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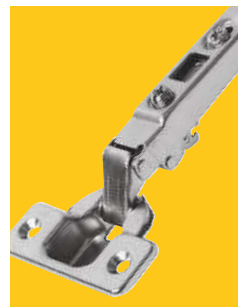
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Welcome



It's early days on this door job; a good start has been made – and this time the momentum carried me along to the end!

Let's start at the beginning. I've always found this to be a good point of commencement and possibly the most important stage of any job or project. A hasty ill-thought start invariably leads to difficulties down the line and, unless you're the sort of person who cares little about such things (and as a woodworker you're not likely to be that type of person), avoidable difficulties should definitely be steered clear of.

Proper planning (almost) guarantees a smooth-running and successful job, and time spent in quiet thought and contemplation will invariably pay handsome dividends. Of course, it's possible to over-think a job and sometimes it's not such a bad thing to have a bit of a deadline to provide some incentive.

Although we can plan a job down to the last detail, there's still plenty of scope for tripping up on the starting line and stumbling out of the blocks with an undone shoelace. Working on site is a good place to make a bad start; I've lost count of the number of times I've unloaded the van only to discover a key power tool or component has been left back at the workshop. There's no end to the list of things that can go wrong right at the start, and I'm sure we all know that feeling. When I first met my friend Paul he walked in the workshop door on the Monday morning to unpack his tools at his new bench and, reaching into his tool bag, sliced his finger on a Stanley knife. Not an overly auspicious beginning to a new job, but it all worked out fine in the end.

It's funny just how quickly a bad start can make itself known; generally within seconds has been my experience, often coinciding with a walk back from the chop saw or powering down the table saw. Either the wrong piece of timber has been cut or the wrong measurement has been the case, and sometimes both. There's nothing for it but to start again, and if you're really unlucky it's another trip to the timber merchant, too.

But what can we do? Certainly regular repetition is useful, but varied work will always throw up any number of unforeseens. I've often thought that the best way to ensure a top class result is to do the job twice; clearly ridiculous but there surely can be no better guarantee of getting it right. Making notes (and actually reading them later) isn't a bad idea, but for me it remains a blend of hope and blind optimism to get me through and, with the finish of one job another can begin, and maybe this time it will all work out OK.

Mark

You can contact Mark on editor.ww@mytimemedia.com



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CONTENTS

What's in store for you this month

36 WOOD AWARDS WINNERS!

Recently unveiled at a special ceremony held at Carpenters' Hall in London, here we look at the 2016 Wood Awards winners across all 12 categories. Shown opposite is the winner of winners: Maggie's at the Robert Parfett Building, whose stunning lattice beam roof structure is made using Nordic spruce

WOODWORK

14 Acer hearts

Beguiled by Valentine's Day, Robin Gates falls for the charms of sycamore, carves heart-shaped pots from a log and makes knives for green woodworking from an old saw

32 Full steam ahead

Inspired by a recent steam-bending course held by Charlie Whinney, Rick Wheaton sets about making his own £25 soil-pipe steamer and uses it to create a stylish fruit bowl

44 Archive

Who fancies a challenge? What about making a wooden xylophone?



32



NEXT ISSUE

THE MARCH ISSUE IS OUT ON 10 FEBRUARY

48 Moving house (or your workshop)

After 20 years in his former workshop, Peter Bishop decides to up sticks and downsize to a smaller working area – he shares the story with us here

54 Made anew

Unable to throw away an old family treasure, Dominic Collings uses oak to give his piano new life

64 Chest the ticket

Alan Willey combines ply, solid timber, and a touch of pragmatism to make this very practical offset chest of drawers

90 A walk around the factory – part 3

Peter Baker further discusses the complex furniture making production line, the multiple usage of component parts, and walks us around the huge hangar-like '12 Shop'



70



42



To celebrate their 60th anniversary, Felder are running a fantastic competition in conjunction with *The Woodworker* and *Good Woodworking* magazines to find three of the best furniture makers across the UK – there's also some fantastic prizes up for grabs

See page 20 for further details

TURNING

26 Woodturning safety & good practice

Being aware of the plethora of safety considerations and practices before you start turning will stand you in good stead for an injury-free and happy journey, as Bob Chapman discusses here

42 A special commission

Peter Vivian is tasked with producing a gavel and accompanying sounding block to be used at a meeting to commemorate the 50th anniversary of the 'Sixty-Six' Club

58 Emerging bowl

Colin Simpson goes for something a little different this month and creates an abstract piece – a turned, well-polished bowl that seems to emerge from another piece of wood

70 Smooth & simple

Time really does flow with Ralph Harvey's trinket box, whose smooth lines combine turning with cabinetmaking

ON TEST

78 Triton TWSS10 wetstone grinder

80 Festool ETS EC 125/3 EQ sander

82 Knew Concepts fret saw

84 Ryobi R18ALF 18V folding area light

REGULARS

3 Welcome

8 AOB & diary

11 Timber directory

13 News from D&M Tools

25 Readers' letters

44 Archive

46 Subscriptions

89 Marketplace

90 Timeslip

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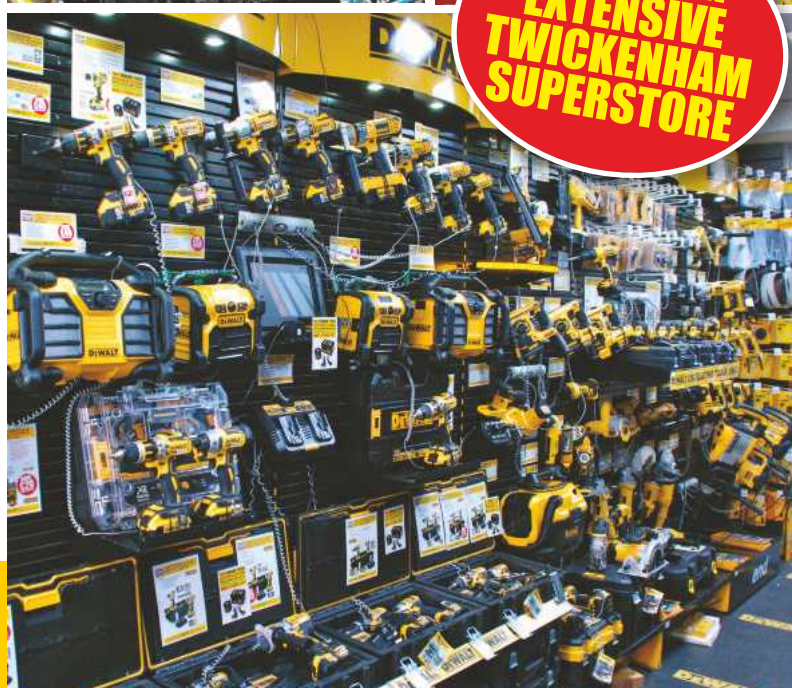
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In brief...

ANY OTHER BUSINESS

I expect most of us will have seen those cut-price power tools and bench-top machines at the supermarket, particularly if you shop at one of those German or Austrian ones. As you look at the bargain-priced sealed and packaged kit, you think to yourself: 'should I buy one?' It seems like a great deal, but then everyone says 'buy cheap, buy twice', and you kind of know that's actually true. But is this so bad? Quite possibly not.

Although the cheap Brand 'X' drill press (say) from China will no way be as good as a top quality equivalent from Europe (which itself probably won't be as good as a big solid cast one made 75 years ago in the UK), it will likely do the job it was intended for – and will do it today, right now. No, let's not discount this important factor: you can take it home and use it straight away. Whereas this sort of purchase would generally be a considered

one and the result of plenty of research and investigation, when something is heavily discounted and right in front of you, it can be very easy to make a spontaneous purchase.

Most of us have probably got at least one piece of kit in our workshop which is barely fit for purpose, but somehow we make the best of it by making allowances and paying a bit more attention in use. An impulse buy such as we're talking about here may well become the lame duck of your setup, but as long as it mostly works, then why worry?

I've found that after every job I've invariably got a better understanding of the processes involved and a second shot at the job would be both easier and more satisfactory. Perhaps then your potential white elephant will redeem itself by steering you towards a better model and one which entirely suits your needs.

Mark

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Using its GBH 18V-EC rotary hammer in a concrete drilling task, Bosch demonstrated that the new battery pack maintained power for 90% longer than existing 18V XL units. The improvement is largely due to optimised component design, better cooling and intelligent

battery management. Intelligent technology is used to control energy consumption according to the application's demand. The latest advance in cooling – Bosch CoolPack 2.0 – is up to 35% more effective than its predecessor, and lower inner cell resistance – up to 50% – further protects against overheating. These factors not only increase runtime but extend the lifetime of the battery.

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17* & 17 Bandsaws
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26 Fine-tuning hand planes*
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DCS520T2 54V XR FLEXVOLT PLUNGE SAW

MANUFACTURER: DeWalt

D&M GUIDE PRICE: £689.95 with two batteries, charger plus 2 x 1.5m rails and connector

The latest addition to the DeWalt 54V XR FLEXVOLT range is the DCS520 Cordless Plunge Saw. The parallel plunge allows the user to maintain a smooth and constant hand position while cutting. The 42-tooth blade gives a fine and accurate finish with very little breakout in laminates and rail adjustment allows the saw to be adjusted accurately to the rail.

The anti-kickback function stops the saw from moving backwards along the rail and helps stop the saw from climbing out of the workpiece when making plunge cuts. Variable speed (1,750-5,000rpm) allows the correct speed to be set for different types of materials and the enclosed guard gives a 90% dust extraction capability. A 55mm depth of cut allows the trimming and sizing of most common door sizes.

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DSD180 LXT 18V DRYWALL CUTTER

MANUFACTURER: Makita

D&M GUIDE PRICE: £149.95 – body only

Makita has launched a cordless drywall cutter that uses the orbiting blade principal from a jigsaw while achieving a far superior straight line accuracy for cutting plasterboard or wood panels, either as loose stock or when installed to create access apertures for electrical switches or water system connections. We are unaware of any similar product available on the world power tool market.

The new Makita DSD180 LXT drywall cutter drives the orbiting blade up to 6,000 strokes per minute with depth adjustment from 9-30mm depth of cut. A fixed baseplate keeps the cutter stable and protects the material from scratches and damage. The angle of the baseplate, in relation to the motor body and soft-grip handle, gives excellent machine control and balance and therefore provides accurate manoeuvrability and easy over-head operation.

The orbital action of the blade and the flat baseplate achieves high accuracy for straight line cutting and in plunge operations very accurate square corners can be achieved for electrical box installations. The DSD180 Drywall Cutter is controlled by a variable-speed trigger, has a useful LED job light and weighs just 1.9kg.

A very efficient dust collection box around the blade mechanism connects directly to a dust extractor, which helps to eliminate almost all dust generated.



Acer hearts



Beguiled by Valentine's Day, Robin Gates falls for the charms of sycamore, carves heart-shaped pots from a log and makes knives for green woodworking from an old saw

Watching sycamore seeds spin to the ground like tiny helicopters is an abiding memory of autumn playtimes in a village primary school. Half a century later, the pleasure in launching a handful of sycamore seeds on the wind and seeing how far they fly remains undimmed. The magic of it leaves me almost light-headed.

Technically the 'helicopter', which is often called the seed, is a dry single-winged fruit known in botanical circles as a *samara*,

with the true seed sitting inside it. The tree that springs from the seed is one of Britain's stalwart species, unfussy in its demands, equally at home in town,

hedgerow or deciduous woodland.

Sycamore's Latin name *Acer pseudoplatanus* reveals it as a maple (it's sometimes called 'sycamore maple'), and it's one of the broadest of our broad-leaved species. In high summer the crown is dark (**photo 1**) and dense with large-lobed leaves filling every available space, but in autumn the sycamore's sombre mood lifts as the leaves turn golden yellow (**photo 3**) and its countless helicopters (**photo 4**) with the sun in their translucent wings prepare to fly.



The dense crown of a hedgerow sycamore



Signs of autumn in a town sycamore



In autumn, leaves turn golden



4 Sycamore 'helicopters' ready to fly



5 Pinkish-grey bark of a mature tree



6 Medullary rays in a linen-like texture

Sycamore timber

Considering the sycamore tree is so common it's a wonder the timber is not easier to buy and more widely used; the only sycamore I found at my local DIY store was an interloper poking its head above exotic shrubs in the car park. It's the beautiful quilted and curly grain patterns of cleft timber that are most in demand, for high-end furniture, guitars and violins, but there's much to recommend the plain straight-grained stuff – especially for anyone taking their first steps in green woodwork. Sycamore stands up to moisture and repeated scrubbing without losing its lustrous cream texture, and is mildly antiseptic so it resists the growth of mould, all of which make the timber ideal

for kitchen ware, such as spatulas, spoons and bowls.

The timber is so pale it appears almost white to the naked eye, which adds to its clean image. Look through a hand lens, however, and what appeared featureless grows more interesting. A section through the end-grain reveals a pinkish hue (photo 5) and fine medullary rays intersecting with growth rings in a pattern resembling plain-woven linen (photo 6). It's the structure of a strong timber with fine, even texture, which makes it very workable with hand tools.

Anyone nifty with the pruning saw should not have to venture far from home to find a usable piece of sycamore. If living near a bus route passing through country lanes you may find branches left in the verge by

highways tree-loppers, and the local parks and gardens department can be obliging, too, in sparing an odd piece from the wood chipper. The bog-standard sycamore is sometimes regarded as a weed in urban situations where more ornamental maples and planes are preferred. They're often cut down around allotments, too, where the shade of a sycamore's heavy crown doesn't bode well for prize-winning crops.

Although sycamores are common nationally, I seem to have pitched up in a corner of the Welsh Marches where they are thin on the ground. It's mostly oak, ash, alder and beech in my neck of the woods, with the occasional sycamore gracing a patch of waste ground.

Sense of place

A piece of native green timber carried home from the great outdoors has a sense of place about it that the standard DIY fare of kiln-dried plantation spruce never has, and for the purposes of this small project almost any of our native hardwoods would fit the bill. In fact, for anyone as indecisive as I am, the serendipity of timber selection that comes with using found green wood is a benefit – what you find is what you get, end of story. I know I'm not the only woodworker to spend half an hour sifting through the timber racks for the perfect piece, only to trudge dejectedly past the checkout empty-handed!



7 Cross-cutting the log into pot-sized pieces



8 Rough shaping with a 25mm chisel



9 Getting closer to the line with a 25mm gouge



10 Boring the 'pilot' hole with a centre bit

True, the worker with a tidy bundle of shrink-wrapped PAR timber can get on with the job whereas I'll be wondering what to make of a twisted piece of hawthorn that's all shakes and fissures, but it's not just wood, it's mental exercise – and as the years clock up the old grey cells are better for it. At the very least the find becomes an interesting stick in the garden but when a piece does make it onto the bench and transcends itself to become an item in the house, that gives a satisfyingly grounded feel to my woodwork. There's nothing like a bit of green woodwork to make me ponder a simpler way of life, and a time when renewable home-grown wooden products ruled the roost.

A timely example is the sycamore log I carved into heart-shaped pots for my nearest and dearest one Valentine's Day. Initially I'd carried it home because it hefted well and made a good bat for knocking acorns along the road, keeping me amused. But then as the whole world seemed to be going heart-shaped in early February, and the spirit of the moment got under my skin,

the log presented itself as an opportunity to experiment with carving wooden pots, which departed from the usual cylindrical shape.

Practice makes pots

One of the many good things about green woodworking is that it doesn't take much practice to make something useful, and the way I make a one-piece pot from a log is quicker and easier than making even the simplest wooden spoon. Essentially, it's just a small piece of timber with a big hole in it!

The Swedish technique favoured by professionals produces a more complicated two-piece pot. It's made by carving a hollow cylinder in green wood and inserting a separate disc of dry long-grain wood at one end. The cylinder seals tight against the base as it shrinks – hence they're called 'shrink pots'. The reasoning behind this technique is that a one-piece pot with a base of end-grain might crack along the lines of medullary ray as the wood dries – just as you see in the end of a log – and the end-grain of some species can be very porous. But in practice not one

of the pots I've made in sweet chestnut, cherry, hawthorn, ash or sycamore has opened a single crack, and some cherry drinking pots made five years ago, sealed with a food-friendly beeswax and walnut oil paste, remain liquid-proof to this day. I think it helps that my pots are small, typically around 70 x 100mm, and the wood is hollowed out soon after collection so that drying occurs evenly, from both inside and outside surfaces of the pot.

In any case, the shrink pot technique offers no guarantee of success unless you're a fine judge of shrinkage because there's a chance the cylinder may split lengthways if it over-tightens on the dry base.

The first step in making these pots was to strip the bark from the log, which was about 90mm diameter, and cross-cut it into pot-sized pieces (**photo 7**). I have to say, there's no measuring involved – it's simply a matter of what looks right is right. Then I pencilled a heart on one end of a piece and began roughing out the shape with a 25mm chisel (**photo 8**).

This tool is one of a set of four Marples



11 Enlarging the interior with a 12mm gouge



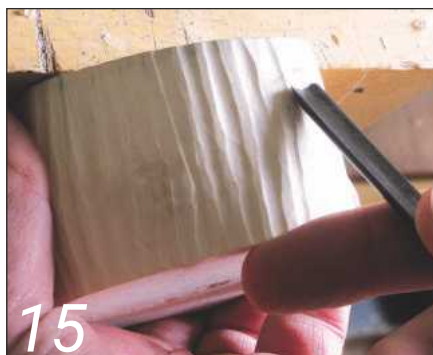
12 In the face vice with a board across the guide bars



13 A mallet's eye view of progress



14 Smoothing away ridges left by the gouge



15 Making grooves with the 10mm Addis carving gouge



16 Working on the interior with a home-made hook knife



Refining edges with the short-bladed knife

M373 split-proof bevel edge chisels (6, 12, 18 and 25mm) I bought about 20 years ago and they've proved sturdy companions, with their one-piece forgings of blade, bolster and tang in a tough plastic handle that's completely untroubled by whacking with a mallet. The chisel was followed by taking bites with a hefty 25mm gouge (**photo 9**), which brought me closer to the pencil line.

Something I notice working green wood is that although it's easier to cut than dry wood it can be prone to tear-out because of the high moisture content, and it takes more work to get a really smooth surface. It's all too easy to remove a bigger chunk than planned, and the situation can get untidy around knots if you don't follow the reversals in grain direction. Where possible it's best to make shearing cuts across the



The curved scraper (ex-tyre lever) takes tiny shavings

grain. If tear-out remains a problem, it can help to let the wood dry for a few days before resuming work. In any case, the situation varies from species to species and, for me, it's as much about gaining hands-on knowledge of timbers and building confidence with tools as it is about the thing made.

Rough-cut heart

The next operation was to chuck a 25mm centre bit in the brace and bore a hole in the middle of the solid rough-cut heart, being careful to stop turning before the point broke through the base (**photo 10**). Working outwards from the centre with a 12mm gouge (**photo 11**), I enlarged the hole, a slow process but satisfying as the pale chips fell from the gouge like scoops of vanilla ice cream. The only awkward part



Short and hook knives made from old saw plate

of the operation was clamping the thing as the walls grew too narrow to bear onto with the holdfast, and no two surfaces were parallel. Eventually I settled on holding it in the face vice with the base resting on a board across the guide bars (**photo 12**), using the mallet as lightly as did the job (**photo 13**).

Next I smoothed away the ridges on the outside left by the gouge (**photo 14**), but then had a change of heart and decided the furrowed surface had looked more interesting than the almost featureless unadorned sycamore. So, using a more delicate 10mm carving gouge, I brought back the alternating light and shade of grooves.

This gouge is a bit special, a beautifully balanced old tool made by JB Addis & Son, which I bought from woodcarver Norman Gaches when he was whittling down his collection (**photo 15**). Norman, who died in May 2016, was an amazingly talented carver based in Ryde on the Isle of Wight. I first met him 25 years ago when he was carving a figurehead for the training ship *Royalist*. For the gouge it was a fall from grace to be making grooves in these rustic pots, but such are the vagaries of life for old tools.

To smooth the inside I used my home-made hook knife (**photo 16**). With the reflex sweep of its blade I could slice through end-grain in the base and take wispy shavings off the walls. Clamping the work wasn't an issue now because gripping it by hand was essential to bringing wood and edge together at the best angle, and in good light. The ragged edges were fared with another home-made knife; this one with a short blade and applied somewhat like a potato peeler, pulling it towards me (**photo 17**). Both these tools have a relatively long handle, which gives good leverage on the cutting edge. Lastly I went over the inside walls with a scraper made from an old tyre lever; it's a handy shape for working inside small pots, and its curved edge takes proper little shavings (**photo 18**).

To seal the wood I applied a light coat of



Shaping an edge with the hand-cranked grinder



Hewing birch to shape for a handle



Forming the hook around a steel bar



Drilling a handle to receive the tang

walnut oil, turning the pale sycamore a golden shade reminiscent of the tree's autumn leaf. One down, two to go, and I had a family of sycamore hearts – one each for my wife, son and daughter.

Born again blades

The knives I used in this project were reborn from a buckled hand saw – one of my less fortunate impulse buys on eBay.

Using metal shears, I cut a piece of saw plate around 14 x 115mm for the hook knife, with a third of that length being tapered to serve as the tang inside a wooden handle (**photo 19**). Having successfully hammered a few bends from kinked saw blades, I reckoned there was a fair chance I could hammer a bigger bend into a piece of one, so set up a steel bar as a former in the engineer's vice and began tapping with the hammer (**photo 21**).

My naive confidence was rewarded as I managed to persuade the blade through



Driving the handle onto the tang

180°, at which point I wished I'd shaped it on the grinder beforehand (**photo 20**). Holding the hook against the hand-cranked wheel while also swivelling it to take the bevel around the curve was a test of coordination, which grew more menacing as the edge grew sharper.

Meanwhile I had found a piece of spalted birch to make handles, hewing them to shape with the carpenter's axe, and with the new blade gripped in the vice I knocked the handle onto its tapered and knife-edged tang with the mallet (**photo 22**). So as to guide the tang into position but ensure a firm fit, I'd drilled the end of the handle with a row of not-quite-meeting holes (**photo 23**). The hook was a learning curve in more ways



Sharpening the hook knife...

than one, as I fumbled my way through a new sharpening technique (**photo 25**), pulling the blade along the stone with a rolling action beginning at the tip. But given a coat of Danish oil this tool was ready to cut, and I've had plenty of fun with it since – hollowing the bowls of spoons, for example. For shaping outside surfaces I made a second knife with a short, straight blade, which was far less fiddly.

With the benefit of hindsight I'd suggest saw plate steel is a tad too light and springy for a hook knife, especially if working dry wood – a professionally made tool is on my shopping list. But if you've yet to try green woodworking you don't need to buy specialist tools, let alone make your own, as there's an awful lot of fun to be had with everyday chisels and gouges. That said, proper green wood tools are reasonably priced and not hard to find, with some of the best coming from small-scale makers in Britain. **WW**



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In your own write...

Here are just some of the latest letters we've received since the last issue. Drop us a line on paper or via screen and keyboard to add your voice to the woodworking crowd; you might be one of the lucky few who will manage to get their hands on a coveted *Woodworker* badge!

The Woodworker
& Woodturner

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'WORKING HANDS' COMPETITION

Hi Mark,
I really enjoyed the recent 'workshop operations' competition, even though I only got less than half right like you. Maybe a follow up with non-workshop stuff might cause some interest, but I guess you would need photographs of such workers. "A good chippie can hang six to seven doors in a day," my dad would advise.

While I'm here, I would also like to comment on Michael's Oct/Nov comment. I would much rather pay the current price than have no adverts and at double the purchase price, especially the overseas price. On recollection, *Better Homes & Gardens WOOD*, a US publication, had way more advertisements than *Fine Woodworking*, so I pulled out an issue of *FWW* from my archives and it had more than 50 pages (two half pages

= 1 page) in an 118 page issue from the early 1980s. Therefore if YOU were to attract another 40 pages of companies for service, then you too could double your content. Those were the days when the net covered about 100 miles square. Our local mags have plenty of adverts too, in this internet soaked society. Businesses probably advertise so as to reinforce images in our brains so we can quickly find the distributor needed for our purchases and then go online or pick up the phone. It's a lot easier than falling into the sinkhole of the internet and losing one's search by distractions from YouTube, etc. and wasting precious time.

Keep up the good publication. I love the down to earth variety as well as the fact your mag recognises that we ALL make mistakes, unlike some of the *FWW* readers.

Regards, **Ranald Millar**

Thanks, Ranald, and I'm glad to say I'm in agreement with you there. And when it comes to hanging doors, two a day is more like my average these days, and frankly, I'm happier with just the one – especially if it's a fire door and there are stairs involved!

Mark

We recently ran this quiz from the past, which was originally featured in *The Woodworker* of October 1935



ROCKING HORSE PLANS

Hi Mark,

Years ago I saw a rocking horse project in *The Woodworker* and wanted to make it more than anything. I was only a kid but the thought of it stayed with me and inspired me to get into woodworking after I left school. I now run my own construction firm but still think of making that rocking horse one day. I've read the mag on and off over the years but have not seen any rocking horse plans since that first one. How about doing another? Cheers, **Tony**

Hi Tony, well it's great to think that our simple journal has been a source of inspiration, and thanks for getting in touch. I personally don't recall seeing a rocking horse project in the mag in recent years, but it sounds like a spot of archive searching is in order. In the meantime, if there are any readers out there who can remember when the project appeared, we'll give it a go. Or, if anyone's made one recently, perhaps you could send in a photo to get the ball rolling? Mark



QUESTION OF CONTRAST

Hello Mark,

As we get older, the first thing that starts to go (after the knees!) is the eyesight. Even in my venerable years, I can see well enough to use all the measuring and cutting devices, and still turn out some passable work. What does cause me problems, though, is the design of some of the pages in *The Woodworker*. It's a contrast thing, where you have the printing set into a coloured background. The worst is the editorial, where the white script against a blue background is virtually illegible to me. One day, when you get old, you will understand what I mean. Meanwhile, any chance of better contrast layouts? **Frank Ashurst**

Well, I have to agree with you, Frank, and I'm glad you've mentioned it. We're looking to be redesigning the mag very soon now, but I've had a chat with Nik, our designer, and he's going to do something about that straight away. Don't forget, the magazine belongs to all of us and we all have a voice in it. Mark

GET IN TOUCH!

Don't forget, we're always keen to see your photos, so please don't hesitate to send them in if you've snapped something of interest recently. Email me at the new address: editor.ww@mytimemedia.com

Woodturning safety & GOOD PRACTICE

Being aware of the plethora of safety considerations and practices before you start turning will stand you in good stead for an injury-free and happy journey, as Bob Chapman discusses here

By their very nature workshops are inherently dangerous places although general workshop tidiness removes many of the potential hazards. Sweeping floors regularly and not leaving wires trailing about are oft-quoted examples. However, there are hazards, which, although not restricted to woodturning, may occur more frequently or to a greater extent in the woodturning workshop. What follows is not intended to be an exhaustive list of all the dangers a workshop may possibly hold. Instead I have focused on the specific dangers I think apply particularly to woodturning.

Dust & dust masks

Obviously dust is not as immediately catastrophic to an individual as, say, losing an eye or being hit in the mouth by a large piece of fast-moving wood, but in terms of the number of people affected by it, in my opinion dust is the biggest of all the woodturning hazards. It is insidious, often

invisible and yet it can do immense damage to our health starting the instant we begin turning. It's no good waiting until that damage has already been done before taking precautions.

Unfortunately it is often the case that, for many turners, dust protection remains a low priority until problems arise and sadly, by then, it may already be too late (**photo 1**). While purchasing a dust extractor a few years ago, I was asked by another turner why I was buying it, and was I having breathing difficulties? He seemed surprised when I said I wasn't, as if I was therefore wasting money, buying something I didn't need. I don't think he could have been more wrong.

The Health & Safety Executive (HSE) have identified a number of health problems associated with wood dust. It is known to cause skin disorders, such as dermatitis and eczema; it may cause damage to the nose and nasal passages leading to rhinitis (runny nose), violent sneezing, nasal polyps and, in extreme cases, nasal cancer. Wood dust is

also known to be a causative factor in asthma, and the Control of Substances Hazardous to Health (COSHH) regulations define hardwood dust as a carcinogen. Fine dust may also deposit in the moisture on the surface of the eyeball leading to dry, sore eyes and conjunctivitis.

The HSE offers advice on suitable dust control measures, which include:

- Dust extraction at machines to remove the dust 'at source' and before it can be inhaled.
- Extractor fans to remove contaminated air from the workshop (**photo 2**).
- Air filters running continuously to remove airborne dust (**photo 3**).
- Regular use of a vacuum cleaner to clear up wood dust and prevent large accumulations.
- Use of individual respiratory protective equipment (i.e. dust masks) for very dusty tasks, such as sanding.

I have implemented all of those recommendations in my own workshop. The last of the HSE suggestions concerns the use of personal respiratory protective equipment or, more simply, dust masks (**photo 4**). These vary enormously in both



The dust extractor is linked into the bandsaw's controls so that it starts automatically whenever the bandsaw is switched on. This is an ideal arrangement



An extractor fan is inexpensive and removes contaminated air from the workshop very quickly. In summer it also encourages a flow of cool air through the workshop, but in winter it removes warm air as well as dust





price and effectiveness but all turners should consider using them – especially during sanding. Masks are usually rated as either P1, P2 or P3, and the bigger the number the more effective the mask at removing dust from the air being breathed.

It is especially worth noting that many of the cheap white masks that cover the nose and mouth with a thin pressed paper filter

are of little more than cosmetic value. They may look the part but in reality they offer very little protection from fine wood dust. For woodturning a P2 filter should be considered the minimum acceptable standard, and a P3 filter is better but more expensive. Masks that don't say they meet these standards are almost certainly a waste of money and, by giving you a false

sense of security, may actually increase the danger to your health since you may continue to work in dusty atmospheres in the mistaken belief that you are protected.

To be effective a dust mask must fit your face properly, and if you have a beard then a full-face mask is probably best for you. Otherwise half-face masks, provided they are fitted with the proper filters, are just as



The air filter removes particles down to one micron, and runs continuously. The Camvac has a posable collector positioned at the headstock, near the source of dust. Because they recycle the air, no heat is lost in winter



Personal respirators are very effective and available from several sources. Make sure filters are rated to at least P2 standard

effective at a fraction of the price. In **photo 4** on the previous page, the full-face masks can cost several times the price of a half-face mask similar to that on the right.

When I recommend half-face masks at demonstrations, I'm often told 'they don't seal properly – my glasses mist up'. This almost certainly means that the user isn't putting the mask on properly. Adjust the straps so the mask is a close, but comfortable fit to the face. Cover the filters with your hands and breathe in deeply. This

will pull the mask in to your face and help to form a good seal. If it doesn't then readjust the mask (wiggle it around a bit) and try again. Wear the mask for a few minutes until your breath warms it up and softens the plastic or rubber it is made from. Cover the filters again and repeat the procedure. The softened mask will conform to your face even better. Repeat as necessary but I find that after doing this a couple of times, I can comfortably wear the mask all day without any problems to my safety glasses.

Well, yes, some of these things may be true but even the smallest of splinters can cause permanent damage to an unprotected eye and compared with the loss of one or both eyes, they seem trivial arguments to me. The argument that "I wear glasses anyway" is especially misguided because ordinary glasses do not offer anywhere near the same protection as safety glasses, and if the lenses were to break they might actually increase the risk of eye damage. In any case, I wouldn't want to risk damaging my ordinary glasses – they cost a small fortune and I need them every day.

Most safety glasses either wrap around the face or have side panels to prevent material entering the eye from the side. They should be reasonably close fitting without a large gap between the glasses and the user's cheeks or forehead. The better ones have a 'ledge', which almost meets the forehead and prevents entry from above (**photo 5**). Try to choose glasses that are approved to EN166, the European standard for industrial safety glasses, or ANSI Z87.1 and AS/NZS 1337, which are the corresponding American and Australia/New Zealand standards at the time of writing.

When I was teaching chemistry I had the difficult task of trying to persuade my teenage pupils to wear safety glasses during experimental work. The only accident to a pupil I ever had was when one lad poked himself in the eye with the arm of his safety glasses while putting them on. He wasn't hurt but, seeing the funny side of this, I insisted the incident was recorded in the school's accident book. It says more about the clumsiness of teenagers than anything else.

As I'm short sighted I can see work on the lathe quite clearly without my prescription glasses and I find it better to

REMOVING DUST

Wherever we might be there is always some dust in the atmosphere, and we are continuously exposed to it. The 'P' (protection) or 'FFP' (Facial Filtration Protection) ratings of dust masks are based on the idea that there must be some low level of inhalable dust which is not actually harmful, or at least, that we can do little about. This is known as the Occupational Exposure Limit (OEL). Put simply the OEL is reckoned to be the level of dustiness, which an average person can safely work in, all day, without needing any dust protection at all. Different countries have different standards and their OELs are revised over time. At the time of writing the European (EU) OEL for unspecified wood dust is 5mg/m³ and an even lower value of 3mg/m³ is being considered.

In dusty conditions where the amount of dust is greater than the OEL, additional respiratory protection is needed to reduce the level of dust in the air being breathed.

A P1 (or FFP1) filter will protect against levels of dust up to four times as dusty as the OEL. A P2 filter is effective in conditions 10 times as dusty as the OEL, and a P3 filter protects against 20 times the OEL. Some manufacturers claim to make filters which offer even better protection than these minimum standards.

In general, as the 'P' number gets bigger the mask can remove finer particles. Some manufacturers describe the efficiency of their filters by quoting the size of the smallest particles that the filter can remove. This is usually expressed in microns. A micron is one thousandth of a millimetre and some filters will remove particles smaller than 1 micron. Thus the outer filter of my Jet AFS-1000 will remove particles down to 5 microns and the inner filter down to 1 micron, whereas my Camvac GV286 claims to filter out particles as small as 0.5 microns

Eye safety

I have a notice on my workshop wall, just behind the lathe, which says:

**REMEMBER,
YOU ARE NOW USING
YOUR LAST PAIR OF EYES**

When I go into the workshop I put on safety glasses and I keep them on until I leave. It's interesting to examine them – they are covered in tiny droplets of sanding sealer and/or CA adhesive. I'm not really aware of how the drops got there but, presumably, they would have gone in my eyes if I hadn't had the glasses on.

What is it about safety glasses that people dislike so much? I try to persuade friends in my local woodturning club to wear them, but many of them won't.

"They're uncomfortable, I don't like them"

"I can't see what I'm doing as well as I can without them"

"They slip down my nose, I'm forever pushing them up"

"I don't need them, I wear glasses anyway"

"They get covered in dust"

"I feel silly wearing them"



The safety glasses on the left can all be worn over ordinary spectacles; those on the right cannot. Note that most of them try to enclose the sides and some enclose the top as well. Ordinary spectacles do not do this



6 Four-prong drive centres are often supplied with lathes but may not be the best choice for beginners

remove them before putting on my safety glasses. If you need to keep your ordinary glasses on, you can buy safety spectacles and goggles that will go over them, and if it's really a problem your optician can supply prescription safety glasses.

An alternative to safety glasses is to wear a full-face visor. Most of these are large enough for spectacles to be worn inside them. They do, however, suffer the drawback of 'steaming up' when the water vapour exhaled in the user's breath condenses on the face shield.

A better, but much more expensive option, is to go for one of the full-face respirators (see **photo 4**), which completely enclose the face and reach under the chin. They offer excellent impact protection as well as dust protection. The constant airflow through them prevents any steaming up, but their weight and the noise of the fan can make them tiring to wear for long periods.

Methods of workholding

Ensuring that the workpiece is securely mounted on the lathe is the first step towards safe turning and there are a number of different methods available. Without claiming to cover them all, this section aims to give a very brief description of some of the most commonly used methods.

Drive centres & live centres

Drive centres (**photo 6**) fit into the Morse tapered hole in the headstock spindle and, as the name implies, they drive the work round when the lathe is switched on. The other end of the workpiece is supported by a 'live' centre – so called because it has bearings in it and can rotate with the work, thus reducing friction (**photo 7**). A centre that remains stationary in the tailstock is called a 'dead' centre, but nowadays these are not widely used.

The four-prong drives shown to the left of **photo 6** are knocked into the wood with a mallet before it is mounted on the lathe (to avoid damage to the lathe bearings), and the tailstock is brought up to wind the live centre

into that end and secure the work in place. The Steb centres shown in the centre of **photo 6** are placed in the headstock first and then the wood is brought up to it and pushed onto the points with pressure from the tailstock. The drive on the right is a special item, used when there is a hole in the middle of the wood to be held, for example, when making the stem of a lamp.

All of these centres are used when turning spindle work – i.e. long and thin with the grain in line with the lathe bed. The Steb centres are wonderful safety devices because, in the event of a serious catch, the wood will simply stop rotating whereas with four-pronged centres it might well go flying. I recommend Steb centres to all beginners. Gerry Stebbings, the man who invented them, once came and had a lesson from me.

Four-jaw scroll chucks

These chucks (**photo 8**) screw on to the headstock spindle and can be used to grip the wood. The jaws are fitted in such a way that they are self-centring as they are closed. The main advantage of a chuck is that the tailstock support is no longer needed and with it removed there is much better access to the workpiece. Chucks are most widely used when turning bowls, boxes and hollow forms where the tailstock, if present, would simply be in the way. They cannot hold long pieces securely enough for work to be done on the far end.

Different jaw sets are available for chucks enabling different workpieces to be held securely. The jaws on the right of **photo 8** are Cole or 'button' jaws and are used for 'reverse chucking' bowls and platters, i.e. turning them round so the foot can be finished.

Other methods

Photo 9 shows a number of other ways in which work can be held. The large screws at the top left are gripped in a chuck and the workpiece is screwed onto them. This arrangement is commonly called a 'screw chuck'. Next to them is a faceplate, which can be attached to the workpiece with



7 Tailstock centres. On the left is a 'dead' centre used with an auger for boring very deep holes. The one on the right has changeable tips for different purposes

woodscrews and then screwed onto the lathe spindle. Below the faceplate are a couple of metal rings designed to be screwed to the wood and then held by expanding chuck jaws into their recess.

In the middle of **photo 9** are three Jacobs-type chucks. These will be familiar to most owners of an electric drill and can be used in either the headstock, to hold small workpieces, or the tailstock, frequently to hold a drill bit when drilling on the lathe. Note that, if used in the headstock without any tailstock support to hold them in place, they may work loose as the lathe rotates. On the right of **photo 9** are some home-made screw chucks to hold small items such as apples.

Lathe safety

Woodturning lathes are simple machines but it is important that they are set up and used correctly. When first setting up a lathe, care should be taken to get it at the correct height for the person who will use it. Stand with one arm bent at the elbow and held horizontally across your chest. Measure from your elbow to the floor and set up the lathe with its spindle centreline at this height (**Fig.1**).

An inch or so either way probably won't matter much, but getting the height right helps prevent back problems developing and can make a big difference to how easily you can hold and manipulate tools at the correct angle for cutting properly. One of the problems I have when people come for lessons is that they may be taller than 6ft or shorter than 5ft, and I have had students at both ends of this spectrum. I have a platform for short students to stand on, but have yet to dig a trench for the tall ones.

Although commonly perceived by beginners as a major danger, a workpiece flying off the lathe is, thankfully, not a common experience. Of course this presumes that the workpiece is mounted securely in the first place and that sharp tools are being used correctly. Before switching the lathe on, double check that



8 Four-jaw scroll chucks have transformed the turning of bowls and hollow forms with their ease of use



9 Many 'home-made' means of workholding can be devised, such as simple screw chucks

the workpiece is securely mounted and always rotate it by hand to ensure that it clears everything. Select the correct speed and stand to one side 'out of the firing line' as you switch it on.

With increased confidence it's easy to become careless of these basics. I have a scar on my upper lip where I was hit by the corner edge of a square piece I was in the process of 'turning to round'. The tool, a spindle roughing gouge, had become blunt. I knew it was blunt but I was almost finished and, instead of stopping to sharpen it, I simply pushed a little bit harder. An afternoon in A&E gave me time to ponder as well as a few stitches. I'm less complacent now.

My lathe has variable-speed, which I change by rotating a dial on the control box. The dial has numbers from 1 to 10 and I daresay I could calculate what these numbers mean in terms of revolutions per minute but, to be honest, I don't think I need to know. I always switch on at a slow speed

and then slowly increase it; I know that position 1 is the slowest and 10 is the fastest and I've learnt that somewhere between positions 5 and 10 is usually about right, depending on the workpiece.

I often say that I think of the lathe as having only three speeds: the first is 'too slow', by which I mean the cut is laboured and the finish is poor; the second speed is 'too fast', which usually means that the lathe is vibrating a bit too much, or I find the rushing, whirring noise a bit unsettling (in other words, I'm getting scared). Somewhere in between 'too slow' and 'too fast' there is a compromise speed, which is 'about right'; this is the speed where the lathe is rotating quite quickly, it sounds and feels good, and the work cuts smoothly. I try to do all my turning on 'about right'.

If this simple rule of thumb is too vague for you, you might find the graph in **Fig.2** more helpful in deciding the lathe speed appropriate for different sizes of workpiece.

The correct speed will also depend on how securely the workpiece is mounted. In general, bringing up the tailstock will increase the security of work mounted on a faceplate or in a chuck, allowing a faster speed to be used.

Long, thin spindles are prone to flexing and whipping in the middle and this is more pronounced at higher speeds, making them less secure. A lower speed will be better despite their small diameter.

The hardness and density of the timber may also affect the optimum speed, particularly where density varies through the workpiece – for example, where there is a significant amount of sapwood in the piece. Similarly, pieces of timber which are out of round or have sections missing and are badly out of balance will also require slower speeds to begin with although as they are brought to the round the speed may be increased. There are no hard and fast rules about what speed to use other than 'start

Establishing correct lathe height

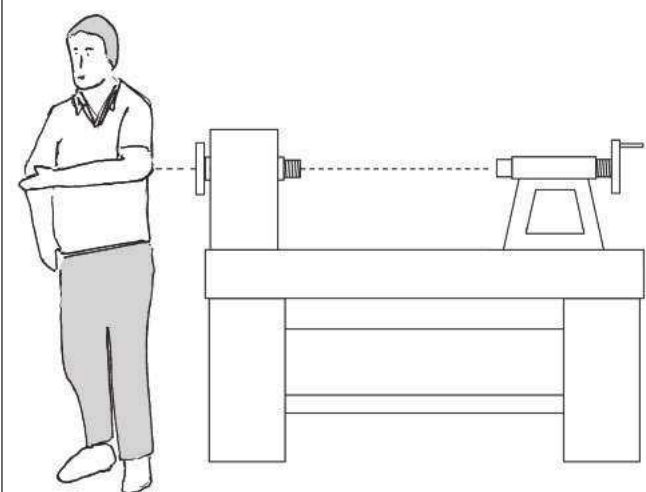


Fig.1 The correct height of the lathe spindle will be different for each user. Some adjustment may be needed if you are very different from average height

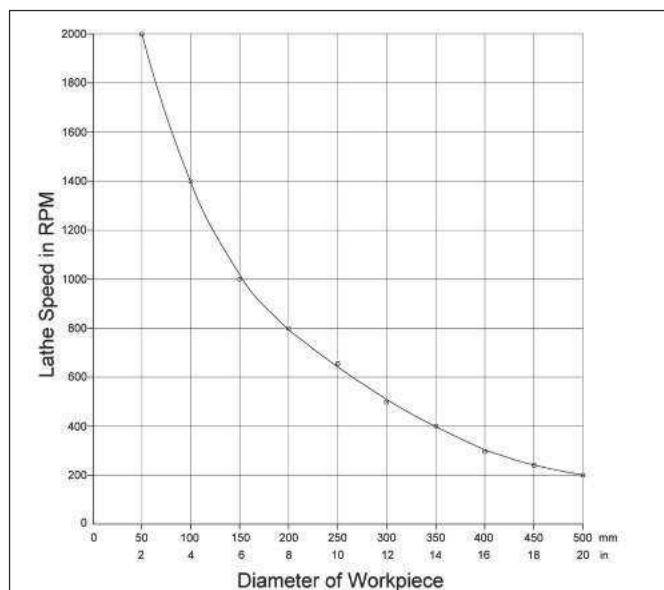


Fig.2 Please note that this table and graph should be read only as an approximate guide to turning speeds. Remember that out-of-balance or very thin pieces will require slower speeds than you might expect

slow and increase cautiously'. Experience will teach you.

Compressed air

Most compressors are very, very noisy and I find the noise in itself is hazardous. My compressor had a slight leak somewhere and the pump would switch on automatically when the pressure dropped inside the tank. The sudden loud noise always made me jump – not a good thing if I was turning or using the bandsaw. The neighbours didn't much care for the noise either. For both these reasons I invested in a 'silent' compressor. It was a bit more expensive but the difference is remarkable. It too has a slight leak, and occasionally bursts into a soft whispering purr that is barely audible. I recommend one.

Compressed air can be dangerous if directed at the skin. Air may be forced into the bloodstream and the resulting embolism can, in extreme cases, be fatal.

The HSE also advise that compressed air should not be used to blow dust off surfaces as it merely spreads the dust around and makes more dust airborne and inhalable. Many woodturners find compressed air useful for blowing the dust out of the grain of the wood before applying a finish and, although this conflicts with the HSE advice, I still do it because the quantity of dust is small and removing it is a necessary evil. I do, however, try to minimise the problem by directing the air jet to exactly where it is needed and nowhere else and I have my dust mask on and extraction equipment running while doing this.

Chainsaws

I have two chainsaws: a petrol engined one for outdoor use away from the workshop and an electric one for use inside the workshop. I use them so infrequently that I will never be an expert. This is possibly a good thing because it means that I still treat them with the utmost respect. Chainsaws can kill and, when I'm using one, I never forget it.

All I can really say about chainsaws is that most of the dangers are obvious but some are not. They are all well documented. Read up on them and then get expert training and the proper clothing, then use it. I have, and I do (photo 10).

'It's Elf & Safety gone mad...'

The Health & Safety Executive come in for much, in my opinion, undeserved ridicule and many woodturners (and others) of my acquaintance seem to regard them as the unnecessary watchmen of a 'nanny state'



Chainsaw protective clothing: ear defenders, hard hat, steel mesh facemask, Kevlar gloves, padded trousers and steel toe cap boots. All slightly too big for my long-suffering model

and the butt of many ill-tempered 'jokes'. On the contrary, I think that they are a very valuable source of sensible information and advice on practical safety issues. I try to adopt this advice where I can, and when I can't or won't, I can at least say that I have

made a considered decision in knowledge of the possible consequences. To blindly ignore this advice and carry on regardless, which almost seems a matter of principle for some, seems to me to be foolhardy in the extreme. [www](http://www.getwoodworking.com)

Full steam AHEAD

Inspired by a recent steam-bending course held by Charlie Whinney, Rick Wheaton sets about making his own £25 soil-pipe steamer and uses it to create a stylish fruit bowl

If wood is heated to 100°C it can be bent and twisted into shapes that are both beautiful and useful. This idea has always interested me, and I'm lucky enough to have recently been on a one-day steaming course. It was run by the likeable and immensely knowledgeable Charlie Whinney to see the amazing things an expert can do with this technique.

After a one-day course, I've not done any more than stick my toe in the water, but I'm hooked... I've made a basic steamer for a few quid, and I'm busting to share, so here goes...

Building the steamer

The easiest way to heat wood to the magic 100 is with a steamer, i.e. a container filled with steam. At its simplest, you could use a kettle and a drainpipe, and this soil-pipe steamer is not much more complicated, but a lot more efficient.

I copied Charlie's idea for a steam generator – a £25 B&Q wallpaper stripper – and scrounged a 1.5m length of 150mm diameter soil-pipe from a building site. That's pretty much all you need, apart from

a few bits of scrap and a bungee cord or two, though a kitchen timer is useful and a probe thermometer adds to the fun.

The corrugations on my scrounged pipe add some insulation, nice but not essential, and the interior is smooth – an ideal combination. If you have to buy some pipe, various diameters and thicknesses are cheap enough at builder's merchants. The pipe is angled slightly so that condensation will drip out at the lower end. Both ends of the pipe are loosely sealed with plywood discs: the lower one fixed, the upper easily removable as a door. Note the shortened stripper pipe pushed into a 22mm hole in the lower disc. This is loose for condensation (have a jug on the floor), and needs to be held in place with a clamp.

For best results, wood to be steamed should be free from knots or damage, and straight-grained with little or no 'run-out', i.e. the grain should run parallel to the surface. Not every piece of wood you steam will bend without breaking, and breaks mostly occur where the grain runs out, or there is some other fault.

Before any actual bending can take place, you must know what shape you're looking for, and have a form cut, strips cut, and some clamps handy. Speed is vital; another pair of hands are useful, and gloves are essential. Once out of the steamer, wood cools and loses its flexibility in only a few seconds, and quick clamping will reduce 'bounce back' – the tendency for wood to return to its original shape.

The upper disc forms the door, which is screwed to a plate and held by a couple of bungees. The door needs to be quickly opened and shut – and it's also a loose fit because THIS IS NOT A PRESSURE VESSEL. The wood strips should be supported to allow steam to circulate freely; I used a few bits of chicken wire but any sort of shelf will work equally well.

To operate, put wood strips inside the tube, close the door, fill the steamer tank, and switch on. In a few minutes, steam will start to fill the pipe, a good time for Mr Health & Safety to point out that steam is hot (no kidding) and should be treated with considerable respect.



1 Cutting the strips – less waste is generated if you use a bandsaw



2 Probe and temperature gauge – not essential but nice to know it got to 100°C



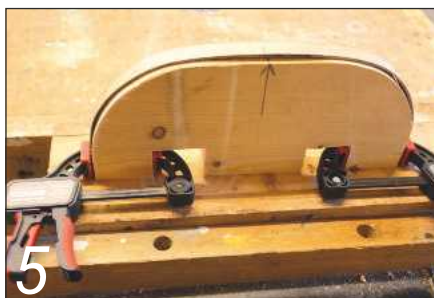
3 Half an hour later the first strip is ready



Steamer and kit, from
bottom left clockwise:
the B&Q steamer; forming
jig; cooling jig with strips
and clamps; steamer tube



4 Clamping one end to the former jig



5 Both ends clamped – this is easier if the jig is in a vice



6 Into the cooling jig. Strips can now be handled without gloves

The time taken for wood to soften will differ between types, wetness, and thickness; part of the enormous learning curve of this technique. As a generalisation, it seems the thinner, the wetter, the quicker. Charlie had everyone steaming as many different kinds of wood as he could lay his hands on: green oak, kiln-dried ash, plywood, MDF, even bits of old skirting board. You'll soon get to know what works and what doesn't – a big part of the appeal is that steaming is as much an art as a science.

However, as a guide, around half an hour should be enough for a handful of experimental thin strips, and because it's easy to get caught up in the steaming and let the thing run dry, use the kitchen timer to remind you to check the tank every 30 minutes or so.

If you have a probe thermometer (around £10 from most kitchen shops), drill a small hole for the probe and read the internal temperature. A thin pipe in a cold workshop might need some insulating, and this will cut down on the condensation.



7 The drilled strips attached to the simple base

Steaming sequence for a fruit bowl

Detailed instructions will obviously depend on the shape and size of your project, but, assuming you've cut your wood, made your form and got everything ready to go, here's the sequence for a simple fruit bowl (my thanks to Norm for his help with the clamping).

1. Wearing gloves, open the door, remove one strip, then close the door
2. Immediately place your strip over the form and clamp one end
3. Quickly bend the strip with your hands, and use the other clamp
4. Leave to cool for 2-3 minutes
5. Remove from the form and place in a restraining jig
6. Repeat with other strips, one at a time

The following morning the strips were removed, drilled, and mounted on a simple base, at which point it occurred to me I'd made a fruit bowl that folded up. Anyone got a camper van? [www](http://www.learnsteambending.com)

USEFUL POINTS

- The steamer temperature will drop rapidly once the door is opened, so if you're steaming multiple pieces, have the door open for as short a time as possible
- When hot, wood marks easily, so use soft-nosed clamps or scrap blocks
- If you only want to steam small pieces, then a small steamer will be more efficient for this purpose
- A good way to minimise 'bounce back' is to use the restraining jig for longer: the longer the better. Also, you can anticipate some bounce back by making your jig hold your wood in a tighter curve than you eventually want
- When bending, the outside surface is under most tension, and break-out can occur along the grain. A more advanced technique, not covered here, is to improve results – especially if sharp bends are needed – by supporting this outside surface with a thin metal strip



8 The 'unfolded' bowl in use

FURTHER INFORMATION

To find out more about Charlie Whinney and his steam-bending courses, see www.charliewhinney.com and www.learnsteambending.com

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2016 Wood Awards Winners

Recently unveiled at a special ceremony held at Carpenters' Hall in London, here we look at the 2016 Wood Awards winners across all 12 categories



FURTHER INFORMATION

To find out more about the 2016 Wood Awards winners, visit the dedicated website: www.woodawards.com

The winners of the 45th annual Wood Awards were recently announced at a ceremony held on 22 November 2016 at Carpenters' Hall in London, hosted by editor of *Crafts* magazine, Grant Gibson. The Wood Awards is the UK's premier

competition for excellence in architecture and product design in the world's only naturally sustainable material. The Awards aims to recognise, encourage and promote outstanding design, craftsmanship and installation using wood. www.woodawards.com

ARNOLD LAVER GOLD AWARD & STRUCTURAL AWARD – Maggie's at the Robert Parfett Building

The Arnold Laver Gold Award is the winner of winners. Maggie's at the Robert Parfett Building by Foster + Partners was awarded this prestigious title (as well as winning the Structural Award). The voting for Maggie's was unanimous with the judges commenting that the remarkable structure "has brought together the best in engineering, fabrication and architecture."

Maggie's Centres provide a welcoming 'home away from home' – a place of refuge where people affected by cancer can find emotional and practical support. The design of the Manchester centre establishes a domestic atmosphere in a garden setting with a greenhouse and a veranda. The centre accommodates a range of spaces from intimate private niches to a library.



The centre combines a variety of spaces, from intimate private niches to a library



The lattice beam structure is made using Nordic spruce



The roof is naturally illuminated by triangular roof lights and is supported by lightweight timber lattice beams

FACT FILE

Location: Manchester
Architect: Foster + Partners
Wood species: Nordic spruce

COMMERCIAL & LEISURE – Stihl Treetop Walkway

Photographs by Rob Parrish



The Stihl Treetop Walkway snakes through the ancient woodlands of Silk Wood and across The Downs

The judges chose Stihl Treetop Walkway as the Commercial & Leisure winner as it has the ability to inspire all generations to learn more about wood. The Grade I listed Westonbirt Arboretum is home to one of the finest tree collections in the world. The Stihl Treetop Walkway provides views over this landscape, in particular the ancient woodlands of Silk Wood and across The Downs. At almost 300m it is the longest structure of its kind in the UK. The walkway bridges across a valley, allowing for ease of access at ground level without any stairs or lifts.

While walking along the structure the valley falls away beneath and the walkway rises to over 13.5m above the forest floor. The route snakes above and through the tree canopy supported by scissoring timber legs. The walkway is a hybrid timber and steel structure: larch was selected as the main material due to its durability and attractive colour; Scottish larch was selected for the decking and

handrail while the columns are Siberian larch, as it offers a tighter grain and higher strength-to-weight ratio.



Siberian larch is used for the columns due to its tighter grain and higher strength-to-weight ratio

FACT FILE

Location: Westonbirt, The National Arboretum, Glos.

Architect: Glenn Howells Architects

Client/owner: Forestry Commission

Wood species: Scottish and Siberian larch

EDUCATION & PUBLIC SECTOR – Stanbrook Abbey



Stanbrook Abbey is made using renewable, recycled and low energy materials

Stanbrook Abbey is a new home for the Conventus of Our Lady of Consolation, a Benedictine community of nuns who devote their lives to study, work and prayer. The nuns' contemplative way of life required spaces that were simple, tranquil and beautiful. The nuns chose the remote location, in peaceful woodland at the edge of the North York Moors, for its "special quality of silence and light." The new church derives its plan from two intersecting axes significant in the liturgy of the church; its organic form rose out of the modest orthogonal domestic architecture of the abbey. The new spaces include private cells, a refectory and kitchen, work rooms, a meeting place, guest spaces and a community church and chapel. Preference was given to renewable, recycled or low energy materials.

FACT FILE

Location: Wass, Yorkshire

Architect: Feilden Clegg Bradley Studios

Wood species: German oak, Scottish spruce, Douglas fir, British sycamore



The detailing on the furniture pieces in the church is superb

INTERIORS – The Portledge Rear Staircase



The spindles of the staircase are cut with arcs of varying sizes to create an organic flow

The judges regarded this project as "an almost faultless piece of work; a surprising intervention in the historic context that works extremely well." The new rear staircase was designed as a distinct contemporary insertion into the old Medieval service wing of Portledge House, a Grade II listed Manor House in Bideford, north Devon. The stair replaces a damaged multi-phase service stair and forms part of a re-ordering of the house. The staircase blends with the wall panelling to create a homogeneous design using storm-felled English oak chevrons between darker walnut fins. On the staircase, the German walnut fins form spindles topped with a leather handrail. The spindles are cut with arcs of varying sizes to create an organic flow. CNC machining was used prior to the staircase being assembled by hand using a variety of traditional joinery techniques.

FACT FILE

Location: Bideford, Devon

Architect: Witcher Crawford Architects & Designers

Wood species: German walnut, English oak

Its design as a bespoke sculptural piece was instrumental in its approval by Historic England and the local conservation officer.



Storm-felled English oak chevrons are used between darker walnut fins

SMALL PROJECT – The TWIST



The TWIST demonstrates the possibilities of using wood in a very beautiful and efficient way

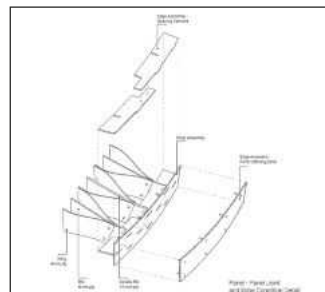
The project was developed by the Emergent Technologies and Design Programme at the Architectural Association School of Architecture for Timber Expo 2015. The project sought to exploit the anisotropic properties to gain full control of the bending and twisting behaviour of plywood. The system was primarily composed of two plywood strip elements: the ribs and the wings. The ribs were CNC-milled planar arcs that served a structural function while the wings were straight strips with the grain perpendicular to the length. These wings connected to the ribs at specific angles and distances in order to bend and twist. A sub-system of combs and the perpendiculars ran along the free edges of the articulated surface, locking the geometry in place. Computational techniques, based on the results of full-scale physical experiments, were used to generate the forms.

FACT FILE

Location: Timber Expo 2015

Architect, engineer & builder: Emergent Technologies and Design, Architectural Association

Wood species: Birch ply



The system is primarily composed of two plywood strip elements: the ribs and the wings

PRIVATE – Contour House



A combination of American white oak, European oak and some stainless steel has been used for the superstructure of Contour House

Sanei Hopkins was commissioned to design an open, light replacement house using high-quality traditional materials. Removing the existing house and associated landscaping allowed the 'contours' of the original meadow site to be reinstated. The use of timber externally was precluded by the Peak National Park Authority because the site is in the heart of a protected landscape where stone is the prevalent material. Stone only acts as a rain screen and cladding. A combination of American white oak, European oak and some stainless steel has been used for the superstructure. Flitched feature trusses support the roof over the swimming pool and master bedroom with stainless steel ties and rod fixings. The house has been designed with sustainability at its core, maximising carbon storage while minimising carbon emissions and energy consumption. It utilises both local and renewable materials as much as possible.

FACT FILE

Location: Peak District

Architect: Sanei Hopkins Architects

Wood species: American white oak, European oak



Flitched feature trusses support the roof over the swimming pool

EXISTING BUILDING AWARD – Ansty Plum



Ansty Plum has undergone a retrofit and studio extension

Ansty Plum, a mid-century house designed by David Levitt and wood-lined stone studio designed by Alison and Peter Smithson, has undergone a retrofit and studio extension. The buildings are situated on a steep wooded hillside overlooking a collection of 12th-century buildings. The house has a simple open plan with a singular plane rectangular roof following the gradient of the land. The studio, hedged into the slope, peeps onto an ancient wooded track. Coppin Dockray transformed the house by removing many sequential changes made over the past 50 years to open up the house and express the architectonic qualities of the original Douglas fir construction. A new bedroom and study were created with bespoke Douglas fir joinery. The derelict studio has been brought back to life, acting as an ancillary bedroom that glows pink with Douglas fir. A secluded shower room was created by extending into the hill.

FACT FILE

Location: Wiltshire

Architect: Coppin Dockray

Wood species: Douglas Fir, birch



A new study was created with bespoke Douglas fir joinery

Photographs by Brotherton Lock

FURNITURE & PRODUCT COMPETITION WINNERS (Bespoke & Production Made)

BESPOKE – Pantori

Photographs by Adrian Lambert



Pantori uses a combination of Japanese and English joinery to create a freestanding pantry larder

Inspired by the Japanese Wabi-Sabi aesthetic that embraces simplicity and naturalness, Pantori is a freestanding pantry larder, created for Japanese crepe eatery, Nojō. A combination of Japanese and English joinery has been used. The top has been jointed using three-way mitres and wedged tenons, the rails are housed dovetails, while the drawers have been housed and nailed with ring shank nails typically used in boat-building. Oak was selected for the frame and flexible straight-grained ash for the woven inner drawers. Shou Sugi Ban, the traditional Japanese technique of burning timber to preserve it and make it resistant to fire, rot and insects, inspired the scorching on the oak. Within the drawers, waste sawdust creates a substrate for mushrooms to grow in. Two extra rails allow the positioning of the drawers to be changed while the oak board provides an extra workspace.

FACT FILE

Designer: Steph Leake, Intern at Jack Badger Ltd

Maker/manufacturer: Jack Badger Ltd

Wood species: European oak, English ash



The drawers are filled with waste sawdust to facilitate the growing of mushrooms



Hand-cut Japanese joinery ensures the design stays true to its roots

PRODUCTION MADE – Planks Collection

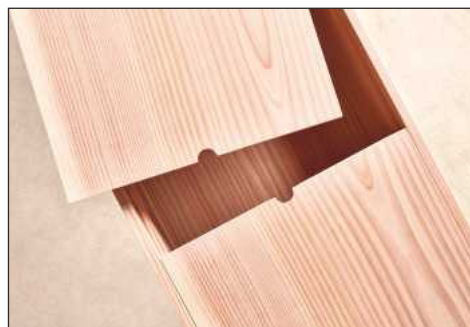


Planks Collection expresses the integrity of the material, using it in the most effective way and bringing rationality to its design. Shown here are the table and bench...

Designed by Max Lamb, Planks' roots lie in the humble carpenter's workbench and 17th/18th century English country furniture. The collection (a dining table, bench, shelving, console table and lounge table) promotes utility, strength, durability and economy of material. Easily accessible storage prevents clutter from gathering on work surfaces. Varying plank sizes have been used for each piece of furniture to minimise waste. Full-width planks are used as the defining feature. Narrower planks are joined to form structural rails to support the top. Four simple L-shaped legs, structurally strong yet physically light, connect to the side of the box and support the cantilevered top.



... as well as the shelving unit



The Planks Collection has been designed with generous surfaces with uninterrupted wood grain

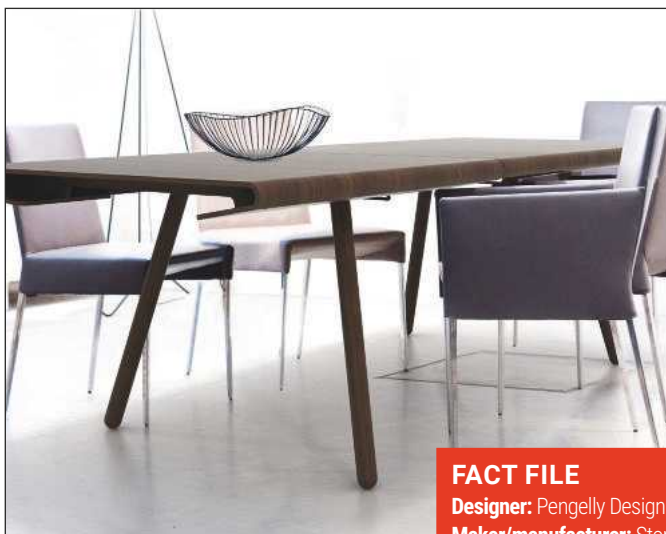
FACT FILE

Designer: Max Lamb

Maker/manufacturer: Benchmark

Wood species: British Douglas fir or European oak

PRODUCTION MADE – Stretch Extending Dining Table



Stretch Extending Dining Table was conceived to use the natural characteristics of formed ply

Designed by Simon Pengelly, the table was conceived to use the natural characteristics of formed ply and is available to buy in a range of vivid colours, ensuring it will fit within any home or office environment. The form of the laminations enables the top to slide along a very simple metal frame, cleverly exposing the extension leaves stored within the table. First designed in 2003, the original was much smaller and less successful. The re-design in 2015 was based on overcoming issues with the movement of each lamination. The updated version is significantly larger due to these issues being resolved.

This elegant solution works to solve a common problem

FACT FILE

Designer: Pengelly Design

Maker/manufacturer: Stonebridge

Wood species: European beech, birch or oak



STUDENT DESIGNER

Within this category were two cash prizes: £1,000 for the winner and £500 for the People's Choice Award

STUDENT DESIGNER WINNER – Geometry



This modern circular dining table was praised for having its own definite aesthetic

Geometry was chosen as the winner of the Student Designer category. The judges said: "This table has its own definite aesthetic. It is solid and it works, using a system that does not involve any screws. It is a robust piece of furniture."

Geometry is a modern circular dining table. The frame is inspired by molecular geometry, made with contemporary stainless steel rods and contrasting classic oak junctures. The table top consists of constructional oak veneer and solid oak lipping.



The frame is inspired by molecular geometry, made with contemporary stainless steel rods and contrasting classic oak junctures

FACT FILE

Designer: Michael Stevenson

College/University: Building Crafts College

Wood species: European oak

STUDENT DESIGNER PEOPLE'S CHOICE AWARD WINNER – Velo Chair



Inspired by the bicycle, the Velo Chair connects body and object by seamlessly wrapping itself around the user



The flexibility allows a more comfortable backrest, which flexes and moulds around the sitter

Velo Chair, made and designed by Rycotewood Furniture Centre student Jan Waterston, won the Student Designer People's Choice Award. Throughout the summer and the London Design Festival the public was asked to choose its favourite student design on Twitter, and Velo Chair was by far the most popular.

Inspired by the bicycle, the Velo Chair connects body and object by seamlessly wrapping itself around the user. Each surface is hand sculpted. Ash was selected for its flexibility, allowing the complex curves to be free-form laminated without breaking. The flexibility allows a more comfortable backrest, which flexes and moulds around the sitter.

FACT FILE

Designer: Jan Waterston

College/University: Rycotewood Furniture Centre

Wood species: English ash

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A special commission

Peter Vivian is tasked with producing a gavel and accompanying sounding block to be used at a meeting to commemorate the 50th anniversary of the 'Sixty-Six' Club

I recently received an enquiry from my local MP, Conor Burns, regarding producing a gavel and accompanying sounding block to be used at a meeting to commemorate the 50th anniversary of the 'Sixty-Six' Club. This later became two identical gavels so that one could be presented to The Rt. Hon. The Lord Eden of Winton Bt PC, who would be attending.

The design

I showed Conor several different species of timber but recommended American black walnut (*Juglans nigra*) as it offered a combination of good density and hardness,

essential for a gavel, plus, in my opinion, is one of the most beautiful timbers available. He asked if I could produce a couple of design sketches but as it has been a very long time since I was at art college, I figured it would be quicker to turn a couple of sketch pieces (photo 1). These I did from a few lengths of dowel in beech and tulipwood or poplar; doing this also provided the opportunity to check the size and how they felt in the hand although the poplar used for the heads was a bit too light.

The handle

With the design chosen I opted to turn the handles first after cutting a square length of walnut and knocking the corners off with the bandsaw. I turned the octagonal block down to the maximum diameter of the handle using the spindle roughing gouge, then reduced the round tenon to the same diameter as the Forstner bit I was planning to use to drill the hole in the head of the gavel (photo 2). I cleaned the shoulder of the tenon with a parting tool and refined the general shape and sweep of the handle with my favourite bowl gouge. The detail at the end

of the handle and the detail nearest the tenon was created with the parting tool turned on its side to create the crisp edges. I sanded down to 240 grit and then finished with a dark friction polish. Not happy with the level of sheen, I waxed and buffed it while it was still mounted on the lathe.

The head

I elected to turn the two heads at the same time as I thought this might give me a better chance of getting them as near identical as possible – I wasn't convinced this was the right course of action! I turned a third separately so I had another option, but in the end chose the two that were turned simultaneously. Again, I turned the block of walnut to the biggest diameter, which is where the handle pierces the head. After I carefully measured their position, I rolled the beads with the parting tool on its side, which is used with a scraping action. The faces of the gavels' heads have a slight convex surface, which I did using the parting tool leaving as little material between the heads and the spare timber at each end as I dared. The barrel shape was created using



Sketch pieces



Beginning to turn



The completed handle

a combination of bowl and skew gouge. I finished them using the same method as for the handle (**photo 3**). I separated them and removed the excess carefully with a small Japanese flush cut saw, then sanded them to remove any marks before refinishing the bare timber by applying the friction polish followed by lots of vigorous buffing.

Drilling the hole

Any inaccuracy in drilling the hole for the handle would show up like a sore thumb, so to reduce the chance of this happening, I quickly knocked up a 'V' block using offcuts of MDF with the aid of a hot-melt glue gun (**photo 4**).

Two becomes one

I cut a slot down the round tenon finishing just short of the shoulder to receive a wedge. The slot needs to be at right angles to the direction of the grain in the head to stop it splitting when the wedge is driven home. If the gavel was made from a light coloured wood such as ash, then a contrasting wedge in walnut or wenge works well, but in a dark wood I think a pale wedge looks a bit odd, so I decided to make mine from walnut. PVA was used to glue the pieces together but you have to be quick when rotating the handle to the correct position with the slot at right angles to the head as the glue grabs almost straight away. I had to drive the handle out of one of the heads and have a second attempt. When I was happy with the final position, I drove the wedge home, cut off the surplus, then sanded and refinished the bare wood.

The sounding block

This is simply a rectangular block of walnut with a bevel on the top edges; this can be achieved with a router or sharp plane. Traditionally there is a small hollow to receive the widest part of the handle, which helps to keep the gavel central to the base. I used

a woodcarving gouge to create the hollow and refined it with a Dremel and small sanding drum. Before finishing, I had the text laser engraved on the top face and front edge as the customer had said he would prefer this to having engraved metal plaques attached to the timber. Finishing was achieved by applying shellac sanding sealer thinned down with 10% methylated spirit with a second coat on the end-grain. I then sprayed them with three coats of acrylic lacquer; this gave a glossier finish than the gavels so I waxed them with '00000' steel wool and buffed with a soft cloth, which gave me the effect I was after (**photo 5**). The gavels were completed the night before the function, as my wife always says to me: "If it wasn't for the last minute you'd never get anything done." Conor collected them on his way back from the House of Commons and kindly sent photos of that night's presentation (**photo 6**). [www](http://www.getwoodworking.com)



The 'V' block



The completed gavels



Conor Burns and Lord Eden of Winton Bt PC with one of the completed gavels and blocks

Music in the workshop

In this excerpt from October 1934, we're faced with a definite woodworking challenge – the construction of a xylophone, which although requires a fairly straightforward assembly, could prove tricky when it comes to the tuning

I strongly suspect that if something can be made from wood, the item itself (and full instructions alongside) will have featured at least once in a copy of *The Woodworker*. As I peruse the archives of our favourite woodworking read, I am constantly surprised by what I find inside. This page, for example, from October 1934, made me smile and is actually an item I have on my 'to make' list.

A tuneful ear

No doubt we're all familiar with the standard metal-keyed xylophone, and quite possibly too the timber-based version known as a marimba. My recollection of the latter is of graduated staves on a frame with hollow resonance tubes suspended below. Seeing the one pictured here made me realise that perhaps there is another and more simple way of constructing a working instrument.

I have no doubt that our *Woodworker* version would, if correctly constructed, perform tunelessly; also gratifying to see was that fairly common timber species could be employed for the keys. Although the basic procedure for manufacture and assembly is straightforward enough (but perhaps I will be substituting a firm foam strip for the flexible straw rests that are recommended), probably the trickiest part of the job will be tuning each key. It's suggested that a nearby piano is utilised for this task, one which can be made much easier if there's a friend with a musical ear in the vicinity. Certainly most of us would probably be OK with the notes in the basic octave, but also included are sharps or accidentals, as they're referred to here.

A woodworking challenge

I know that most of us welcome a woodworking challenge, and tuning a timber xylophone sounds like quite a wholesome one to me. If should be OK, though; by trimming a shaving off the end of your key (or stove) or kerfing a groove in the underside, a 'flattening' of the note can be effected. Just be careful, though, as, unlike a guitar string, there's no going back the other way if you overdo it.

Mark

HAVE YOU EVER MADE A XYLOPHONE?

HAVE you ever tried to make a xylophone: that musical instrument with wooden keys and played with wooden beaters? Any woodworker can make it. It is usually a feature in military bands and is also frequently used in orchestras. It can, however, be a most effective solo instrument.

It is played in a manner similar to the dulcimer, and consists of a number of wooden bars, which are tuned according to their length to represent the different notes of the scale. These bars are strung together by means of catgut, and rest upon supports made of tightly bound straw. The instrument is played with a pair of wood hammers.

A xylophone can be made any size. The one illustrated at Fig. 1 stretches an octave and a half, from E to A, accidentals being included. It may easily, however, be made of two octaves, C to C, by the addition of four longer bars below and three shorter ones above.

The keys are usually made of walnut, but maple or ordinary yellow pine of good quality gives a mellow tone. The bars (Fig. 2) are planed smooth to about 1½ ins. wide by ¾ in. thick, the upper side being slightly rounded. For a xylophone

of the size shown they will vary in length from about 12 ins. to 8 ins. The ends should be chamfered to prevent the wood from splintering. Of course, for larger instruments than the one described, the keys will be correspondingly stouter; otherwise they would turn out weak in tone.

Take the bottom bar (in this case E), shape it and cut it to approximately 12 ins. in length. Test the note with a piano or other instrument. The tone is improved by cutting a V-groove across the underside, as in Fig. 2. This groove, when cut in the underside, makes the note slightly flatter. For the second bar (F) cut the wood ¼ in. shorter and test it. If not high enough, take a paring off; if too high, cut a groove in the back (shallow or deeper as required) until the note is the correct pitch. It is customary to first cut the bars so that they are a little sharp, then to flatten the tone by means of the groove in the underside.

Proceed with the other bars in the same way. The exact length for each cannot be definitely given, as a slight difference in width or thickness will alter the note. If any bar is accidentally cut too short, it will do for

a higher note. Any friend with a good musical ear, accustomed to the tuning of pianos or violins, will be able to assist the worker in tuning the instrument.

Fitting.—When the bars are finished they are laid, not as in Fig. 1, but side by side in a row and in their correct scale order. The bars representing accidentals are meanwhile placed rounded side downwards. Holes are then bored from side to side through all the bars, care being taken that the same drill bit is used throughout.

The accidentals (F sharp, G sharp, etc.) are then turned over (as Fig. 1) and the bars joined by threading three lengths of fine catgut through the holes. A number of small wooden washers (see Fig. 2) should be prepared. A washer is placed at

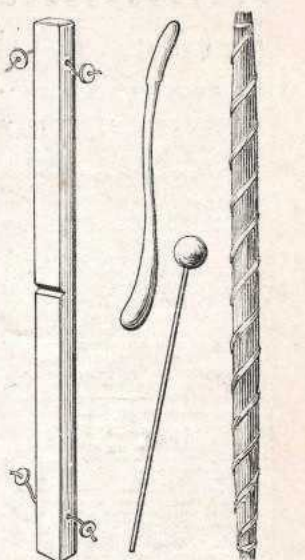


FIG. 2.—THE KEY. FIG. 3.—BEATERS. FIG. 4.—THE REST.

each end, and one is also put between the bars which come together.

Straw Rests.—Fig. 1 shows the correct position of the instrument for playing, the dotted lines indicating the three flexible straw rests on which it stands. Without these rests the tone of the xylophone will be dead and ineffective. The rests (Fig. 4) may be from 24 ins. to 27 ins. in length, and are made by winding straws tightly together and tying them with tape. The rests may be about an inch in diameter.

Beaters.—Two beaters, or hammers, are required for playing the instrument. The usual shape is shown at Fig. 3; the length is about 8 ins. and a hardwood like sycamore should be used. If this shape is found troublesome, two turned hardwood balls, about an inch in diameter, may be taken (Fig. 3, lower sketch) and fitted with thin cane handles about 8 ins. long.

The keys may be lettered E, F, G, etc., as indicated in Fig. 1, and when not in use the "accidental" bars may be turned round so that the instrument is made compact for placing in a shallow cardboard box. (127)

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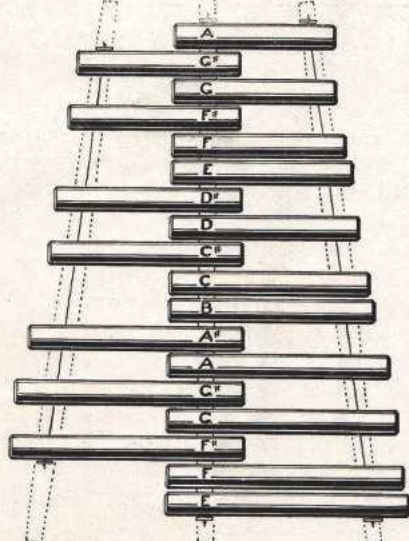


FIG. 1.—A HOME-MADE XYLOPHONE.

DO GET IN TOUCH

If any readers have memories and photos of things they or their forebears made from *The Woodworker*, please get in touch as we'd love to see them. Just email me on the new address: editor.ww@mytimemedia.com and we'll get them in the mag

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Moving house (or your workshop)

After 20 years in his former workshop, Peter Bishop decides to up sticks and downsize to a smaller working area – he shares his story with us here

Nearly 20 years ago we were in a state of limbo. I'd sold my local business and was working throughout the West Midlands and South Wales building up a new one. In rented accommodation, awaiting that idyllic home to appear, I kept driving past a local petrol filling station and shop that had been closed for a couple of years. Eventually curiosity got the better of me and I stopped to take a look, soon realising that the old shop would make a great workshop. So, with the promise that we'd only stay as long as it took to get planning permission to build houses on the site, we made contact with the owner. To cut a long story short, we bought the whole property, including a four bedroom house, from the foreclosing bank a few months later. The house was a mess but nothing that couldn't be sorted. That took another three months or so before we moved in. I, on the other hand, moved all my kit into the workshop straight away.

Workshop hunting

It actually took all those intervening years to get, with tremendous effort and cost on our behalf, the planning approval we'd been seeking. I could write a book on how incompetent, inconsistent and obstructive our numerous planning officers had been, but, moving on... This approval immediately created a direct problem for me: where was



my workshop going to go? The ideal solution would be for us to move wholesale and find another home with buildings as well, but unfortunately we were unable to do this for a number of reasons, so workshop hunting I began.

Having put feelers out locally and explaining that we wanted to stay in the same area, a pal turned up trumps in the end. A farmer, who like most others with a number of older, smaller buildings that had now been replaced with large sheds, had a space that might suit.

It was quite large having been a grain store at one time, complete with concrete floor, block walls and some windows. Joists over-supported another level but that would be too much for me. I took one look and decided it would suit me down to the ground. The square footage was quite a bit less than I'd been used to, but that was OK – this would just encourage me to use it more efficiently, which was no bad thing. Apart from a host of cobwebs it was clean enough, so I said "yes, please" and thanks.



Outside the old workshop



It's amazing what you collect!



Main old work area with empty shelves

Power & lighting

One drawback was that there was no power or lighting. I contacted our electrician of choice. Craig, like all 'trades', was busy so we set a date about six weeks hence for him to get started. He was a couple of weeks late but got stuck in and sorted a circuit of bench high plugs and strip lights within a couple of days. We swept the floor out and I started to plan where everything would go. Steve and Andrew, the farmer friends, had an old corn mill to move as well. This didn't stop me taking stuff to the new workshop, though. I spent a good couple of weeks just taking it there and piling it up. As usual, I had to move some things about two or three times because I'd stuck them in the wrong place.

My planer, bandsaw, rip saw and mortiser are all big chunks of cast iron. At my age I just could not manage to lift them so we got a couple of the younger farm hands to take the strain. With these last pieces in the workshop, I could start the final layout.

Final layout

I needed to create a flow system at the start for the machines. As the new workshop was a sort of inverted 'L' shape, I started the short length with the rip saw, then slightly offset the planer. I followed this with the extraction in the middle, then the bandsaw, the cross-cut saw and just round the corner, the mortiser. All the big bits of kit were here together close to the



Lugging belongings into the new workshop



What's behind these doors?

extraction where, hopefully, I could contain the worst of the sawdust and shavings.

Down the long part of the workshop I popped in my two big side benches. The last one of these has the lathe mounted on it. Along the bottom wall was an existing bench that I levelled up and firmly secured to the wall. Back up the other side were some of my old kitchen units for storage and plonked in the middle was the big, flat surfaced laying out bench. Around another corner I erected my timber storage trestles and the odds and ends went there. That was the main layout sorted, now all I had



Machines all cleaned off and ready to go

to do was place all the smaller tools where I could reach them.

Placing the smaller tools

Having moved stuff around often enough in the past, I'd mounted a lot of my hand tools on boards and racks so they could be fixed and taken down from walls. This saved me loads of time as I could simply take the wall mounting down from one workshop and fix it up in the next. The biggest problem was deciding where to put what. All my chisels and small kit I needed close to hand. This lot went directly on the wall behind the long



Work in progress

bench, which had two vices on the front. I then worked from there putting the less often used tools further away from the centre of activity. I have to say I was pretty pleased with the result. As before, I could simply stick my hand out to grab the tools that I was using regularly and the rest I could get at by taking a couple of steps one way or the other.

Tackling the cobwebs

In my rush to get in I'd not really attempted to deal with the cobwebs, so now was the time. With my reduction pipes attached to the extraction unit, I started to vacuum off the beams. A mucky job but someone had to do it. I admit I should really have done this right at the start because now I was doubling the work by dropping dust and muck down onto my gear. Less haste more speed, perhaps! After a good morning's work, I'd got rid of most of the detritus.

And there we have it. I'd gone down from around 130sq.m to about less than half this without too much pain, apart from a load of bruises. A fresh start in a new workshop after 20 years and the work is backing up ready to flood in – even though I'm apparently retired! **WW**



With everything in its place...



... the new workshop was up and running



I doubt the workshop will stay this clean for long...



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In brief...

MUCH MORE THAN A HARDWOOD SCRAPER

Robert Sorby is renaming its Hardwood Scraper to ensure the name supports the tool's wide application more accurately. As of now, this popular tool will be known as a Negative Rake Scraper.

Although originally designed for tackling hardwoods, especially in the making of musical instruments, the tool is equally at home on all types of wood and is perfect for spindle work, platters and open curve bowls.

"We want woodturners to know this tool has a wide application and is not solely designed for working hardwoods. It can be used to great effect on all types of wood," says Robert Sorby Product Manager Clive Brooks. "The term negative rake is widely acknowledged and understood by

woodturners all over the world, so the choice of name was straightforward."

For those who don't know, the design of the tool delivers a cutting action that helps reduce the risk of grain tear-out and allows the turner to achieve an incredibly smooth finish that needs little, if any, sanding. The negative bevel on the top face of the tool works to prevent the wood from riding over the cutting edge and so tearing the grain. This, in conjunction with the positive bevel rubbing behind the cutting edge, delivers the high finish.

Product codes for the 19mm tool will stay the same and it will remain available handled (821H) or as a blade only (821). The name change also applies to the 6mm micro version of the Hardwood Scraper (860H). To find out more, see www.robert-sorby.co.uk.



BOATBUILDING MEETS GARDENING

The year is 1117. By the edge of a Norfolk river a boat-builder has been at work. His yard, a humble garden, and the Broadland landscape around provide both the materials for his trade and sustenance for his family. A sail has been rigged to provide a makeshift shelter from the sun and rain.

In July 2013 a 1,000-year-old boat was discovered by Environmental Agency workers beside the River Chet in Norfolk. The boat was 6m long and skilfully built of oak. Wooden pegs and iron nails were used in its construction, and between the overlapping strakes animal hair and tar had been used for waterproofing.

In 2015 The Broads Authority commissioned the International Boatbuilding Training College, Lowestoft, to create a replica of the 'Chet boat'. The Broadland Boat-builder's Garden is inspired by the traditional skills, which continue to be taught at IBTC Lowestoft, and by the ancient landscape of the Broads itself.

The design of the garden incorporates plants, which are of their time and native to the Broadland area. This garden draws attention to the fragility of this environment

and identifies a relationship between the delicate biome of this precious landscape and the need to keep alive the skills of those that have shaped it.

The 'Chet boat'

The original boat, which was made of hewn oak, was a relatively small vessel, double-ended and about 6m long x 1.5m wide. The surviving part of the boat consists of a keel plank with four strakes on either side. In the centre of the boat there is a setting for a mast. Only two wooden frames were present, although rows of nails indicate that there were originally at least four frames. Unusually (perhaps?) for a small boat the keel plank on this vessel was made of two pieces of timber scarfed together end to end. The presence of this scarf and the long scarfs on other planks suggests a skilled builder working with relatively inexpensive materials.

The planting

The garden lies close to the water's edge and contains plants native to the dykes that criss-cross the grazing marshes. Among a bank of common reed can be found meadowsweet and purple and yellow loosestrife. An area of shorter fenland vegetation is bright with southern and early marsh orchid, and the stately royal fern can be found together with the much scarcer crested buckler fern. Against this backdrop the boat-builder has nurtured a few flowering herbs and vegetables: peas, garlic, kale, chives, and plain cole or rape. To find out more, see www.ibtc.co.uk/chelsea2017.

WOOD CUT TO ORDER

The Wood Cut To Order website has been launched by traditional stair parts manufacturer Traditional Products Limited, whose USPs include wooden stair spindles and a full range of staircase components. The new site aims to provide homeowners, DIY enthusiasts and companies requiring new suppliers with an online, simple-to-use source for all their timber requirements, meaning quality wood is as little as three clicks away.

The site offers 10 different types of timber, including oak, ash and beech, and is accredited by the Forest Stewardship Council as well as the Programme for the Endorsement of Forest Certification. They are also able to supply timber not mentioned on their website; customers simply have to request their preferred type and Wood Cut To Order will aim to source it within a few days. The site hopes this will prove handy for companies whose suppliers are unable to find the materials required at short notice.

Ordering is easy – just choose your timber, enter the required sizes and provide payment details; the wood will then be cut to order and shipped via courier.

Wood Cut To Order supplies PAR (Planed All Round) timber to customers wanting to finish off their project with material which complements the rest of their interior and has a good understanding of what is required on a project, in case advice is needed.

The company delivers throughout the UK and customers can take advantage of their fixed delivery cost of £19.50, which covers most of the UK mainland. Customers in the Scottish Highlands, Northern Ireland, the Irish Republic and the Isle of Wight will be quoted at cost.

For further information on Traditional Products Limited's new venture, see www.woodcuttoorder.co.uk.



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Made ANEW

Unable to throw away an old family treasure, Dominic Collings uses oak to give his piano new life



Unless this piano got an urgent makeover, it was heading for the skip

I was recently faced with a conundrum – that is, what to do with an old piano. Mine is a piece of furniture I grew up with, my father having rescued it from the back room of a local pub.

It has good tone and was made by a quality British manufacturer, but the dark mahogany finish matched nothing in our house, and with numerous scratches and dents incurred over the years, it was certainly past its prime. For some time it had been hiding safely in our small home office, but when an office revamp climbed to the top of the agenda, the piano's death knell seemed to ring... To free up space for the office furniture I had designed, it was decided that the piano had to go.



The new boards were thickened, lined up...



No problem, you might think; a small ad in the local newspaper would do the trick. Not so. There are literally hundreds of such ads on Gumtree (www.gumtree.com), and it soon became clear that I would have to give the piano away for free or skip it. Refusing to do either, it was agreed that the colour and appearance were the problem and not the piano itself; by remaking the piano in oak to match our other furniture, we could turn this eyesore into a centrepiece for our dining room and simultaneously free up office space. And so the aged Barratt & Robinson won a stay of execution, but would the face lift be good enough to safeguard its future?



... and jointed with Dominos...

Saving on stock

As my supply of clamps is limited, I decided to tackle the larger sections first, these being the lower and upper front panels. My oak stock was 32mm-thick, but the original piano was made from 19mm veneered blockboard, so as I had the intention of using the original pieces as templates, I first needed to process my stock down to this thickness. I made a few passes on a jointer to flatten one side and then used the bandsaw to reduce the stock which not only provided substantial offcuts, but saved my planer blades somewhat.

Next, I laid the boards out on the table saw to assess the best colour and grain



... and any knots in the timber were filled in



5 The final shape was machined using the original as a template



7 For the new sides, I laid the old ones onto the stock and drew around them



9 After being attached, the edge pieces were trimmed using a sharp chisel

match. I always number the boards in pencil at each end; the first is planed with the numbers facing away from the fence, and the next with the numbers against the fence; this way, if the fence isn't exactly square to the jointer table's, a positive camber on one board is cancelled out by a negative one on the subsequent board.

The boards were lined up and jointed with Dominos (**photo 3**), one or two larger knots were filled (**photo 4**), and the final shape machined using the original as a template (**photo 5**).

Dismantling & rebuilding

At first I thought that the original body had been assembled with screws only, but once they were all removed I realised that a lot of glue had been used too – indeed, I had to pretty much smash the sides apart



6 One side of the panel was removed and replaced before the other was tackled



8 The sides were shaped using a bearing-guided cutter in a router



10 With the main body assembled, the makeover was already proving a success

with a mallet to remove them from the main body. The piano is very heavy thanks to a large cast-iron frame at the back which takes the tension of around 200 strings; the only things keeping this section vertical were the sides that connected with the base. This meant that I needed to remove one side and replace it with the new one before removing the other (**photo 6**).

As the end panels had such a convoluted shape, it was impossible to make these sections out of solid oak without leaving a substantial amount of end-grain showing. To get around this the original manufacturer had used veneered plywood, but as this wasn't available, I used veneered MDF. To replicate the shape, I simply drew around the original side and cut close to the line with a jigsaw using the finest blade I had, with no pendulum action set. This

was very time-consuming, but necessary to limit any breakout of the delicate veneer. I clamped the original side onto the MDF in order to shape the copy, which I did using a bearing-guided router bit (**photo 8**).

For the edgebanding I had hoped to reduce the size of the side by around 3mm and add a correspondingly thick solid oak edge, but some of the tight radii made this impossible, so the side was left as was and a real wood veneer was used. I applied this with a regular household iron, which activates glue on the rear of the veneer strip for the straight or convex sections. For the concave parts, I carefully lifted the veneer upwards and applied heat with a hair dryer. As soon as the hash marks in the glue disappeared, a small roller was used to press the veneer to the bare MDF edge. The edge is supplied oversized at 22mm, so it requires trimming. You can buy hand-held laminate trimmers but due to the complex shape, this was done carefully with a chisel honed as sharp as I could get it (**photo 9**).

To ensure the correct alignment of the new side, I simply clamped old and new together and, using a drill bit with a depth stop, drilled straight through the holes in the original and into the copy. I transferred the position of several locating dowels – which act as stops for the panels – in the same way. The lateral mid-section in front of the keys and the lower rail surrounding the pedals were also copied from the originals, though I added a rebate to the rear to accept the original 25mm plywood base and key panel. With the first side replaced, glued and clamped, the second side could be hammered off and the main body reassembled (**photo 10**).

All of the larger panels had angles on their upper and lower edges, which I replicated by first measuring the original with an angle gauge and then setting the jointer fence accordingly (**photo 11**). The fence on my machine tilts both ways but I always tilt it forwards; this reduces visibility but makes a slip far less likely. If you're in the market for one of these machines, this is a feature I would highly recommend.

Making the lid sections

The two-part lid section required a rebate angled at 18° to accept the piano hinge, for which I had a 15° bit that was fortunately close enough. The lid locates on two dowels attached to the sides spaced only 35mm apart. The lid section was only 70mm wide so there was no way to attach any straight edge. My dovetail jig proved to be the solution with its adjustable fingers

set to 35mm apart – enabling the dowel rebates to be machined (**photo 12**).

The final section was the sheet music stand, which had an unusual angle rebate at about 5°. With no bit available at this angle, I made a quick jig which fitted over the fence of my router table and angled the stock the correct amount, meaning that my longest straight bit would do the job (**photo 13**). I used a large rounding-over bit to machine the finished edge of the music stand and the front lip of the lid. Laying the original over the copy, I drew the curved ends of the music stand with a pencil, rough-cut the shape on the bandsaw and shaped it on the bobbin sander (**photo 14**).

The finish line

I sanded down all parts using 320 grit abrasive paper and finished them with two coats of Osmo Polyx oil, employing a light de-nib between coats with 600 grit abrasive (**photo 15**).

The final touch was to add the maker's mark. As most manufacturers buy the internals from a third party manufacturer and simply make the body, I contemplated putting on my own name or something like 'Collings family piano', but in the end decided that this might look tacky and so went with the original manufacturer's name! To do this I used Letraset, which is unfortunately becoming increasingly hard to come by – it seems that computers and printers are gradually replacing these products – meaning that I had to go for a font that was close as opposed to an exact copy of the original maker's mark (**photo 16**).

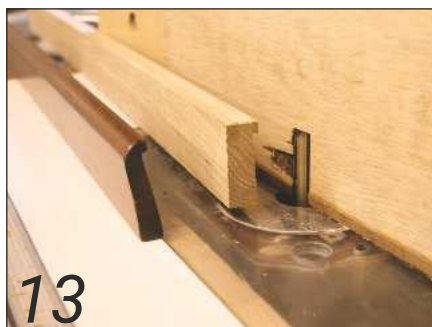
Overall, I have to say that I'm very pleased with the end result, and it's good to see the piano out in the open again. Its new location might even mean I play it a little more in those rare moments that I'm not tied to the workshop. Wishful thinking, eh? [www](http://www.getwoodworking.com)



11 An angle gauge was used to set the planer fence for cutting the larger sections' edges



12 The dowel rebates for the lid were machined using a router and a dovetail jig



13 To cut the angle rebate on the music stand, I constructed this jig



14 The music stand pieces were rough-cut on the bandsaw and shaped by a bobbin sander



15 Once sanded, all the parts were finished with two coats of Osmo Polyx oil



16 The lettering showing the maker's name was applied using Letraset



17 The maker's name was effectively replicated



18 The piano's face lift transformed it into a dining room centrepiece

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On all courses there will only be a maximum of 4 at a time, this will mean that I will be available when you need help and advice.

Woodwork Course 2 (Wood and Things)

This is a continuation of course 1 (tools and things) with the emphases on timber, what are acceptable defects in timber and what isn't, how do you write out a cutting list that means something to your supplier, what to look for when buying wood and what to avoid.

You will ideally have done course 1 (tools and things) or have a good working knowledge of how to use hand tools and have used hand held power tools.

The projects for you to pick from will be more complicated and will involve the use of the more sophisticated hand tools and hand held power tools and will include using some of the static power tools in the workshop. We will also be looking at buying timber, making cutting lists and drawing plans.

Woodwork Course 3 (Project Days)

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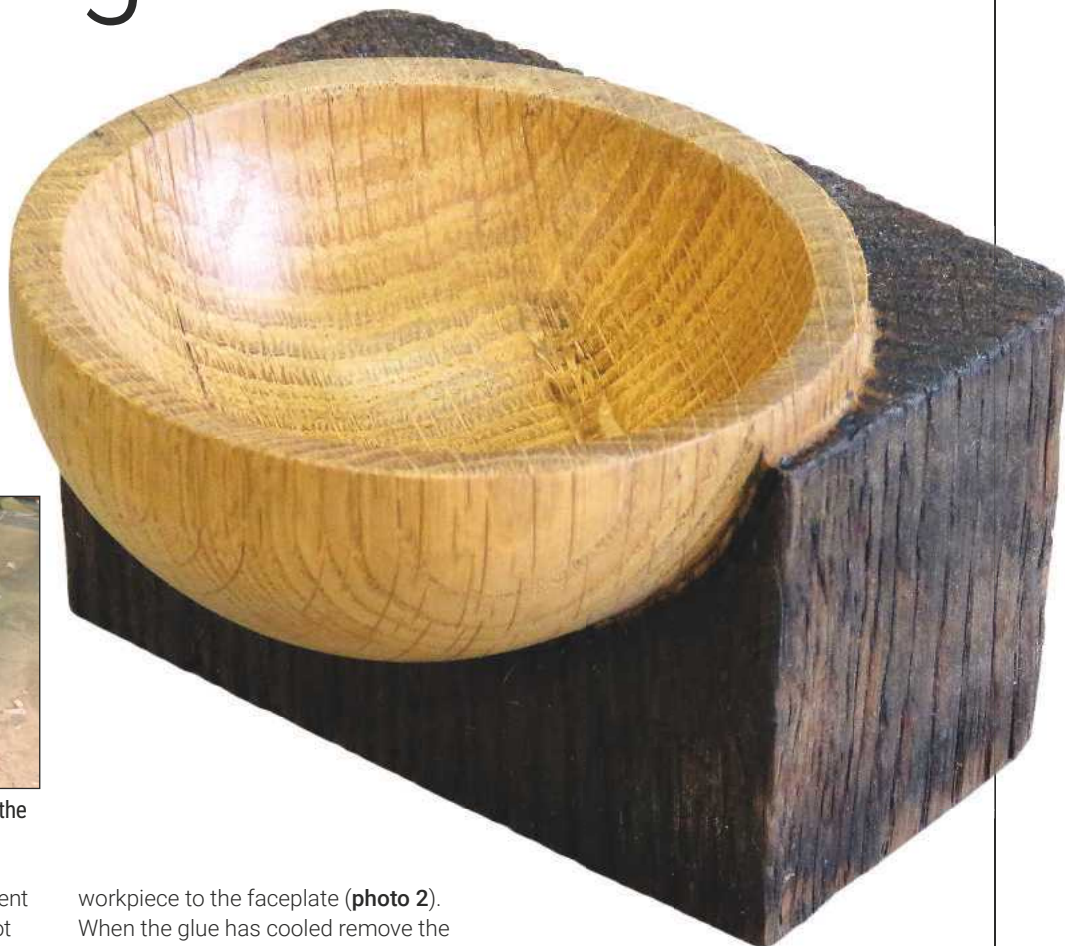
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Emerging bowl

Colin Simpson goes for something a little different this month and creates an abstract piece – a turned, well-polished bowl that seems to emerge from another piece of wood



1 Mark a centreline around all four faces and the centre of one face

This month's project is a little different as it's not entirely round. It may not be to everyone's taste, but it will be a talking piece and people, including other woodturners, will wonder how it was made. Here's the secret...

Turning the hemisphere

Of course you can make this piece any size you like, but some of the turning will be out of balance, so I suggest you start small and work up. I started with an old oak fence post – 100mm square and 170mm long. The outside of the fence post was nicely weathered and I liked the idea of a well-polished bowl coming out of this weathered texture. Draw a centreline all the way around the piece – in my case 85mm from the end (**photo 1**). This line will help when the piece is cut in half. Mark the centre of the width on one face, then mount a scrap piece of wood on the lathe to act as a sacrificial faceplate. I used an offcut of a kitchen work surface. Place your workpiece up against this and bring the tailstock up to the centre of the face you've marked, to ensure the workpiece is centred on the faceplate, and then hot-melt glue the

workpiece to the faceplate (**photo 2**). When the glue has cooled remove the tailstock and start turning the bottom of the bowl. You are aiming to turn as perfect a hemisphere as possible. Any discrepancies will show up on the rim of the finished bowl. The diameter of the hemisphere must be slightly smaller than the width of the workpiece, so, in my case, I turned a hemisphere 95mm in diameter.

Start with a fingernail profile bowl gouge and take light cuts to remove the waste (**photo 3**). **Photo 4** shows the same cut from a different angle – I have actually swapped hands so the camera can see the cut. Note the tool is well over on its side and the shaving is coming on the lower edge, just away from the tip of the tool. You will be cutting more air than wood at this stage so it is important not to push heavily with the bevel. I kept switching between this pull cut and a push cut as shown in **photo 5**. This push cut helps flatten off the base but it is a difficult one to achieve due to the amount of air you will be cutting. When I was nearer the finished shape, I changed to a small spindle gouge (**photo 6**) and kept checking the profile with



2 Use the tailstock to centre the piece and glue it to a faceplate



3 Make pull cuts to start shaping the outside...



... using the bottom wing of the gouge



A push cut helps to flatten the base



Change to a small spindle gouge to finalise the shape...



... and keep offering up a template to ensure accuracy

a template I had cut until I was happy with the shape (**photo 7**). You can then sand and finish the hemisphere (**photo 8**).

Finding the centre

To remove the piece from the faceplate, put a chisel between the faceplate and the workpiece to break the glue joint. Cut the piece in half on the bandsaw (**photo 9**). The next step is a little trial and error. We need to find the centre of a circle that will give us an even rim thickness. Keep moving the point of the compasses until you achieve this (**photo 10**). Place the piece back onto

the faceplate, bring the tailstock up to the centre of the circle you have just drawn and hot-melt glue the piece again (**photo 11**). I also glued in place a wedge under the bowl part of the piece (**photo 12**).

Allow the glue to cool and then flatten the top surface using a pull cut with a bowl gouge (**photo 13**). I wanted the rim of the bowl to emerge from the top of the piece as well as from the side, so I needed to lower the rest of the top. Stop the lathe and draw a circle the same circumference as the bowl you've already turned (**photo 14**). My pencil line was a little larger but I



Sand and polish the hemisphere



Use a bandsaw to cut the piece in half – centrelines drawn earlier will help



Use a pair of compasses to find the centre of the bowl – a bit of trial and error



Use the tailstock again to centre the piece and glue it to the faceplate



12 Glue in a supporting block under the bowl part



13 Flatten the top surface using a pull cut



14 Mark the circumference of the outside of the bowl's rim



15 Use a parting tool to cut a groove on this mark...

can always creep up on it to make it smaller. Next, use a parting tool to cut a groove just to the left of this pencil line (**photo 15**). I used a hardwood scraper to flatten the rest of the waste wood (**photo 16**).

Hollowing the bowl

Now to hollow the bowl. In this orientation, you will be hollowing end-grain. Drill a hole in the centre of the bowl using a spindle gouge or a twist drill in a Jacobs chuck (**photo 17**). Once you have drilled your

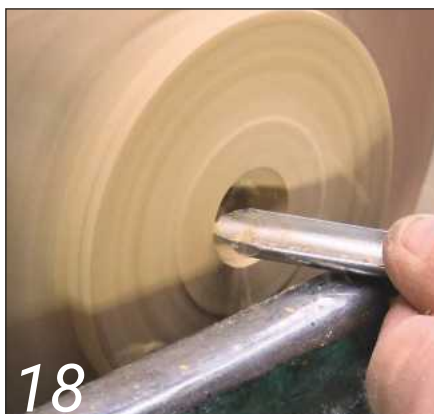
hole use the spindle gouge for the hollowing. Start with the gouge about 2mm inside the hole with the flute pointing towards 10 o'clock. Swing the handle away from you in an arc (**photo 18**). Repeat this action, using the bottom wing of the gouge, going a little deeper and wider with each successive cut. After hollowing with the spindle gouge, use a round-nosed scraper to clean up the inside shape of the bowl (**photo 19**). Use the scraper with the handle held slightly higher than the cutting edge



16 ... and a hardwood scraper to remove the waste wood to the left of this groove



17 Drill a hole in the centre of the bowl with a spindle gouge...



18 ... then hollow from this hole cutting towards the rim



19 Make gentle cuts with a round-nosed scraper to clean up the end-grain



20 Scorch the areas that need texturing using a small gas torch...



... then wire brush these areas

and take very light cuts, particularly on end-grain, as in this instance. I said earlier that I liked the idea of a smooth bowl emerging from a textured piece. The problem now is that I have two clean cut surfaces that should look like an old, weathered fence post. I rectified this by doing a little light scorching.

Scorching

Remove the piece from the lathe and mask off the areas of the bowl that you

don't want to burn. Masking tape gives limited protection and it also burns itself, so take it easy with the burning process. I used a small pencil burner (**photo 20**) to scorch the wood and then brushed off the carbon with a rotary wire brush (**photo 21**). This process did remove some of the softer spring growth, but it still didn't look like the original weathered faces of the fence post, so I decided to use my pyrography machine to enhance the



Further texturing can be done using a pyrography machine

effect (**photo 22**). When I was happy with the result, I gave the piece another light brush with a soft bronze brush to remove any carbon deposits and then gave the weathered faces a coat of Danish oil. The oil darkened these areas, which is the effect I wanted, so it would contrast more against the light, polished area of the bowl. I must admit that I was rather pleased with the result. **WW**



The completed emerging bowl should look something like this

In brief...



The Flush Fixes and Oval Fixes in place

BENEFITS OF BUTTON-FIX ON DISPLAY

Custom furniture maker, Rob Thompson, has used the load-bearing and invisible qualities of Button-fix fastenings to enable the quick, clean, on-site assembly of a unique display cabinet.

An experienced product designer, previously creating the model set of Gotham City for *Batman* the movie and the Aston Martins and BMWs for James Bond, Rob Thompson diversified into furniture design alongside his film set roles. Creating bespoke items for clients, such as trinket boxes, tables and cabinets, for more than 10 years, Rob is skilled in producing unique furniture, custom-built for the space it will inhabit.

One such project was the design and build of a 4 x 2m touch-to-open display cabinet, incorporating a right angle. Due to

the design of the unit, building on-site would have taken considerable time, disturbing the property, thus creating significant dust and noise. Rob therefore sought a solution that would significantly reduce time on-site, without comprising the aesthetic appeal of the final product.

Identifying the Button-fix fastening solution at stockist SDS London, Rob chose to use 20 Type 1 Flush Fixes to simplify his design and build process. Ideal for applications where panel-to-panel contact is necessary, the Oval Fix is rebated into a panel, while the Button is securely fastened to the adjoining panel, thereby creating an invisible fastening that is secure, durable and easily removable, if required.

Rob explains: "I prebuilt the units as much as possible within my workshop, so that there was minimal dust and disruption in the client's home. By using Button-fix fastenings to accurately align all the components, I was able to pre-install the fixes and buttons to reduce the time required on-site and simplify the unit's assembly process. On-site I built the unit with blocks that already had the Button-fix components added. This made assembling the unit a much faster process



The completed display unit in situ

as the 'blocks' were easily transported to the property, aligned and fastened."

Interconnecting, the 'block' components of the unit simply slid together, producing an audible click, signifying that the Button-fix fastenings were securely attached. Enabling the unit to be in place within just two hours, the homeowner was amazed at just how quickly the bespoke unit had been assembled.

Rob continues: "Another major benefit of using Button-fix for furniture design and installation is the complete invisibility of the solution when compared to other traditional fixings, such as screws or bolts. Aesthetic appeal and a high quality finish is paramount for both me and my customers, so Button-fix is the ideal fastening solution."

For more information on Button-fix, visit www.button-fix.com and to find out more about Rob Thompson, see www.robthompson.co.uk.



TURN IT UP @ AXMINSTER

Turning enthusiasts should not miss this opportunity to see two top professionals – Mark Sanger and Richard Findley – in action at Axminster's Nuneaton store on Saturday 4 March 2017.

Both are winners of the Ready Steady Turn competition at 10 Turners Turning – Richard in 2014 and Mark in 2016 – but both have very different styles. Mark's work features wood, mixed media, texture, form and colour, all of which are influenced by Far Eastern philosophies and cultures as well as the natural forms and textures found in nature. Whereas Richard comes from a long line of professional woodworkers and is a production turner, undertaking commissions for one-off prototypes through to large

production runs, turning for furniture makers, restorers, architects, designers and joiners. You never know, they may go toe-to-toe in a rare and exciting woodturning showdown, so make sure you put the date in your diary for this unmissable encounter.

Date: Saturday 4 March 2017

Time: 10am-4pm

Venue: Axminster Tools & Machinery, Bermuda Trade Park, Nuneaton CV10 7RA
To find out more, see www.axminster.co.uk.

NEW SNAPPY INSERT BITS

Trend has recently launched its Snappy 2 Pin Spanner Insert Bits, which are sold in packs containing four sizes of 25mm spanner bits for spanner or snake eye security screws. There are four sizes available: No.4, 6, 8 and 10. Made from high grade Chrome Vanadium steel, they are through hardened for long life and are suitable for trade, industry and the DIY user. These bits are highly resistant



to wear and tear and are designed for use with an insert bit holder. Prices start from £14.34; see www.trend-uk.com to find out more.



POWERFUL NEW STAPLERS FROM MAKITA

Makita has introduced two new 10mm battery powered staplers,

which replace existing models, offering a host of advanced technical features. The new Makita DST112 is powered by the Makita 18V Lithium-ion battery while the DST111 model is a 14.4V version, which will deliver 5,000 shots from the 3.0Ah battery whereas the 18V 3.0Ah version generates 6,000 shots. Both new staplers have magazine capacity for 150 staples of 10mm width, either 7mm or 10mm depth, and 0.5 x 0.7mm wire size.

These new compact, lightweight cordless staplers have selectable firing modes, which offer the choice between bump firing and trigger sequential control. The anti-dry fire safety mechanism requires the nose tip to be pressured against the material for firing to take place when the trigger is pressed. A trigger lock must always be applied when the machine is put down. The magazine is moulded from plastic to reduce the overall machine weight and has a viewing window to check remaining staple stock. The staplers feature an LED job light, belt-hook and soft grip ergonomically designed handle. Both are available to buy as body only options; see www.makita.co.uk.

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This chest of drawers combines good looks with functionality

Chest the ticket!

Alan Willey combines ply, solid timber, and a touch of pragmatism to make this very practical offset chest of drawers

The original brief for this piece was quite straightforward: I was asked if I could make a chest of drawers to match the wardrobes that I'd recently made for a young girl's bedroom; something with four drawers for clothes, perhaps, and two smaller ones for the inevitable smaller bits and pieces?

To add extra interest and only a little more complexity – or so I thought – to what would otherwise be a conventional chest of drawers, I sketched out this offset design that makes a feature of the two upper drawers, which are part of the top rather than simply being housed in the carcass itself. When it came to materials, I decided on ply for the main carcass, as its stability

would assure the drawers of the consistent fit necessary to their smooth operation. In particular, I chose spruce ply for its similarity to the pine that I'd used on the wardrobes.

Starting the carcass

The first job was to make the sides, but my table saw is a little on the small side for use as a panel cutter. Instead, then, I used a straightedge guide and a circular saw to rough cut the panels, which were then sandwiched together and machined to their final dimensions using a router. It's a long-winded way of doing things, I know, but it has the redeeming virtue of being accurate. Using a homemade jig, I routed out the 18mm-wide trenches to

house the drawer frames (**photo 1**), and – as you can see in **photo 2** – rebated the rear of the cabinet for a 6mm ply back. The front edges of the ply sides were then fitted with pine strips to cover their raw edges.

Making the drawer frames

The four main drawer frames run the full width and depth of the cabinet, and are therefore quite simple to make – especially if, like me, you use No.20 biscuits (**photo 3**) rather than mortise and tenon joints to assemble them. Admittedly, the biscuits were a little on the large side for use in the ends of the frame rails, but I reasoned that, once trimmed to length, their exposed ends – which you can just see in **photo 4** – would

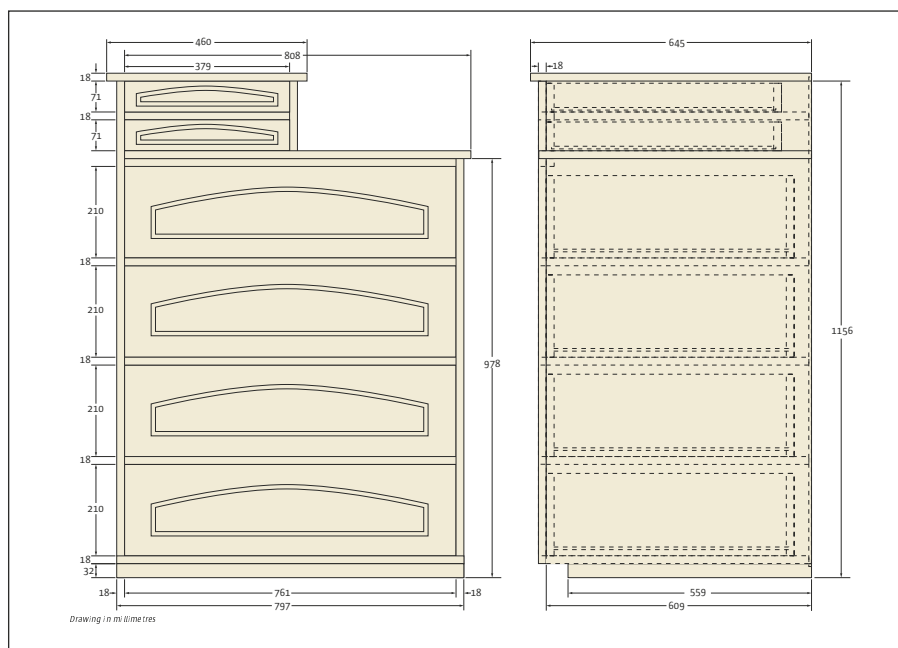


Fig.1 Chest of drawers



I used a homemade jig to rout the housings in the sides for the drawer frames...



... and a 6mm rebate for the chest of drawers' ply back



The four main drawer frames were assembled with No.20 biscuits...



... which were then trimmed to length and hidden inside the assembled carcass

be hidden inside the assembled carcass. The offset design means, however, that the upper drawer carcass is just under half the width of the cabinet. While I felt that its sides could be made from ply like the sides of the main carcass, I decided that its top, which has quite a large show face, should be made in the same way as the top of the main carcass using jointed-up boards of solid timber. In both cases, the boards – the direction of whose growth rings was alternated to minimise warping and cupping (**photo 5**) – were joined using biscuits, and it was while I was struggling to cramp them together (**photo 6**) that I resolved not to spend any more money on power tools until I've bought myself some proper sash cramps! While the boards for the tops cured, a test fit of the drawer frames in the sides proved that they were a good fit, so I added

pine strips to their front edges to match those on the carcass. The whole assembly was then dismantled, glued up, and reassembled (**photo 7**) using a square and a few brads through each frame as a belt-and-braces approach to keeping everything square.

It was about now that I began to revise my opinion of my offset design: making the two tops meant taking into account the fact that the larger top is not only rebated to sit on the main carcass, but also to receive the side of the upper drawer carcass, for which a further rebate needs to be cut in the smaller top. Accepting all this as the price of 'added interest', I soldiered on, but not without measuring each cut twice and even changing glasses twice to rule out any possibility of a mistake before I started up the router! My nerves were frayed.

After cutting these trenches and squaring off all their corners with a chisel, I checked the fit of the main top before finishing the edges of the two tops by first rounding their corners, and then applying the moulding using an ovolo cutter in the router.

Drawer construction

The four sides of each drawer box were cut from ply. The fronts were joined to the sides using dovetails made with a jig (**photo 8**). Experience has proved that it's easy to get confused when using a dovetail jig, so I always number and hand each piece – a process that also comes in handy later during assembly. The rear pieces of the boxes, meanwhile, were housed in rebates cut in the sides.

A 6mm groove was cut along the bottom of each of the drawer fronts and sides to



5
The carcass and drawer frames were glued up and assembled using a square to keep everything, well, square



6
Boards of solid timber were jointed up to make the tops of both the main carcass and the upper drawer box...



7
... a job that made me resolve to buy myself some proper sash cramps before I attempt anything like this again!

accommodate the ply drawer bases. As you'll see in **photo 10**, rather than setting up the router, I found it much quicker to do this job on the table saw, from which the guards have been removed for photographic purposes. All the usual safety caveats apply if you use this method, and you'll note that I'm using a push block to feed the workpiece over the table: these blocks can be replaced; fingers can't.

The drawer fronts, which would be screwed to the ply drawer boxes, were cut from sections of solid timber that were made up, not with biscuits, but by jointing boards using a jointing cutter in the router table. This precluded any possibility of

exposing a biscuit when the decorative moulding was routed into the drawer fronts.

The finishing touch to the drawers was to again use strips of thin pine to conceal the raw top edges of the ply drawer boxes.

Final assembly & finishing

With the two tops fitted to the carcass (using trenches cut on the underside, glued halfway and pinned at the rear), the chest of drawers was finally starting to take shape. Drawer guides were fashioned from scraps of the ply and fitted on either side of the drawer openings, while hardwood wear strips at the bottom of the opening were added to give the drawers something on which to run.



8
For the drawer boxes, dovetails were used to join the drawer sides to the fronts...



9
... while rebates house the drawer backs



10
I cut the grooves for the drawer bases on the table saw, a method that requires caution and guards – removed here for photo clarity



11

A completed drawer box ready for the ply base



12

The drawer fronts were routed to create a false panel

These were waxed at the finishing stage to make the drawers run smoothly.

The drawer fronts were then checked for fit using slips of thin plastic to create the correct spacing between each piece, and a spot of sanding to make the necessary adjustments to their size. Then, with a batten clamped to the front of the cabinet to stop the drawer fronts moving, I inserted each of the drawer boxes in turn from the back of the cabinet and drilled and screwed them to the fronts. Finally, to help centre the drawers when they're being closed, I sanded a slight chamfer on the edges of the drawer fronts.

After refitting the drawers and reattaching the clamp to hold them in place, I added stop blocks to the rear of each drawer so that the responsibility for arresting the travel of the drawer doesn't fall on the drawer fronts alone. All this left me to do was to fit the ply back after first applying sanding sealer and wax to the inside of each drawer compartment.

The whole piece was then given a coat of sanding sealer and a final sanding with 320 grit followed by three coats of Rustins' honey wax paste, whose finish brings together the ply and timber as neatly as I think the chest of drawers combines good looks with practicality. [www](http://www.getwoodworking.com)



13

Ply guides and waxed hardwood 'wear' strips should make the drawers run smoothly

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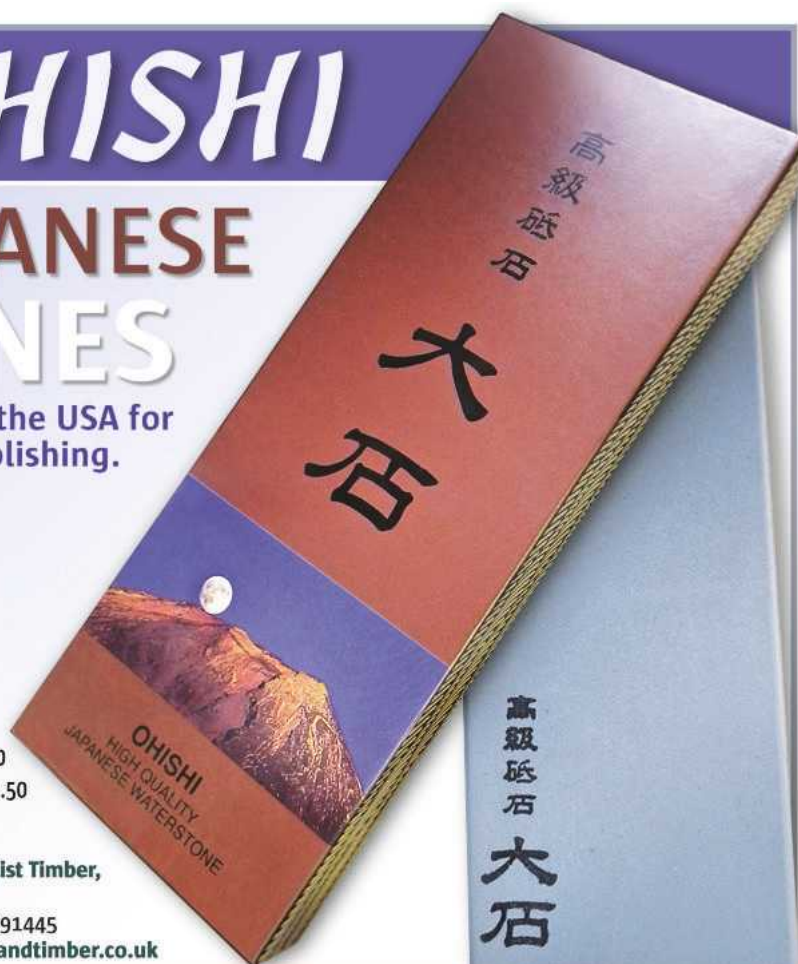
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SMOOTH & SIMPLE

Time really does flow with Ralph Harvey's trinket box, whose smooth lines combine turning with cabinetmaking



This unusual trinket box, which is made from the halves of a turned bowl, is my take on a piece that I found on a US woodturning site. Though it combines turning and cabinetmaking, the method of construction is really quite simple and, better still, can be readily adapted to produce pieces of different sizes and shapes.

Turning the bowl...

The first step is to mount the blank for the bowl, which forms the body on the lathe (**photo 1**), and clean up the face and edge to size – in my case, the blank was 280mm in diameter and 50mm-thick. Then turn the outer face to shape using a template as a guide (**photo 2**). A slow final cut will help to minimise chisel marks, which can be

dressed out using 120 grit abrasive. Next, mount a piece of scrap timber in the chuck and clean up the face so that you can remount the bowl blank using a couple of beads of hot glue. To get a really secure joint, make sure that the faces of the chuck and blank are free of dust, and use the tailstock to centre and steady the blank while the glue sets (**photo 3**).

Keep the tailstock in place to steady the work while roughing out the bulk of the waste timber, then use another template to shape the inside of the bowl so that the inside wall is parallel to the outside. Producing walls of uniform thickness is important as any unevenness will show when the bowl is cut in half and rejoined to form the body of the box.

Again, try to make your final cuts slowly and lightly to minimise chisel marks, then sand the inner face with 120 grit (**photo 4**).



1 Mount the blank for the body and turn the face and edge to size

CUTTING LIST

To make the drawer unit to the dimensions described in the text, you'll need to make the body from a gonçalo alves bowl blank that's at least 285mm in diameter and 50mm-thick. The following cutting list covers the other components (all dimensions in mm).

Item	Qty	L	W	T	Material
Drawer carcass sides	2	150	60	4	Sycamore
Drawer carcass dividers	4	68	60	6	Sycamore
Drawer box front/back	6	68	40	7	Sycamore
Drawer box sides	6	74	40	7	Sycamore
Drawer fronts	3	105	45	20	Sycamore
Clock section	1	105	62	20	Sycamore
Base piece	1	105	15	20	Sycamore
Handles	3	30	22	22	Gonçalo alves
Veneer for base	1	180	105	n/a	Sycamore

YOU WILL ALSO NEED

A 35mm clock insert. A choice of quartz movements is available from suppliers such as **www.martinhdunn.co.uk** or **www.woodcraft.com**.

Two scrap pieces of timber, one approximately 80mm in diameter and 20mm-thick to remount the bowl blank, and one 150 × 80mm and 9mm-thick to act as an infill piece for the base prior to fitting the veneer. You'll also need 6mm-thick timber or ply for the drawer bases and a piece of 105 × 275mm MDF to shape the drawer fronts

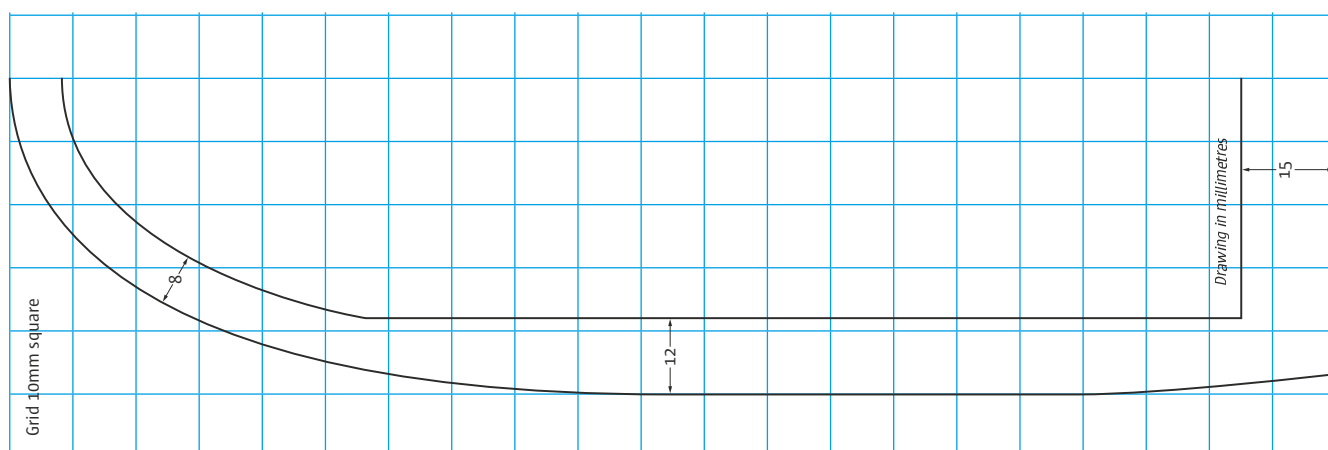
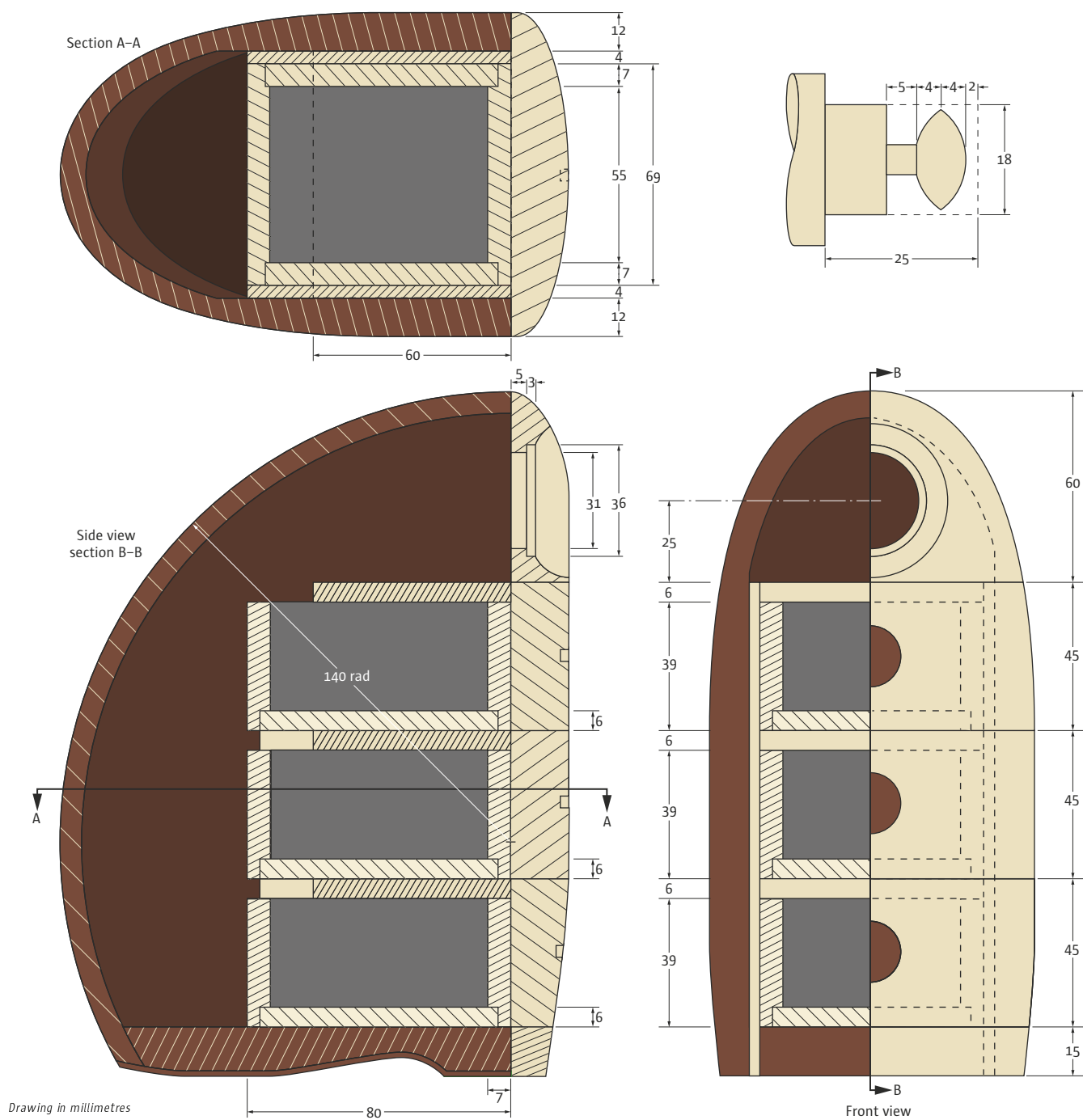


Fig.1 Trinket box



2 If necessary, use a template to help you turn the outer face of the blank to shape



3 Remount the blank to turn the bowl's inside. Be sure it's running true to avoid an uneven wall



4 Turn out the inside of the bowl using a template to maintain an even wall thickness

Finally, lay a steel rule across the outer edges of the bowl to check that the face of the bowl is flat (**photo 5**); when the bowl's cut in two, this surface will form the mating faces of the box halves, and accuracy is crucial if you're to get a good joint.

Take the bowl off the lathe and remove the glue chuck before cutting the bowl in half. If you've used two pieces of timber to make the bowl, simply separate them along the glue line; otherwise, mark the centre and cut accurately in line with the grain.



5 Check that the bowl's face is flat; accuracy is important here if you're to get a good joint later



6 Masking tape makes a versatile cramping tool when gluing the halves of the bowl together



7 To form the flat base of the unit, measure from the centre of the blank and square across the face and down each side, then...



8 ... cut off the waste. For a cleaner finish, cut fractionally shy of the mark and then sand back afterwards



9 You can add some detail to the base of the piece by shaping the cut, which can be rather attractive

... and making the body

To turn the bowl halves into the body of the drawer unit, glue the faces of the two pieces together. You'll find that, to apply pressure to the joint while it dries, it's easier to use strong masking tape (**photo 6**) rather than rigid clamps, which can also put too much pressure on the centre of the bowl and cause the joint to open up.

Once the glue has dried, remove the masking tape; don't worry about any residue from the tape on the glue line as this will be cleaned up later. Instead, use a belt sander (or a sheet of 120 grit abrasive glued to a flat board) to flatten the face, making sure that you keep the body flat on the abrasive so as to not over-sand one side).

To form the flat base of the unit, measure from the centre of the blank down the face of the blank by 70mm, then square across the face and down each side (**photo 7**). When

you remove the waste (**photo 8**), you'll get a cleaner finish if you cut fractionally shy of the mark and sand back to the line afterwards, making sure the corner is square.

If you wish, you can add some detail to the base of the piece by shaping the cut (**photo 9**). This can look attractive, especially if the grain of your timber is plain, though it can make things slightly more complicated when it comes to fitting the veneer to the base later.

The drawer boxes

To make the drawer carcass, start by marking out the position of the four drawer dividers on the two side pieces. Then drill and countersink the sides, and glue and screw the dividers into place. Once dry, check that the drawer carcass fits neatly into the body (**photo 10**), and then glue the two assemblies together.



10 Check the drawer carcass fits neatly in the body before gluing it into place



11 The drawer boxes are made up using lap joints



12 When choosing the timber for the drawer fronts, consider the balance of the grain and how it will fit within the shape of the unit



While the glue is setting, prepare the 160 × 80mm scrap timber that is used to fill the inside of the base. Although this won't be visible in the finished piece, it provides the substrate for the veneer. To give the best possible finish, it should be cut and shaped



13 The position of the clock insert was marked to mount on the lathe, ready to turn

to match as closely as possible the dimensions and profile of the base and sides. Use a hardwood filler to make up any discrepancies.

Talking of profiles, if you've shaped the bottom of the sides you'll now need to make a former to match the profile and apply an even pressure to the veneer. This is cut to size and glued in position on the base, using masking tape to secure the edges, followed by the former and clamps.

When everything is dry, lightly sand the face of the unit to ensure that the surface is flat, ready for the drawers. **Photo 11** shows how I made up the drawer boxes using simple lap joints for the fronts, backs and sides, each of which has a 6 × 3mm rebate into which the drawer base is set.

Glue and assemble the drawer boxes, remembering to check that they're square. When dry, clean up the sides and bases, and make sure that they fit neatly into the carcass, adjusting as necessary.



14 Shape the face timbers to match the template and round over the edges

Making the drawer fronts

I say drawer fronts, but you'll actually need enough material to make not only the three fronts, but also a fascia for the base, and a housing for the clock. If these five sections aren't cut from a single piece of timber, choose the pieces with consideration to the balance of the grain, and how it will sit within the overall shape of the unit (**photo 12**), especially if you use something with more dramatic figuring than sycamore.

Before shaping these pieces to match the unit, prepare the top section to receive the clock. I used a 35mm clock insert mounted in a 31mm diameter hole, and had I been willing to mount the movement flush, I could've made this cut-out with a simple



15 Glue the base section in place, and use a slip of veneer to space the drawer fronts evenly, as shown



16 Glue the drawer fronts to their respective drawer boxes, and drill them ready for handles



17 The drawers were lined with stiff cardboard covered with a self-adhesive felt

hole saw. Because I thought that an inset arrangement would be more interesting, however, I hot-glued the sycamore to a piece of scrap timber, and used my lathe to turn a stepped and profiled hole.

Next, use a piece of scrap MDF to make a template from the face of the drawer unit. Then, temporarily attach the face pieces to the template with a couple of beads of hot glue, remembering to leave a small gap between each. You can then shape the sections to follow the profile of the template, and round over the edges (**photo 13**). When doing this, you can remove the bulk of the waste with a belt sander or hand plane, though I found a drum sander in a power drill was particularly effective. Finish off by sanding the sections, working through from 120 to 320 grit.

After gluing the base fascia to the front edge of the unit and securing it with masking tape, lay each of the drawer fronts in place, using a slip of veneer to space them evenly, and then glue the clock section in place above them (**photo 14**).

When the base and clock sections have dried, the drawer fronts can be removed

and glued to their respective drawer boxes, taking care to ensure that they're correctly aligned; any slight discrepancies here can be corrected with a little judicious sanding later (**photo 16**).

Drill the drawer fronts ready for their handles, then sand the rest of the unit to remove any marks, again working from 120 through to 320 grit.

Detailing & finishing

I applied two coats of lacquer to the unit, lightly rubbing down with wire wool between applications, and then topped

these off with a couple of coats of Briwax. To line the drawers, I used stiff cardboard covered with a self-adhesive felt-type material (**photo 17**), which is easy to cut to shape and can be tacked in place with double-sided tape.

The handles, meanwhile, are a simple button shape, which I turned up on the lathe, sanded, sealed, and finally polished before gluing them to the drawer fronts.

And there it is – an attractive trinket box whose construction, I'm sure you'll agree, offers plenty of scope for experimentation with different timbers and details. **WWW**



The handles are simple button shapes...



... turned up on the lathe



The attractive trinket box's construction offers plenty of scope for experimentation with different timbers and details



In brief...



HITACHI 18V NIBBLER

Designed to make fast, accurate cuts in a variety of metal sheets, the new cordless CN18DSL/JP 18V nibbler has been launched from Hitachi Power Tools. Slicing through up to 1.8m of steel per minute and cutting up to 20m per charge, this new cordless tool is a force to be reckoned with.

The CN18DSL/JP 18V nibbler has three cutting positions and a slimline grip, making it comfortable for the user and easy to make tight and precise cuts. There's little more

infuriating than running out of charge mid-job, so a handy battery indicator light is fitted as standard. The tool also comes with two 5.0Ah Lithium-ion batteries with a charge time of just 75 minutes – so you need never run out of power on the job. The CN18DSL/JP 18V nibbler also comes with two wrenches, battery charger and a carry case.

As with many of its tougher, faster and more advanced power tools, Hitachi's three-year warranty is available when the tool is registered online within four weeks of purchase, so trade professionals can be assured of long service and peace of mind. To find out more about this and other tools in the extensive range, see www.hitachi-powertools.co.uk.



FESTOOL CHAMPION HEALTHY WORKING ENVIRONMENTS

Carpenters are four times more likely to contract asthma compared with other UK workers. With this in mind, Festool has teamed up with the British Lung Foundation (BLF) to promote the benefits of safer working using dust extraction.

Festool has already attended one of the leading woodworking trade shows recently, W16, and with the help of BLF's nurses hundreds of tradespeople were able to come to the stand for a free drop-in lung health test. This resulted in some medical referrals being made to check on possible health issues with potential ongoing treatment.

As a known carcinogen, exposure to wood dust can also increase your risk of lung cancer. The BLF's Battle of Breath study found that over 43,000 people are diagnosed with the condition every year. While it is the second most common form of cancer in the UK, the mortality rate is higher. Statistically, only half of the people diagnosed with lung cancer will survive six months after diagnosis. It is the biggest cause of death from cancer and lung disease in both men and women in the UK.

Pete Higginson, a carpenter from Cambridge, said: "I think I will be cutting up wood for the next 40 years. I don't smoke so it's worth looking after the pair of lungs I've got! That's why I use Festool dust extractors; I work with the CTL SYS all day. On and off it sits next to the bench and it's great when fitting because it fits in the SYS tower. My Festool CTL 26 dust extractor keeps the KS 88 E clean and accurate."

Festool offers a range of dust extractors that are suitable for any job, from low to high class dust. To find the right model for you, see www.festool.co.uk.



NEW UJK TECHNOLOGY WORKBENCHES

Axminster have just introduced two new workbenches to their UJK Technology range. One takes Parf Dogs and the other Twist Dogs, but both have many features in common.

The bench frames are made from high quality birch plywood, chosen for its strength and stability. The outer frame is 18mm-thick with a phenolic face and a 12mm birch ply inner box construction, which ensures that the top remains perfectly flat at all times. There is storage in the centre of the frame for dogs and other accessories. Cut-outs in the frame enable it to fit onto the Brennenstuhl trestles, forming a strong and steady workbench. The front and rear aprons have plenty of Twist Dog holes for aligning workpieces vertically and cut-outs offer accessibility for clamps.

The worktop for both benches is 18mm thick Valchromat; moisture resistant and engineered for added strength, it won't warp and affect the accuracy of your work. The

choice is between the holes in the tops: one features plain 20mm holes for Parf Dogs; the other takes lockable Twist Dogs or Parf Dogs. All are CNC machined for the greatest accuracy, aligned lengthways and widthwise with rows perfectly square to each other and forming a grid of 11 holes by 7. These dog holes allow you to use Parf Dogs to make perfect right angle or mitre cuts with a track saw. Alternatively, guide rail clamps can be inserted in the holes for surface clamping, thus making an excellent assembly table.

The bench with Twist Dogs comes with one pair of these dogs. The Twist Dog's unique feature is a pin through the spigot. This pin securely locks the Twist Dog into the specially drilled holes in the front and on the top of the workbench. Made from hard acetate plastic (the same material as shatterproof chisel handles), these dogs will not damage cutting edges in the case of accidental contact. Twist Dogs use the alignment of the workbench's holes to set up fences, guide rails or workpieces.

The bench with Parf Dogs also includes a pair of UJK Technology Twist Dogs, an invaluable feature when aligning the workpiece vertically on this bench. Prices start from £269.95 inc VAT; see www.axminster.co.uk.

VERSATILE DRILLING TEMPLATE

This versatile drilling template from Blum is the ideal tool to ensure doors are fitted to cabinets accurately. The template works by transferring the measurements from doors to cabinets, and vice versa, so that mounting plates and

hinge positions match up perfectly. Suitable for use on either assembled or unassembled cabinets, the jig includes two adjustable templates that can be used for different styles of mounting plates, such as inline mounting

plates and cruciform mounting plates. Priced at £62.50 for each device, see www.ironmongerydirect.co.uk for more information.

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Ideal for cabinetmakers, joiners, turners and carvers, this wetstone grinder from Triton would prove to be a great addition to any workshop

Triton TWSS10 250mm wetstone grinder

Since the invention and development of the original Tormek wetstone grinder in early 1970s Sweden, the popularity of the slow-running, water-cooled grinding method has steadily increased around the world. Frequently to be found in the workshops of cabinetmakers and joiners, turners and carvers, when it comes to edge tools, there is little that can't be sharpened on this type of machine.

A great addition to any workshop

The last few years have seen the release onto the market of similar grinders from a number of different manufacturers, the latest of which is this one from rugged Australian company, Triton. While not quite in the Tormek class (as indeed few imitators are), the TWSS10 is without doubt a useful machine and a great addition to any workshop. One of the main attractions of wetstone grinding for me is the design, which enables even a complete duffer to obtain consistent results. By the employment of a simple positional frame (known as the support arm and assisted by various jigs and clamps), a blade can be positioned and ground at the correct angle, and remain square to the wheel throughout the grinding process.



Safe and secure packaging makes for a confident start



The leather stopping wheel to the fore; the support arm will fit in either orientation for maximum range



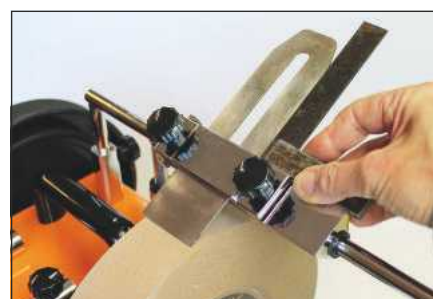
The non-brittle plastic water trough clips easily into place



The support arm is fully adjustable and locks into position



Checking the correct grinding angle



All that remains is to check your blade is securely locked and square, then it's all systems go

Approx.
£200

Box clever

On opening the box I was immediately impressed with the secure packaging of the machine, and especially the 250mm diameter diamond stone itself, which was protected in a separate padded carton. The grinder requires little in the way of assembly other than attaching the

wheels and hooking on the water trough. I was momentarily nonplussed by a lack of rotation when I first powered the machine up, but on investigation soon discovered that the drive shaft wasn't fully in contact with the inside edge of the hollow leather-faced stropping wheel. A simple but effective system, it's a friction drive and by adjusting the torque switch, the tip of the motor shaft presses more firmly against the inside of the wheel and ensures that the wheel will turn no matter what amount of grinding pressure is being asked of it.

In use

With the wheels now turning, the water trough can be filled to the line. Make sure you stand by with some extra, though, as the stone is surprisingly porous and soon sucks up an unlikely amount of water, necessitating another refill or two and provoking a feeling of 'where's it all going?'. When it's all filled up and steadily running, there's something very pleasing about the sight and sound of the stone emerging from the water pool, and you could forgive yourself for just zoning out for a minute or two.

When you're ready to make a start, fit the aforementioned support arm into one of its two positions, and set your blade, chisel or gouge into the square edge jig, loosely tightened. With the blade and jig now attached to the support arm, you can employ the angle set-up jig to ensure your bevel will be as you want it. I set mine to 25° and was puzzled when the jig seemed way off; on closer inspection it became apparent that an inner plate on the jig has to be set to the wheel diameter first. So, with everything fixed up as required, sharpening can begin.

Unlike the frenzied spark-filled process that is grinding on a regular dry wheel bench grinder, sharpening on a wetstone grinder is a much more leisureed affair. Once everything is in place, it's a simple case of gentle pressure and slow, repetitive movements. I found it was easy to let my attention drift, however, and it was only the water puddles here and there which brought me back.

Summary

There's no denying that it can be a wet and watery business, and if you've got a purpose built corner of the workshop for wet stuff, then this is where you'll want to site the grinder. I've seen rubber tray mats, which will keep everything nice and contained, and this is certainly one solution to a potential problem. Using the leather-faced stropping wheel is a nice way of finishing the sharpening job and, with a dab of honing paste (or chrome cleaner as it is known in the motor trade), you can soon achieve the sort of polished edge to a tool that every carver covets. All in all, an asset for every workshop, albeit a slightly wet one...**MC**

SPECIFICATION

POWER	120W
DIAMOND STONE	250mm dia. x 50mm
SPEED	2,800rpm motor; 125rpm wheel
WEIGHT	14kg
BORE	12mm

VERDICT

PROS ■ Accurate and reliably repeatable results

CONS ■ Slow and wet

VALUE FOR MONEY
PERFORMANCE



FURTHER INFORMATION

- Triton Tools
- www.tritontools.com



A little concentration is required, plus a lack of care about spillages

Festool have hit the nail on the head with this palm-style random orbital that delivers on many different levels

Festool ETS EC 125/3 EQ sander



As much as it's a job I don't enjoy doing, sanding is a necessary evil, and I have to say that running your hand over a well finished piece of work is a joy, so getting the job done well is essential.

A different breed

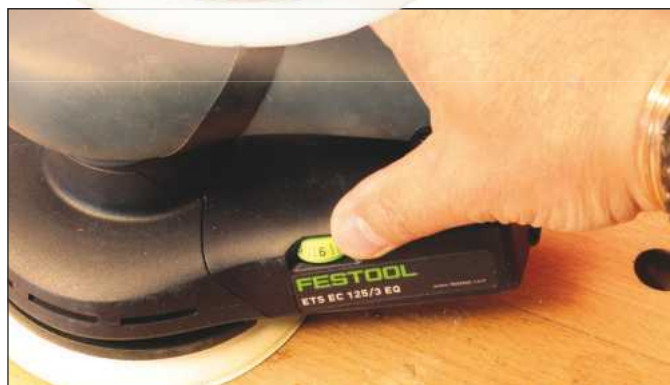
Festool certainly deliver with their products and the sanders are no different; well, actually, this particular model, despite being a standard 125mm random orbit style, is definitely different to any other on the market. What sets it apart is the unique extraction sensor that disables the sander if there's a hose attached, but with no actual suction present.

It's toggled on and off through the front-mounted power switch that also operates the sander in general use and it can be switched off completely by sequencing through the operational cycle as explained in the manual.

A light on the side of the machine indicates the status of the sander so that you can check before you begin work as to whether the extractor detection is engaged. It's certainly useful for ensuring this is always used when available, and with no dust bag or other collector supplied as part of the out-of-the box setup, it forces you towards this as a standard. I'd have liked to have seen a dust bag included for those times where extraction isn't available, though.

In use

A second area where it scores highly is the brushless motor, which outside of the Mirka Deros sander, is the only one I'm aware of in mainstream circles that is currently using this particular technology.



You can reach the speed dial easily to make adjustments as you work



The LED indicator tells you whether the sander is set for extraction detection



The power switch on the ETS EC 125/3 EQ toggles through the extractor detection as required

It makes for a smaller unit and in actual fact is very reminiscent of the Mirka sander in style, with the top palm grip method of holding along with a small hoop handle for additional control options. Using the hoop handle option puts the speed control dial in easy reach of the thumb – assuming you hold it in your right hand of course!

The dial is indexed with 20 clickable positions to hold a particular speed as needed, which allows for additional polishing functions as well as the usual sanding, but of course it's the sanding side of things where it really excels.

Putting the sander to work, I set about cleaning up an old small pine cabinet with a lacquered finish that needed stripping back so I could try out some new finishes on it. Fitted with a 120 grit abrasive pad it cut through swiftly, and hooked up for extraction, there was no visible residual dust.

The ride here was incredibly smooth as well with negligible vibration back through the unit, purring along as it went and keeping a constant speed under load; no drop in power or speed as it worked.

Although the 3mm orbit dictates it to be more of a finishing sander, and the 125mm diameter pad leans it more towards smaller pieces of work, random orbit tools are very quick workers and with the correct abrasives, capable of quickly sorting pieces that require a bit more effort.

This smooth operator does just that with ease, and on my test piece, cut back to bare timber on two sides and the top in only two or three minutes on each surface. It makes for a sander that is more than capable of not only working on bigger areas, but on areas that require more judicious abrasive work than simply a fine finish workout.

The finish from the 120 grit was superb, but opting for a really glassy surface I gave it a quick run through the grits to 320, and I definitely wasn't disappointed!

In summary

I've always been a fan of smaller palm-style random orbital sanders over the bigger options and prefer them for their speed and easy manipulation on surfaces, whether flat on the bench or in situ, and Festool have a winner here with this dinky little machine. It's easy to control, either horizontally or vertically, and with the small hoop handle design gives a two-handed approach if needed as well as the more manoeuvrable palm style. As usual, the price will scare a few people off but is worth it if you're looking to achieve high quality results, and if you do a lot of sanding, then the benefits easily stack up against the cost. **AK**



Festool's interchangeable power lead is fitted on this sander

SPECIFICATION

MOTOR	400W
WEIGHT	1.2kg
SPEEDS	6,000-10,000rpm
VOLTAGE	230V
ORBIT DIAMETER	3mm
INTERCHANGEABLE SANDING PAD DIAMETER	125mm
DUST EXTRACTION CONNECTION DIAMETER	27mm

Available accessories include a variety of sanding and interface pads as well as a suction hose

VERDICT

PROS ■ Extractor detection system ■ Brushless motor
■ Very smooth ride ■ Light weight
■ Leaves a top quality surface finish

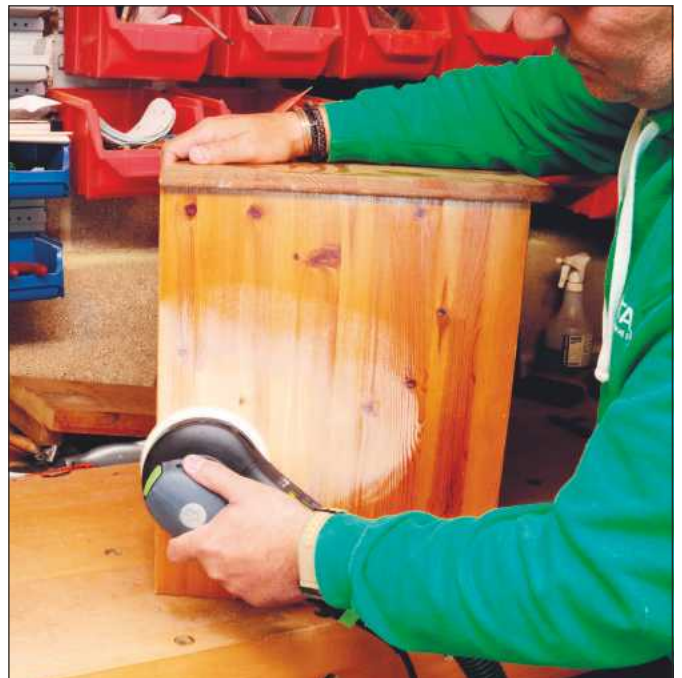
CONS ■ No dust bag supplied as standard
■ The usual high cost of Festool, but you get what you pay for!

VALUE FOR MONEY
PERFORMANCE



FURTHER INFORMATION

■ Festool
■ www.festool.com



Starting work on this pine cabinet, the sander quickly cut through the finish

As with most things in life, it pays to go for quality, and this fret saw from Knew Concepts produces excellent results while being light in weight and very easy to control in use



Knew Concepts saw

I've been aware of the Knew Concept saws for some time and have seen rave reviews from users, but until now, haven't had a chance to look at one – and a fret saw is a fret saw, surely?

Light as a feather

The price alone indicates that there might be something a little bit different going on here, and picking it up it's as light as a feather, with the anodised aircraft grade aluminium frame keeping weight to a minimum. The lightness sets alarm bells ringing, however, as it doesn't seem man enough and at first, it did make me wonder whether the saw was up to the job of securing a blade in tension.

But on trying things out, the wide, flat frame with its webbed design keeps things exceptionally rigid once tension is applied. The tension is set with a cam lever and there's a two-stage tensioning setup to allow you to fine-tune. Blades are secured with excellent front and rear clamping barrels, each with a hole to allow the blade to thread into, which is then secured with the knurled locking knobs. Any slack in the blade is then nipped up by winding the screw adjustment on the rear

clamping barrel before setting the final tension with the cam lever. I noticed that as you begin to tighten the screw, the cam lever begins to swing through, indicating the blade is in the right area for applying the final amount with the cam, and once in place, you can 'ping' the blade to get a note from it, indicating that the tension is very taut across the frame.

If you are using this saw for dovetail work, this particular model doesn't have a swivel function to move the frame to the best position (there is a swivel model available, however) but with the throat depth of 125mm, if you are doing dovetailing and using it to remove the waste for the tin or tail boards, it is plenty big enough in most instances, and a deeper throat as well as a smaller one is also available. With such a lightweight frame, cutting away waste from dovetails makes it easy to control with the frame used in a sideways fashion, which the fixed blade dictates in such work.



The blade is securely held in place with two anodised aluminium knurled knobs



A combination of the knurled rear screw and the cam lever are used to set the tension

In use

Putting the saw to the test, having used a standard fret saw on many occasions, I've found that even with the tension as tight as possible, the blade tends to bow as you make a cut, and quite excessively in some instances. The Knew Concepts saw couldn't be more different: I tried a few fine cuts taking thin veneer-like slivers and found that as the cut is made there is some bow in the blade but only marginal, with the frame taking the strain superbly to keep the blade true and well tensioned, making consistent cuts a far easier task.

Moving over to a set of dovetails, the same consistency applies. This means you can get very close to your final shoulder lines without fear of drifting beyond so that any paring work is minimal. Of course, any saw is only as good as the blade you put in it, and this saw comes with a high-quality Pegas blade fitted and if purchased from Workshop Heaven, an additional pack of five Pegas blades are included. These blades are machine filed so the performance is second to none, cutting quickly and cleanly.

In summary

When it comes to hand tools there are occasions where a basic model will do, but like many things, until you try a tool designed at a different level, you don't realise what you're missing and just what a difference it can make. In the case of these saws, they are engineered rather than manufactured, and that makes all the difference, especially when married up with a blade of the same quality. The price may be high, but the results are well worth the outlay. Who Knew?! **AK**



Once set correctly, the tension lever on the saw sits back vertically



Even on dense stock the blade remains taut with minimal bow

SPECIFICATION

FRAME THROAT	125mm
BLADE LENGTH	130mm
WEIGHT	133g

VERDICT

Made using high-tech aerospace materials and techniques, this state-of-the-art saw feels practically weightless in the hand and is capable of cutting quickly and cleanly

- PROS**
- Very rigid when tensioned
 - Minimal blade bowing
 - Light in weight and very easy to control in use

- CONS**
- No swivel function on this model
 - Expensive unless you are working to fine tolerances

VALUE FOR MONEY PERFORMANCE



FURTHER INFORMATION

- Workshop Heaven
- 01295 678 941
- www.workshopheaven.com



The frame is very light weight for cutting in sideways orientation, such as on dovetail work

Able to stand, fold or hang almost anywhere, this handy folding area light allows you to work with both hands in a clearly lit environment

Ryobi R18ALF 18V folding area light

£79.99



Ryobi seem to be ahead of the pack when it comes to designing products that appear to be niche accessories. That said, once used, you soon appreciate how they'd benefit your work. These may not be power tools in the conventional sense, but although cordless they're perhaps harder to categorise. Because Ryobi is a strong brand in outdoor and garden products as well as portable power tools, there's bound to be some crossover. It's certainly true of their new folding area light, which would be equally at home in a garage, garden or workshop.

Cordless power

This model is not a hybrid and will only run off a battery. It's supplied bare, so you'll need a Ryobi One Plus pack. Don't forget that with lithium power there's no gradual decrease in output, so the light will suddenly expire. Whether folded or fully extended, you can choose to just illuminate the front or rear lamp, or have both on together. These are

activated by depressing the front button and working through the sequence. Each strip consists of 10 LEDs, which are extremely bright. Rated at 12W, the output is 850 lumens when both are active.

Made from high-impact plastic throughout, fitted with a 4.0Ah battery the unit stands 440mm tall when closed. Unfolded, this increases to 680mm. You can rotate the upper lamp through 270°, meaning you can direct the beam pretty well where it's needed. What's particularly clever are the multiple hanger options. The main fold-out hook is located at the top, while a second one at the base enables you to suspend the lamp overhead by hanging it sideways, fully extended. You could also insert a couple of screws in the wall above a bench to provide fantastic overhead lighting.

In summary

I used this lamp while building a bathroom project, and found it very useful. Having a beam pointing in two directions simultaneously may seem unnecessary, but this really does light up a room nicely.

To conserve battery life, switching to one lamp gives more than enough light for most situations. With a 4.0Ah battery fitted, in single lamp mode it ran for 10 hours. Even if you only have one battery, you can expect to get more than a full day's operation on a full charge. **PD**



Whether folded or fully extended, you can choose to just illuminate the front or rear lamp, or have both on together



The lamps are activated by depressing the front button and working through the sequence



The lamp handily accepts any Ryobi 18V battery



The upper lamp can be rotated through 270°



The main fold-out hook is located at the top

SPECIFICATION

LUMENS	850
VOLTAGE	18V
WEIGHT WITH BATTERY PACK	1.3kg

VERDICT

An illuminating discovery, this product is incredibly useful for a number of DIY applications and fitted with a 4.0Ah battery, will run for up to 10 hours

PROS ■ Incredibly bright light is emitted
■ Beam can be directed pretty much wherever it's needed

CONS ■ Only runs off a battery, so you'll need a Ryobi One Plus pack

VALUE FOR MONEY PERFORMANCE



FURTHER INFORMATION

- Ryobi
- www.ryobitools.eu

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FOR SALE

Woodworker magazines: various issues from 1979-1995, all in first class condition - 160 in total. Sensible offers; collection only **01908 649 224 (Milton Keynes)**

Large quantity of sandpaper (various grits). Hardwood including ash, oak and mahogany - all in assorted sizes **0161 339 5101 (Lancs)**

Poolewood PW40 Superlathe - 40in centres, 28in bowl turning capacity, 1HP motor with variable-speed change. Comes with purpose-built base for easy, increased stability if required. Full instruction and maintenance manual, plus lathe steady. Buyer collects; £250 ONO **01242 517 576 (Cheltenham)**

Record Power DML24X wood lathe - tubular bench with box of assorted bits; customer to collect; £325 ONO **01617 901 395 (Manchester)**

Clarke Woodworker 900mm reversible head wood lathe - in good condition; £135, or willing to part exchange for bench-top model **07979 903 802 (Surrey)**

Leigh D1600 dovetail jig with metric scales - also includes user manual and DVD. Ready mounted on base and has purpose-made storage box. Also includes Leigh seven-piece

8mm shank cutter set, chip extractor and guide bush for Elu. Very little used; offers over £250 **07796 573 528 (Southampton)**

2 x Axminster air filtration units, 2 x remote controls and 2 x additional filters (as new); £275 - buyer collects **07888 657 527 (Barnet)**



Selection of unusual Chinese hand tools in rosewood. Various sizes, two ploughs, shoulder and moulding planes, plus scraper. Beautiful finish; £185 **01825 239 365 (Gloucestershire)**

Proton DSH two-speed scrollsaw - hardly used; £120. Record DX1500 dust extractor on castors; £60 **01208 733 334 (Cornwall)**

Yew branches - 6ft long, 3in diameter. Would suit chairmaker or similar **07797 769 207 (Jersey)**

Le-Matic AR500 edge-bander kit plus table, glue pellets and rolls of unglued edging; £495 ONO **01409 261 726 (Devon)**

Windsor chair seat and splat templates. Bruce boiler and steam box, bending straps, crinoline. Back, arm and bow formers. Offers. Also rounders, ravishers and trapping plane available separately **01603 715 231 (Norwich)**

Stanley 05 1/2 jack plane; £40. Stanley No.04 foreplane; £45. Record 071 router plane; £35. All good condition **0208 641 4238 (Surrey)**

Shopsmith, vgc, also bandsaw and dust extractor; offers invited **01923 256 466 (Herts)**

Titan 230V 1,500W 10in table saw with stand and extension - buyer collects; £60 **01480 463 264 (Cambridge)**

Hardwood blanks for turning; £450 **01579 350 097 (Cornwall)**

Authentic joiner's toolbox with 60 tool items including three sharp Disston saws (full list by request); £275 **02393 781 045 (Gosport)**



Nova 3000 lathe with Speed Genie; £500. Chucks: Nova (extra jaws), Axminster & eccentric; £120. Airshield Pro; £100 **07730 253 545 (Cumbria)**

Kity 535 planer/thicknesser - in good order. Photo available, buyer collects; £75 ONO **01497 831 759 (Herefordshire)**

WANTED

Woodworker magazines. Pre-1951 plus 1984-1986. Grandfather collecting for cabinetmaker grandson **01493 368 180 (Norfolk)**

Spiers/Norris/Henley planes wanted by private collector; any quote beaten. Ring Ron Lowe on **01530 834 581 (Leics)**

Woodworking hand tools, especially old wood and metal planes, wanted by collector. Write to Mr B Jackson, 10 Ayr Close, Stamford PE9 2TS or call **01780 751 768 (Lincs)**

Woodworking tools: planes by Norris, Spiers, Mathieson, Preston, Slater, etc. brass braces, interesting rules and spirit levels; top prices paid, auction prices beaten **01647 432 841 (Devon)**

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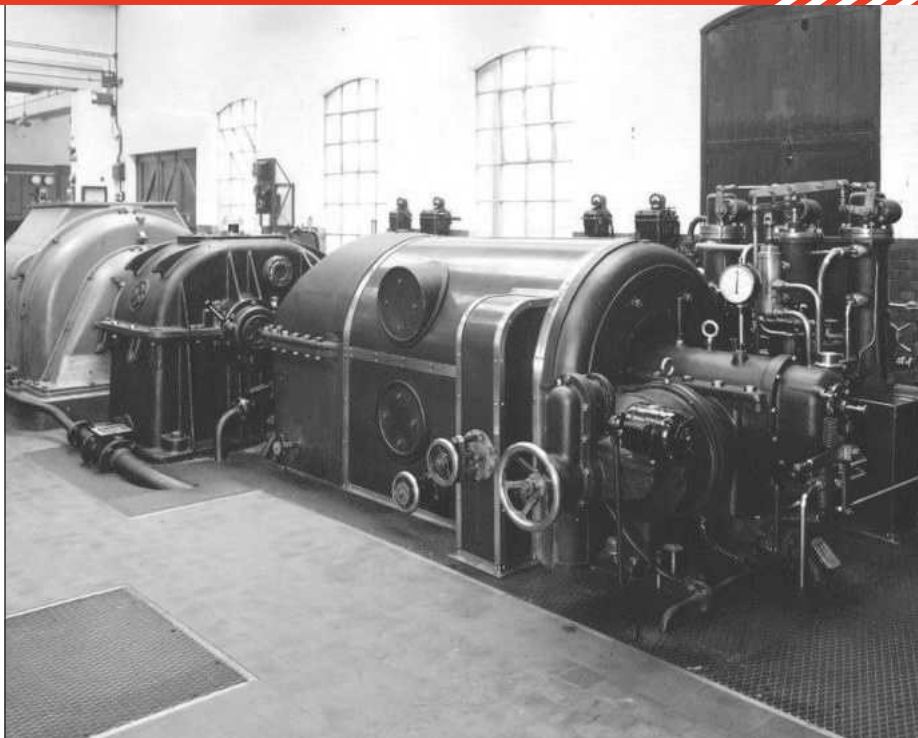
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The powerhouse, where the factory burnt its own wood waste to make electricity

The RF press

In an earlier article, I described the method of curing glue lines by use of Radio Frequency and I described the alignment of the electrodes to the joints to be cured. This press worked by random curing of the glue lines. The press was about 12/14ft in diameter and about 8ft tall. The area was divided across giving a front half upon which one could work while the back half carried the sub-assembly which was being 'cured'. This table rotated and had an assembly jig on each half, which enabled one to unload and reload jig 'A' while jig 'B' was curing.

At the front of the press were three button/switches: two green and one red. To switch the press on you had to press

A walk around the factory **PART 3**

Peter Baker further discusses the complex furniture making production line, the multiple usage of component parts, and walks us around the huge hangar-like '12 Shop'

In the last article I calculated that the wood mill produced some 36,000 piece parts per day. Every piece part had a number and was manufactured in economical quantities, not for a particular sales order but for stock. Individual parts would be utilised in many pieces of furniture and possibly in multiples within that piece. For example, there could be six, eight or even 10 identical shelf bearers in a 4ft gents' fitted wardrobe, depending upon the design. Each component had its own special place in the racking system, which comprised the 'parts store'. All the specified components would be gathered onto a trolley, the docket placed in its slot and then placed into the trolley park. There it would be collected by a tug driver, with two more trolleys destined for the same workshop, hooked up into a little train and driven off. After unhooking the trolleys and placing them in order, the tug driver would gather the trolleys with finished work on and take his little train on to the next destination, park them and return to his journey's beginning station, ready to set off once more. These trains of components and sub-assemblies were constantly weaving their way along the corridors, in and out of workshops, assiduously avoiding those on foot and never striking anything or anybody.

The organisational complexity and efficiency beggars belief, but it worked!

'12 Shop'

At the far end of the site we come to the sub-assembly shops, among them '12 Shop', where I worked for a time. These were like huge hangars and during the war they assembled many large structures here. Even though the doors were about 20ft high and at each end of the shop, the temperature one day reached 90°F. Just after lunch the tea trolleys started circulating around all shops dispensing cold orange juice. When the temperature reached 90 we were all sent home. It was only about five o'clock and I was there on a 2-10pm shift. We were paid average earnings for the time lost. In 12 Shop I was engaged upon sub-assembling ends and middle-ends for wardrobes; that's how I know about the multiple usage of component parts, for I operated a sub-assembly RF press here.

both green buttons, which were some 4ft apart, thus ensuring there was no way you could have a hand anywhere near the platen, which held the electrodes. The red button was the STOP button and only required one finger! The platen was suspended under the press ram and descended in order to apply high pressure onto the assembly in the jig. The name, 'Random' curing, is because the electrodes were placed diagonally across the platen, thus, in effect, spot welding the assembly together at some two inches spacing. The curing time may have only been seconds but that was sufficient time to create a firm bond, enabling me to release the assembly from the jigs, forcefully. As all the components had, eventually, to come together and create a finished piece of furniture, the correct location of the components was pretty vital.

Forgive me for not being more precise; I am sitting here and casting my mind back to visualise things I witnessed and observed about 65 years ago. Had I been a tad more efficient, then I would have measured everything and photographed it all for posterity. **WW**

GET IN TOUCH

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In part 11 of this series, Peter continues his tour through the factory and this time visits the maker's shop – No.22. And if any other readers have a story to tell, we'd be glad to listen. Just write to editor.ww@mytimemedia.com and we'll see how we get on



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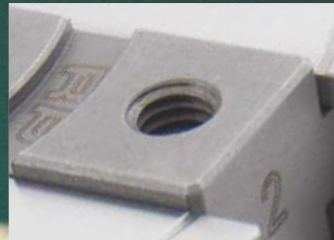
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