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Welcome!



The variety of articles that somehow find their way to *British Woodworking* never ceases to

amaze me. You start with a blankish page, and magically, as if from the ether, ideas present themselves. This issue antique restorer Rob Leach has been making traditional bar stools, Richard Arnold has been carving the 'wreaths' of curved handrails for a store in Knightsbridge, and John Lloyd has been trying out a Five-Minute Dovetailing exercise on his students. We look at the first issues of two seminal magazines, some 75 years apart, David Fellows makes a walnut bathroom cabinet in Arts & Crafts style, and I have a go building a guitar from a cigar box. Gordon Fry asks if his tenon-cutting technique can compete with a Festool Domino, and Robin Gates gets his children making projects, like a towel tidy for the kitchen. We look at textured woodwork, and Gerwyn Lewis makes a crosscut sled for his saw. Enough, I hope!

Nick Gibbs, Editor
nick.gibbs@freshwoodpublishing.com



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David Savage writes about timber and furniture design, drawing on the experience of 35 years as a designer maker



John Lloyd is a restorer and maker who runs long and short courses from his marvellous workshops in Sussex.



Gordon Fry runs his fine furniture and joinery business in Normandy and writes for us as The Country Carpenter



Gerwyn Lewis set up the Green Wood Trust in Shropshire, and uses wood for myriad purposes. He runs one-on-one tuition near Telford



Steve Maskery is best known for his jigs and devices, and for the DVDs he has produced on that subject. Some people call him The Jig

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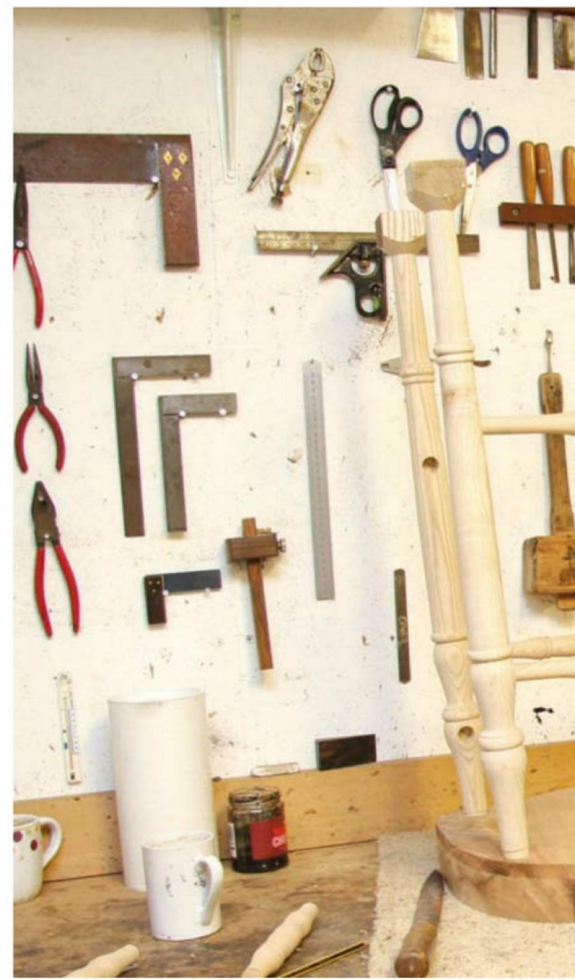
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Tricks

Antique restorer Rob Leach devises

Antique restorers may work on country furniture from time to time, but rarely reproduce rustic chairs or stools. Rob Leach has a Windsor arm chair in his Gloucestershire workshop he made shortly after leaving Rycotewood in 2003, where he studied Furniture Restoration, but hasn't made anything like it since then. A fellow student at Rycotewood was a bit of a bodger, and they made the armchair on a pole lathe. This time Rob had been asked by his parents to make replicas of an heirloom bar stool as presents for his two sisters, Sarah and Emma. "We had this tall stool at home that everyone loved," Rob explains. "It's the first place people sit in the kitchen." But it is knackered, and no one has any idea where it came from." Even the brass bottom stretcher had worn through, revealing a wooden core, which Rob has replicated on the reproduction.

He started by copying the measurements of the seat, legs and stretchers, and then set about finding ways to speed up production



to the Bar Stool

ways to reproduce a traditional tall stool efficiently and using modern techniques

as chairmaking is notoriously time consuming. He turned one leg in his workshop and then took that to a copy turner to have sets of them made. "It cost about £7 a leg, and I couldn't have turned them for that amount," he says. "It would probably take me about an hour a leg to turn them myself." By a stroke of good fortune, it transpired, he told the turners not to remove the drive marks and any waste from the ends of the legs. He expected he might have to remount the legs on the lathe, but confesses he didn't realise quite how significant it would become.

He also got the stretchers copy turned. To speed up the whole process he made the central section of all the stretchers identical, leaving a cylindrical 20mm diameter section at each end which could be trimmed to length accordingly.

Making the seat

In the meantime, Rob got on with the seat, which is critical in Windsor chairmaking. First he cut out an MDF template to guide

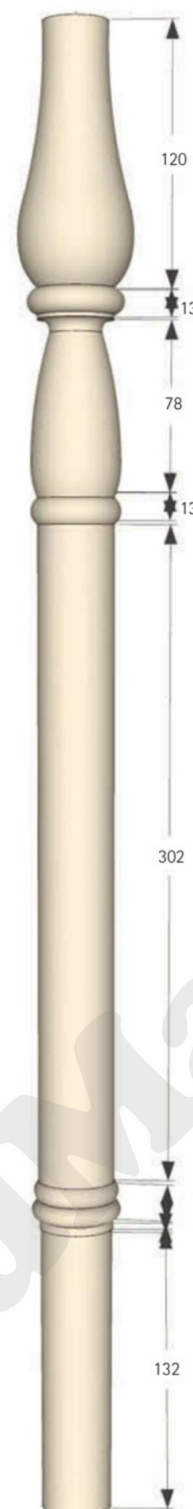


Template The MDF seat template was used for shaping the seat with a trimming cutter, and then for positioning the leg holes, getting the angles right, and then for marking up the seat for shaping

a router around the chair seat blank, and to help with positioning the leg holes and getting the angles right.

The legs on the stool don't have that much splay, and Rob chose to make all the angles 4°. He ordered the brass tube from a

Fig.1 Chair leg



Dims are approximate. Diameter top & bottom is 30mm and at the widest is 50mm



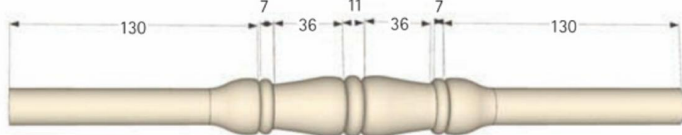


Turning Rob turned the first leg (left) and stretcher for the copy turner, but when they came back 'softer' than he expected (above) he remounted them on the lathe to make the details crisper



Fig.3 Stretcher

The stretchers are 20mm diameter at ends. At widest they are 28mm diameter



company in Birmingham, and turned an oak dowel to acts as a core in case the brass tube should ever wear out. The wood core should also strengthen the stretcher, just in case someone heavy tries using the stool as

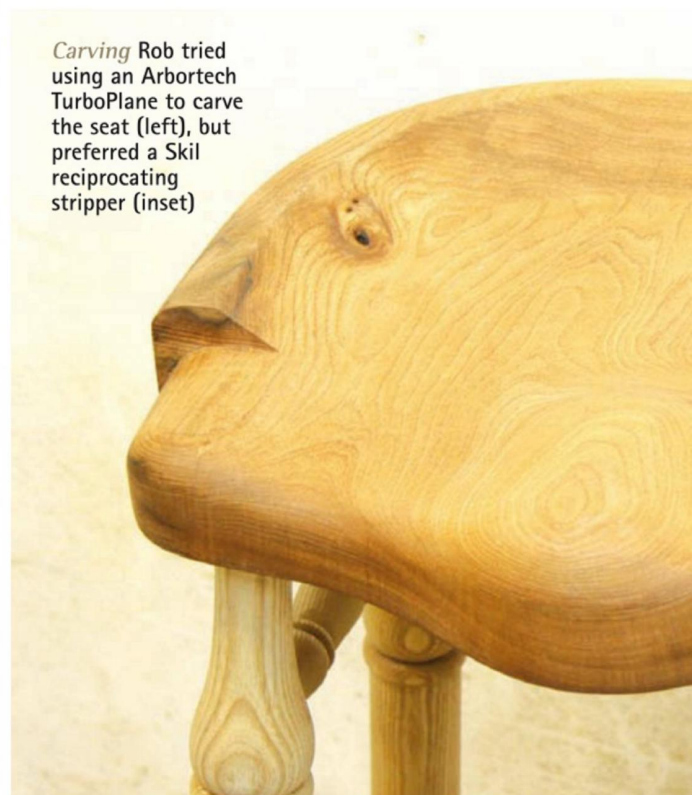
a step ladder. The core only has to be turned roughly, a little oversize, so that the brass tube acts as a dowel plate, stripping off the excess and making sure that the wood doesn't rattle inside the brass.

Using AutoCAD Rob printed out a 4° angle as a template to make wedges for his drilling jig. "I don't think I have a protractor in the workshop any longer," laughs Rob. "I just use the computer for angles." He did a quick stick drawing of the stool in AutoCAD, like a Lowry picture, just to check the angles were right.

Then he screwed the template to the top of the elm seat blank, and cut out the shape on a bandsaw, within a mm or two of the line, then used a long trimming



Carving Rob tried using an Arbortech TurboPlane to carve the seat (left), but preferred a Skil reciprocating stripper (inset)





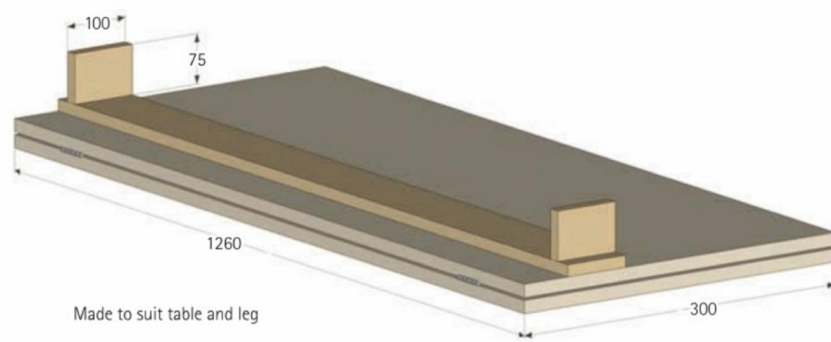
cutter in his router to get the exact shape of the stool.

With the template now lined up on the underside of the seat he marked the positions of the leg holes, and followed lines on the template to mark diagonal axes on the seat to guide the drilling. He used a simple hinged jig to get the angle consistent, rather than tilting the table, using wedges made from his 4° printouts to get the right angle on the false table. Once the angle was right he inserted a batten



Jig for drilling at angles

Fig.3 Drilling jig and carriage for leg



The jig is very simple, and gives you a sub-base for pillar drills. You can't see the wedges that accurately find the right angle, in this case 4°. Once the angle has been found Rob screws the two halves of the base together, with a batten in between, to make sure there is no movement. With the table also able to tilt this jig also gives you the opportunity of drilling compound angle holes. It was a huge bonus for Rob that the turners had left the square ends on the chair legs as he could use them to square up the leg when he rotated it to do each set of holes for the stretchers.





Drilling With the carriage for drilling the holes in the legs for the stretchers. Rob found that it helped to put a sash clamp across the ends for extra strength



into the jig and screwed the whole thing up so it couldn't wander out of true. All you have to do is line up the axis line from the template on the centre of the drill bit. Later Rob would discover that he couldn't use the same drilling jig for the legs because there isn't enough room between the drill bit and the pillar, so he had to drill the holes in the legs for the stretchers with the table tilted to the side.

Rob had a set of Forstner bits to drill the seat for the legs, but found them to be very ordinary and kept burning the wood. So instead he bought much more expensive 20mm and 28mm Colt Forstner bits (which we've tested elsewhere this issue, see p.61). The holes in the seat are 30mm deep and those in the legs are 20mm deep.

Drilling the legs

It was while drilling the legs that he realised how useful it was to have the square section still on one end of the turned leg. It means it is so easy to rotate the leg through 90° accurately to drill the next set of stretcher holes. The brass foot rail 9in off the floor.

Then Rob could dry assemble the chair to find the stretcher lengths. He did this very simply by measuring the shortest dimension between two holes (the upper part of the hole because of the splay) and then added 40mm so the leg is snug in the bottom of the 20mm hole. The brass was a bit of a chore because it is actually 22.2mm

diameter, and Rob could only get a 22mm Forstner. In the end he used a small drum sander on a Dremel to widen the hole.

Seat shaping

The most time consuming part of the whole project is shaping the seat. Rob made lots of pencil lines on the elm from the template to show where the pommel and the unusual back go. He removed an area of waste where your bottom goes with a router, hand-held, as much as anything to set a depth limit. The original stool had a more rounded back support, but Rob liked the slightly sharper edge going the whole round the rear of the seat.

He tried an Arbortech TurboPlane, but found that a bit too frightening (and probably too dusty for a restorer's workshop), and the hollow was too sharp and deep for a travisher. A Skil reciprocating stripper with a Flexcut shallow gouge proved to be ideal for removing most of the waste. Rob then used gooseneck scrapers and lots of abrasive to smooth the seat. He found disc sanders left too many marks.

He then made a saw cut at the front of the back support, and pared with a chisel to smooth the front corner of the seat. Then after a final sand he assembled the whole stool, and applied a few coats of Danish oil, and put the glued-up assembly on his tablesaw to level the ends of the legs with a pencil. He cut off the excess with a handsaw, tried it out and thought of home.

Draw an SU leg

You can draw a chair leg, or similar complex round shape, with the Follow Me tool in SketchUp. Start by drawing a single line as long as the leg up one axis, using the Line tool (L). At the base draw a circle (1) with the Circle tool (C) to the diameter of the finished leg, though remember that SketchUp gives you the radius not the diameter. Now draw a line from the centre of the circle to an end point, ideally to a Cardinal Point (which is on one of the axes). When you find a Cardinal Point the circle doesn't highlight. At the top of the centre line draw another line, the length of the radius of the leg at that end (2), and on the same axis as the line at the bottom. Now you can work from bottom to top with Lines (L) and Arcs (A) to create a profile (3). This should then create a surface, but if it doesn't you might have to segment the area to diagnose if there is a gap in your profile (4). Finally click on the surface of the circle at the bottom, then click the Follow Me tool (under Tools), and finally click the surface of the profile. As if by magic the item will be formed.

Details SketchUp Pro is available from paulthecad.co.uk.

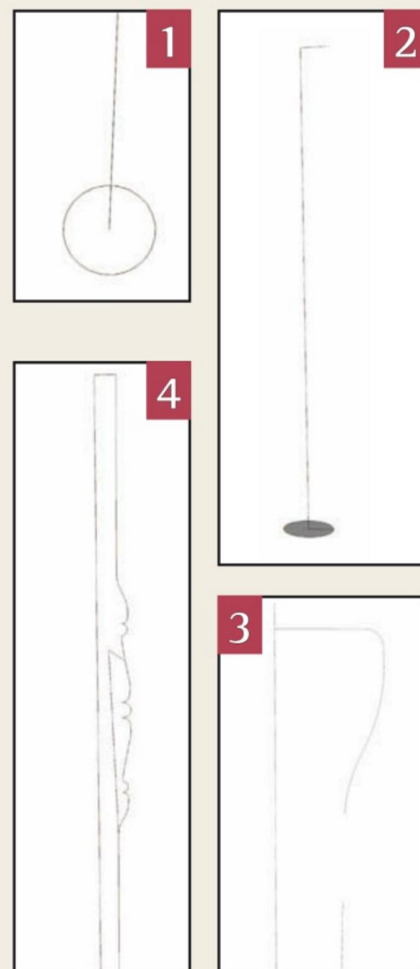
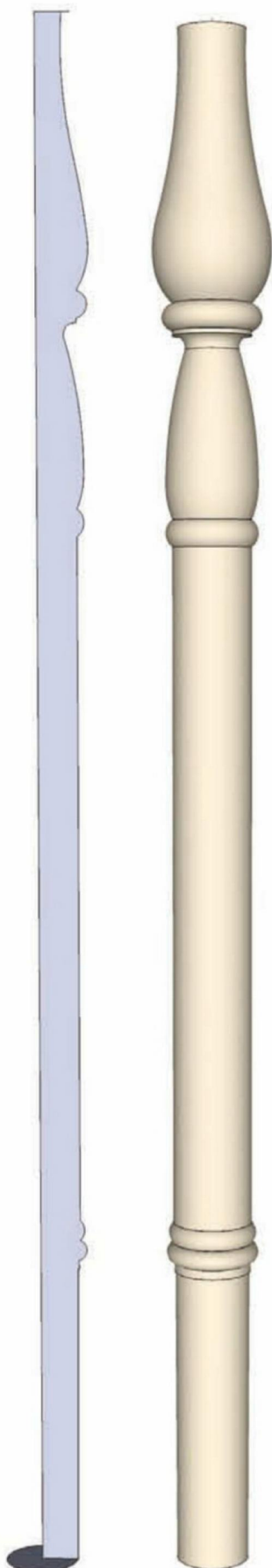


Fig.1 Profile of chair leg ready for Follow Me



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LETTERS & TIPS

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New wood law



Professional joiners and furniture-makers may want to prepare themselves for a new law that aims to combat illegal logging around the world. The EU Timber and Timber Products Regulations come into effect in March 2013, and demand anyone involved in the timber market, as an importer, trader or manufacturer of wood products and timber has taken due diligence in sourcing wood, and can show a paper trail to prove the status of the wood they are using or selling.

The National Measurement Office, which is responsible for interpreting and policing the new law in Britain, has yet to define exactly what each link in the chain has to fulfill. Concern has already been raised over the harvesting and sale of native wood, but that is likely to be covered by Forestry Commission felling licences. We have not been able to determine to what lengths woodworkers will need to go to demonstrate their timber has not been illegally logged.

However, it will be the users of panel products like plywood that are most likely to have to show an audit trail for the materials they buy. Buying FSC (Forest Stewardship Council) ply is likely to be the safest approach, from a trader within the EU, as they will also have to show that the sheets they are importing are from a sustainable source.

Inhibiting markets for plywood made from illegally logged trees should help a little in the control of rainforest destruction, but we need to keep our eyes open that it doesn't restrict the trade in native timber. Britain has a respected system for authorised felling, but not a high level of FSC-certificated forests.

LETTERS

Standard power

If someone tried to sell you a new torch which required a triangular cross-section battery, only available from the torch manufacturer, would you buy it? Of course not! You would instinctively know that when it came to replacing the battery it would be difficult to obtain and more expensive than standard Ever-Ready or Duracell batteries. What is obvious for disposable batteries applies equally to rechargeable batteries – as your correspondence shows, they do sometimes need replacing, and, guess what, they are hard to find and expensive.

Batteries are currently expensive because (apart from some manufacturers who have interchangeable batteries for their tools) they are individually designed for each tool, and there is a relatively short production run over which to amortise costs. When you buy your portable power tool you are buying in a fiercely competitive market so the price is reasonable, but when you buy the new battery you are in a captive market, so you have to pay whatever the maker decides.

The answer, as with disposable batteries, is standards. There should be a range of standards for rechargeable power tool batteries, covering the required range of chemical, physical and electrical characteristics. Manufacturers should design their tools around these standards, just like torch manufacturers design torches around the disposable battery standards. Batteries (and associated chargers) would be produced in volume by battery manufacturers and sold in a competitive market, thus ensuring that they are both reasonably priced and widely available.

The manufacturers will hate this idea. They will say, first, that the physical design of the battery is an important element in the ergonomics of the tool, and must be under their control. Well, maybe. I think most users will sacrifice a little in that department for lower cost and guaranteed availability of spares. Secondly, they will say that the battery characteristics and control systems are an important part of how they distinguish their product in the market. True, but I would rather put my faith in the battery companies doing their research and development and bringing us competitive products. There would, of course, be nothing to stop tool

manufacturers continuing to offer ranges of products with bespoke batteries.

Hopefully the Western tool manufacturers will get together and agree some standards. This is so obviously required that if they don't, I expect we will find the Chinese do, and we will soon all be using cheap Chinese designed portable power tools, with a range of standard Chinese rechargeable batteries.

Steve Dooley

Drilling jig

I would like to make a jig like John Lloyd's (BW32:34) but am having difficulty tracking down the track. Most aluminium providers do not have this section and that offered by Rutlands needs a 13mm-deep slot, which doesn't leave much out of 18mm stock. My thanks to JL, as I always enjoy his articles.

David Woolard

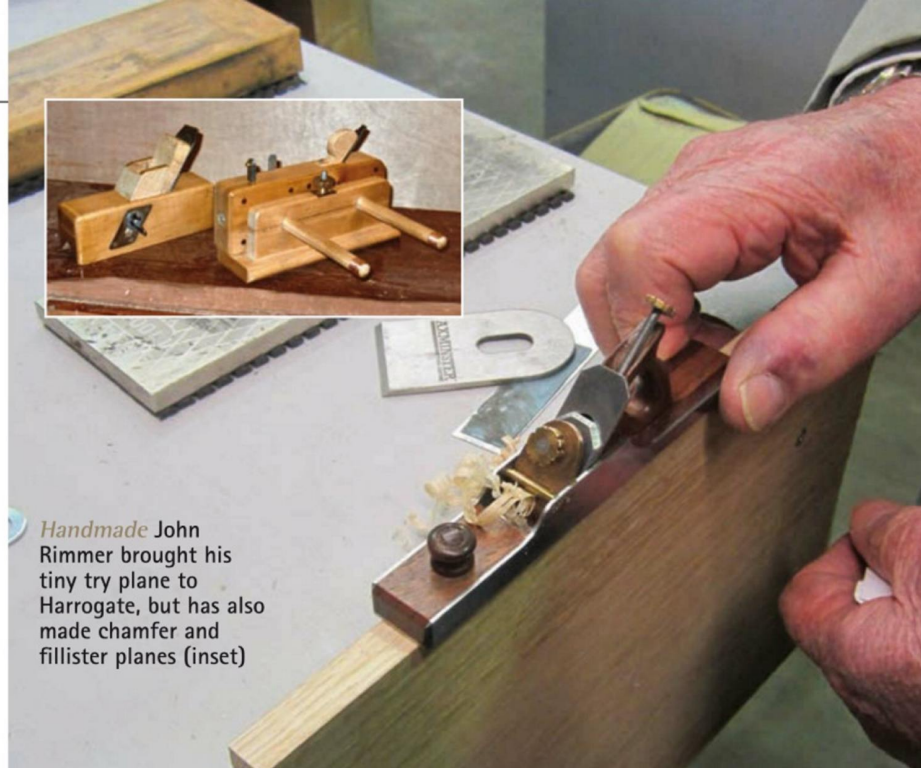
All the bits you need are available from Axminster. I used their track (840636) in conjunction with their jig-making kit (820724). We used quite thick material for the main table but have successfully used 10mm-thick track in 19mm ply. We're finding the new addition to the pillar drill is really worthwhile and the sliding sub-table is brilliant, especially if you are chairmaking. We have also now added a second hinged sub-table to our armoury, great for compound angles. **JL**

Extraction standards

My wife says that I am turning into a grumpy old man. This is a wicked lie of course because I am never grumpy. However, I do find my blood pressure rising when I pick up another power tool and try to attach it to my various extraction systems. Every one seems to have a different size or shape of connector, and despite having every adaptor known to man I still have to resort to gaffer tape. The importance of dust and chip extraction is constantly emphasised, but it would be so much easier if manufacturers standardised the connections.

Tony Troughton

Sounds familiar. Considering the number of machines and power tools that come through our workshop we have boxes of old bits of pipe and hose, knowing that one day they will come in useful, and a drawer full of Jubilee clips. As you will read elsewhere this issue, DeWalt have launched a new



Handmade John Rimmer brought his tiny try plane to Harrogate, but has also made chamfer and fillister planes (inset)

range of extraction connectors, but they are dedicated to DeWalt power tools. Is that enough to commit to a single brand? Possibly. Fortunately you can at least buy stepped adaptors to cope with the vagaries of power tool design, but life would be easier with standard diameters. What are we to ask of the market economy? NG

Wisdom of hands

Having read the 'Wisdom of Hands' feature in the Dec/Jan issue of British Woodworking I regret that in the 1940s I did not have a woodworking tutor of the calibre of Doug Stowe. My interest in woodworking developed despite, rather than because of the woodwork master at my school. My subsequent mentor was Charles Hayward's book *Woodwork Joints*.

I believe the 'Wisdom' article should be compulsory reading for many of today's educationalists who appear to have abandoned any thought of hands-on learning. Some years ago I was offered, at a knock-down price by a headmaster friend, an almost-new engineering lathe made redundant by the current 'risk averse' culture and educational thinking. A sad reflection!

In view of the interest you showed in my quarter-scale try plane I showed you at the Harrogate show, I enclose photos of a few more, full-size wooden planes. They are made from recycled mahogany and/or hard American maple salvaged from a school gym floor. The chamfer plane has proved invaluable and the moving fillister I find much more sympathetic in use than my steel Record 778.

The metal items are all to quarter scale and based on square steel tube with one face removed. The small mitre plane is a replica of a piece by Alan Beardmore, which I bought years ago. Blade come from a job lot bought at auction by a friend. Some needed heat treatment to

enable them to be cut and shaped and subsequently re-hardened and tempered. All the Norris-type adjusters show no more play than that on my Norris A2.

My sources were from Jim Kingshott's *Making & Modifying Woodworking Tools* and John Whelan's *Making Traditional Wooden Planes*. Both include useful information and methods of heat treatment, softening, hardening and tempering of steel.

John Rimmer

It was a pleasure to meet you at Harrogate, John, and the tiny try plane worked superbly. Thank you for showing it to us, and I hope it inspires other to produce simple, working tools from easily-acquired materials. NG

All about skill

Well done to John Lloyd for his brave words about skill (BW33:28). The desire for an 'easy' way to achieve professional results without putting in the hours needed to be de-bunked. I think he did it very elegantly.

Michael Huntley

Too much turning

I am concerned about the increasing woodturning content in the magazine. Although I am also a turner, I prefer magazines that cover woodworking or woodturning, but not both. I would be interested what other readers think. Please let us know if you support this trend or if you prefer the magazine to include woodworking only.

Jim Beach

Interesting point. I'd never considered turning to be anything other than woodworking. I've never seen them as separate. Should we feature the turning of chair legs, as Rob Leach does this issue? What about the odd pen here and there, to sell at craft fairs. My instinct is that many



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woodworkers have a lathe, which they could use more, perhaps not for bowls, but for little items to add to furniture or to help around the house or workshop. They may not want to buy a dedicated woodturning magazine. There are also a fair number of British manufacturers of turning kit, and we like to give them some coverage, but I take your point. NG

More wisdom

It took me about a month to read Doug Stowe's 'Wisdom of Hands'. I had assumed it was just another article on teaching woodworking to kids. I think Doug is delving into some issues that are both interesting and important. It's natural to start with a bit of history on the Sloyd movement in Scandinavia, and also the early 20th Century work of Rudolf Steiner. I am constantly finding there is a huge attraction to making a really good chair or spoon with simple tools like froes and drawknives. In our global village we're at a point where woodworking has possibly met the ultimate enemy: CAD and CNC. These are fantastic technologies for production and manufacture. But they represent the end of the need for skill in design and woodworking. In his article, Doug brings in this other aspect of how what we do with our hands is an integral part of our humanity.

Drew Langsner, USA

Thanks. I like to think there is something to learn from most of our articles, but Doug's was special. We've been wanting to publish it for a long time, and only recently got it together with him. NG

Excellent service

In these days of declining customer standards, it is always a pleasant surprise to come across a company offering excellent service. I refer to English Woodlands Timber in Cocking, W. Sussex. I have purchased timber from this company on two occasions recently, and although my order was small, this company responded magnificently from my initial enquiry with Sarah through to my collecting the order from Chris. Even more so this time because my order for cedar of Lebanon (*Cedrus libani*) was processed within hours. The whole staff are friendly and welcoming and it is a pleasure to do business there and to collect the timber driving through the Sussex countryside.

Terry Giltinan

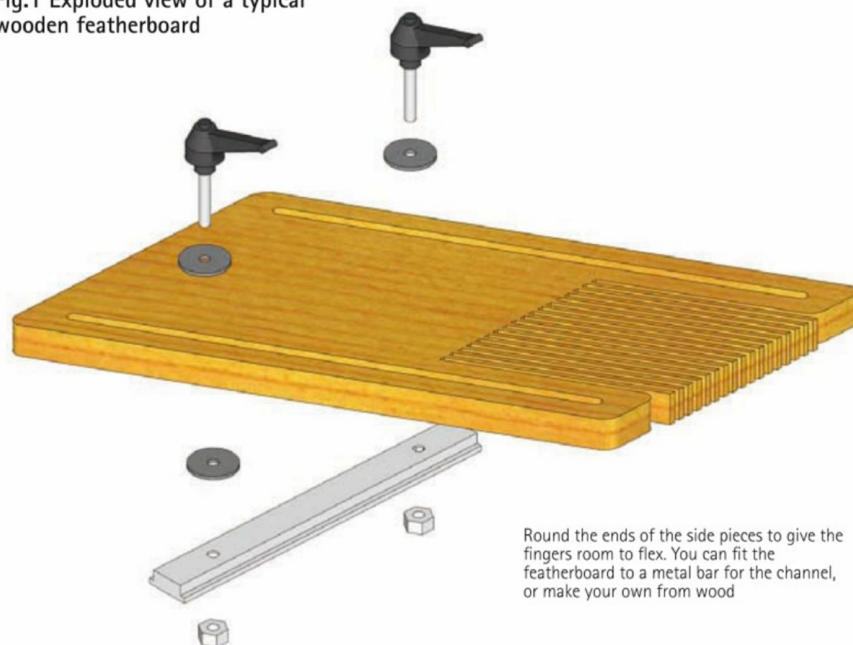
Good news. I suspect there are more companies offering good service than one imagines. It's such an easy way to please customers and improve business. NG

SAFETY

Keeping up the Pressure

Steve 'Jigster' Maskery gets safety-conscious with featherboards

Fig.1 Exploded view of a typical wooden featherboard



Featherboards must be one of the most underrated helping hands in the workshop. I confess I never used to consider using them, but since making a few up to use as features in my DVDs I've become a genuine convert. A featherboard is basically a spring. It applies pressure to the workpiece, keeping it tight against the fence and/or the table whilst it is being machined and allows the free movement of the workpiece forward, whilst at the same time resisting the forces that are tending to push the workpiece backwards. The secret of their successful use is to ensure that they provide the right amount of force in exactly the right place. Often, this 'right place' is up close to the blade, somewhere where you don't want to get your fingers.

Making a featherboard is easy. Mounting it can be a bit more problematic, whether used on a tablesaw, or other machines, such

as a router table. It can be made from almost anything, as long as it is not too brittle. The wood should, however, be straight-grained, so softwood or ash would be good choices; strong and flexible. The size of the featherboard will depend on the machine and the way in which it is going to be mounted, but let us assume we are starting with a piece of softwood 400x125x20mm and we shall mount it by clamping it in the T-slots machined in the table top.

Angled cuts

Featherboards have to be mounted at an angle to the fence (or table, if they are pressing downwards), so your first task is to cut the ends at an angle: 30° is suitable, but it is not critical. Then draw two lines on the face of the board, each 30mm or so in from the long edge. These areas are going to be where the featherboard is clamped so you must not machine feathers here.

Rout a slot down the centre of these two clamping areas, right the way through, so that a Bristol lever can slide along the full length, stopping 20mm or so from each end so that workpieces of various widths can be accommodated.

Next cut the feathers. The width of each feather may depend on the material. If it is a very stiff hardwood you will probably



want them no more than 3mm wide. A more springy softwood may allow for 4mm or more. But whatever you choose, they should all be the same, not just for looks, but for smooth operation. If your saw blade has a 3mm kerf and you want to cut 3mm feathers, each cut will be 6mm over from the previous one, so a strip of wood 6mm thick helps for setting up the saw fence. On this featherboard each feather is about 100mm long. The shorter they are the stiffer the spring effect will be. Draw a line at 30°, 100mm in from one end, so that it is parallel to the end of the board to show where each cut stops.

Position the fence to cut the left-most feather, furthest from the rip fence, inside the line showing the clamping area, where the bolts will go. Make the first cut as far as the pencil line and turn off the saw. Withdraw the workpiece.

To move the fence exactly 6mm, insert the strip between the workpiece and the fence, hold the workpiece firmly in place, remove the strip and reposition the fence up to the workpiece.

Make the second cut, stopping at the pencil line in the same way. Repeat the procedure across the board until you reach the other clamping area and you have a neat row of identical feathers.

If you choose to do this operation on the bandsaw, your spacer strip will be 4mm or so, rather than 6mm because the kerf is so much thinner, but the procedure is the same. You now need to provide a bit of clearance at the end for these feathers to work properly, so trim back the clamping areas by about 3mm. I also round mine off, but that is not strictly necessary.

Clamping

The clamping position needs to be varied according to the width of the workpiece and where we want the pressure to be applied. On my Excalibur this is easy as it has T-slots machined in the top. I simply rout a T-shaped runner to slide in it and embed two M6 nuts in the underside. When the runner is hard up in its slot, it must be a shaving lower than the rest of the table so that it clamps firmly.

To find the positions of these two embedded nuts, lay the featherboard across the mitre slot in its working position ensuring that the feathers touch the fence evenly. If it is rotated the nuts will not be in the right place when you come to use it. With a slim pencil, mark through the slots onto the T-runner below.

Where the pencil mark crosses the centre-line drill a tiny pinhole through the runner. This transfers that position accurately over to the other side. From below, drill a 10mm hole 8mm deep, and a 6mm right the way through. You can now pull an M6 nut into that cavity and it will

Making the bar

"Ah, but", I hear you say, "my saw has only plain mitre slots, not T-slots." Well in that case we have to be a bit more imaginative. One option is to make the featherboard, longer, much longer, so that it reaches the left-hand side of the saw. It can then be clamped in place with two G-clamps. In this case you don't need the runner at all. You may have to deal with ribs on the underside of the table casting, but I'm sure you can do that for yourself.

Another option is to drill and tap a series of M6 holes along the bottom of the mitre-slot, but that is a bit more drastic and does not give you as much control over positioning.

be held securely.

You can now pass a Bristol lever through a penny washer, through the featherboard and into the runner, which should now clamp up nicely. If the feathers themselves are fouling on the table top too much, lift them up a tad by inserting a large penny washer between the featherboard and the runner. It will still clamp up but the whole thing will sit 1mm or so above the table.

Another option is to use the plain mitre slot, but make the runner a lot longer and just a tad thicker than the depth of the slot, so that it sits proud a little bit. This runner can then be clamped in place with a G-clamp from the front edge of the saw, assuming that your fence rail does not get in the way.

In use

If the workpiece is narrow and you are not ripping very much off it on the tablesaw, using a pushstick to apply sideways pressure may be out of the question as it would have to be fed into the blade along with the workpiece. Set the blade to the right height and the fence to the required position and hold the workpiece against it, so that the front end is touching the teeth of the blade. Hold the featherboard up against the workpiece, hard enough for the feathers to bend a little and as far forward as the end of the board. Do not set it further forward than that or the offset will be pressed into the blade at the end of the cut and could get shot back at you. You should be pushing the workpiece against the fence, not the blade.

When you rip the workpiece you do not need to get your left hand anywhere near that blade, as the featherboard is doing the job for you. Your right hand is pushing forward (using a pushstick, of course) and the workpiece moves forward smoothly and evenly, with no fear of drifting away from

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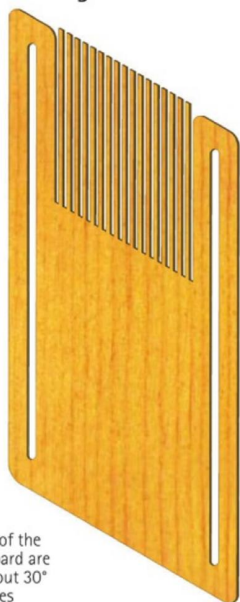
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Fig.2 Plan of a featherboard



The ends of the featherboard are cut at about 30° to the sides

the fence or kicking back. Using a short rip fence will also reduce the risk of kickback.

Featherboards can be used in other applications too. I have designed a fence-cum-guard for use with a dado head on the tablesaw. It has vertically-mounted featherboards so that the bottom of the housing is nice and flat, as the workpiece is being pushed down firmly onto the table. Its in-built guarding also gets around the tricky problem of not being able to use a guard that is mounted on the riving knife in this application. In this way I can use a dado head on my saw, fully guarded to comply with H&S guidance and get excellent results.

To be honest I rarely bother, because the time taken to set up a dado head is not usually worth it, and there is almost always a quicker, easier way of doing the job with a router. In some cases you may want to use a pair of featherboards, say for rebating on a router table, with one mounted flat on the table and another on the fence pushing downwards. The possibilities are endless and in every case they offer excellent support and keep your fingers out of harm's way.



Pic.2 A featherboard stops kickback, pushes the workpiece hard against the fence and keeps your fingers away from the blade. Steve Maskery has a new Workshop Essentials double DVD on Tablesaw Safety Accessories, including featherboards. Find out more by visiting workshopessentials.com

SHARPENING

Deneb's Way

Britain welcomes Lie-Nielsen's Deneb Puchalski and his simple but effective sharpening system

When Deneb Puchalski visited Britain a couple of years ago, woodworkers gathered round his bench to watch his sharpening system. It is hardly rocket science, in fact many of us were reassured to notice that his approach is already found in many workshops. He uses an Eclipse honing guide, and a series of stops on a board to line up the edge for the primary and secondary bevel. It means he can repeat the honing action without having to check the angle with a ruler across the wheel. Of course, you could make your own little guides, which are hand-held, and which you take to the blade, if you haven't space on your bench for permanent stops.

Deneb is back again this March, with demos at The Carpentry Store, Naas, Dublin (7th March, 4-7pm, thecarpentrystore.com); ATC High Wycombe (8-9th, 10am-4pm, axminster.co.uk); Classic Hand Tools, Witnesham, Suffolk (12th, 2-5pm, classichandtools.co.uk); G&S Timber, Penrith (13th, 1-4.30pm, toolsandtimber.co.uk); Brodies Timber, Dunkeld (14th, 2-4pm, brodiestimber.co.uk); and ATC Warrington (15th 12-4.30pm & 16th 10am-4pm, axminster.co.uk).



Denebstrations The Lie-Nielsen man at Talking Tools events in Oxford (top and above) and Axminster (right). His sessions this March around the UK and Ireland will include advice on setting up a plane, using Lie-Nielsen tools and sharpening



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ON TEST

Bandsawn Dovetails

After our test of Tuff Saws blades last issue, Robert Ingham cuts dovetails with them

The bandsaw is a versatile piece of equipment which is usually associated with cutting curves. However, with the right blade, it is an extremely useful saw for cutting straight lines. I have been cutting the tails of dovetail joints with my bandsaw for many years. While there are some very well-engineered dovetail jigs available today I still get a lot of satisfaction and pleasure, producing this joint by hand. But, as I am sure most craftsmen will agree, to cut dovetails by hand is slow and time consuming. To speed up the process and ensure the continuity of quality, I have developed jigs that do not deskill the process but make it more efficient.

This approach is particularly beneficial when making a chest of drawers. The time taken to mark out tails and then cut them with a saw by hand probably represents more than 50% of the duration. To speed up this stage I divide the width of the drawer side into the number of pins and tails but do not mark them out with a dovetail template.

Bandsaw jig

Instead, I use a jig that consists of a plate with a fixed fence at one end. This is made from MDF and it is fixed onto the mitre sliding fence that runs in a groove, parallel to the direction of cut. It is set to the angle of one in eight that I prefer for dovetails. The position of each tail is aligned with the saw cut in the jig fence and held in place with a sliding stop. The jig is then pushed forward and the cut is stopped by an insert that is clamped into the slide groove.

Key to the success of this

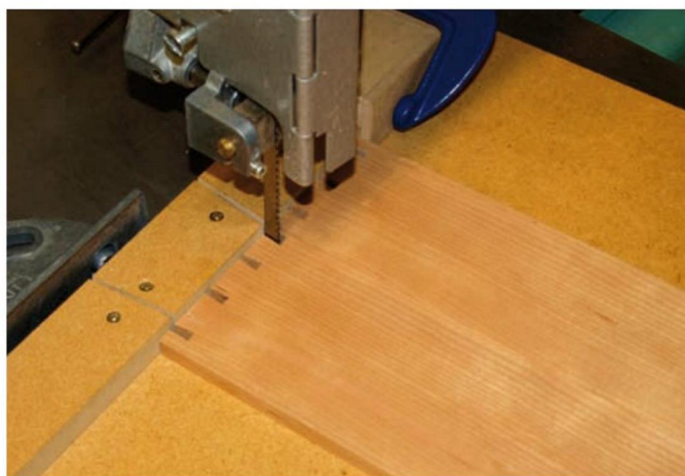
process of cutting the tails is the choice of bandsaw blade. It needs to have a thin kerf with the sawn surface being as fine as that produced by a dovetail saw. With this in mind the *British Woodworking* team recently put me in touch with Tuff Saws. This is a small company run by Ian John who has studied the technology of these tools and actually operates the equipment to make the blades himself. I chose a 3/8in, 6tpi blade which he made to fit my Inca Expert 500 bandsaw.

Blade quality

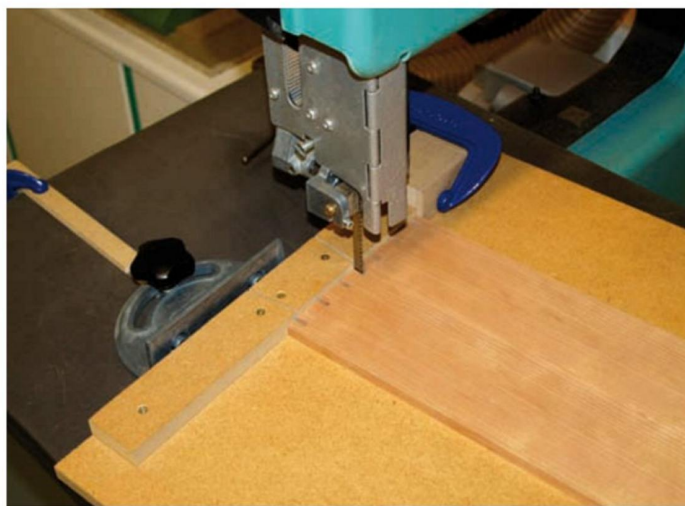
The welded joint is so good I had to turn the blade around several times before I could see it. The blade ran perfectly true without any wobble at the joint and the cut that it produces is perfect. The blade is made from high grade carbon steel. The teeth are ground, set and induction hardened. The hardening process is so precise that it only covers the area of each tooth without any spread into the main body of the blade. This ensures that the spring quality is consistent.

I also acquired a 1/2in Vari-Tooth Premium blade. This has sections of 3tpi and 4tpi and although the blade is quite narrow it is so efficient that I used it to saw cut veneers. The tooth pattern cuts so well I was surprised how little force was necessary for a deep cut. In the past I would have expected this quality of cut to be produced by a much wider blade. It is encouraging to enjoy the benefit of improvements in engineering technology.

Details SuperTuff Premium bandsaw blades cost about £15 for a 3/4in blade. Visit tuffsaws.com or call 07896 058499.



Pic.1 Robert Ingham uses a jig to cut the sides of tails on the bandsaw, and has been impressed by the SuperTuff blades



Pic.2 Robert uses a medium-sized Inca bandsaw



Pic.3 The finish off the Premium blade is superb, with only the slightest marking, especially if you keep it moving

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Benchmark for

To celebrate Benchmark founder Sir Terence Conran's 80th birthday, the Berkshire furniture-makers made him a special tool cabinet, fitted out with their favourite hand tools

When the team at Benchmark Furniture, the manufacturing company set up by Sir Terence Conran 30 years ago, decided to celebrate the 80th birthday of Britain's best-known furniture designer, by making him a stocked tool cabinet they started by taking a vote. "It was very democratic," says MD and co-founder of the Berkshire company, Sean Sutcliffe.

Many of the 50 craftsmen at the Benchmark factory, located behind Sir Terence's home at Barton Court, Kintbury, came up with a list of the tools they'd want in such a collection, and the votes were tallied and the tools were ordered. They were laid out on the workbench and the cabinet was designed

around the tools, and it now hangs in Conran's study.

Of course, none of craftsmen were spending their own money, but there is a telling irony to the fact that of the £3000-worth of tools chosen, only a handful of items were certainly made in Britain, though Benchmark made the bog oak carpenter's mallet because they couldn't find a nice one to buy, apart from the crude beech versions. The Benchmark craftsmen are not unique: visit almost any workshop around the country and you'll find similar tool choices.

That the cabinet was made for an advocate of British industry and design is perhaps what brings the transformation of the hand tool market to mind. "Made in Britain" is

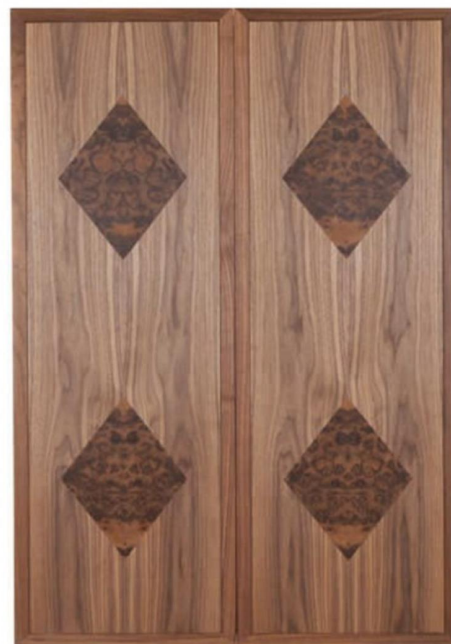
important to me," Sir Terence Conran commented in 2011, "not only because I'm patriotic, but also because I am scared stiff of unemployment in this country. Manufacturing can create jobs, which is why I am immensely proud of Benchmark, which has created over 60 full-time highly skilled jobs in a rural area." It's not simple, and no one would deny that British woodworkers and woodworking skills have benefitted immensely from contemporary approaches to hand tool manufacture. And who are we, promoting tools from around the world, to comment, anyway?

Growth

In seed-funding Sean Sutcliffe back in 1983 with £7000 to set up Benchmark, Conran was



establishing a company to produce high-quality furniture for shops (including his own, like Habitat), for hotels/restaurants, and for private commissions. Amazingly, Conran's cash was the only capital invested in the company,



Pedigree The cabinet was made to celebrate Sir Terence Conran's 80th birthday in 2011, and similar stocked ones sell for £12,000 through The Conran Shop. The cabinet was made from American walnut with burr walnut veneer diamonds in the door panels

Tools



Benchmark Sean Sutcliffe (above) set up Benchmark (left) with Terence Conran in 1983. The company has grown gradually ever since

and all its growth has been funded by revenue.

With their own showroom at Kintbury, the company can boast a number of ways to sell furniture, either by commission or off-the-shelf. "The advantage," says Sean Sutcliffe, "is that commissions, say for bespoke hotels or restaurants, are variable so it works well that we have the ability to make stock of our furniture range for our on-site shop, which is situated alongside the workshop and is visited by interior designers and the public."

That the business has grown so large is a shock to Sutcliffe himself. "I had a vision that the perfect number of craftsmen for a workshop was eight, but I revised that to 12, and we're still growing now with 50." Crucially, the majority of craftsmen at Benchmark started there as apprentices, aged 16, from local schools. "People ask me why our furniture isn't made in China. I say that I'm a furniture maker, and I believe in employment in rural areas."

Apprentices

This year Benchmark took on three more apprentices who'd just left school after taking

GCSEs. They have lots of schoolchildren coming on work experience, some of whom return during the summer for more. "We get two or three apprentices from every 10 who come here from school," Sutcliffe explains. He prefers to take apprentices young so that Benchmark can build a skill base, and with time, most of them specialise, perhaps in the hand shop, the machine room, or, as in Daniel Thomas' case recently, in the drawing office.

Sir Terence's tool cabinet was made by a group of Benchmark's most senior craftsmen in four days, from American walnut and ripple sycamore, with mitred corners. How the joints were reinforced depends on the craftsman, possibly with biscuits, Dominos or a loose tongue. "They all have different ideas," says Sean Sutcliffe, "and we allow our experienced craftsmen to make their own decisions on the best way of constructing the furniture that they make." What a good place to work.

Details To learn more about Benchmark Furniture and view their products visit them at benchmarkfurniture.com.

The Tool List

What did the Benchmark craftsmen choose?



Handmade The Benchmark tool cabinet is 150cm wide, 61cm deep and 108cm, and costs £12,000 fully stocked. What do you think of the selection? Do tell us. Terence Conran once said: "I have never seen an ugly hand tool; it a perfect example of form and function coming together to produce something that not only works, but is also aesthetically pleasing"

Chisels

- ✦ Ashley Iles set of 12 Bevel Edge Chisels
- ✦ Ashley Iles set of 6 Carving Chisels
- Narex set of Mortice Chisels (6-16mm)

Hammers

- ✦ Benchmark Handmade Bog Oak Mallet
- Estwing Hammer
- Axminster Pin Hammer
- Tiranti Sculptors Hardwood Carving Mallet

Planes & Scrapers

- ✦ Clifton Burnisher
- Lie-Nielsen No.51/2 Jack Plane
- Lie-Nielsen No.4 Bronze Smoothing Plane
- Lie-Nielsen Block Plane
- Lie-Nielsen Medium Shoulder Plane
- Lie-Nielsen Flat Spokeshave
- Lie-Nielsen Curved Spokeshave
- Lie-Nielsen Cabinet Scraper Set

Saws

- Lie-Nielsen Crosscut Saw
- Lie-Nielsen Tenon Ripsaw
- Lie-Nielsen Dovetail Saw
- Victor Gent Saw
- Japanese Dozuki-Me Saw
- Axminster Coping Saw

Screwdrivers

- ✦ Axminster Cabinet Screwdriver Set

Marking

- ✦ Clifton Bradawl
- ✦ Richard Kell Dovetail Marker
- Japanese Try & Mitre Square
- Four-Fold Wooden Rule
- Axminster Spring Calliper
- Stanley 64 Rule, 150mm, 300mm & 600mm
- Axminster Four-Piece Engineer Squares
- Hanson Carpenter's Pencils
- Sabatier Ebony Marking Knives (Left & Right)
- Workshop Heaven Rosewood Combination Gauge
- Workshop Heaven Rosewood Cutting Gauge



ON TEST

News and tests of tools and kit for anyone equipping or upgrading their workshop

Veritas Rebater



You'd have to want to rebate by hand pretty seriously to spend £375 on Veritas's new Bevel-Up Jack Rebate Plane, but then it's a serious piece of kit. With retractable and adjustable (for depth and to match the blade) scoring wheels, and adjustable mouth and the new PMV11 steel blade, this is a piece of engineering excellence and beauty. You'd have to be doing a lot of rebating and/or panel raising by hand to justify the cost?

Just over 15in long, and weighing 6lb, the plane is big enough without being heavy, and 2 1/4in wide. It has a Norris-style mechanism, with set screws in the sides of the plane for registering the blade accurately. There are also little grub screws just behind the front handle to release the scoring wheel shafts, and to move the wheels (Veritas call them spurs) in and out. It scores beautifully, giving you a much tidier shoulder than you're likely to get from the knife on a Stanley Combination Plane. And the substance of the plane, and the combined angle of 40° (bed 15°, bevel 25°) cuts very smoothly.

Details Visit brimarc.com for stockists.



Golden Rules

Working to the Golden Section has never been easier



This Phi, Golden Rule from Axminster isn't exactly new, but it will give you more fun for £2.99 (including the VAT), than many things in this expensive world. Ostensibly it's a 12in steel rule with a twist, the distinction being that you can determine the dimensions of long and short sides of a box, for instance, so that they conform to the Golden Section of 1:1.618. The Golden Ratio of Phi is named after Phidias, a sculptor of the Parthenon in Greece, and is based on the realisation that many objects incorporate proportions of 1.6 times longer than they're wide.

It's not a difficult calculation, but once you've decided to employ the Golden Ratio in a design, using a ruler that works it out instantly saves a lot of hassle. In our case we were making a yew and boxwood box from branchwood, and decided to determine the length and width by Phidias's famous formula. Playing around with the lengths of a sides and ends of a mitred box can be awkward, especially when you are trying to keep the grain continuous, so it was a huge help to be able to work both upwards from the ends



and downwards from the sides to find the best dimensions. Once the length of the sides was decided, we were able to use the Golder Rule to find a piece of boxwood wide enough for the panel in the top and the bottom. It was a relief to have some of the decision-making taken out of one's own hands and put in those of an ancient Greek. Fantastic value for £3.

Details ATC Golden Rule: 12in long; graduated for increasing or decreasing; £2.99inc.VAT; axminster.co.uk.





Veritas Inset Plane

David Whitten makes a plane from a Canadian insert

Veritas have recently added an Inset Plane to their range of high quality miniature planes. The plane is $1\frac{1}{16}$ in long by $\frac{3}{4}$ in wide, with a blade width of 0.46in (11.68mm) and the manufacturer suggests that it would be particularly useful for making a chamfer plane to a specific width or angle. Detailed instructions for this are provided on the Veritas website (veritastools.com).

I found a small block of beech and drilled and chiselled a recess to take the metal plane body. After shaping the block to a pleasing shape, I cut a finger groove in each side and then glued the metal plane body into the block with epoxy resin, taking particular care to ensure that the metal was not proud of the base of the block. After cleaning up with sandpaper, I cut a couple of chamfer guides using my 45° shooting board and after drawing two lines 8mm apart I glued the guides to the base using rubbed joints. Once the glue had dried, I planed off the excess wood on the sides and front of the guides and applied a finishing coat of boiled linseed oil.

When tested, the plane rapidly cut accurate 8mm chamfers on a variety of timbers with a minimum of effort, and it makes a useful addition to the tool box. Although the plane is well made and performed well, the need to glue it into a wooden body makes it rather inflexible for anybody wanting to cut different-sized chamfers. To cut chamfers with different angles one would need to destroy the wooden body and start again. If I were to start again, I would consider using a larger block of wood and screwing the guides in to place to allow for more flexibility. Another option would be to make a dedicated chamfer plane using a cheap block plane blade from Axminster. This would be considerably cheaper and would not involve any more work than making up a body for the Inset Plane.

Details Veritas Inset Plane: fits in 43x19mm mortise; A2 blade, 12mm wide; can be used alone; £37.60inc.VAT; brimarc.com.



Inset The Inset Plane fitted into a wooden 'body' with 45° cheeks for chamfering



Made in Britain



We've had a few calls from readers wondering what's happened to Cyclone Central, and their dust collectors. The good news is they're fine, just waiting for a supply of their clever, make-your-own system you connect to a workshop vac (or Dyson) and fix to the top of a bin to catch dust and chippings. They are taking pre-orders for delivery by the end of January, and offer a 10% discount if you order two or more cyclones.

Details Visit cyclonecentral.co.uk for details.



We're very excited to hear that Workshop Stoves are now selling British-made Oakfire Stoves designed to burn shavings and chippings, as well as offcuts etc... With its double air tube for sawdust, it should be able to burn from the bottom. It has a door at the top for filling, and a baffle to increase efficiency, they say. We can't wait to give one a go as they look fabulous.

Details Oakfire Stoves from £362 for 4kW. Visit workshopstoves.co.uk for details



News



The Axminster Trade Series has two new bandsaws, in the £1099 SBW4300B and £798 SBW3501B. Both have a cast iron table, and drop-on rip fence. The 3501 can take blades from 3mm-19mm wide, has a maximum 340mm width of cut (300mm with fence) and 200mm depth of cut, and it weighs 84kg and has a 550W motor. The larger 4300 has 410mm width of cut (370mm with fence) and 300mm depth of cut, and has a 1500W motor.

Details Visit axminster.co.uk for details.



Charnwood's new W870 lathe is a larger version of their W813 model, with a 1hp motor, 14in over the bed and 43in between centres, and it costs £599. The W880 (above) is a pro lathe costing £1699.

DeWalt Storage

Putting all your tools on one trolley would speed up travels

The merger of Black & Decker and Stanley has added another yellow and black brand to the stable that already comprised DeWalt. Insiders tell us this was purely coincidental, and that actually the yellows are slightly different and perhaps more of a chore than a blessing. However, synergy has been found particularly in the design and manufacture of tool cases, with DeWalt harnessing Stanley's expertise in that market to produce a range of power tool and accessory boxes for the workshop and on site.

For jobbing carpenters, moving around and working out of a van, the ToughSystem trolley kit is phenomenal, and though it might seem steep for three boxes, the £250-ish price would probably pay for itself quite quickly in time spent losing kit, lugging it back and forth, and in impressiveness for customers. At the D&M Show in November there was a carpenter on the DeWalt stand whose entire van was kitted out in their boxes and cases. There were plenty of envious visitors, muttering about his obsessiveness, but quietly jealous none the same.

Cases of varying depths and configuration slide onto the trolley's hinging arms, with the end handles on each box holding it in position, and a lockable pivoting metal strap round the

back for extra security. It is very clever, and you'd save yourself so much time and back-wear being able to move all your tools into place in one go.

There are also four narrower TSTAK designs cases, which have drawers for smaller items. The TSTAK 1 combines space for tools to keep you going around the house, plus an integral tray for drill bits, blades etc... Very clever.

Details ToughSystem: Full Stack with trolley about £260. TSTAK cases start from about £35 each. Visit dewalt.co.uk for details.



Stack The ToughSystem boxes slide off and on swinging arms on the trolley, with the side handles locking the boxes in place. You can slide out any of the boxes independently, though it's not easy to open the lid of the top box when it's on the trolley. The narrower TSTAK system (above) is good for the workshop as well as on site, but it is, arguably, an expensive way to store your stuff

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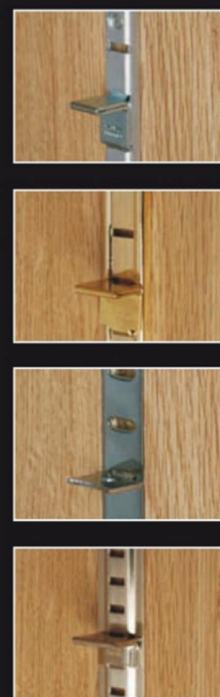


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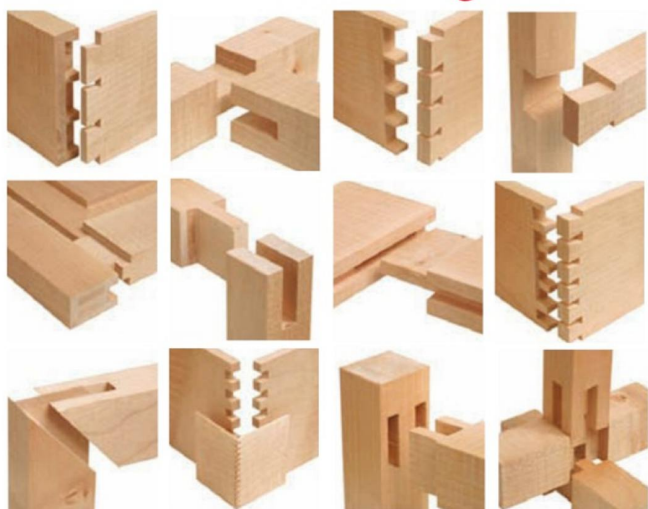
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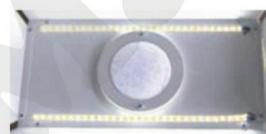


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SIP Jointer



Once upon a time the biscuit jointer was the new must-have power tool. A friend of the magazine asked us recently about buying one, and before we'd had time to give it much thought, he had purchased a relatively expensive model, despite only intending to use it for occasional butt joints to make table tops. Others might use biscuits for carcasing, to make cupboards from melamine-faced chipboard or MDF, but there are so many jointing options these days that one wonders if it makes sense to spend a considerable sum for a top-notch model in a home workshop.

So we asked SIP to send us their 07904 700W model, which costs upward of £60, and we've used it to make kitchen cupboards and butt joint components to make panels. It's a bit rickety around the seams, and you probably wouldn't want to rely on it to earn a living, but for the price you will be able to achieve accurate results. Once you have a biscuit jointer set up there is, let's face it, not much to go wrong. It does one very simple task, cutting a slot to a consistent depth and the right distance from the fence or the base. And to that end the SIP jointer will do you fine if you are only using it occasionally for carcasing and to make panels. Biscuit jointing can be done with low-cost tools, and you can spend any spare cash on other tools.

Details SIP 07904 Biscuit Jointer: 800W; fence adjustable 0°–90°; dust bag; depth stop for 00/10/20 biscuits; from about £60; details sip-group.com.



Woodoc

Is it a wax, oil or polyurethane?

Imported into the UK by Phil Irons, the friendly giant who wears a leather cowboy hat at shows, Woodoc finishes have been produced by a family firm in South Africa for 30 years. They aim to combine the resilience of a polyurethane with the tactile softness of a wax or oiled finish. Best stored upside down to stop the waxes solidifying in the bottom (we assume), Woodoc finishes are available in matt (No.5), velvet (No.10) and gloss (No.20). In the tin they look like an oil, and go a bit cloudy when you stir them gently. You brush them on, liberally, and they go on more like a water-based finish, being quite thin. As a result they penetrate deeply, and 10 minutes after the first coat you are supposed to touch up any dull areas where the finish has sunk beneath the surface. It's not all that clear from the instructions how long you should leave it

before the second and third coats. Actually it seems to harden more quickly than we at first thought. It's hard to tell with the Matt type, but within 30 minutes of applying the Gloss you can tell that it's dry and ready for another coat, or for buffing back and waxing.

It goes on really easily, and you don't have to wipe off any excess (which is a mixed blessing with oils as wiping off leaves a convenient thin coat but always feels a bit wasteful, and can't be done too long after application). Be careful of build-up on edges, but otherwise this is a really user-friendly, and surface-friendly finish, that combines the best of a number of other finishes without too much odour and trickiness.

Details Woodoc Finishes: 500ml from £13; visit philirons.com for details.



Yellow FrogTape

Is it more than just an ordinary masking tape?

FrogTape Delicate Surface is a low tack masking tape which you can use on finished or unfinished surfaces for protection, marking or sharp paint or stain lines. At £7.29 for a 40m 24mm roll it's hardly cheap, but actually it's really good. It does indeed lift without leaving any residue, it has a nice papery finish to it for writing, and it tears easily. The box looks a bit over-the-top at first, but keeps the tape clean, rather than picking up dust as is normally the case with masking tape. And as the makers suggest, you can always use the box for storing nuts, bolts, screws, etc... You wouldn't use FrogTape the whole way round a room for painting skirting board, but in the workshop it's excellent, and feels reassuringly high quality. You turn to it with confidence.

Details FrogTape: with PaintBlock Technology; 24mm or 36mm width, £7.29–8.49; visit frogtape.co.uk or call 01442 275311 for stockists.





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New Chisels

Excited to have three new sets of chisels in the workshop, Peter Sefton compares British and Canadian hand tools



It's always good to have some new chisels to test and this time around it was the new offerings from Sheffield's own Sorby and the Canadian made Veritas' first venture into bevel-edged chisels. Sorby are one of the oldest chisels makers in the world, still offering the largest range of woodworker's chisels with 20 variations at my last count including bevel-edged, skew, registered, sash mortise, paring, corner and timber framing slicks. But not one to be left standing, their latest range is the 'eco-friendly' Sheaf River (named after the river that runs behind the factory where the chisels are made by hand, and shipped in a biodegradable box).

The new Sorby chisels come in four alternatives: traditional English style bolster and brass ferrule with a leather washer and the more American-style tapered bolster and ferrule, both with American ash handles. Both are available in either standard English-length handles of 120mm and 155mm, or the shorter 90mm versions of the shorter blade version butt chisel in the American style.

The steel blades are made from high carbon steel which has been drop stamped and is reported to be capable of sharpening to 0.5 micron and are diamond hardness tested in line with their other chisels. I found the grinding of the blades to be accurate and relatively clean, apart from the bevel-edged chisel grinding being slightly off centre on one chisel. To put it into context I have seen the same issue to a smaller degree on a Lie-Nielsen in my workshop this week, but I don't believe that it necessarily affects its working.

The Sorby backs took about 15 minutes to flatten and lap to a good polish. I started the backs on 40 micron abrasive



Choice Peter Sefton (left) has been testing the new Sorby and Veritas bevel-edged chisels. The Sheaf River Sorby series are named after the river that runs behind the Sorby workshops in Sheffield



paper and brought them down to 3 micron. The bevels come pre-ground to 25° in readiness for softwood, and I honed them to 30° to test them on hardwood using my Veritas MK2 honing guide on some new scary sharpening films I have been testing. I usually regrind my new chisels but thought I would not go that far in this test as both makes are said to be ready from the box. I found the Sorby comfortable in the hand and the butt chisels reassuringly sturdy and sure footed.

I have always shied away from butt chisels as I feel you get more for your money with a full length blade and handle to match, but found the butt a very comfortable fit in the hand. Both Sorbys came with plastic blade guards and the chisel sizes etched in metric and imperial on the top flat surface.

The handles have been seated onto the tangs with the grain matched to give the annual rings oval shapes down the top face of the chisel, showing the attention to detail you would expect from a

company with such heritage in wood turning and tool making.

Both Sorby chisels I tested were the tapered bolster and ferrule style, which blends the blade to handle seamlessly. The butt handle is turned with three fine grip rings cut into the ash to aid grip and add interest. The longer bevel-edged chisel's blade is taper ground starting at about 0.7mm on its edge at its thinnest point near the tip. The butt starts at about 1.25mm wide which means neither could give a really crisp corner if used for 1:8 dovetailing but should give more strength for general bench work.

Veritas

The Veritas is a new contender to the chisel market and interestingly has been launched with O1 steel, which has always been the English (and my preferred) steel choice for chisels. But not being one to copy English traditions, Veritas have their own take on handle shape, blade profile and tang detailing.



The handles are made of maple that has been oven cooked to high temperature which caramelises the sugars in the wood to give rich golden brown tones and a fine finish; however it does have the tendency to change the colour to varying degrees. As you would expect the handles are of a much more north American style shape-wise, with a smaller overall diameter than the English models; the maple handles also narrow towards their waist inviting your hand to grip and squeeze and they have a flat front and back to match, which stops them rolling on the bench.

The blades look thick in comparison to the Sorby but are only 0.2mm thicker at the tip and 0.5mm thinner at the tang end. They are very well ground with the edges taken down to a fine crisp detail so they would be good for using in dovetails and tight corners. However in use this edge does need to be eased slightly to stop it cutting your fingers when paring.

The blades have a new tang design which leaves them with plenty of strength

when using them for chopping out waste for lap dovetails or small mortises. The blade's tang and stainless steel ferrule interaction seems a little clumsy to me as there are gaps front and back as it enters the handle, but I think this tells the tale of how they are made and lapped to such fine tolerances as I presume they are ground and machine lapped over their entire length thus not thickening at the tang. In use this does not detract from their strength or ability to bite into the wood when struck with my lignum mallet. The handles are well shaped for both hand paring and mallet work but did show slight signs of bruising after my tests. They come in a plastic storage box with rust inhibitor squares (the same as their plane iron boxes) and the blade's tip comes with wax dipped ends for protection in carriage.

Veritas have opted to grind blades of 1/2in and less, to 30° and micro bevel of 32°, the wider chisels are ground to 25° with micro bevels of 27°. The thinking behind this is that the force taken on a narrow chisel's edge when hit with a mallet is concentrated on a small area, and therefore requires more strength behind the edge. The only problem with such clever thinking is that their MKII honing guide does not have a 27° setting, although this can be overcome by using the following technique. Set the honing guide to 17° on the green back bevels setting, whilst also having the blade carrier roller assembly set on the No.2 yellow standard angles. Sorry if I have lost those who do not use this honing guide - you must give it a go if you chase razor edges.

Verdict

Well less chatter, more chopping; how did they perform and hold their edge? I decided to use some 15mm maple to chop into and then try paring some end-grain sweet chestnut to see how the edges held up. I marked 20 knife lines at 1mm intervals and chopped into it with three good mallet blows giving 60 chops in all on the three chisels on test (which were two 10mm Sorbys and a 3/8in Veritas).

The answer is (as always!) varied in that the longest chisel in the test, being the Sorby bevel-edged, started to lose its edge after the first 10 mallet blows but did not noticeably break down any more after that initial loss of the crisp edge. The steel did continue to chop the maple but did then leave torn fibres when paring.

This may have stood up better to the beating if I had reground the initial chisel's edge and changed the grind to a full 30° angle and honed a secondary bevel of 35°, giving the edge more strength. The extra length of the bevel-edged chisel was of benefit when paring to assist in keeping things plum and square.



The stout Sorby butt chisel felt a little more sure-footed and its edge lasted longer taking 12 strong blows before degrading to the same level as its big brother but again it did stay the course and pared the chestnut with minor end grain scratching, again a steeper regrind may resolve the steel's performance.

The new Veritas took and held a very keen edge lasting the whole 60 mallet blows without showing any signs of weakness in the steel and left the chestnut with the cleanest end-grain fibres (but the handle did show signs of bruising). In this test the steel performed the best, although you would expect this as the chisel costs about twice the price of the other models on the bench.

Whilst I was doing this test I decided to see for myself how my old faithful Ashley Iles bevel-edged chisel performed, and I wasn't disappointed. Its edge did start to deteriorate after approximately 50 blows and remained capable of paring the end grain to a lesser but similar quality as the Canadian contender.

So, if you like ash handles and English hand-made craftsmanship at reasonable prices, go for the Sorby but be ready to re-sharpen. They cost between £20.15 for a 6mm bevel-edge butt with the leather washer and £31.49 for the 25mm tapered bolster chisel.

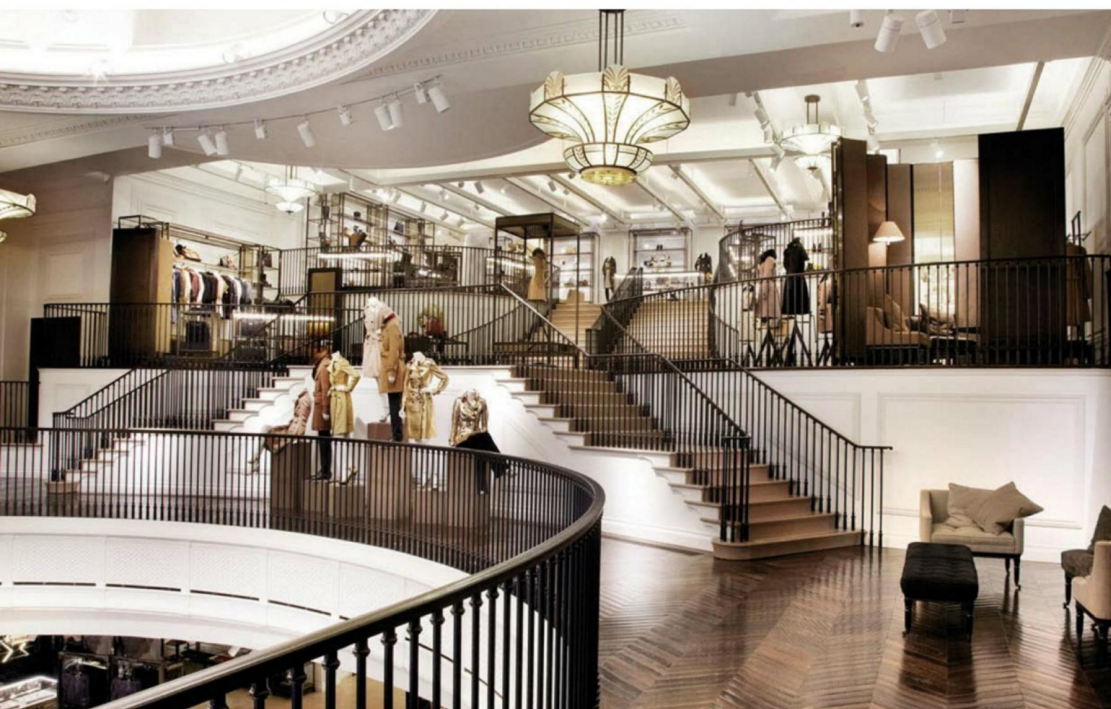
If you prefer the contemporary styling and don't find the variation in handle colour off-putting, you won't be disappointed by the Veritas steel or quality of lapping. They cost £47.44 for the 1/4in and £59.50 for the 1in.

As for the Ashley Iles chisel, the edge held its own and does have the largest range of sizes available ranging from 1.5-50mm at an average price of about £20.00 for the standard sizes. The Sorby and Veritas are currently only available in five sizes from 6-25mm.

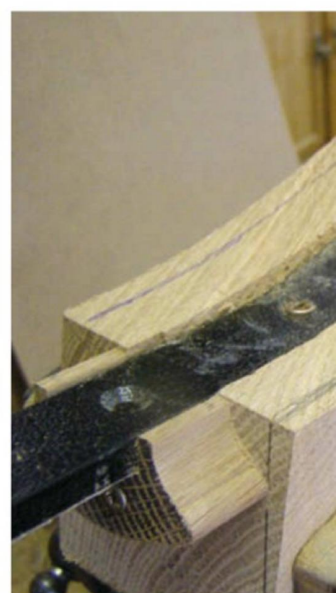
Details All the above chisels and more are used extensively on our long and short furniture making courses in Worcestershire (peterseftonfurnitureschool.com).

All Hands to the Rail

Bidding online Richard Arnold discovers that some things really can only be done by hand



Wreaths The Burberry store in Knightsbridge, for which Richard made the handrail wreaths by hand. Working on one of the shallower sections of handrail (left). Each piece was started by marking out the section onto a lump of oak, using the metal rail, which had already been installed at Burberry, but had to be removed for Richard to do the work. He hadn't made a wreath like these since college in Leicester, 30 years ago. The trench was difficult to do because he only had 3in-thick oak, and had to take grain direction (particularly short grain) into account. He started by routing a trench freehand, then cleaned up by hand. Sample profiles are screwed to the ends as a guide (right)



This is a story of a lucky purchase, and being in the right place at the right time. A few years back I was checking out a famous online auction, and spotted a very clean sash fillister for sale. This was something I needed to add to my grandfather's tool chest, as the original one had been lost.

The other thing that drew me to this plane was the fact that the seller had noted that whoever won the said plane in the auction would have the first refusal on a

whole chest of other tools that the fillister plane had been in.

Thankfully my bid was successful, and I arranged to pick up the fillister, and view the other tools in the chest. As it transpired, the seller was emigrating to Australia, and was disposing of most of his possessions. The tool chest had belonged to his grandfather who had at one time run a small joinery business. Unfortunately the rest of the tools in the chest were either badly damaged, or duplicates of tools I already

possessed. Out of courtesy I made a list of anything that I thought might be of value so that the seller could auction off the rest of the tools.

Parting shot

I was about to take my leave when I noticed that there was a small sliding drawer in the chest that I had not previously opened. On further investigation, discovered six beautiful miniature planes lying in the bottom of the drawer. I instantly recognised

Tools for the Job

Richard relied on miniature wooden planes to do the job



Other woodworkers helped Richard with the monumental task of producing the handrail, but didn't have the tools, so couldn't help him much. The tiny 'thumb' planes (above & left) have compassed soles, no more than 2in long, and were the sort used by coachbuilders. "I could have done with smaller ones," Richard admits. The two rebate planes are often found in pairs, one of them coffin-shaped, and were used to form the quirks



these as being what I refer to being handrail wreath planes. In truth they could be used for other purposes other than handrails, but this is what I usually associate them with.

I told the seller I would be interested in buying the planes, and we eventually struck a deal. In hindsight I possibly paid more than their market value, but somewhat surprisingly they have more than paid for themselves.

As is often the case with this type of plane, rather than being made by a



Curves Using one of the little thumb planes to produce a section of handrail. Notice how little wood there is either side of the trench for the metal bar, which meant there was very little margin for error

commercial plane maker, they had been created by the craftsman himself. What was curious was the material he had chosen. My first thought was that it may be walnut, but after cleaning them I was unsure. I have shown the planes to numerous people over the last couple of years, and the general consensus is that they are probably made of false acacia. Incidentally, I think he must have been a bit short of wood, as two of the planes have boxwood wedges.

In truth, although the planes appealed to me, and I admired how well they had been crafted, I didn't think I'd have an opportunity to use them. So, as before, they were tucked away in a small drawer in my own chest for safe keeping.

Ribbon rail

Last summer I had a phone call from a new friend who is a fellow woodworking enthusiast. He was at that time doing some freelance drawing work for a joinery company near Cambridge. This company had taken on a contract to supply some oak handrail for the prestigious Burberry store in Knightsbridge, London. The handrails consisted of a series of continual flowing curves, interspersed with complex turns.

They had presumed they could manufacture the handrail with a combination of spindle molding, and CNC router technology, but discovered that although they could produce the long flowing sections with machinery, the tight turns proved impossible to work. After approaching other specialist machine shops it transpired that the only way to produce the wreaths was to resort to good old-fashioned hand methods.

At this point my friend happened to



mention he may know someone who might be able to help. To be honest the only handrail wreath I had ever made was at college, and that was over 30 years ago! But I love a challenge so I said I would try a test sample for the architect's approval, and if they were happy with that I would do the others. When I say the others, I was told there were only six wreaths they were struggling with, but there might be a couple more they might get me to take a look at. I should have been suspicious! I finally finished the contract, 52 wreaths later.

Working by section

The handrail section itself was quite delicate, the overall size being 2x1 1/4 in. This was housed over a metal base rail which had been sent to site, fitted in situ, then cut back out, and sent on to me at the workshop. The way I approached the job was to house each wreath over these metal base rails, then level the oak to a flat plane

just proud of the metal. This was tackled by taking as much bulk away with the bandsaw, followed by a wooden spokeshave and rasps.

At this point I screwed a small section of finished handrail to the squared ends of the blank. Using the base and these small sections as a reference, the blank was then reduced to its finished thickness and width.

The handrail profile was made up of a combination of coves, quirks, beads, and a shallow ogee at the top. It was at this point that those little planes I found a couple of years before really came in useful. Much as one would approach moulding a straight section of handrail by hand, the first stage was to form a series of rebates, as I did when I was reproducing the 'Titanic' handrail a few issues ago. (BW29:10). These were in the first instance cut free-hand with a mallet and chisel, then cut back to a gauge line with two of the small planes which are in fact compassed rebate planes,

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BW34



Tight The tight curves (below) were the most difficult, because they come back on themselves and drop down as well (left). The carving was done entirely by hand, with planes, chisels, gouges and scrapers. Normally handrail sections are held together with special bolts, but this wasn't possible here, and Richard thinks they were assembled with metal dowels

one with a compassed sole, and one with radiused sides.

The next step was to remove waste from the edges by forming appropriate chamfers. These were worked with a wooden spokeshave and rasps. The cove at the base of the rail was then worked in the first instance with a small carving gouge, then trued up with one of the small planes which was a compassed round. The bead on the outer edge of the rail was roughly worked with a tiny violin maker's plane, followed by a small scraper fashioned out of a piece of broken hacksaw blade. Finally the profile to the top of the handrail was worked with a combination of a large scribing gouge, violin plane, and finally an appropriately-shaped cabinet scraper. All of the moulding processes could have probably been carried out with just the use of various chisels, gouges, and scrapers, but those six little planes made the job so much easier, and for that matter a lot more fun.

Plane owner

The name stamped onto the planes is D. Woodward, so if you are looking down on me Mr Woodward, I would just like to say how much I admire your craftsmanship, and thank you for having the opportunity to use your planes.



One more thing. The day I bought the planes, I did come away with one more tool. Just as I was leaving I spotted a small back saw lying on a shelf, and something about it struck me as unusual. I enquired if it was for sale, and the gentlemen said that as I had been so helpful he gave it to me as a gift. That little saw turned out to be one of the most exiting finds I have ever made, but I will leave that story for another day.

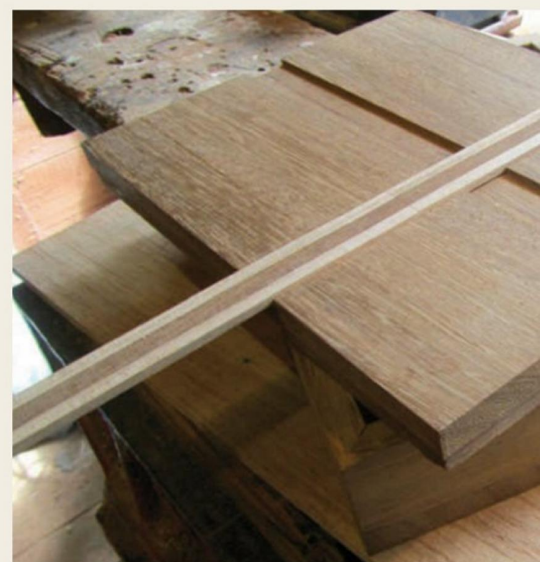
Violin Using a violin-maker's plane, made for Richard by his father, when Richard was restoring violins



Pic.1 For a bow, cut two B-shaped pieces, leaving a straight section between the loops as long as the ribbon is wide. Chisel a halving joint so that the two half-bows sit flat across each other. Glue a single loop diagonally on top to hide the join



caption Glue thin boards together using contrasting colours and slice the sandwich into slim pieces. The sandwiched can be thickened to suit a straight router cutter for grooving (below). Cut the box in half after routing the grooves



Ribbon Development for Boxes

Keen to get in on the ribbon act, Tony 'Bodger' Scott makes an unusual box with integral wrapping

My daughter Amanda is getting married this summer, so, like any proud father, I've been casting about for something special to make her. The inspiration for this jewellery box wrapped in trompe-l'oeil ribbons with a bow on top came from an American magazine. The finished box looks splendid, but is not difficult – which is just as well, given my limited talents. The principle can be adapted to other projects, too: a wooden swag on the face of an open-fronted cupboard, say, or decorative handles on a bowl.

Start by planing flat three small planks of whatever wood appeals. I used 1 1/4in-thick pieces of ash and teak to create a contrasting colour. Glue and clamp them to make a wooden sandwich. Aim to make the finished sandwich exactly the same thickness as your most convenient groove cutter is wide (20mm in my case). Once the glue is dry, you can slice off straight ribbons with a bandsaw, or cut loops, bows and waves with a coping saw or scroll saw.

The box itself – mine is 9x7x2 1/2in – began life as four mitred sides with slabs glued top and bottom. Once the edges had been squared off on a bandsaw, I cut shallow 20mm grooves right round the box, centred on the short side but off-centre on the

long side. Leaving the cross-over point of the grooves off-centre leant, I thought, a jaunty informality to the design; it also meant I didn't have to reset the router table fence between cuts. And leaving the box's lid and body intact until after grooving ensures the grooves line up.

A trial assembly showed that the general idea would work, but thinning the ribbon loops and refining their inside faces was tiresomely slow without a bobbin sander. In the end, I improvised. I sawed an inch or so into the end of a piece of 8mm dowel, and put the unsawn end into the chuck of my old drill. One end of an inch-wide strip of sandpaper went into the slot; the other end was left flapping. Fix the drill business-end-up in a vice, turn it on and, bingo, a zero-cost sander capable of smoothing the inside face of the smallest loop.

A small turned knob in the same dark wood is glued to the face of a racetrack-shaped plate inside the drawer. Twisting the knob swivels the end of the plate up into a shallow groove on the underside of the shelf, and holds the drawer closed even when the box is tipped up. I just have to hope my daughter loves it.

The finished box is a fair representation of a present wrapped up in a bow. Next time, though, I'd be tempted to mitre in the top and bottom to avoid so much end grain showing. And, for the lighter strips of the ribbon, I'll avoid the strong grain pattern of ash and use instead a smoothly cream-coloured wood such as holly. If I were making a similar box again, I'd make the lid somewhat deeper. My lid is so shallow inside that I had to cut a slim slot into it to fit the brass hold-up. Two other elements worked better: leaving the ribbons proud of the edge to keep lid and body aligned in use; and burying small magnets in the front edge (the rectangular shape lower left) as a substitute for a catch.

Cutting out neat baize-covered



Pic.3 The first try at laying out the pieces proved the idea would work, but the ribbon loops are still uneven and rough, before sanding with a home-made 'flap wheel' to a finish (below)

feet to keep the bottom ribbon from rubbing turned out to be easy. Attach stick-on baize to a strip of the same wood as the box and use a plug-cutter to cut through both at the same time. On the left-hand edge of the box, you can also see one of the four finger indents (two on the lid, two on the body) which make it easy to open the box against the pull of the magnets.



Pic.4 Tony uses a V-cutter in his horizontal router table to cut the mitres on the end of the box sides. Use a backing piece to reduce tear-out and push along the fence. Leaving a flat on the end of the mitre helps with running against the fence and during glue-up



First Issues

Nick Gibbs delves inside the launch editions of woodworking's most influential magazines

The American magazine, *Fine Woodworking* have recently reissued their first issue, from 1975, which you can buy for about \$15. The magazine has probably become the most famous in the world. The oldest extant woodworking magazine must surely be *The Woodworker* (now known just as *Woodworker*, despite a campaign in the 1980s to have the definite article reinstated). Its first issue came out in October 1901, published by Dawbarn & Ward, and edited by Percival Marshall (A.I.Mech.E), who opened the first issue with a vision in mind: 'We do not set ourselves the task of competing against any existing publication, but we strike out in a direction which seems to us to offer room for a reasonably healthy and useful existent.' If only we knew what the rival titles were like in those days.

Seventy-four years later, editor Paul Roman welcomed readers to *Fine Woodworking* simply by writing: 'We're delighted to be publishing this magazine.' Having left General Electric to launch the magazine from their home, keen amateur woodworker Paul and his wife Jan had their own dream of inspiring readers. 'Good luck folks,' wrote John O'Meara of Bedford Hills, NY, 'I hope you succeed.'

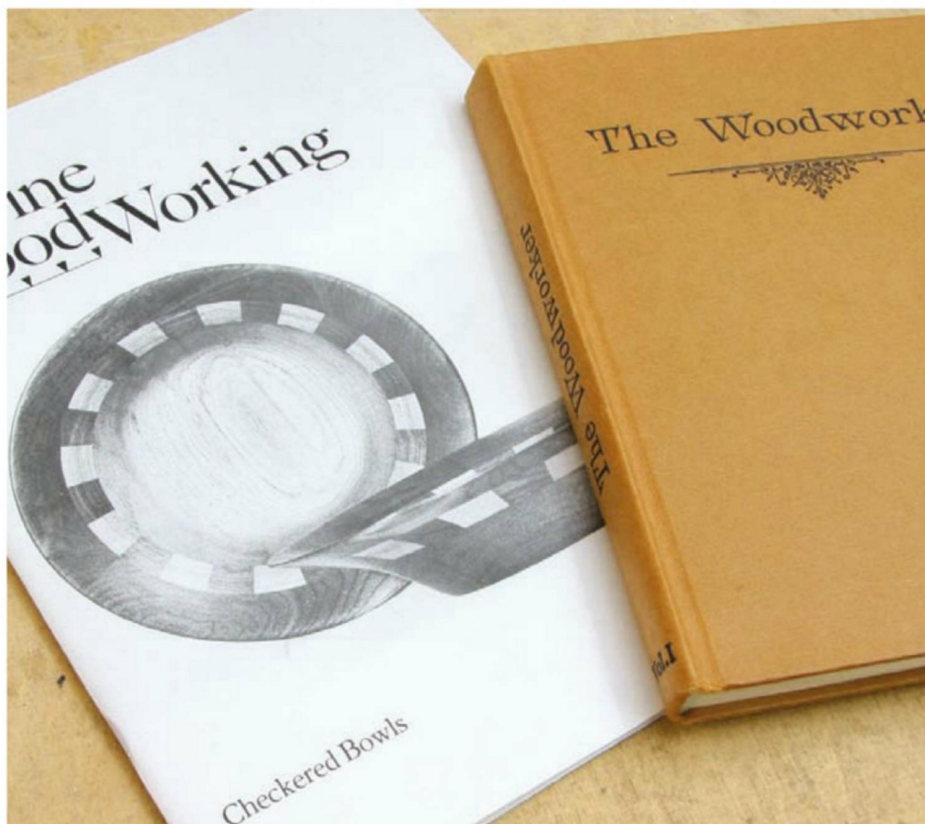
Both editors made a call to arms of fellow woodworkers. Paul Roman, who stood down as CEO of publishers The Taunton Press in September 2012, told readers: 'What we're looking for primarily is expertise – the writing usually has a way of working itself out. So do drop us a note if you have the germ of an idea, or more.'

Authorities

Percival Marshall, who went on to become the owner of his own eponymous publishing company, made a similar, if more formal request: 'Although we have a permanent staff of contributors already engaged, we

"Coming before the public for the first time as a carpenter I am inclined to feel anxious"

are open to consider offers of designs or articles from competent authorities on woodworking subjects, and we shall be especially pleased to receive from our readers in general any photographs and descriptions of work they may have



executed, which would be likely to interest or assist their fellow readers.'

While *Fine Woodworking* promised to pay for features, *The Woodworker* came up with the ingenious idea of running competitions for the best articles, including £2 2s for the best piece entitled 'A Woodworker's Tool Cupboard, and How to Make It.' Competition No.6 in the same launch issue was for a feature on, 'How to Build a Cycle Shed to Hold Two Bicycles,' also worth £2 2s to the winner. The results of the first six competitions were published in the February 1902 issue. Mr Albert E. Barnes of High Wycombe's winning of the Best Original Design for an Armchair was compromised

by the magazine's comment regarding that competition that, 'we have to express disappointment with the designing abilities so far evinced by our readers.'

You get an idea how ready readers were for the new magazines by the Letters to the

Editor in the launch issues. 'My desire to add some practical help to my good wishes for the Editor's new undertaking has induced me to contribute a few photographs and sketches of articles of furniture and decoration executed in my very limited spare time,' wrote WT Whitehead of London to Percival Marshall. 'Being an artist by profession, I am perfectly willing to accept philosophically, and even gratefully, any fair criticism about my designs; but coming before the public for the first time as a carpenter, I am inclined to feel a little anxious for fear the more practical man should say – "The work is 'bodged', not 'made'." I make dozens of designs as the ideas strike me, with the intention of executing them one after another, but on account of the time that each little job takes, as I am going on now, life is too short to get half through all I have set myself to do. For this reason, among others, I am looking forward to all kinds of useful information to be picked up in the future pages of this publication.'

Across The Pond, Robert N. Lominack Jr, from Norfolk, Virginia had similar hopes for *Fine Woodworking*. 'It is about time – no,

mortise made for the lock cuts away all the strength of the door. What I said in reference to Fig. 9 applies with still more force to Fig. 10, therefore gauge both tenons from the face side of the rail.

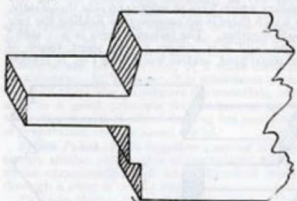


FIG. 11.—"TUSK" TENON.

Fig. 11 shows a form of tenon which is met with in carpentry only; it is called a "tusk" tenon, and is used in framing for the joists of a building where openings have to be left for stairs, fire-

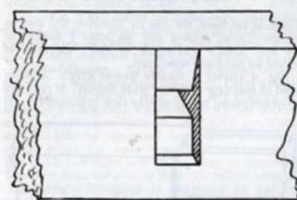


FIG. 12.—MORTISE FOR "TUSK" TENON.

places, &c., and Fig. 12 shows the corresponding mortise. It will be noticed that owing to the method of cutting the tenon there is practically

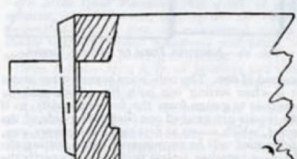


FIG. 13.—SECTION OF COMPLETE "TUSK" TENON JOINT.

no weakening of the joint by the mortise, and yet the advantage of nearly the full depth of the joint is obtained in the tenon.

A section of the complete joint is shown in Fig. 13, so as to make it clear, as well as to show how the two timbers are fixed together by means of key I, which, passing through the tenon as shown, draws the two parts together tightly. In setting out, all gauging must be done from the top side of the joints, as that is where they are required to finish level.

In my next article I shall show how to fix mortise and tenon joints together by means of pins and wedges.

(To be continued.)

[CORRECTION.—In the last line of the previous article in this series the word "priming" should read "pinning."]

Timber: How to Choose It, and How to Use It.

By PERCY A. WELLS.

(Continued from page 16.)

II.—ENGLISH, AMERICAN, AND EUROPEAN OAK. ENGLISH OAK has been fully described as "The King of all woods," and if the test of time and history be taken, it is well worthy of such a title. In strength and durability it has no rival, and many a fine piece of work, made over five hundred years ago, is standing to-day a witness to its indisputable and universal superiority. The ships which Drake commanded were built of "Hearts of Oak"; the wonderful screen in York Minster, and such stately Halls as Speke and Haddon were reared with the same sturdy material. It can be safely said that from the times of the earliest Saxons the oak has been in all senses a national timber: the first laws were enacted beneath its branches; ships, houses, churches, furniture, and vehicles were built and made of it; and to-day it is still put to the same national and domestic uses, and is still the grandest all-round wood the world produces. It appeals to all Englishmen as the best loved of all our trees; how much more should it appeal to the man who fashions it for good and noble uses?

The common English Oak (*Quercus robur*) is divided into two species, the difference being more in the foliage and fruit than in the timber itself. In the one, called the Peduncled Oak, the acorns are supported on short stems, the leaves are the larger of the two and the bark the darker; in the other—called the Sessile fruited oak—the acorns have no stems, and although the peduncled oak is said to be the best, the difference is so little—if any—that both kinds are used without question of superiority. Needless to say, English Oak is difficult to work, although with good wood it always repays the labour; it varies in colour from straw to pale brown, and goes darker with age to a fine brownish black, but never seems to lose its strength. If exposed to the weather without varnish or polish it goes a dull grey, and the inside darkens quicker than when indoors. It is used largely for its "silver grain," or "clash," as it is called in common

method is shown at S, Fig. 17, and yet if we watch a dozen joiners at work we shall probably see quite half of them make their wedges in this way. At T is shown the proper method of cutting wedges, and a comparison of the two shapes will soon prove that this is so.

In Fig. 20, at U are shown two faults which often show themselves in wedging up tenons. On the right the wedge penetrates through to the face side, owing to the tenon being too small for the



FIG. 20.

mortise, and accelerated by the use of too small a wedge; while on the left is shown a part of the face driven out by the use of a wedge of the same pattern as shown at S, Fig. 17. The remedy for each of these faults is obvious.

At V and W are shown two methods of what is called "fox wedging"—that is, wedging tenons which go only partly through the wood. The mortises have to be made larger inside than out, and the wedges sloped to the same extent, and a fairly strong job is the result. V shows the wedges at the sides of the tenon, and W shows the tenon split and the wedges inserted in it. The latter makes the stronger job; but it is rather a difficult matter to make a satisfactory job, and, taken on the whole, such tenons are better fixed with pins.

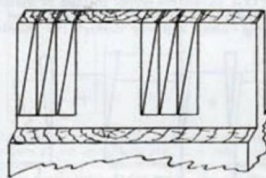


FIG. 21.

Fig. 21 shows how to cut the wedges from the waste wood in the haunchings in such work as panel doors, sashes, &c., thus economising both time and material.

Wedges must only be used abutting against end grain; if against side grain, the work will certainly split and be ruined; they must be the same thickness as the tenons—if thicker they will split the wood, and if thinner will turn round when driven, with the same result.

I shall in my next show some mortise and tenon joints of a more complicated kind than the simple ones shown in the preceding chapters.

(To be continued.)

How to Polish Woodwork.

By "MASTIC."

(Continued from page 34.)

II.—METHODS OF POLISHING.

THE work must now remain at least for twelve hours. Next go over the work lightly with a little methylated spirits and linseed oil on a piece of rag to remove smears and dust. Then give one or two rubbers of polish, the last rubber to be half polish and half methylated spirits, and kept working evenly until the rubber is quite dry, when the surface should be almost entirely free from smears. Now prepare a spirit rubber by pressing together a piece of clean wadding, and damp the surface of the wadding with a little methylated spirits. Cover the rubber with three thicknesses of rag, and go over the work quickly and evenly, taking care not to press too hard at the commencement, or the surface of the work will be spoiled. When the rubber appears dry, remove the first layer of rag and proceed as before. When that layer is dry remove it, and with what remains of the rubber go over the work very quickly, and use much pressure until the rubber is quite dry. The work is now finished, and should be allowed to stand for a few hours before handling, when all brass work may be replaced and the parts put together.

If it is desired to make the wood darker, prepare a stain as follows:—Mix 2 ozs. of bichromate of potash in $\frac{1}{2}$ pint of water and dissolve. Then mix some of the solution with equal parts of water, and test the strength by going over a piece of the same quality wood to be stained. When dry, oil with linseed oil. If the pattern is too light, add more stain; if too dark, add more water. It will be found that some mahogany is more sensitive to the stain; parts which are not as sensitive as others will require a second application of the stain. If any part of the surface is rough after staining, it must be rubbed down with fine glass paper. Great care must be used in doing it or the surface will be patchy, and the edges show light. When dry, oil over with linseed oil, and polish as directed in previous article. If it is necessary that the work should be of a reddish tint, use a little red polish when bodying in.

Small mouldings and turned parts may be given a coat of varnish thinned with a little polish, and laid on with a camel-hair brush after the work is first bodied in. It should be papered down the same as flat surfaces, using half round oil flout paper. This will help to make all the work of an even thickness, which can only be otherwise obtained by constant practice.

Carvings may be treated as above, and when a good surface has been obtained, finished with a thin coat of varnish, or by glazing, which must be done as follows:—Mix 1 oz. of benzoin and 1 gill of methylated spirits. When dissolved, strain it through a piece of close rag; make a small rubber, which must be kept for this purpose

Tusk It was perhaps indicative of the times that every issue of *The Woodworker* seemed to include details of cutting either tenons or mortises. In November 1901 they featured the tusk tenon, which, according to the author, was employed 'in carpentry only'. It was used for framing joists in buildings, notably where openings had to be left for staircases and fireplaces

past time – that serious woodworkers, who desire to be this century's fine craftsmen, have a magazine for them rather than just another do-it-yourself, arts and crafts publication. Robert Lominack, now a retired Presbyterian minister, received a flyer about the new magazine through the post, and wrote to Paul Roman, promising to subscribe for the rest of his life.

That is exactly what he has done, and he now has all 231 issues of the magazine. At the time, he says, there were no woodworking magazines in the USA, apart from a 30-page 'cut, lick and paste' job called *Workbench*, which he had to drive 200 miles to buy in his wife Mary's home town of Gordonsville, VA, near Charlottesville. To this day, Reverend Lominack has no idea how Paul Roman got his address to send him a promotion for the magazine. We found Robert over the Internet, of course, which has changed publishing beyond measure.

Changing magazines

Perhaps the most distinct contrast between magazines then and now, ignoring the lack of colour, and in *The Woodworker's* case,

photographs, which weren't introduced for a couple of issues, is the readers' need for answers. In the launch issue of *The Woodworker*, Percival Marshall introduced Question Box, a feature that was still going when I was editor in 1991. The magazine offered a Postal Reply System, effectively answering more questions than it could publish, and doing so as quickly as possible, before the next issue was in print. Even in the late 1980s this was still a significant undertaking, with a dedicated filing system of questions and answers, and a log of which questions had been sent to whom, and if the reader had received a response.

Publishers rarely understood such customer service, but in those days paying £15 to antiques expert Vic Taylor to answer a question was considered a duty of the publication, whether or not his response was published. These days, of course, queries are answered by other woodworkers, on forums and via blogs, and that essential need has been lost from magazines.

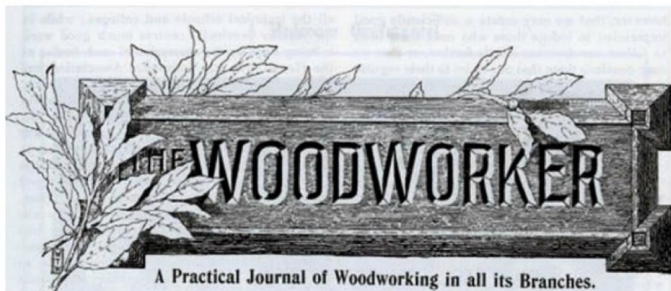
You can sense, however, that in 1975 woodworkers in the USA were desperately in need of advice, though the launch issue of *Fine Woodworking* lacked answers to John

Answers In the launch issue of *Fine Woodworking* Earl Lichten asked about the setting out of foxtail joints, which we know of as 'fox wedging' perhaps because the wedges inside the mortise are cunningly hidden. By the way *The Woodworker* spells mortise with an s, and if that was good enough for them it's now good enough for *British Woodworking!* Contributors take note!

Earl B. Lichten's request for information about setting out foxtail joints (in single or double wedge arrangements) in maple, cherry, honduras mahogany or plain pine, for jewelry or knife boxes, as he wrote. As luck would have it, *The Woodworker* showed the technique in issue three, December 1901, which we have in our hands thanks to *British Woodworking* reader, David Howden, who gave us the first annual at a show recently.

The two magazines, so far apart in age, were surprisingly similar in content. *Fine Woodworking* was, and is, big in size and 50 pages long (but only quarterly then), whereas *The Woodworker* (if the annual is an exact replica) was halfway between A4 and A5, and only 20 pages an issue in 1901. Features in the launch issue of *Fine Woodworking* included a profile of banjo maker Richard Newman, a review of furniture in Washington DC, the turning of a laminated bowl, and a long piece by Timothy Ellsworth on hand planes, and of particular interest to the student entrants of our own Planemaking Challenge, how to make your own wooden plane.

The Danish designer-craftsman Taje Frid,



VOL. I. NO. 1.

OCTOBER, 1901.

PUBLISHED MONTHLY.

To Our Readers.

TO justify its appearance, and to attain a satisfactory measure of success, a new journal must do one of two things: it must either accomplish in better style what other journals are already doing, or it must fill a want which its contemporaries have left unsatisfied. It is on the second count that we base our *raison d'être*. We do not set ourselves the task of competing against any existing publication, but we strike out in a new direction which seems to us to offer room for a reasonably healthy and useful extension. We aim at producing a journal for woodworkers—and for woodworkers only; not one which, while containing a limited amount of cognate information, also devotes a considerable portion of its space to matters more or less remote from any branch of woodworking. In doing this we are merely following the tendency of the age—viz., to specialise, and we venture to believe that this intention on our part to exclude all extraneous matter from our pages will gain for us the sympathies and the tangible support of those who regard woodworking as their hobby or their livelihood. We include the latter class advisedly, for while we look to amateur workers to furnish a goodly proportion of our readers, we trust that the quality of the fare we provide will be such as to make our journal equally worthy of the perusal of the professional. We shall cater as much for the practical craftsman, who is seeking artistic and attractive designs to which to apply his manual skill, as for the man whose

power of origination is in advance of his dexterity with his tools and of his ability to carry out his artistic conceptions on sound constructive lines. The novice, too, will receive due consideration at our hands, and we shall aim to so vary the contents of each issue that workers of all ages and all stages may find some one thing at least of interest or of value. We are fortunate in having secured as members of our regular contributing staff men who are specialists in their respective branches of the subject, and our readers may thus rely on being provided with information of the highest possible value to them in their work. We cordially invite our readers to avail themselves of the opportunity for obtaining skilled advice or assistance through the medium of our Postal Query Department, as announced elsewhere in this issue, and we shall be equally pleased if they will make use of our correspondence column for the discussion of any points of mutual interest. Although we have a permanent staff of contributors already engaged, we are open to consider offers of designs or articles from competent authorities on woodworking subjects, and we shall be especially pleased to receive from our readers in general any photographs and descriptions of work they may have executed, which would be likely to interest or assist their fellow readers. Suggestions of subjects which our readers would like to see treated in our pages will be welcomed, as also will any comments or criticisms indicating points wherein the usefulness of our journal may be increased. All first numbers have their shortcomings, and we are well aware that this issue of *THE WOODWORKER* is no exception of the rule. We trust,

Launch The first issue of *The Woodworker*, in October 1901. 'All first issues have their shortcomings,' the editor wrote. 'We trust, however that we may create a sufficiently good impression to induce those who read these lines to follow our fortunes a little further, so that we might convince them that our claim to their regular support is well founded, and that we have really come to stay.'

whose articles and books for *Fine Woodworking* made him famous over here, wrote in the first issue about woodwork in schools. 'Today people look down on vocational education because it has not inherited the prestige of the past generation in America. In Europe, the craftsman enjoys the recognition he deserves. There should be more effort made to put more respect into vocational training. A student taking vocational training is just as intelligent as a student enrolled in a college program, the only difference is that the student does not want to be an academician.'

Threats in schools

Today, Design Technology is under greater threat than ever in Britain today, as a result of the proposed introduction of the English Baccalaureate (EBacc) into secondary schools. A handful of academic subjects are set to be given elevated status when it comes to point-scoring for schools at GCSE level, and art, music and DT are likely to be marginalised. This is a tragedy for schools and children, especially as DT was making so much progress in trying to reintroduce practical skills, while also using designing

exercises to ignite interest in other parts of the curriculum amongst students who are disillusioned by theory-based subjects.

I'm not sure how many craftsmen in Britain would have agreed with Taje Frid even then, in 1975, and certainly not now. The second issue of *The Woodworker*, in November 1901, featured an article by JWT on the Sloyd System of Manual Training, observing how schools had been changing. We hope to publish the piece in full next issue, but it starts by saying: 'No subject in the school curriculum so well illustrates the great change which has been made in education recently as manual training. The general advance in education has been from the abstract towards the concrete, from the theoretical towards the practical, from the knowledge of words towards the real knowledge of things.'

The author goes on to promote the Sloyd approach, from Sweden (as Doug Stowe did last issue), which advocates practical activity as a adjunct to academic study, rather than as a separate entity. As a system it focuses on skills that raise individual awareness and challenge a student's faculties and self-discipline, rather than preparing them for

October, 1901.

The Woodworker.

19

Technical Classes for Woodworkers.

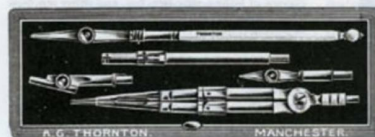
THE NORTHAMPTON INSTITUTE. Classes for modelling, and elementary and advanced wood-carving are amongst those held at the Northampton Institute, St. John Street Road, London, E.C., and will be found especially adapted to the needs of those engaged in the woodworking and furniture trades. Other classes are intended for cabinet makers and designers, whilst carpentry and joiners' work form conspicuous features in the well-produced prospectus of the Institute. This prospectus can be obtained on application to the Principal, R. Mullineux Walsley, D.Sc., F.R.S.E.

THE BATTERSEA POLYTECHNIC. Carpentry and joinery are undertaken in a thorough manner at the Battersea Polytechnic, the syllabus showing that attention is paid to students in all stages of advancement. Hand-railing and staircasing will be of use to those who wish to obtain a practical insight into this department of woodworking, and there are also

drawing instruments of all grades, and supplies drawing papers, tracing papers and cloths, inks, colours, and every requisite for drawing purposes, particulars of which will be found in his complete catalogue, which covers over 200 pages.

Woodworking Machinery.

We show, in the illustration below, a very conveniently designed circular saw-bench made by Mr. E. S. Hindley, of Bourton, Dorset. In this bench the table rises and falls by a screw, the spindle and pulleys always remaining in the same position. This obviates the necessity for altering the length of the belt, and the fixed bearings ensure a perfectly steady-running spindle. The table, which is accurately planed, is provided with a cross-cut slide and an adjustable canting fence. The latter can be instantly swung over the end of the table, leaving the table clear when long pieces of timber have to be cross-cut. The bearings of the saw spindle are of ample length, and lock-outs are provided to allow all side play to be taken up. The spindle is adapted to take a planing and



other classes in connection with building which will appeal to readers of this journal. The Secretary of the Battersea Polytechnic, Battersea Park Road, London, S.W., will send this prospectus for 3d., post free.

On the Market.

[The Editor will be pleased to receive for review under this heading samples and particulars of new tools, apparatus, and materials for Woodworkers.]

Drawing Instruments.

Every woodworker should be the possessor of a drawing board, and a few, at least, of the simpler forms of drawing instruments. The set shown in the accompanying engraving is, perhaps, the minimum outfit in point of completeness which will serve for useful work. It is called the "Vex" set, and is made by Mr. A. G. Thornton, of 107, St. Mary's Street, Deansgate, Manchester. It includes a 4½-in. electrum double steel-jointed bow compass, with double knee-joints, fine steel points, pen and pencil points, and lengthening bar, and also a 5-in. drawing pen with electrum mounts and bone handle, all enclosed in a silk-lined, flat pocket case. This, as a cheap set, is excellent value and can be confidently recommended. Mr. A. G. Thornton makes a very large variety of



moulding cutter, if required. This is a machine which is well adapted for high-class joiners' and cabinet-makers' work. Mr. E. S. Hindley also makes small saw-benches for hand-power, hand-saw machines, a "joiner and wheelwright" machine, steam engines and boilers, electric light plant, and other specialties, full particulars of which will be found in his 60-page illustrated catalogue, forwarded post-free on application.

Tyler's Combination Wood Trimmer.

The machine which bears the name above is a combination tool for wood trimming, and for cutting mitres and tenons. The cutter carriage runs in a square adjustable governor, with adjustable screws to take up wear. The cutters are set in a mitre form, with a shearing cut. They will cut any angle or mitre, and the faces of four different angles or squares can be planed at one setting. The front gauges are pivoted, thus enabling the operator to adjust them to any angle or square by means of a hand-lever, and to work the gauges quickly to and fro by a screw. A special depth gauge is provided to regulate the cut of the shaving. The machine shown in the illustration on the next page is the No. 9 size, which has a table 18 ins. by 20 ins. graduated from 10 to 135 degs. on two sides, right and left. It will trim 9 ins. long by 11 ins. high, on every angle between the foregoing limits, and it will

Testing From the launch issue *The Woodworker* ran a page devoted to new kit, known as On the Market, which in October 1901 featured drawing instruments and a circular saw-bench made by Mr ES Hindley of Bourton, Dorset. Considering Benchmark had such difficulty finding a good carpenter's mallet for Terence Conran (see p.18) it's convenient *The Woodworker* showed how in 1902 (right)

repetitive work. Anyone who has studied the modern DT syllabus will realise that it has a skeleton the could provide that sort of comprehensive education given half a chance. It is surely the responsibility of magazines like our own, to stand up against moves to devalue practical learning, as the EBacc appears to be doing now. If you are interested in joining a campaign to draw attention to this, please email us.

The Woodworker went out if its way to help young craftsmen, and had a regular feature called Manual Training Notes, with grainy photographs of smartly-dressed pupils. 'In view of the many letters we have received from teachers expressing the wish that we should devote more space to woodworking from the instructor's point of view,' introduced the editor, 'we have decided to establish a regular section of our journal for this purpose. We believe that teachers generally, and especially those in isolated districts, will appreciate the opportunity for their opinions on various methods or systems of instruction in vogue.'

Plus ça change. Do please email us with your thoughts on how we can help to inspire new generations of woodworkers.



A Home-Made Mallet.

THIS much abused tool does not always find a place in the amateur's outfit, the hammer being sometimes made to do duty instead, to the serious detriment of the chisel handles. The short life of some mallets is owing to their being made of beech, which is about as unsuitable timber to stand hard knocks as can be found. If a mallet is made from good hard ash, it will last a lifetime. The writer has one in use at the pre-

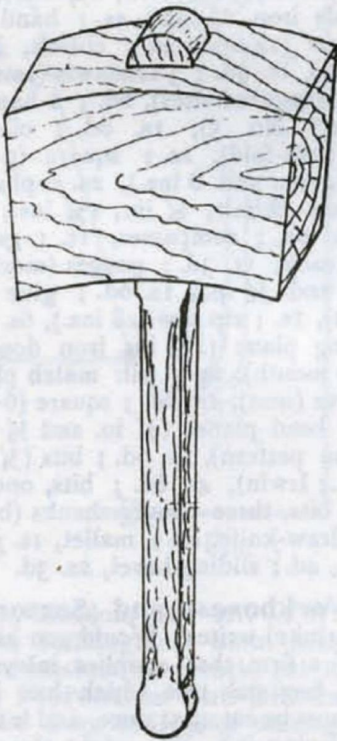


FIG. 1.

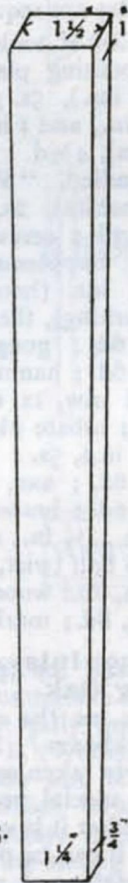


FIG. 3.

sent time which has been in constant hard wear for upwards of twenty-five years, and is good for many more years yet. Another thing which is bad about the ordinary mallet is the shape. They are frequently made too thick, with the result that chisels are often broken. On the other hand, if a mallet is made thin and long, it falls far heavier in use, and there is no fear of broken chisels.

To make a mallet, obtain a piece of ash, 6 ins. by 5 ins. by 2 in., and plane it up true as regards the two sides and one edge. Then make the centre line A (Fig. 2), and square it over at top and bottom. Now at the top set off $\frac{3}{4}$ in. at each side

of the centre line, and at the bottom $\frac{1}{8}$ in. less. Connect these lines, and square over at the top and bottom edges. These give the outline of the mortise in length. For the width of the mortise, set out in the same way, first making a centre line, and setting off at each side $\frac{1}{2}$ in. and $\frac{7}{16}$ in., respectively, at top and bottom. The block is now as shown isometrically in Fig. 2, and the mortise must be made carefully, so that it runs straight through and neither the ends nor sides are hollow.

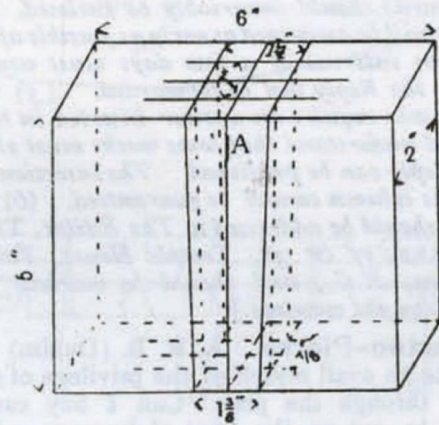


FIG. 2.

The handle must then be made. This should also be of ash, about 18 ins. long, Fig. 3, and planed to the right size to drive lightly in the mortise from the top side, in which it should fit closely at both top and bottom. The top end of the handle is then rounded off neatly, and the small end which forms the handle proper is cut off to 10 ins. from the head, and rounded to fit the hand. The head is rounded at the top side, and the bottom can be left straight, or cut out, as shown in Fig. 1.

The two ends of the head must be cut off, so that the bottom of the mallet is about $\frac{1}{2}$ in. shorter than the top, as in Fig. 1. The sharp edges can then be taken off with the spoke shave, and the job is done.

The material for a mallet as above can be obtained at any wheelwright's for a few pence, and three hours' work will make it easily, while the saving in chisel handles will cover the cost every three months at least.

Oak which is to be Exposed to the Weather.

A good method for above, if it is not to be varnished, is to oil well with boiled linseed oil, taking care that all end grain has two or three applications. Any small knots which are cracked should be stopped with putty made of yellow ochre and boiled oil.

Domino Effect

With 60 tenons to cut **Gordon Fry** asks if a Domino might not be better value for money

Designing this incredibly long oak sideboard gave me a few challenges. Distance was one of the main issues, the house being 75 miles from home. Back in the workshop you can't just nip to the site and take that key measurement you somehow missed off the rough sketch. I am finding myself, more and more, taking my laptop on site as it enables me to map out the plan of the room/space.

It seems strange to me now to take only a book and pencil to a site meeting for drawing out the fundamental shapes, and then return home to transfer this onto a SketchUp drawing file. In the past, I was often anxious at this stage, hoping I had noted all the relevant information.

Construction

For a cabinet it makes good design sense to create all the doors in a uniform size, especially if there are many of them. For this one, six of the doors are the same dimensions (676x493x28mm) and the remaining two are different only in width (676x555x28mm), but the same height for continuity across the cabinet. There are three small panels (780x180x28mm) and one large double panel (780x967x28mm).

First, though, the panels were roughed out before making the other components, because I

don't have enough sash cramps. I glued up two or three panels at a time, left them to set and continued machining the other parts. Once they were out of the cramps, I wanted to ensure the panels stayed flat, so weighed them down with some heavy tool boxes!

All the dividing panels and doors were constructed using the same settings on the tenoner and mortiser for speed and simplicity.

The finished size of the rails and stiles was 50x28mm, with the exception to this rule was the bottom rails of the panels, which were 127x28mm. This rail is different due to the skirting board which was to be applied after the main framework and doors had been fitted. This covers up all of the fixings which hold the facade to the pine floor.

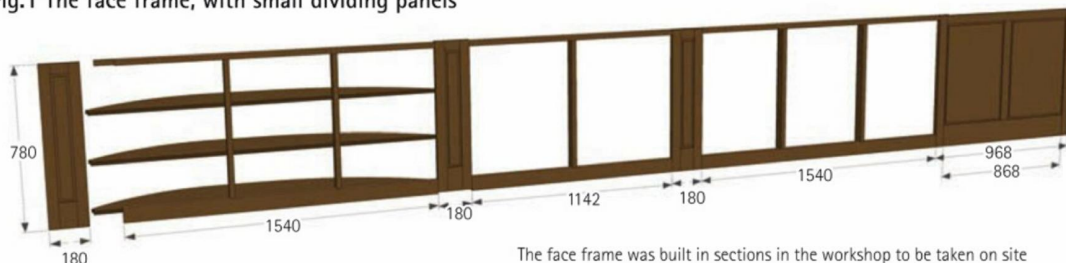
Once the vast quantity of oak had been planed, edged and thickened, the marking out could begin. In France you have to purchase a whole tree; no selecting individual boards. If the odd board is available, that's because it has been discarded as waste. It is a different story when buying beech in Normandy, with mills happy to let me pick single boards. Average price for a cubic metre of quality kiln-dried oak is £1000-1500 before tax, and depending on thickness, ranging from 18-120mm. In the UK you'll pay £35-50 per cubic



Frames Dry fitting the frame assembly (above), and using weighty boxes to keep the door panels stable whilst preparing other components. These panels comprise five boards with alternating grain to help keep them flat



Fig.1 The face frame, with small dividing panels



The face frame was built in sections in the workshop to be taken on site

SketchUp on site

These days I use SketchUp (SU) to map out a floor space when quoting for a new job, on site. It is very useful to include the thickness of the walls, let's say 300mm, as the Push/Pull tool will not work unless the walls have a thickness in plan view. Once you have created a face of a wall in a plan drawing, use the Push/Pull tool to create the required height of the wall. I like to use the actual thickness from the site as it will give me a better perspective of the space and of opening depths. All dimensions are input into the Value Control Box (Measurement bar) which is on the lower right-hand corner of the screen. Notice that you don't have to click in this box as SU accepts numbers during the drawing process.

Move round your room to the next wall. You only have to double-click and the wall will instantly refer to previously created wall height. The 'double click' action is incredibly useful when building up heights, depths and widths quickly. To create a hole in any wall, use the Rectangle tool to draw the shape of the opening, then Push/Pull to create openings within a space. Planning this way helps to understand better the feasible working area within which to design. However, I often hide two of the walls if they aren't close to the piece, as they can get in the way when working in SketchUp.



Tenons Dry assembling the doors and panels (above). Notice how many tenons Gordon had to cut! Checking the fit of the small panels to the top and bottom rails (left)



Pic.5 Offset sash cramps (left) being used to pull one of the sections of the face frame into square when gluing. Gordon used stabilising blocks to make sure the bottom rail remains flush with the dividing panel (right). The cramps weren't that tight, so that the ratchet cramps would pull the joint up firmly





TIP



Cramping If you need to keep a frame square it can help to use a sash cramp either side of a central stile (left). A straight edge (above) was used to check for flatness

foot, which equates to about £1025-1500 per cubic at today's exchange rate.

First job was to set the mortising machine to cut out all of the mortises, ensuring I had the face mark against the fence. There is nothing worse than reversing this as it can set the shoulders out of alignment when assembling the frames.

The entire project required 60 tenons. It made sense for me to set up my Sedgwick tenoner to cut this kind of volume. However, I think a Festool Domino (which I don't own) would cope really well with this type of job. It cuts down the traditional processes needed to make a standard mortise and tenon joint and in this project it would have come in handy as there were no mouldings on the stiles and rails.

Where it might gain is the fact that you have two flat

surfaces to bore your holes into, thus there is no need to remove cheeks and form shoulders that line up all the way around the joint, as you do in traditional methods. It would win the race for speed in straight forward jointing. The Domino dowel rods come in various lengths (from 80mm up to 750mm), which means it would be quite easy to create long and short shoulders for rebating. This would allow you to rebate your entire length of stock.

Without actually owning a Domino, I wonder how well it would cope under a lot of strain, since this is a hand-held machine and accuracy could wain after continuous use, unlike my tenoner which clamps each section of wood and in turn has its own stop, so there limited errors of judgement.

In my opinion, most workshops need a mortiser. Mine



is a Jet 719-A, which costs £962.95inc.VAT. But my tenoner could be replaced by a Domino or a standard spindle moulder, and an equivalent to the one I have is the SETM-3HD three-headed tenoner, which costs £4849 from Axminster. Obviously the Festool Domino is significantly less.

Biscuit jointing

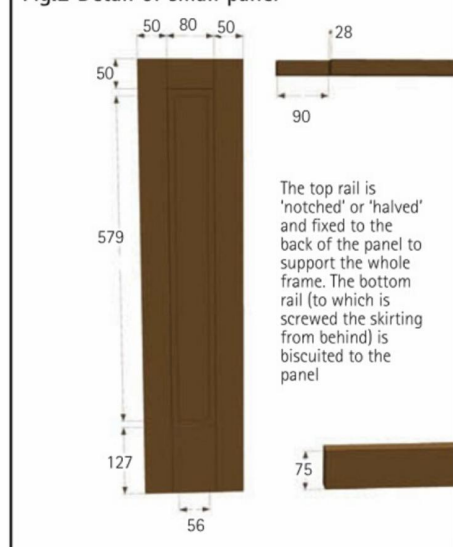
The bottom rails between the panels are biscuit jointed into the panels. This is because the stiles are only 50mm wide and there was a tenon on the panel

rails taking most of that width. There wasn't room for a tenon from both sides of the stile. It also meant that I would be able to shorten this rail if required when fitting on site. Fortunately, that wasn't necessary. A slight scribe on the two end panels against the walls was all that was needed. A Domino could replace my biscuit jointer when it goes to the tool grave, but the DF500 Q-Plus costs about £730, compared with £284 for the Makita 3901 jointer.

The dividing panels are the full height of the frame. The top rail wraps around the back of these panels with a halving joint of sorts. To hold them in place I biscuited the halving joint to the panel, with biscuits into the back face of the panel. This helped a lot on site as I was single-handedly assembling a unit more than 5m long. I was able to hold the long top rail in a precise position while cramping the other end and making sure everything was aligned. Once glued it made a strong joint, and we were nearly ready to go on site.

FOR SALE OMEC 650-M
Dovetailer milling machine,
single phase, used only twice;
£2,400; email BW.

Fig.2 Detail of small panel



Biscuits Cutting slots in the dividing panels for biscuits to fit the bottom rail

Cutting Tenons the Old Way

Still without a Domino, French Fry cuts his tenons on a tenoner, bandsaw and by hand



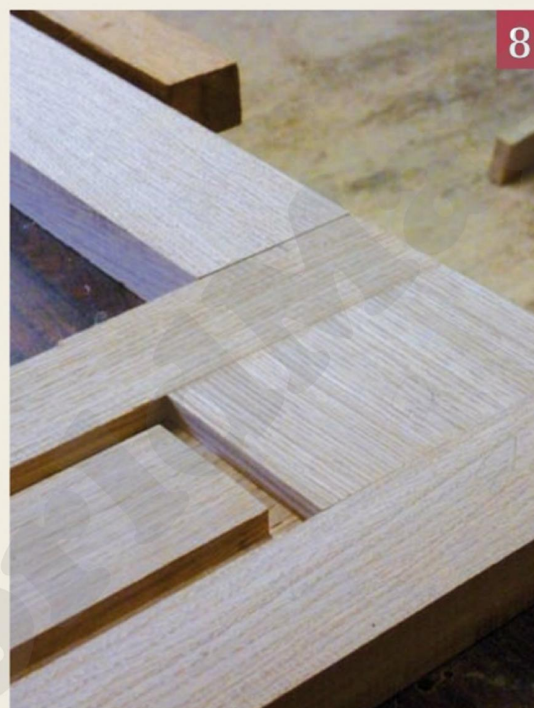
Machines Using the tenoner (left) to remove the bulk of the waste from the tenons. The narrow 'side' cheeks are cut on the bandsaw (above). Is there a term for this cheek?



Cleaning Using a Japanese saw to cut the short shoulders (left). Then tenoner cuts the main shoulders. Paring the side cheek (above) and the shoulder (above). With a Domino you wouldn't have to do any of this



Fitting A dry run into the mortise (left & above). Perhaps the Domino would be faster!! Detail of one of the small panels (right), with the simple rebated panel, which scales well between the small and large panels and the doors



Dovetail Dash

Continuing his discussion on skill John Lloyd tries cutting a five-minute dovetail



1 *Starting* Mark the thickness of each piece on the other with a sharp pencil (left). The 'tail' piece needs a pencil line all the way round for cutting the shoulders. Saw the dovetail shape completely 'freestyle' (right), no squares, dovetail markers, pencil lines nor jigs, just 'skill' acquired by practice



Whilst there are a great many uncertainties in life, one thing that is for sure is that if you want to become skillful at something, no matter what it is, if you practise that skill regularly and with purpose, you will become more proficient. No ifs, no buts, this is an absolute certainty!

The problem is that practising something generally means repeating the same thing over and over again, which might seem 'boring', even if you're not a teenager! So

what we need is practice that is 'fun', and that is what drew me to this exercise. It's not something I came up with myself, in fact I found it in a book by an American woodworker called Gary Rogowski and it's an exercise called The Five Minute Dovetail.

Practice exercises need to be measurable to be meaningful, there's no point just going through the motions and making loads of mistakes, if this is the case, all your practice will just make you much more proficient at errors. It's very important,

therefore, that the degree of success is measurable so that corrective action can be taken. In the last issue the sawing exercise was aimed at getting a smooth efficient cut with the saw to make a vertical cut, the degree of success could of course be measured against, whether the start of the cut was 'smooth' and comparing the direction of cut against the squared lines drawn on the wood.

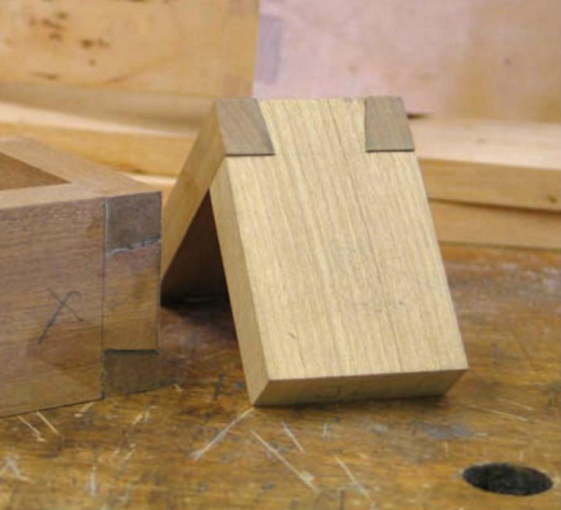
This exercise is still about sawing but it is in effect testing how the process of 'hard wiring' the skill is coming along, and whether you are able to allow the skill to be used without the voices in your head interfering with it by over-thinking it? It's not just me that has the voices is it? It is also an introduction to cutting a simple dovetail joint and giving a time limit stops you from procrastinating. Don't worry about it, just get on with it and let it happen.

So before doing this exercise for the first time a couple of practice cuts with your favourite dovetail saw will get your eye in and loosen up your cutting arm. Now we need a couple of pieces of wood to join together, make sure that both pieces are the same width and thickness, about 50x15mm and 75mm long is fine. No squares, dovetail markers and cutting gauges required here, just a dovetail saw, a sharp pencil, a piercing saw, a chisel, something to hit the chisel with, an air of quiet confidence, and of course a stopwatch or clock!

So, firstly, sit each piece across the end of the other and mark the thickness of the



Cutting the pins

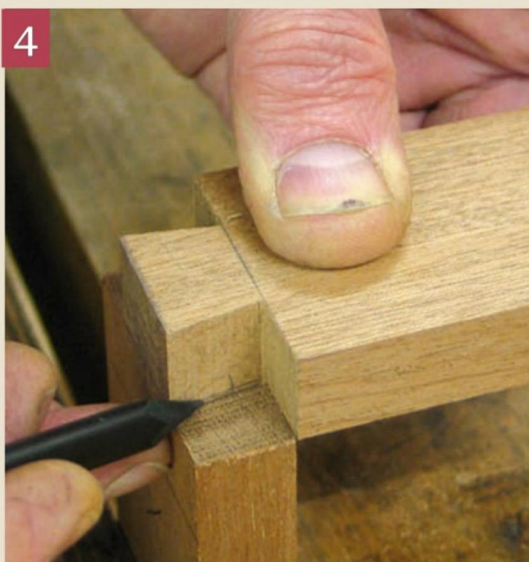


3 *Shoulders* A couple of completed five-minute joints (top) and making a cut to the shoulder lines on the tail piece (above)

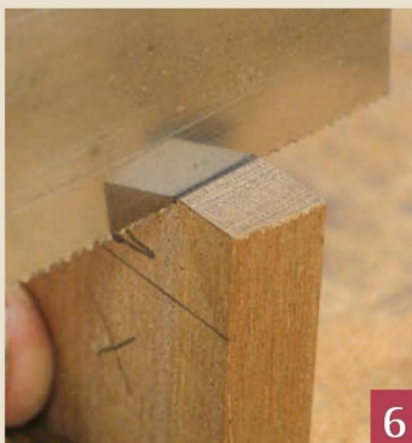
wood on both faces, this is in effect the 'cutting-gauge line', now set one piece of wood vertically in your vice to cut the tail. No markings for this, just set the saw on the top edge, a little way in from the end, at what you consider to be a right angle. Tilt the saw a little in the direction that is appropriate to create a dovetail shape, and make two cuts down to the pencil line.

Turn the wood through 90° and make the two shoulder cuts, following your pencil lines. Now set the completed tail on the end of the other piece of wood and mark the dovetail shape with your pencil, setting the saw just to the waste side of the lines and saw down vertically, no cheating with a square, just do that Zen thing and saw down to the line.

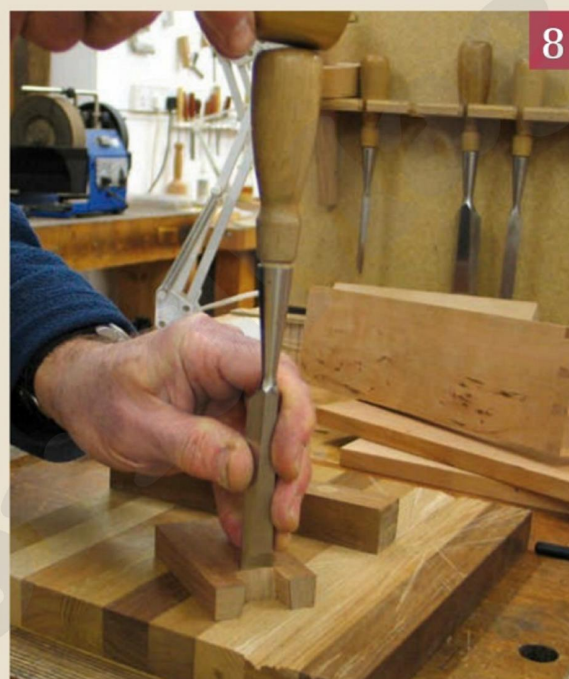
Remove most of the waste with a piercing saw/coping saw and finally chisel to the pencil lines and assemble the joint. Be critical of the fit, number the assembled joint and keep it to compare to your next effort, you'll be surprised how your accuracy improves, just a little practice every day will make all the difference.



5 *Marking* Transfer the dovetail shape to the second piece (left) with a pencil, mark the waste and an X to remind you which way round the joint goes, but no other lines, then cut 'freestyle' to the waste side (above) vertically



6 *Waste* Make the second vertical cut with no lines to follow (above) then remove the waste with a piercing saw (right)



8 *Finishing* Chop the last of the waste away (right), chiselling on a block and assemble the joint (above). Make sure you number the joints to monitor your progress (left)

Wood School

Teaching children at home Robin Gates learns the tricks of inspiring young hands



Starters Tom using a turning saw (frame saw) to cut the heel notch for the boot jack (left). Annie's heart-in-a-heart (above) was cut out with a coping saw. Using the brace and bit to bore holes in the nail varnish holder (right) was hard going, and Annie suggested a bit of swapping was done. Tom's designs for an automatic boot remover (below) were inventive, if a bit impractical, so he made a boot jack instead



When education on the Isle of Wight was restructured to close middle schools our son Tom was having an awful time in Year 6 so we decided on a 12 months of home schooling. It proved a wonderful year for us all. My wife Omi taught Maths, English and ICT while I got to grips with Science, History and DT, and we shared art, music, cooking and PE. From day one Woodwork was an important part of our practical curriculum.

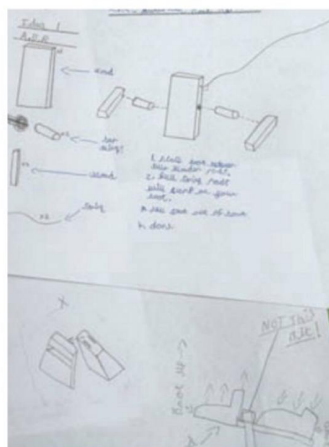
Tom's first project was prompted by a scrap of plywood found on the seashore. He saw a Christmas decoration in its approximate square and was eager to drill a hole in one corner and hang it – job done! However, I saw the potential for more work, suggesting that he mark lines between corners to find the centre and use dividers to scribe a circle to be cut out with the coping saw. His doubts about this evaporated as I began

feeding him the tools. Aside from offering a cautionary word on using the vice and the saw all I did was watch. His own experience was the teacher and his mind was leaping ahead.

"We can use the offcuts as a hat and a beard and make a Santa," he said. For the next few weeks I was Tom's assistant while he sawed and glued, drilled holes for eyes, and joined two corks by a dowel (piece of kebab stick) to make noses for the double-sided face. The jolly Santa was duly painted and joined our decorations in time for Christmas.

Term Two

Our spring term project began in January following a walk through local marshes. Tom loves wellies because they are so easy to put on but he had always struggled with taking them off. While he fretted with boots that wouldn't budge I suggested he invent a helping hand. In our next DT lesson he



sketched an Automatic Boot Remover with pivoting arms operated by strings. Steering towards practicality I gave him a small spruce board and nudged him towards a see-saw with a notch at one end to clamp the heel – a simple boot jack. He thought this was boring compared to his idea but agreed to make a sketch. Anyway, he'd had enough of theory and wanted to see something. He used a try-square and bevel

gauge to mark out the piece and within minutes the sawdust was flying.

Expecting Tom would find cutting the heel notch in $\frac{3}{4}$ in board hard going with a coping saw, I handed him the larger turning saw (which some people call a frame saw). This may appear an unwieldy tool but once grasped it quickly proves its worth for both straight and curved work. The solid beech frame alone applies sufficient weight for cutting and for smaller hands it offers alternative grips to enhance steering and stability. We will show how to make one soon.

Tom attached the fulcrum for the boot jack with screws then rasped, sanded and finally sealed the wood with boiled linseed oil. We couldn't have picked a more useful project in 2012; with record rainfall the boot jack was in constant demand. Something I learned from both projects is the importance of making things that are useful as this



nurtures a sense of purpose, encouraging further work.

Pick your project

Our daughter Annie in Year 9, meanwhile, was struggling at school with a complex mechanical toy in MDF, littering the bench with broken coping saw blades. She also suffered a mishap with a school pillar drill that sent a broken bit flying through the air. Why, I wondered, had she been using a pillar drill at all – why not a safe and user-friendly hand drill? Seeing what Tom had been making at home she wanted to join in. We began by rebuilding her confidence with the coping saw.

All she needed to do was slow down, keep the blade straight and not press so hard. From a sketch on a scrap of plywood she cut a delightful heart-in-a-heart there and then. Again, it was a question of finding the right project. Annie's world is all hearts and kisses;

she wouldn't have warmed to making a boot jack.

Now she and Tom were often hanging about the workbench, picking things up and asking questions. And the temptation was to respond with, 'Put that down,' or 'Now isn't the time,' but it is essential to grasp every such opportunity of feeding a child's curiosity. Now is always the time. It has probably helped that our bench is in the back room. I'd suggest setting up a bench indoors specifically for teaching. An old B&D Workmate would be perfect. Shivering in a dimly-lit shed in winter may not be every child's idea of fun!

For Annie's next project we settled on making a stand for her jumble of nail varnishes. She picked a length of $2\frac{1}{2} \times 1\frac{1}{4}$ in elm from a basket of offcuts and arranged the little bottles along it. Having drawn around the bottles she got stuck into boring the holes – for about 30 seconds. There were 16 holes in three different sizes and even

with freshly sharpened centre bits it was hard going with the 19th-Century wooden brace. Woodwork for our kids is also a living history lesson!

"Let's take turns," she said, and why not? That's something else I've learned: we may think children will only be satisfied if they do all of the work but there is a particular joy, and sense of responsibility, in working together on a project, especially if it makes the difference between success and failure. In completing her cosmetics stand Annie also used a Stanley No.9 $\frac{1}{2}$ block plane (perfect for smaller hands) and a spokeshave, finishing with glass paper and a neutral wax polish.

Can Do

Happily, Tom has returned to island schooling in Year 7 transformed. Out of the wood shavings he has emerged with an optimistic 'can do' attitude, happy and confident. Annie, too, has gained in diverse ways

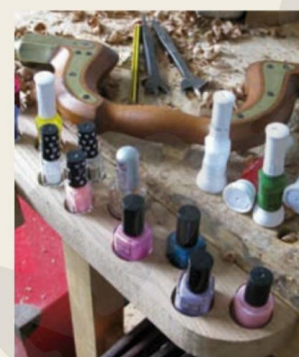


Christmas Tom's Christmas decoration was made from plywood found on the beach

Projects



It's a good idea to choose projects that are likely to be used to build confidence and purpose. The boot jack may not have been as inventive as Tom had hoped, but it got him sawing and planing and it works. Meanwhile Annie's nail varnish stand (below) touched a nerve and is a perpetual reminder of what she has achieved at the bench.



Tidy The nail varnish stand was a popular project





Towels Tom planing the end-grain on the towel tidy with a Stanley block plane (left). Preparation is good: plans show the parts marked out for the towel tidy (above), showing which tools are used and where. Boring a corner hole with the brace and a 1in centre bit (below)

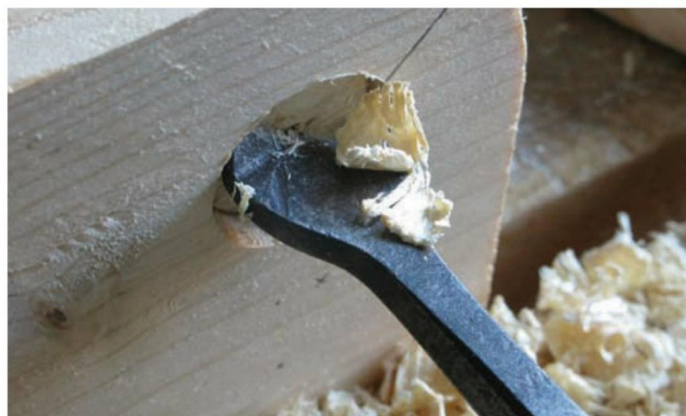


through making useful things by hand. It seems to me that manual and mental work are two sides of the same coin, with the intellect engaged in every purposeful movement of the hand. Time and again we have found woodworking integrating with other areas of the curriculum – in science, for example, with annual rings in timber leading to a discussion of how trees grow, and in history, when we made rivets, which held Viking ships together.

But I have probably gained the most. In this age of solitary screen-based entertainment it can be difficult for us to find common ground for interacting positively with our children. Woodwork is just such ground. You do need to prepare: plan what you are going to do, have

tools and timber ready. But I've found it's best to pitch straight in with a project and not practice until perfect while making nothing.

Often it's best to abandon the first idea and go with the flow of the child's own thinking. Also, while instilling common sense – keeping both hands behind the cutting edge, for example – try not to stifle creativity by being over-zealous with health and safety. We didn't have an accident all year (touch wood!) but if you focus on using hand tools for sawing, boring holes, and banging in nails, honing skills which are also fun to exercise, the risks are no greater than with peeling onions or grating cheese. Children using hand tools not only appreciate the character of



real wood but feel, see and hear the difference they are making.

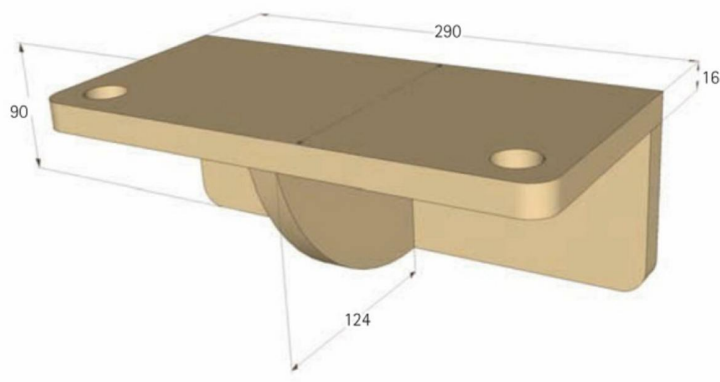
Tea towel rack

One home woodworking project began with a problem in the kitchen: where and how to hang tea towels. Over the years we have tried hooks, rings, rails,

slots and one vicious plastic-jawed device which bit our fingers! We needed a sturdy rack for a couple of towels ready to use above the draining board, while airing them and storing more towels in reserve.

The 11½in width of our rack was dictated by the wall space

Fig.1 The towel tidy



Finishing The cut out parts of the towel tidy offered up for fine tuning the fit (above)

Schools Planemaking

Announcing the winners of this year's toolmaking challenge in schools



Winners The top three (from left): Kim Nicholson, Thomas Jackson and Dion Philips

while the 5 1/2 in depth was designed to accommodate the folded towels and suspend those in use away from the wall. The 3 1/2 in high wall plate looked about right to support a curved bracket and wall fixings.

We used offcuts of 5/8 in Norway spruce but any solid timber will do. While measuring and marking out we used the try square, marking gauge, and then dividers for scribing the radii of rounded corners. A sliding bevel was needed for marking out the support bracket with grain running diagonally. The frame saw again proved ideal for cutting out the parts while the Stanley No. 9 1/2 block plane was used to smooth end-grain and fine tune the fit of meeting surfaces. The plain glued-and-screwed joints brought home the importance of flat edges and faces, which was frustrating at first but so rewarding when, with a last swipe of the plane, the glimmer of daylight between two parts was extinguished! We used a spokeshave for smoothing the rounded corners

Holes for tea towels were bored using a brace and 1 in centre bit on the same radii as used to scribe the rounded corners. A towel is pushed into place from below and, suspended by an 'ear', is then ready to be deployed in an instant with a pull from below.

Congratulations and thanks to everyone who participated in 2012's Schools Planemaking Challenge, and to our sponsors, Axminster and Tite-Fix, who supplied the blades and fixings. Each year more and more schools take part, and we get a bit better at running the challenge, which aims to introduce Yr 10 & 11 DT pupils to toolmaking, self-reliance and a project that actually works.

The entries were, once again, really impressive, not only in numbers but also quality. The top 10 were hard to separate, but our panel of judges eventually awarded the top prize of £100 to Kim Nicholson of Ribblesdale High School, Lancs, which also won best school. Please contact us if you know a school keen to join this year's challenge. We supply the parts, and details are at britishwoodworking.com.

AXMINSTER
TOOL CENTRE

Tite-Fix



Judging Mick Hudson of Clifton was one of the judges, seen here at Peter Sefton's Open Day in December



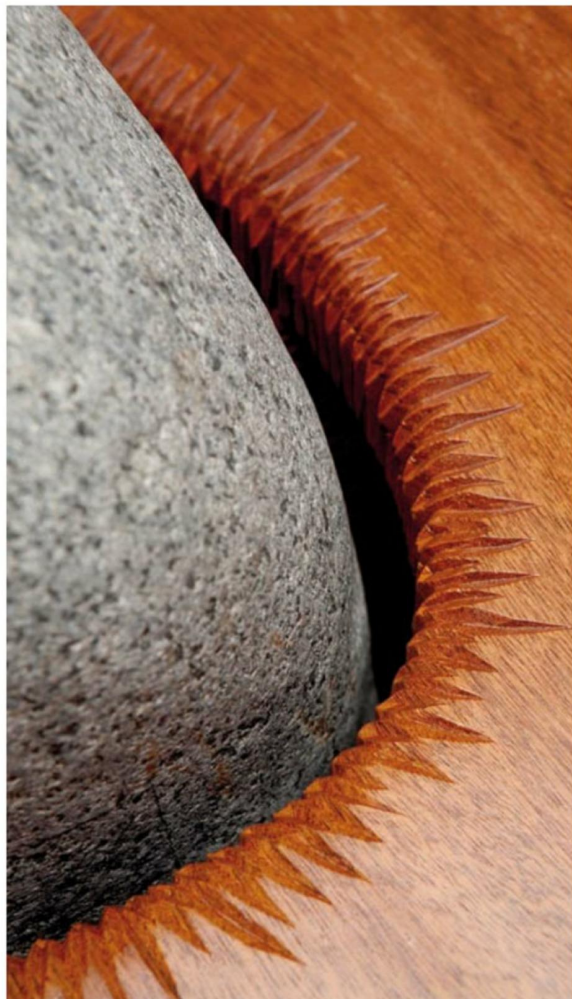
Ribblesdale Ribblesdale High School won best school



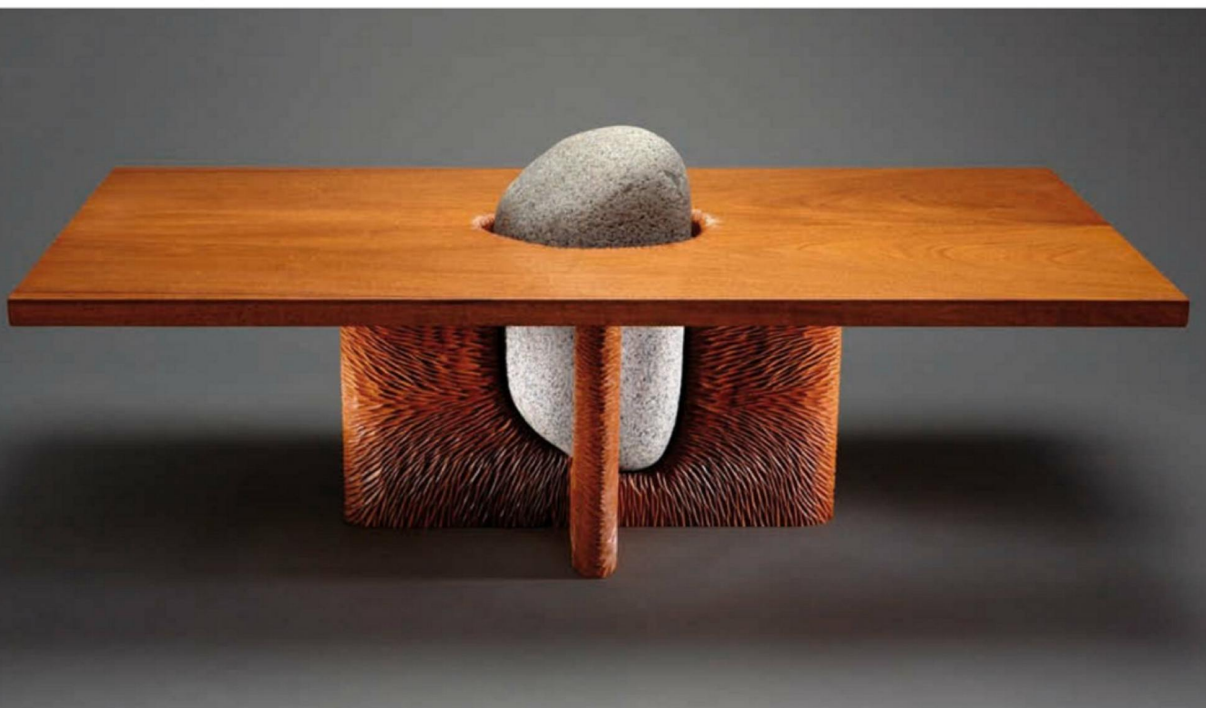
Keen Aled Dafid's group were enthused to hear Dion Philips was a runner-up

Texture

If timber weren't tactile enough, some makers add extra texturing



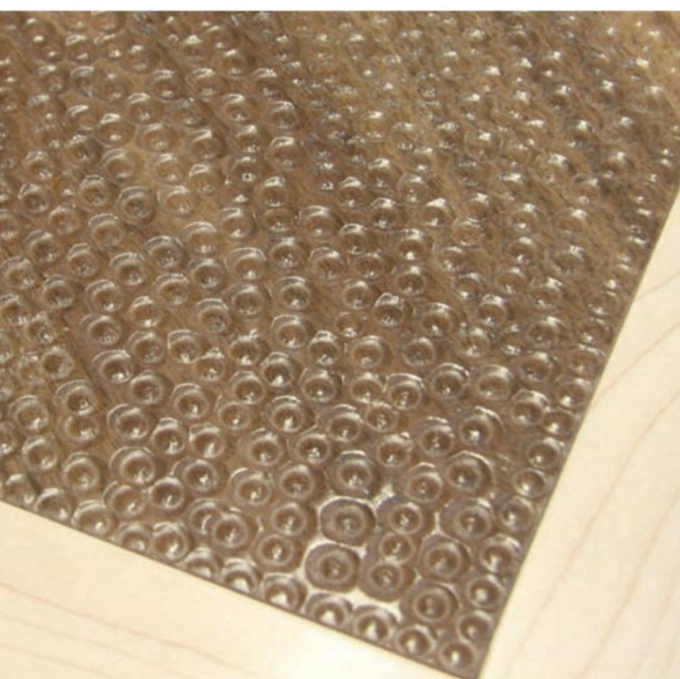
Rolland We found Seth Rolland's Tsubo Coffee Table in Lark Crafts' little *Tables* book. Made from FSC mahogany, the top is removable, and the granite lifts out of the textured underframe, which is made from mahogany offcuts from a door and window manufacturer in Port Townsend, Washington state, USA, where Seth is based. He started by drawing out the general direction of the carved marks onto the wood, and then spent 20 hours carving the surface by hand with a single 90° V-tool. Each mark takes three-five passes, sometimes from different directions according to the lie of the grain. "I was after the effect of wet fur," Seth explains. "I wanted it to tuck in and out, as an organic pattern." Though he'd experimented with smaller sculptures, and did a trial board, this was his first piece of textured furniture, though he's subsequently explored similar ideas with his Cascade Buffet (at sethrolland.com under Cabinetry)





Flutes We've been raving about Erich Fichtner's work for a couple of years, but last year the Worshipful Company of Furniture Makers recognised the simple cleverness of his fluted boxes and chest in their annual awards at the Celebration of Craftsmanship & Design in Cheltenham

Router The textured surface of Higgs Designs' walnut and maple coffee table was not, as you might expect, punched, but routed with a customised cutter. "I reshaped a router cutter end on the grinder to plunge through the walnut surface creating a random pattern," says designer Simon Higgs."



Wizardry in Wood

Axminster sponsors Worshipful Company's challenge



Winners The Open Turning Competition for a pair of salt and pepper mills, sponsored by Axminster Woodturning Chucks, was won by Louise Hibbert (left). Howard Overton came second (above)

Every two years the Worshipful Company of Turners holds a competition, and in 2012 this coincided with their four-yearly exhibition, Wizardry in Woods, at the Carpenters Hall in London. The competition categories offer prizes and bursaries to the winners, so attract a high standard of turning. This time Axminster Woodturning Chucks provided a prize pot of £300 in the Open Turning Competition to turn a pair of salt and pepper mills. Two of the top three entrants featured textured surfaces, with Louise Hibbert from Conwy winning. Howard Overton from Gillingham came second and John Edwards from Tonbridge third. Though the exhibition only ran for four days in October, you can still view the catalogue at wizardryinwood.com.



Third John Edwards' ornamental mills

Have a Cigar

Sent a brace of books on making musical instruments Nick Gibbs makes his first guitar using a cardboard cigar box, some recycled elm and cheap electronics

It's been a tumultuous few months in the Old Cotswold Outhouse, the catalyst for which was nothing more than a bandsaw blade. When I fitted a new Tuff Saws Premium variable pitch blade on my Record Power BS350 a few months ago I had problems with the tensioning. At Harrogate's Northern Woodworking Show Stuart Pickering from Record offered to send me a new handle to replace the one I'd stripped over-tightening the mechanism. I thought the blade must have been too long, but the problem turned out to be caused by 'someone' (me) improperly repairing the machine a couple of years ago when the adjuster really did break.

Stuart suggested we check the thread on the adjustment, and sure enough there was more travel than I expected. So the blade is now running tight and true, and it has transformed the workshop. Really transformed it. Not so long ago I had hoped to convert the Outhouse to British-only machinery, which was a nice ideal, and the burgundy Coronet bandsaw and tablesaw I bought cheaply second-hand are beauties, but with this new blade I realised I might be able to cope with one medium-sized bandsaw and no tablesaw at all.

I've been able to dispense with the Coronet Imp bandsaw because I rarely do tight curved work, and have a coping saw

or Hegner for such jobs. I realised that I'd always liked having small and large bandsaws not so much for curves, but because the wider blades on bigger saws tend to be more aggressive, and not so friendly to use on small items.

I've also realised that most of my tablesaw jobs can be done on the bandsaw, or with a cordless circular saw on trestles outside, or in the space vacated by the tablesaw. The finish from the Tuff Saws blade is extraordinary, though arguably not as good as from a tablesaw. Suddenly I have tons of room to roam, and it's lovely. Losing the Imp has also gained me a low bench on which I can cross-cut by hand or with a cordless circular saw using Kreg's amazing SquareCut jig as a guide.

Christmas surprise

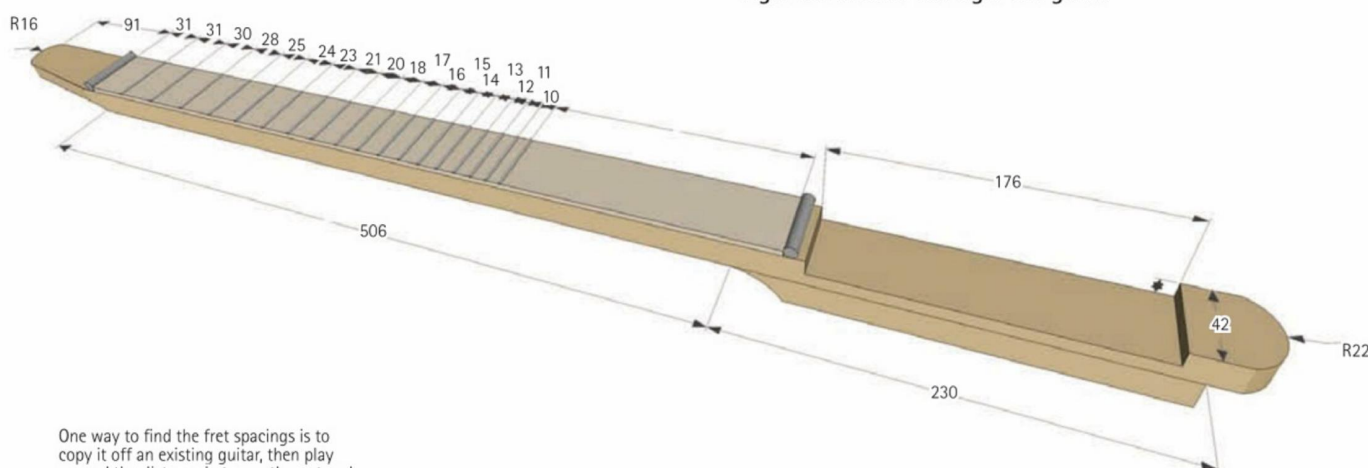
The first projects in the newly emptied workshop were presents for Christmas: nail varnish holders for goddaughters, miniature bar skittles for a godson, picture frames for my wife Tina, and burr amboyna blocks for my many nephews, to hold our new Freshwood Publishing pens. Generosity's my middle name! Every year I produce a box of goodies for my seven nephews (and one dear niece, Annie), because I always run out of time to wrap up individual presents. The first Christmas was a bit of a disaster

because there was a scrum over the best items in the box, but since then they've quietened down a fraction.

This year I came up with the idea of chopping up an amboyna burr I've had for years into 2in blocks, with the interesting natural edge on the top, like an island. I drilled a hole for the pen, and used punches to stamp their initials on the front so that there'd be no arguments. Come Christmas the heathens ripped open the cardboard box



Fig.1 The neck of the cigar box guitar



One way to find the fret spacings is to copy it off an existing guitar, then play around the distance between the nut and bridge until it plays right



Frugal It's hard to realise that one can make a guitar from an old piece of elm staircase (left), from my friends Liz and Dave, and a battered cardboard cigar box bought from eBay for £10. The neck is reinforced inside the box with an extra length of elm (above) which protrudes a little. Elmer's PU (polyurethane) glue is proving to be really popular in the Outhouse, because it doesn't go off in the bottle

wrapping, and discarded the blocks and pens hoping they'd find cider and chocolate. Eventually they realised this year's gifts were not for eating or drinking, and then set about recreating the amboyna burr on the floor, which was an unexpected joy, and something similar will certainly be built into 2013's combo surprise.

Making guitars

The first project of the New Year has been

to build a cigar box guitar. This has been in the offing for six months, since we were sent two books on the subject, which is considered a current craze in musical circles. It turned out to be some of the most rewarding woodwork of my life.

The idea could not be more simple. You attach a wooden neck to an old cigar box, add some tuning pegs, the bridge and 'nut' (a bridge at the top of the neck) and some strings, and away you go. Further



Box Gently mark out the neck on the top of the box (left) to show where the bridge should be. The box ends are reinforced (above)

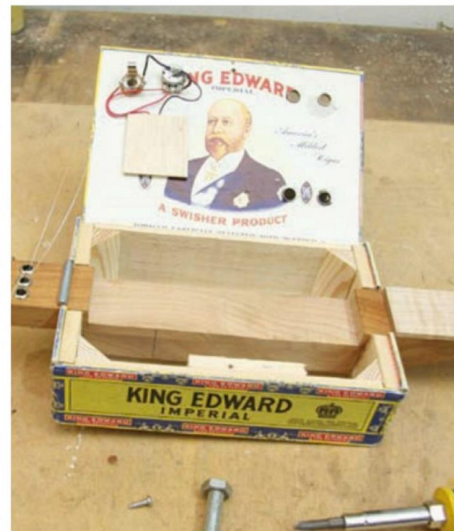
Electronics



You can't believe how easy it is to amplify a guitar, even something as basic as a cigar box instrument. All you need is a piezo from Maplins, which is otherwise the innards of a buzzer, but in a guitar it works the other way, sending messages to the amplifier. You also need an output jack for the cable to the amp, and a volume control. It won't cost you much more than £5. Both on making cigar box guitars have instructions on the wiring, Michael Orr's *Music Factory* having the better directions, by a fraction. You need a soldering iron to connect the wires, and the only tricky bit was soldering wires to the back of the volume knob. For some reason it just would not stick. You sandwich the piezo between two pieces of balsa, then stick that inside the box, under the bridge.

You will also need some fretwire, and some tuning pegs (aka tuners), though many cigar box guitar makers recycle them from discarded instruments, and plenty don't use frets at all. The bridge is a bolt and the holes are lined with grommets!





Inside Nick used Fisch drill bits that Axminster have started bringing in recently to make the holes for the volume control and output jack. They are really sharp. The neck (above) is supported by reinforcement inside the box, with corner blocks holding it all



Frets I used the Mini Silky Saw which I had reground last year with a Japanese tooth configuration to cut the fret slots. Each fret was 'sanded' to length on the disc sander

refinements include frets and electrification. I had it all done in less than a day.

My guitar is based on the second of three projects in David Sutton's *Cigar Box Guitar*, published by Fox Chapel. It has three strings, frets and can be plugged into an amp. The cigar box was bought from eBay, for £10 inc.p&tp. I'm sure you could pick them up for less, but I was in a hurry.

You start by making the neck, dimensioned to suit the box (body) and with a scale in mind, determining the distance between the nut at the headstock end and the bridge, positioned about two-thirds of the way along the box. I had an old elm floorboard which was perfect for the neck, and cut it down to 42x20mm. Though my planer-thicknesser has left the workshop, I have kept a bench-top Delta thicknesser, which is good for cleaning off varnish from old elm floorboards. For a bit of extra support, another piece of elm is

glued to the back of the neck, the length of the body (box), and protruding a little at the headstock end.

To raise the frets above the front face of the body you add a fretboard, which also strengthens the neck. For this I used rippled maple, from Surrey Timbers (surreytimbers.co.uk), where the ever-helpful Kevin Bolger has a great range of species. I've been wanting to use the board for ages, and still have plenty more for other projects. It is hard, but planes beautifully to a fantastic finish you don't need to sand.

Spokeshaving the neck

Once the neck, support and fretboard are cleaned up, you need to relieve the neck inside the box so that the top of the body vibrates more easily. Then you use spokeshaves to round over the edges and notch the cigar box to take the neck. It was at this point that I discovered that my box,

rather than being cedar (which is why musicians have used them to make quick guitars), was made from cardboard. Oops. It made cutting easier, but I was nervous it wouldn't work at all.

With that in mind I lined the sides of the box with English poplar for reinforcement, with triangular section glue blocks in the corners. English poplar (not American tulipwood, *Liriodendron tulipifera*), is light and wooly, and good for fruit and vegetable crates and for matches, but not much else, except lining cigar box guitars it transpires. Then I drilled sound holes, and holes for the volume control and the output jack. If you are very careful, you can drill cardboard perfectly, especially when using a brand new Fisch drill bit, but getting it wrong and it tears. As a precaution I covered all holes with FrogTape, which helped a little. Fortunately any ragged edges can be covered with either washers and shallow nuts, or silver grommets.

To fit the frets I copied the spacing from my daughter Sasha's discarded guitar, and cut the grooves with the Silky Mini I had refilled last year by Nagatsu-san, a Japanese master saw doctor, who may be returning this year for more lessons in sharpening. I was incredibly fortunate that he sharpened two of my saws over a weekend course, so I now have a Veritas and the Silky in push and pull Japanese teeth configurations. The little Silky proved to be ideal for the frets, though fixing a stop to the blade would have given a more consistent depth.

Once I'd developed a bit of a system, cutting and fitting the frets was quick. I used a disc sander to clean up one end of the wire, with the top edge bevelled at the end to be smoother on the fingers. Then I



Strings I couldn't work out how to hold the strings in place, until I noticed they have a hole in the 'nipple' at the end. So I worked out that I could chisel out a groove at the bottom of the neck and use a piece of wire to hold the strings in place. You'd be surprised how much tension there is on the strings, and this has proved to be a good solution. The screw-in eye is for a strap off my daughter Sasha's school handbag!



offered the length of fret up to the neck, and clasped it between index finger and thumb of my right hand, up against the neck. Then you transfer this 'mark' from right hand to left, and use wire cutters to cut the fret, before cleaning up the end on the disc sander.

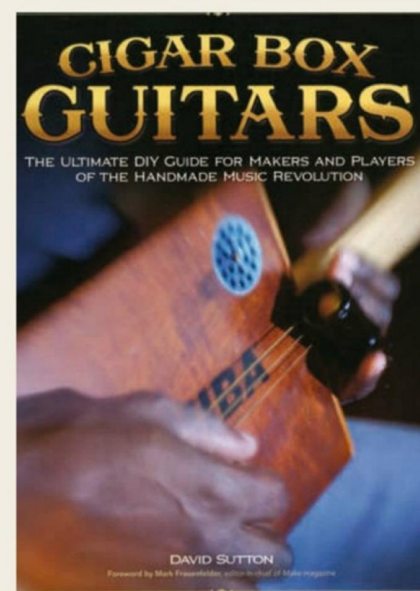
The tuning pegs (tuners) are easy to fit, with chromed bushes keeping them square, and a couple of tiny screws holding them in place. I used three of a set of six tuners, with two going in one direction on the top of the headstock and one the other way on the bottom. How you do this does depend a little upon which side of the post you position the string. Sadly Mike Sutton gives very little advice about fitting strings, and there are moments throughout his otherwise excellent book, when some musical knowledge is mistakenly assumed.

I then sorted the electrics, which is no more than soldering a piezo buzzer to a

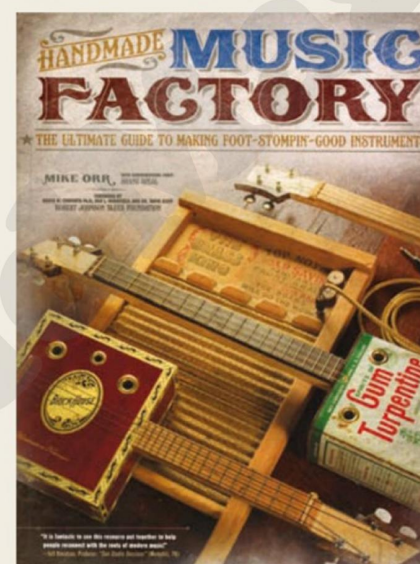
volume control and output jack, though Mike Orr's *Handmade Music Factory* has a better section on electrifying instruments. The neck is glued into the box with Elmer's polyurethane glue, which has become my favourite PU, mainly because it doesn't seem to go off as quickly in the bottle as Gorilla and Balcotan. But it also has a simple but effective nozzle, and perhaps foams more densely than other PU adhesives. Then the box top was screwed down and the lengths of threaded rod used for the nut and bridge, and to protect the edge of the box at the bottom. Now I just have to learn how to play it!



Book to Book



Fox Chapel Publishing have produce two marvellous books by David Sutton and Michael Orr. Ultimately I used a combination of two projects from David Sutton's *Cigar Box Guitars* to make my instrument, but the advice on electrifying a guitar is better in Michael Orr's *Handmade Music Factory*, and his book has a wider range of projects for woodworkers. Fox Chapel produce fabulous books, and both titles are inspiring. I was, however, frustrated that they seemed to lack any basic music theory. As a novice to instrument-making (and playing) I was completely in the dark about stringing and tone, and I would have liked more information about the practicalities of tuning and playing the guitar I'd made. That said, both inspired me to make a guitar, which I'm now learning how to play. I've rarely been prouder of something I've made, so thanks Michael and David.



Cross-Cut Sled

Gerwyn Lewis upgrades his tablesaw with an after-market cross-cut fence

After last month's article I'd like to expand on my use of the cross-cut sled. I generally think very little of it and take it rather for granted as a basic piece of my workshop equipment. You only have to look on the Web and you will find no end of advice on how to cross-cut successfully on the dimension saw (tablesaw). Having given it some thought I have to agree that it is a useful topic, and to add a little direction I have decided that the most useful thing I can contribute is the use of the sled for cutting tenons.

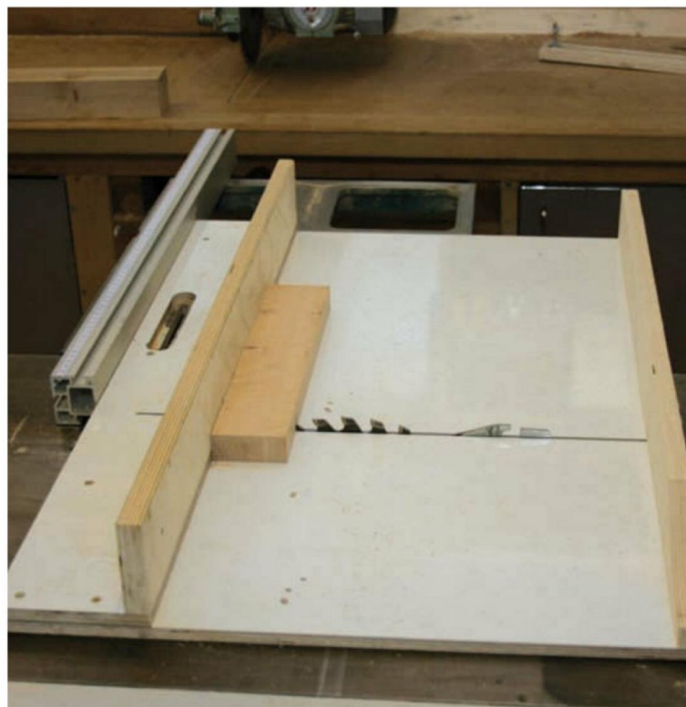
Cutting mortise and tenon joints is such a basic need for the woodworker that it hardly needs mentioning, yet it can cause problems. Cutting mortises is relatively easy now with the development of good quality and relatively cheap mortising machines. This was not the case not so many years ago, but there I'm showing my age. It is a constant source of amazement to me how affordable they are now. The other alternative is to use the router for mortising.

This method is ideal for small construction, though it gets to be a struggle with larger sizes. I looked up Robert Ingham's excellent book again, it is his preferred method, as it gives a superb degree of accuracy. But this is not the case with tenons, I find.

There are lots of well established methods, cutting them on a bandsaw being the most popular. I have to admit that my bandsaw is pretty rubbish, bearing in mind that it was rescued from a skip at the Wolverhampton School of Art by a friend of mine. The ultimate, of course, would be a tenoner, but it's simply not justified in a small workshop. The Americans make great use of sawing the tenons vertically on the saw. I have tried it, but with very little success and you do have to remove all your guards. You could cut them by hand, I hear you say, but I don't get much joy from that degree of purgatory.

Cross-cutting

And so to the cross-cut sled. It has been my mainstay for years,



and being set in my ways, I see no reason to change (showing my age again!). The hawkeyed amongst you will be quick to notice that I don't have a machined slot in the table of the saw so I have to use a cross-cut table.

Well, then why do you need a sled, I hear you say, and my answer is greater accuracy and versatility. The first attempt was just a simple table with a slot

but I did find it rather limiting. From the next photos you can see the extra table that I fitted inside. I've included a photo of the jig upside down to show how I routed the slots for the various stops.

With the jig in position, this is where it gets interesting. By sliding the table up to the edge of the saw I can use the fence to stop breakout. I also use the fence of the saw as a stop for



False Gerwyn already has a sliding table for his sliding carriage (above) on his tablesaw (left). The crown guard has to be removed for tenoning, which makes it dustier but otherwise not particularly dangerous if your hands are kept well away from the blade



Fixings The cross-cut sled fits inside Gerwyn's existing sliding table, which is bolted to the sliding carriage. Many woodworkers choose to 'line' a sliding carriage, to make sure there is a flat surface. The cross-cut sled is held in place with T-bolts, which run in grooves in the underside of the new sled



the length of the tenon. Then I simply set the depth of cut and remove the waste. Simple! as it says in the advert. It takes very little effort to plonk the jig on the table, set the dimensions and chop away. The result is accurate and reliable and is great for small tenons and trenches.

For the big stuff such as a joinery-size door I use my trusty old radial arm saw. The secret

here is to invest the time into making a good long table (mine is 8ft long), and then to spend time to get everything level and square. I have mentioned before the use of a saw blade with a negative rake, apparently it reduces breakout. I haven't bought one myself, it could be my next indulgence.

I did remind myself the other day of how long I've had this machine, it's older than the kids

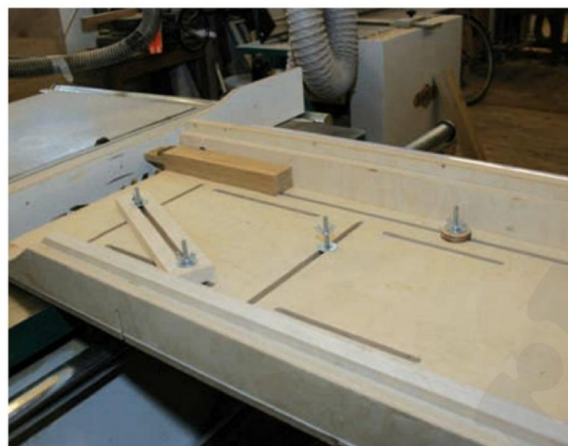
and my daughter is 35. It's cut a lot of tenons.

Shoulders

The only other task then is to clean up the shoulders, should they need it. The shoulder plane is the obvious weapon of choice, but the other day I was mooching around in a tool shop and found a small Swiss plane made by Rali. It was in a scruffy box more or less thrown into a

corner, but it's ideal for this job. It has disposable blades but I just rub up the one blade that I have and it cleans perfectly up to the shoulder. I reckon it's much under-estimated, it probably suffers from good old prejudice as it looks so radical.

I hope this is some help, it is a tried and tested method and has stood the test of time, that has to be some recommendation, I suppose.



Slotted The slots in the fence can be used for stops, and for different angles to the fence. We will try to encourage Gerwyn to do a proper drawing of the sled in a forthcoming issue



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Walnut Wall Cabinet

In the first of a two-parter, David Fellows designs a bathroom cabinet inspired by the Arts & Crafts style, but with shaped doors, which he shows how to make here



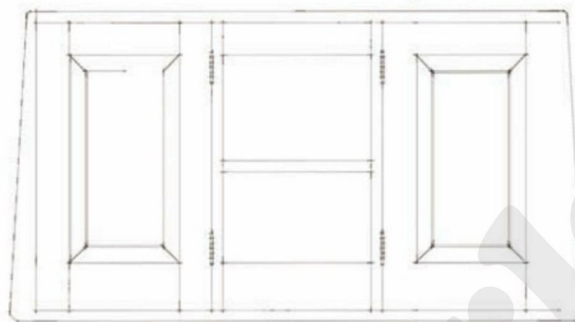
Some time ago I promised to make my wife a new wall-hung bathroom cabinet. As usual, I asked for a specification and received the following: "I would like it made out of something a little darker than oak and with more figure, either walnut or mahogany. There should be two doors and an open space in the middle with an adjustable shelf and a drawer beneath. Please don't make it square: I would like it to have some quirky curves."

The first point was easy to deal with, as I already had some American black walnut from British Hardwoods. The request for curves brought Art Nouveau

to mind and I consulted books and the Internet. I quickly came to the conclusion that most of the classic designs were hardly practical at best and would be

time-consuming as well as an extreme challenge to my skills. For simplicity I decided that any curves in the design would not be along joint lines and that all

Fig.1 Some Arts & Crafts cabinets had a trapezoidal face-frame



the joints would be either precisely vertical or horizontal.

Some Arts and Crafts cabinets have a trapezoidal shape (Fig.1), which is achieved by tapering the stiles on the front frame. Usually the sides of such cabinets are vertical and the stiles of the face-frame protrude beyond the sides of the cabinet progressively toward the bottom, which I do not find attractive. Some of my walnut was 44mm square and I had intended to use this for turned items. It occurred to me that if I were to taper these on one side to about 19mm at the top and glue them up into panels I could achieve a trapezoidal shape with full sloping sides,

Fig.2 Trapezoidal design with shaped crest rail

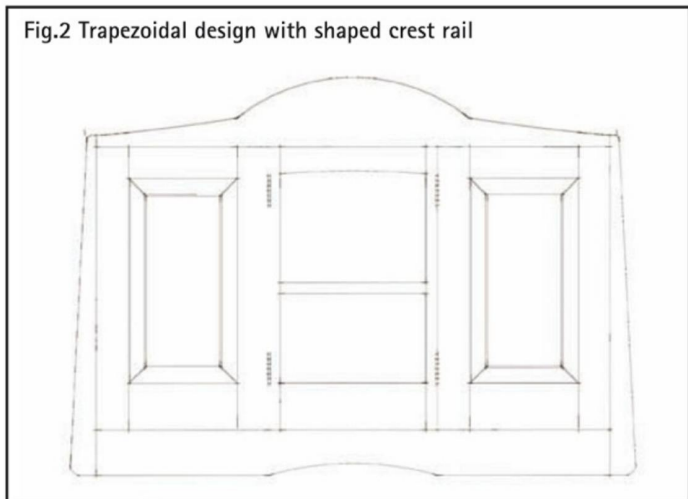
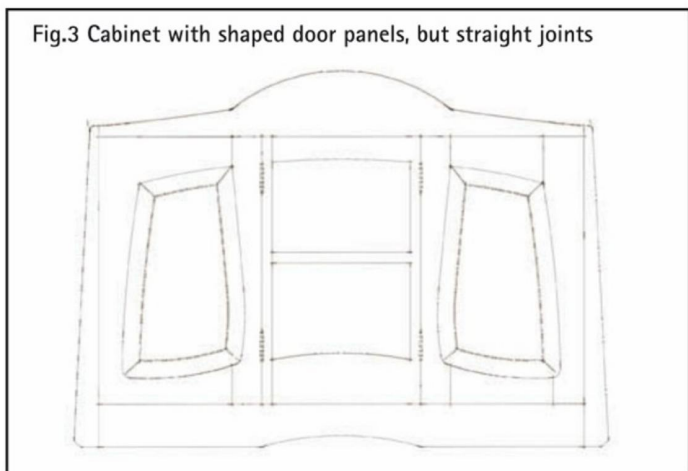


Fig.3 Cabinet with shaped door panels, but straight joints



and still have 90° joints to the top and bottom.

Adding shape

A shaped-top crest rail and bottom apron rail could be used to add curves on the horizontal edges (Fig.2). I sketched that out at full size on kraft paper and refined the profiles in consultation with my wife. We agreed that some more curves were needed so I turned my attention to the two doors. I was already comfortable with the concept of shaped raised and fielded panels (BW27 Celia's Linen Chest) and had recently acquired an ogee fielding cutter (BW31 Cheval Mirror). Starting with doors with a rectangular perimeter I sketched in various shapes of panels with curves extending into the stiles and soon decided that the top and bottom edges of the panels should also be curved. To reflect the trapezoidal outside profile of the cabinet the panels were made wider at the bottom and the corners moved upward on the hinge stiles and

downward on the meeting stiles.

The curved front of the drawer and the addition of a fillet under the crest rail (Fig.3) allow the curves to flow across the width of the cabinet between the various components. These curves echo or complement those along the top and bottom extremities of the cabinet. Further refinement of the top rail and apron and a curve across the top of the doors completed the development of the design (Fig.5). The fillet at the top of the open section was then integrated with the crest rail.

Due to limited access, the cabinet doors would be opened from either side rather than from the front, so they were designed to be hung on the centre stiles.

Despite the inclusion of many curved components the construction is straightforward. All of the parts are cut from PAR 19mm boards, 146mm wide or from 44mm squares. I considered the use of veneered 6mm MDF for the back panel

Shaped frames

Making a template for marking out is critical for producing two matching doors

Because the tops of the doors are curved I decided that it would be easier to make them first and cut the crest rail (F) to match them later. I recommend you make a full-size drawing of one of the doors first on strong paper or thin ply. Start by drawing the straight outside lines of the door, and the joint lines, making sure they are accurately positioned. Note that the meeting (outer) stile (A) of the door is cut from 74mm width stock and that the top and bottom joint lines are offset by 18mm.

On the drawing, extend the lower joint line of the hinge (inner) stile (B) upward with a light pencil mark for a few cm. Place the centre point of your Forstner bit on the extended joint line at the bottom rail with its periphery a little above the end of the joint line and draw round its edge. At the bottom of the meeting stile (A) the centre is displaced a little inside the joint line. Using French curves, splines or flexi-curves draw and refine all the curved inner edges of the door frame.

Carefully cut out the individual parts from the drawing with a scalpel or scissors to make templates. Ensure that you include the circles at the bottom of the stiles in the stile templates.

Prepare material for all the door frame parts to overall sizes. Mark all the parts with clear face and left/right door identity to avoid confusion later. Leave the tops of the stiles long and square and the width of the meeting stiles (A) at 74mm. Cut the top and bottom rails so that the grain runs as closely as possible along the curves, both for aesthetic effect and to avoid short grain at the inner corners. Using the template prick the location of the centre of the Forstner holes near the bottom of the meeting stiles. Bore them through. Cut the face of the lower joint on the hinge stiles 56mm from the outside into the bored hole either on the tablesaw or with a tenon saw. Mark and cut all the joints in the frames. Take the hinge stiles of both doors and dry joint or clamp them together as shown in Pic.1. Bore the hole to form the tight curve at the bottom, centred on the joint line.

Dry-assemble both frames and pencil-mark the remainder of the



Fig.4 Grid showing layout of doors and details of the right-hand door frame

inner curves and the top curves by drawing round the templates on one of the frames. Ensure that there are smooth transitions at the bored holes and sharp cusps at the top joints. Saw and smooth the edges of the components of that frame, re-assemble it and use it to mark out the inner curves of the second frame. Finish the inside edges of the second frame.

Dry-assemble the doors again with clamps clear of the face side. The stiles are still long and square at this stage. The cutout can be chamfered and grooved using a router with an offset base or preferably on a router table. Performing this operation on a complete

clamped-up frame is much more convenient and less risky than attempting to do it on individual parts because the short-grain at the ends of the stiles is supported by the clamped-on rails. Chamfer the face edge of the cutout 45° x 3mm with a router or spokeshave and chisels. Groove the inner edges of the cutout 6mm or ¼" wide at mid-thickness progressively increasing the cut by changing the guide bearing to a depth of 6.3mm. Deepen the rounded bottom of the cut at the top joints with a chisel to a cusp, following the edge profile. Since the panels project beyond the face of the doors it is convenient to cut the hinge mortises at this stage. Set them 1mm deeper than normal to allow for trimming the stiles later.



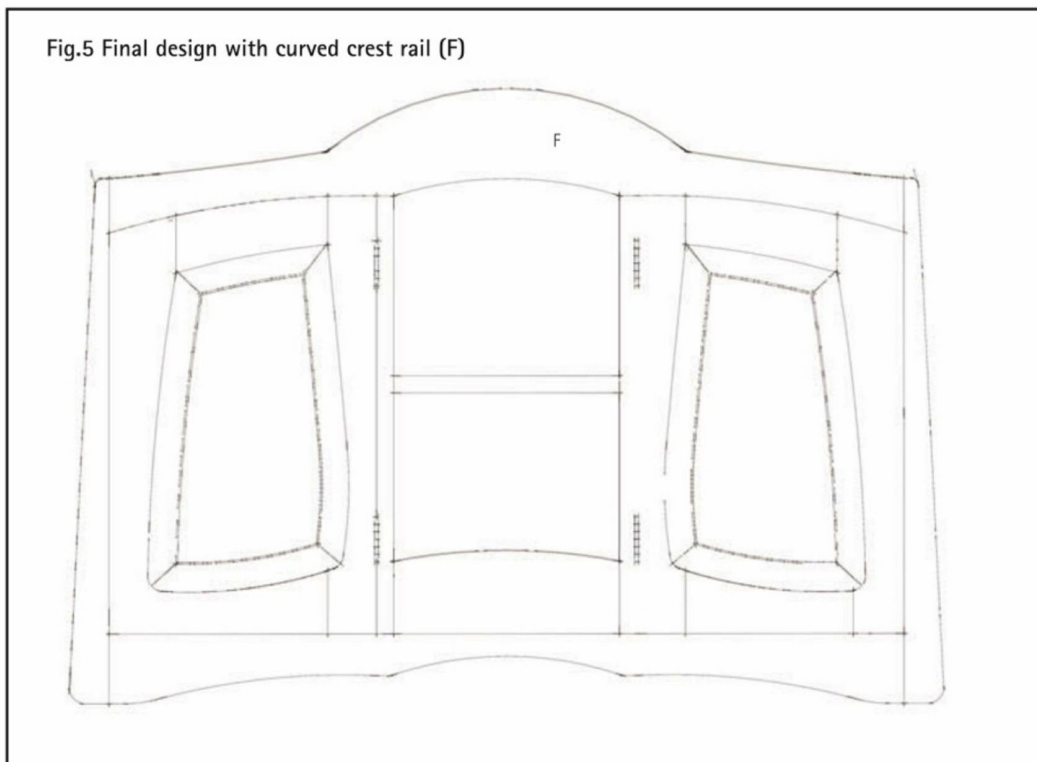
Pic.1 When it comes to drilling out the corner where the rail and stile intersect, you can clamp the two hinging stiles together so that you can use a Forstner to drill out half a hole in each (above). A normal slotting cutter on a mandrel is too large for getting round the tight curves on the door frame, so you will need a one-piece cutter (right) either from MLCS or Trend, whose C145 costs £21.53. The frame has to be dry-assembled a few times to get the curves right (left) after you have drilled out the corners with the Forstner bit





Pic.2 The door looks more complex than it is. All the joints are 'straight' but they are offset on the outer (meeting) stile

Fig.5 Final design with curved crest rail (F)



but could find none locally with black walnut veneer, so I re-sawed some boards to make 7mm thick strip-lap panels.

Choice of joints

I used Domino joints for the face-frame, doors and carcase, but you could use dowels, Beadlocks or other loose tenon joints and biscuits where appropriate, or of course traditional mortise and tenons for the frames and half rebate housing joints, dovetails or mitres for the carcase.

A flexible curve (eg. Axminster 100324) or some laths and another pair of hands and a set of French curves would be useful in drawing and refining the profiles of the doors, their panels and the top and bottom curves. You will also need a 1/2in-shank router in a table to handle a horizontal fielding cutter for the door panels, otherwise you will have several hours of carving to do. Because the panels are curved you cannot use a vertical panel cutter. I rough-cut all the gentle curves on a bandsaw and refined them with spokeshaves.

The sharp internal curves at the bottom of the door frame components were cut with a 35mm Forstner bit. Cutting the grooves to fit the panels in the curved edges of the doors

presents some challenges and standard slotting cutters mounted on a mandrel are not suitable. They are too big to conform to 35mm diameter curves. You will need a one-piece slot cutter of 1 1/4in (31.8mm) diameter and 1/4in (6.3mm) width, with a selection of bearings to stage the cut and avoid tearout on the short or adverse grain. Trend (C145) and MLCS (#5368) cutters are suitable and you will need additional bearings of 30, 25 and 19mm diameter. Rutlands have an equivalent cutter, but it is only available in a set (TR310).

The inner edges of the door frames were relieved with a 45°

pilot-guided chamfer cutter, but you could use a round-faced spokeshave and chisels.

The door panels

Having made the door frames (see Boxout, p59), glue up 19mm material for the panels, taking care to grain-match across joint lines and book-match between panels as much as possible. When they are dry offer them up to the rear of the door frames and draw round the cutout. Draw a further 5mm offset outside that line, and then bandsaw and spokeshave down to the outer line. This allows the panels to fit within the xmm-deep door frame

groove with clearance all round to allow for seasonal movement.

Set up the router table for fielding the panels. I used MLCS cutter #8675, which has an ogee profile with a bead. Rather than using a starting pin on a clear table I set up the fence (Pic.2) as far forward as the shape of the panel allowed, with the fence gap set to just clear the cutter diameter. The cutter bearing is then slightly behind the line of the fence. This arrangement allows the use of a fence-mounted transparent guard over the cutter and good dust extraction through the fence gap. Take many passes around the panels, progressively



Pic.2 The finished doors. Walnut is notoriously difficult to match when gluing up the panels. Notice how the panel on the right is more consistent than the one on the left. Fortunately with time the colours will change, and the contrast won't be as obvious. Instead of using a lead-in pin for moulding the panels, bring the fences right up close to the cutter guide bearing (right)



increasing the depth of cut.

Start each pass part-way along a long-grain edge with the edge of the panel initially against the right side of the fence only. Swing the left end of the panel in against the fence and onto the face of the bearing to start the cut and then slide and rotate the panel anti-clockwise against the pilot to complete each pass around all four edges to just beyond the starting point.

If you need to pause during cutting do not leave the work stationary against the cutter but pull it away and resume the cut later a little ahead of where you paused. If you stop moving the panel while cutting then the surface will char and the burn mark will be very difficult to remove. With each successive pass at greater depth more of the cutter diameter will be in contact with the panel, so progressively reduce the amount that you raise the cutter, in order not to overload the router. Continue until the edges of the panels fit the grooves in the door frames. It took me about 10 passes using a DeWalt 625 table-mounted router.

Finishing

Trial-fit the panels in the frames then adjust, plane, scrape, sand and apply at least one coat of finish to them. I used Danish oil. Finish the inner edges of the frame components and then glue up both doors.

After glue-up ensure that the outer edges of the stiles are square to the bottom edge. The two doors should also be precisely the same width, ideally 294mm. Plane the stiles and bottom edge as is necessary. On one of the doors cut off the top horns on the stiles and refine the top curve with a spokeshave. The highest point should be at the top outer edge of the hinge stile. Mark out the second door back-to-back from the first and profile the top of the second, making them identical mirror-images.

Details Next issue David will show how to make the carcase, and particularly the tapered sides and the magnetic catches.

Forstner Bits on Test

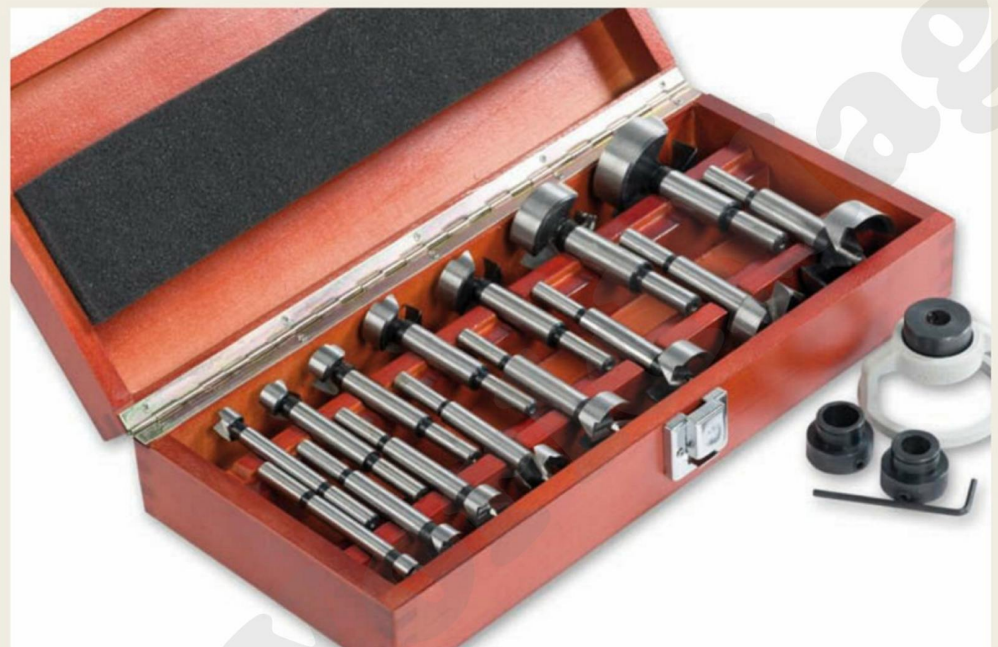
The best drill bits for accurate holes are Forstners, but which ones?



Axminster have recently brought out new Forstner sets, costing £70 for a 12-piece (10-50mm) and £20 for a seven-piece kit (10-35mm). The larger set also includes a depth stop, however we'd generally recommend you buy a few specific, high-quality Forstners, rather than sets, which tend not to be as good. To that end we've been testing new Forstners, made by Colt and Fisch. The Colt drills have 'cut back' periphery, and serrated cutting edge, while the Fisch has a scalloped periphery and straight edge. The both cut beautifully, though the Colt just shades it, especially if you're trying to make a partial cut on the edge of a board. Buying a couple of these and tailoring your techniques accordingly, will be a better investment than buying a large set.



Details Both Colt and Fisch drill bits are available through brimarc.com.



David Parker explains how to make lightweight, but sturdy trestles from PAR softwood with only a Workmate to help

When selecting timber from the timber merchants ensure that it is square and has been planed evenly. (You can't take this for granted unfortunately, so check.) Particularly check the faces of the crossbeam and leg timbers are square because this will affect the accuracy of each joint and stability of the trestle.

Remember to check all lines before cutting so that the angles fall in the right place. If in doubt it is better to cut a couple of trial joints on scrap timber so that you can visualise how they will line up. Also take care about twist when gluing up. If the timber is not square the legs might come out at different angles, however don't worry about this too much because leg discrepancies can usually be sorted out in when it comes to the truing-up process and cutting the legs to length. If there is any shifting of the angles this can be rectified by cutting the legs to length after assembly. Each end will be trimmed parallel to the saddle after the sawhorse is assembled.



Trim Cutting the horns off the top of the legs to be flush with the top of the sawhorse (above). Trimming the ends of the legs to level the sawhorse, working on a flat space (left)



Sketch David drew the angles on graph paper so that he could set his sliding bevel accurately





Joints Cutting the halving joint (above) using a piece of scrap to offset the leg in the Workmate. Gluing up the legs (left)



Parts The materials you need to make a sawhorse (above) and the angled halving joint glued up with polyurethane adhesive for a waterproof bond (left). The finished sawhorse (below) in treated timber should last for years



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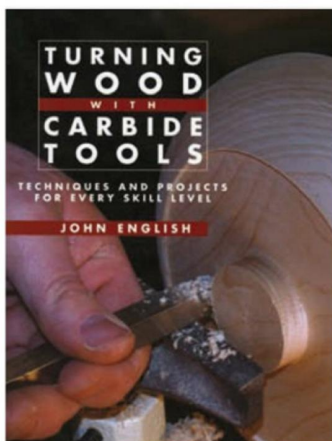
I have tried to review *Turning Wood with Carbide Tools* by John English (Linden Publishing) from a woodworker's viewpoint rather than a woodturner. I know many of us use the lathe solely as a tool to achieve a desired shape or component, rather than purely enjoy the making process with the lathe. Normally, effectively using the lathe would have to include tool grind angles, profiles and a fair chunk of practice. Using various carbide cutter tips promises us the shapes we require with the minimum of technique.

John English's book initially explains the formation of carbide and its grading for hardness, moving on to list the basic shapes available and listing the carbide tooling suppliers in the United States. Only nine pages are used to specifically detail using the tools before various projects are covered in more detail. These projects include; turning between centres, bowl turning, hollow forms and finials.

Useful articles

Along with the chosen woodturning projects, useful articles are included such as calculating the volume of a sphere, timber selection and making your own extractor waste gates from plastic pipe. There are also a few pages on lathe selection and safety.

My initial thoughts were that if woodworkers chose the easiest method to make a given project, then that choice shouldn't be influenced by a less than positive response to this book. However reading this short book several times and looking at the illustrations, I realise that woodworkers take pride in all they make and would be disappointed in the finish achieved by most of these tools as used in the book, were they



presented square onto the work and are scrapping the wood.

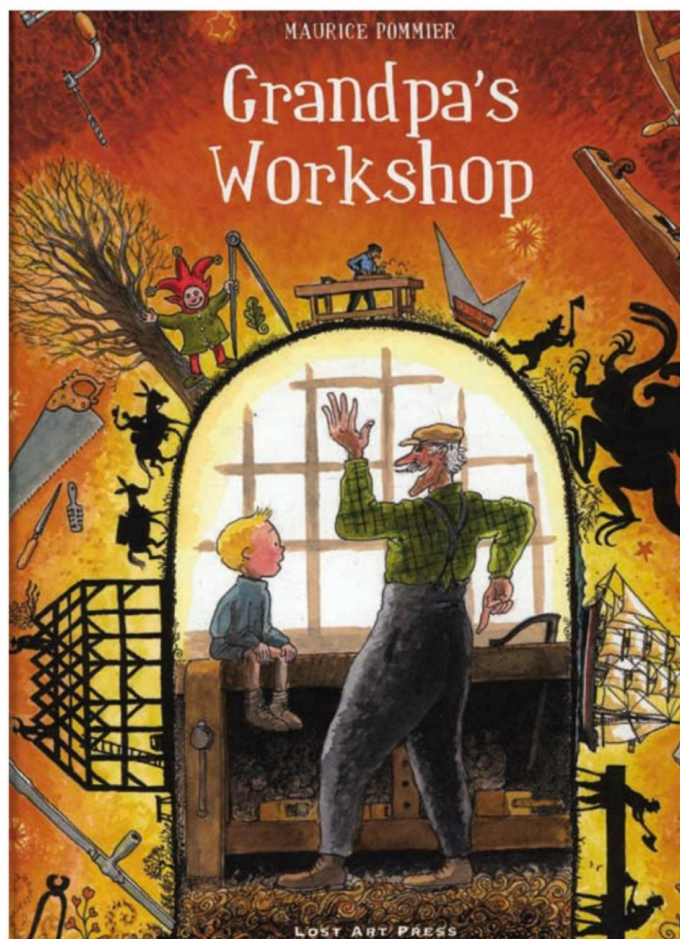
Many of the pictures show badly ripped grain with detail and sharpness missing from all the outside shapes. Further issues arise when we are told 'sanding works best at higher speeds'. This is not the case as high speed sanding causes abrasive to generate surface heat, which is an abrasive's biggest enemy. High speed sanding is also responsible for surface cracking on many enthusiastically finished pieces. It is also suggested to snap off the end nubs from spindle pieces, a practice I would similarly avoid as in doing so the grain can be damaged deep into the completed project.

Verdict

In conclusion, this type of carbide cutter can work well in skilled hands, as the tools made by Crown, Sorby and Hamlet often show when being demonstrated in the UK, effectively and cleanly hollowing end-grain work in particular.

However this short book at 129 pages really doesn't make the best case for carbide tooling. In fact the better articles presented in the book have no relevance to carbide tooling at all. In my view this book is at least 100 pages too long.

Frans Brown



Sadly we weren't able to review *Grandpa's Workshop* by Maurice Pommier (published by Lost Art Press) before Christmas, and it would have made the perfect gift for young woodworkers who could benefit from a bit of fantasy and adventure linked to wood. I had a little book called *Jack's Cabin* that inspired my hammering and cutting as a boy. Maurice Pommier's large format hardback has the potential to do exactly the same, but in spades, with far more levels of fantasy, but also explanations of hand tools; sort of Roald Dahl meets Charles Hayward. It's not easy to describe, but it's the sort of book children will always want to find when they visit grandparents. Sylvain Grosbois loves staying with his grandfather, Pèpère, so he can spend some time in the workshop, listening to stories, trying to use a saw, and searching for elves in every corner of the little wooden cabin. Perhaps only children can understand a book like this, skipping around through time, narration transferring from a young boy, to an old saw and even to Abel Grosbois' hammer for a few pages. The illustrations are a delight and the book is thing of true beauty that is bound to be mentioned in 30 years time as the catalyst for a new generation of wood lovers. NG

Grandpa's Workshop is available from Classic Hand Tools (classichandtools.co.uk) for £16.50. Watch out for the European Woodworking Show from 21-22nd September.

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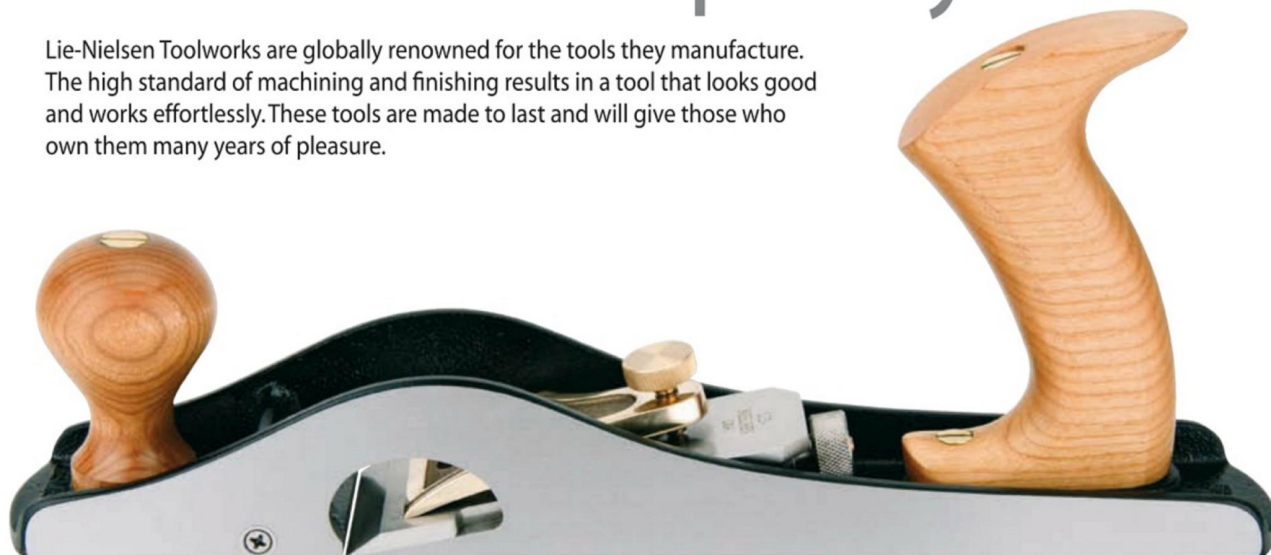
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