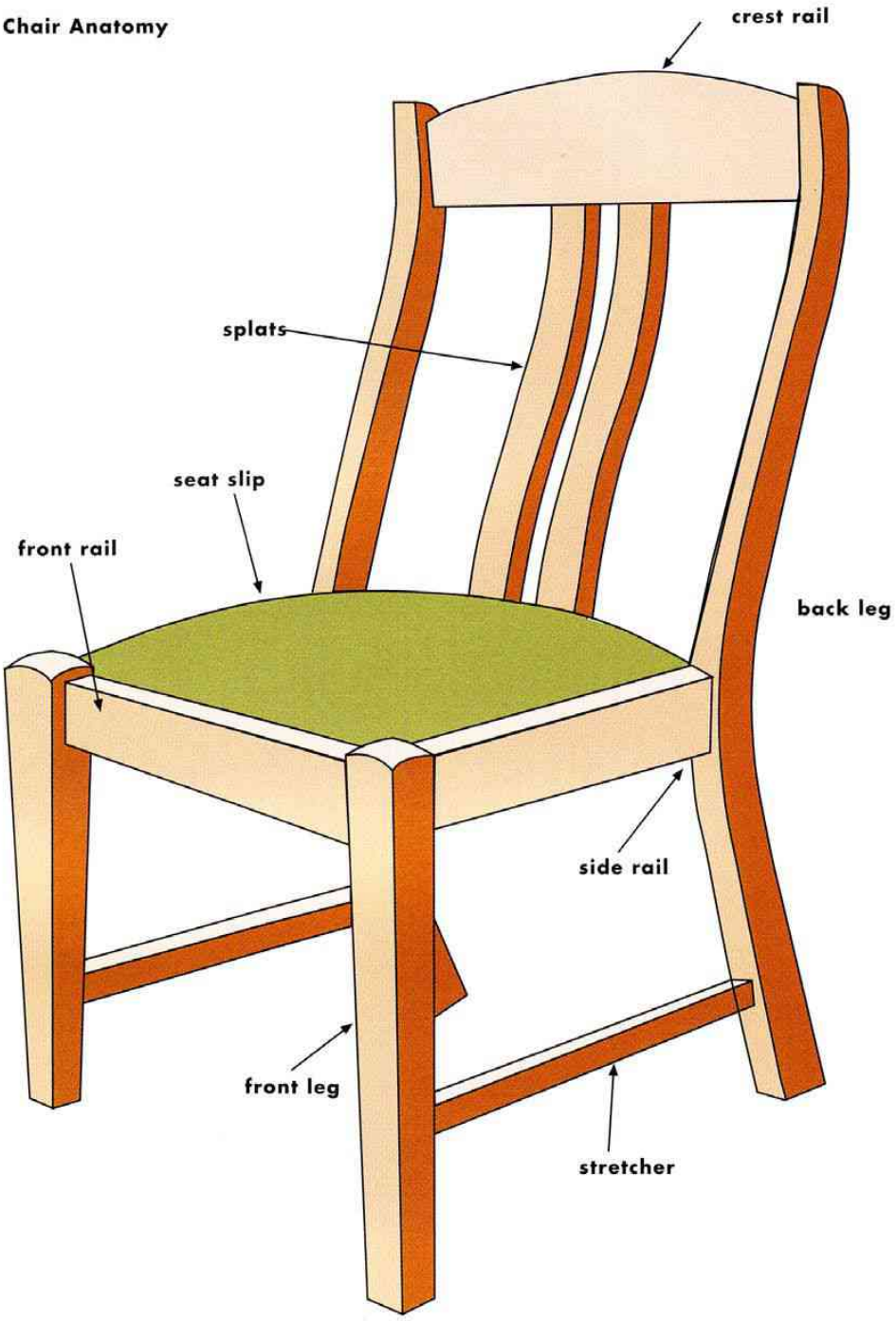
Chair joinery needs to be very carefully considered. While large tenons are stronger than small ones, more material needs to be removed from the mating mortice, thus weakening this component. This is often found to be a problem on the back leg/side seat rail and back leg/back seat rail junction, where two members need to meet at the same area, thus weakening the entire back leg.

There are various ways of avoiding this problem. One is to combine mortice/tenon and dowel joints, with the latter done on the back seat rail after the side sub-assembly has been glued together. This gives the added benefit of locking the side rail tenon into its mortice.

Another way is to tenon or dowel the back seat rail toward the rear end of the side seat rail, thus keeping these joints separate. Another advantage of following this method is that one can achieve good triangulation for all these joints if a vertical structural backrest is joined between the back seat rail and the back crest rail.

Always bear in mind that the back leg/side seat rail joint is the one that has far more force exerted on it than any other chair joint, and therefore, has to be strong enough for its task of withstanding these forces when the chair is tilted back from time to time. You can discourage this practice somewhat by positioning the bottom of the back legs further behind the seat than the top.

The 'toe' of the back leg is like a fulcrum and the closer it is to the chair, the more mechanical advantage the sitter has to tilt the chair backwards. Don't, however, overdo the flair of the back legs otherwise they become a tripping hazard!



Glues

I use Garret Wade 202 GF to glue my chairs together as it not only has gap filling properties but also allows a small amount of creep which, in my opinion, is essential for chair joints as they are often jarred severely. Brittle glues such as urea formaldehyde are definitely out of the question, while epoxy is an option but I don't like its permanent nature. I am being drawn to using animal hide glue once more as one can often reduce its brittleness by adding glycerin. Its great advantage, other than an almost unbreakable joint, is the fact that it can be dissembled again, without fracturing any wood. I believe in the repairability of chairs—hide glue permits this. It is also environmentally friendly, even if a little on the nose while being heated! I always err on the side of using more than is required rather than starving the joint of glue. Excess PVA can always be brushed off with a toothbrush dipped in warm water, or carefully chiselled off when set.

Prototyping and Jigs

I begin a new chair design with rough

'Looking Glass' chair, 1986, Neil Erasmus and Dave Street, jarrah, American red oak. Photo: Robert Garvey. Both this chair and the one featured on page 45 use exposed and wedged mortise and tenon joints throughout. Here the tenons are highlighted on the end of the back slats.

1:10 scale sketches. I try to start with a brief so as to keep the feel of the design within certain boundaries. I may draw as many as a dozen variations of this idea until I feel I am getting close to a result. I make separate sketches of smaller details to get a better idea of the proportion and balance of these elements. Once I am happy with these small sketches, I then draw freehand, full scale shapes on a piece of 12mm MDF.

Structurally, I see a chair compromising of two separate entities. One is the seat and backrest; the other the structure that firmly supports them at the correct height and angles. It is therefore at this stage that I draw an accurate side elevation. Included in this are all the relevant shapes and angles of the seat and backrest and the structure that will support them. Draw front and plan views as well. You may calculate your angles directly off these drawings, but I prefer to calculate them exactly, trigonometrically, as these are the angles which are dialled into your machines when cutting them.

Sometimes I will use this piece of MDF as a template. I may cut off the back and front legs and proceed to fine-tune their contours by hand planing or sanding. All bumps and troughs need to be carefully feathered out. Try to avoid abrupt changes from large radii to smaller ones and vice versa and blend curves gently into flattened areas (like those where other members join). I use these templates for marking out purposes and for making spindle moulder or router shaping jigs.

Generally I would knock up a rough prototype of my chair before proceeding with the jigs. This prototype should help complete the process of trial and error, by exposing any further problems with my design.

Neil Erasmus is a furniture maker and conducts courses in woodwork from his studio in Pickering Brook, WA, (08) 9293 7171.

By Susan Wraight

MICROCOSM

Susan Wraight is an internationally renowned carver of netsuke, a traditional Japanese artform. Her exquisite miniature carvings have won awards and worldwide acclaim with the result that her work is held in numerous collections. This story documents the making of a recent commission, from design to completion.

'Sunbaker', European boxwood stained, inlaid amber eyes, 1998.

'Spring: Frog on a taro leaf'
Boxwood, amber eyes,
by Susan Wraight, 1998.
Photo: Terence Bogue.

There are many advantages to be enjoyed when making a living by carving wood on a small scale—as those colleagues of mine who make large sculptures or furniture often tell me as they struggle to shift unwieldy baulks of timber into cavernous workshops, or sign large cheques to transport dining tables safely to exhibitions. Forgive me if I sound smug, but that is not the half of it.

Imagine the low cost of timber; being able to put an entire exhibition into a small *Postpak* box and sending it anywhere in the world for less than $50; being able to work whilst sitting on a beach leaning up against a palm tree if you choose to do so, and managing to squeeze a workshop into the smallest of spaces if necessary.

It is a flexible and comfortable way to work, but the best aspects for me are the contemplative nature of the process, and the reactions the carvings receive when people see them—especially when it's for the first time.

Lord Chesterfield once wrote to his son: 'Have you learned to carve? For it is ridiculous not to carve well. A man who tells you gravely that he cannot carve, may as well tell you that he cannot blow his nose; it is both as necessary and as easy'. I have now been carving for 20 years, with almost as much enthusiasm as Lord Chesterfield, and over that time have often been asked to describe the techniques I use. Carving on a small scale can produce wonderfully intimate and engaging works, and I hope that this article will encourage more people to try it out for themselves.

Modelmaking

The first stage for me is to do some research into my chosen subject and begin to make some models in plasticine. This is helpful in a number of different ways. Firstly it helps me to think in 3-D. The final model enables me to determine the composition of the piece and it is easier to predict any problems in advance.

Sawing Out The Block

Making a model also takes away the terror of picking up a block of wood and not knowing where to start, because it can be used as a pattern. I decide in which direction the grain will run through the carving, and hold the model up to the selected wood in the appropriate position. I draw around its profile and saw out the excess material. I repeat this for the front, side and top views of the piece. This leaves me with a rough block that already shows the approximate form of the model.

AWR: How long does each piece take?

SW: Between 2 to 4 weeks full-time, depending on the detail involved.

Roughing Out

I use a motor tool to remove excess material. For the first six years of my professional carving life I was a hand tool purist and did everything by hand, but a bout of repetitive strain injury cured me of that. Whether using hand tools such as block cutting gouges, or a motor tool such as a *Dremel* or my own *Electer*, the principle is the same: the hard edges left after sawing the block are removed, and comparison with the model allows me to judge

AWR: Do you use magnification?

SW: Since turning 40, yes I do. Depressing isn't it? I wear glasses that magnify x 3 while I'm carving, and for checking really small detail I use a jeweller's loupe (x 10). I don't work under it for long though—swimming in and out of the shallow depth of field makes me feel seasick.

AWR: What timbers do you use?

SW: Dense, close-grained and hard, with no pores and little, if any, figure. My favourite is European boxwood, but I am always trying new timbers and have used a wide range including such woods as holly, myrtle, sassafras, African blackwood, pink ivorywood and various fruit woods and acacias.

Commonly used tools. Here 3 scrapers, 4 engravers, 1 block cutter.

where negative spaces may hold excess material that should be cut away. As the form develops it can be useful to draw over the block to give a road map and identify high spots that should not be touched.

Detailing

I carry out all detailing with hand tools, finding motor tools too inaccurate for fine work. I also enjoy the rhythmic process of carving by hand far more than using the motor tool with its associated noise and dust.

The carving action is shown in the photo on page 51. One hand acts as the vice and holds the work; the tool is held in the other. The tool slides along the thumb as the cutting edge bites into the wood and removes a small shaving from the surface. Because the cut is not made away from the hand, but towards it, it is essential that the tool cannot slip (with very sharp tools the resulting cut is not necessarily painful, but can be deep—blood stains the work too!). A safe action can be achieved if the thumbs are lodged firmly up against one another, or if the thumb of the cutting hand is jammed securely against the wood so as to prevent the carving hand from slipping. (*If in any doubt, do not attempt this technique—ed.*)

The range of tools I use includes block cutters, jewellers' engravers, scrapers and dental probes, as well as a range of abrasive papers.

Decorative Effects

Eye inlays

I usually inlay the eyes of animals I carve. The eyes are expressive, and animate the piece when inlaid with another material. My favourite inlays are buffalo horn when a dark eye is required and amber when something lighter is needed as was the case in 'Spring' (shown on p.49).

When inlaying eyes I first mark out the position carefully with pencil. I then carve or drill one of the sockets to a depth of about 3mm. Inlay material is shaped into a tapered rod that can be filed to a tight fit in the socket. At this point I carve out the second socket, using the inlay as a template—thereby ensuring that both eyes are a similar size and shape. Inlay material is cut from the rod allowing plenty of excess above the eye surface, and glued into place. Once the glue has set, the eyes are carved to shape and polished.

Uki-bori

This is a Japanese technique, which results in a pattern of even, raised bumps across the surface of the work giving a rich texture and visual appearance. It is particularly effective for such things as a frog's warty skin, as on the back of the frog in 'Spring'.

A piece of steel is shaped so that the tip corresponds to the desired profile of the raised texturing. The easiest and most effective is a small hemisphere, similar to the tip of a ballpoint

pen. This tool is then pressed firmly and evenly across the area to be textured. Once this has been done, the surface is carefully pared down to the bottom of the many small depressions. The surface is once again smooth, although bruising may be visible. Warm water is then sluiced over the area, causing the compressed fibres to swell back to their original position—forming small, even bumps across the work. The Japanese carvers who used this technique to great effect in netsuke would also use it to sign their works.

Staining

After much experimentation over the years with various wood stains, drawing inks and some natural recipes that would make MacBeth's witches look askance, I have settled on fabric dyes as my favourite medium for colouring my carvings. They offer a marvellous range of colours, are reasonably resistant to fading, can be tinted subtly and are easy to use. I paint the dye on to a damp surface and, after drying well, rub back high spots to enhance detailing.

Finishing

At the moment I use either of two methods. For materials where I wish to bring out richness of colour I apply a light coating of almond oil, which I allow to dry thoroughly and then cover with a beeswax based polish.

On the advice of several other netsuke carvers I have recently been achieving very satisfactory results by applying neutral shoe polish to the surface of carvings and buffing it with a soft brush. Netsuke need to be handled—they are seen as much with the fingers as the eyes, and this latter method seems to make the surface more resistant to the adverse effects of handling.

It sounds easy, and up to a point it is—but I have been carving for two decades (and am still learning). This article gives you the essentials, but for want of space leaves much detail for you to discover on your own. My intention has been to introduce you to carving on a small scale and to assure you that the joys of learning along the way are well worth picking up a tool and trying for yourself.

Susan Wraight can be contacted at PO Box 2240, Caulfield Junction, Vic 3161

By Robert Howard

SPIRAL TWIST

The commission to make this table was a direct consequence of some publicity I received for the spiral centre pedestal table I wrote about in AWR#16. There was one slight complication however, my clients wanted a table 1.8 metres in diameter, with the top from a single piece of burl.

After assuring them that finding such a piece of wood would probably be impossible, I nevertheless promised to try. To my great surprise, my first phone call scored a hit. David Hayes up in Wauchope had a slab of redgum that sounded promising, even though it was 125mm thick. I went up and had a look at it and after some discussions with my clients decided to buy it.

It had a large fissure that extended through about a third of its width, but I felt confident that some George Nakashima-style butterfly keys along with some epoxy filler would take care of that. David has a great system rigged up for flattening large slabs with a router, so I asked him to reduce the thickness from 125mm down to 65mm. It was a shame to waste so much wood, but splitting it wasn't really an option. The wood needed to come off both sides to keep the slab balanced as it dried.

My next problem was the base. I have long felt that organic, waney-edged burls need a complementary rather than contrasting base. I have never felt that straight lines are appropriate in the base—as in Nakashima's tables, for example. The trick is to make an organic base that doesn't look rustic. This table was to go into a modern, new apartment, and would be surrounded by modern furniture, so rustic was definitely out.

My idea was to obtain a large block of wood in the form of a stump, and carve it into a spiral base. Once again, David Hayes came to the rescue, finding an old stump of suitable size that wasn't too cracked, split or rotten in the middle. There was a small pipe in it, and it was slightly off centre, but basically it was great. As a red eucalypt of the Port Macquarie/ Wauchope area, it could have been

Sydney blue gum, flooded gum, bloodwood, red mahogany, grey gum, ironbark or even tallowwood, because it looked more brown than red. If I had to put my money on something, I would guess it was flooded gum, because of its light reddish colour and reasonable weight.

All up, the top and stump as they arrived at my workshop weighed over 400kg. To make the base, I first had to carve the stump into a cylindrical form. The ends were already flat and parallel, so all I had to do was mark a circle on each end and with chainsaw and axe, cut away a quite small amount of excess wood, see photo below.

Next I created a cotton reel shape by roughly chainsawing a number of cuts around the circumference of the block to varying depths to form the cotton reel profile. Because of the inexact nature of this whole process, I made sure to leave some wood to take off later.

Some big 60mm wide Stubai sculptor's gouges were next used to work the block to final profile. This required quite a few cuts over the entire surface, removing a small amount of the very hard wood each time. I used a profile gauge made of 3mm MDF (top photo p.55) to get the shape even all around.

To reduce the risk of the block splitting any further, now that the wetter internal wood was exposed to the air, I set about hollowing the inside and ends using, where appropriate, chainsaw, axe, industrial *Arbortech* with tungsten teeth and then gouges.

The Spirals

My initial plan was to cut the top and bottom rings into hexagons from which six spirals would be carved. The lines and form of the spirals as they would merge into the supporting structure of the top was food for consideration. I was led to a line that met the top ring circumference roughly at right angles, continuing out along the six arms to support the top. The only consideration at the bottom was visual. I made top and bottom cardboard templates divided into six equal segments, and traced out five more identical lines.

I used the powercarver to take away the bulk of the wood between the spiral ridges and then finally went to the slower but preferred method of gouges and mallet. I felt the hollows would work better if they did not meet the outer rim in a straight line parallel to the end surfaces. I cut a template and marked a series of curves on each rim and carved down to these, as can be seen in the top photo on p.56.

I must have worked my way over the entire surface of the six spiral contours about a dozen times, each time carefully removing a little more wood and refining the ridge and rim lines. Between each of these circumnavigations was a period of contemplation and head scratching, until I finally reached a form I was happy with, given the physical constraints of the block. Apart from the sheer hardness of the wood, the only other problem I encountered here was the interlocked grain which at times made it very difficult to find a direction in which the wood would cut cleanly.

To give the form a bit more 'lift' and lighter feel, I decided to undercut the base ring where each ridge met the floor. I was careful not to undercut beyond what I hoped was the sucking capacity of a vacuum cleaner, but far enough to create a shadow line.

The Support

I set into the bottom of the form a large block of hardwood, into which was placed the nut of the long 25mm diameter bolt that was to hold down the inside ends of the six top support arms. And even though I allowed over 6mm for shrinkage of the wood at the ends of this block, I twice had to cut more wood away before the table was finished.

Trenches were cut on the top surface of the base to house each of the support arms, and notches at the outer surface to accommodate the expansion and contraction of the base.

I made up a quick jig using MDF offcuts, and by carefully measuring and packing under it, positioned it to cut six trenches of various depths so that the six identical arms sat in position, level with each other and parallel to the floor (see photo p.58). The arms were made from 200 x 50mm jarrah. I was taking no chance of them not being strong enough to support such a very heavy top for a long time into the future.

The centre joints no longer fell exactly on the points of a perfect hexagon and the top surface wasn't a perfect circle either. I stood the base upside down on a sheet of MDF and traced the shape and positions of the six arm notches. Allowing for the fact that the positions were marked as if from below and not above, I layed out and cut the six angles for the central joint. This joint would accommodate the centre bolt and, by screwing each arm to its neighbour, fixed them so they could not easily fall over sideways. I cut the boards lower in the centre to allow for the head of the bolt and the large 6mm washer, and to allow access with a spanner should any adjustments be needed after the table was assembled.

Each board was cut away at the bottom so that it sat in the trench on the top of the base and overlapped down into the notch on the side (see photo p.54). I positioned the structure on the base and marked the length of each arm. I also marked how wide each board needed to be to meet the ridge line at each notch. I then cut the final contour of each arm, and bevelled the under-surface to match the spiral contours at each ridge line.

The Top

The top had to be strong enough to last, with a surface whole enough to use. To make it strong, I inlaid into the top and bottom surfaces, above and below each other, matching pairs of 12.5mm thick jarrah butterflies. These were positioned to stabilise the large fissure that extended from one edge and well into the slab, and one other large crack—the surface is shown on pages 54 and 55.

The larger openings were then taped up on the undersurface and then progressively filled with *West System* epoxy, dyed dark brown with a quantity of raw timber pigment. I could only fill around 10-12mm at a time because any larger volume of epoxy would have generated so much heat as it went off as to be dangerous. At the same time I progressively filled any large cracks or holes in the base as well. This was a long and tedious process, and required

more trips around the surfaces than I care to remember.

The Edge

My clients and I agonised a great deal over the outer edge. On the one hand, the natural waney edge gave the top a great deal of character, but on the other it made the top dangerously close to being dysfunctional. We decided to try using the natural edge, rationalising that if it proved unpleasant to use we could always cut some of the undulations out later. I took this into account when positioning the butterflies.

Nevertheless the 65mm wide edge varied from rough bark to rotten sapwood to broken heartwood and so would have looked too rustic in its entire natural state, so it was worked somewhat. The tool marks were left in the base spirals and I decided to work the edge in a similar way.

I had the centre bolt and washer manufactured and fitted them to the support arms. All that now remained, apart from sanding and polishing, was to glue a positioning dowel into the outer end of each support arm, and to rout a small slot to accommodate each dowel in the undersurface of the top. To mark this out, I simply drove a small nail partially into each support arm at the centre point of the dowel hole (before it was drilled of course), clipped the top off each one, and then lowered the top gently into position on top of them. After removing the top, I pulled the nails out, drilled the dowel holes and routed the top slots.

Because the top is a burl I expect it to move in all directions. With six dowels on the points of a hexagon, the top is, if you think about it, free to expand and contract but quite resistant to movement. The sheer weight of the top will also help it to stay put.

Before sanding, I tooled the top surface of the base, and the hollows in the top and bottom of the base. Apart from the fact that I like this effect, it had the practical virtue of avoiding a long and tedious sanding job.

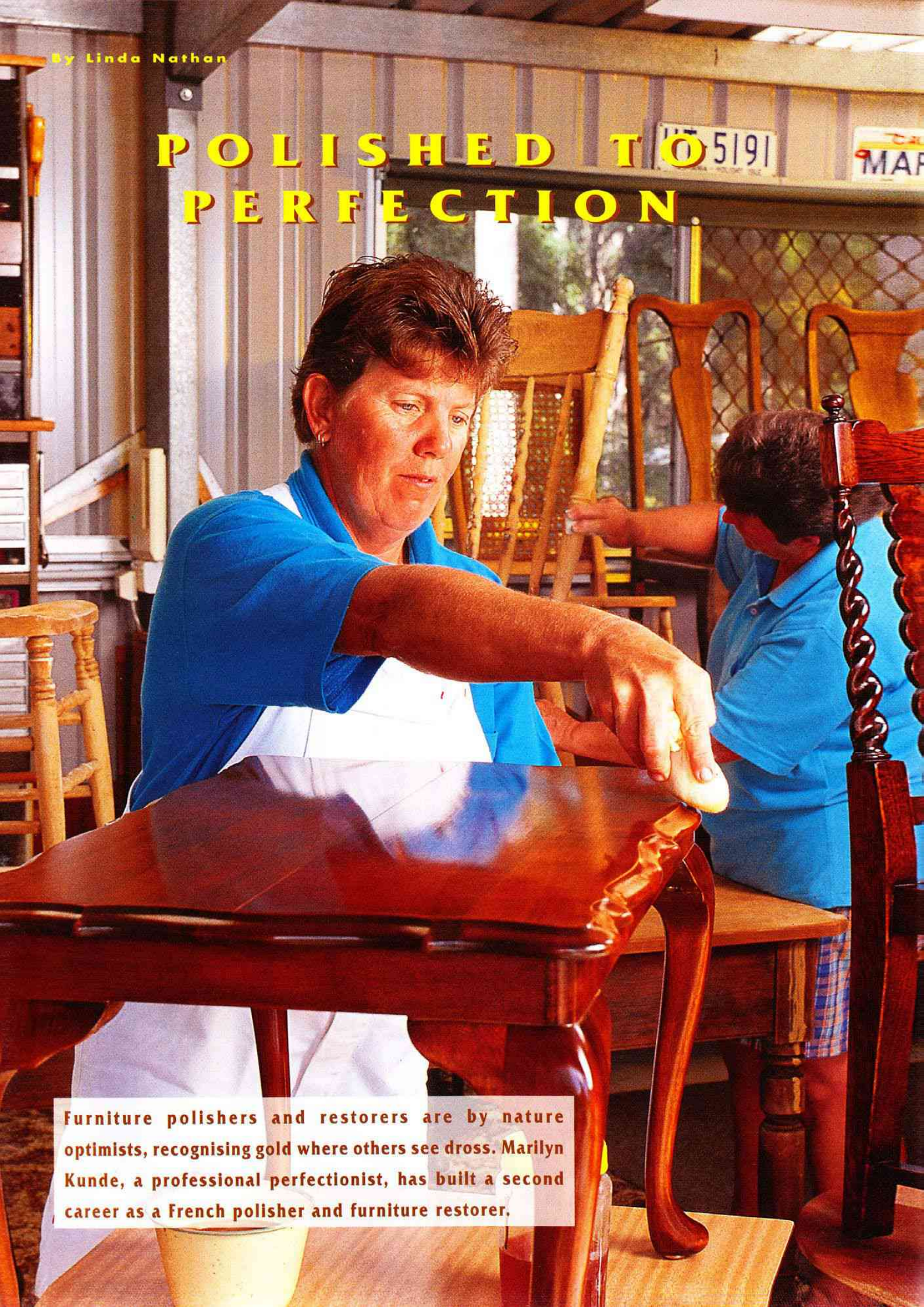
I used Tony Kenway's mix of three equal parts of boiled linseed oil, tung oil and polyurethane (Feast Watson's *Weatherproof*) to finish the top. This is brushed on and rubbed off very thoroughly and, as Tony says 'if you don't work up a sweat rubbing it off you aren't doing it thoroughly enough'.

My clients called by many times while the work was proceeding, and were a constant delight to work with. They were also extremely patient because a number of other commitments interrupted the work at key stages and dragged the job out over many months. It was an interesting table to make, and, if you can bear the thought of the necessary physical work, this simple technique involved opens up some fertile avenues for exploration.

Robert Howard is a woodcarver and furniture maker in Alexandria, NSW.

By Linda Nathan

POLISHED TO PERFECTION



Furniture polishers and restorers are by nature optimists, recognising gold where others see dross. Marilyn Kunde, a professional perfectionist, has built a second career as a French polisher and furniture restorer.

You mightn't think 25 years in Australia's armed forces would exactly be the ideal learning ground for a French polisher. But when Marilyn Kunde of Cashmere, Queensland, emphatically states *I'm a bloody good French polisher*, you'd better believe her!

Marilyn signed up in the early seventies: 'My sister was already in the army, but I think I joined just to get away. What else was a wild, uneducated little rough-nut going to do?' Growing up on a farm was the best preparation for self-reliance and manual dexterity a girl could ever have. 'Dad was a share-cropper. We always lived within about a 100km radius of Brisbane. There were five kids and we did everything on the farm. By the time I was 17, I was the boss of four men on a pineapple farm at Beerwah, driving tractors and trucks.'

Forthright in the extreme, her opinions have at times cost her dearly. Twenty four charges for various minor misdemeanours saw her eventually leave the army, after a career spanning truck driving and administrative work. 'The army gave me direction, it educated me, put up with my wild ways, promoted me, taught me responsibility.' And, in a way, it even nurtured her new mid-life career. Before leaving the army a doctor encouraged her to concentrate on French polishing for its therapeutic value.

More likely though, her entry into the pernickety business of French polishing came to embody a lifelong state of mind. 'I've always been a perfectionist. My mum and dad were perfectionists, the house was always 'imac' and you had to look after everything. With five kids, and being poor as we were, every piece of furniture we had had to last. If you wanted to be rough and tough you went outside and beat each other up there.' Her trade name, *Utopia Antique Restorations*, typifies her professional aspirations.

Her initial training in the craft took place six years ago at an eight week TAFE college course in Melbourne. Over the next 12 months she undertook various commissions. She worked with Robert Pratt, cabinetmaker and French polisher of Wesley Antiques in Sandringham for a month ('we did four month's work in one').

Returning to Brisbane Marilyn continued to work on her own, selling restored furniture from an antique market stall. 'I couldn't work for other people, I couldn't tolerate it. I wanted to do something for myself. People had been telling me what to do for 20

By Marilyn's own admission this recent restoration was a 'mongrel' job as it took two weeks alone to strip the lacquer and bitumen stain. This beautiful English oak sideboard with Queen Anne legs was formerly adapted with a chipboard shelving unit, 'bitumen' stained and lacquered. Inserts were made for the large deep drawers to increase the storage capacity. The backboard was made to Marilyn's design by Charles Sales and the split turning underneath the top was relocated to the backboard. All up, another four weeks work.

This 1860 cedar dressing table was painted white and had missing uprights.
A photo in an antique guide provided the model for the replacements which were carved by Judith Parry of Redcliffe.
The restoration took four weeks to complete.

Left and below: A 1900 (Federation/Edwardian) early Australian hoop pine sideboard. The painted surface of the cabinet had to be stripped, and some rotten and borer affected boards repaired with wood which was 'aged' with a bitumen stain.

years.' Profit is definitely not her motivating force: 'I don't work for money—I'd rather produce work that was '1,000%' right. (At the antique market) there were replicas everywhere, there was inferior work for the same money as mine. They were all at me: "Don't put so much effort into it"....the finishes some people did—they'd call it French polish, but you could see it was put on with a bloody paintbrush. And most people don't know the difference.'

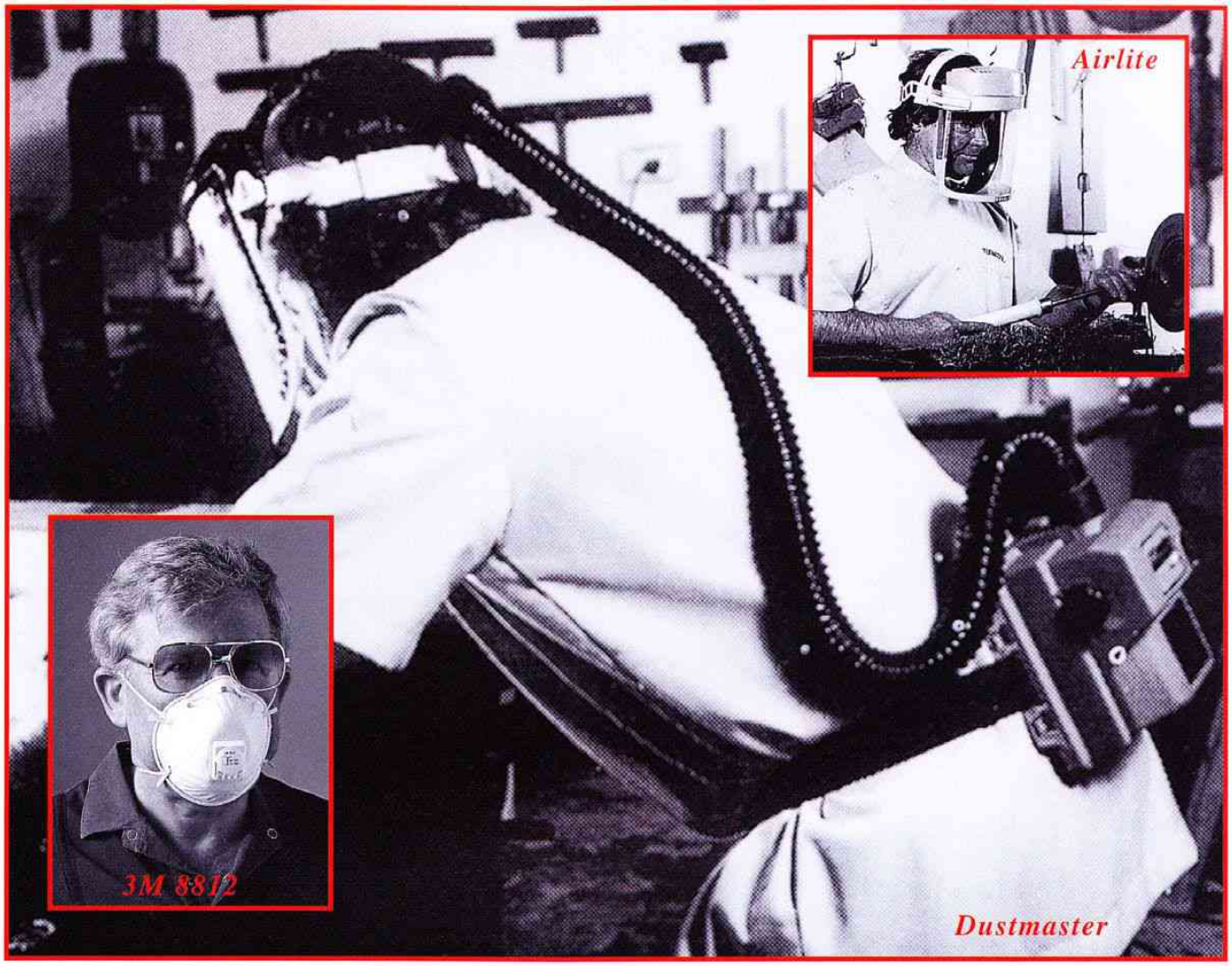
After a couple of years working on her own she applied for and gained work as a traditional French polisher working with Matthew Hunsche and Jürgen Danner on the Conrad Treasury Hotel. Restoring and fitting out the old Lands Administration building in Brisbane's central CBD enabled her to observe at first hand Danger's 33 years experience in the trade. Although she feels there was an awareness that she was a woman who had not come into the trade in a traditional manner her work was respected and, after an initial period working at Hunsche's workshop, Marilyn became an on-site supervisor for the major part of the project.

From her small workshop in Cashmere, Qld, Marilyn works full-time restoring antiques and polishing. Her knowledge is not book-learnt, but gleaned through experience and from working alongside recognised exponents of the craft. A good finish takes time she explains, 'you've really got to prepare the surface properly. Don't compromise—get a real French polishing mop, and use a rubber. Don't try to finish it in one day, allow each coat to harden—and above all, don't rush it!' □

Marilyn Kunde can be contacted on (07) 3298 5550.

3M RESPIRATORY PROTECTION

FOR THE WOODWORKER



Wood dust presents a number of potential respiratory problems and every woodworker will have experienced the irritant effect of wood dust in the nose and throat. Some wood dusts have been associated with occupational asthma and nasal cancer. As specialists in respiratory protection, 3M have addressed the particular needs of woodworkers and can offer hazard related protection through these three respirators.

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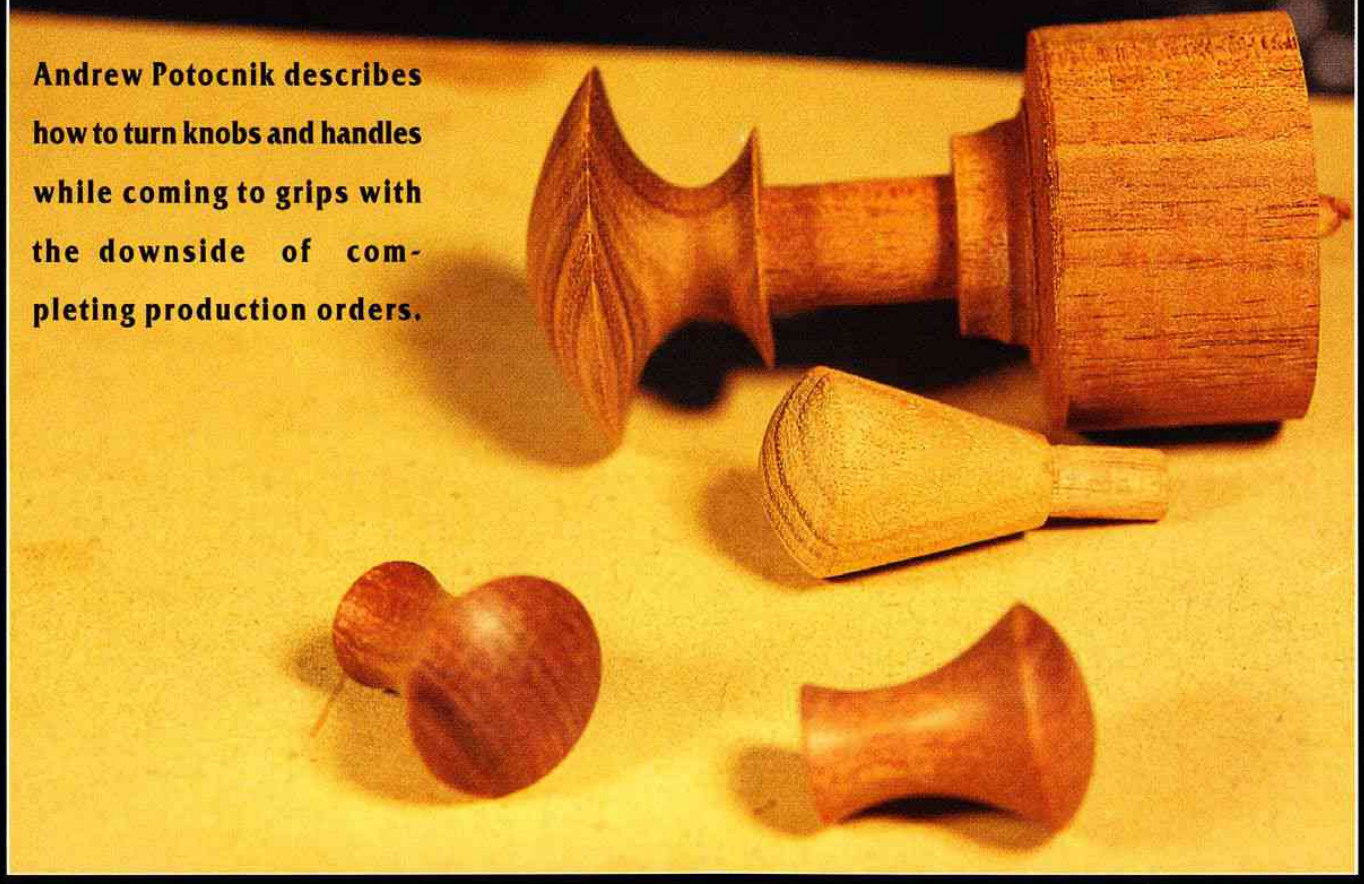
HANDLING PRODUCTION WORK

Andrew Potocnik describes how to turn knobs and handles while coming to grips with the downside of completing production orders.



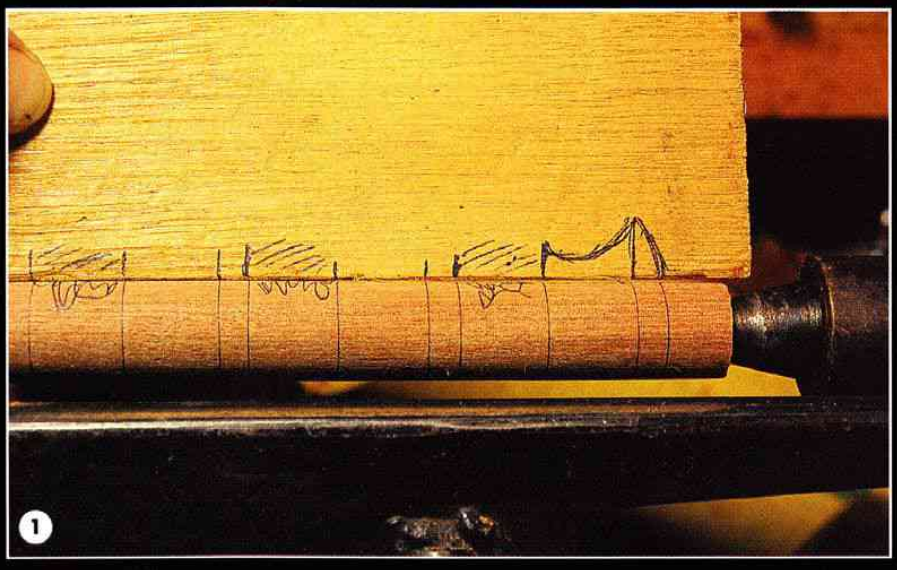
Trying to find a balance between 'artistic integrity' and survival inevitably requires a creator or maker of objects to also take on the role of production manufacturer. This may be in order to develop production lines, items made in multiples to a price which suits the general market; or in order to transform other people's ideas into completed forms. Sharing this dilemma, I often rely on clients who require me to produce a variety of furniture componentry. Frequently the request is for drawer knobs or cabinet handles.

Turning something for yourself allows you the luxury of making each item individually, taking as much time as you feel is needed. However, if you are making for someone else, who is also working to a price, then you need to look at ways of speeding up your production technique and eliminating overlapping procedures in order to reduce time, which equates to money.

Recently I was contacted by a client who needed several turned knobs for the doors and drawers of his custom constructed buffet. His request was for a fairly traditional but nevertheless distinctive shape, which should not protrude too far, but still be easy to grip.

Unfortunately, for me, what this person had in mind was something very similar to a kitsch, mass-produced radiata pine knob available at any hardware shop. This created a dilemma, should I simply churn out an order, or influence the client's tastes?

After discussing and sketching several possibilities a design which satisfied both of us was developed. I then produced actual size scale drawings and gained the approval of the client. For some commissions it may be worth producing sample turnings to assist the selection process. These, and examples of past work, may also be useful for showing to future clients.



Keeping records of designs, sizes, materials and production times and details will not only assist future quotations, but will prove invaluable should a dispute arise. When quoting you should take into account time needed for design and installation as well as outright production.

The Making

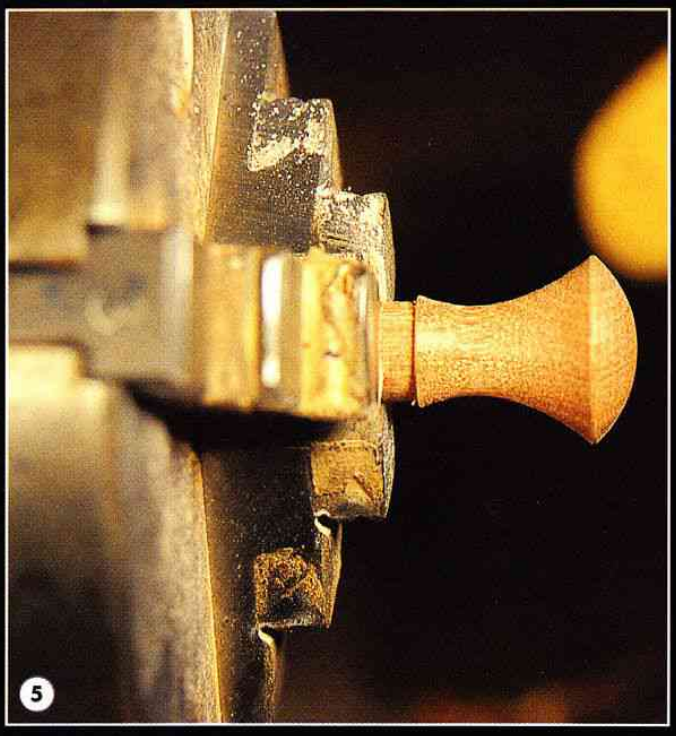
Once all these details had been sorted out the dimensions were transferred to a scrap piece of plywood which acted as a marking guide or template. After the blank had been turned to its correct diameter and checked with vernier callipers, the markings for each knob segment were transferred from template to the blank (photo 1).

Each segment was turned with its own tenon, which was held in a 3-jaw chuck while the domed end of the knob was completed. The 12mm diameter tenon was cut with a parting tool (photo 2). Next, I needed to create a simple sweeping curve from the base of the knob to its broadest point just before it reversed to form a dome. Photo 3 shows how a scraper was used to achieve the required curve. If I need to create straight lines in this area, I prefer to use a skew.

After shaping and sanding, segments were separated, ready for re-chucking. Photo 4 shows a series of partly completed components along with those which had already been separated with a saw. Each knob can be separated with a saw and mounted, via its tenon (photo 5), in a chuck enabling the turning of a domed end. The dome or knob-end may be shaped with a skew, gouge or scraper, depending on your requirements.

Photo 6 shows the final turned and sanded knob profile which was then separated from its tenon with a parting tool. After applying a threaded fastener to each knob, a finish completed the fabrication of these simple but important items. The back face was later drilled to accept a screw for attaching to the door or drawer. Photo 8 shows the finished knobs in front of some other design possibilities while photo 10 shows the knobs on the completed buffet.

Working to a brief or developing designs for others forces the maker to think in the aesthetic domains of others and yet remain true to his or her own ideals. The designer, artist or craftsperson must strike a balance between the demands of hand, eye and spirit. To satisfy one or two of these needs is an achievement, to balance all three is a life-long quest.

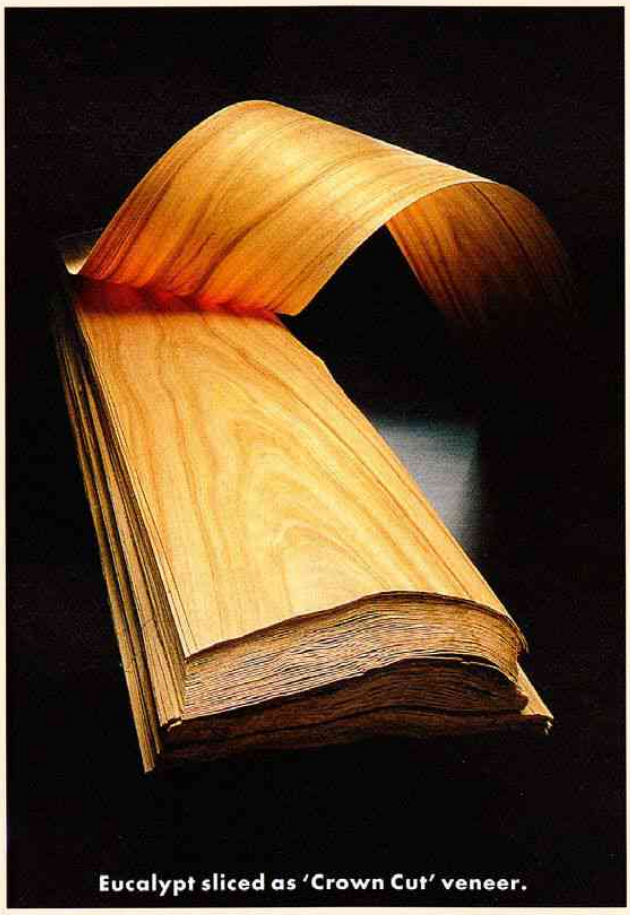


By Linda Nathan

THE TREE OF PRODUCTION: SOURCING TIMBER VENEER IN AUSTRALIA

Like a tree, the veneer production and distribution industry in Australia starts out from a compact base of manufacturers and progressively becomes more complex as it branches out, terminating in numerous and diverse points of sale. Here we outline the journey which this most valuable utilisation of timber undertakes in Australia.

The production of timber veneers is an industry which has existed for literally thousands of years and yet has growing relevance to the needs of producers and consumers today. Both higher and lower value timbers are well utilised when sliced for veneer. Rarer species, larger sectioned or highly figured woods are maximised and rendered more stable in use. Younger, smaller-sized plantation hardwoods and softwoods can be peeled or rotary sliced for the production of numerous timber products.



Eucalypt sliced as 'Crown Cut' veneer.

Veneer has always been used for stability; historically over solid timber, or now commonly over man-made fibre substrates where they additionally offer economy and ease of use to furniture, cabinet and kitchen makers. Some species or figured woods are difficult to dry and use in solid form— veneer may here be the only option. Depending on the way the timber is sliced (crown, quarter or rotary) and the way the leaves are matched the looks obtainable are limitless. Book, slip, reverse slip and random matchings are readily available, while special matches such as diamonds, v-matches, herringbones, four-ways, end and sunburst matches are more expensive to produce and generally only available to order. Most veneers sliced today are 0.6mm thick and pressed to substrates such as particleboard, MDF, plywood and blockboards. Other products available include laminated edgings and plywoods, profile wrappings and inlays.

The veneered panel industry supplies structural (building plywoods and substrates) and decorative sliced veneered panel products. The latter is the focus of this story and includes veneered particleboards, plywoods, MDF, laminated and custom panels.

Considerable volumes of veneer are produced in Australia. Estimates by the Decorative Veneer Association of Australia put Australia's production of decorative sliced (as opposed to peeled) veneers at 7.5 million square metres (or 4.5 million cubic metres) per year. Most of this is processed and pressed in Australia for local use, although Gunns Veneers, the biggest player in the Australian industry who slice an estimated 80% of the total volume produced, export some veneer leaf and layons.

Export and import figures from ABARE do not differentiate between sliced and peeled veneers, although for the record, in the period 1995-1996 Australia imported 12,500 cubic metres of timber veneer, and in the period 1996-97, 17,700m^3. Exports from 1995-96 totalled 1,294m3, and during 1996-97, 1,375m3.*

In fact, Australia's production and export of timber veneer was much greater some decades ago. Around twelve years

ago much of Australia's rainforest was placed under World Heritage Listing. Up until that time Australia used and exported significant amounts of timber species such as Queensland maple, blackwood, silky oak, black bean, silver ash and Queensland walnut. While an undoubted victory for environmentalists, the decision was a bitter one for the industry with an estimated 1500 jobs forfeited by the closure of mills such as Foxwood, Rankin Bros, Hancocks and Simms Veneers. Some, such as John Boothman of George Fethers & Co, bemoan the constriction of a once thriving local industry. Whereas half of his company's turnover once derived from domestic woods that percentage today would amount to around ten.

Ironically the laudable protection of rainforest on public land has led to significant cutting of rainforest on private land, in many cases with far less refined forestry practices than those formerly exercised. In terms of the world environment the cutting of rainforest timbers continues, but in other places. In terms of trade in veneers the Australian market now imports much more than it produces.

Imported veneers arrive via specialist veneer importers and distributors who source large quantities of veneers from around the world. As to how much local and how much imported veneer is used in Australia current estimates are, according to Deirdre Ruddick, Secretary of the DWVA (and General Manager of Mayze Corporation), volume-wise, around fifty-fifty.

Exact figures on the size of the industry and the volume of its production are not readily available. Contributing to this lack has been the acknowledged reluctance of manufacturers to disclose their production figures. There are disadvantages for the industry as a whole in not having this kind of information resource.

Veneer slicing technology is specialised both in terms of know-how and equipment and Australia is, according to Deirdre Ruddick, fairly competitive with the rest of the world. She estimates that within the last ten years many companies (both slicing and panel producers) would have upgraded their equipment. Around four years ago Gunns Veneers installed a staylog rotary slicer in their Boyer mill, specifically to handle the smaller-sized regrowth logs which are now their major resource. D.G. Brims use a 1933 slicer which has been upgraded with various hydraulic tilting and clamping attachments. Speed is not in any case the primary consideration when slicing harder Australian species, according to John Brims, managing director of that company. Britton Bros in Tasmania have in particular specialised in the technology of slicing burls and other 'difficult' figured woods. These timbers, which form a low percentage of the volume of timber sliced, are harder to slice, but rarer and per square metre, high value.

Veneer Slicers

The commercial veneer slicing operations which stand at the head of the local industry are Gunns Veneers in Boyer, Tasmania; D.G. Brims & Sons in Wacol, Queensland and Proveneer in Redbank, Qld; and Bunnings Forest Products in Western Australia. Brims & Sons slice primarily for their internal panel production and Britton Bros (Smithton, Tas) specialise in smaller volume, specialty Tasmanian species. Of the veneer manufactured in Australia the majority is sliced from 'Tasmanian oak' species (*Eucalyptus obliqua, regnans, delegatensis*) while the remainder comprises numerous species.

In addition to their Boyer mill, Gunns Veneers operate another mill in Somerset. Ninety per cent of veneer sliced there is radiata pine with the remainder being eucalypt, blackwood, myrtle, sassafras, Huon and celery top pine.

Founded in 1915 D.G. Brims & Sons are the second largest producer of sliced and peeled veneers in Australia. The company does not supply leaf but slice for their own comprehensive manufacture of plywood, particle- and veneered boards. Around nineteen Australian species are sliced. Radiata and hoop pine are the prime raw material for decorative faced plywoods (25% Brims production) and particleboard (75% production). Ninety per cent of the latter is manufactured into veneered board, and 80% of this receives decorative veneer facing. The company prides

Fine veneers from top to bottom: Australian red cedar, figured Queensland maple, Queensland cherry, silky oak, flame mahogany, crown cut anegre.
Photo courtesy Briggs Veneers.

itself on high recovery rates, claiming 98-99% for pine, where even sawdust is utilised. Around 10-15% of a decorative log is sliced for veneer, and Brims on-sell the rest for sawing into solid section.

Proveneer work in close conjunction with Matilda Veneers (Gold Coast, Qld) who source and sell timber and distribute sliced veneer to other wholesalers and veneer and timber merchants. Robert Filip, Manager of Matilda Veneers, gained 28 years of experience as a manager for Hancock Pty Ltd (Qld) before eventually buying that company's slicers (after its closure) and relocating to Redbank, near Ipswich. Most of the slicing undertaken at Proveneer centres on plantation hoop pine, brush box and spotted gum as well as northern Queensland timbers such as Qld maple, silky oak and black bean which have been harvested from private land.

Bunnings Forest Products slice mainly jarrah, followed by quantities of karri and marri at their Yarloop mill in south-west WA. Sliced veneer occupies around 1% of Bunnings production and this is supplied on a wholesale basis to panel layers for veneered board manufacture.

Britton Bros manufacture a range of around 12 Tasmanian species, including highly figured birdseye and burl veneers. Blackwood is the most commonly requested species which they supply, however myrtle, Huon pine, celery top pine, leatherwood, musk and eucalypt burl are also supplied.

There are much smaller veneer slicing operations, such as Otto & Co in Stepney, SA and Djarilmari Timber Products in Denmark, WA. Of the fifty or so species of veneer Otto & Co carry, around half are native species. Around half of the veneer which the company sells is sliced by the company itself. Otto & Co will slice to order as a specialty service which is generally reserved for special timbers.

Djarilmari collect figured native hardwoods from the forest floor and produce 3mm sawcut veneers from these. Most of their trade centres on solid timber however their beautiful

Top and above Slicing and drying veneer at Britton Bros in Smithton, Tasmania.

and mainly jarrah and sheoak veneers are prone to movement and definitely only for the hands of the experienced woodworker. This company is now developing some technology for drying these veneers, making them more stable.

Decorative Veneer Board Manufacturers

There are around twelve commercial panel layers in Australia including D.G. Brims and Sharp Plywoods (both in Qld), Processed Forest Products (NSW), Panelveneer (NSW, Vic), Presswell Panels (NSW, Vic), Yates Wood Products (NSW), Laceys Ply & Wood Products and Mayze Corporation in Victoria, BrownWood and Veneer Panels in SA and Wesfi and Timber Traders in WA.

Processed Forest Products claim to be the largest flat board manufacturer on the east coast of Australia. Seventy percent of their business is supplying veneered panel products to resellers, whilst the other 30% basically consists of supplying directly to furniture manufacturers, kitchen makers and shopfitters. This company can supply around 150 species of veneer, around fifty of which are Australian.

Panelveneer claim to be the largest panel producer in Australia, being producers of plywoods and particleboards as well as veneered boards, with branches in Wetherill Park, NSW and Glenroy and Dandenong, Victoria. In October the company's name will change to Amerind Forest Products in order to better reflect a growth of product lines as Amerind also specialise in solid

Chris Searle of Cockatoo timbers, Tasmania stands near a tiger myrtle stump which will yield highly figured veneer.

timbers, especially West African species such as anegre, makore, sapele, koto, iroko and danta. Native species and American hardwoods (rock maple, oak, cherry) are part of their range as well and both standard and custom work is undertaken.

Mayze Corporation in Victoria profess to being probably the smallest panel layer. They produce stock lines but specialise in custom layups, especially of exotic veneers which may or may not incorporate inlay.

Laceys Ply & Wood Products manufacture particleboards, MDF and plywoods as well as a range of veneered boards from imported (including 'New Age Veneers') and local leaf. They distribute through another company division, Timberwood Trading in West Brunswick. Timberwood supply standard sized board and also specialise in custom orders and matchings for the architectural, shopfitting, cabinet and furniture making industries. Sharp Plywood in Wacol, Qld also supply plywoods, veneers and particleboards to trade and smaller users. This company will undertake custom layups and offer the convenience of a comprehensive range of products to the buyer.

Veneer Merchants

From slicing to processing to wholesaling to retailing, the tree begins to branch out as there are numerous specialist suppliers of veneer leaf and board who may also supply solid timber or other products. Importers of decorative veneers include Briggs Veneers (NSW), George Fethers (Vic), Opal (SA), Eveneer (Vic) and Albart Trading (NSW).

Founded in 1960, Briggs Veneers Pty Ltd carry around 70 species, 70% of which are imported, the remainder being Australian. Volume-wise however, their sales are almost equally divided between exotic and native species. Briggs supply veneer leaf and manufacture layons for panel laying specialists and individual users. Some 30 years ago the company expanded on the work of timber industry stalwart Harold Morley Snr by pioneering the use of native hardwood veneers such as brushbox, turpentine and spotted gum. These timbers were then used only for structural as opposed to decorative purposes. Allen Broome, managing director of Briggs, has seen the demand grow for 'character-enhanced' timbers, as people accept that it is the nature of wood to contain varying types and amounts of feature.

Veneer & Timber Products in Strathpine, Qld are veneer manufacturers and merchants. Ninety per cent of their stock is sourced from abroad, including Papua New Guinea and the Solomon Islands. Slicing is carried out off-shore by contractors in Asia. Selection of logs and slicing is personally supervised by Harold Morley, company director. Veneer is sold in Australia and to Asia, Europe and the USA. In a new development, the company is about to expand its range of PNG species to include amoora, taun and others alongside PNG rosewood. Amongst the 20 or so native species supplied are Queensland blackwood, brushbox, turpentine and grey ironbark. Their range of 'pink' timbers includes myrtle, pencil cedar and nyatoh. Current demand for exotics such as ebony, Burmese teak and purpleheart has been noted by the company, which accepts large and small orders.

Buying Veneer Leaf And Board

Once sliced, veneer is either sold in flitches (bundles of leaves stacked in the order they are sliced) or crates (1,000-3,000 square metres) for further processing. Sliced through and through by the traditional vertical slicing technique the leaves will be the width of the log they come from. Generally only around 10% of the total tree is suitable for slicing. If rotary sliced, the veneer will come in the form of sheets which have been 'peeled' from the log.

The leaves must be matched or otherwise arranged, joined (stitched with a glue 'thread', spliced or edge-glued, or taped) into 'layons' which are then pressed to an appropriate substrate. The latter include MDF, particleboards and plys of varying description. Some veneers are laminated and formed or 'bent' into furniture components or 'shells'. Joining and matching is the more time-consuming side of the panel laying process. Most panels are pressed in 2400 x 1200/900 industry standard sheets. Custom layups, and pressings of smaller section veneers (for example, burls) are available, but at a price of course.

Buying Veneered Board

Board sizes are normally 2400 or 2700mm by 1200 or 900mm widths. It is important when ordering veneered board to specify in the order 'length x width x thickness'. Note though that the 'length' is referred to as 'long band' and indicates the direction (or 'length') of the grain. A 1200 x 2400 board, for example, would be crossbanded with the grain running in the direction of the shorter length.

Saving Time & Money

Ordering well ahead is generally the way to ensure supply. The rarer the veneer and the more specialised the layup, the more time will be required to source and manufacture. In some cases it may be necessary to order up to six months ahead. Buyers should understand that odd leaves must be bought in sequence from the flitch, leaving the remainder in sequence for matching in layons.

You may save money by letting your supplier know the actual lengths you require as shorts may be available. Keeping the square metreage down in this way can trim dollars off both material and freighting costs. With such a range of species, colourings and figurings there may be lower priced alternatives to consider.

Gradings

F2S or 'face two sides' refers to face quality veneer on both sides of the panel.

SSB or 'same species back' means same species both sides, however back quality can be lower.

CNB or 'customer nominated back' means you can have whatever you want, while MOB or 'manufacturer's option back' leaves the choice to the manufacturer.

G1S 'good one side' and BAMO 'back at manufacturer's option' are also widely used terms.

Opal Wood Corporation in SA is a smaller supplier who wholesale around 30 species of mainly imported veneers in flitch bundles. Albart Trading, operating since 1954, supply 65-70 'top end' species to panel layers and joineries, 15-20 of which are native timbers. They report current market preference for the ever-popular American rock maple and European beech. Lazarides Timber Agencies supply around 12-15 Australian veneer species alongside the large range of solid timbers they supply. Their veneers tend to be from the more highly figured flitches.

Cockatoo Timbers in Tasmania specialise in the sourcing and preparation of highly figured and burl flitches. Slicing is contracted out to Britton Bros. Species supplied include burl eucalypt, musk, myrtle, tiger myrtle and several other lesser-known but highly decorative timbers. This company is a specialist producer which caters for furniture and musical instrument makers and woodturners by supplying only the rarest Tasmanian species and most unusual samples.

Peter Scott-Young (East Ringwood, Victoria) supplies large and small quantities of around 80 species of veneer leaf to panel layers, furniture makers, boatbuilders and joineries. Around a quarter of those are native species but many are special in terms of figure and rarity. Another of the company's specialties is sourcing thicker (1-1.5mm) walnut, mahogany and satinwood veneers for antique furniture restorers. Imported inlays are also stocked.

Another specialist supplier is The Marquetry Craft Co which is based in Nowra North, NSW. Over 70 species are supplied by the leaf to furniture makers for inlay and restoration work. This company specialises in small orders and manufactures bandings, inlay motifs and D.I.Y pictorial marquetry kits.

George Fethers & Co commenced trade in 1917 and are now amongst the largest and longest-trading veneer merchants in Australia. Fethers stock a large range of fine veneers and specialise in supplying for architectural fitouts, such as for Victoria's Crown Casino. A current initiative includes the sourcing and custom slicing of redgum, whose dark red tones offer an alternative to jarrah.

Eveneer, who recently relocated from Adelaide to Melbourne to improve access to port facilities and to be closer to their eastern seaboard customer base, claim to carry the most comprehensive range of veneers in Australia. The company supply leaf and use state of the art technology to splice together layons for panel producers and individual users. Of interest are the 'Even' range of 'reconstructed' veneers made by Italian manufacturer Alpi, who produce a staggering estimated 260,000 square metres of veneer per day for world markets. *Alpi* veneer is made from plantation-grown poplar which is miraculously processed to resemble a large range of species and figured woods, with consistency, volume and a sustainable resource being key selling points.

Species and Trends

Popular imported species (which look as though they'll

never go out of style) include American white oak, American cherry, American beech, as well as significant amounts of Asian, African and Papua New Guinean timber species.

The fashion for lighter coloured timber veneer has continued for a number of years now. Because Australia has only the Tas oak or Vic ash eucalypt species to offer in this colour range (in significant volumes) the market has had to look to imported species such as those above to satisfy this fashion trend. Demand also continues for pink and highly figured burl and birdseye timbers.

According to Deirdre Ruddick of the DWVA the public appreciation of natural feature and the variable visual qualities of timber has risen, allowing manufacturers to make use of more of each leaf. 'If people will accept these features, timber veneers become even more environmentally friendly', she commented. Victorian ash species harvested from areas which have experienced bushfire in the last century or so in particular exhibit significant amounts of kino or gum vein, which have been successfully marketed as NFG timbers. The same species grown in Tasmania's south-west and marketed as Tasmanian oak are generally freer of this particular natural feature.

The sustainability of plantation-grown timbers is increasingly valued, as is the reliability of this uniform look and size product. Radiata, clear and hoop pine in particular are plantation staples for the timber and timber veneer industries for structural and decorative purposes.

**From Australian Forest Statistics (a publication of ABARE)*
The Decorative Wood Veneer Association has produced a Veneer Product Information Manual *which may obtained by telephoning Deirdre Ruddick, Association Secretary on (03) 9460 6555.*

Suppliers of Veneer and Veneer Products

Adams Timber Vic (03) 9761 8688, ACT (02) 6280 6467

Briggs Veneers NSW (02) 9624 5000

Britton Bros (03) 6452 2522

Charlie Henry Timbers Pty Ltd (07) 3274 4111

Cockatoo Timbers (03) 6458 1108

Djarilmari Timber Products (08) 9848 2020

Gunns Veneers Pty Ltd (03) 62 61 3317

Lazarides Timbers Agencies (07) 3851 1400

Mathews Timber Vic (03) 9874 1666, NSW (02) 9604 2077

Mayze Corp Pty Ltd (03) 9460 6555

Otto & Co Pty Ltd (08) 8362 3525

Panelveneer (Amerind Forest Products) Vic (03) 9306 1666, NSW (02) 9756 0622

Peter Scott-Young (03) 9870 8733

Processed Forest Products (02) 9645 1000

Sharp Plywood Pty Ltd (07) 3271 4511

The Huon Piner (03) 6280 1110

The Marquetry Craft Company (02) 4423 4717

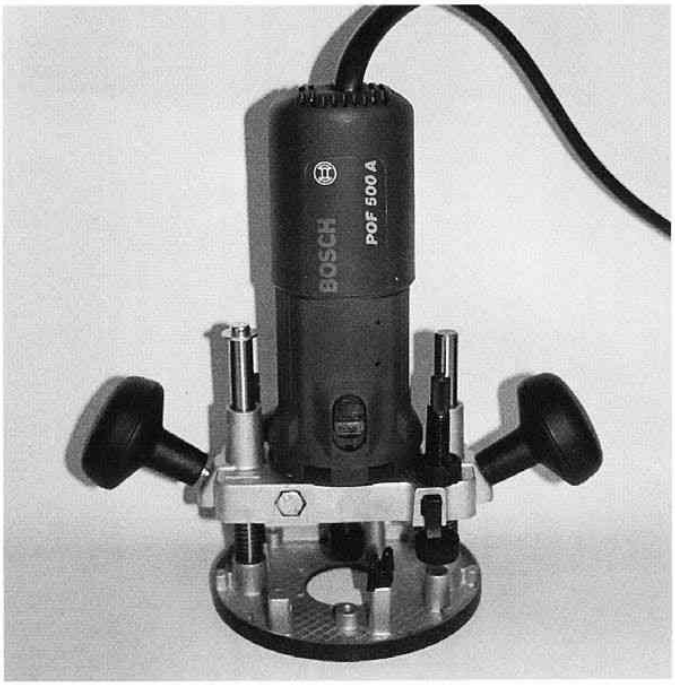
Timberwood Trading (03) 9384 1144

Trend Timbers (02) 45 77 5277

Veneer & Timber Products (07) 3881 2068

Zenith Timber Industries (07) 5546 9777

PRODUCT REVIEWS



BOSCH POF500E

I was actually in the market for a laminate trimmer to use for detail woodworking such as inlays and the like, however this mini-router caught my eye. For what I wanted it was better than a laminate trimmer. The Bosch POF500E is easy to handle and has excellent plunge controls (released by twisting one of the hand grips), fence accessories and twin hand grips. The tool comes with a swag of accessories such as 4mm router bit, sturdy fence, depth gauges and dust extractor port—in fact I still haven't gotten around to trying out all the gadgets.

To change router bits you use a spanner and a short steel rod which locks the collet. As the rod secures on four high impact plastic fingers, I dare say that there could be some wear in this area over time.

This is not an industrial duty tool. It is for light duty use only, however its lightness is one of its greatest strengths and with fair and reasonable use it should last for years. You would expect to pay around $204 for the tool and it will suit hobbyists and those wanting a small router for the odd special job. If your demands are more heavier or high frequency you will need to look elsewhere. Available from most power tool dealers.

By Adrian de Groot

3M AIRLITE HELMET

A woodturner friend of mine has been telling me for years to get a powered air-filtering helmet. Well, I finally bought one and now I can honestly say that I should have followed his advice right from the start.

There are a few of these contraptions on the market, all boasting various advantages. Which ever model you eventually choose you will undoubtedly be better off with more dust protection than you previously had.

Air is drawn into the helmet through a filter and clean air blows down into your face. The helmet has the dual advantage of offering full face and forehead protection. The Airlite is powered by a rechargeable battery which offers around 6-8 hours of continuous use—certainly ample in my case for use over a 24 hour period.

Using the Airlite has certainly made a difference to my breathing. After a session sawing MDF or sanding some sort of dusty timber I really feel much cleaner and I'm not experiencing the same sort of reactions to wood dust I used to experience previously.

The only downside for me centres on the actual balance of the helmet. The positioning of the motor and fan (as with most other products of this kind) is over the forehead—after extended use your neck can feel a bit wobbly.

I also experienced some hearing discomfort after long periods of exposure to the vibration and noise. Wearing ear muffs only seems to compound the problem. In the long term I feel I will probably upgrade to the more expensive (around $200 extra) model which mounts the motor and battery on the waist. Your usage requirements will dictate the cost effectiveness of the extra outlay.

The Airlite retails for around $360 and is available from specialist tool and woodturning equipment suppliers. Call 3M on (02) 9498 9333 for more information.

Reviewed by James Brook

The Robert Sorby Texturing and Spiralling System

This tool provides a simple way to produce a variety of effects on your turnings, either between centres or on vessels. For some of the effects, almost no skill is required, while others may take a little more practice. The tool consists of a handled solid shaft which carries a variety of wheels to produce the different effects. The tool is fitted with an indexed flat rest which can be rotated to different positions to vary the angle of cut, enabling return to a known position by selecting the same angle on the index.

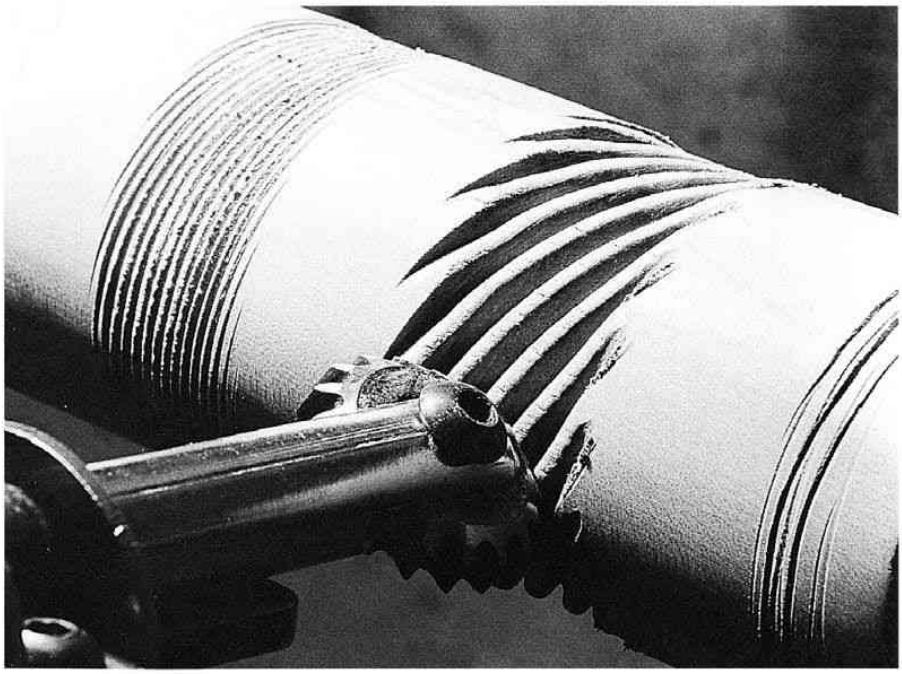
There are four cutter wheels provided with the set—a texturing cutter and three spiral cutters of different gauge. The texturing cutter is easiest to use and works in two positions. When it is held vertically to the rotating work it produces an 'orange peel' effect. This leaves pleasing dimples on the wood extended by traversing the tool left and right until the desired width of pattern is obtained. The effect is varied by pressure and speed. Even while the work is spinning it is possible to ensure that the pattern is uniform by casting a light across the work to bring it into relief. By turning the texturing cutter on its side, an equally pleasing 'striated' pattern is produced as the wheel is driven across the surface by the rotating wood.

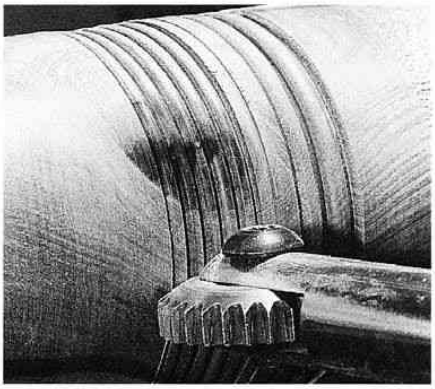
The spiralling cutters can be used to create textures in the same way as the texturing cutter, producing a more pronounced 'checkerboard' effect with their wider teeth. They can also be used to cut beads of a remarkable consistency. The tool is simply set with the wheel horizontal so that it does not rotate and the tool is raised into the spinning wood by lowering the handle. With the wheel kept in the horizontal position, it can be moved left or right to extend the beads as far as you wish. The quality of cut varies with the wood chosen. I initially tried it on sassafras and there was some pick-out, but on denser hardwoods it worked wonderfully.

Cutting a spiral is the most interesting effect and, while I found the instructions confusing at first, once I tried it they became perfectly clear and the process was straightforward. First you choose the angle of the cutterhead and tighten the flat tool rest to that angle. This will determine the 'steepness' of the spiral. Then set the lathe speed at around 500 rpm and address the cutter to the rotating wood. It will start to spin and, as it cuts deeper, a spiral will begin to appear. It is almost magical to watch a precise spiral grow as you raise the tool handle to increase the cut. When the spiral is commenced you can raise the speed to around 1000 rpm and continue. It is a simple matter of moving the tool to the left or right to extend the spiral. If I had not performed the task, I would never have believed how easy it is.

The success of these operations depends on the sharpness of the cutters and the makers recommend an interesting way of sharpening. With the cutter held against a rotating piece of wood, the spinning wheel can be honed with a diamond file. For heavier sharpening, the wheel can be sharpened on the grinder.

I thoroughly enjoyed using the tool and produced a smorgasbord of effects in no time at all. I also used the texturing cutter to produce the 'orange peel' effect on one of my hollow vessels and am very satisfied with the result. This is a tool I recommend, particularly for those who like to experiment, and I am sure I have only scratched the surface of its potential.





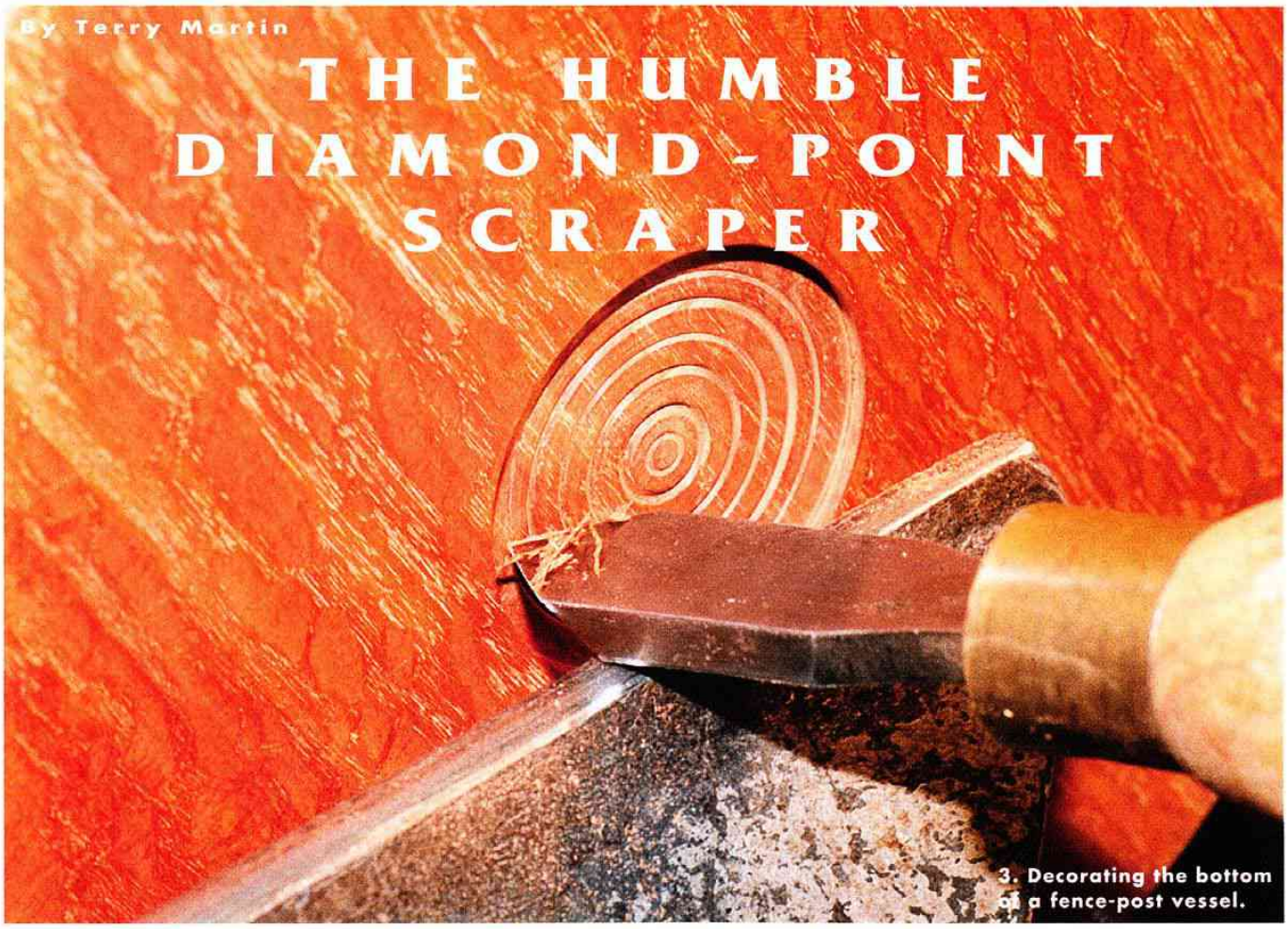
Top: cutting a spiral. Left: cutting a series of beads. Right: texturing the rim of a vessel.

Reviewed by Terry Martin, woodturner

Available from:
Mik International (08) 8333 2977
JNU (03) 9553 0899
The Woodworks Book & Tool Co (02) 9807 7244
Gregory Machinery (07) 3844 4433
MacDonnell Rd Hardware (07) 3283 1558

By Terry Martin

THE HUMBLE DIAMOND-POINT SCRAPER



3. Decorating the bottom of a fence-post vessel.

Travelling to demonstrate or participate in woodturning events is fun, but carrying a heavy bag of tools is no fun at all, particularly if you are going by air. I've managed to reduce my turning tool kit to a few basic items and one tool which I always take is a diamond-point scraper. It is, without doubt, the simplest tool I use and one of the most versatile, with uses ranging from basic roughing to delicate decoration.

Grinding scrapers can be easier if you use a flat tool rest to achieve a consistent bevel (photo 1). Simply press the tool down on the rest and a quick pass across the wheel will suffice. The angle of the bevel on scrapers, as with other tools, is a matter for personal choice. In the case of the diamond-point scraper it can depend on the hardness of the wood you are using and how much clearance you prefer under the cutting edge. I usually grind the bevel to around 40°, but it's not necessary to be precise. Far more important is the angle of the 'vee' which forms the diamond point. I always grind this to less than 90°, around 80-85°, although a more acute angle is acceptable for fine work. The reason for this angle will be clear in the examples below.

I often use the diamond-point scraper to shape the spigot on the bottom of bowls or vessels for remounting in a chuck. Because I prefer a small foot on vessels, as a general guideline I make the foot just slightly larger than the spigot, which is predetermined by the size of the chuck jaws. I cut two steps in the spigot—one for holding in the chuck and the other left as a space for parting off the vessel after it is turned (photo 2). It is a time-saving method which eliminates the need to re-chuck for removal of the spigot. Because most chucks have slightly dovetailed jaws, a tapered spigot will give a better hold.

Placing the tool rest as close to the work as possible, carefully address the scraper to the spigot, taking light cuts until the desired taper is achieved. The shoulder of the second step needs to be at 90° to the axis of work for the chuck jaws to seat against. This is where the angle of the scraper vee is important. If it is not less than 90°, it is not possible to cut a tapered spigot. With most woods it is a quick and efficient way to cut a precise spigot. It is important to note that I am not saying it is the only way—a gouge ground to a long point will cut beautifully and with some cantankerous woods that is the only way to achieve a neat cut. But we should remember that the spigot only needs to be cut well enough to run true. After all, it is going to be cut off later.

If you are going to use the chuck in the expansion mode, which generally works well for platters where the blank is not deep enough to sacrifice the wood needed for a spigot, the diamond-point scraper is again very useful. After the recess is cut, the rim can be slightly undercut with great precision using the diamond point scraper to accept the dovetailed jaws. Again, this cut can be done in other ways, but with most woods it can be performed more easily and precisely with the scraper.

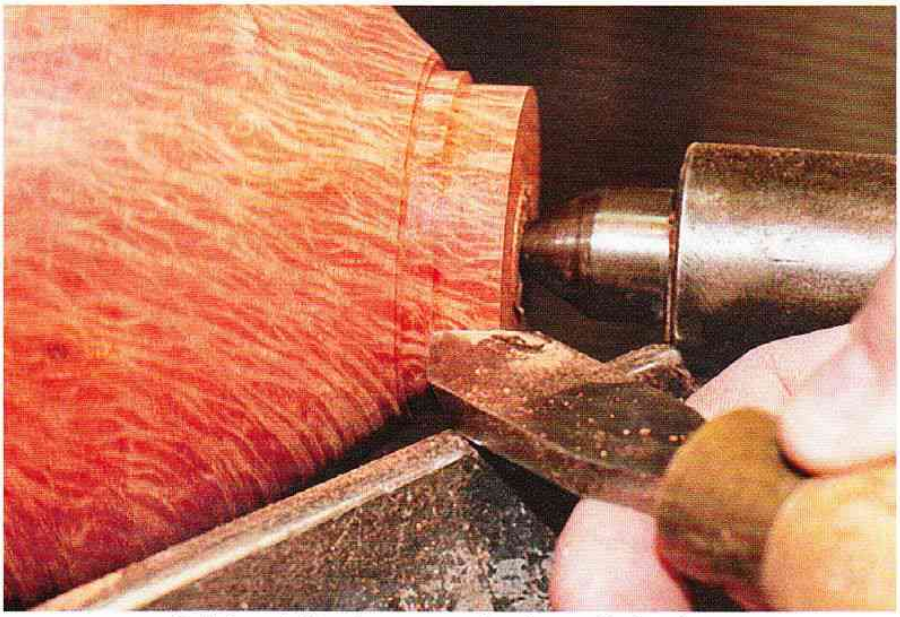
Expansion recesses can be an efficient way of holding a piece, but when they are finished they look like what they are—a hole in the bottom! It is possible to deceive the eye to a certain extent by decorating the recess with concentric grooves, both inside and outside the recess. This is where the diamond-point scraper is at its best. The most controlled way to make this cut is to hold the scraper on the tool rest with the tool pointing down so the tip is very close to the wood, then gently raise the handle to commence the cut (photo 3). This method produces a more controlled cut than just pushing the tool into the wood and it can be performed with remarkable precision and safety.

By positioning a light across the rings to throw them into relief, it is possible to space them quite precisely by eye. Even if they are not exactly spaced, the eye usually compensates and convinces the brain otherwise. Here the old adage applies: 'If it looks right, it must be right' (I don't really know if it is an old adage, but I've said it so often that it feels like one).

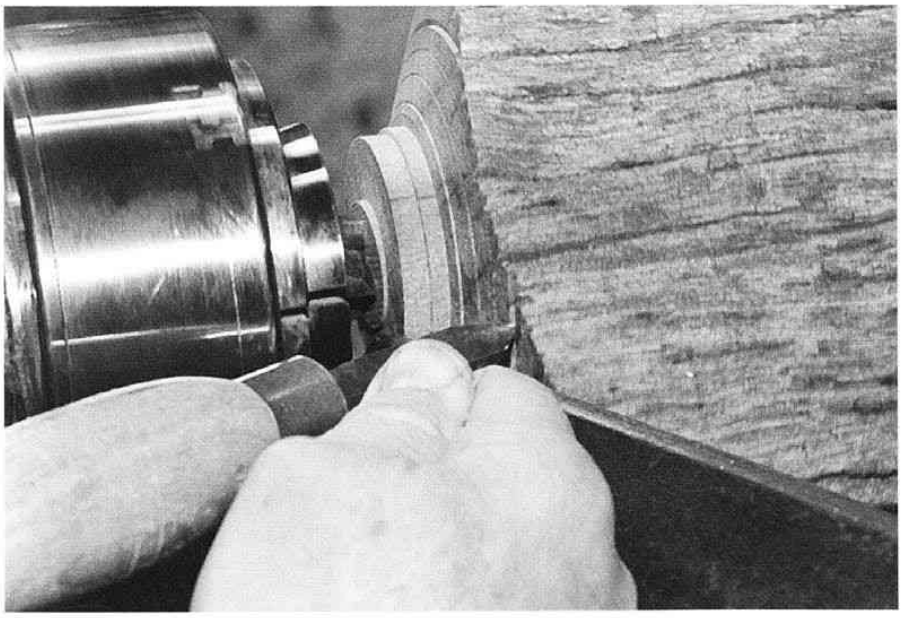
With most scrapers it is important not to push the tool into the wood too hard because a dig-in is very easy to provoke. But the diamond-point scraper is very forgiving as the area of tool in contact with the wood is tiny, particularly at the start of the cut when only the very point is entering. This makes it extremely easy to control. Again, a vee with an acute angle is easier to control here as it is cutting less wood than an obtuse, or wider grind. The narrower the tip, the easier it is to cut a fine groove.

The same method can be used to decorate the rims of platters and bowls. While it is easy to overdo this kind of decoration, it is remarkable how a few simple grooves will give a lift to an otherwise bland rim (photo 4). They catch the light and add a three-dimensional quality to a flat surface. Grooves can also be functional, improving the grip of the thumbs on a platter rim. They also serve to define areas which may need that extra demarcation. This can be best seen in natural-edged platters or bowls where voids disrupt the rim.

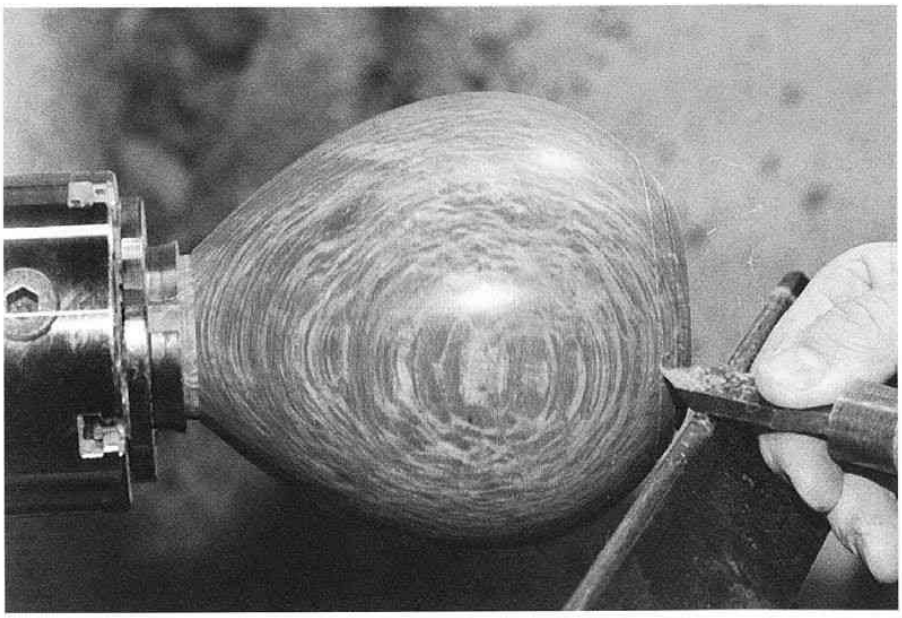
1. Grinding the diamond-point scraper on the flat tool rest.



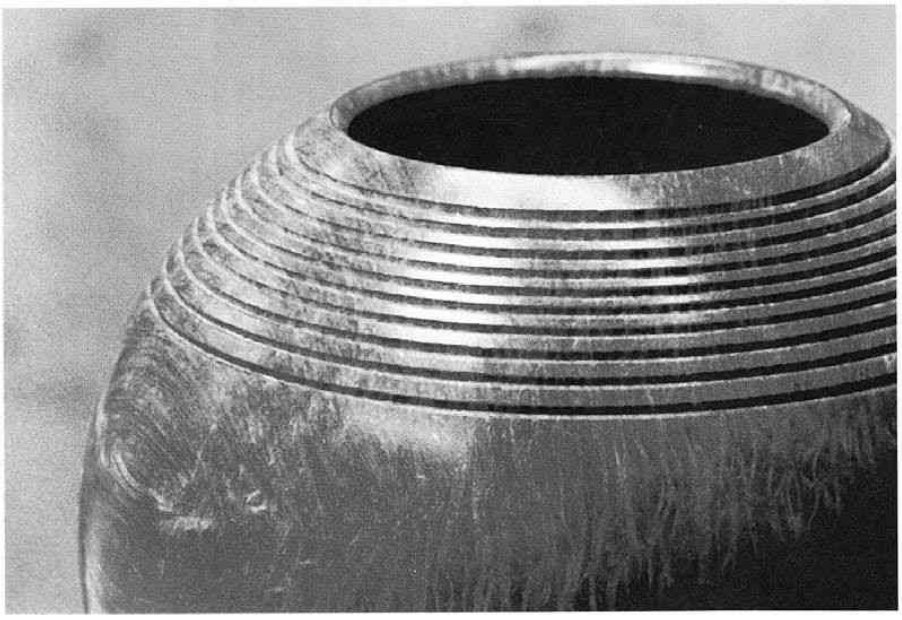
2. (above) Starting to cut the dovetailed spigot.
4: (below) Cutting grooves on a platter rim.



5. Decorating the bottom of a fence-post vessel.



6. (above) Decorating the rim of a hollow vessel. 7. (below) The finished vessel.



A few well-positioned grooves which cross these voids seem to leap across the spaces and visually bind the rim.

This can also be seen in photo 5, showing grooves being cut in the base of a vessel made from an old fence post. The two-step spigot has been cut with reference to the chuck jaws, which hold the spur drive. The grooves span the gaps in the irregular base, as described above. When the spigot is parted off I only have to sand the foot, leaving the pre-turned grooves to highlight and surround the base.

Photo 6 shows the finishing of the outside of the vessel started in photo 2. Here the two-step spigot can be clearly seen. It enables me to sand right up to the base edge and is ready for parting off when the piece is finished. The vessel shown is made from West Australian lace she-oak, which is one of the best scraping timbers available. It is possible to raise cascading ribbons of fine scrapings with this timber and give yourself a wonderful buzz! With finely figured wood a simple form works usually works best, but in this case I decided to decorate the rim with grooves to contrast with the smooth walls (photo 7).

Usually I prefer simply sanding the base of a vessel after parting it off, but if you do like decorative turning on the bottom, the diamond-point scraper can be very useful. After this vessel was parted off, I reversed it on the chuck. It is important to carefully control the force used in mounting a vessel this way, as it is easy to break the rim with over-expansion. It may be necessary to place a piece of cloth inside the rim to prevent bruising of the wood. With the tailstock in place to support the work, I dressed up the base with a gouge, then removed the tailstock and sanded to finish. At this stage you don't want to try clever turning which may result in a catch and destroy hours of work. The diamond-point scraper is so stable that lightly cutting a few grooves as a final flourish is simplicity itself. If you have trouble cutting grooves with consistent spacing, don't worry—just cut two grooves and they are guaranteed to be evenly spaced!

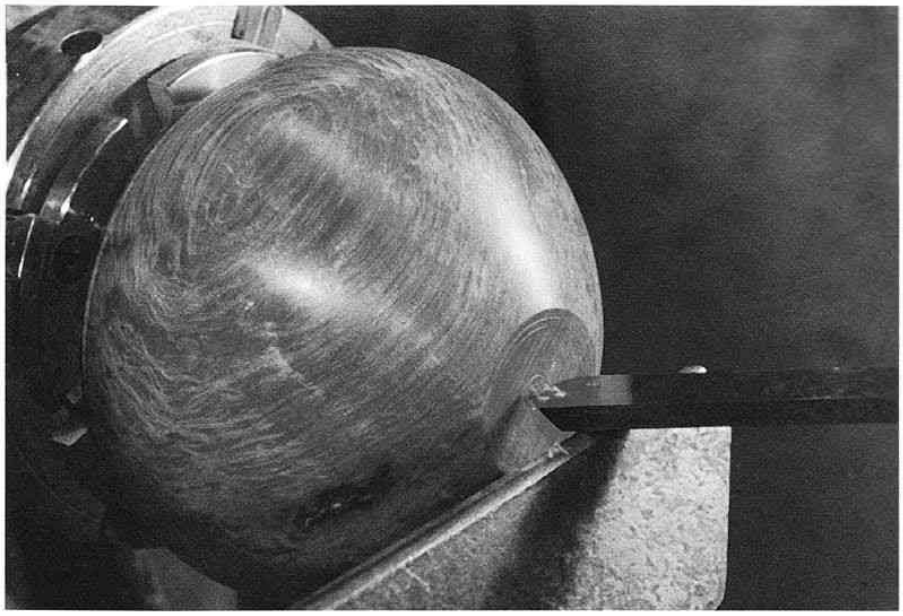
If you don't have a diamond-point scraper, consider grinding an old tool

for the purpose. After all, a diamond-point scraper is simply a piece of tool steel ground to a point, so there is no need to go out and buy a specifically ground tool. Almost any old turning tool can be ground to suit. One of the best ways is to grind the stub of a used-up gouge. We all know there is a lot of metal left over when the flute of a gouge is all ground away. By adapting it as a scraper you save a lot of money—with the added advantage of it already having a handle.

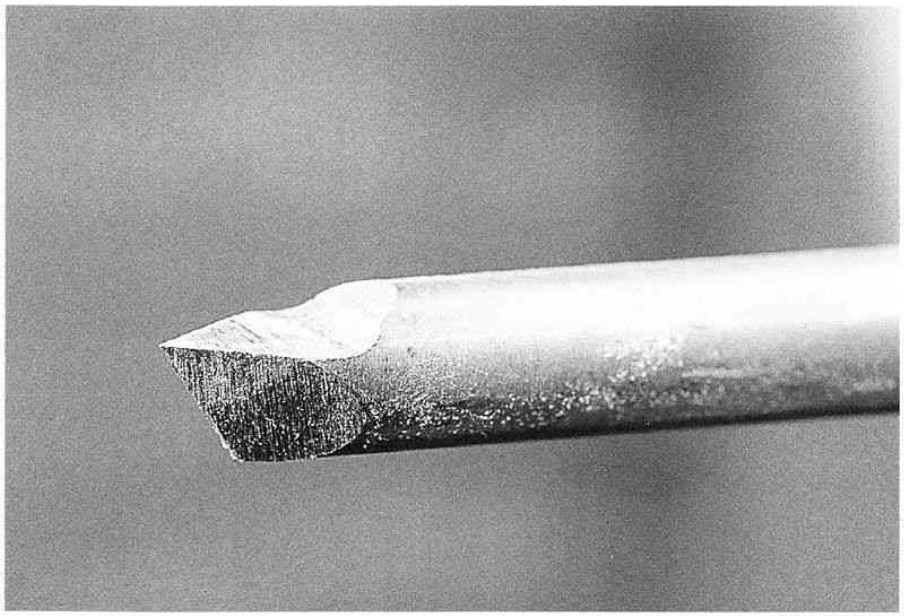
Keeping a water container handy to cool the tool during regrinding, simply grind a flat on one side to form the top of the tool and then grind the two bevels (photo 9). I have several scrapers like this ground for specific purposes and they perform beautifully. It is also possible to grind such left-over tools into skews, parting tools, or whatever else you can think up.

Of course the use of such tools is not limited to vessels. With the right timber you can also achieve rapid and precise cuts between centres. Photo 10 shows the recycled tool (being used to cut grooves in a cylinder mounted between centres) is useful for either marking-out, or decorating.

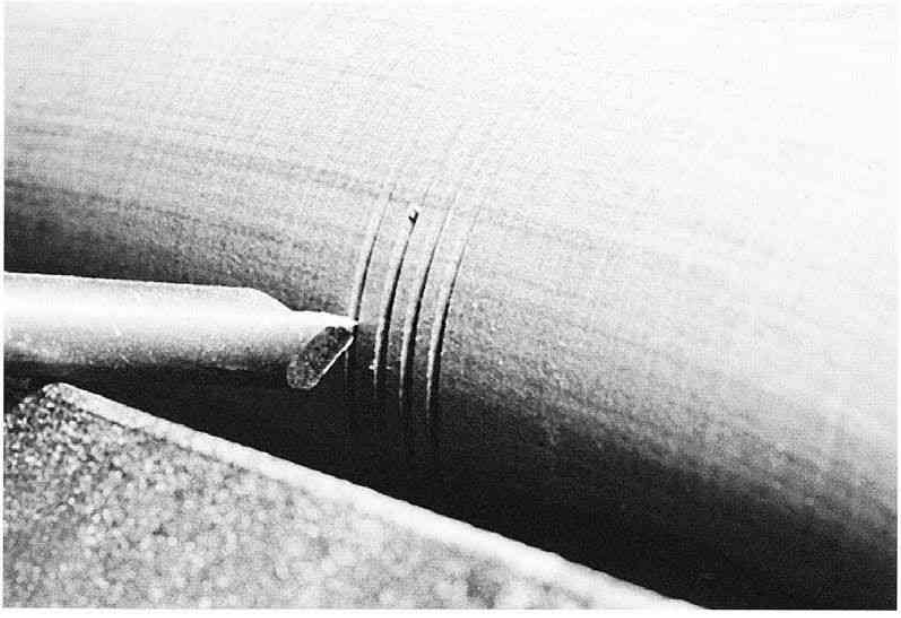
I can give a good example to illustrate why I never leave this tool at home. Some years ago I was demonstrating in France and had been asked to make a typically Australian piece. I rashly offered to turn a piece of mallee root which I had carried with me from home. When we arrived at the venue, I found the lathe was not fastened down and the off-centre wood caused it to bounce around the workshop floor. By the time I had roughed out the blank and the lathe was running smoothly, the limited minutes available had almost gone, so I pulled out my trusty diamond-point scraper. Pretending I had always intended to do so, I quickly cut a series of close grooves all around the outside of the vessel. Like many close-grained timbers, mallee root can be difficult to cut, but scrapes very well. In no time at all I had a finely finished vessel, the French were pleased and my reputation was intact. That was when I vowed never to leave my trusty diamond-point scraper at home.



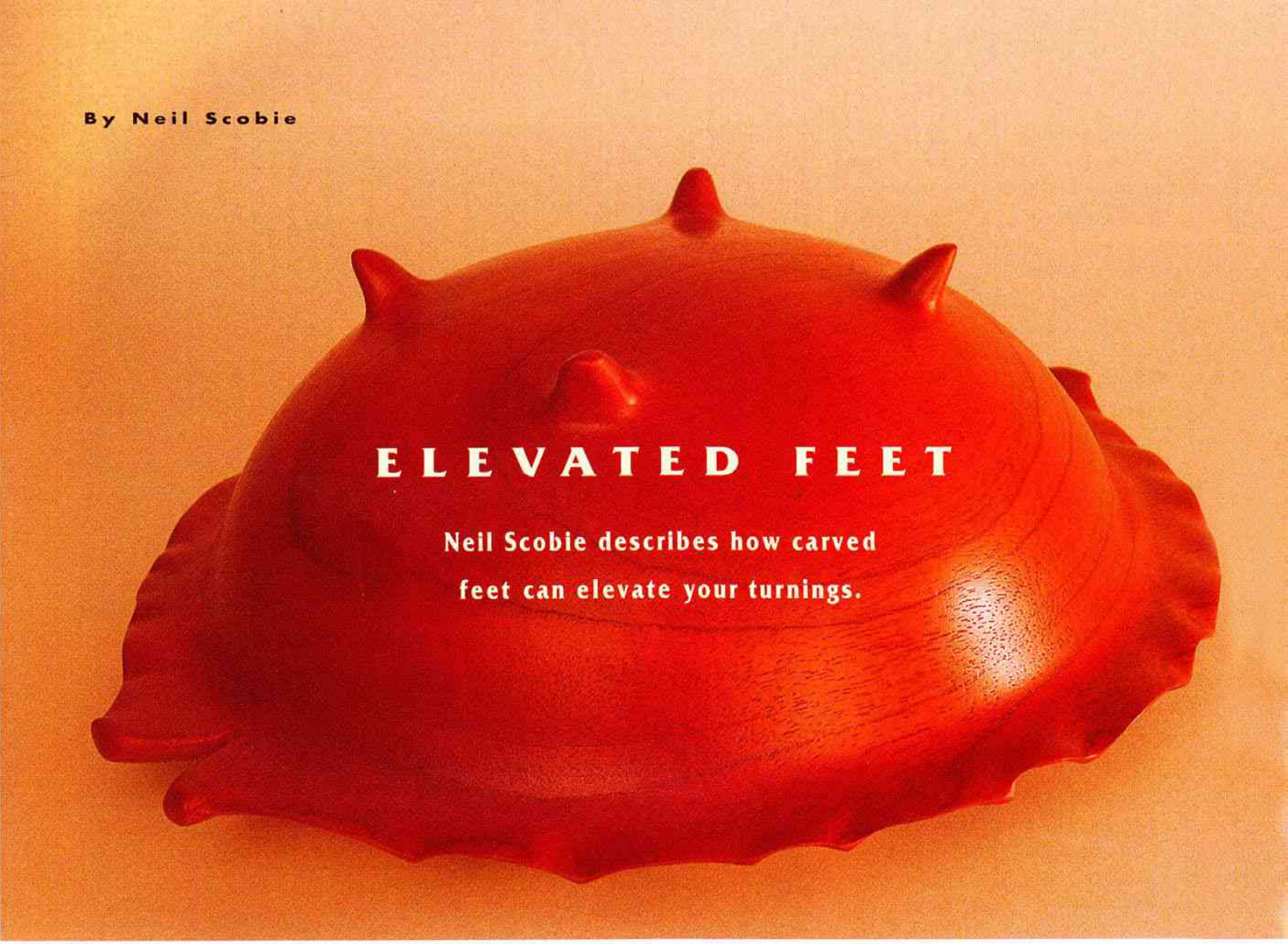
8. Cutting fine grooves in the foot.



9. A re-ground gouge stub. 10 (below) Grooving a cylinder between centres.



By Neil Scobie



ELEVATED FEET

Neil Scobie describes how carved feet can elevate your turnings.

One way to make your turned bowls a little more distinctive is to add legs or carved feet. I first saw legs on a bowl in 1988 when Canadian Michael Hosaluk was in Australia demonstrating. Several of his bowls featured legs which were shaped like a boar's tusk. Since then I have seen many bowls with legs or feet, some well executed, others leaving a lot to be desired in workmanship. If you wish to add this technique to your repertoire you should aim to make surfaces meet accurately and avoid visible saw or chisel cuts. There is no rule which dictates the number of feet you should have, however the advantage of three feet is that they will always sit level.

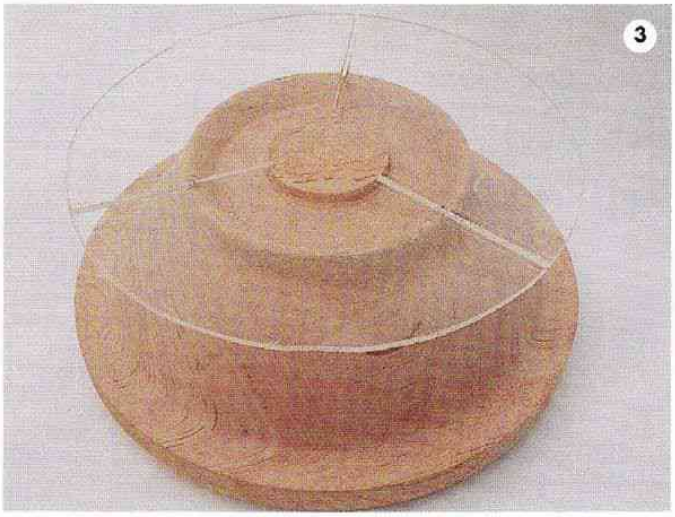
Photo 1 shows the underside of a roughed out cedar bowl blank. The blank was about 280mm in diameter and 90mm high, and had been drying for about six months. To remount the blank on the lathe I held the central spigot on the foot in a chuck, then trimmed the top and inside surface of the bowl, but not to the final shape. A recess on the inside of the bowl was then turned to accept the chuck jaws in their expansion mode.

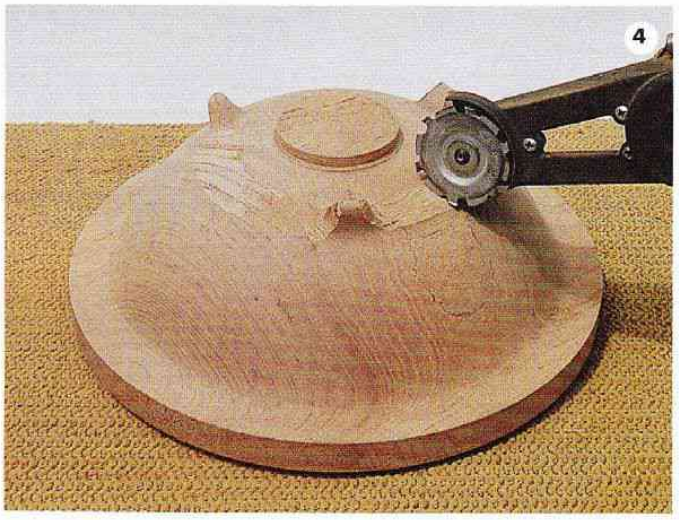
With the blank firmly held in this recess the outside surface may next be worked. Turn the shape you desire, allowing a ring where the feet will be. It is imperative that the surface above the foot ring and the inner surface are in the same curve. Imagine how the bowl would look without the foot ring—there should be an even curve. A profile gauge can be used to check that the surfaces are even (photo 2). Position the feet so that when the spigot is removed, the centre of the base will not touch the surface that the feet will rest on.

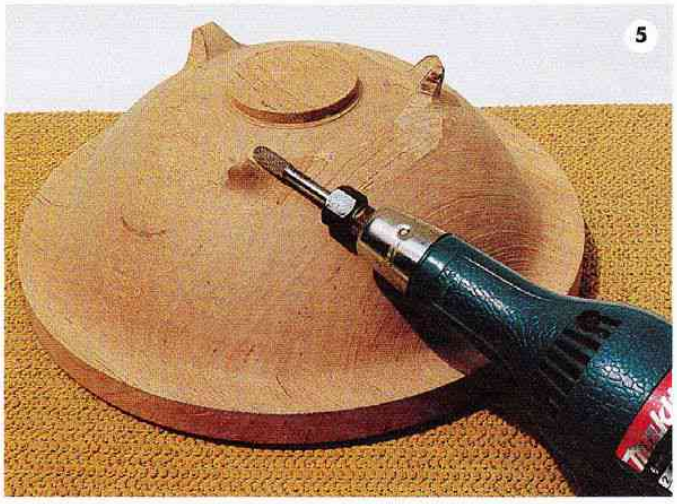
It is important to trim the foot to accurately to take the chuck jaws. Turn a small groove to mark the centre of the base spigot—you will need this later. Next sand the outside of the bowl and around the foot ring. It is debateable whether the feet should be carved before the inside of the bowl is turned or vice versa. I prefer to shape the feet first, as the blank can be secured firmly in the chuck. I then take the bowl off the lathe and hold it on a purpose-built jig which allows me to position the bowl at almost any angle for carving.

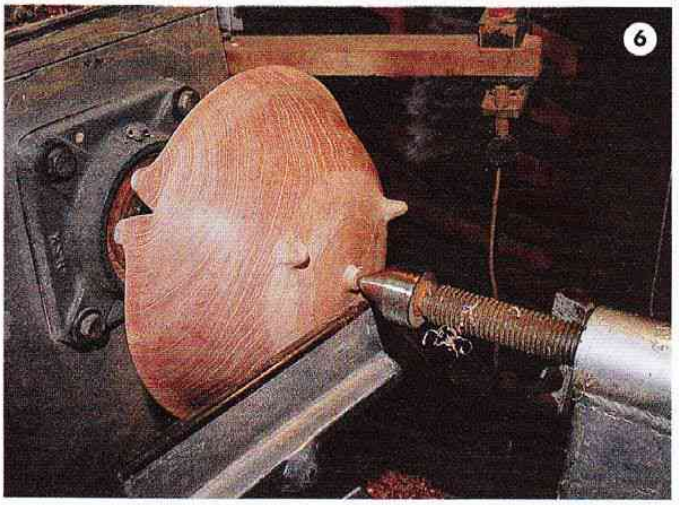
Photo 3 shows a template that I use for marking out three even feet. There are many ways of removing the waste between the feet. These include using a coping saw, chiselling with a carving gouge or using a power carver such as the *Arbortech Minicarver* shown in photo 4. I prefer the last method because it is very quick, although I suggest you practise on a scrap piece of wood to build up your confidence.

I trim around the feet with a die-grinder (photo 5). I sand the shaped surfaces with a soft sanding pad in an electric drill. The softer the foam the better it will hug the curve, but these fall apart more quickly than the usual harder sanding pads. Having shaped and sanded









the feet it is time to turn the bowl over, hold the spigot in the chuck and turn the inside. A set of double-ended callipers will allow you to check the wall thickness, particularly around the feet section and where the spigot is to be trimmed off.

A wall thickness of 6-7mm would be fine for a medium size bowl. If you don't have double-ended callipers use your fingers, they will give you a good guide. Once you are happy with the shape of the inner rim this can then be sanded. Any shaping or carving of the rim can be carried out at this stage.

The bowl is next reversed on the lathe so that the spigot can be trimmed (photo 6), leaving about 15mm which can easily be removed by hand and then sanded, again with the soft sanding pad. I usually sand to 400 grit with the drill sander around and between the feet and the centre of the base. Figure 3 also shows the set up for trimming the spigot.

If you wish to add separately turned, carved or otherwise shaped legs you can follow the same procedure mentioned above, but instead of carving the whole leg you can carve a small stub in which you can drill an 8-10mm diameter hole about 10mm deep. You can now turn, or turn and carve a leg with a round tenon on it which will fit into the hole.

By Philip Ashley

THE RADIAL REVOLUTION

The recent joint winner of the Tasmanian Wood Productivity Award is a radical new sawing technology which promises greater recovery of smaller plantation-grown hardwoods.

A radical new 'radial' method of converting logs into sawn timber is set to maximise the return from small diameter plantation logs. Inventor Andrew Knorr, claims up to an amazing 70% recovery is possible. Traditional hardwood sawing methods using circular saws and band resaws recover between 30-50% of fifty year old regrowth eucalypts, and with young plantation trees, this figure can be significantly less. Square slabs are cut from the log, resulting in some waste from the centre of the log (the pith) and the outer sapwood.

Radial Sawing

A log is mounted between two centres, as on a lathe. The saw then moves along the length of the log, cutting to within 25mm of the centre. The log is repeatedly turned and sawn to produce wedges, as shown in the main image above. The wedges can later be resawn to produce perfect backsawn boards. Sections of up to 250mm wide are possible, from logs of up to 700mm in diameter. The longest log that can currently be sawn is just over seven metres.

Small hardwoods are renowned for their natural growth stresses, which can be seen in the end splitting of the logs. Radial sawing releases these stresses evenly into each wedge.

Andrew's fully operational mill in Yarram, Victoria, employs six people and produces sawn timber and finished products. Andrew said that the impetus for the new technology came from local environmental groups, who wanted foresters to plant hardwood instead of softwood plantations. Hardwood trees traditionally take a minimum of fifty years before they can be felled for timber products. This is much too long a period for farm forestry, so Andrew developed the technique as a way of converting smaller 15-30 year old trees into a commercial product.

Products

Species such as yellow stringybark and silvertop ash are currently manufactured into flooring and decking, weatherboards, cladding, interior joinery components and furniture items. The Eltham library in Victoria specified that no rainforest timber was to be used in its construction, and radially sawn plantation hardwoods were selected. Radial sawn timber has also been used at Latrobe University and for the Aboriginal cultural centre in Uluru, where very harsh conditions are set to test any structure.

Above: Lining boards and furniture made from radially sawn timber.

Maximum recovery is achieved when the boards are used as they are sawn, with bevelled edges. Best log recovery rates are obtained from products such as decking and weatherboards. When the pieces are resawn into square lumber for traditional products, the recovery drops closer to that of conventional sawing methods.

Benefits

The most significant benefit is to the environment. While hardwood resources

Silvertop ash set in the "dog" used to hold the log

Sawblade ready to be lowered for the first cut.

in Australia are now at a sustainable level, reductions in forest allocations for logging as well as export potential, will create the need for an alternative future resource. Using the radial sawing technique to process small logs, farm forestry would seem to be a viable source of income. Research by the CSIRO into species suitable for wood products, which also have environmental benefits, have identified seven species which are currently being investigated by CSIRO and Holmesglen TAFE. This research is supported by the Forest and Wood Products Research and Development Corporation.

Darren Gladman, Greenpeace timber campaigner, has welcomed the new process and said: 'It has the potential to make the (hardwood plantation) industry viable.' Current hardwood plantations are used mainly for pulp and woodchips. This sawing method has the potential to supplement radiata pine plantations as a resource for timber products, as the growth rate of certain hardwood trees is the same as or better than pine. Many small logs currently used as woodchips will be able to be used for furniture, substantially increasing the cost benefit of the resource.

It has taken ten years to develop this radical new sawing method, and even if the recovery of sawn product were only marginal, the technology is worth integration into the sawmilling industry which up till now has been rather conservative. Overseas, the Swedish SCA company is planning a Skr55million 'star cutting' sawmill based on a similar principle. This mill was developed by the Royal College of Technology in Stockholm, and is set to produce 14,000 cubic metres of pine per year. Such is the interest in this high recovery method of milling, that Andrew Knorr is looking to export the new technology within the next few years. Dwindling resources will no doubt force countries with high demands on their natural timber resource to look at alternative sawing methods, such as this new award winning Australian technology. □

INTERNATIONAL CONTEMPORARY FURNITURE FAIR NEW YORK '98

Tony Kenway, Churchill Fellow, recently returned from a whirlwind tour of the world's top design spots and events. Having taken in the best of Milan, Finland and Japan, he found New York worth visiting for several reasons.

John Kelly Furniture, American Cherry

New York, New York, as ol' blue eyes would say, is a memorable place for sure. My arrival there was marked by his death and in true American style, the lights of the Empire State Building were turned to blue, in his honour.

The International Contemporary Furniture Fair, or the ICFF, is held over four days in May each year at the Jacob Javits centre on Manhattan Island, New York. An important event on the international furniture calendar, it covers an area of 60,000 sq ft with more than 400 designers, manufacturers and representatives of contemporary furniture, lighting, floor coverings, wall coverings, textiles and decorative accessories for residential home, office and contract.

The fair is open to trade with public access on the final day. Many designers, architects and retailers can be seen from the US and beyond sourcing new items and ideas for their clients. International magazines like *Metropolis*, *Interni* and *Wallpaper* were *en force* as major sponsors, as well as 300 representatives from the international media.

I was particularly interested in fine crafted timber furniture. This, however, was poorly represented apart from a few local makers from New York and a stand-out semi-functional piece by Garreth Jones from the UK. His work was part of the government assisted British contingent who came as a group but exhibited individually (something for Aussies to consider).

The big name designer/makers from the US were not to be seen, but mainstream production furniture designers were well represented, such as Dakoda Jackson with his 'Dark Wenge' and the 'full gloss' urethane range, thoughtfully designed and made using highly figured mahogany and notably some Australian lacewood veneer. In the US he commands high prices ($10,000-$20,000 US for a dining table). His work has strong demand selling at exclusive outlets across the country. One ageless designer, Vladimir Kagan, was

Kombinat of Toronto, Canada. Engraved metal furniture

on the stand charming passers by. The spritely 60 plus-year-old has been designing furniture since the 50s and is now experiencing somewhat of a revival. His lounges and chairs are well made, functional and comfortable, and basically unchanged since the originals, and could easily be mistaken for more recent Italian designers. Kagan's work has timeless appeal, in

'J1' cabinet by Cherrybrook

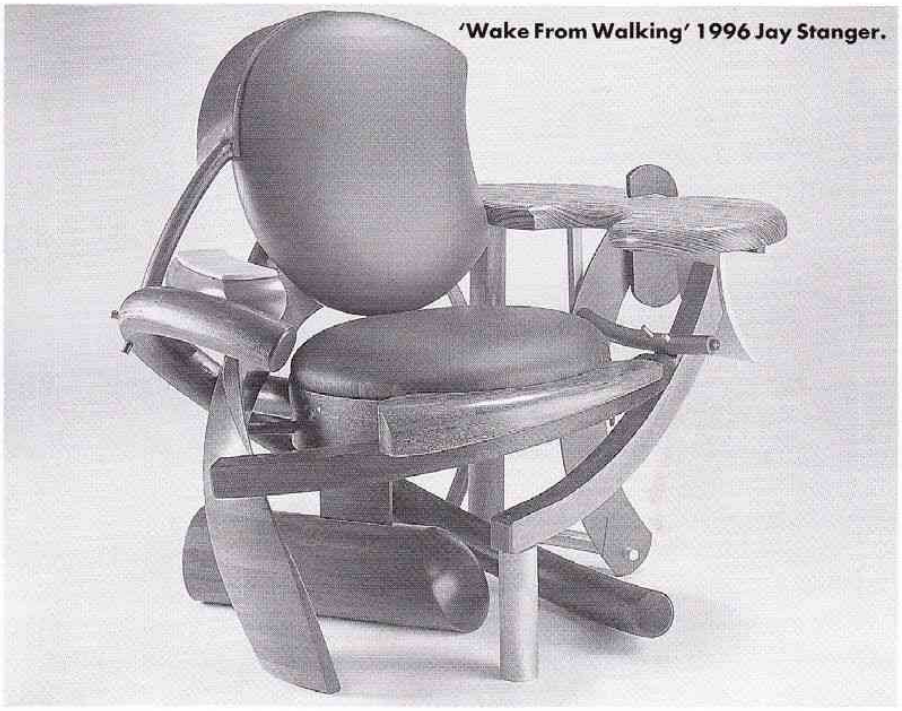
Michael Jansen Studio. Table, coloured glass, made in India

contrast to the more fashionable pieces that can be seen in Milan and New York with questionable artistic merit and little practical application.

On the more crafty side, there was some well-made production furniture on display, such as a range from Charles Shackleton who has a medium-sized factory in Vermont employing 20 or so craftspeople. Each piece, made from solid cherry, black walnut or American oak, is made exclusively by one craftsperson and carries with it the evidence of hand-on-wood, such as gouge or hand tool marks left behind on purpose for effect. As is common in the US, this type of solid wood furniture is simply oil finished. Charles believes these details have helped sales tremendously, setting it apart from mass-produced lacquered furniture seen elsewhere.

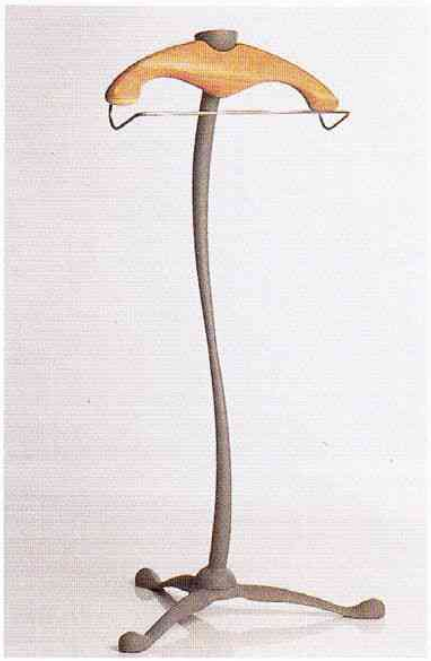
A slightly different but seemingly successful approach by John Kelly is to ship American cherry from Indonesia to be made into his simple, but quite elegant designs and distributed over the globe. He has five outlets in the US and is now negotiating deals in Australia. John believes that, in the US, cherry is well-known and accepted, and he doubts being able to market Indonesian species as well.

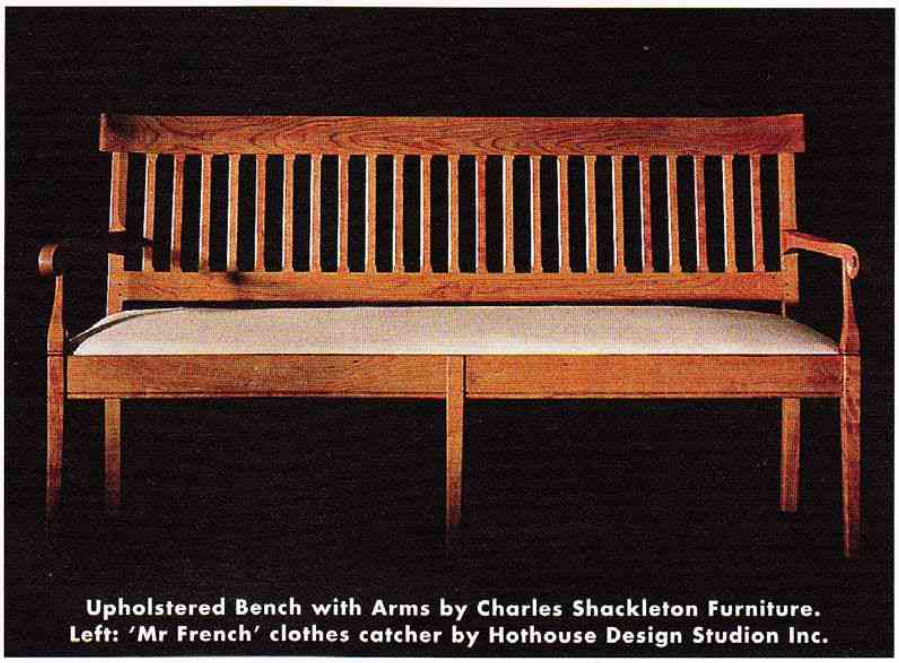
I was impressed with the amount of creative one-off designs to be seen (in materials other than wood). Many designers were 'testing the water', making the show visually stimulat-



'Wake From Walking' 1996 Jay Stanger.

'You're Innocent When You Dream 1997', Wendell Castle





Upholstered Bench with Arms by Charles Shackleton Furniture. Left: 'Mr French' clothes catcher by Hothouse Design Studion Inc.

ing. There were innovative marble slab desks by Gregory Muller, engraved metal furniture by Kombinat of Canada, and some rather sexy asymetrically-designed lounges in vibrant colours by Luminesce.

As you stroll around you have a chance to see emerging design at work. Several east coast design schools had displays showing examples of students' work. Students were briefed on projects such as the use of green or recyclable materials, stackable flat pack design, or, as was the case with the students from the University of the Arts in Philadelphia, a very interactive display that was entertaining and colourful, winning them the prize for best school display.

Each year the organisers invite a few high profile guests, and this year was no exception, with the legendary Philippe Starck giving a talk on the importance of design into the next millennium. He spoke of 'morality in design', and focused on ecologically sustainable use of material, environmental considerations and vegetarianism. He was rather entertaining and gave the impression that he doesn't take himself too seriously.

Another keynote speaker was Sir Terence Conran, a 60-year-old English designer/manufacturer who has a chain of furniture outlets across the globe. Conran spoke of the need to revitalise the designer/maker status in the current climate, saying that many designers are now losing touch with their materials and becoming more clinical in their approach. He emphasised the importance of touch, sound and smell in marketing—a point that was keenly debated by the panel, giving examples of companies selling very successfully on the internet alone.

The fair also hosts some other events in town over the four days, notably the opening night party in Chelsea, the lofty new designer area in New York, providing a great chance to meet the press and designers on an informal level. Many business deals are worked out at this event over a wine or beer. Also in town on the famous Madison Avenue is the ICFF windows display, showing a selection of works from the show, and 'taking it to the streets'!

A little further downtown in Soho, many designers extend their connections 'off site' with an evening of wine and chat in their prominent New York spaces. Whilst in New York, if you are at all interested in finely crafted one-off furniture it's well worth a visit to some of the best galleries in the country. Leo Kaplan Modern on Madison Avenue has some whimsical colourful pieces by Wendle Castle and others. In Chelsea there is the John Elder Gallery, representing many sculptors and furniture makers. Textural surfaces and colour seems to be the rage at the moment in New York, and these pieces are selling quickly.

For the purist craftsman, a visit to Pritam and Eames Gallery on Long Island is a must, representing some of the finest work from across the US. Kristina Madsen cabinets with carved door panels, Judy McKee's bronzed animal figures with glass top coffee tables selling as limited editions for US$25,000 and many other exquisite pieces can be seen.

For those considering breaking into the US market, the ICFF is probably the most internationally recognised show of its kind in the US, mainly due to the fact that it is in New York. It's a show more about contact and networking than sales. In terms of size it's similar to Australia's Designex, with many more contemporary furniture exhibitors. Compared to Milan, the ICFF is tiny, but has a more intimate feel and a friendly interactive atmosphere.

Australia was not one of the 15 countries represented. With our currency in favour of export at the moment, it may be worth considering this show as a way of entering the American market and beyond, particularly for quality furniture.

Other furniture shows on the east coast include the Philadelphia Furniture Show, High Point and Chicago Design show to name a few. They are possibly as good or better in terms of sales but not as far reaching as the ICFF.

WOOD DIARY 1998

8 August-6 September
Living With Wood 1998
Metro! Craft Centre, North Melbourne
(03) 9497 1916

6 Sept-4 October
Sturt Annual Exhibition
Sturt Gallery, Mittagong
(02) 4860 2083

11-13 September
2nd Annual Conference for Collectors of Contemporary Wooden Vessels, Sculpture, Furniture
San Francisco, USA
Tel/fax 612 707-8876

19 September-18 October
Meet the Makers
Floriade, Commonwealth Park, Canberra
Tel (02) 6285 1186 Fax (02) 6285 1796

19 September-4 October
'The Devil In Waite'
Woodgroup SA members' exhibition
(08) 8383 6385

19-27 September
Woodcraft Guild of ACT
'Treasures in Timber'
Aust. National Botanic Gardens, Acton ACT
(02) 6281 6548 Email: len@effect.net.au

21-26 September
Designing In Wood Exhibition
Coles School of Woodcraft students
Darebin Arts Centre, Preston
(03) 9486 3766

24 September-24 October
Koonung Woodturners Guild Exhibition and Sale
The Timber Trip Gallery, Brunswick
David Tonkin (03) 9850 2231

29 September-11 October
'Too Good To Burn'
Turned bowls and platters by John Stewart
Metro! Craft Centre, North Melbourne
(03) 5352 1999

3-4 October
Woodturn 98 Woodturning Seminar
Meadowbank TAFE
Bookings Doug Midgley (02) 4733 6814

3 October-January '99
18th National Craft Acquisition Award
Museum & Art Gallery NT
(08) 8999 8282

8-11 October
SOFA Chicago
Info Craft Australia (02) 92111445

9-11 October
Timber & Woodworking Show
Melbourne Exhibition Centre
Riddells: (02) 9712 5623
Fax (02) 9712 5628

10-11 October
1998 Classic & Wooden Boat Festival
National Maritime Museum, Darling Harbour
(02) 9552 7777

14-18 October
The Australian Craft Show
RNA Showground, Brisbane
Tel: (02) 9876 3905

16-29 October
International Woodcollectors Society 1998 Annual Meeting
Aldinga Beach, South Australia
Tel: (08) 8556 3446,
Email munz@adelaide.on.net

23 October-29 November
Objects of Ideas
Orange Regional Gallery
CCQ (07) 3229 2661

23 October-6 December
Tasmanian Wood Design Collection
Customs House Gallery, Circular Quay, Sydney
(03) 6327 3394, (03) 6334 6558

23 October-7 December
Recent Works by Marcus Tatton
Centre For Contemporary Craft
Circular Quay, Sydney
(03) 6239 6505

29 October-1 November
Meet the Makers
Hordern Pavilion, Old Sydney Showground
Tel (02) 6285 1186
Fax (02) 6285 1796

30 October-1 November
Woodcraftsmens Guild Qld Inc
1st Annual Woodcraft Competition
Mount Coot-tha Auditorium
Info: PO Box 40, Salisbury, Qld 4107

31 October
Wood And All That Jazz
4th Annual Wood Show
Wangaratta Woodworkers Inc
Les Norman (03) 5721 5416

2-7 November
Northern Rivers Woodcraft Exhibition
Grafton Jacaranda Festival
The Barn Grafton Showground, Grafton
Lester Sillett (02) 6624 2105

4-8 November
The Australian Craft Show
National Convention Centre, Canberra
Tel: (02) 9876 3905

7-8 November
Greening Australian Native Timber and Furniture Expo, Albury
Mark Logan, (03) 5881 3429

13-15 November
Meet the Makers
Royal Exhibition Building, Melbourne
Tel (02) 6285 1186 Fax (02) 6285 1796

14-15 November
Eltham & District Woodworkers Annual Exhibition
Eltham Community & Reception Centre
(03) 9436 1907

24-29 November
The Australian Craft Show
Homebush, Sydney
Tel: (02) 9876 3905

24-29 November
Craft Makers Fair
Exhibition Building Sydney Showground & Exhibition Complex
Tel (02) 9876 3905
Fax (02) 9876 4210

27-29 November
Meet the Makers
Adelaide Convention Centre, North Terrace
Tel (02) 6285 1186 Fax (02) 6285 1796

28-29 November
Woodturners Society Qld Inc Exhibition
Mt Coot-tha Gardens Auditorium
John Carter (07) 3397 8156

7-27 December
VWA 15th Annual Exhibition
Metro! Craft Centre, North Melbourne
(03) 9497 1916

8-29 January, 1999
Australian Wood Design Exhibition
Mechanics Hall, Browning St, Orbost
(03) 5154 1898

Listings are free, send details to: 'Wood Diary' Australian Wood Review, PO Box 4336, Loganholme D.C. Qld 4129

WOOD NEWS

Productivity Awards

A Tasmanian company is the joint winner of the 1998 *Forestry Tasmania Wood Productivity Award* announced in late July. ***Red Rock Timbers Pty Ltd***, based in Tasmania, and ***Radcon Pty Ltd***, based in south east Victoria shared a prize of $10,000. Certificates of Recognition were presented to *RoTree Corporation Australia Pty Ltd* from Tasmania, for resource productivity; *Paccy Stronach*, also based in Tasmania, received a timber furniture design award for a rocking chair; and *Richard Loney* and *Mac Young*, also based in Tasmania, received a Student Achievement certificate.

The Minister for Forests, the Hon John Beswick, said: 'The sustainable applications of the entries demonstrate that timber is a renewable resource with a strong future. It is also clear that Tasmanian timbers not only look beautiful, but can be used in a wide variety of creative and sustainable ways.'

Radcon Radial Timber's Andrew Knorr used the waste of native forests for timber and the lack of hardwood plantations as motivation to create a new method of sawmilling that would turn young plantation and smaller diameter hardwoods into viable saw logs (see story this issue).

Red Rock Timber Products are putting Tasmanian timbers on floors that previously would have been covered in carpet, vinyl or ceramic. Real Timber floor covering is multi-layered, pre-finished and made principally of Tasmanian oak, and can be laid over almost any existing surface.

Certificate of Merit for Resource Productivity winner Rotree Corporation Australia developed the Spot Cultivator out of the desire to ensure forestry had a sustainable future. The Rotree is an excavator-based site preparation tool that minimises disturbance during plantation preparation. The cultivator eliminates the need for broad environmental impact, such as broad burning and mound ploughing, by concentrating cultivation for each individual tree, causing about 80% less soil disturbance.

Architecture students Richard Loney and Mac Young designed and developed a transportable storage trunk, 'The Traveller' which is made entirely of Tasmanian MDF and veneers.

Paccy Stronach developed his contemporary rocking chair to demonstrate the beauty and versatility of Tasmania's lesser-known woods, blonde sassafras and celery top pine.

The joint winners with the perpetual trophy which was created by Kevin Perkins from myrtle and stainless steel.

Renovator's Delight

Do-it-yourself-ers rejoice! ***Robert Bosch Australia*** has released a new lightweight delta sander, the PDA 240E, which boasts a new triangular sanding plate, providing easy access to all those hard-to-get-at places, making it an ideal tool for sanding even the narrowest of surfaces. Dust extraction is located at the rear of the machine, with optional vacuum connection for dust-free operation, and is priced from $139. Bosch have also released the GDA 240E Delta Sander, which can be adapted to sand or polish surfaces such as brickwork, plastic, stone, wood and metal. Features include dust extraction, electronic variable speed control and an ergonomic design that reduces user fatigue. Contact Bosch on 1800 804 777.

Bosch's PDA 240E Delta Sander

EXTREME Impact

Over 30 new DeWalt products will be introduced in Australia over the next few months, under the '**EXTREME**' banner. The new range will feature cordless tools, reciprocating saws and an extended range of machinery. Call 1800 816 900.

Woodturn 98

Sydney will soon experience ***Woodturn 98*** from October 3-4 at Meadowbank TAFE. Organised by the Sydney Woodturners Guild Inc the woodturning seminar will bring together four of Australia's top woodturners, Roger Browne (Tas), Andrew Gittoes (NSW), Dean Malcolm (WA), and Terry Martin (Qld). At $60 for the weekend, it is a must for all woodturning devotees. Contact Doug Midgley on (02) 4733 6814.

Soft Sell

Furniture designers/makers can now promote their handiwork through a subscription-based service, ***Internal Elements***, which will provide marketing, promotion and assistance with ongoing development of furniture and accessories. Proprietor Dee Biggs promises the $200-a-year service will offer subscribers a unique opportunity to sell and further develop their products effortlessly, and allow the designer/maker more time to create their pieces. Contact Dee on (03) 9690 1946.

Interactive Wood

The CSIRO has many book and CD-ROM titles available of interest to timber enthusiasts, including the new 'CSIRO Atlas of Hardwoods'. For the technologically inclined there is the new interactive CD-ROM 'Euclid' which is useful for identifying eucalypts in a Windows environment. Call 1800 654 051.

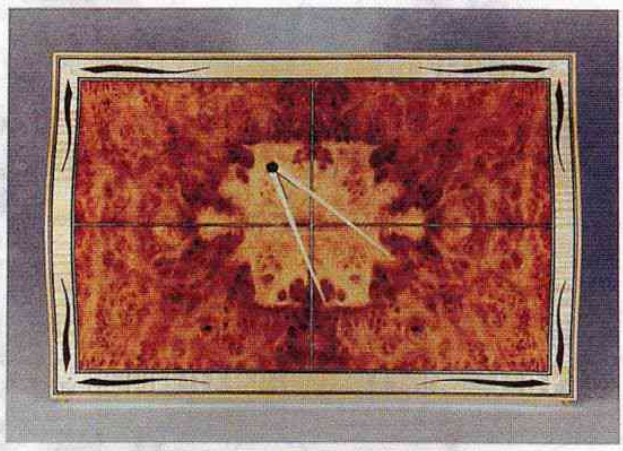
interzum 99

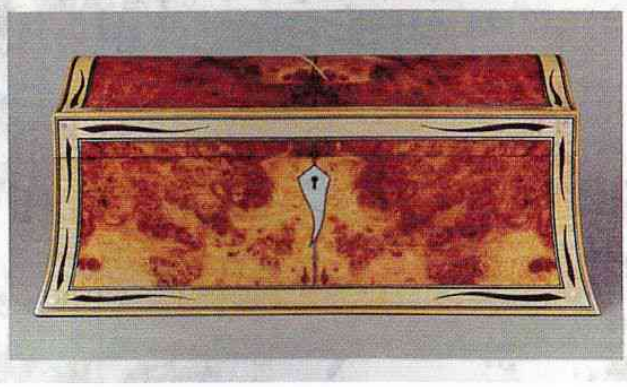
The biennial ***interzum***, the world's largest display of hardware, laminates, upholstery products and other supplies used by manufacturers of furniture, cabinets, store fixtures and other wood products has announced May 7-11, 1999 as its date in Cologne. Accommodation booking should be made as early as possible. Call 0011 49 221 821 2542.

WOOD NEWS

Celebrating Boxes

Box-makers from all over the world are urged to participate in a major exhibition which will tour the UK in the year 2000. Organisers *Peter Lloyd* and *Andrew Crawford* (see Andrew's 'Pencil Box' in oak burr, right) are interested in hearing from anyone with box-making skills who wishes to be involved. Contact Peter or Andrew on 0011 44 16977 46698.





Life With Wood

Applications for the ***International Furniture Design Competition Asahikawa '99*** are currently being received and organisers are looking for excellent furniture designs which will help make life more comfortable. The theme for the competition, to be held in July 1999 in Japan, is 'Design with Love, Life with Wood'. The organising committee are looking for creative ideas and imaginative designs not only for the competition, but also for the furniture industry of the world. It's held only every three years, so be quick to enter. Tel Minoru Nagahara 0011 81 166 47 0655.

Power Up

UK-based ***Power Capacitors***, manufacturer of capacitors, power factor correction systems and converters, earlier this year established a wholly-owned subsidiary company in Australia to support the growing demand for its products in Australia and New Zealand. The company's portfolio includes the TRANSWAVE converter ranges, which had previously been imported in APS kit form, modified and assembled by APS to meet Australian wiring regulations. Since the restructuring, prices have dropped 20% from 1995. All the converters conform to Australian wiring regulations. Call Peter Moss on (02) 4782 9900.

Woodn't It Be Lovely

Prizes of $200 are up for grabs in Brisbane's first ever ***Woodcraftsmens Guild of Queensland Inc's Annual Woodcraft Competition*** to be held from October 30 to November 1 at Mt Coot-tha. The competition is open to all makers of fine woodcraft and boasts awards in eight categories over 14 events, including carving, woodturning, marquetry, musical instrument making, toymaking, fretwork, bushcraft and cabinet making. Entries must be original works and must have been completed within two years prior to the closing date, October 20 1998. Contact Brian Willmott at PO Box 40, Salisbury Qld 4107.

Forestry Success

Forestry Tasmania's corporate headquarters in Hobart has received two awards at the recent annual Royal Institute of Architecture's State Awards ceremony. The building collected the award for best recycled development, and incorporates a range of timber products and applications, ranging from new age products to recycled timber. Money saved by recycling materials also helped pay for key features such as the building's dome and internal forest landscaping.

Open Days

Trend Timbers in Mulgrave, NSW are holding an Open Weekend 28-29 November which will feature demonstrations of turning, carving and other equipment. More information from (02) 4577 5277.

On November 14 ***The Turnery*** in Marion, South Australia, will also feature a not-to-be-missed Open Day of turning demonstrations by award-winning Guilio Marcolongo. For full details, call The Turnery on (08) 8358 1400.

Furniture on the Internet

A one-stop furniture directory will soon appear on the internet, where you can go to find out about furniture designer/makers in Australia. Each designer/maker included will be listed on the main ***FURNWEB*** home page, with a link to a detailed one page business profile with examples of work and full contact details. The page is currently under construction and will soon be available for viewing at www.furnweb.com.au. For details contact Anton Gerner on 0412 521 305.

U-Beaut Deal

Aussie ***U-Beaut Enterprises***, manufacturer of *Shellawax Cream*, have recently cemented a deal with Penn State Industries in Philadelphia USA who will become their exclusive distributor. The first 1,000 jars have already left Australia and the deal is expected to be worth in excess of $100,000 in the first year alone. The cream, specifically designed for woodturners and woodcarvers, can be applied on the lathe, is non-toxic and water-resistant. Phone U-Beaut on (03) 5476 2356.

Artisans Wanted

Morrison's Huon Pine Sawmill in Strahan, Tasmania's most-visited tourist town, is seeking talented craftspeople to work in their new complex. Morrison's intention is to create a centre of excellence, showcasing specific arts and crafts that focus on West Coast heritage and natural resources. The sawmill requires a freelance woodturner, an artist with a professional and commercial outlook whose work would focus on West Coast subject matter, and a jeweller/silversmith. If you have skills in specialty woodcraft skills such as woodcarving or marquetry, the 'forgotten' arts, such as blacksmithing or leather working, or skilled craftwork, such as weaving, basketry or tapestry, Morrison's would like to hear from you.

Contact Andrew Thomson on (03) 64 717244.

Wood Show Comes Of Age

For the first time ever, Adelaide hosted the ***Timber and Working with Wood Show*** in June, as a stand-alone event instead of its usual inclusion in Adelaide's annual Home Show. Thousands of timber and woodworking professionals and enthusiasts attended the event at Hamilton Hall in Wayville.

Obituary

Widely-respected machinery dealer, antique machinery collector, woodturning teacher and historian *Vincent Sydney Lowden Smith* passed away at his home in Hobart on April 21, aged 76. In 1963 Vin established a highly successful woodworking machinery business. He taught woodturning to young and old in classes at local high schools, and claimed the world-wide patent for his ring-gouge as a new tool for turners. He travelled widely throughout Australia promoting the ring gouge, and in 1983, upon returning to Tasmania, he en-

couraged some of the older members of one of his classes to establish a local guild, from which the Woodcraft Guild Tasmania was born. Vin was an avid collector of antique woodworking tools and machinery, and travelled the state displaying examples from his collection at exhibitions and wood shows. His aim was to establish a working museum displaying all of his pieces. The contribution Vin made to Tasmania's woodworking scene will last a long time.

Under Pressure

Cherrybrook Cabinetmaking is releasing in Australia *FUJI Industrial Spray Equipment*, a high volume low pressure (HVLP) spray system. No compressor is needed and the quality of the finish is identical to the best high pressure spray finishes. The overspray (and bounce back) common with normal compressed air spray equipment is absent along with the waste thereby created. The manufacturers claim a saving of up to 50% on finishing products a year. The equipment comes with a two year warranty. Contact Cherrybrook Cabinetmaking on (02) 9481 8716.

Talking Furniture

A furniture forum organised by the *Furniture Designers Association*, was held on July 31 in Hobart, and featured two speakers who looked at issues relating to the marketing of furniture and craft in Europe and the USA. The forum, ***International Focus***, was open to all associated with the design, manufacture and marketing of furniture and related products. The speakers were Peter Costello, a Hobart-based furniture designer and Mark Bishop, a Stanley-based designer/maker with extensive experience in the production and marketing of fine woodcraft objects throughout Australia.

The Safest Cut

Toolbox Blades Australia in Strathmore, Victoria, have just released a woodcarving tool which will enable you to use your angle grinder on timber to cut, hollow, groove or sculpt. Developed in Sweden the ***Toolbox Supercut*** boasts a unique safety feature. A saw chain is free-fitted around the perimeter of the disc and is friction-driven—in the event of an overload or chain jam, the chain will automatically slip, which eliminates the tendency to kick-back. From $60 RRP (for the 100mm size) and also in 115, 125 and 230mm sizes. Contact Toolbox Blades on (03)9379 0999. Dealer enquiries welcome. Free video available.

New Drills From Panasonic

Panasonic has released three new cordless power tools as part of its compact and powerful ***Predator*** series. Included is a new 24 volt rotary hammer, the *EY6812VQKW*, weighing 3.6kg and using the SDS drill bit system handling drill bits up to 20mm. The new *EY6230FQKW* is a 15.6 volt drill/driver with a 13mm keyless chuck and two-speed gearbox with electronic variable speed control. A 15.6 volt drill/driver, the *EY6930FQKW*, is also new and designed for drilling into bricks, timber and steel. For details contact Panasonic on 132 600.

Panasonic's EY6812VQKW rotary hammer

Wood In Sydney

The ***Sydney Timber and Working With Wood Show*** was a great success at the new Olympic site in Homebush Bay, at the end of July, with increases in both exhibitors and visitors. Over 27,000 people visited the three-day event. The next show will be held in Melbourne from 9-11 October at the Melbourne Exhibition Centre. More information from Riddell Exhibition Promotions (02) 9712 5623.

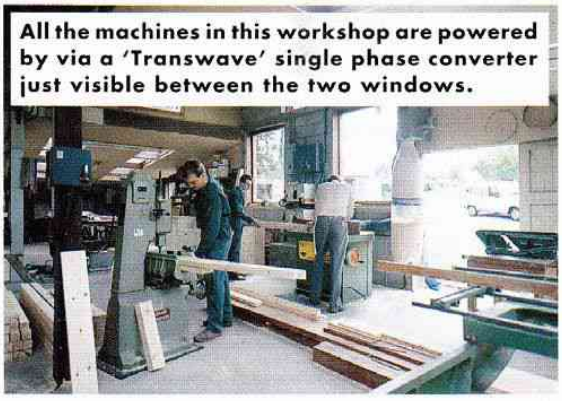
AWISA 98 a Winner

A record number of visitors came from throughout Australia and New Zealand to visit the ***AWISA 98*** woodworking industry exhibition in mid-July at Darling Harbour, Sydney. 8,500 people attended the event, and the show occupied a third more space, making it the largest industrial event to take place in Sydney. The next AWISA is in Sydney from 12-15 July 2000.

Corrections

Last issue's feature on pyrography listed the price of the ND1 Pyro Pen as $140. The correct retail price for the ND1 pyrography machine is approximately $199, available through retail outlets.

The ***Fein MS XE 63-611 detail sander*** was listed in AWR#19's feature 'The Details that Count' by Richard Vaughan as being supplied only with an 80mm apex to apex triangle pad. On the contrary, the sander comes with a full range of options for furniture and building work. The tool is capable of sanding, sawing, scraping, rasping, polishing, concrete settling and cutting. For further information contact Fein Australasia on 1800 676 781.



All the machines in this workshop are powered by via a 'Transwave' single phase converter just visible between the two windows.

Fein's MSXE63-611 detail sander comes with a full range of options.

Subscribers Win!

Colen Clenton handcrafted marking gauges, square, dovetail and mitre markers from Colen Clenton (02) 4990 7956.

DeWalt DW733 260mm heavy duty portable thicknesser, 152mm cut depth, 317mm width capacity, auto knife set system, 33.6kg, from DeWalt (03) 9895 9200

All current subscribers are eligible to win one of these prizes!

Winners announced issue 22.

Porter Cable profile sander makes sanding difficult edges, corners, mouldings and carvings a breeze. From Carba-Tec 1800-658 111.

DeWalt DW430 belt sander, light but powerful, for sanding surfaces and edges, from DeWalt (03) 9895 9200.

Become a subscriber to Wood Review, save money and be eligible for this and future prize draws.

Return the form below today to: Australian Wood Review, PO Box 4336, Loganholme DC, Qld, Australia 4129 or fax to (07) 3806 2277, telephone: (07) 3806 2288

Copies of this form are acceptable.

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BACK ISSUES

Back issues and subscriptions are available by telephoning/ faxing or posting the order form opposite (or a copy) to us.

WINNERS

[from last tool draw]

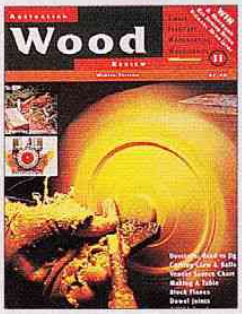
Panasonic EY3503FQWKW Cordless Wood Saw
W.Croke, Manly, Qld

Bosch GUF 4-22A Biscuit Joiner & Grooving Saw
B.Flewell-Smith, Geelong West, Vic

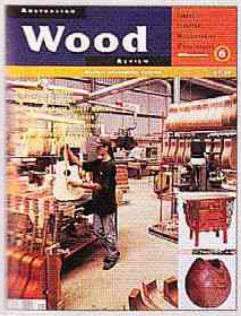
Atlas Copco PES 12T Cordless Drill
R.J. Cameron, Smithton, Tas

DeWalt DW682K Plate Joiner
D. Warner, Happy Valley, SA

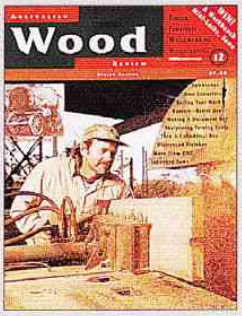
Woodcut BowlSaver
D.H. Ellis, Engadine, NSW



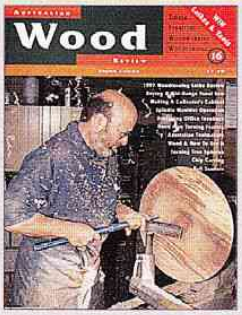
No. 11
Dovetails, router cutters, veneer reference chart, dowel joints, carving claw & balls, a colonial table, block planes, turned and carved 'winged' forms, Cook's Endeavour, collecting timber, walnut, tiger myrtle, vacuum pressing, Jah-Roc, MAP.



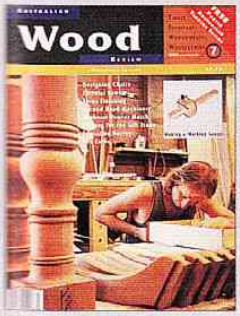
No. 6
Musical instrument making in Australia, timber veneer design , Chinese Furniture, laying a sunburst veneer match, computer design software reviewed, sanding and abrasives, bandsaws, winning at exhibitions, turning natural edged hollow forms, Maton Guitars.



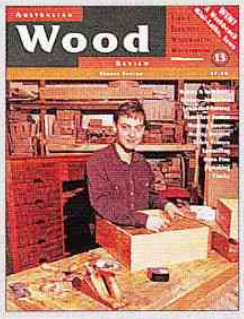
No. 12
Sawblades, dust extractors, routers, document box plans, sharpening turning tools, CNC, Japanese saws, distressed finishes, selling your work, sawmilling, Griffith Furniture, teak, French woodturners, veneered table top.



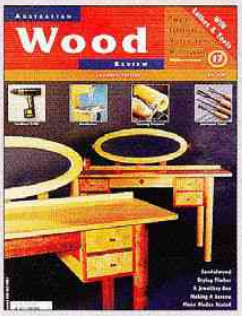
No. 16
1997 lathe review, buying mid-range panel saws, a collector's cabinet, spindle moulder operation, designing office furniture, Huon pine turning feature, Australian toolmakers, drying wood, turning spheres, chip carving, belt sanders, ancient timbers, Elvin Harvey, Paul Noordanus



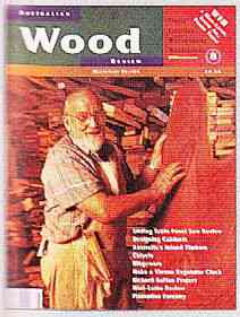
No. 7
Designing chairs, torsion boxes, spray finishing, making a marking gauge, plywood, second-hand machinery, circular saws, education survey, blackwood, Parker furniture, making lathes, gift trade woodturning, computer software, veneering. Free Special Timbers Poster



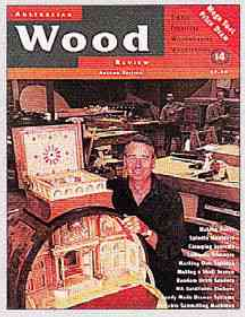
No. 13
Panel saws, making drawers, safety, a hall table, router usage, jigmaking, Huon pine, Leo Sadlek, working smarter, sawmilling, laminated/segmented turnings, collaborative woodturning, Wentworth Furniture, Jeannette Rein.



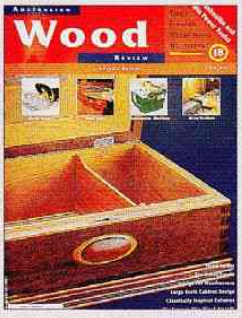
No. 17
Matched dressing tables, demystifying 'design', sharpening drill bits, a screen, respiratory safeguards, working smarter, cordless drills, bandsaws, Japanese tools, plane blades, Tessa Furniture, lidded box and spillikans, a segmented bowl, sandalwood, jewellery box.



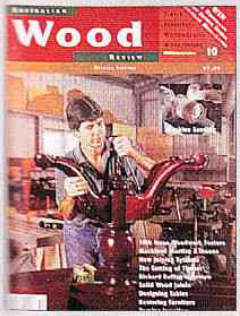
No. 8
Designing cabinets, panel saw review, desert & inland timbers, plantation forestry, Robert Dunlop, mini-lathe review, turning a lidded bowl, Wendell Castle, hingeware, the chisel, history of machinery, mahogany, making a Vienna regulator clock



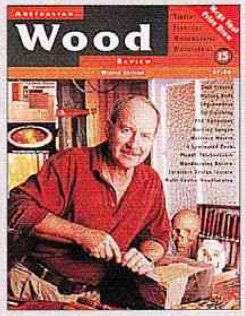
No. 14
Making doors, spindle moulders, clamps, laminate trimmers, squares, making shoji, random orbit sanders, WA Goldfields timbers, drawer systems, portable sawmilling, carve a backboard, scroll chucks,turning handled bowls, inlay, David Boucher.



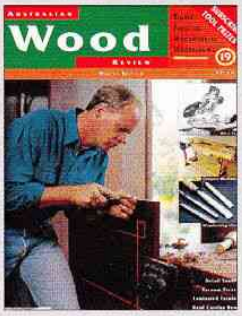
No. 18
Combination machines, biscuit joiners, scroll saws, urban forestry, using scrapers, design for turners, large scale cabinet design, columns, 18th century table, Peter Cook's puzzle boxes, William L. Jackson, Tasmanian Wood Design Collection, Wesfarmers Fine Wood Awards.



No. 10
Anniversary Australian Woodwork feature, designing tables, buying timber, joining systems, turning jewellery, pedestal table project, mortise & tenons, restoring furniture ct'd, mulga turnings, Raffan interview, machine sanding, solid wood joins.



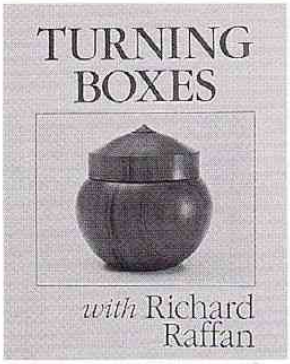
No. 15
Furniture design comp. review, making beds, drill presses, edgebanders, oil finishing, PVA adhesives, marking gauges, moisture meters, a laminated desk, planer-thicknessers, new woodturners, multi-centre turning, turning bookends, eye safety, Don Powell



No. 19
Mitre saws, detail sanders, vacuum presses, gluing hardwoods, tuning saws, recycled timber, tree giants, pokerwork, a cafe table, a compact workbench, cylinders, hand carved bowls, recycled timber kitchen, turning segmented forms, turning tables, buying turning tools, Glen Holst

Bookshelf

Wood Review's Mail Order Bookshop— There's nothing like a good book!



Turning Boxes by Richard Raffan

As a contributor to this magazine Richard Raffan is no stranger. Neither is he short of fame on the local and international scene, where he is known for his books, videos, demonstrations and gallery presence.

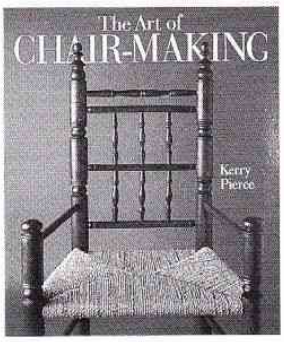
His latest book derives from a personal fascination with boxes, based on their functional, symbolic and sculptural purposes, and the challenge they offer on a technical level.

For the turner they give scope for endless permutations, which will almost always be treasured by their eventual owner.

Turning Wood with Richard Raffan, *Turning Projects with Richard Raffan* and *Turned Bowl Design* are now regarded as classics and *Turning Boxes* is written in the same lucid and easy style.

The book includes enough introductory information on tools, equipment, wood selection and preparation to make it accessible to novice turners. Comprehensive chapters on design, deep hollowing, surface decoration and lids as well as a from-start-to-finish project guarantee to satisfy more advanced turners as well. A gallery of recent works by turners from all over the world should inspire all. Diagrams, sketches and photos illustrate throughout.

Softcover, 172 pages, $39.95

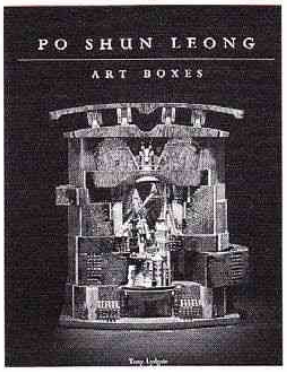


The Art of Chair-making

By Kerry Pierce

Looking for somewhere to sit or something *'to please the eye and comfort the body'*— then this book of projects for chairs from various historical periods is a great start. Projects include Windsor style pieces (four stools and a zoar- style chair); two four board benches; Shaker style chairs (stool, two-slat, Enfield style, slat-back, and tape-back side chairs, Mt Lebanon slat-back transitional rockers); Pilgrim chairs (two); contemporary post-and-rung chairs; and swings. Other Chapters are dedicated to the topics of construction (mortising, turning and steam bending), examination of different woods, seating materials, adhesives, abrasives, discussion of hand and power tools, weaving seats and running a small workshop, this book provides a comprehensive guide to the art. A gallery of chairs and comments by experienced furniture makers rounds off this guide.

Softcover,144 pages , colour, $29.95



Po Shun Leong Art Boxes

By Tony Lydgate

Reflecting the imagination, wonder and fantastical world of a small boy and the skills and vision of a grown man, UK born artist Po Shun Leong's art boxes, form a pinnacle in this architect's amazing life. From his fellowship with Le Corbusier (regarded as the father of modern architecture) to his volunteer work in Mexico (of the 1960s) and designer of 27 public schools, as well as bridges, wells and water systems; and award winning furniture maker of California—Po Shun returned to his architectural roots in exacting the detail of his art boxes. Lydgate has traced the journey of Po Shun's boxes from a discussion of the importance of the container to illustrations of his work and a review of his techniques. Using ten basic tools Po Shun discusses sanding, finishing, bleach and wood before giving the details in a step-by-step guide to creating five art boxes: a pencil holder, a wheel box, ancient ruins box, ark box, and a sculptural box. This book is for those who appreciate art and the abstract and are looking for inspiration in the mystery of another artists' work. Full colour photos. For more on Po see the profile in AWR#10.

Softcover, 128 pages, $29.95

Woodturning, Techniques. Tools. Projects

By Ray Key

This is a major updating of the text published 13 years ago as *Woodturning and Design* (UK) and *Woodturners Notebook* (USA), with an emphasis on updating the changes in tools, techniques, lathes, chucks, abrasives and finishes of the past decade. With a general introductory discussion on earning a living by turning to influences and inspirations, the book is divided into three main sections: equipment, timber and techniques; projects, which are all possible production line pieces: a chopping board, pestle and mortar, salt and sugar bowls, pepper mill and a salad bowl. The final section is dedicated to boxes, platters, bowls and vessels. A comprehensive and practical book for the turner wishing to extend their technique.

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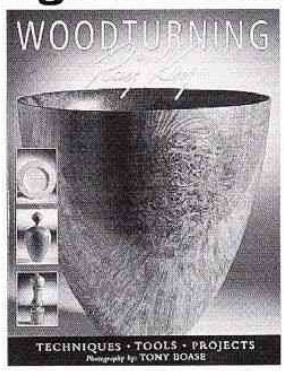

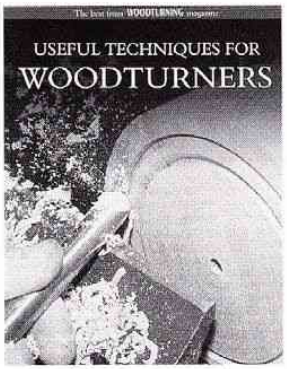

Useful Techniques for Woodturners

This compilation of *The Best from Woodturning Magazine* covers 38 different and unique techniques to keep the woodturner-reader intrigued. From Maurice Mullins device for carving and decorating box lids through to his suggestions on developing style and design, many unusual aspects of woodturning are discussed. Ken Sager discusses paper joints, toolmaker Ray Levy adapts an old machine shop technique to include zig zags, and RJ Emery describes how he produces decorative pieces with a difference on an engineers lathe. Practical techniques are also addressed: Bob and Anne Philips tell how to sand at high speeds, Geoff Heath makes handles, Kai Kothe make a complete set of accessories for the scroll chuck, Fred Holder hand chases threads, and Geoff O'Loughlin makes a simple poleless pole lathe that 'will keep you fitter than a butcher's dog'.

This collection promises both insight and a good read.

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By Samantha Meyer

PLANE PASSION

Trevor Semmens has a passion for timber; more specifically, for one of the longest used tools for shaping timber. In addition to a collection of over 200 species of timber in the form of 'eggs' he has over 1000 woodworking planes, mostly wooden, from a number of countries. The oldest date from about 1750.

Trevor's passion for planes began by chance while visiting a workshop in T[illegible]ia to look for timber for woodturning. There an old trunk which contained about 80 planes caught his eye. He bought them, he says, 'without really knowing why.' He was so intrigued by the variety of planes that he began actively looking for more pieces.

His search has resulted in amassing 1008 planes as well as a collection of other woodworking tools, trunks, books and catalogues. As well, Trevor has delved into the history of planes and planemakers in Australia. The first planes used in this country were brought from England and used by both immigrant and convict artisans and labourers.

Consequently, and because of our strong colonial and business ties, by far the bulk of planes found in Australia are of British origin.

Most are wooden (beech) planes, but more recent ones are steel. Later, large numbers of planes were imported from the United States (principally metal) under the 'Stanley' brand. 'As a result of Australia's reliance on imported planes and with such a small manufacturing base, there has been little in the way of locally made planes,' he notes.

Immediately following World War II, because it was virtually impossible to obtain tools of any kind, it was realised that more effort had to be put into developing local products. There was a real impetus for both existing tool/engineering firms to re-gear for tool (including plane) production, and for new companies to get in on the act.

This was probably the high point of Australian woodworking plane manufacturing, with production of both wood and metal planes.

'The 90s has brought a period of renewed interest in things old. The restoration of old houses and furniture has also led to the rediscovery of hand tools including non-electric planes and moulders'.

Trevor decided to share the information he had gathered in the first edition of Australian Planemakers, which was published in 1993 and gained feedback from around Australia. The quantity of information provided through this feedback led to publication of the much expanded second edition.

Trevor explains that the purpose of the second edition is 'to bring together all the significant information available on Australian woodworking planemakers. This book is a reference to an important period in Australia's economic and cultural history. To hold these tools in our hands is to feel and touch our history'.

The second edition of Australian Woodworking Planemakers is available from Trevor Semmens, 19 Loinah Road, Montagu Bay, Tas 7018.

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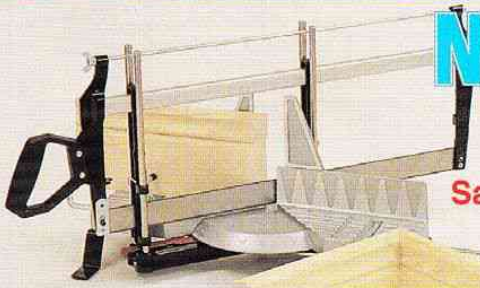

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