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# December 2015 Control Contro

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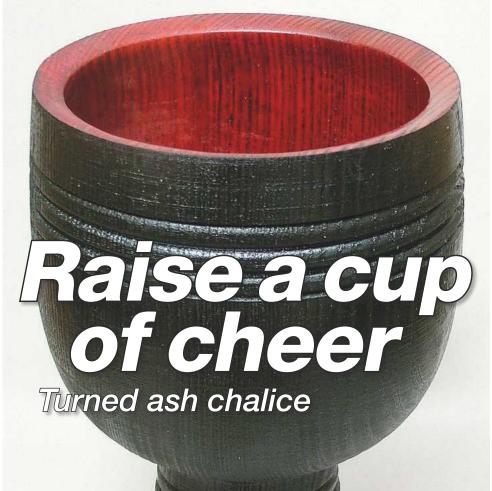
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## Welcome



t's always good going away and, if you can do a bit of work while you're there then it certainly adds another element to your holiday. I was visiting my brother in New York recently and found myself volunteering for a double window shelf job. I couldn't help it and so, after the initial concept and design work, a simple materials list was drawn up and the sourcing of timber began.

It's fun to have a bit of a mission, and finding things is so much easier these days with everything online. After a brief internet search, we ascertained that there was a Chinese builder's merchants a few blocks away within easy walking distance. I always make a point of visiting timber yards when I'm abroad and have found that there are as many similarities to ours as you might hope; certainly they're always familiar enough for the visitor to feel at home

It's always good to see variety in the otherwise familiar, and we all play our part in contributing something to our world of woodworking. Identical tasks will inevitably be executed in different ways by different people, and there's rarely a single and 'correct' method of doing something. We all like to think that our way is the best, but, as long as we keep an

open mind and work safely, then we stand a good chance of getting the best out of our rewarding craft.

The Chinatown builder's merchant one was on the basic side but seemed to have a small to medium-sized timber section, and it was while I was investigating some shelved softwood having climbed onto some window frames that I discovered I'd strayed into the 'forbidden zone' and was invited to leave by one of the employees. A lot of people seem quite tense in Manhattan, but I did what I could to calm things down a bit, before putting in my order and paying cash (\$6.50) on the nail for an 8ft length of 6 × 1 pine, or 1 × 6 as it's referred to on the I ower Fast Side

Clutching my docket, I loitered about in the main yard space until my – pleasingly clear and straight – length of timber arrived. It was a satisfying moment and I feel that next time I'll make a better job of things, now that I now know how the system works. We made it back home with the board, via one or two stops, and it shouldn't really come as a surprise that this is as far as my participation in the window shelf job got. I'm only human after all and there are just too many distractions in that particular town



You can contact Mark on mark.cass@mytimemedia.com



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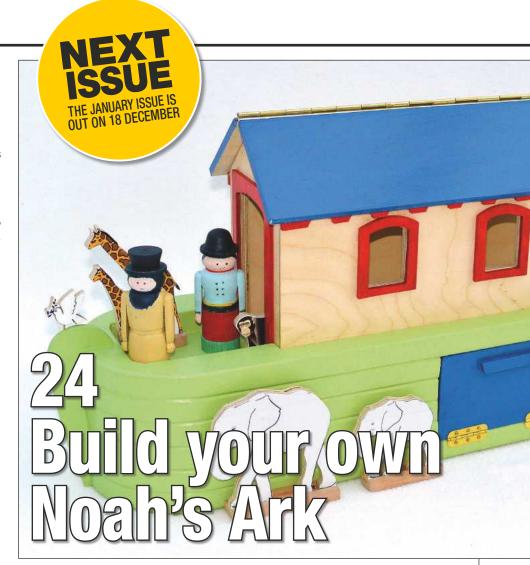
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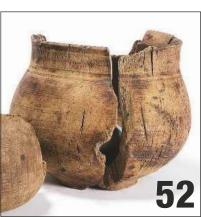
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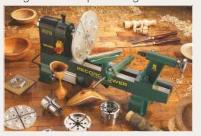
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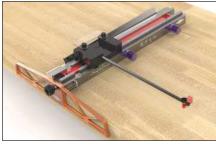
This clever tool is ergonomically designed for comfort over long periods with a slim handle and easy to change tips. It comes with a writing tip and five nickel chrome wires of different thicknesses, which allow you to make your own tips. Accessories are also available including pens with different tips, packs of specialist tips and a separate splitter means you can switch between two pens.

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Antex is offering a 20% discount to WW readers. Just quote 'TWW20P' when purchasing and you can pick up this great tool for just £120, instead of the usual £149.99. To buy yours, see www.antexcraft.com.

#### **CHINESE WHISPERS**

Thanks to this innovative and clever new product from Bridge City Tool Works, making your own gallery-quality chopsticks has never been easier or more fun. The Chopstick Master allows you to create this ancient tool and is designed for non-woodworkers, the DIY market, as well as all those who appreciate fine craftsmanship. "Anyone over the age of eight, regardless of experience, can join



in the fun and make their very own set in 15 minutes," says designer and CEO John Economaki.

During the past six months, over 1,000 pairs of chopsticks have been produced with various

Chopstick Master prototypes. This non-powered product is a professional tool with an all-metal base, and is designed to last multiple generations. The Chopstick Master design has been optimised and is now ready to hit the worldwide market. The product had a successful launch in China this September and is available in the US by pre-order only until 2016. To find out more, see www.bridgecitytools.com.

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alloy bits undergo hardening in accordance with the latest production standards. Priced at £75.96 (valid until 31 December

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#### **DECEMBER**

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#### Any other business

Down my way (Hove, East Sussex) it's quite good for sourcing timber; as well as a timber recyclers in town, there's a friendly yard five minutes' drive from my workshop for all my softwood and man-made board requirements. They also sell some useful lengths of utile and oak for any emergency jobs that come my way, and will order most things in. If I want to choose something slightly more unusual, there's a speciality yard selling sawn hardwood boards (and

offcuts) of many species a bit further along the coast in Worthing.

#### **TIMBER SUPPLIERS**

Not everyone is this fortunate, though, and the latest request from a reader (see page 20) is just one of many I've recently received asking for information on finding the very staple of our craft. Now, I'm only familiar with a small part of the UK when it comes to timber suppliers, so this month in

AOB, I'm asking readers to write in with details of bona-fide timber dealers in their vicinity. We're talking places where anyone can just walk up and make a purchase, large or small. Hopefully enough people will participate to enable me to draw up a useful database that we can publish for the benefit of all. Email me at the usual address: mark.cass@mytimemedia.com or instruct a young family member to do so on your behalf; you know it makes sense

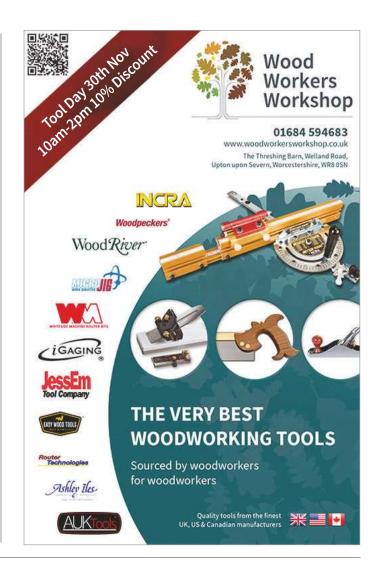
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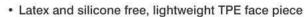




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This free event is frequently cited as the highlight of the woodworking calendar with probably the largest display of tools and accessories from all the leading brands. Visitors eagerly anticipate the opportunity to get their hands on the latest products, try out the kit, compare various brands and talk to the experts before taking advantage of the exclusive show deals and special offers.

New exhibitors this year included Milwaukee with their 'Big Red' demonstrator lorry appearing as part of their UK tour. The wonderful weather allowed visitors to enjoy the numerous outdoor displays as well as the two floors of indoor exhibition space.

Woodworking experts including Andy King, Tibby Singh (BBC Young Carpenter of the Year), Julian Collins and 'The Gentleman Joiner' Christopher Hall, were demonstrating and providing masterclasses throughout the weekend.

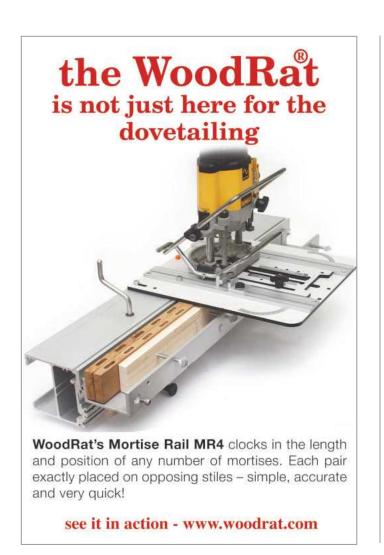
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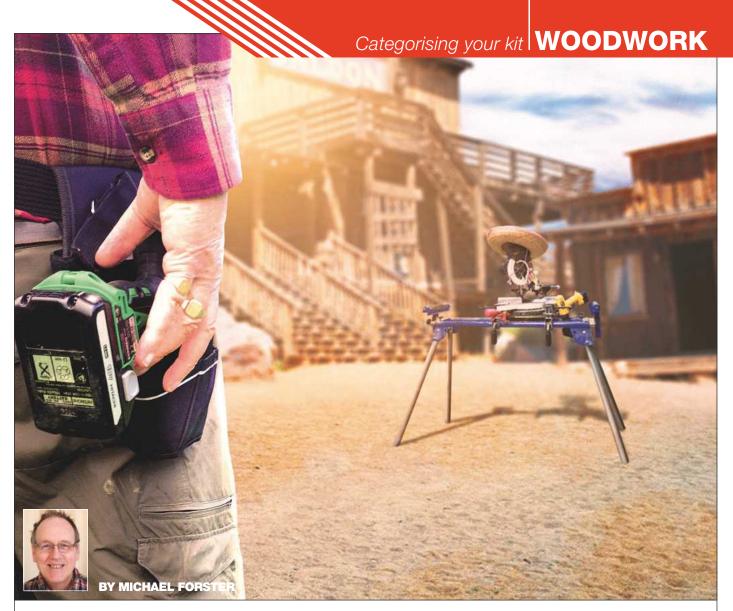
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# The Good, the Bad and the Ugly in the workshop

Inspired by the Spaghetti Western, Michael Forster begins to wonder how he should categorise his workshop machines based on their performance: are they Good, Bad or Ugly?

t's a bizarre idea, I daresay - I'm no stranger to those - but watching the iconic Spaghetti Western put me in mind of my workshop. Oh yes, the main characters are definitely there. There's the Man with No Name (Clint Eastwood) - nicknamed Blondie by his companions. Tough, good looking and effortlessly effective, he's the 'Good' guy, but you still need to be careful how you mess with him because he's deadly, too. Then there's Angel Eyes (Lee Van Cleef), and he's baaaaad. But like Eastwood he can be charming – and therefore all the more dangerous. And finally we have Tuco (Eli Wallach) - he's 'Ugly'. You don't know whether to like him or to despise him. Sure, he can be useful to have around, but he

makes a lot more fuss and mess than the other two – and, as with them, you wouldn't want to be on his wrong side. They're all there in my workshop: Blondie, Angel Eyes and Tuco – the Good, the Bad and the Ugly.

#### 'Blondie' – the Startrite 401E bandsaw

Let me introduce you first to 'Blondie' – my Startrite 401E bandsaw. Like Eastwood's character, he's quiet and almost clinically efficient, simply getting the job done without unnecessary drama. Tall and lean, he takes up no more floor space than a mid-range DIY machine, but he's in a league of his own when a big, hard piece of timber threatens to be too much for me to handle, cutting it down to size without so much as



Blondie the bandsaw – effortlessly cuts the heavies down to size



The thicknesser is an essential bit of kit, but it's noisy and, despite the extractor, has to be cleaned up after - so it gets the 'Ugly' tag

(figuratively speaking) taking the cheroot out of his mouth. I bought the bandsaw following a conversation with boxmaker Andrew Crawford: 'Get the biggest and best you can afford and accommodate', he'd said – and I've never regretted it. It handles a range of jobs effortlessly and effectively and there isn't a plank in the timber rack that can begin to intimidate ol' Blondie.

#### 'Tuco' - the sliding compound mitre saw

However, as I intimated earlier, when it comes to labels like 'Good', 'Bad' and 'Ugly' the distinctions aren't necessarily that simple – whether we're talking people or kit. Take my sliding compound mitre saw for example. It, too, is a solid bit of kit that will cut wood - and for that matter metal accurately and safely. It's not quite so refined as the bandsaw, though and in fact, I often choose to work by hand for lighter tasks just to save my ears and manage my stress. So I call it Tuco - the ugly one. I wouldn't go so far as to call it 'bad' because it isn't - it does a good job for me, but it's just all the histrionics I find wearying. I really can't say I like the thing, but I tolerate it.



This little drum sander is much more refined in operation, so it's a Goodie - but you have to respect its limitations

I have to include my Maguire bench on my 'Good' list. It's rugged, dependable and just does the job without a wobble or a winge





If I'm talking about 'Goodies', then I have to include the star of my cast of hand tools: my all-purpose, quietly efficient, Veritas low angle jack plane



The prime candidate for the 'Tuco' tag has to be the electric router



The electric router is much more manageable when up-ended under a table

When it comes to the award category of 'representing endearing ugliness and love/ hate relationships', the electric router, in my estimation, walks off with the Oscar every time. I tolerate my three because they're useful - they get the job done - but completely lack Eastwood's laid-back ease, whining and screaming their way through the task and raising a fair old dust cloud. My only recourse is to link up whichever one I'm using with the similarly ugly shop-vac and a pair of stout ear defenders. By this time, swathed in protective gear, I find that my relationship with the beloved craft has changed somewhat. No longer enjoying the contact with the timber and the direct involvement in every change created by plane, saw or chisel, I am, I realise, just not enjoying woodworking – it's become a chore that just has to be done and the sooner it has been, the better.

The router itself might be – OK, 'is' – the most versatile tool on the market. Just as it comes out of the box it can perform a huge range of tasks. Knock up a few 'shop-made jigs and it'll rise to greater challenges; up-end it under a table and it's almost pleasurable to use. And that's another similarity: Tuco, also, tended to be at his least threatening and most manageable when he was up-ended under the table...

Another way to keep Tuco in check might be to buy yourself a good quality jig, such as a Woodrat or a Leigh, and cut some seriously fancy joints. Just keep the guards and other safety features on, protect your ears and lungs, keep your wits about you, and old Tuco will be your best friend, but man, he's ugly.

#### 'Angel Eyes' - the chop saw

I once had a very different chop saw; I retrospectively named it Angel Eyes because it was truly baaaaad. When we first met it even seemed to have Lee Van Cleef's smile - you know, that enigmatic twinkle that could be beguiling but for some reason isn't and that comes to be more of a warning than reassurance. Well, it had been cheap and seemed like a bargain, so I hoped I was wrong. I was disabused of that hope when I set the end-stop to cut a short piece and the poorly-designed mounting rod fouled the back of the blade - in 'good' kit that danger would have been designed out. Just as in the film, the smile turned cold and the retribution was swift and deadly - or it would have been had I not been wearing a protective visor. Once was enough, though and Lee was sent packing back to the agency that had provided him, never to darken my set again.

#### Don't let your guard down

I'm reminded again of the chilling subtext of the movie – the disconcerting similarity between the characters: good, bad or ugly, they were all remorselessly deadly when the need arose. And so it is with my kit. Blondie the bandsaw can only be so quietly efficient because he's got a lot of potentially lethal power and isn't choosy about whose blood gets spilled. The blade runs through the table about three times as fast as a DIY machine, and with a massive 410mm of blade exposed at full capacity, any user is well advised not to let concentration lapse. The reality is that any woodworking tool

- machine or hand - is capable of doing us damage and won't have second thoughts about doing so. That's why I always use guards, dust extraction, protective kit, and keep my hands on the right side of cutters. 'Good' the kit may be, but I'm not letting my guard down, just in case...

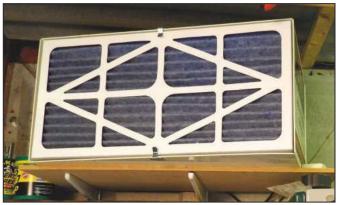
#### **Materials**

There's a lot more I could say about my kit, but I'm sure you get the drift, so let's



When it comes to materials, temperate hardwoods are definite Goodies – effortless good looks with no huffing and puffing





Microscopic airborne dust is a big threat to my wellbeing. Blondie the ambient air filter quietly disposes of it in my machine shop. No fuss, no bother, just the occasional change of filter and otherwise I hardly know he's around. Now, that's good!

move on. When it comes to materials, I love hardwoods - preferably the temperate ones, such as oaks, ashes and walnuts. Like Eastwood, they're good-looking and reliable, so they generally come in the 'Blondie' category. However, all timbers present some challenges, in terms of grain, texture, consistency and so on, and indeed risks - irritants and toxicity in particular. All those factors need to be managed. This is usually about good extraction and general workshop housekeeping. Some more exotic hardwoods combine strikingly handsome appearance with strength and reliability but also create higher levels of irritation, or worse.

Sometimes the irritation can be partly about personal chemistry: I have a

cabinetmaker friend who won't have wenge in the 'shop since the dust produced an allergic reaction serious enough to hospitalise him, while others love and use that very timber regularly without dramas.

My clear vote for the 'Angel Eyes' role, though, goes to the horrible fast-grown, rapidly-kilned softwood that's all too readily available in some DIY stores – particularly the shrink-wrapped multi-packs that have something of Lee van Cleef's smile about them. Butter wouldn't melt, you'd think, as they stand there so straight and tall and look like the perfect answer for that bit of carcass work. Get them home, though, and release them from their packaging corset, and suddenly all that upright decency

The chip extractor cleans up after my machines. I wouldn't be without him but he's noisy and not completely effective - so he's Blondie with Tucoesque tendencies



An important guardian of my peace of mind is the fine filter on my main extractor that locks up those ornery hombres - fine dust particles - where they can't hurt me

vanishes and you realise they're as bent as a nine dollar bill... Don't bother looking for the photo, there isn't one – it's been a long time since I had any of the stuff in my workshop!

So where's old Tuco in all this? Well, most of you who know me will already be thinking MDF. I love it and I hate it in similar proportions to Wallach's Tuco character. There's no doubt that when certain kinds of job need to be done, it's the preferred candidate: flat, stable, predictable and reasonably easy to work with (here, I realise, the comparison with Tuco is strained more than somewhat, but bear with me). I use it a lot for workshop jigs and fittings, especially where the job just needs to get done and beauty isn't an issue. But for all its virtues it needs to be handled with caution, especially when cutting. Some people have an intolerance to the formaldehyde it contains, but for most of us it's the dust - very fine, airborne particles that will pass through ordinary extractor bags straight back into the workshop air ready to be breathed in. And being fine, they will also penetrate deeper into our respiratory systems. So I'm afraid the only recourse for indoor work is dust management: fine-filter extraction at source and personal protective equipment for lungs and eyes. And, as with the router, the bottom line for me on MDF is that I just don't enjoy my woodworking when I use it. Ugly? You bet.

So that's about it - I could go on, but I'm sure you get the gist by now. Blondie and Tuco - the Good and the Ugly - are my constant workshop companions. And Angel Eyes - the Bad? He was clinically dispatched by Blondie at the end of the film, but don't let that fool you. There's far too much of him in the other two for us ever to get complacent. WWW



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## In your own write.

Here are just a few 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!

#### **SNAIL MAIL OR EMAIL?**

You can write to us at The Woodworker, MyTime Media Ltd, Enterprise House, Enterprise Way, Edenbridge, Kent TN8 6HF or send an email to mark.cass@mytimemedia.com





#### SIDEWAYS IS THE ANSW

I was struck by the letter from Roger Gray in your excellent November issue, and the Andy Standing article which prompted it. Both items illuminate the complexity of trying to rout splines on a traditional set-up. Routing across the corner of a box held in a vice sounds very tricky, and moving the cutter from a free-standing plunge router to a table sounds like a recipe for inaccuracy.

A horizontally-mounted router removes all the problems and all the risks. With it, I can, in a matter of minutes, cut any number of slots of any shape (including dovetails) across any number of corners on a glued-up box of any shape and size - without changing the plunge depth and while the workpiece is held securely flat on a simple sled. Then, without removing the cutter or changing the plunge setting, I can cut exactly matching splines to fit the slots. No measurements of any sort are required, except the old Mark One Eyeball and a bit of test-fitting.

#### **Tony Scott**

#### Thanks Tony,

There's a lot to be said for a sideways routing set-up, and I look forward to running your technical description of how to do it in the next issue.



#### **EDWARDIAN ELEGANCE**

#### Hi Mark.

Here's my version of an Edwardian tea caddy. As you can see, I've made it as a jewellery box using sapele with a dentil inlay banding. Antique brass hardware, burgundy pig suede lining, and two coats of Danish oil finishes it off beautifully.



#### **Rob Winter**

#### Rob.

That's a very nice job and no mistake. A small box really provides a chance for a woodworker to show off his or her skills, and there's no hiding place for errors as it will always come under close scrutiny from all who behold it.

Mark

#### SOURCING TIMBER

#### Hello Mark,

I have just started woodworking again after 20 years and I don't know where to find any timber yards - the only place close is a big DIY store and you don't find hardwood there. I'd be very grateful if you or any other WW readers could point me in the right direction. I live in Lurgan, County Armagh, Northern Ireland. Thank you in advance for your help.

#### Aidan Thompson

#### Hello Aidan,

Welcome back to the world of woodworking. Yes, sourcing timber is fast becoming an unlikely challenge. It seems like a lot of timber yards have gone and all that are left are the big ones. Don't despair, as even the average builder's merchant will have some oak and probably some kind of exotic hardwood, but it won't be cheap, and probably won't be exactly what you're looking for dimension-wise.

A lot of turners I know get their turning blanks online and as well as the specialist suppliers, there's often the chance of a bargain on eBay. Let's also not forget the roadside skip and old furniture from a jumble sale shouldn't be overlooked either. You could also speak to someone at your local joinery shop; they'd definitely have a few offcuts or would add your requirements list to their next order from their trade supplier. Round my way we have a timber recycling yard – maybe this is the time to get one up and running in your neck of the woods? Mark

Here at The Woodworker we're always pleased to see photos of your work, and we know everyone else is as well! So send them in now and see if you can make the cut.



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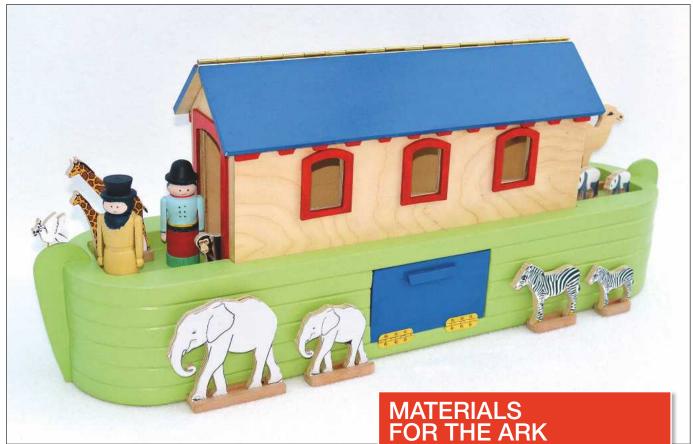
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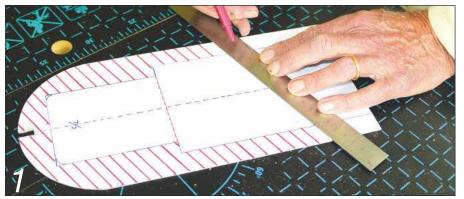
## Imaginative play

Ian Wilkie presents a wonderful idea for a potential Christmas gift for a youngster - a traditional Victorian Noah's Ark complete with hand-painted animals and hinged roof

his Noah's Ark is designed in the spirit of a traditional Victorian ark, which was considered a suitable toy to be played with on a Sunday when other pastimes were frowned upon. This toy still has the power to charm both young and old alike. The Ark is designed to be strong with plenty of storage space for Noah and the animals. The hull illustrated is constructed in planed, kiln-dried, whitewood spruce. This was inexpensive and quite satisfactory as the Ark was to be painted. The hull is barge-shaped and flat bottomed; a hatchway in the side gives access to the inside where there is plenty of room to store the animals. The boat is built up in six layers using a bread-and-butter technique.

The cabin is made in birch plywood and is basically a rectangular box with a roof, which hinges back to give access to the interior and storage. This is a project well suited to the scrollsaw, particularly when it comes to cutting out the animals but if you don't have a scrollsaw, then the hull can be cut out using a jigsaw as long as the wood to be cut is clamped down firmly.

The toy should be strong but not too heavy. There should be no sharp edges or splinters with PVA glue used predominantly and screws and pins avoided with the exception of the hinges. Any paints must be certified suitable for children's toys. Storage for the animals is important and the toy should encourage imaginative play.



Start by making a template for the hull using the dimensions given in the plan. As there are six pieces to cut out, this is well worth the effort. Draw out each of the six planks on to the thicknessed timber. Note that although the outside shape is the same for all six pieces, this is not so for the internal cutting. The base 'A' remains solid; 'B', 'C' and 'D' are identical; 'E' has a deck fore and aft and 'F' is cut out for the top deck

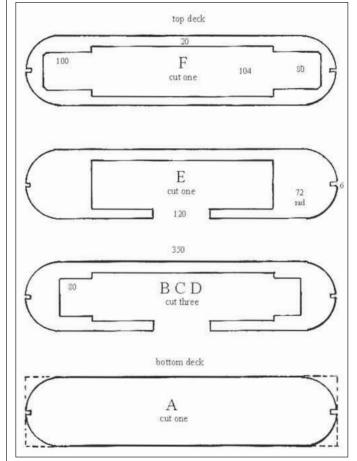


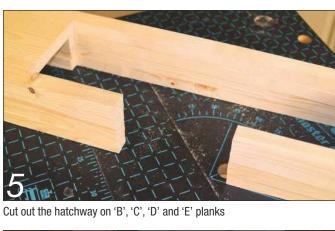
Drill small holes at the corners of the areas to be cut out; this allows the scrollsaw blade to pass through



First, cut round the edge of each piece. I suggest you use a No.7 PGT blade to achieve a good cut. Cut out the slots fore and aft for the stem pieces









Sand all parts thoroughly



Use a small plane to chamfer the top and bottom edges of each layer; this will give more emphasis to the planks



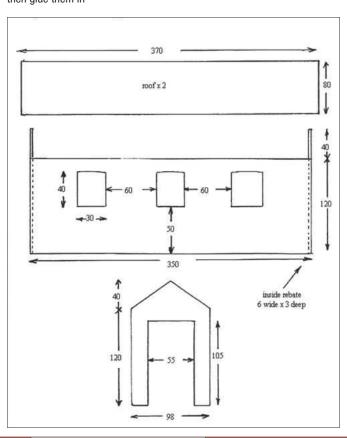
Insert a temporary piece of wood into the slots fore and aft to aid alignment, then glue up the layers with PVA. Cramp up securely as each layer is built up, making sure you wipe off any excess glue that oozes out with a damp cloth. After every two glued planks, drill 6mm holes around the edges



Dip the ends of 6mm Wolfcraft dowels in glue and tap them into the holes to give added strength. Continue in this way, offsetting the dowels. When the glue has cured, sand the hull thoroughly



Cut the front and back stem pieces in 6mm-thick plywood or hardwood, then glue them in





Cut out the walls of the cabin and then the windows and doors. The open windows and the end doorways allow animal heads to poke through to get some fresh air and also increases the play value



Make up the cabin carcass following the plan with any adjustments necessary so that it fits the cut-out area on the deck and, when the floor is inserted, it is level with the front and back walls. I rebated the walls 6mm wide  $\times$  3mm deep so that the pieces would fit well together and the gluing area increased. I marked my parts with coloured dots so that the completed cabin would fit back in the right way



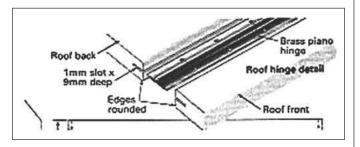
Glue and cramp up. Heavy weights are ideal for holding the base in place. As a dry run, insert the cabin in the deck and glue narrow strips on the inside long sides of the hull to support the cabin when it's finally in position. Glue a bar across the back of the cabin to give an added gluing area for the back roof

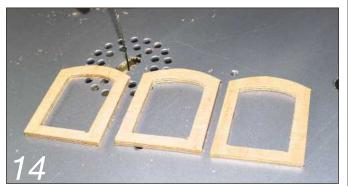


Now you have the fun of painting and decorating the Ark as you wish. I applied two coats of primer on the hull, rubbing down between each before putting on the top colour. I varnished the walls of the cabin but painted the extra embellishments and the roof using PlastiKote paint, which is designed for these small projects as it is a quick-drying, low odour, water-based enamel and certified suitable for children's toys EN71. The product comes in both spray cans and 59ml bottles. If you have difficulty in sourcing the bottles, see www.fredaldous.co.uk

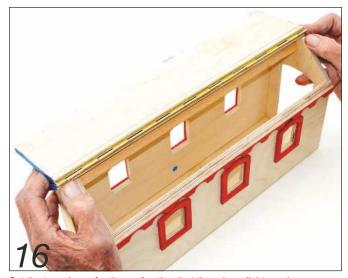


Cut a door for the hatch in the hull, which will hinge down and form a ramp. This can be held shut with two small turnbuckles or a small magnet





Extra detailing, such as window frames, barge boards, canopies over the doors and so on can all be cut from the remaining ply. It is easier to paint these embellishments first before finally gluing them on. Many of these parts can be stacked and cut in one go



Cut the two pieces for the roof noting that there is a slight overhang all the way round. The two roof pieces are joined along the ridge with a piano hinge. Remove 1mm from the centre core of the plywood with a fine saw and glue the edges of the hinge into the slot produced (see drawing) using CA adhesive. Make sure the roof fits neatly before gluing the back section in position – it may be necessary to pare a little wood from the cabin side apexes. Leave the front section free as a lift-up flap

#### **MR AND MRS NOAH**

I turned two simple figures between centres...



arms were cut out on the scrollsaw and attached to the shoulders with dowels. the country the Ark is made



#### **THE ANIMALS**



When it come to the animals there are various possibilities. Traditionally the animals were often carved or whittled from a block of solid wood but this demands considerable skill and patience, which alas, few of us have. The attraction of this toy is its simplicity and naivety. The animal is representative and relies on its shape for recognition. Scale really is not



that important as long as the elephant is taller than the lion, for example. However, as the animals went in two by two, one of the species will need to be slightly larger than the other! The simplest method is to cut out animal silhouettes in thicknessed timber and if the wood is thick enough, the animals will stand upright on their own

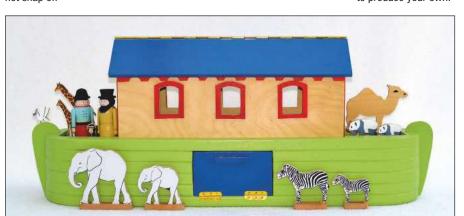
If plywood is used, then stands will be necessary. Rout a groove to match the thickness of the plywood in a length of hardwood. Cut short lengths suitable for each animal and glue it into place with CA adhesive. Whether or not you colour and detail the animals is up to you



Another option for those who have computers and printers is to look at free Clipart on the internet and choose examples that can be scaled and printed out. This works well if a good quality photo paper is used. Glue the pictures to thicknessed timber or plywood, taking care to see that the edges in particular are firmly stuck down. Cut round the animal simplifying the outline so that small pieces (thin legs, tails and horns, for example) will not snap off



I should point out that there are some excellent, detailed plastic animals of the right size to buy but they are expensive, especially when you need two of each, but if you are short of time then they may be the answer. However, this magazine is all about making things so have a go and try to produce your own!



#### **FURTHER INFORMATION**

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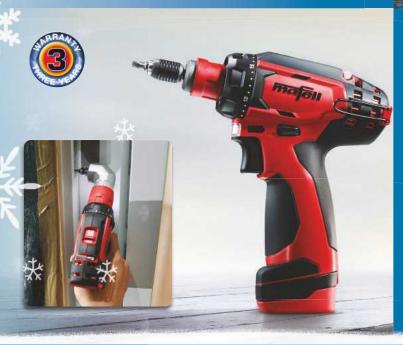
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The three holdfasts and the tools used to make them. From left to right: two-part ash and hawthorn; chestnut crook walking stick; grown ash hook



**BY ROBIN GATES** 

# By hook or by crook

Robin Gates makes three timber holdfasts, which are light, safe, delightfully tactile and great for small-scale woodwork

spell of problem solving in the woods led me to try a grown ash hook, **photo 1**, as a holdfast. Surprisingly it worked, prompting further experiment with crook-handle walking sticks and a lever-operated design.

#### Sweet charity

After moving house last year, I was impatient to set up a workbench at the new abode. I was lucky enough to come across a viable option for a new one: a kitchen workstation in solid beech, which I found in a charity furniture store.

I would have preferred a purposedesigned woodwork bench but beggars can't be choosers and this sturdy outcast from some gourmet's kitchen had much to commend it. Although a tad wobbly, it only required a turn of the Allen key on its pull-together joints and the legs were a generous 63mm square. The 41mm top was almost double the thickness of my previous bench. The 'kitchen' label rankled only until I saw the price tag, a mere £30. I would have been guilty of peevish ingratitude if I had not loaded this bench



Finding a grown ash hook in the woods. The one on the left was too small; the one on the right was ideal



Peeling the bark with a knife



Shaping with a block plane leaves one hand free to hold the work



An old halfpenny makes a 25mm template for the shank



The nifty 102 block plane used for finishing



Sharpening the 102's blade

into the car immediately. £30 wouldn't buy a set of dogs for the Swedish pinup of a bench I'd been dreaming of.

But it dawned on me as I was driving home that this bench didn't even have holes for dogs; in fact it was completely deficient in the workholding department. For a while I made do with a bench hook and G-clamps but in dividing my attention between holding the work and cutting it, I was seeing too many splintered edges and ugly patches of tear-out. The obvious answer was to install a vice, and yet I felt strangely reluctant to bolt a lump of metal to this otherwise plain timber surface.

#### Into the woods

An alternative came to mind when I was walking in the woods: a branched stick, a natural grown hook of ash. I had been recalling just how useful my old iron holdfast had been, clamping the work with more versatility than a vice, and so easy to set up when needed.

At its simplest, the holdfast is forged in the shape of a hook with the shank passing through a hole in the bench and the end of the hook, or beak, bearing down on the work. One tap on the head with a mallet locks it in position; a second tap on the rear of the shank releases it. Between uses a holdfast stores out of harm's way, leaving the bench top clear.

Joseph Moxon's description of how the holdfast works in Mechanick Exercises, written some 300 years ago, has not been bettered: 'The point of the Beak throws the Shank a-flope in the hole in the Bench, and preffes its back-fide hard againft the edge of the hole on the upper Superficies of the Bench, and its fore-fide hard againft the opperfite fide of the under Superficies of the Bench, and fo by the point of the Beak, the Shank of the Hold-faft is wedged between the upper edge, and its opperfite edge of the round hole in the Bench'.

#### By hook

Although Moxon was writing about an iron holdfast, I'm sure a grown timber hook would have been used as a holdfast well before iron. The strength of natural curves, forks and branches with their uninterrupted long grain has been exploited for countless generations. From Neolithic people using a hooked stick to lash the head of an adze at right angles to its handle, to shipwrights using a natural oak hook to join the gunwales of a clinker-built hull, history reveals our instinct for using what grows around us. Thus far my own homage to this tradition had been a 'jar jar', a 'branch'

mallet bearing a passing resemblance to the quirky *Star Wars* character.

My search for an ash hook with reasonably straight limbs at about 45° to each other eventually bore fruit in a hook about 38mm diameter in the shank and 25mm diameter in the branch that would become the holdfast's beak. Being both tough and shock-absorbent, I reckoned ash should be well-suited to the purpose.

Impatient to experiment, I decided not to wait for the wood to season and got down to stripping away the bark with a knife, **photo 2**. Beyond the sticky green layer of cambium the green ash cut cleanly enough to use a block plane, **photo 3**, although at the risk of some tear-out around the knots and the possibility of splitting at the ends if it dried too fast.

Considering that timber is less rigid than iron, I decided that the shank should have a larger diameter than the typical iron holdfast, settling on 25mm diameter for the shank fitting in 27mm diameter holes in the bench – the latter dictated by the size of an old centre bit. Using old tools, I'm frequently using Imperial measurements and an old halfpenny, **photo 4**, was used as a template to mark the end of the shank, as it's exactly 25mm diameter.

#### Tied to the apron

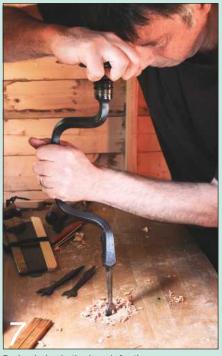
A drawknife or spokeshave is ideal for shaving a stick down to size only if you have a shaving horse or other means for clamping the work since they each require two hands for the tool. If one hand is taken up in holding the work, a block plane is a good alternative. I used my Stanley 9½ set coarsely and then my nifty Record 102 for the finer cuts, **photo 5**.

Sometimes I get misty-eyed when I reach for the little 102, a plane my Dad gave to me some 45 years ago. At just 140mm from toe to heel, it is also known as an apron plane because it slips so easily into the woodworker's apron pocket.

The child-friendly scale of the 102 belies a serious plane, which excels for small-scale work, fitting snugly in one hand with the palm over the rounded lever cap and the forefinger pressing in a hollow button at the toe. The cutter is adjusted by eye and feels much like an old wooden smoother, tapping lightly with a hammer on the cutter or the strike button cast into the heel. The trick to getting the best from the 102 is simply to keep it sharp and handy, **photo 6**.

#### Boring the bench

Having reduced the holdfast shank to within a few shavings of final size, I faced the



Boring holes in the bench for the holdfast shank, using the Scotch iron brace



A notch in the bit's square shank locates with the clip in the brace



Preliminary shaping of the hawthorn with the carpenter's axe

drastic step of boring several large holes in the bench top, **photo 7**. This would be a job for my Scotch iron brace, a satisfyingly unsophisticated tool and also one to test my power of concentration in maintaining it vertical while the arm muscles coped with an overdue workout. At just over 1kg, the solid iron brace has weight enough to keep



Close-up on the centre bit at work. Shavings are like pencil sharpenings



First of three holes completed



A natural curve of hawthorn for the beak of the two-part holdfast



A natural curve benefits from the strength of continuous long grain

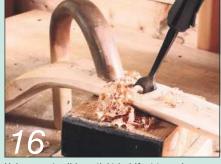
a modicum of down-force on the centre bit, **photo 8**, while I take a breather and clear away the shavings; watching them peel upwards from the cutting edge is almost hypnotic. The old square-shank bits for this brace have a notch, **photo 10**, filed in one side to locate with a spring-mounted tooth, a system so quick and secure I wonder how



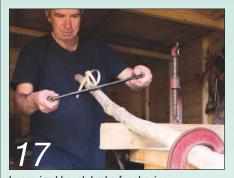
As far as I could go in shaping with the axe



Further shaping of the hawthorn beak using a drawknife



Using one (walking stick) holdfast to make another. Boring the angled hole in the beak



Improvised bench brake for shaving an ash shaft with the drawknife



Holes bored for the holdfasts double up as anchor points for a bench stop



Door stops screwed to the bench stop locate with holes in the bench



Start of test fitting while shaving the ash shank to fit the 25mm hole in the beak

the slow threaded multi-jawed chuck ever caught on.

The reach of a holdfast enables it to clamp over a wide arc so positioning the holes isn't that critical - holes almost anywhere will be useful. For starters I opted for three holes in a line, photo 9, 255mm apart and 200mm back from the left and front edges of the bench. With those I expected to grip work near the front edge for planing, or with an end to the right of the bench for sawing. With three holes in a row I'd also be able to grip the work with two or three holdfasts simultaneously.

The fit of the shank in the hole dictates not only the angle of the beak when the holdfast is knocked tight but the strength of the grip between hole and shank, so I left the final shaping of the shank until the holes had been bored. Then the friction of twisting the oversize shank in the hole created shiny spots, which showed exactly where I needed to plane.

I cut the end of the beak to be parallel to the bench top when the holdfast was locked tight, canting backwards, so as to maximise its area of contact with the work.

My fear that the holdfast might split at the branching point when subjected to rigorous use proved unfounded - the ash holdfast works brilliantly, locking and releasing with a knock on the head or the shank exactly as it should. The down force generated is more than adequate to grip small timber, and I love its natural simplicity.

#### By crook

In a charity shop I found myself staring at a bunch of chestnut walking sticks, thinking I might buy one for pulling down branches in the blackberrying season – they were only £2 each. They were of the standard NHS type with a heat-formed crook handle, made from coppiced chestnut. Then I was struck by another possibility - why not use the crook end of the stick as a holdfast? With a diameter of about 25mm promising a good fit for the holes already bored in the bench, they appeared almost ready-made.

It was dead easy to convert these sticks into holdfasts by sawing them to length, planing a few knots flush and cutting away the reflexed end of the crook so as to create a roughly semi-circular arc for the beak.

These crooks perform at least as well as the naturally-grown hook, with the advantages of being easier to find and make, not to mention cheap – you can buy them new online for as little as £5. Evidently mine were cast-offs from a retirement home, bearing the names of previous owners Edward and William, presumably no longer

with us. I hope they would approve of their old walking companions being recycled as a useful pair of holdfasts.

#### In two parts

My third version of the timber holdfast is in two parts with shank and beak locking together by a through mortise and tenon joint similar to a wooden mallet; this offers an alternative if crook walking sticks prove too small for the job or naturally-grown hooks are too hard to find.

I already had a natural curve of hawthorn, photo 11, to hand so used that for the beak. Hawthorn is a tough fine-grained timber but the log can reveal splits and buried knots when opened because of the tortuous growth of the tree. Luckily this piece cleaned up well under the axe, photo 12, and drawknife. One of the crook walking stick holdfasts found an early use in clamping the hawthorn while I bored an angled hole for the shank, photo 16.

Part of an ash pole was straight enough to serve as the shank so I improvised a bench brake, **photo 17**, to hold it with a G-clamp and notched block while using the drawknife, **photo 15**. I find it pays to delay sawing a pole to length as this can limit the clamping possibilities, then I planed the shank to final diameter using the hole in the beak as a guide.

By now I was fairly confident the thing would work and so added a design tweak in leaving an extension on the back of the beak. This acts as a lever: by pulling upwards the holdfast is released without requiring a tap from a jar jar, **photo 23**.

A useful spin-off from the holdfast experiment is that the holes in the bench have doubled up as anchor points, **photo 18**, for a chunky bench stop located by door stops, **photo 19**, obtained from the local DIY store, which were an exact fit.

Although my old iron holdfast was as solid as the Forth Bridge, it could be unwieldy to manoeuvre and posed a constant danger to the sharpened edges of tools left on the bench. By contrast, these timber holdfasts are light, safe, delightfully tactile and – for the time being at least – perfectly functional for my small-scale woodwork.

#### FURTHER INFORMATION Moxon's Mechanick Exercises ebook:

https://play.google.com/books/reader?id= t\_IRCzjTf08C&printsec=frontcover&output= reader&authuser=0&hl=en&pg= GBS.PA65



Setting the natural hook holdfast with a tap on the head



The two-part ash and hawthorn holdfast clamps work for drilling



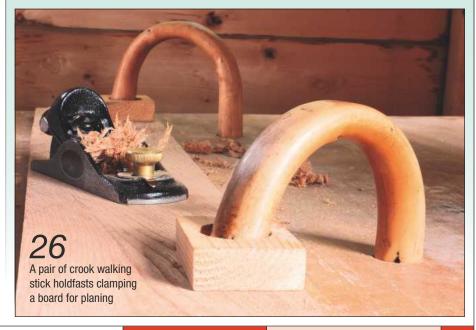
Clamping the work for sawing



Releasing the natural hook holdfast with a tap on the back of the shank



The two-part holdfast is released by pulling upwards on the rear extension





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# In brief...

#### **INVISIBLE JOINING**

The OVVO connection system is an award-winning, innovative product that enables a new way to join finished board products invisibly, while also eliminating the lengthy assembly times typically associated with flat-pack furniture.

The connection system is the brainchild of Sean Phillips, company director and inventor. Having owned and operated his own furniture-making company for over 20 years, the recent recession afforded Sean the opportunity to invest time in developing the concept, and the results are truly revolutionary.

The new system will eliminate the hours of frustration that comes with flat-pack assembly, as it requires no more use for tools, glues or screws. The concept is a push-fit solution that allows two pieces of material to join together easily and the action is simple: all you have to do is press them together and wait for the 'click', which indicates that the join has been made. It is an invisible solution with one element embedded in the material while the interlocking, self-clamping clip forms a tightly held bond between the two pieces of material being joined.

OWO won the 'Manufacturing' category of The Irish Times InterTrade Ireland Innovation Awards 2014, and also won an Interzum Award for Intelligent Material and Design in 2015, beating competition from many categories and industries from across Europe. To find out more, see www.ovvotech.com.



#### A DAY OF HAND TOOLS & ROUTING

Wood Workers Workshop will be holding their hand tool and routing day on Saturday 28 November, so why not visit their workshop at The Threshing Barn and take advantage of a 10% discount. Come and meet Peter Sefton and see professional demonstrations at the best in-house routing setup in the UK. See expert demonstrations from quality imported US Brands, such as WoodRiver - exclusive to Wood Workers Workshop - plus Incra, Woodpecker, Whiteside, iGaging and Jessem.

There will be a wide array of tools, router tables and accessories for sale alongside hand tools sourced from some of the best English toolmakers. Plus, get expert advice on what to buy and Peter will also be demonstrating his hand tool techniques.

Visitors all get the chance to win a £50 voucher against their Wood Workers Workshop purchase, with the prize being drawn on the day. Find out more here: www.woodworkersworkshop.



#### **COMPACT CIRCULAR SAWING**

Makita's new HS7601J, mains-powered, 190mm circular saw offers a new compact design, which reduces the overall size of the machine and due to the use of aluminium for the baseplate, now weighs just 4kg

Powered by a 1,200W motor, and available in 110V and 240V versions, the HS7601J will run up to 5,200rpm and has a maximum depth of cut of 66mm at 90° and 46mm at 45°. The compact design of motor housing includes a flat base, which increases stability when the blade is being changed. The soft grip handle with trigger controls has the forward grip knob moulded as one, which allows for enhanced control and balance.

Cutting depth is quickly adjusted with a single locking lever and the rear angular guide gives smooth and precise adjustments of the bevel angle. The aluminium baseplate is fully compatible with the Makita Guide Rail Set 197005-0 and is delivered in a MAKPAC case.

Makita's expanded guiderail accessory range now offers adaptors to fit most circular saws, jigsaws and routers in the Makita range of power tools. Prices start at £130, see www.makitauk.com.

#### **TURN YOURSELF A PEN**

Charnwood has recently introduced a new range of pen turning products to their range, which includes 20 colourful acrylic blanks measuring 19mm diameter  $\times$  130mm long. Being already round cuts down on turning time and also eliminates any chippings coming off. There are also two Camo acrylic banks and 12 coloured wood blanks, each measuring  $20 \times 20 \times 130$ mm. The pen collection starts with the standard 7mm slimline twist pens, which are available in gold, gun metal, chrome, copper and black chrome



and come complete with matching click pencils, all available in the same colours.

For the more adventurous turner, there are chunky cigar pens in gold and black, gold and gun metal, chrome and black and gun

metal and black, with cigar pencils available in gold and black and chrome and black. The range also includes the popular Sierra pens, which are available in the same colour ranges. A selection of mini key chain pens in various colours and two Christmas tree decorations finish the range in gold and chrome. For more details, see www.charnwood.net.

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# In brief...

#### A LOUD TABLE, ACCORDION TO NORMAN

Pull out the drawer of a table and you rather expect it to glide out quietly and smoothly. Not so with Norman Mackay's coffee table, made from Scottish elm and fitted with the internal workings of an accordion. Norman, a graduate of the Chippendale International School of Furniture, runs Woodeye Furniture from incubation space at the School, and combines a woodworking career with life as

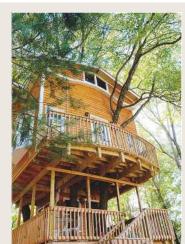
A Highlander by birth, Norman has played the button accordion from an early age and plays with Norman Mackay's Ceilidh Experience, a fusion band that mixes up the traditional with modern rock.

a musician.

Norman has appeared on radio

and TV and a film for which he wrote music was featured at the Cannes Film Festival. "A diatonic reed block was used for the drawer's 'voice' and limited to two chords (one out and one in). After much thought, I decided to go for Amen. The only other options I could think of were the theme tunes to Jaws and Psycho, which I didn't fancy much," says Norman.

His hand-crafted table can be made to order, taking up to eight weeks to construct, and other musical furniture ideas are in the pipeline. Musical chairs, perhaps? To see more of his fantastic work, visit www.woodeyefurniture.co.uk.



#### **AN EPIC BUILD**

This epic three-storey, 40ft treehouse was made by Jay Hewitt, a handyman from Massachusetts who lovingly built this wonderful construction for his grandchildren.

Before his five-year-old grandson and four-yearold granddaughter were born, he said: "I wanted to build a treehouse for them. You've never seen a treehouse like the one I'm gonna build for them." He had enjoyed a

treehouse in his own childhood, "but it was basically a 4 × 8 sheet of plywood. I never dreamt that a treehouse would be anything like this." Hewitt began building the treehouse about a year ago but sadly, he currently intends to sell the entire property, but he says that if he doesn't find a buyer, he plans to continue expanding the treehouse. We really hope that happens, so watch this space for more tall treehouse tales!





#### **GRAND DESIGNS DOES KEBONY WOOD**

A stunning family home was recently completed on the south coast of the Isle of Wight as part of Channel 4's Grand Designs, designed by architect Lincoln Miles. After a near-death experience, Bram and Lisa Vis decided to take life by the horns and build a unique large family home for themselves, family and friends. With floor to ceiling windows looking out to sea and features including a snug, a games room and roof terrace with a swimming pool, the family home is the epitome of the best-of-the-best. Having been inspired by nature, international modernism and the open plan simplicity of the Farnsworth House by Mies van der Rohe, the new build is clad with Kebony wood, which brings to the grand design the camouflage, beauty and quality which was so desired. Having started the project in March 2013, the new family home is now complete. To find out more, see www.lincolnmilesarchitecture.com.



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# Return to glory

**Peter Bishop tackles** an unusual commission - the restoration of a Victorian/Edwardian coffin bier

occasionally get asked to do some odd things. This one should not really have been much of a surprise seeing as how I'm sort of involved with the trade (I make environmentally friendly coffins as part of my business). So when 'Bill the box' turned up with a flat-packed bier in the back of his hearse, I was a bit lost for words. "I found this in one of my old sheds," he said,

"thought you might like to sort it out for me." Not really a question but more of an assumption that I'd be intrigued enough to take this pile of dirty parts and sort them out.

Please note that although many of the following photos show machines unguarded for clarity, you should ALWAYS ensure that when operating equipment, the appropriate guards are in place.



The bier, as it came to me

The first step was to soak the leather straps





Making a template to repair two of the vertical arms



#### **Disassembly**

We spent the next hour or so putting the bier back together as best we could, photo 1. Most of it was there: a couple of metal bits broken or missing and the same with the woodwork. Nothing too drastic, just covered in several layers of old paint and decades of dust and bird droppings. I thought that this was going to be one of those jobs that will get very mucky before it starts to come together. 'OK, Bill' I said, 'let's bowl it into this storage shed and I'll get round to it sometime'.

That 'sometime' actually started a few months ago when I got another pal down the road, a master with metalwork, to make up a missing bracket and weld back together some broken metal parts. I also took off the four leather straps and washed them, photo 2, soaked them in water and then revived them with a product called Abbey 1982 Saddle Food, photo 3. Now they were supple and ready, at some stage, to go back into service. I left the rest alone until I'd built up enough courage to tackle it!



A broken arm is assessed on the template



Top pieces are marked out on an oak blank

A gap in projects, some fine days and I really had no more excuse for not starting on the bier. I needed to patch up the broken woodwork first. A couple of the decorative, vertical arms had lost their curly bits on top. I took a template from a good one, photo 4 & 5, marked out and cut some blanks and then fitted them onto the arms with Domino joints. The bevels were applied, photo 11, using an appropriate bit in my router table and the difficult parts finished by hand. I rubbed some ammonia into the new wood to darken it and bring it to somewhere near the colour of the old stuff. All would have a sealing stain coat later on. There are two decorative rails running up the sides of the bier. One was shortened, probably broken off at some point, and both were missing a knob on one end, photo 12. These were turned to match and a new section turned and jointed into the shorter one, photo 13. The fresh wood was treated like the arms to match.

I then decided to approach the rest of job as I would stripping an engine: do a bit at a time, laying out all the parts so I'd know how they went back together. Surprisingly, most of the nuts and bolts came undone reasonably well with only an odd one or two having to be cut off. The screws were not so good. Layers of paint had been applied so each slot had to be cleaned out before I could try and extract them. Some had to have a good clout to loosen them but only one broke off! To make sure I got the short axles back in the right slots, I stamped a corresponding number on the outside face of the metal and alongside the slot on the wood, photo 15. These would need packing out with washers later when I put them back in place. I ended up with a pile of dirty components, metal and wood, all over my bench, photo 16. I tackled the main frame and back wheel assembly next. More swearing and cursing, dirt and dust followed before all the bits were apart. NB: The axles were made in the West Midlands and stamped 1904 so this bier was well over 100-years-old. Let's hope that my restoration will enable it to go on for a similar amount of time, assuming it's reasonably well looked after.

#### **Dirty work**

I sanded all the muck and old paint off the wood with power tools and by hand, **photo 18**. The metalwork was cleaned off back to the bare faces with wire brushes and emery cloth, **photo 20**. By this time I was filthy and my workshop had a thick, cloying layer of dirty dust all over it. Fortunately I'd worn a mask; you don't want to know what that



The curly bits are roughed out on the bandsaw



Jointing with Dominos



Checking for fit – they were both different thicknesses



Each new section was glued and clamped up in a vice



Finally, most of the bevel was applied and then finished by hand



The decorative side bars needed some knob ends



One bar was short so I turned and jointed in an extension



Starting to strip the front axle section



The wheel shafts were bolted on. I numbered each as I took them off



A little while later this was the pile of dirty components that made up the front section



A lot of the screw slots had layers of paint and dirt that had to be cleaned out



The main frame gets stripped down

looked like! Ah, at last, I could clean myself up and the workshop and get to the good bits of the project. Cleaning the metal parts showed that they were originally painted a dark blue. This was a pleasant surprise so I bought a can of Oxford blue metal paint to bring them all back to their original state. The individual pieces had a couple of coats, which I would touch up later on once fitted. I used some black enamel paint for the short wheel axles and the metal outer rims of the wheels; the hubs were blue. This lot was left to dry and harden off.

The two axle frames and the main bed frame had been made using dry pegged mortise and tenon joints; they were all loose. I guess the wood had shrunk from its original size over time. I drilled out the old dowels, about 6mm, clamped each frame in turn, made some 8mm rough dowels, then re-drilled and drove the pegs in. This sorted the frames, which were now tight.

All the woodwork, which was oak, had originally been painted or varnished with



This was the shortened side piece with one of the missing knobs



The wheels were cleaned up with a variety of powered wire brushes, etc.

a thick, brown coat. I'd decided early on that I'd re-colour this lot with the proprietary Osmo 'One Coat' exterior sealer. Their walnut colour seemed the best so this was brushed on and the excess wiped off as recommended. A couple of coats here and there and the woodwork was done.

#### A bright finish

There turned out to be a few more brass pieces than I had originally thought, photo 22. I knew there were hub covers for the wheels and six retention brackets for the decorative side rails. As I'd taken the main frame apart, I found that the metal 'trefoil' shapes, photo 23, supporting the two coffin rails were also brass. It was a bit daunting to get stuck into cleaning all these bits. The boss came up with a solution: 50/50 white wine vinegar and salt in a hot water bath overnight loosened most of the muck, photo 24. It still took some elbow grease to bring all the brass up to a shiny finish with steel wool, but it wasn't as bad as it could have been. Once dry and bright, each piece had about four layers of clear metal lacquer sprayed on, photo 25. Hopefully this should retain the bright finish for some time. This is a car product from Halfords, which is useful if you want to protect bare metal.

With everything now ready, the assembly was a reversal of the original process. Having seen the condition of the bolts and screws, I'd only managed to salvage a few. The main, central pin for the front axle was one and a few brass screws. The rest were nice new stainless steel nuts, bolts, washers and screws. Because the original bolts had all been coach bolts, and the wood had softened around the recesses for the squares on the heads, I switched these to standard bolts with flat washers. Hopefully that would allow them to be tightened or taken apart a lot easier. Section by section the bier started to reappear from the bits and pieces. Some odds and ends needed to be dealt with as I went along. Each bright



27
All the metal work was cleaned right back and

cleaned right back and then painted – this is the front section lot

These, I thought, were the brass components





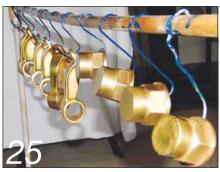


Soaking the brass parts in a hot solution to shift the worst of the muck

screw or bolt set into the blue metal work had to be painted in to match. Where the other bolts butted onto woodwork only they were left bright. The recovered brass screws had their slots and tops cleaned before being used. All screws had a tiny amount of grease dabbed on their tips before insertion; this should ease extraction at some future point.

#### Wheels

The wheels were last on my list of jobs. Behind the brass hub covers were some leather washers. I'd had to clean and recover the originals. I could not find new ones anywhere nor did I have any leather tough enough to cut replacements from.



Once the brass has been finally cleaned up, each piece was sealed with spray lacquer

A large adjustable spanner, with a rag around the covers to stop marking the brass or destroying the lacquer, and the wheels were finished off. I lifted the whole lot off the supports and stood back to admire my handiwork!

Just a couple more things to do now. Firstly, I lifted on and strapped in place one of my stock coffins - this one was made from sycamore. The contrast between the coffin, dark leather straps and woodwork was stunning even if I do say so myself! The next thing to do was show it off to Bill. I called him up on a pretext and asked him to come over. I'd stored the bier in one of the workshops that he would not see on arrival and when I opened the door and



I had to mask off the rims of each wheel to paint the metalwork black

ushered him in, he was speechless. That meant that I'd done the job right or made a complete mess of it! It turns out he was a happy bunny. So much so that he's now talking about exhibiting it, minus the coffin, at a local show. Obviously a hit, then! WW

#### **FURTHER INFORMATION**

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- Abbey England
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- www.abbeysaddlery.co.uk

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# The ever-circling VearS Join Phil Whitfeld for a whistle stop tour of woodturning's 3,000-year history



Examples of turned medieval bowls found in the City of London

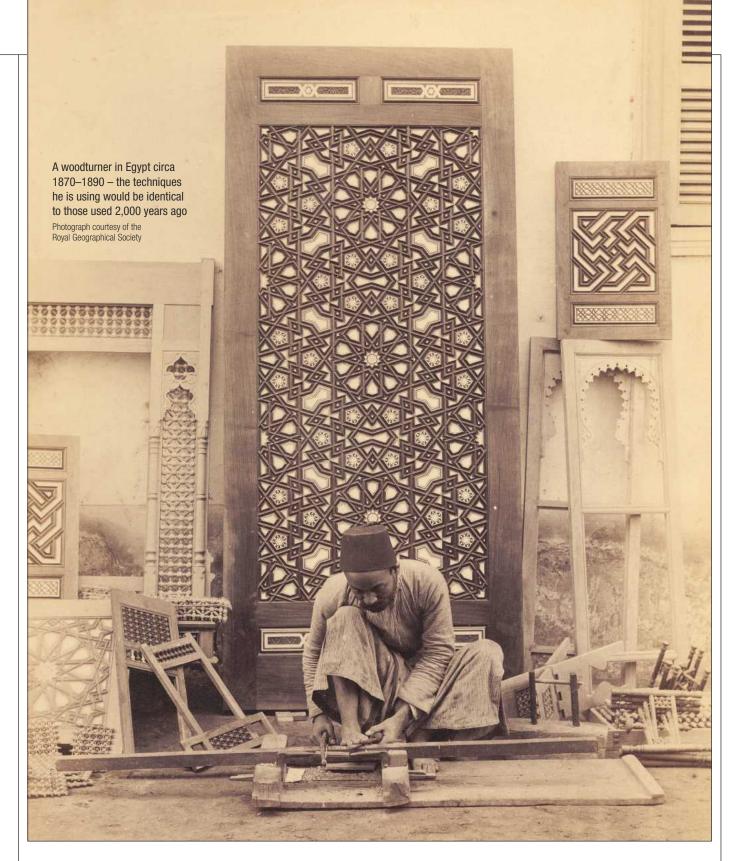
Photographs courtesy of the Museum of London Archaeology

here will be some, I'm sure, who think it no coincidence that around 3,000-3,500 years ago one of the first peoples to celebrate beer and brewing, the Sumerians, were also probably some of the world's first woodturners. Hard evidence of turning's origins is hard to come by, of course: it's in the nature of wood to decay, and even when artefacts are found - the round joints in some of the wooden structures in the tomb of Tutankhamun, say, which date from around 1,350BC we still can't say for certain just how they were made. Indeed, the first record of woodturning wasn't made until 1,000 years after Tutankhamun's death, when artists decorating another tomb included a drawing of a primitive lathe being worked by two men, one holding the workpiece and the other operating the cutting tool.

#### **Etruscans**

What we do know is that, during those 1,000 years, the tide of empires and trade carried woodturning across the Mediterranean to Greece and Rome which, through their wider influences in Europe, helped to spread its techniques even further afield. So, while the oldest undisputed example of woodturning - a fragment of an Etruscan wooden bowl made in around 700BC - was found at Cornetto in what is now Tarquinia, Italy, within 100 years of its manufacture, beautiful and elaborate wooden bowls were being made by highly skilled turners among the Celtic who peopled central and western Europe. By the second and third centuries BC, the practice of turning was not only known throughout Europe and the Near East, but was being used to produce an increasingly wide range of products, both decorative and practical.

Here in Britain, some of our earliest examples of woodturning were found at Vindolanda, a Roman garrison just south of Hadrian's Wall, a location that dates them to around 170AD. The cups and bowls shown to the left come from the City of



London from the 11th and 12th centuries. At Glastonbury Lake Village, meanwhile, an Iron Age settlement, which was at its peak more than 100 years earlier, excavations have unearthed workpieces including an unfinished wheel hub and spindles that were evidently turned between centres.

When the Saxons arrived on our shores to fill the vacuum left by the Romans, they brought with them further evidence of woodturning's ubiquity; indeed, it seems that the Saxons preferred bowls and vessels turned from wood to those made

of pottery. The years of Danish influence also laid down a rich archaeological seam of turned artefacts in British soil, with many good examples having been discovered at Jorvic, modern-day York.

#### **Our traditions**

The early English turners used two principal methods to produce turned work: the bow lathe and the pole-lathe. In the former, the string of a bow was wrapped around the timber so that, by drawing it backwards and forwards, the timber could be made to turn.

Of course, this reciprocating set-up meant that the workpiece turned both towards and away from the turner, who could only cut when the stock was revolving towards him. More disadvantageous, though, was the fact that operating the bow left the turner with only one hand free to manage his cutting tool, so the bow lathe was often operated by two men.

#### **Bow lathes**

In contrast, oriental turners (perhaps because they were more flexible and/or



This turned serving bowl was found when Henry VIII's warship the Mary Rose was salvaged in the 1980s Photograph courtesy of the Mary Rose Trust

enterprising than their occidental counterparts; who knows?) came up with a more dextrous approach to their bow lathes. Sitting on the ground, they used one hand to drive the spindle, and the other to steady the cutting tool; at the same time, one foot was used to hold the lathe steady and act as a toolrest, while the toes of the other foot guided the point of the cutting tool. You can still see these lathes and this technique at work today in the souks and bazaars of the Near East and Asia.

Looking even further East, the Chinese developed a version of the bow lathe at which the turner was seated, using his feet to pedal foot-boards attached to either end of a cord wrapped around the lathe spindle. This treadle arrangement left both hands free, of course, to hold and guide the cutting tool, and was only one step removed, so to speak, from the pole-lathe

### **BODGERS, BILLETS AND BEETLES**

That the word 'bodger' is used today to describe someone who only does half a job could be explained by the fact that, originally, bodgers would only produce the turned parts of a chair - legs, rails, and spindles - and not the complete item. Unlike their modern namesakes, however, they were highly skilled craftsmen who could produce matched parts by eye, and were only limited in what they could produce by their equipment. Indeed, the art of bodging remained an integral part of woodworking production well into the 20th-century, though its importance had undergone a steady decline from the beginning of the Industrial Revolution onwards as mechanisation meant that parts could be produced more quickly and cheaply than by traditional methods.

Being close to the source of materials, bodgers prepared their own timber. After felling, trees were cut into lengths called 'billets', and then cleft with a wedge hit home by a mallet or 'beetle'. A side axe

or drawknife was then used to rough the heaviest waste off the billets to produce an octagonal shape that could be turned relatively easily. It might be thought that, having been turned in its green state, the parts would distort as they dried, but any distortion was negligible owing to the relatively small section of the parts.

It was an unnamed Sussex bodger making chairs to sell by the roadside who inspired one

> of the most iconic collaborator Edward Burne-Jones pieces of furniture photographed in 1874 of the last 200 years. The story goes that William Morris, the founder of the Arts & Crafts movement, was out on one of his habitual country walks with friends some time in the early 1860s when he came across this man selling simple chairs with latheturned legs and spindles and a simple rush seat. Morris loved the elegance and simplicity of design and the fact that it used simple

construction techniques when went against the mechanisation and mass production of the Industrial Revolution.

According to Max Donnelly, the curator of furniture at the Victoria and Albert

> Museum, lathes either foot powered or latterly machine powered were used to turn spindles, which fitted into holes augured into the backs of chairs. The majority of the work being done with hand tools chisels, planes saws and augurs.

Donnelly believes that the chair was a genuine example of early mass

production with thousands being made by Morris and Co and other companies until the 1920s. Today original Sussex chairs in good condition command prices of between £800 and £1,500 for an excellent original example.

William Morris (right) and

his friend and Arts & Crafts

What was a simple village construction took on a new life becoming the musthave feature for the homes of the burgeoning new Victorian middle class. Of course, Morris was happy to use mechanised lathes and other machinery to take the drudgery out of some of the employees' work.



A William Morris Sussex chair circa 1860 Photograph Copyright V&A Images Victoria and Albert Museum London





– which brings us full circle back to England where the pole-lathe was in widespread use until the outbreak of World War II.

The pole-lathe's bed and toolrest was set up between the trunks of two suitable trees that also provided the 'centres' for the workpiece. Power, meanwhile, came from a cord looped around the stock, with one end tied to a branch – or lath, which may provide the origin of 'lathe' – of a conveniently overhanging tree; the other, meanwhile, was made into a 'stirrup' into which the turner put his foot. Pushing down on this stirrup made the workpiece turn and pulled down on the branch which, when the stirrup was released, would spring back and turn the wood in the opposite direction.

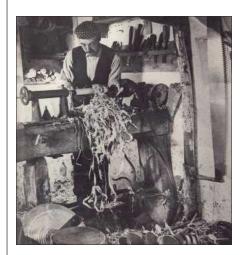
Whereas a bow lathe could be readily transported to where there was work to be done, the more static nature of the pole-



This 17th-century English silver-mounted, lignum vitae wassail bowl carries the coat-of-arms for the Grocer's Company and the inscription, 'Ye gifte of Richard Rogers to hys olde friends who meet in the Toy room'. Wassailing ceremonies took place at different times throughout the year including Christmas, Shrove Tuesday and January 6th (Twelfth Night). The wassail bowl was filled with a mixture of ingredients including ale, sugar, nutmeg, ginger and cloves

A traditional Irish tankard is known as a lamhóg used in inns and taverns throughout Ireland, Wales and the west of England until the early 20th century. This example is made from a single block of willow, which has been turned on a pole-lathe. The handle has been gouged out with hand tools and the vessel shows evidence of repairs with the application of metal fastenings to the sides

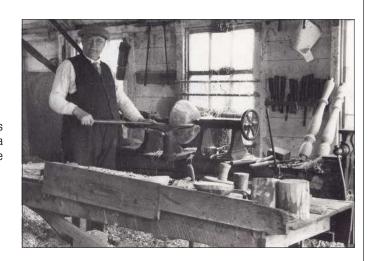




#### Welsh turner William Rees using a foot-powered lathe Photographs courtesy of National Museums and

Galleries of Wales

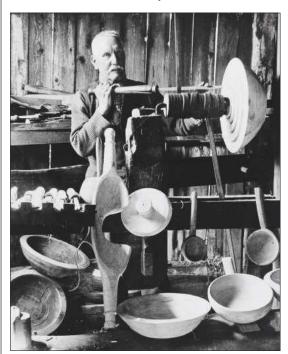
...and some 40 years later using a powered lathe



lathe lent itself to working in the woods, where the raw materials were to be found. Today, only a handful of England's rural bodgers are to be found working polelathes, but their skills are kept very much alive by green woodturning courses.

#### From cottage industry to industrial revolution

According to the Turners' Company, the first reference to a London turner occurs in 1189, though the city soon gathered enough craftsmen plying this trade to come together and form one of the first medieval guilds. Set up to protect the interests of its members, the guild of turners laid down standards for the products that they manufactured, established a system of



Shropshire turner Jack Jordan in his workshop. The object in the front left is a dairymaid's yoke Photograph courtesy of Shropshire Archives

apprenticeship, restricted competition from non-guild members, and collected money to help support retired or invalid turners. In 1604, the turners were elevated by the granting of a charter by King James I, making the Turners' Company one of the City's older companies.

This recognition paralleled the growing importance of turning as a means of mass manufacturing. Both here and on the Continent, the lathe was used to produce everything from farm implements, furniture and turned architectural elements to musical instruments and sports equipment. By the 18th and 19th centuries, it was common to find lathes installed in the carpenter's shops of the larger villages and towns. These machines were largely made

of wood, including the beds and the head and tailstocks, which were known as 'puppets'; the only metal parts were the centres on which the work revolved. Though some lathes were powered by water, most were turned by hand, using a wheel up to 7ft in diameter, whose rotation was transferred through a belt and pulley system to the headstock, and whose momentum helped to overcome the drag created by a heavy cut.

As the Industrial Revolution gathered pace and workers migrated in increasing numbers to the towns and cities, ever faster and more efficient lathes were designed to meet the increasing demands of this urbanised population for turned wooden products. The mass production of wooden wares for the workforce wasn't turning's only contribution to the transformation of Britain,

however. Indeed, it could be argued that without the mechanical wood lathe the Industrial Revolution wouldn't have taken place at all, as many factories, such as the cotton spinning mills in Lancashire, required specialised components that were made on wood lathes.

#### **Hobby turners**

In parallel with these industrial machines, the availability of smaller lathes helped to create the amateur turner. English gentleman, for example, were helped in their enthusiasm for making ornamental turnings from ivory, blackwood, and ebony by the lathes of Holtzapffel & Co., the London firm founded in 1793 by the German immigrant, John Jacob Holtzapffel. In the mid-19th century, John's son, Charles, and grandson, John, wrote a five-volume series of books on turning, which came to be regarded as the authority on ornamental turning. That the three volumes written by Charles are still in print and, in many ways, as relevant to modern turners as they were in the 1840s, should come as no surprise: for although, as R Pugh, former Secretary of the British Wood Turners Association wrote: "Many of the items which were traditionally turned from wood are no longer required or are made from synthetic materials... the skills to produce them from wood remain strong and will continue for as long as there are those discerning people who appreciate the many practical and aesthetic properties of a turned wooden item."

October 2016 brings the perfect opportunity to appreciate the latest products of a craft that dates back more than three millennia when the Turners' Company – itself a comparative stripling in its 419th year – stages the quadrennial Wizardry in Wood exhibition, not in Sumeria but in the Carpenters' Hall, London.





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Makersmith staff have 35 years design, manufacturing & installation experience and the business has recently invested significantly in advanced manufacturing technology to enable people and business to make exactly what they need.

Gareth Davies, owner of makersmith says: "We understand that individual woodworkers as well as small & medium size businesses don't always have a clear route to access the latest design and manufacturing technology. We have the experience and capacity to support them and to be effectively an extension of their own workshop facility.

We are a creative business and our design capacity means that we can help clients with new solutions and new ideas as well as straightforward CNC processes. We are excited to be able to support woodworkers and the woodworking industry and are looking forward to providing this whole community with our services."

You can find out more about what makersmith can do for you at: www.makersmith.works/wow or by calling: 01723 336322

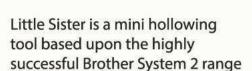
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On all courses there will only be a maximum of 4 at a time, this will mean that I will be available when you need help and advice.

#### **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.

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The advanced course is rather different from the previous two.

To come on this course you will need to have done both the other courses and have used your skill at home on your own projects and be ready to take on something more difficult.

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am currently working on a series of work where I am texturing and scorching ash and then dyeing it black. This process means that the viewer is not distracted by the colour of the wood and can therefore concentrate on the shape. However, because I have scorched the wood, the grain is very apparent, so the viewer knows the item is made of wood.

#### Chop, chop!

Here's how to do it. Start with a piece of ash measuring 200mm square × 356mm long. Chainsaw off the corners to make a rough octagon and mount it between centres. You could use a spindle roughing gouge to convert the octagon into a cylinder, but I find that on larger pieces, the spindle roughing gouge is too slow. Instead, I often use a swept-back bowl gouge to bring an out-of-round log to a cylinder. With the tool on its side, make a series of chopping cuts, (photo 1), using the bottom wing of the tool, just off the tool tip. Continue to make



BY COLIN SIMPSON



# As black as ebony

Colin Simpson gets creative this month as he turns a chalice in ash, then decides to texture and scorch it using a variety of spirit-based stains

these chopping cuts until you have removed all the high points. **Photo 2** shows a close up of the cutting action and also the ridges left from the chopping cuts. Yes, I know this looks awful, but it is a quick way of truing up the blank.

#### **Decorating the stem**

This surface is easily cleaned up by using a planing cut, (**photo 3**). This is a bevel supported cut with the cutting edge at

about 45° to the surface of the timber. Next, cut the chucking spigot using the bowl gouge, (photo 4) and then start shaping the outside. I started by cutting the tapered stem of the chalice and then rounded over the cup, (photo 5). I am still using the swept-back bowl gouge for these cuts. To finish the stem, swap to a spindle roughing gouge used on its side so you can cut right up to the bottom of the cup, (photo 6). When you are happy with the

#### TURNING | Ash chalice



Mount the blank between centres and convert it to a cylinder



Use the swept-back bowl gouge to make chopping cuts...



...followed by a planing cut to smooth it out



Cut the chucking spigot for your chuck



Shape the outside with the bowl gouge...



...followed by the spindle roughing gouge

shape, begin to decorate the stem with some beads. You can cut these using a spindle gouge, (photo 7), or, if you prefer, you can scrape them using a skew chisel on its side, (photo 8). There are special beading tools, such as the Ashley Iles one shown in photo 9. This type of tool is used with the flute down and the handle held low. Enter the wood with the two points of the tool and raise the handle until the bead is formed, (photo 10).

#### Adding texture

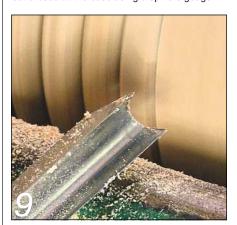
Use 24 grit abrasive to texture the outside of the chalice, (photo 11); this will leave a series of fine scratches around the piece. You also want to pick out the softer fibres in the grain, so use a stiff wire brush to do this, (photo 12). Next, scorch the whole of the outside with a blowtorch, (photo 13). It is a very good idea to clear up any shavings from the lathe and floor before using a blowtorch, or better still, remove the piece from the lathe and do the burning outside the workshop. With the burning complete,



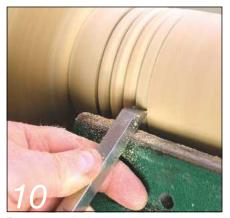
Cut a bead at the base using a spindle gouge...



...or, if you prefer, a skew chisel held on its side



Here you can see the special beading tool from Ashley Iles



To cut successive beads, use it with the flute down on the toolrest



24 grit abrasive paper adds some nice texture - or scratches...

brush away any loose carbon with a stiff bristle brush, (photo 14). If you find that the scorching doesn't go right into the beads, then stain the outside with ebony dye, (photo 15).

#### Hollowing

When the dye is dry, reverse the piece and mount it on the chucking spigot. Square off the top and drill a hole in the centre of the cup, (photo 16). Hollow the cup using a spindle gouge. 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, pivoting the tool on the toolrest, (photo 17). Continue using the bottom wing of the gouge going a little deeper and a little wider each time, (photo 18). If you have a specialist hollowing tool, you can, of course use this to hollow. Photo 19 shows me using my Woodcut Pro-Forme, which makes easy work of cutting through the end-grain. Aim to achieve an even wall thickness and keep checking it with double-ended callipers, (photo 20).



...and a stiff wire brush picks out the softer fibres in the grain

#### TURNING | Ash chalice



Give the whole of the outside a good scorching with a blowtorch



Use a scrubbing brush to remove the excess carbon



Apply ebony dye to give the piece a uniform shade of black



Mount the piece in your chuck and drill a hole in the top



Use a spindle gouge to hollow the piece, starting in the hole...

#### Change of direction

It was at this stage that I changed my mind on the decoration of the outside. I decided that the cup part of the chalice would also benefit from a few beads; these would help to better tie the cup to the stem. So before I hollowed the piece to its final thickness, I cut the beads on the outside, (photo 21). Of course, this meant I had to go through the wire brushing, scorching and dyeing process again. When this was complete, I finished hollowing the cup and sanded it, (photo 22). I wanted the inside to be smooth, so it would contrast with the textured outside. I also decided to stain the inside a reddish colour. I used a Venturi tube to blow spirit-based stain into the bowl part of the chalice, (photo 23), followed by Danish oil to seal the stain. I felt that brushing on the oil would disturb the stain. I gave the piece several coats of oil, then reversed it onto a wooden dolly to remove the chucking spigot, (photo 24). WW



...and swinging the handle away from you



...or you could use specialist hollowing tools



Regularly check for an even wall thickness



I felt these beads better tied the cup to the stem



A smooth inside contrasts nicely with the textured outside



I stained the inside red using spirit-based stains and then oiled the piece



Finally, reverse chuck the piece onto a dolly to remove the chucking spigot



The completed chalice, textured and scorched

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BY DOUG STOWE

# Power-assisted pins...

...and tails. Doug Stowe finds a way to take the hard work out of hand-cut dovetails

don't know about you, but I find that half-blind dovetails made with a router jig don't quite give the level of satisfaction that comes from hand-cut dovetails: the pins can seem too broad, or they're not correctly angled for hardwood. To me, they just don't look 'right'. However, the trouble is, as you may have found yourself, that hand-cut dovetails are difficult to make well, and removing the waste from between the pins is laborious. So, I've reached a compromise that combines the pin profile that I prefer and the satisfaction of hand cutting with the speed and efficiency of the plunge router in order to save on the chisel work.



**1** Begin by laying out the position of the tails in the normal fashion, using a marking gauge, sliding bevel, and a square



2 I use a Japanese pull-saw to cut the pencil lines marking the tails



3 If you have one, use the bandsaw to make relief cuts across the space between the tails. This saves you some chiselling time



4 Use a marking gauge to scribe the drawer facing when marking the pins



5 Mark the pins directly using a knife for a crisp and accurate line



6 Again, use the pull-saw to make an angled cut between the scribed lines, then...



7... it's time to bring in the router and a 10mm spiral cutter to rout the waste from between the pins



8 By moving the fence, you can make additional clearing cuts



9 Use a narrow straight chisel to extend the router cut into the corners of the pins

## FOR BEGINNERS The angle at which dovetails are cut determines their

strength. Cut the tails at too steep an angle and you'll have too much short grain at their tips, which will weaken them. Cut them too shallow and you lose the mechanical advantage of their wedging action. Generally, the angle should range from 7°-14°, using steeper angles in thinner components





10 The flat surface left by the router gives an excellent staging area to finish the cut



11 Use a wider straight chisel to pare the pins down to the knife marks



12 Check the final fit before assembly



13 Generously apply glue to the pins and the spaces between them



14 Use lots of clamps and check carefully that the drawer is square











No handles are needed to interrupt the flow of the grain, because the lip along the bottom of the drawers' false fronts extends below the front strut. Thanks to the table being made of pine rather than a hardwood, sanding through the grits didn't take long. Nor did wiping on a couple of coats of teak oil to darken the wood slightly and add a silky sheen suitable for a bedroom





BY TONY SCOTT

# Hang loose

#### Christmas comes early for Tony 'Bodger' Scott as he goes off piste with a workable drawer mod

ands up anyone who's spent hours with a plane and abrasives, wrestling to piston-fit a traditional drawer into a traditional frame? That's pretty much everyone, then. Me too.

Kickers, runners, shelves, sides and slides: the whole lattice-work required to persuade a drawer to run smoothly is the stuff of nightmares. And that's not counting the obsessive-compulsive necessity to have the whole lot perfectly straight, square and parallel. Nothing I've made has ever been that millimetrically perfect.

There has to be an easier way, and I think I may have found one (though the Editor may decide I've not so much launched a revolution as re-invented the wheel).

A neighbour asked me recently to make her a console-cum-dressing table for a small bedroom in her house. Nothing fancy, just a narrow, simple, modern-looking top with undecorated rails and square legs, all in pine to match an old pine wardrobe.

#### **Torment**

It seemed like a fun idea, and practical, to add drawers to the table, and to design them without handles so as not to spoil the simple lines of the piece. My neighbour was delighted, then I got gloomy as I remembered the torment of the last time I'd tried to make and fit drawers!

The eureka moment came when I was bandsawing the 25mm-thick glued-up top to 1m wide × 400mm deep. I suddenly realised that the slices I was left with could be cut into square 25 × 25mm lengths, some of which could be made into L-shaped lengths, which could be screwed to the underside of the top. From front to back; in mirrored pairs; without any need for any supporting frame at all. Forget the piston fit, I could hang the drawers!

The stock for the project was bought from a DIY shed, already planed all round:  $45 \times 45$ mm for the legs;  $18 \times 125$ mm for the rails;  $12 \times 100$ mm for the front and sides of the drawers and  $6 \times 100$ mm for the drawers' back and base.

To save wood, I decided to fit the rails to the legs with glued dowels instead of joints:



The top is made from three rub-jointed pieces, positioned so that the grain in each piece curves in the opposite direction from its neighbour, in order to reduce bowing. Happily the end-grain patterns match so closely that the glue join below the pencil is hard to see

three dowels at each end of each rail. Not having a Joint Genie, I glued a thick piece of beech to two other pieces to form a rectangular T-shaped jig that could be held tight against any corner, photo 2.

It was then easy to hold the end of a rail against the jig, trace round it, photo 3, and use a pillar drill to put three dowel-sized holes within the outline. As long as the holes are vertical and I remember to hold the jig one way up for the rail and the other way up for its matching leg, the holes I drill

- wherever they are on the jig - are bound to line up. A home-made jig like this will, of course, eventually get so worn that the holes are no longer accurate, photo 4, but it will remain reliable enough for the length of a single project.

#### Trouble

Three rails and 18 dowels took care of the back and sides of the table frame, and since I was going to hang the drawers, I needed only to put a single  $25 \times 25$ mm



Marking the jig's sides A and B means that, as long as the holes are perpendicular and I remember to flip the jig over, the holes for each matching pair of faces on rail and leg must line up



I prefer to make throwaway single-project jigs for dowelling joints. Here, I've glued together three beech offcuts...



.... and drilled three holes to fit more or less evenly within the end of a traced-out rail

strut across the front to keep the legs square and provide a stop for the drawers. The plank that would have formed the front rail became instead the false fronts for the two drawers.

To make squaring the frame easier, I glued the ends up first, then attached the back and front rails. With the table top upside-down and the glued-up frame set loosely in place, measuring a suitable size for the drawers was straightforward.

A straight router cutter put grooves in the sides and front of each drawer to take the back and base. A dovetail jig sorted out the corners, photo 5, though not until I'd had to go through half a dozen test cuts to get a Goldilocks fit: not too high, not too low; not too shallow, not too deep; and not too tight or too loose.

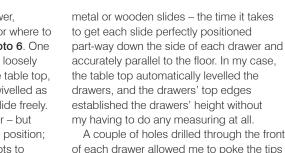
Part of the trouble on my dovetail jig is that the two pieces you're jointing have to be offset by the width of exactly one tooth on the jig, so that they line up when assembled, but the stops for the two pieces move independently. Even a tiny inaccuracy in their position produces a noticeable change of level at the assembled corner and throws off any groove you've cut in the stock. If the two stops were permanently linked with the right offset, it would at least remove one variable.



On most dovetail jigs, the stops - the silver slides visible just to the left of the wood, above and below the comb - move independently. But since the offset between the wood pieces is always the same, driven by the size of the teeth on the comb, the joint would be easier to cut accurately if the stops were fixed together



Offcuts of the same L-shaped hanger serve to secure the table top to the rails at the back and sides. Slots in the unglued hangers allow for movement in the table top



A couple of holes drilled through the front of each drawer allowed me to poke the tips of two screws through from the inside. I taped a couple of thicknesses of masking

tape round the edges of the false fronts to establish a little clearance. Then, with the drawer carcass in place, I could press each false front against its carcass to get an accurate marking for the position of the screws, before gluing and screwing them together permanently.

As before, no measuring was necessary. In fact, the whole job was so straightforward that I may abandon orthodox drawer-fitting forever. The temptation to hang loose instead may prove irresistible. WW



A spacer bar helps to make sure the hangers are parallel before they're screwed into place on the underside of the table top



A thin offcut glued and screwed to the lip of the drawer fits easily into the L-shaped hanger, and holds the drawer just clear of the rail below

I used the four sides of each drawer, assembled dry, as the template for where to attach my L-shaped hangers, photo 6. One end of each hanger was screwed loosely into place on the underside of the table top, then each pair of hangers was swivelled as necessary to allow its drawer to slide freely. Two further screws in each hanger – but no glue - locked the hangers into position; these screws were set in small slots to allow for movement in the top, photo 7.

#### **Temptation**

Once the hangers were in place, I could fit the drawer bottoms into their grooves and glue up. Thanks to all the test cuts on the dovetail jig, the assembled drawers needed only the lightest of sanding at the corners.

25mmm offcuts from the hangers made L-shaped buttons to attach the rails of the table frame to the top - two buttons at each end of the table and one along the back between the drawers. Again, the screws holding the buttons at each end of the table went through small slots without glue, although glue was used with screws to attach supporting strips to the drawers, but since the strips were merely slim offcuts, they took only a few minutes to shape and fit. Compare that whole process with the hassle of trying to fit more orthodox

Both ends of the offcut are tapered to minimise the risk of binding or racking. The false fronts are chamfered at both ends so that they don't catch the legs or each other as the drawer closes, and along the bottom to provide a finger-sized lip



# Hold the phone!

Practise making accurate mortise and tenon joints with this simple little project designed by Bill Newton

his little table was designed to hold a telephone with directories on a lower shelf. I used a shelf rather than a drawer because space was tight and a drawer would have increased the table's size. It's made in American cherry and dyed to a dark red mahogany shade to match existing furniture. The table design is kept as light as possible without compromising its strength. Mortise and tenon joints are used throughout, and the slats on the shelf mean there are quite a few, so this project is a great chance to practise cutting these accurately.

#### Marking out

Cut and prepare all the items to size and mark face side and edge on each piece. Mark out the legs to the drawing, keeping the face sides and edges on the external faces of the legs. The mortises for the top rails are central in the legs' thickness. But the mortises for the bottom rails are slightly offcentre, 1mm closer to the outside face to allow for a slightly longer tenon here, which will increase the strength.

The mortise for the top rails is haunched using the one-third haunch, two-thirds tenon rule. The haunch is tapered from 0mm at the top to 5mm deep at the bottom to maintain as much strength as possible in the top of the legs. Mortises are also reduced in length by 2mm from each remaining edge to eliminate the possibility of gaps appearing at the rail/leg junction. Don't use a marking knife for marking out the mortises because the rails are set back from the face of the legs and the knife marks will be visible at this point. Mark out the rails for tenons; these are square shoulders with the tenons central in all of the rails; these can be marked out using a marking knife. Two of the bottom rails require marking out for the slatted shelf mortises; these must be marked out as a pair because the mortises are not central in the rails' depth; the face side must be the opposite face to the mortises.

Determine the position of these mortises using dividers to ensure uniformity of the rail spacing, then reduce each of the mortises in length by 3mm from either side to allow for the small radius that will be applied to the top edges of the slatted shelf



items. Mark out these mortises using a pencil, as again, knife marks will be seen.

It is possible to mark out the slatted shelf rails for tenons. These are a bare-faced tenon shouldered only from the top face (face side). The shoulder length of the rails are critical to the shoulder length of the two remaining bottom rails (no mortises). The shoulder length of the slatted shelf rails should be the shoulder length of the bottom rails plus 18mm; however, it is so important that it would be better left until the table can be dry-assembled and the shoulder size determined absolutely. Mark out the legs for tapering. This can be done simply using a rule and straightedge or with a simple template, **photo 1**.

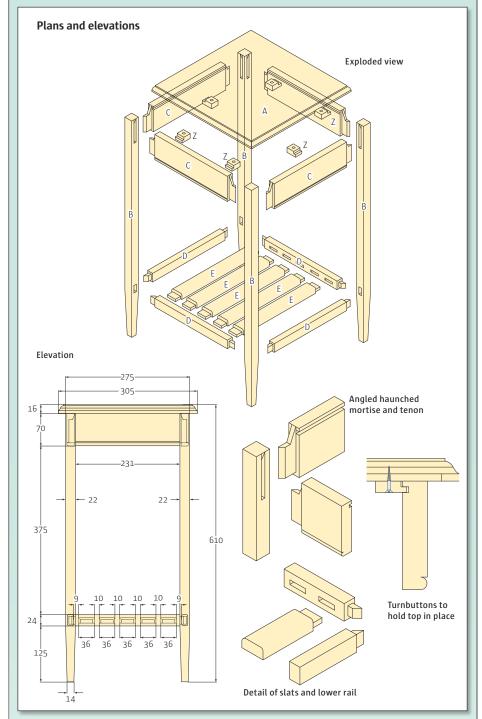
### Making the table

Start by tapering the legs. I did this by marking out as described earlier using a template, then cutting them back on the bandsaw and finally planing by hand using a No.4 smoothing plane.

Make sure the taper starts at the underside of the bottom rail, making no violation of the rail position. Carry out regular checks for square at the leg base and produce all four tapered sides to each leg until all four legs are complete.

Now mortise the legs down to a depth where the mortise meets in the centre of the leg. This should be done for both top and bottom rails, but remember there is a difference in setting from the fence. Make the tapered haunch by sawing down the sides using a gent's saw or similar fine saw, **photo 3**, then carefully take out the waste with a sharp chisel removing a little at a time until you reach the maximum depth of 5mm.

Now mortise the two bottom rails to receive the slatted shelf rails. These mortises are 9mm deep to accommodate a





A simple template makes marking out the tapered leg shape much easier, and ensures all the legs have the same taper

Using a smoothing plane to clean up the tapers on the legs





Cutting the angled haunch on the top rail's tenon using a fine-toothed gent's saw. This hides the end of the haunch



The waste is removed from the tapered haunch with a sharp chisel, a little at a time



The mitres on the tenons must be cut very accurately, an important skill



Viewed from underneath you can see the oak buttons



tenon that will be 8mm long. Now tenon the top and bottom rails; these tenons are 6mm thick and set centrally in the rails' thickness; the shoulders are square both across the width and across the thickness of the rails.

Reduce the width of the tenons to fit the mortises and produce the tapered haunch on the top rails to fit the haunch in the legs. Cut the mitres to the ends of the tenons so they'll meet together in the centre of the

legs but ensure the mitres are cut to put the face sides on the exterior of the rails (these being the long point of the mitres).

Dry-assemble the table, making any adjustments that are required. Identify each tenon to each mortise, then once assembled, check the shoulder length of the slatted rails, photo 6; mark out, then tenon these rails. Break down the assembly and apply the 6mm bead to the bottom

edge of the top rails and the groove to the inside face of the top rails; this groove will provide a location for the buttons that hold the top in position. Apply a 6mm roundover to all four edges of the bottom rails and the two top edges of the shelf slats.

### Clean-up and assembly

Clean up the faces of all components using a cabinet scraper and working down through the grades of abrasive paper, finish with 240 grit. The table is to be dyed so cross-sanding must be avoided at all costs; use hand sanding blocks only, working with the grain at all times.

Using the above preparation methods, clean up the slatted shelf components and the inside face of the mortised bottom rails, which can then be assembled using PVA glue. Be careful when applying the adhesive not to overload the application to avoid squeeze-out from the joint. Any squeezeout must be removed with a damp cloth immediately; this will show as a white patch through the dye should it be allowed to dry without being removed. Cramp the assembly together, checking for square and set aside for the adhesive to cure, then clean up all the remaining components.

Now apply adhesive to the parts required to make up the two end frames. Each frame will consist of two legs: one top rail and one bottom rail. Make sure that each set comprises of the correctly identified component parts before assembly. Assemble with sash cramps checking for square before leaving for the adhesive to cure.

Final assembly of the table under frame is made 24 hours after the previous assemblies. Use sash cramps and check the assembly for square in both vertical and horizontal planes, this is then left to cure for another 24 hours before any further work is attempted. However, these periods of curing time can be used to make and prepare the top.

### Making the top

The top is made from solid cherry, jointed from pieces 40mm wide. Each piece I used was sliced from a tangentially sawn board to give a quartersawn piece, thus minimising movement of the table top as a whole when assembled.

The board should be wide enough to provide all the pieces required to make the top, and as each piece is sliced off the board, identify this to the preceding piece to keep an order for matching.

Plane the parts to thickness plus approximately 1mm allowance for cleaning up; the joints can then be prepared on the

jointer and with a No.6 jointing plane. Joint the top using 6mm-thick crosstongues made of oak (you could use plywood) stopped 50mm from each end of the piece. Rout the grooves for the tongues using a 6mm grooving cutter and then prepare the cross-tongue pieces to fit the grooves.

Assemble the top using PVA adhesive and three sash cramps (two below and one above the top) to avoid any cupping that may occur, then place aside for the adhesive to cure. When cured, remove the cramps and cut the top to length and width. Clean up the top provisionally to remove any adhesive; this is done using a smoothing plane working at 45° to the grain direction from either side.

Rout the edge of the top using an ogee cutter, leaving a 1.5mm quirk on the top face. To avoid burn marks with this cutter ensure that it's sharp, reduce the rotational speed of the router and keep a constant feed without any momentary delays, each

### FOR BEGINNERS

Underneath the table top on this project there are eight 'buttons', photo 5. Buttons are used where a top is made from solid timber to allow the timber to move without leading to splitting of the top or opening one of the joints

of which could produce a slight burn mark to the edge. Burn marks are difficult to remove and will show through the finish even if the project is dyed. Now clean up the top to a finish starting with a cabinet scraper, then start with 120 grit, followed by 180, and finally finishing with 240 grit abrasive. Next, cut and prepare the eight buttons required to hold the top in position to the underframe of the table, photo 6.

Next, remove the cramps from the table frame assembly and then carefully mark out, cut and remove the horns from each of the leg tops, ensuring they are square and level with the top edge of the rails. Place the top upside down on a protected surface and position the table frame upside down over the top.

You can then begin to set the frame central and square to the top, and position the eight buttons into the grooves within the back of the top rails. You must ensure to set them so they are equally spaced around the perimeter of the table and leave a clearance of approximately 0.5-1mm for movement. Pilot drill for the screws and screw the buttons into position.



The parts together, ready for assembly, lacking only the top rail

### **Finishing**

The table is dyed to a dark red mahogany shade with Liberon palette wood dye, available from The ToolPost - www.toolpost. co.uk. This is a water-based dye and it will raise the grain of the timber, so remove the top (identifying its position so it returns to the same place later) and deal with it as a separate item. Then using a clean damp cloth, dampen all the surfaces of both the top and frame, and then leave them to dry thoroughly.

Then the whole table can be re-sanded with 240 grit abrasive ensuring there is no cross-grain sanding. Next, repeat the whole process once again, lightly sanding with 240 grit abrasive; this final damping and sanding should ensure the wood dye will not raise the grain. Apply the wood dye with a brush, cloth, or sponge and allow the dye to penetrate for a short time before wiping back with a dry cloth (do not allow the dye to dry before wiping back). When all the table has been treated in this manner, place aside and leave to dry thoroughly before doing any further work.

For this project a deep, strong colour is required so you'll need a second application; this cannot be applied for at least two hours after the first application. I prefer the first application to be dry before I lightly cut it back with a 320 grit silicone carbide paper, then I apply the second application in the same manner as the first before leaving to dry for a full 24 hours. Sand with a 320 grit silicone carbide paper to remove any nibs and then coat with



The completed table, before dying red with a mahogany stain

a cellulose sanding sealer from Chestnut Products – www.chestnutproducts.co.uk. Allow this coat to dry thoroughly before de-nibbing with a 320 grit abrasive.

Apply two finishing coats of melamine lacquer (again from Chestnut Products) with de-nibbing taking place between coats. Finally, the table can be finished using '0000' wire wool with wax polish (Liberon Black Bison fine paste wax in Victorian Mahogany) that is buffed to a finish with a clean, soft cloth.

The top can now be reaffixed back into its original position taking special care to place it down onto a well-protected surface. WW

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Multicutters are such useful tools and this new offering from DeWalt is especially good, as it's robust and comfortable in use

### **DeWalt DWE315** Multicutter

I'm a big fan of multicutters and have used one for years. They can be used for such a wide variety of tasks, from sanding to metal cutting and removing tiles. On a recent job, my multicutter finally gave out and I needed one in a hurry. After a little research, I decided on this DeWalt and ordered one. It is available in a range of sets, from a bare machine to a comprehensive kit with all the accessories. I chose a simple set with a bag and a couple of blades, as I already have a lot of multicutter bits.

### Design

This is a beautifully designed machine. Whereas most multicutters have a sliding power switch and a variable-speed wheel, DeWalt has provided a large variable-speed trigger with a choice of two grip positions.

### **SPECIFICATION**

**POWER** 

300W

### **OSCILLATING FREQUENCY**

0-22,000 per min

WEIGHT

1.5kg

**ACCESSORIES** Soft storage case; sanding head; abrasive; two blades; blade adaptor

### **VERDICT**

A great tool: excellent ergonomics, efficient clamping system and overall great performance

- **PROS** Fast clamping
  - Variable-speed trigger
  - Robust construction
  - Good range of accessories

**CONS** ■ Needs adaptor to use some non-DeWalt accessories

**PERFORMANCE** 



### **FURTHER INFORMATION**

- DeWalt
- **07003 39258**
- www.dewalt.co.uk

On the front of the machine is the clamping system to hold the various cutting and sanding plates; this uses a simple sprung clamp,

which provides an excellent grip. However, to use it, the blade or accessory must have a cut-out in the rear to allow it to fit around the shaft. Some manufacturers, apart from DeWalt, do produce blades to fit this format, but if you want to use the more common blades with a central hole, an adaptor is supplied. On the front of the machine is the now obligatory LED worklight, which is actually rather useful.



Some multicutters can feel a bit bulky, but this one from DeWalt is well-balanced and extremely comfortable to use. The large variable-speed trigger and choice of small or larger diameter hand grips are especially good features. The clamping system is fast and positive and the motor is powerful, providing efficient performance.



Blades and sanding head

### Summing up

I am very impressed with the DWE315. It does everything that I need from it and is a pleasure to use. It has a comprehensive range of accessories and I particularly like the large soft bag that was supplied with it; so much easier than those annoying hard cases. I'm sorry that my previous machine broke, but I've definitely made the right choice in replacing it with this DeWalt. AS



Inserting the blade



Releasing the clamp



Fitting standard blades with the supplied adaptor



The DWE315 in use

Although these two products don't have a lot in common, you can't go wrong with a good, efficient heater and a highly recommended PU glue

### Clarke Devil 350 ceramic heater

Although the weather has been a touch on the mild side of late, we all know that the real winter cold is just around the corner, and that soon the extra layers of clothing will be required.

Let's face it, it's no fun working in a cold workshop, £107.98 and some form of heating is an absolute necessity if you're to get the best out of yourself -

and safely, too. Unless you're lucky enough to have a woodburning stove in the middle of your 'shop, you'll have to consider other options.

Compact & efficient



A simple light assembly task; something of a warm up

### This free-standing ceramic

heater from Clarke is well suited for the small- to medium-sized workshop or studio. It doesn't take up much space and can be positioned anywhere you want it, delivering a serious blast of heat to the coldest parts of the room. Used with some form of trickle heating - like an oil-filled radiator or something equally as safe for the dusty environment that is most of our workshops - you can pretty much guarantee you'll retain full feeling in fingers and toes throughout a lengthy day.



No rosy glow, but a discernible colour change when hot (lower element on)

### Summing up

It comes well packed and needs a minimum of assembly before use – a nice simple job that barely takes five minutes. With its safety guard it appears to be quite a robust unit, and will certainly make

### Soudal Pro 40P polyurethane glue

I expect most of us have experimented with PU glue over the last few years since its invention. Designed originally for humid areas, it utilises the moisture in the air to cure, expanding as it does so in a golden foam. It's entirely waterproof and will stick timber to pretty much anything. It sounds great, but does have one or two drawbacks, the biggest of which is its tendency to go off quite quickly once it's been opened. Over time I've learnt that it's best to avoid cutting the spout and squeezing the adhesive out; instead I just unscrew the cap each time which slows down the 'setting in the tub' rate.

### Less clean up

I had a special job a while back and bought the only one that Brighton Tools and Fixings had on their shelves; Soudal Pro 40P. I'd never heard of it, it wasn't cheap, but it looked professional and I was intrigued by the look of the plastic tub. I was immediately pleased as the glue didn't foam up to its normal vigorous amount; this meant a lot less cleaning up.

### Summing up

still entirely

liquid. Definitely

recommended. MC

It set and held exactly as expected and I realised that, by storing the tub on its side as intended, the nozzle would be temporarily sealed and prevent any more air getting in. A couple of months later I had occasion to use it again and it was





This is easily the best PU glue I've used to date



The Soudal tub is designed to be kept on its side

### **SPECIFICATION**

### **TWO SETTINGS**

1,200 & 2,400W (up to 8,200 Btu/hr) **VOLTAGE** 230V **DIMENSIONS** L560 × W370 × H375mm WEIGHT 5.45kg

### **FURTHER INFORMATION**

- Machine Mart
- 01158 406 235
- www.machinemart.co.uk

### **SPECIFICATION**

APPLICATION TEMPERATURE

+5°C to +35°C

WATER RESISTANCE D4 (DIN EN 204)

### **FURTHER INFORMATION**

■ Available from various trade outlets and online

a difference. MC

If you're looking for a block plane that offers a little bit extra and won't break the bank, try looking at this Deluxe model from Axminster's Rider range

### **Rider** No.60 1/2 Deluxe block plane

The new range of affordable high-quality planes from Axminster will have an immediate appeal to most of us UK woodworkers. Retaining the traditional appearances of the familiar Stanleys and Records, they've managed to incorporate many of the popular features from the top North American manufacturers while keeping them within a sensible price range.

I was struck by the overall finish and presentation of the No.60 1/2 Deluxe block plane I tried out recently, and pleasantly surprised when I learned of its price. It's pretty much ready to go straight out of the - top quality cardboard - box, although most of us won't be able to resist giving the high carbon 3mm-thick blade an extra going over on the fine stone or equivalent.

### **Professional feel**

The body is cast in ductile steel (making it more robust and less prone to damage), and a nice square piece of machining it is too, with a flat sole and a tidy mouth. Axminster claim that the sole is flat and accurate to +/- 0.04mm (0.0016in); sadly

I have no way of verifying this, but it came up very well indeed when I passed it over my sharpening system (wet and dry on 10mm glass). The mouth is adjustable and, with the standard lateral blade adjustment, provides ample variety in cut. The blade cap is cast in solid bronze, polished, and adds not only to the good looks of the plane but to the professional feel that a useful bit of extra weight will so often give. Some might argue that a bronze cap is unnecessary, but it's not just the metal that's to be considered here; I find that the action of tightening and loosening this particular design of cap during adjustment is much easier and more effective than the method offered by the conventional and smaller cap screw.

£52.96

### Positive adjustments

positive and give you that feeling of being in control. The low angle blade - set in a bevel up configuration – offers great performance in end-grain and was also found to be consistent in face and edge situations.

The blade comes with a secondary bevel (30°) already 'honed' in; I'd have preferred just the primary 25° myself, as I quite like to see how long I can retain this first bevel before I need the second one.

### Summing up

It comes carefully packaged in a knitted plane sock in the aforementioned box with a mini catalogue and some useful instructions on sharpening and setting up - very helpful if you're a beginner or just in need of a refresher. All in all, it's a very nice block plane indeed; I really enjoyed using it and I suspect that most of us wouldn't object to finding one on our own workbench. MC

### **SPECIFICATION**

BLADE WIDTH	33mm
WEIGHT	815g
OVERALL LENGTH	155mm
OVERALL L × W × H	155 × 46mm
<b>ACCESSORIES</b> a handy	plane sock
for protection	

### **VERDICT**

Comes with a good range of accessories for the beginner, has a very professional feel and offers great value for money

PROS ■ Solid cast and polished bronze cap

- Micro-adjustable depth of cut for complete control
- Honed 3mm-thick, O1 high carbon steel blade
- Suitable for the beginner

**CONS** ■ Pre-honed 30° bevel (but that's hardly a problem)

**PERFORMANCE** 



### **FURTHER INFORMATION**

- Axminster Tools & Machinery
- 03331 406 406
- www.axminster.co.uk

I found all of the screw adjustments to be



The blade mouth is fully adjustable and enables greater variety in use



The basic component parts; note thickness of blade



The Axminster low angle block plane, Deluxe version

With the blade cap inverted, the larger contact area for holding the blade can be seen



This trade-rated drum sander from Axminster is ideal for the serious woodworker and for anyone needing to machine a lot of thin materials

### Jet 16-32 Plus drum sander

£949.96

I'd been hankering after one of these for a few years – ever since I spent a couple of workshop days with boxmaker Andrew Crawford. It's ideal for thin components as it takes ultra-fine cuts and doesn't leave tear-out or snipe – dealing with both of which can account for disproportionate wastage where, for example, 3mm thick box-linings are concerned

Jet offer two models suitable for the small workshop – the 10-20 and the larger 16-32. Both use a single drum with interchangeable grits, but the latter (with an extra 310mm sanding width) also includes a leg stand making it, in my opinion, much better value.

The 16-32 Plus will finish boards up to 810mm wide (in two passes) and 75mm-thick, and a quarter-turn of the handle raises or lowers the drum by 0.4mm, making very fine adjustments easy.

### Opening the box

The machine arrived preloaded with 80 grit paper and a box of loadings of different grits. Also included was a tool for changing the papers and an abrasive cleaning stick that will seriously prolong the life of the paper loadings.

Setup was fairly straightforward once I realised that the legs had to be bolted on outside the rails, not inside, as it affects the alignment of the bolt holes. Otherwise the machine comes pretty well ready to go. The instructions include how to fine-tune the alignment of the drum, but I found it easier to judge by results, checking a sanded board with a dial calliper and adjusting accordingly.

#### In use

The feed is by an abrasive belt with a finely-adjustable speed. A point to watch here is the fact that the belt is controlled by a separate switch from the NVR on the drum. So don't hit the NVR and assume that the belt has stopped too because it won't have. Similarly, after a power cut or similar, turn off the dial switch or restoring the power will start the belt running.

Whereas on a thicknesser the feed mechanism is enclosed, on this machine it's not – and it's not impossible to get your fingers nipped between the belt and the drum

The inclusion of the leg stand (an £89.99 optional extra on the smaller version) makes this bigger machine better value

0





Castors (an optional extra) are useful, but I found these elsewhere for a fraction of the cost



The paper loadings are easier to change using the tool provided



For all its innocent looks, like any sander this machine produces a lot of dust - so extraction is essential

cowling. It's more irritating than dangerous, but just be sure to turn off the belt motor as well as the drum. I'm trying to make a habit of turning off the belt first to be sure.

Working with hardwoods - ash, maple, sapele, oak - I found it best to set the belt at half-speed and take 0.2mm cuts (an eighth turn of the handle) at a time. Simultaneously doubling the depth of cut and feed-rate caused the thermal cut-out to trip, and pushing my luck further resulted in torn paper. Replacement was fiddly the first time but it gets easier with practice. Even so, I tend to use the machine for first-stage sanding, finishing off by hand, rather than keep swapping papers.

Once I got the hang of it all, I found myself really taking to this machine. It's not a thicknesser and shouldn't be used as such, but it will do an excellent job of finishing what the thicknesser started. It's also a lot more refined in use than my thicknesser quieter and kinder to the timber as it goes through – and has no problem at all with things like interlocking grain, which always comes off the thicknesser with tear-out that then has to be handplaned away. This machine is a quick and reliable alternative to that stage – I now thickness timber initially about 0.5mm oversize, finishing off at the drum sander for a snipe and tear-out-free finish.

One thing that's absolutely needed with this is extraction. With the 100mm port on the top connected to my extractor, I'm not aware of any dust invading the workshop. Remove the extraction, though and it's another matter - so think health and safety.

### Summing up

Overall, this is a really useful bit of kit – especially for anyone using a lot of thin materials, such as box or model makers. Something I've really appreciated is that, because of the feed system, it will process pieces that are too short for the thicknesser – as long as I don't try and hurry it. Again, that's great for small-scale makers.

Having used it now for over a year, I'm really pleased I got it. After a few initial teething troubles, I've learnt to respect its limitations and now we get along famously. MF

### **SPECIFICATION**

540mm long × 800mm wide × 1,200mm high **DIMENSIONS** CAPACITY Timber 810mm wide (in two passes)

75mm-thick **ABRASIVE WIDTH** 76mm SANDING DRUM DIAMETER 127mm **DUST EXTRACTION OUTLET** 100mm **FEED SPEED** 0-3m/min SPEED 1,400rpm **TABLE SIZE** 410 × 1,070mm **WEIGHT** 85kg

**ACCESSORIES** Leg stand; paper changing tool; cleaning stick; box of paper loadings

### **VERDICT**

If you're seriously into your woodworking and can afford the hefty outlay, this trade-rated machine won't disappoint. It should also be noted that having dust extraction is of paramount importance

**PROS** ■ Good range of accessories

- Ideal for box or model makers
- Great for machining short pieces

**CONS** ■ Hefty price tag

- Confusing setup
- Belt control takes some getting used to

**PERFORMANCE** 



### **FURTHER INFORMATION**

- Axminster Tools & Machinery
- 03332 406 406
- www.axminster.co.uk

Where the machine excels is in producing a snipe-free finish on thin pieces such as box linings





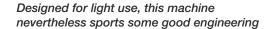
Regular cleaning with the provided stick prolongs the life of the paper

The single drum is controlled from an NVR switch...





... but the belt is separately controlled from the variable-speed dial



### **Charnwood** BS350 Premium bandsaw

Falling into the price band that errs towards affordability over robustness, Charnwood has a range of three saws sharing identical components and design to suit both budget and capacity needs.

You still get a good bandsaw for your money, and a good blade - far too often companies make do with a cheap one that comes with the saw, only to get complaints that the saw doesn't work properly.

The one fitted on all three of these is British made, and in my testing of the biggest model it made short work of the 175mm-thick oak off which I sliced a few 3mm-thick veneers without struggle.

Aluminium features heavily in its build, from the band wheels to the guide post and fence assembly, so this saw will be more at home in a less demanding environment. The two bigger machines are targeted as 'Light Trade' and the entry level one as 'Hobby'.

### **Double bearings**

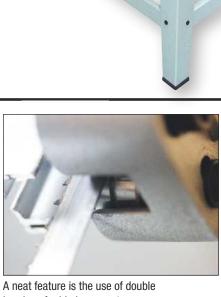
The main difference over any bandsaw I've looked at over the years is the use of double bearings for the side support. This now gives four bearings on the upper guide, and it's replicated below; this is a decent feature as the lower guides are often more simplistic. By doubling up the

bearings the blade has additional support on wider blades to minimise any twist as you turn tighter corners as well as better support on standard straight cutting.

Adjustments are a combination of small knobs and hex key. I thought these to be a little on the small side for a really good nip up to ensure the settings remain constant, more so for older or less strong fingers.

The guide post itself has a double-function locking knob, the internal ring acting as the lock, with the outer adjusting the height accordingly. This works well, although the overall quality of all the adjusters is where cost savings have been made, plastic being used instead of nylon.

Blade tensioning is the now almost standard tensioning wheel and tracking knob backed up with a quick-release tensioning lever for fast blade swaps. You have to remove the fence running rail to remove



bearings for blade support



£579

Twin trunions support the table and allow quick angle setting



This post allows the table to be set perfectly square to the blade



The fence rail removes easily for blade swapping

the blade but the wing nut release below it makes it a doddle to do, so you can swap a blade in around a minute.

### Through the doors

A basic indicator needle shows the tension as a ballpark figure, which can be read through a small window in the upper door so you don't need to open it to check the setting.

A look inside the upper door reveals a spoked aluminium wheel with a small spring and bracket to tension the blade; certainly not as beefy as some, but about par for this price band.

Open the lower door – both are micro-switched for safety while working with them open – and the lower wheel is linked to an external knob that slackens the drive belt for a second speed option when working in other materials. It also reveals a neat feature shared by all three saws in the range: slots in the bottom of the saw allowing the dust to drop into a small drawer in the base.

The rear dust port has a cover cap to keep the dust within the base so that it drops into the drawer if you don't use an extractor. It does a decent job although there was a bit of dust on the floor.

A further handy feature common to all the saws is the switchable worklight on a handy flexible stem. The final area to consider is the cast-iron work table. This is flat and well finished with mitre slots for the supplied mitre fence, which along with the sliding fence allows a variety of cuts to be easily made. I did a few quick tenons to check out both fence options and was pleased enough with the results although there is some play in the mitre slot as the fence isn't of top-end standard, but is sufficient for general use.

The slots aren't standard, though, so an aftermarket fence won't fit if you are looking to upgrade.

#### Summing up

So although not the heaviest of builds out there, nonetheless the Charnwood pulls its weight and comes up with decent performance, but it needs to be looked after in the more robust light trade environment for which it is badged as suitable. AK

### **SPECIFICATION**

MAX CUTTING DEPTH 225mm

THROAT WIDTH 340mm

**MOTOR** 1,100W BLADES 6-25mm

CUTTING SPEEDS 800 & 370mpm

**WEIGHT** 75kg

#### **VERDICT**

Despite being let down by a light construction and cheap additions, this would be a good addition to the workshop for a beginner

**PROS** ■ Twin roller bearings

- Worklight
- Neat dust collector
- Two speeds

**CONS** ■ Light build

■ Cheap plastic knobs

**PERFORMANCE** 

### VALUE FOR MONEY

### **FURTHER INFORMATION**

- Charnwood Woodworking Machinery
- **■** 01530 516 926
- www.charnwood.net



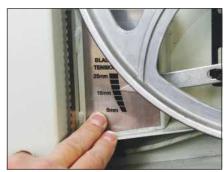
The blade dealt with oak consistently and cleanly



As an indication of the collection feature, this is from one rip cut



A tensioning lever allows fast blade swaps



Tensioning can be assessed with the indicator



Initial tensioning is achieved with the top adjuster

Discovered at the Totally Tools show, these premium screws are awarded top marks

### Optimaxx screw range



If you've ever bought cheap screws you'll know the pitfalls associated with them. While premium screws abound to counteract such problems, these from Optimaxx are a little different...

> These screws aren't the only ones that will self-cut without a pilot hole but with the Optimaxx's wide and sharp threads starting right at the very tip, along with a groove in the point to gain additional clearance, they cut very

quickly, biting into the wood and pulling in swiftly.

### Raised ridge

From

A sawtooth-like serration on the first few turns of the thread severs the wood fibres to aid clean cutting progress, and a lubricant coating minimises friction as the screws bite, with the longer screws

benefiting from this the most here.

I've seen screws that self-countersink, but these have a raised ridge that cuts the head recess. They do work, but when used in a pre-countersunk hole these ridges can keep the head slightly above the surface. The Optimaxx countersink has 24 flutes cut into the underside so that the countersink remains the same-sized profile and will therefore sit flush.

These grooves certainly do a sterling job, especially on a melamine-finished board, zipping away the surface like a dedicated rose-type countersink, so that the surface is cut cleanly for a premium finish.

Trying them against another quality screw I found that the contender crushed the countersink into the melamine while the Optimaxx excelled in cleaned the countersink area cleanly.

### Summing up

I'm impressed. AK

### **SPECIFICATION**

Sizes

 $3.5 \times 20$ mm  $- 6.0 \times 180$ mm

### **VERDICT**

These wood screws incorporate a number of unique features and they work excellently. The fact they contain 24 slots that self-countersink into all materials without leaving any surface damage whatsoever is a real plus point. They are definitely worthy of full marks!

- PROS Self-countersinking head
  - Very sharp
  - Fast clean-cutting threads

**CONS** ■ None

**VALUE FOR MONEY** 



### **FURTHER INFORMATION**

- Proconnect
- www.optimaxx-uk.com

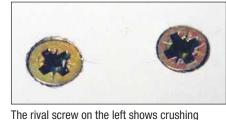




With the screws removed the Optimaxx hole on the right shows a clean countersink



Serrations on the lower threads minimise friction as it cuts



around the perimeter of the head



A sharp point and long clearance flute help prevent splitting without piloting



These grooves work to remove waste for clean countersinking

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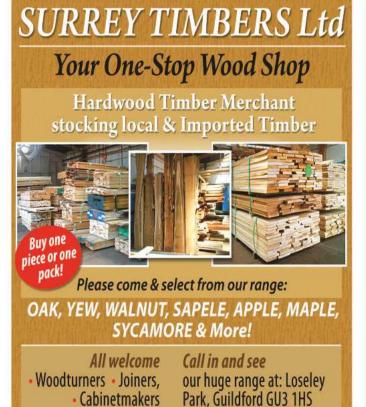
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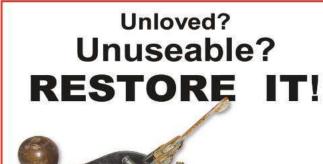
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Stanley No.5 'before & after' photo courtesy Peter Hemsley - The ToolPost

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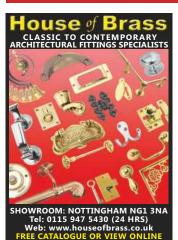


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### £50 + P&P, or can be collected **01482 706 283 (East Yorkshire)**

Leigh Dovetail Jig Super 18. Very little DIY use only. VRS router support and chip collector, unused; £350 + P&P, or can be collected 01482 706 283 (East Yorkshire)

### Leigh FMT jig Pro model.

Very little DIY use only; £350 + P&P, or can be collected **01482 706 283 (East Yorkshire)** 

Tormek SVH-320 planer blade jig. Complete with instructions; £80 01793 771 898 (Swindon)

#### Kity 613 bandsaw.

180mm depth of cut, includes stand, blades and inserts for table; £275 – buyer collects **01497 847 065 (Hereford)** 

### Old tools, smoothing planes, metal and wood, various.

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#### **Exotic Hardwood.**

Short boards, 36in and 24in  $\times$  6  $\times$  2, £6 each; part boards £5. Some turning blanks 2  $\times$  2  $\times$  10in. Buyer collects **0208 675 0132 (London)** 

### Woodworker magazines: 1951–1959 complete.

Many other part sets from 1960–1990; odd copies from 1920–1922. Open to offers **01633 874 918 (Cwmbran)** 

### Axminster woodturning lathe (240 × 330mm).

Extras: 16 chisels, chuck index ring, hole boring kit; £250 – buyer collects **01223 503 860 (Cambridge)** 

#### Record 521/2 ED quick-release vice.

Good condition; £45. Two No. Disston saw 558mm, USA, with applewood handle; £2

0208 6641 4238 (Surrey)

### Screwfix 305mm combination dovetail jig.

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#### 01460 54350 (Somerset)

### Record 7in woodworking vice,

VGC; £55. Two Disston saws; £40. Carpenter's tool box, no drawers; £30. Seven planes, Stanley and Record; £230

0208 6641 4238 (Surrey)

### Bosch GOF 2000CE professional

**router** – brand new with accessories, unused; £250

01629 814 572 (Derbyshire)

### Woodrat including Bosch router GOF1700; £350. Elektra Beckum

HC260M planer/thicknesser on stand; £270. Chip extractor; £80. Kity table saw 419 with extensions and accessories; £250. KGS331 chop saw; £100

01225 330 521 (Bath)

### Triton 2000 Workcentre.

Comes with wheel kit and dustbag fitted with Triton 235mm saw, workshop space needed; £300 01908 569 217 (Milton Keynes)

01300 303 217 (Militoli Reylles

### Scheppach TS2000 table saw with sliding carriage. Very good condition; £250

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Quantity of bone dry oak, walnut, yew and elm;  $\mathfrak{L}400$  01993 703 357 (Oxon)

#### Sandpaper and emery cloth. Various grits, rolls and sheets 01613 395 161 (Lancs)

Record 405 Multi-plane with 37 cutters and nosing – hollow and round bases. Excellent condition; £95. Stanley (USA) Compass plane No.20, excellent condition; £60 01403 785 575 (West Sussex)

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

### Woodworking hand tools,

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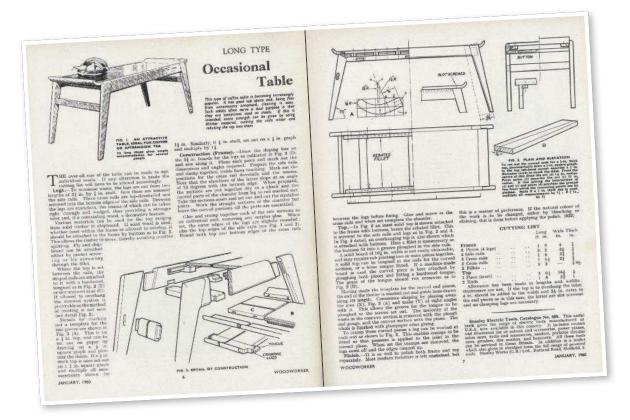
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My advertisement (max 20 words please) reads as follows:				

## An occasional table

Published in the January 1960 edition of The Woodworker, this occasional table presents a bit of a challenge but the end result is well worth the effort



One could argue that, unless a piece of furniture is in constant use throughout the day and night, it must surely be classified as 'occasional', but this is probably a question best dealt with by the philosophers in any bar room snug in the country. Probably more frequently referred to as a coffee table, this type of long and low piece of furniture really came into its own in the 1950s and '60s.

First published in The Woodworker of January 1960, this project would have made a nice start to the year for anyone feeling like a bit of a challenge. Reflecting the current fashions for minimal decoration, this table would have looked its best in beech or a similarly light coloured timber, with maybe a more highly figured piece for the top. The base is a classic design for the time, with its splayed and tapered legs which curve into the rails, a device that I've always attributed - possibly wrongly - to the late Sam Maloof.

The real stars of this design, however, are the curved up ends of the table top.

### A welcome challenge

It's a simple device, but one which lends a great deal to the overall design of the piece, and is readily achievable - albeit with a modicum of care and skill - by your average woodworker. Although it's getting increasingly difficult to pick up a table like this in your local charity shop, I was lucky enough to score one a few years back; it needed a bit of work and this was probably the only reason it hadn't been snapped up by a furniture dealer. The mass-produced version featured an additional lower shelf, but it would be the one-piece curved and veneered ply top which would set it apart from the home-made one.

When it comes to making, a small curved component like this should only ever be viewed as a welcome challenge, and,

with the right moulding plane, is readily achievable by all. Probably the trickiest bit would be joining the curves onto the table ends; a sliding screw joint was one of the options offered in this plan, but dowels or a full-length loose tongue & groove could also be considered. Nowadays most of us would deploy the trusty biscuiter, but it's the clamping method suggested back in 1960 which would be hard to better in this sort of situation. By making the curved lip slightly overlength, it can be trimmed down at each end to leave a very useful lug onto which a sash clamp can be hooked. Once the glue is cured, the lug is cut off and a bit of careful cleaning up with plane, scraper and abrasives will sort things out; all that's left to do is apply your favourite finish. WW

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