FREE! - The Essential Workshop Guide 2013

# WOODWORKIG Plans & Project & technical manual Issue 77 February 2013

Machine Workshop
Bandsaws

FEATURES:
Monday Group
- Stile Building
My Working Day
- James Hatter

Techniques Bench Planes part II

Tools of Yesteryear Preston Plane

## **PROJECTS:**

- Portable Book Rack
- Turned Diabolo Box
- Plans For You Washstand
- RouterCentric Butlers Tray
- Kevin Ley's Walnut Side Table

TESTS:
Skil corded drill
Mirka abrasive mesh
Wood-Mizer sawmills
ZIN Bosch compound mitre saw

# Real Bosch! How To Guide



Ever wondered how the professionals do it? Not sure and need some advice on doing a new task?

Not only is there the guide below, but you can also have the workshop wizard Alan Holtham run through this task in the online "How To" video by scanning the QR code with your smart phone or alternatively visit our You the channel at the bottom of the page.

#### Making a Raised panel door

In this issue Bosch and Alan help you out with a guide to cutting and assembling a raised panel door using a router and worktop jig.





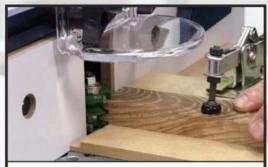
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You will need a powerful ½" router, a router table and a set of panel door cutters



The timber must be thicknessed precisely



Use a homemade jig to scribe the rail ends



Adjust cutter height to machine profile



Make trial cuts and adjust height until joint is flush



Machine the profile on rail and stile edges



Form the panel mould with progressively deeper cuts



Assemble the door, sand the joints and radius the outer edges





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# Welcome from the Editor

#### Past, Present, Future

ello Everyone, here we are firmly entrenched in 2013 hopefully not snowed in, but who knows with our increasingly unpredictable weather! Time seems to move at incredible speed these days; the seasons appear to fly by. We know it is just our own perception, time after all is a human concept not recognised by the Universe, although we can observe it slowly flying apart and expanding into the infinite inky blackness of deep space. Meanwhile here we try to go about our daily lives earning a crust, the world bathed in economic woes and brimming with natural disasters and manmade tragedies. It doesn't do to watch or read much news, as we can't suffer for everyone else; that is the danger of global media: we also feel for other people anywhere in the world.

Now for the good news, and Woodworking Plans & Projects magazine is a perfect escape from reality, a chance to use hand skills and brain coordination in a satisfying way that human beings seem to need and crave. It's a great way to make contacts which you can do via the Woodworkers Institute



Many hands make light, fun work; the Monday Group are a perfect example



website and get questions answered too. One thing that was impressed on me recently by one group of woodworking volunteers, was the social aspect of what they were doing. Too often woodworkers practise their skills in isolation when it is much better to form a group who you can at least call on for advice, and if they are within striking distance you can share resources and help with difficult projects. It is also good for moral support, which we all need now and then. Here at GMC we're a good example of three woodworking Editors whose skills overlap and many more people we can call on for their knowledge and support when needed.

I find myself increasingly working with circa 100-year-old plus hand tools and wondering what life was like for Victorian and Edwardian craftsmen, but also what they would make of our world today?

I think the message is let's keep talking, observing and practising our hard-won skills and enjoy what we do; hopefully this year will turn out well for all of us – and maybe we'll get a good summer? I wish...

Take care and have fun whatever you're doing,

Anthy B

**Anthony Bailey,** Editor Email: anthonyb@thegmcgroup.com

#### SAFETY MATTERS

Woodworking is an inherently dangerous pursuit. Readers should not attempt the procedures described herein without seeking training and information on the safe use of tools and machines, and all readers should observe current safety legislation

#### Problem finding Woodworking Plans & Projects magazine?

You can reserve a copy from your newsagent or call Tony Loveridge, our circulation manager, on 01273 477374 or email him at tonyl@thegmcgroup.com. Alternatively save money and take out a subscription (see left hand panel)

This month in

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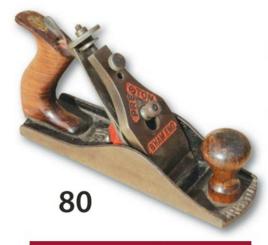
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We let you know about the upcoming events in the world of woodworking, and take a look at what you've been sharing on the Woodworkers Institute Forum









#### Woodwork on the web

To find more great projects, tests and techniques like these, visit our fantastic website at:

www.woodworkersinstitute.com





# MARADE

All the latest news from the world of woodworking, plus tips, letters and images from the Woodworkers Institute forum



(Khaya ivorensis) except the clock and the hinges,

I have made everything. It is 230mm tall - to the top of the finial - 150mm wide and 100mm deep.

C & C welcome.

Beautiful work!

Claude

**Dalboy** 

I like this a lot. Inspirational. Take care.

Don W

Very good. Some fine intricate work. For me the clock face seems a bit on the small side. Well made. Regards,

Ted

Thank you all for the comments. This was my first clock of this type of build, as I normally turn my larger clocks.

Ted, I think you could be right. I used a set of plans from a magazine for the main carcass and added the columns to the design as I felt the front just needed something else, also the rosettes and the finial on the original are brass.

I did think about making some small ball feet which would have lifted it a bit. I am still learning in everything that I make.

Dalboy



## THE VINTAGE FURNITURE FLEA

Now visiting London three times a year, The Vintage Furniture Flea has seen many an accolade. As the popularity for the vintage home soars, the event is incorporating even more furniture into their vintage fairs, so this is the place to go if you want to pick up a hidden gem.

#### **DETAILS**

When: 10 February, 2013

Where: York Hall, 5 Old Ford Road, Bethnal Green,

London, E2 9PJ

Web: www.judysvintagefair.co.uk

### Social media & competitions

If you're not already familiar with our Facebook and Twitter pages, then do take the time to have a look and follow us. On Facebook, search for 'Woodworkers Institute' and on Twitter, we're @woodworkers. You can keep up-to-date with everything that's happening on the website, in terms of new article uploads, the latest press releases, weblogs, as well as a host of special features.

You can use our Facebook and Twitter pages to meet

other woodworkers. interact, socialise and get news of regular competitions.



PHOTOGRAPH BY MAKER

## **South East Woodworking** & Power Tool Show

The next South East Woodworking & Power Tool show takes place in March at the Kent County Showground at Detling, near Maidstone. The Kent Showground is almost certainly the



most accessible exhibition venue in the South East, feeding as it does directly off the M2 and M20, thereby linking the whole of the South East motorway network.

This year's show features demonstrations by Mick Hanbury, Dave Reeks, Jennie Starbuck, wood sculptor Bill Prickett and finishing demonstrations from Mark Raby. Nelton Exhibitions are now also delighted to announce that woodturner Tony Wilson will be demonstrating at the show. An impressive list of demonstrators plus a host of your favourite trade brands promises to make this a great day out! There's free parking and tickets are just £6 in advance.

#### **DETAILS**

When: 8-9 March, 2013

Where: Kent County Show Ground, Detling Hill, Detling,

Maidstone, ME14 3JF

Tickets: £6 in advance Contact: Nelton Exhibitions Tel: 01474 536 535 Web: www.nelton.co.uk

## From the forum

#### Veneered box

Veneered in etimoé (Copaifera sailkounda), ebony (Diospyros spp.) and boxwood (Buxus sempervirens) stringing. Inlavs American walnut burr (Juglans nigra). All handmade - no machinery, which gives an 'antique' feel. 127mm wide x

83mm dia. x 83mm high. Self made key. Plush velvet lining. French polished. C & C welcomed.

Mike Foden

Very nice, Mike! Nice crisp inlay work.

Cheers, Ian H

Nice box, Mike and the inlay is so neat - you would think it grew there!

Ian Thorn

Thanks, Ian H for the kind comments. Ian T - thanks, it was made many years ago, so the inlay has probably taken root!

Mike

# The First Annual Craft Skills Awards

His Royal Highness, The Prince of Wales spoke of his 'huge admiration' for craftsmen and women at the launch of the first annual national Craft Skills Awards.

The Craft Skills Awards have been developed by Creative & Cultural Skills, in partnership with the Crafts Council, the Heritage Crafts Association, the Prince's Foundation for Building Community and the Department for Business Innovation and Skills, to promote excellence in the teaching, learning, development and promotion of craft skills in the UK.

They will not only celebrate the outstanding work that is already being done in the sector, but raise the public profile of craft, and encourage people to consider it as a career choice.

The Awards are open to companies or institutions, teachers, tutors, workshop leaders, masters or individuals. Winners will be awarded £2,500 to be spent on training, craft equipment, skills development, business support, travel or a visit to extend their knowledge and understanding of craft.

Entry is by open application with nomination or endorsement by an individual of appropriate knowledge and standing, or a senior representative of a relevant and appropriate organisation. Applications can be made online by noon on Friday 15 February, 2013.



#### DETAILS

When: Entry by Friday 15 February, 2013 Contact: Craft Skills Awards Tel: 020 7015 1800

Web: www.craftskillsawards.org.uk

里 HOTOGRAPH COURTESY OF

# CHAIR MAKING COURSE - MARK RIPLEY

Instructed by expert designer/maker Mark Ripley this course offers you the opportunity to learn about chair design principles and ergonomics before making joints, assembling, shaping, sanding and waxing your chair. You should be practically minded with some woodworking experience in order to join this course. The fee for the chair making course is \$625. This includes the cost of materials for the chair and use of tools. The chairs are not upholstered due to time constraints.

#### **DETAILS**

When: 4-8 March, and 8-12 July, 2013

Where: Boat Building Academy, Lyme Regis, Dorset, DT7 3JN

Web: www.boatbuildingacademy.com



#### YANDLES SPRING SHOW

Yandles Spring Show is always a highlight on the woodworking events calendar.

Thousands of visitors come from across the country to enjoy the informal and friendly atmosphere created within the surroundings of this historic timber yard.

The usual working site is transformed with marquees hosting a vast array of leading craftspeople. Live demonstrations will keep you entertained with new techniques to learn, useful advice on tools and handy tips. The sawmill itself is converted for use by international manufacturers, traders and publishers displaying the hottest new product lines.

When: 5-6 April, 2013

Where: Yandle & Son Ltd, Hurst Works, Hurst, Martock,

Somerset, TA12 6JU Contact: Yandles Tel: 01935 822 207 Web: www.yandles.co.uk



# Power Tool, Woodworking & Garden Machinery Show 2013

Webster Power products would like to invite you to their Power Tool, Woodworking And Garden Machinery Show 2013 at The Lanark agricultural Centre at Muirglen in Lanark.



The exhibition

will include demonstrations in sanding, sawing, turning, drilling, screwdriving, cutting and laser measuring.

Visit the garden section where Stihl, Viking, Etesia and Mountfield will be demonstrating walk-behind and ride-on mowers.

Whether you are looking for a chainsaw, brushcutter, blower or shredder for your garden they'll have the right machine for you!

Suppliers include Makita, Festool, Bosch, Fein, Stihl, Viking, Trend, Mountfield, Bessey, Stanley, Scheppach, Record Power, Sealey, Dickies, Kity Woodster and many more. The show is free to attend with free parking, plus prize draws, demonstrations and refreshments.

#### **DETAILS**

When: 22-23 March, 2013

Where: The Lanark Agricultural Centre, Muirglen, Hyndford

Road, Lanark, Scotland, ML11 9AX Contact: Webster Power Products

Tel: 01698 381 392

Web: www.websterpowerproducts.co.uk

Send in your letters, tips, advice, digital photos and questions relating to woodworking to: WPP Readers' Forums, 86 High St, Lewes, East Sussex. BN7 1XN Alternatively, email simonf@thegmcgroup.com



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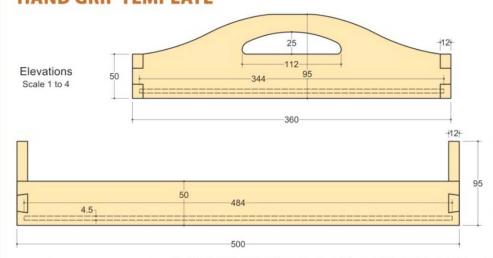
TO THE VALUE OF £ Card Type VISA **(D)** 

# RouterCentric Butler's tray

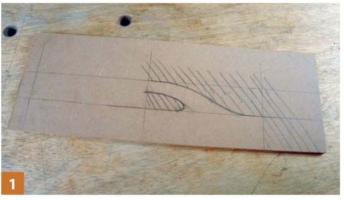
This tray is a standard design but it uses quite a lot of routing which is why I thought this would be a good one to try. I chose luan for the solid components as it is slightly pinky and will colour up easily with dye, and a thin Far Eastern ply for the base which can be coloured to match. It must be noted the luan is rather soft and not easy to cut crisp jointwork

When its time for 'tiffin' you need a decent tray for those drinks and canapés! Here's **The Editor's** spiced-up router version of this traditional English dining device

#### HAND GRIP TEMPLATE



- The tray ends need hand grips so the best way is to make a template that a bottom bearing guided straight cutter can run off. Because it is easier to make one half of the shape rather than do both which may not match that is exactly what I did.
- 2 If you want to batch produce trays use this half template to make a new whole one by cutting it out and turning it over to complete the shape.



The hand grip area must be big enough for larger hands



Standard metal files are quite suitable for cleaning up the shape

The finished template is ready to use even though the left-hand side is left rough as this is the cutter overrun area. It is shaped slightly to mimic the right-hand part of the opening.

The template is affixed to one workpiece blank using special fabric-based double-sided tape supplied by Trend Machinery. It is very adhesive but has slight sponginess that ensures both surfaces stay fixed together. Bandsaw away most of the curved outside edge.

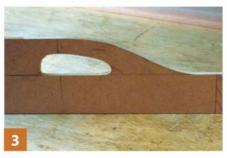
5 I used a drill press and a Forstner bit to remove the bulk of the hand grip waste. You can use a flat bit and cordless drill if that is available but do drill into a sacrificial board.

The next operation is to remove the remainder of the waste using a bottom bearing guided straight cutter in the router table. This entails gradually 'grousing out' the waste rather than rushing the cutter straight to the template and taking out too much, straining the cutter and causing too much resistance.

While the template is attached in the same position repeat the trimming operation on the outside of the handgrip. In both cases always machine into the direction of cutter rotation and always machine 'downhill' of the grain. Turn the template over and repeat the last three steps to complete the shaping.

Using a half round file smooth the surfaces so they meet sweetly. Keep the file level for a square edge.

The first templated handgrip end is now double-sided to the other blank and as before, bandsaw the



To batch produce trays use this half template to make a new whole one



Parting the two surfaces afterwards needs to be done carefully as the tape bond is so strong



Do not let the Forstner clip the edge of the template. Start with it lower than the template but not touching the wood



Extraction is important as quite a bit of dust is thrown up when profiling



Machine from the left running down to the right – this will avoid tearout



The file needs to push at a diagonal to cut both across and lengthways so the curve is smooth

outer curve away leaving enough to trim off on the router table.

#### **SAFETY NOTE**

It was during profiling that I found the bearing was burning the wood because it had siezed – fortunately I had spares in my kit box. A quick swap over and all was well again, so I could continue the project.



Leave about 2-3mm overhang to machine off later

10 Using exactly the same procedure as before, the handgrip waste is drilled out ready for profiling.

Again 'grouse out' the waste layer by layer, but do not be too ambitious trying to rout to the profile. Take time over this operation to get a neat, burn-free result.

12 Machine the outside of the curve running 'downhill' of the grain. This is important because if you work up to the top of the hand grip, the wood will tear out. Now lift off and flip over the completed workpiece, tape it down and machine the other half of the part-completed workpiece.

13 You should now have two identical profiled components. Use a small radius roundover cutter and bearing to shape the top edges. Use a lead-in pin as you will be starting at the leading end of the workpiece.

14 Now repeat the rounding over inside the handgrip on both workpieces. This will make the tray comfortable to hold and admit larger hands.

The tray sides will be rounded later as the inside edges are stopped cuts. Instead slot all components ready to take the tray base. The ply for this was bought as a ready cut quarter sheet with a thickness of 4.5mm. Luckily I happened to have a 4.8mm straight cutter which was close enough. Set the slot in by about 10mm, enough not to weaken the wood.

The sides and ends need to be jointed together and I decided for strength that a single dovetail on the ends would be enough to resist pulling apart. These are marked using a sliding bevel and all the joints should be marked A, B, C and D to avoid mixup. Hatch the waste so you cut the right parts away.

17 The first light cut is made vertically to create a notch for the blade to sit in when making the angled cuts. Make clean cuts to the line and finish level at the bottom of each cut.



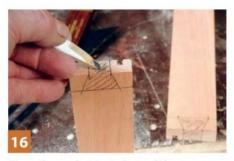
The Forstner will only take out a limited amount of material



If you start from the middle of the handgrip a lead-in pin is not essential



The machining direction is the opposite to an external cut



Keep the socket just clear of the base slot



Repeated slices will take out the waste, or use a coping saw



'Grousing', my term for width-wise removal layer by layer, allows you to sculpt out the waste ready for a final run around the template



You will need the lead-in pin here to avoid any kick-away by the cutter



Do repeated passes to clear the tightly packed chippings



If you have a dovetail saw use it for a finer cut finish



The chisel is being used to transfer the socket shape to the dovetail portion



A light paring should get the joints to fit





Blending the curves in is important for the look and feel



Care in clamping should result in tight, well-fitting joints

🐧 A bandsaw with a six skiptooth blade can be used to cut the waste away working from each direction until you have a neat level cut along the bottom line.

Luan is a rather soft wood, not many stages removed from balsa wood, so a very sharp chisel is required when cleaning up the tray



Use a fine abrasive to avoid obvious scratches



Aliphatic resin glue gives a good quick bond



Once this fillet is trimmed off and sanded the groove will become invisible

corner joints. A good but not over-tight joint is desirable to avoid any splitting.

The dovetailed ends also need a bit of cleaning up for a neat gap-free fit. Note how the dovetail shape just misses the slot that holds the tray bottom.

The tray sides are now rounded over after refitting the cutter and using the table fence not the bearing. Lines are drawn where the roundover needs to run out on the inside edge then a push-on pullaway cut made, but visually starting and stopping before the lines as the outer radius of the cutter will start further than you may imagine.

Sand the flat surfaces thoroughly to a finish on the inside faces, removing any pencil markings of course.

Sand all radii thoroughly and blend the curves into the flat sections. Now do a dry assembly to check the bottom size. Cut out the ply and check the fit.

Apply glue to the joint meeting edges and slide the ply into place and fit all the joints together in the correct order; A-A, B-B and so on.

Clamp the tray up tightly without creating distortion and measure from corner to corner to ensure squareness. Readjust the clamps to correct any inaccuracy and wipe off surplus glue.

The grooves were machined right through, so once the glue has set clear remove any glue from the visible slots with a chisel and glue, push in matching fillets of wood and trim off flush. Finally sand the outside faces with the grain; avoid cross grain scratches as a dark finish will show them up. I swamped the surfaces with a Georgian mahogany spirit dye

and wiped off the excess and spray lacquered the tray once the dye had dried.

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## MACHINE WORKSHOP



andsaws are capable of crosscutting and ripping, cutting bevels and mitres and, as the blade is narrow and the work can be moved around it, cutting curves. Because the blade cuts downwards towards the table, the work tends to be held down by the cutting action and thus the risk of kickback is eliminated. Bandsaws can therefore be safely used for cutting much smaller pieces than circular saws. They can be used for a wide range of tasks from cutting veneers to making accurate saw cuts for dovetail joints. Compared to tablesaws they take up little space; for those with a small workshop or limited budget their compactness and versatility makes them an excellent choice where there is only scope for one machine. They range from small bench-top models to the vast bandsaw mills used in sawmills. I will look at mid-range saws with a depth of cut of around 150-200mm and a throat depth of 300-500mm, but the principles apply to most machines in the amateur or small trade workshop.

#### How they work

A bandsaw consists of an endless steel blade with teeth on one side, which

rotates around two or three wheels, the bottom one of which is driven by a motor. There may also be a facility to vary the speed for cutting different materials. Adjusters are fitted to the upper wheel to enable tensioning and tracking of the blade which runs through a slot in a cast or pressed steel or aluminium table and cuts with a downward action. The blade is supported laterally above and below the table by blade guides which may take the form of blocks or bearings and it is prevented from moving backwards in the slot by means of thrust bearings. The whole upper blade guide assembly is adjustable to take account of the height of the work. The table, which will tilt to enable bevel cutting, is slotted to take a mitre fence and has an adjustable fence fitted to one side.

#### **Features**

1 Bandsaws can be fitted with a wide range of different blade types depending on the work. Blade selection is a subject that warrants an article of its own as blades vary in width, tooth pitch – measured in teeth per inch (tpi) – and form – the shape and set of the teeth –

A selection of blades makes your bandsaw versatile

but broadly speaking these principles should be followed. Straight cuts are best achieved with a wide blade while curves require a narrow blade. The tooth pitch required is determined by the thickness of the material; as a rule of thumb there should be no less than three and no more than 12 teeth in contact with the material at any time during the cut. Tooth form may be; 'standard', which is best for fine cutting and joint making; 'skip tooth' - every other tooth removed - which is better for rip cutting and curves; or 'hook-tooth', which is best for ripping in thick material and cutting veneers. Also worth mentioning are variable pitch blades where the pitch of the teeth changes from fine to coarse and back again. These are designed to reduce vibration when cutting thick stock. A good general purpose blade is a 6-10mm skip tooth blade of 4-6tpi, but for best results select a blade specific to the job in hand.



Speed is changed by moving the belt to a different pulley set



The cast table has a removable insert to access the lower guides

Some machines may be fitted with variable speed. Higher speeds are used for thin or soft materials and for blades with coarser pitch. Slower speeds are used for hard or thick materials or finer pitched blades. Most woodworking can be done at the higher speeds. I have only ever altered the speed on my own bandsaw for cutting metals.

Correct tensioning of the blade is important to ensure accurate cutting and avoid placing unnecessary strain on the bearings. This is achieved by means of a tensioning device fitted to the upper wheel.

Tracking the blade - positioning the blade on the wheels correctly will ensure that the blade stays on the wheels and runs as straight as possible. Tracking adjustment is provided for by a mechanism that alters the tilt angle of the upper wheel.



The tensioning knob raises the upper wheel to tension the blade



Quality machines will be fitted with bearings for the upper guide system

A good quality cast steel or aluminium table provides the best support for the work and ensures accuracy. An insert around the blade is removable to allow access to the lower blade guides.

The upper blade guide mechanism is fitted with blocks or bearings to support the blade and a thrust bearing to provide resistance to the cut. The whole mechanism is adjustable for the height of the work. To achieve the best cuts the guides should be as close as possible to the workpiece.

The lower blade guides, which may also be blocks or bearings, support the blade below the table. These are often metal blocks but may be replaced with blocks of hardwood, ceramic or other synthetic materials to achieve cooler running of the blade.

The table of the bandsaw is provided with a tilt mechanism



Tracking is adjusted by a knob that alters the tilt of the top wheel



The lower guides may be blocks or bearings



The tilt mechanism for table adjustment

which allows it to be positioned to enable bevel cuts.

A mitre gauge which runs in slots in the table top will facilitate cross cutting and mitring.

A fence is provided for ripping and accurate joint cutting. Better fences are adjustable to ensure squareness with the table top and their angle in relation to the blade can be altered to take account of any blade drift - a tendency for the blade to veer to one side when making a cut against the fence.



A mitre gauge is useful for cross cutting and angled cuts



The fence allows for accurate ripping



A single point fence is useful for curves



A guard protects fingers under the table



The NVR switch is a useful safety feature



Keep your pushstick where you will remember to use it



Dust extraction is important for the health of your lungs

another and running true. Check

to adjust this if necessary. Always

maintenance work.

your machine's manual to see how

switch off and disconnect the machine

Begin by fitting the blade. In

from the mains before beginning any

1 1 A subsidiary 'single point' fence may be fitted to the main fence when cutting multiple curves or when resawing – cutting thick stock parallel to the wide face.

Safety features

12 The wheels and other moving parts – apart from the exposed part of the blade – are enclosed within the machine casing, the access doors may be fitted with micro switches to prevent operation of the machine with the doors open. A guard is fitted to prevent contact with the blade below the table.

An NVR switch is fitted so that in the event of power being

disconnected the machine will not restart when power is restored until the start button is pressed.

14 A pushstick is provided to ensure that your fingers never need to come close to the blade. I always leave mine on the table so that I have to pick it up before I can use the machine.

15 A dust extraction outlet is provided to reduce exposure to harmful wood dust. Bandsaws should always be used with a fine dust extractor to minimise health risks.

Setting up your bandsaw

Bandsaws are extremely versatile but can be frustrating to use if not set up properly. Setting up the machine for accurate cutting is not difficult if these basic procedures are followed: before setting up, the wheels on your machine must be aligned with one order to do this you will need to remove the fence and table insert, release the thrust bearings and guides and open both top and bottom access doors. Unfold the new blade – wear gloves and eye protection – and, with the teeth facing you, slide it into position on the wheels through the table slot.

17 Next, tension the blade. If the machine is fitted with an accurate tension scale or gauge then you can use this to determine the correct tension. Otherwise you may gauge the tension by 'plucking' the blade until it gives a clear tone rather than a dull thud. This is difficult to describe but with a little experience you will soon hear the change in the sound when the blade is sufficiently tensioned.

18 Next the blade must be tracked with the tilt mechanism. The blade will track towards the direction of the tilt of the top wheel. The tracking of narrow blades should be adjusted so that



The machine prepared for a new blade

they run in the centre of the wheels. Broader blades should be tracked to run near the front of the wheels so the tips of the teeth are just clear of the tyre.

19 Check that the blade is square to the table and adjust the table if necessary.

Adjust the top and bottom thrust bearings so that they are about 0.4mm behind the blade. Use a feeler gauge or folded paper to set the spacing.

21 Finally, set the guide blocks or bearings about 0.1mm from each side of the blade again using a feeler gauge or a single sheet of paper as a guide.



This 15mm wide blade is tracked towards the front of the wheel



Use a feeler gauge to check the thrust bearing clearance



An engineer's square is useful for checking the blade is true

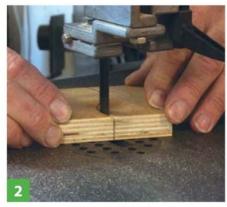


The guides should be about 0.1mm from the blade

## How to work safely and get the best from your saw



A respirator will give added protection when cutting MDF



Curves can be cut freehand



The mitre gauge helps with accurate crosscutting



Always use a pushstick when ripping



These adjusters enable the fence to be aligned for blade drift



Round stock must be well supported

Always wear eye protection, remove jewellery and tie back long hair or loose clothing. A dust mask or respirator is a good idea to minimise the risk from fine dust especially when using MDF and other manmade boards.

2 Unlike circular saws, bandsaws may be used for freehand work. Both hands should be used to guide the work and care should be taken to keep fingers well clear of the blade. Jigs or clamps may be used to hold small pieces.

Crosscutting is best done using the mitre gauge for accuracy. Clamping the work to the gauge will ensure it does not move during cutting, especially when using the table tilted for bevel cuts.

A Rip cuts are made using either a single point fence or alternatively, the rip fence.

5 The rip fence should be adjusted to counteract any blade drift.

When cutting round stock suitable support such as vee blocks or a sled should be provided. The work should always be cut through the centre or the cutting action of the blade may cause the work to rotate.

# Unbeatable **Sanding Power**



## **76mm Belt Sander**

Triton's TA1200BS Belt Sander is host to many significant features, from variable speed control for improved versatility, to belt tracking adjustment for accurate alignment of the sanding belt.

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Belt Tracking Adjustment for accurate alignment of the sanding belt



Variable Speed Control for working with different materials



Lock-On Button adds convenience with extended use



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**Inversion Clamps** (for use as a bench sander) for rapid coarse shaping













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THE REPORT OF THE PARTY OF THE



# Portable book rack

**Gregory Paolini** guides you through this Arts and Crafts-inspired book rack

ears ago, while researching American Arts and Crafts designs, I took an immediate liking to Gustav Stickley's No.74 book rack. It's shorter than most bookcases, with slats that form a V-shaped trough to hold books spine up. Its D-shaped handholds make it easy to move.

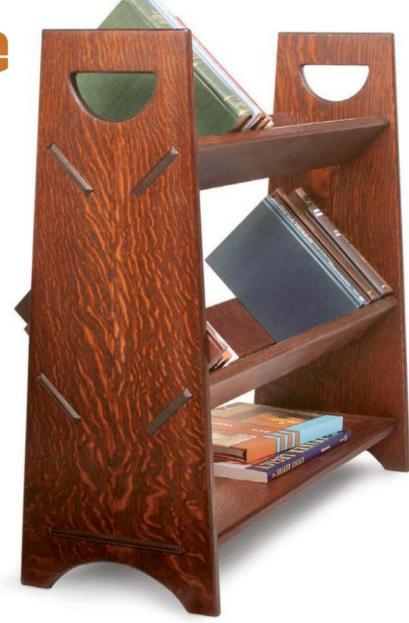
I've made a dozen racks based on that design, from small desktop versions to extra-tall ones that hold compact discs and DVDs. I've also modified Stickley's design. Simple through-tenons replace the wedged tenons, I added a second V-shaped trough in the middle to make the rack more functional, and I tapered the end panels, reflecting the look of the Roycroft designs that I favour. Despite the changes, the book rack retains its Arts and Crafts character. This version, made from quartersawn white oak (Quercus alba), is sized to sit between a couple of Morris chairs.

## Make the end panels and router template

Since the end panels are the focal point, you want boards with maximum figure. Use single wide boards if you have them, or edge-glue narrower boards.

While the panels are drying, make a router template from ¼in MDF or plywood, which you'll use to cut slots for the shelf mortises.

The template – see the drawing – simplifies construction in several ways. It locates the shelf mortises, of course. And because I clamp the template to the inside face of one



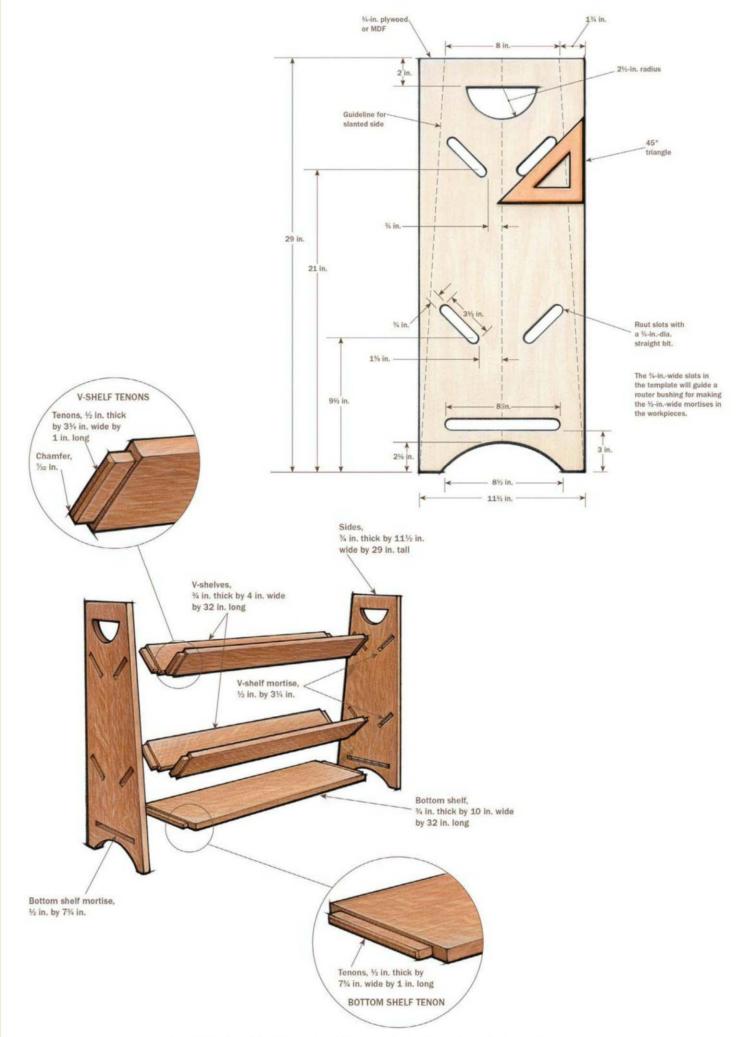
end piece and the outside face of the other, it ensures that the mortises will line up. When laying out the slots in the template, all you have to do is draw the dimensions for the ¼in thick shelves and cut a slot that wide. When using those slots to cut the through-mortises, use a bit and guide bushing. The offset between bit and bushing equals the width of the tenon shoulders. I get a mortise the right width, in the right location.

To avoid tearout when routing through-mortises, I work from one face towards the middle, without popping out the other side. So I rout the bulk of the mortises with the guide bushing, then use a flush-trimming bit from the other side to finish them cleanly.

Make the template 11½ in wide by 29in long – see the drawing. Draw the panel side tapers, handle, and lower arch. Next, draw rectangles



Lay out the slots. Align the template and the triangle against a straightedge clamped to the bench to draw the shelf outlines from





Make the cutouts. Use a straight bit and a fence jig to cut the ¾in slots for the shelf mortises. Use a jigsaw for the other cutouts

representing the full size of the ends of the narrow V-shelves and the wide bottom shelf. With the template drawn, draw layout lines 1/4in from each end of the V-shelf rectangles. For the bottom shelf, draw layout lines 1in from the ends. These define the starting and stopping points for the shelf mortises. To cut the mortise slots, clamp a shop-made fence jig flush with the long side of each shelf outline and plunge cut from one line to the next with a router and a 3/4in bit. Cut out the handle and bottom arch with a jigsaw, then smooth the curves and clean up the sawmarks with sandpaper.

## Mill the oak and cut the mortises

Next, mill all the oak shelves to size and cut the glued-up end panels to length. However, don't taper the



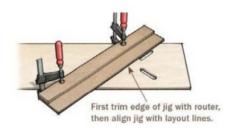
Rout the mortises to partial depth. Use a guide bushing for initial cuts. Clamp the template to the workpiece

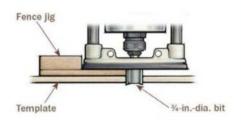
panels until you have finished making all the cutouts with the router.

Make the mortises and cutouts on one panel at a time. Rather than clamping them together and cutting everything at once, I set up the template so that the panels are orientated as copies, not mirror images. In other words, the template goes on the outside face of the left-hand panel but on the inside face of the right-hand panel.

Register the template to the side and bottom of the end panel. You can use a long scrap of wood as a fence to help align the template with the side. Clamp the assembly to the bench and mark a small dot on the bottom of the right foot. You'll use that mark to reference how you laid out the panel.

Set up the router and bushing.

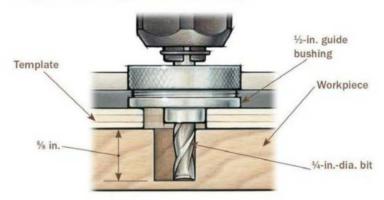




#### Secret to clean through-mortises

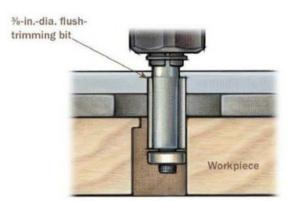
**INITIAL CUTS** 

Begin cutting the shelf mortises with a plunge router equipped with a  $\frac{1}{4}$ -in.-dia. spiral upcut bit and a  $\frac{1}{2}$ -in. guide bushing. Use the same setup to make the curved cutouts. Make these cuts only about  $\frac{5}{8}$  in. deep; don't cut through the work at this stage.



#### FINAL CUTS

Finish the mortises and other cutouts with a %-in. flush-trimming bit, working from the opposite face.







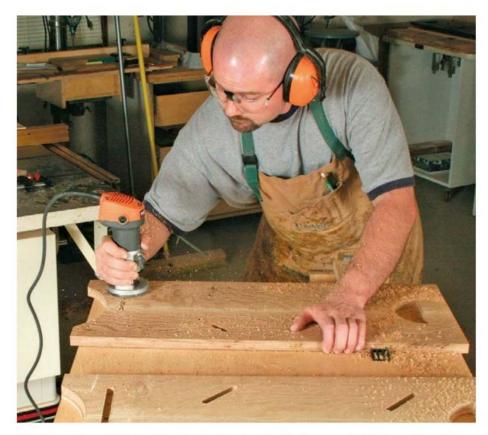
Starter holes for the next step. Drill a hole to allow the flush-trimming bit to enter the mortise. Start with a small pilot hole to locate the centre. To prevent blowout, follow with a larger bit from the other side

¾in wide slots in the template will produce a ½in wide mortise in the oak, using a ¼in spiral bit and a ½in bushing. You could also use a ¾in bit and a ¾in bushing. However, the smaller bit leaves a tiny ridge dead centre in the groove, which comes in handy later on.

Rout the outlines for the D-shaped handle, the lower arch, and the shelf mortises in several passes. Don't cut all the way through. When the cuts are about 5/sin deep, stop and remove the template. Use a jigsaw to remove most of the waste from the handle and the lower arch.

Drill a hole through each shelf mortise. This is where you can use that ridge left by the ¼in bit. I like to use it to centre a ⅙in diameter pilot hole. Then I flip the panel over and enlarge the pilot hole with a ½in bit. This gives me a starting place for the router bit I use next.

Flip the panel over, and finish all the cuts with a ½in flush-trimming bit. I chuck the bit in a laminate trimmer, it's easy to control and lets me easily see what I'm doing.



Flip the work and finish with a flush-trimming bit. To clean up the D-shaped handle and the cutout at the foot, cut away most of the waste with a jigsaw, then use the same bit to smooth the edge



Square up the corners. Cut away the waste in the corners with a chisel. Chop about halfway down, then flip the work and finish by paring from the opposite face towards the centre



The result. You should have tenons with even shoulders, smooth cheeks, and a nice fit

These extra steps guarantee that you won't have any tearout. Square up the mortises with a chisel, working from each face toward the middle to avoid tearout. Finish the panels by tapering the sides on the bandsaw, cutting just to the waste side of the line. I clean up the cuts with a router, using my shopmade edge guide and a straight bit.



Chamfer the tenon ends. Use a block plane to chamfer the portion of each tenon that will be proud of the side pieces, working to a layout line. To minimise tearout, plane the wide cheeks first, then the narrow ends

# Machining tenons on the router table

The best way to machine tenons quickly and accurately is to use a tenoning cutter mounted in the router table. Fit a throughfence to the table's own fence and then do a breakthrough cut with the cutter at the correct height for creating the tenon faces. Set the fence so you take away a first pass at the end of the tenon and use a square pushblock behind to feed the components over the cutter. Be sure to use a test piece first to check all tenoning settings before you machine the actual components.

Machine one face then turn the workpiece over and do the other. Now move the fence back to make the next and possibly final pass, taking away more waste until you reach your marked line. Repeat the operation on the edges although the cutter height will change and may be beyond the reach of the extended cutter. If so, you can cut the tenon ends away with a fine tooth handsaw ready for the next stage.

Next, chamfer the ends of the tenons. Mark a line ½2in from the ends, then plane to that line at roughly a 45° angle. Plane the long edges first, and then do the same for the short edges.

Finally, soften the remaining sharp edges of the shelves and the side panels using a ¼in roundover bit in the router.

#### Fit and finish

Dry-fit the piece. The tenons should slip into their mortises with hand pressure. If you need a mallet, the joints are too tight and you'll need to pare down the tenons with a shoulder plane or a coarse file. Smooth the pieces with a random orbital sander, finishing with 180 grit. Next, hand sand all the pieces with 180 grit paper, working with the grain, to minimise any sanding swirls.

I like to do some of the finishing before assembly, when the pieces are easy to handle. To keep the finish off of the tenons, I wrap them with ½in masking tape.

For a simple finish, I use an oil-based wood stain followed by clear shellac or varnish, mine looked remarkably like one of Stickley's original finishes.

After the stain has dried, glue up the piece. If you get any squeeze-out, let it dry, then peel it off.







Fine-tune the fit. The tenons should fit into the mortises with hand pressure. At the end, you may need to remove a small amount of excess with a coarse file or alternatively a shoulder plane



Dye, then stain. A brownish dye, followed by a darker oil stain, produces a finish that's very close to fumed oak. Mask the tenons to keep finish off glue surfaces. When applying the finish, work carefully to keep the stain out of the mortises



Glue, then shellac. To reduce squeeze-out, put most of the glue on the tenons and only a dab in the mortises. When the glue has cured, apply several coats of thinned shellac. As a final step, rub out the finish

In keeping with the Arts and Crafts tradition, I use shellac as a topcoat. I typically brush on six or seven coats of thinned sanding sealer. After the shellac has cured, I rub out the piece with mineral oil and '0000' steel wool, giving the piece the satin sheen typical of this style of furniture. The finish should provide plenty of protection for a few generations of readers.



This extract was taken from Bookcases,
Cabinets & Built-ins by
Taunton. For a review of this book see Hot Stuff p.45

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# Diablo box

**Mark Baker** tests your turning skills with this attractive curved box

nthony Bailey approached me having seen a project – a diablo box - from my book Woodturning: A Workshop Guide to Shape, and asked me whether I would do a step-bystep guide on how to make one for WPP. I could not refuse such a kind offer - he promised chocolate as a bribe, though I am yet to receive it! So, building on the series that was run some time back looking at projects to get you started in turning, this is something that uses those techniques and builds up your skill level a little further. It is a spindle project - so the grain runs in line with the bed boards of the lathe. While I have used steamed pear (Pyrus communis) for this project, any close-grained dense hardwoods such as sycamore (Acer pseudoplatanus), maple (Acer campestre) and fruitwoods to name a few would also work well.

Mount the piece of wood between centres and use a spindle roughing gouge to reduce the blank down to a smooth cylinder. Remember never to enter the tool into the end grain; instead you have to work from the centre towards the tailstock and reverse the tool so you work from the centre towards the headstock with the cutting. The flute should always point in the direction of cut. The lathe speed needs to be somewhere near 1,200-1,600rpm.



lomm spindle gouge

19mm spindle roughing gouge

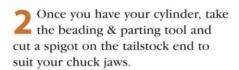
2 or 3mm beadforming tool

19mm side-cut scraper

#### **YOU WILL NEED**

- Timber: 170mm long x 80mm x 80mm diameter. You need to make sure it is defect free
- Scroll or geared chuck with 50mm jaws
- · Jacobs chuck
- · Sawtooth bit
- Revolving centre a point, ring or Steb centre will work
- · Drive spur
- . 19mm spindle roughing gouge
- . 10mm beading & parting tool
- · 3mm parting tool
- · 2 or 3mm bead-forming tool
- 19mm side-cut scraper with radius on corner edge
- · Abrasives from 120-800 grit
- · Finish oil or wax works well
- · Kitchen paper towel
- Personal protective equipment:
   faceshield, dust mask, extraction, etc.





Once cut, remove the wood from between centres. Turn it round and fit the spigot you have just cut into the chuck jaws, then bring up the tailstock and cut another spigot on the tailstock end. You will need this later on when you work on the lid.





PHOTOGRAPHS BY GMC/ANTHONY BAILEY



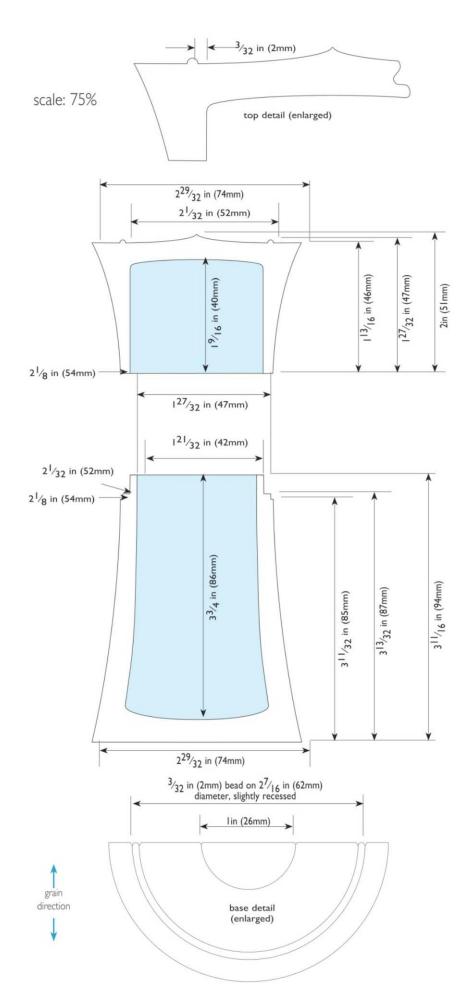




A Now use the spindle roughing gouge to create the two sweeping curves of the main body. You need to work from the highest section down to the lowest so again work from either end. Note the curve is not even. The lowest point will be the join about one-third of the way down from the tip edge of what will be the lid – that is the end that is now nearest to the tailstock.

Once the curve has been cut, use the beading & parting tool to cut what will be the joining spigot between the two sections to the right depth. As mentioned, this is at the lowest part of the curve. Do not make it too wide or there is a greater likelihood of a grain mismatch when the pieces are placed back together.

Now take a thin parting tool and, leaving a very small section of the spigot cut on the top lid part, part almost all the way through then stop the lathe and either twist off the lid or cut the final tiny bit of wood left by the parting cut with a hacksaw to remove the lid from the base section.



Let's look a cheat's method to remove the bulk waste section of the box. Fit a Jacobs chuck in the tailstock and fit a sawtooth or Forstner bit in it - of a diameter just smaller than the finished size required. Once secure, bring up the tailstock assembly so you can drill the hole, remembering to clear the hole regularly by extracting the bit to make sure it does not jam in the wood. Take it slowly and stop just shy of the finished depth - there is a point on the end which penetrates about 3mm or so.

Once cut, use a side-cut scraper to clean up the sides and the bottom. Remember to trail the scraper slightly and make sure you are always cutting on or just above centre on the inside of the hole.

Take the parting tool and clean up the meeting shoulder so it is slightly undercut and also refine the spigot very slightly if necessary. Now sand the inside carefully and also slightly radius the top inner and outer edge of the spigot. Do not sand the outer meeting shoulder, but just lightly sand the spigot with a fine grade of abrasive. Apply a finish of your choice on the inside only.

Remove the base section from the chuck, fit the lid piece in the chuck and like the base, remove the bulk of the waste with the sawtooth bit.

Again, after the waste is gone, use the side-cut scraper to clean everything up, stopping just shy of the full width of the spigot on the base section. Regularly stop the lathe and check the base-to-lid fit so it is nice and snug. Once you have a nice fit, lightly sand the inside and radius off the inner edge with abrasive, only lightly sand the meeting top face, then apply a finish to the inside.

Now remove the lid, refit the base section in the chuck, take a sheet of paper kitchen towel and - depending on the fit of the lid on the base - place one or two layers of kitchen towel over the opening and fit the lid onto the spigot. The kitchen towel helps to form the tight fit needed for later on, but mustn't be too tight or you risk splitting the









lid apart. Be sure to align the grain as well as you can at this stage.

Once fitted, bring up the tailstock and revolving centre, support the piece and use the beading & parting tool to remove much of the spigot on the top section, stopping just shy of the revolving centre.

Next, take the spindle roughing gouge and refine the









body curve; only take a gentle 1-2mm skim cut to do this.

When everything is shaped, take a bead-forming tool and cut a bead on the centre join to disguise it. This also disguises any differential wood movement between the lid and base later on. The bead should be on the lower section of the box and the right-hand side point of the bead-forming tool is placed



















absolutely on the joint between the lid and base to do this.

16 You can see the formed bead. Once cut, sand the outside of the box, then take a spindle gouge and shape the top section, stopping just short of the revolving centre.

17 Stop the lathe. Remove the tailstock centre and check the tightness of the lid to the base. Make sure it is nice and secure with no risk of coming free. If you are not sure, wrap strong Gaffer/duct tape over the joint thus providing extra security. When you are happy, using a very light cut, just refine the apex of the lid using the spindle gouge.

18 Use the bead-forming tool to cut a bead at the appropriate place. Then use the spindle gouge to cut either side of the bead to cause the bead to stand slightly proud of the main lid curvature. It adds more of a visual and tactile element rather than the top of the bead sitting flush with the lid profile. Once happy, sand it, apply a finish and remove the lid from the base and the base from the chuck.

19 Create a jam chuck to finish off the bottom of the box. Fit a waste section of hardwood in the chuck – ash (*Fraxinus excelsior*) in this case – and cut a spigot that will fit snugly into the internal hole of the base. Like in steps 12 and 13 we will use a paper towel over the spigot to ensure a tight fit without splitting the wood and also so the waste wood does not mark the inside of the box.

20 Once you have a good fit, bring up the tailstock to support the work while you remove the bulk of the spigot left on the base with a spindle gouge.

21 Next, sand what you can on the base and cut a bead with the bead-forming tool.

22 Remove the tailstock support. Cleaning up the rest of the base with the spindle gouge, sand it nicely and cut your last bead to provide some detail. Sand then apply a finish of your choice.

23 You should have a nice box with a snug-fit lid as shown.





Simon Frost meets a long established group of stile building volunteers

arold Rowling MBE has spent every Monday

since 1961 making the country footpaths of Sussex accessible. Harold founded the Monday Group 51 years ago to give walkers access to the many legally recognised footpaths in the area by building and installing wooden stiles and occasionally bridges. Now in his 90s - though you certainly wouldn't guess it - Harold still runs the 35-strong volunteer group and actively partakes in the work, from the designing of stiles to their installation and maintenance. We spent a wintry

Monday morning with Harold and two of his team to see them at work.

#### **Harold Rowling MBE**

Harold was an RAF Engineer Officer during the Second World War. He was stationed first at RAF Stoney Cross in the New Forest, a quiet base where, he recounts, two Police Inspectors once turned up enquiring whether they had any horses. Thinking they had said 'Horsas' - the Airspeed Horsa, a wooden troop-carrying glider - Harold replied obligingly, "Yes, in the crates." Somewhat confused, the policemen followed him into

From left to right: Jim Edwards, Harold Rowling MBE and Giles Dickins with the special 'Jubilee Stile' celebrating Jim's 60th stile and the Queen's 60-year reign

the hangar and upon his opening a crate to reveal a wooden glider, it became clear that these servicemen were not guilty of smuggling horses from France! "Occupying troops were known to take their pick, they say every unit would look for the nearest grand piano!" Harold remembers. For the latter part of the war, Harold was stationed in India in preparation for conflict with Japan. The Horsa fell victim to the elements in this hot climate - Harold once found his glider in the hangar with its wooden wings unattached on the ground beneath it; the casein glue holding the wings



Left: The social element of the Monday Group is a large part of its appeal to retired people

**Below: The Monday** Group make sure their name is known, so that walkers know who to report to!

to the fuselage had been eaten by termites. From then on, gliders were kept in their crates until the offensive began - once the order was given they would need to be assembled and airborne within a few hours. The ways in which we encounter woodwork are numerous, and in Harold's case, it had life-or-death implications.

#### Reclaiming the countryside

When Harold returned from service in 1946, nature had taken over the bridleways in the South Downs area while the country was committed to the war effort and many footpaths were closed, leaving most, if not all of the public throughways unwalkable. By the mid-1950s Harold had

begun some clearance work in the countryside, but it wasn't until 1961 that the Monday Group was officially formed. Originally, finance was a problem; the aftereffect of the war could still be felt, and second hand timber was all that was available, "We could only get Japanese oak (Quercus mongolica), it was rotten stuff!" Harold says, but he has always insisted on using oak for its hardness and durability outdoors. One early member of the Monday Group, Reg Adsett, was a postman, and his many contacts in the community helped to raise local interest in the Monday Group - kind donations from the public helped in those early days, and indeed are still important today.



Harold with a stile which has recently returned to the workshop for maintenance

In recent years, the Monday Group has raised increasing amounts of money thanks to the work of stile maker, Jim Edwards. While Harold still thinks up stile designs - now up to the 'Mark 21' model - he no longer makes the stiles himself, leaving most of the making to Jim, who previously ran a commercial furniture business and is now retired, as are all of the Group's members. "His workmanship is of a very, very high level. I'm quite happy for people like Jim to make their own modifications to stile designs as they wish" Harold points out, "Sometimes I think, 'Hmm, I wouldn't do it like that!' But I have no problem with members making stiles in their own slightly different ways." The stile making operation is roughly divided into two self-regulating groups; while Jim enjoys making his stiles from home, the other half of the Monday Group, led by Barry McMenamin, upgraded two years ago from their own garages to the Monday Group's dedicated workshop - a farm building set within the grounds of the beautiful St. George's Retreat. On top of making stiles, Jim also makes bird boxes, bat boxes and hedgehog



Harold at the entrance to the workshop which is kindly loaned to the Monday Group free of charge!



A newly delivered batch of unseasoned Balcombe Forest oak

boxes from offcuts, which he and Harold sell at craft fairs and other shows on weekends throughout the year, providing further income. These days, the Monday Group use English oak (Quercus robur) exclusively, "All of the oak we use is not just English, but Sussex oak! It's so local we can go and see it grow in Balcombe Forest," Harold informs us gladly. Each stile costs roughly £150; that covers the wood, which is unseasoned, and the metalwork, as each stile requires many coach screws and washers, and is anchored with angle irons.

#### Monday-by-day

As well as donations, the public aid the Monday Group by informing them of areas where stiles are damaged or absent. The Monday Group then use the Definitive Map - a scaled-up

Ordnance Survey map that shows all the legally recognised paths - to determine the best location for the structure. After communication with the landowner and Highway Authority if necessary, they decide on the particulars of the stile to best suit the location. There is a clearance branch of the Monday Group formed mainly of ladies who carry out work to make the paths themselves passable - stiles aren't of much use if they lead into overgrowth! There are three general considerations when making a stile - it must be easy to use for walkers of all ages; stock-proof to ensure the farmer's livestock can not get through; and easy to install and disassemble for maintenance if and when needed.

The Mark 1 stile was a simple farmer's dog-and-stick design, but now the Monday Group commonly



Harold lifts the lid on a hedgehog box

install the Mark 20, which has a lifting top bar to aid the walker by eliminating the need to swing their leg over the top, the maximum step height is around 300mm, and a cutout through the centre of the dog pole makes it less heavy to lift. The posts between which the free-standing stile is installed are driven into the ground using a post driver and the stile is reassembled having been



Harold demonstrates his latest model, the Mark 21 stile



A prototype model of the Mark 15 stile



Giles checks the pivoting top bar's fit



Jim drives a post into the ground with a few mighty whacks from a post driver

used to ensure the crossbars are flat to prevent torsion in the long run, and a further diagonal brace reinforces the structure. Holes are dug in the ground and angle irons driven in for support. Harold usually revisits the stile after it has been installed for a winter to see if any action is needed, but generally the Monday Group's agenda is formed by the information gathered from members of the public.

#### Monday people

The Monday Group's members come from all walks of life, and Harold tells us that very few of them come into the group with any real skills or training in woodwork or DIY; "For many people who join," he says, "even the idea of using a spirit level is alien! One of the attractions of the Monday Group is that people who worked as, say,

bank clerks or insurance salesman can finally do something with their hands. By the end of a morning's work a volunteer will have achieved something which can last for 25 years, and that's very rewarding."

The group is split into teams of three or four, who are scattered throughout the area every Monday seeing to various tasks: "Myself, Jim Edwards, Giles Dickins and Tom Walker, who could not be present today, are one team. While we work we're always talking, joking, agreeing and disagreeing; we all come from different backgrounds - I'm an



Jim and Giles dig the holes for the stile which will be anchored with angle irons

engineer by profession, Jim ran a furniture company, Giles was a schoolmaster, and Tom is an artist, he has just written a book about the Monday Group, which is available from our website. There are mixtures of people which never would have happened without the Monday Group." Harold explains, "At first it used to puzzle me, I thought 'Why do people come out here every week in the cold, wind and rain?' And after a while it dawned on me how important the social element is. It's also a great way to keep active and keep learning -I'm still learning through the Monday Group all the time, even after 51 years." Watching this team assemble a stile at a roadside fence, it was clear from their good-natured joking and bantering that the social aspect is half the appeal of turning up every week, whatever the weather!



Though the Monday Group mostly build stiles, occasionally they make bridges such as this, which Harold, as an engineer, relishes in the challenge to design



# Walnut side Kevin Ley demonstrates his flair for unusual timbers with this side table



his is another speculative piece made to sell at this summer's shows. I had been thinking a lot about what to make that would demonstrate my use of unusual timbers and individual designs.

#### Design

I came up with this side table which, though it is a substantial piece, is easily transportable, does not use a lot of timber and gives the opportunity to show off some decorative pieces of walnut (Juglans regia) to maximum effect. A side table is a flexible piece with a myriad of uses. Adding three drawers under the top increases that flexibility and makes good use of the storage space in the frame.

A decorative timber would be used in the drawer fronts with a contrasting timber for the drawer casings to accentuate the dovetails. A decorative panel in a frame would form the top.

The legs were tapered for a lighter more elegant look. The taper was applied from just below the frame to leave a straight piece for the sides, front rails, and back to join to the legs, simplifying the joints.

Tapering only the two outside faces





I toyed with the idea of stretchers to brace the legs but decided that they would clutter the look and steal away some of the lightness and elegance. Carefully chosen timber and prayers would be used instead!

The soft lustre of an oiled finish would bring out all the figure and beauty of the walnut and burr.



Sawing the walnut components



Deep sawing the burr top panel



The cut pieces sticked and stacked for even drying



Sawing tapers on the inside faces of the legs using a pre cut ply taper jig against the fence

then stacked in the workshop to condition during the making.

## Timber selection & preparation

1 I had some walnut (Juglans regia) and burr walnut which would do nicely for this project. The timber had been bought kiln dried then stored, sticked and stacked in my dehumidified wood store for several years. Well-conditioned walnut is a very stable timber so it was ideal for this project.

2 The stuff I chose for the legs was relatively plain but reasonably straight grained. Some nice decorative burr was available for the drawer fronts and could be deep sawn for a bookmatched top panel. Sycamore (Acer pseudoplatanus) was chosen as the contrasting timber for the drawer carcasses. Figured pieces for the sides and back, and some more straight grained pieces for the drawer frames made up the rest of requirement.

3 All the pieces were cut a little over size, faced and thicknessed

#### Construction

The legs had been faced and thicknessed square and were now cut to length. Before tapering the legs Domino slots were cut for the back, sides, and front rails. The slots were staggered so that they did not foul each other. A taper jig was cut in ply to run against the bandsaw fence to offset the leg for the correct amount to be removed. A piece of abrasive sheet was glued to the jig face in contact with the leg so that the legs did not slip during the cut.

5 The legs were then hand planed to their final shape, sticked and taped together to hold them while they settled.

#### **Top frame**

The top frame pieces were trimmed to size and Domino slots cut in the ends. Two Dominos were used in each joint.



Hand planing the legs



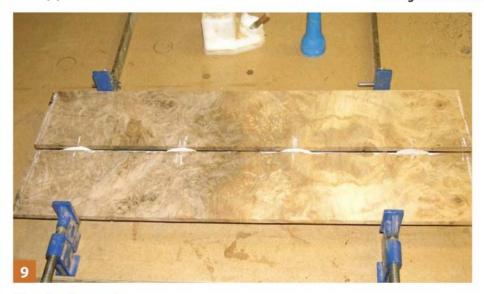
Cutting Domino slots in the panel frame



The top panel and frame construction



Cutting biscuit slots in the panel edge



Clamping the panel



A housing was cut in the inside edges to take the panel. The bottom of the housing was set at the thickness of the panel to ensure the raised centre was at the same level as the frame.

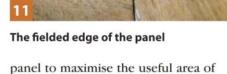


A piece of burr had been deep sawn to make a bookmatched panel. As it was burr there would be some short grain in the joint which would weaken the glue bond, so biscuits were used to strengthen it. The panel pieces were faced and thicknessed and the biscuit slots cut.

Glue was applied to the joint and the slots, biscuits fitted, and the panel clamped up.

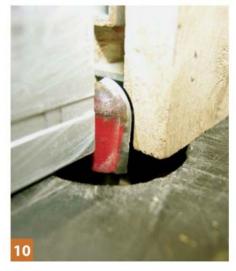
Once cured, the glue ooze was scraped off and the panel was then power sanded.

A radius cutter was set up on the router table and a cove fielding cut on the edge of the top panel. As this was a table top I only wanted a very small gap between the frame and the raised centre of the



the table top.

The fielded edges of the panel were sanded and finished with three coats of oil before assembly so no bare wood would be exposed if there was any seasonal movement. Glue was applied to the Dominos and slots in the frame and the top was assembled. A spot of glue was applied



Fielding the panel edge on the router



The corner joint of the side and back to

to the housing at the centre of the short edge of the panel to ensure any movement was equalised.

#### Sides and back

The back and sides were cut to size and Domino slots corresponding to those in the legs were cut.



Cutting screw pockets in the back to fix the top



Attaching front rails and back to sides showing Domino joints and runners and spacers fitted to sides



The sub frame and legs clamped up

13 Pockets for screws to attach the top, and Domino slots for the drawer runners and kickers were cut in the back. Domino slots in the sides and the corresponding slots in the legs were glued up and the sides clamped to the legs. When those joints had cured, runners and spacers were glued and screwed to the sides.

#### **Drawer frames**

14 The drawer frames were cut to size and Domino slots cut in the ends of the runners, kickers, and front rails. Slots for the runners and

kickers were cut in the inside edges of the front rails to correspond with those in the back. Pockets were cut for screws in the ends of the front rails.

## Assembly of the legs & sub frame

15 The slots in the back, front rails, centre runners and kickers were glued up, Dominos fitted and the sides clamped to the front rails and back. Once all had been checked for square, screws were driven into the pockets through the rail ends into the legs.



Drilling pilot holes for screws to fit drawer spacers. Note MDF blank to align spacers and dividers



Fitting the drawer fronts

#### Spacers and dividers

16 When the sub frame and legs had cured, the dividers and spacers were glued and screwed in place using a piece of MDF cut to size to align them.

#### **Fronts**

17 The fronts were saw cut slightly oversize and then machine and hand planed to a tight push fit. Pilot holes were then drilled in the front faces for the pulls.



Marking the drawer backs from the fronts



Marking the dovetails

#### Backs

18 The height of the backs was measured from the base to 6mm below the side height and they were sawn and planed to size. The drawer fronts were used as templates to mark the exact length of the backs which were then cut.

#### Sides

The sides were sawn oversize in height and planed to a running fit. They were cut to length leaving 6mm clearance from the back of the frame.

#### Bases

The bases were cut from light coloured birch-faced 4mm ply. They would be let into housings in the front and sides and glued and pinned to the back. Sheet material is lighter and thinner than a solid base, and being glued in all round gives a great increase in strength.

#### Making the joints

19 Cutting gauges were used to mark the depths of the tails and pins on both faces of the sides and backs, and the end and inside faces of the fronts.

20 The sides were taped together; the top one marked and the majority of the waste for the tails cut out together on the bandsaw, then cleaned up with a paring chisel.

21 They were offered up to their respective backs and fronts and used to mark the pins.

22 The bulk of the waste was removed from the front sockets, and between the pins on the backs using a carefully set up straight



Trimming the dovetails after bandsawing the majority of the waste out

plunge cutter on the router table. All were trimmed to exact size with a sharp paring chisel.

#### Assembly

23 The inside faces were hand sanded and the joints glued up and tapped home. A sash clamp was used to pull them up tight and force out any excess glue. The diagonals were checked, adjustments made, the backs pinned, and the drawers left to set.



Marking the pins using the cut tails



Routing out waste for the pins





Turning the pulls with a sizing tool



Power sanding the table frame



Pulls were made from leg offcuts turned on the lathe, making full use of my trusty sizing tool. They were fitted to the fronts using double ended screw dowels.

#### **Fitting**

25 Once set the drawers were planed and sanded to a good fit and given a touch of candle wax to ensure easy running.

#### **Finishing**

As much of the surface preparation of individual components as possible had taken place before assembly. I did a final check over the sub frame and top with a random orbital sander...

27... then hand sanded with 320 Abranet on a Mirka extracted hand sanding block.

#### Fitting the top

28 The top was screwed and glued to the sub frame, very lightly and carefully clamped, and left to cure



Trimming the drawer fronts to fit with a block plane



Hand sanding to a final finish

#### **Finishing**

I used a light finishing oil that penetrates well and cures quickly. The first coat was applied with '0000' wire wool and worked for some time adding more oil as it was absorbed.

After the surplus was removed it was left for 24 hours to cure. Several further coats were applied with a soft cloth, again allowing 24 hours curing between coats, ensuring that the oil penetrated deeply but there was no build up on the surface. After a week or so, the whole piece was buffed up with a soft cloth to a nice gentle sheen.

#### Conclusion

This piece was much admired at the shows but did not sell – there seemed to be little money about this year. However, I emailed a photo of it to several clients who had had pieces in this walnut and burr combination. There was good interest and it was eventually bought, from the photo, by a local client who had moved to London and who arranged to pick it up by a visiting friend.

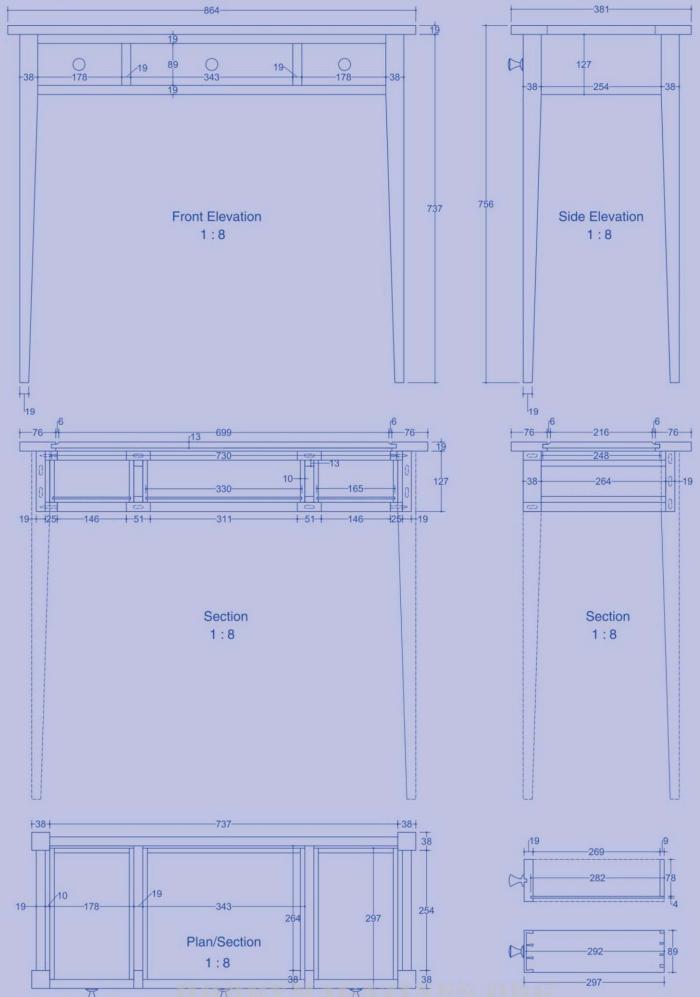


Driving screws into pockets in the back to fix the top to the frame





## Your free side table plan



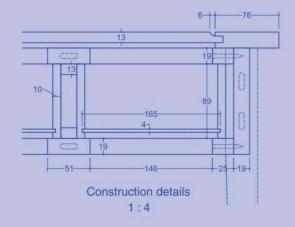
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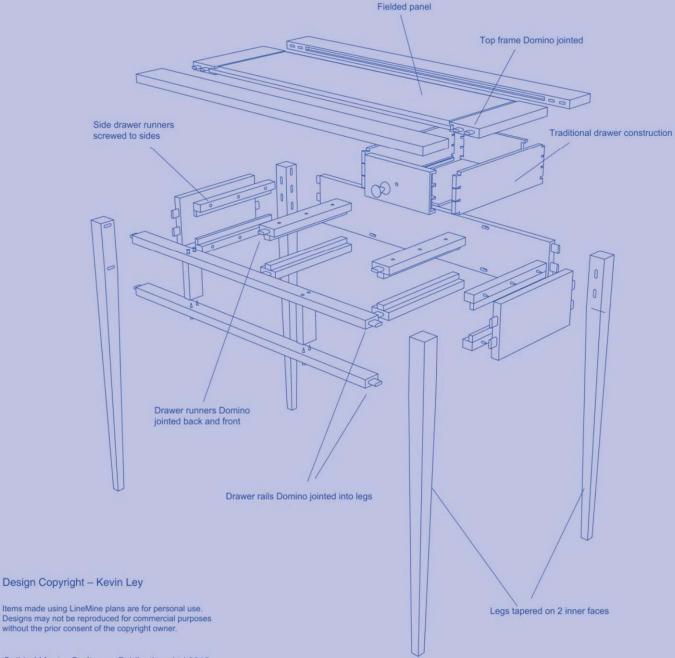


#### Cutting List -Main components

2 @ 864 x 76 x 19 TOP FRAME TOP FRAME 2 @ 229 x 76 x 19 TOP PANEL 1 @ 730 x 248 x 13 LEGS 4@ 737 x 38 x 38 2 @ 254 x 127 x 19 SIDES **BACK** 1 @ 737 x 127 x 19 FRONT RAILS 2 @ 737 x 38 x 19 DIVIDERS 2 @ 89 x 38 x 19 RUNNERS/KICKERS 4 @ 264 x 51 x 19 RUNNERS/KICKERS 4 @ 264 x 25 x 19

For drawer guides and drawers sizes and components, see drawings





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## **WORKFORCE** safety socks

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#### TA450 Tilt Arbor Sawbench



engineering and their manufacturer's insistence on using only the best quality components.

The TA450 Tilt Arbor Sawbench is made up of a large, cast iron table mounted on a heavy duty steel cabinet, which provides maximum timber support and a stable and accurate base for anchoring the spindle, rise and fall, and tilt mechanisms. The spindle is powered by a high efficiency motor and features large diameter saw flanges for blade stability. It runs in 'sealed for life' bearings mounted in a cast iron housing, and requires only minimal maintenance.

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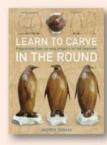
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**Derek Jones** brings us the verdict on this mitre saw from Bosch

y now there's got to be a mitre saw on the market to suit every end user and once you've established your budget and specific requirements, what's left to make you choose one machine over another? This compact machine is well spec'd for a start with all the usual features like a trenching facility, a good range of presets in bevel and mitre mode and extending table either side of the turntable. The working area goes from 440mm wide to 740mm and with a



The cam lock lever that allows bevel cuts to be made can be tensioned to make setting very easy

cut stroke of 300mm it's got plenty of capacity. Mitres between 52° left and 60° right and bevel cuts of 2° to 47° should cover most things.

The working surfaces are all well machined cast aluminium without a single rough edge to be found, suggesting a build quality way above average. Both back fences are pre-drilled to make installing a breakthrough fence of your own fairly straightforward. Dust extraction is via two ports – the first positioned behind the blade at the source of the cut and the second behind the fence. A chip deflector helps to drive the waste material into the airflow.

There is a lot of fine adjustment on this machine that will allow you to calibrate it to achieve good results in each mode. The lever cam lock used to set up for bevel cuts has a tension setting so you can adjust it to be able to nudge up to a precise angle if required. With the GCM 8SJL Bosch have covered all the basics extremely well but there are a couple of nice touches that make it well worth considering; a well placed carrying handle and lens protector for the laser.

#### THE NUMBERS

CRAFTSMAN'S CORNER

Model: GCM 8 SJL Power: 1,600W

No load speed: 5,500 p/min

Bore: 30mm Saw blade: 216mm Weight: 17kg

Max mitre angle: 52°/60° Max bevel angle: 47°/2°

Max cutting capacity: 70x312mm

Price: £439 (RRP Inc VAT)

#### WHERE TO BUY

www.bosch-professional.com





#### Mark Baker takes a look at this unique mobile sawmill business

ood-Mizer are the world's leading producer of thin kerf band sawmills and ancillary wood processing equipment. I paid a visit to Steve Levett, who can be hired, with his Wood-Mizer, to help you turn trunks into workable pieces.

The beauty of the Wood-Mizer - effectively an easily adjustable horizontal bandsaw with extended table - is that for most jobs it only takes one person to operate it. The most labour intensive part is shifting the log onto the hydraulic lifting forks. Using a long enough bar reduces the grunt necessary for this part, but once the log is in place the machine is capable of doing almost everything else without much manual physical input at all. This tree trunk was over 3m in length and over 1m in diameter.

Once the log is in position the hydraulic lift shifts the log onto the platform. Note the upright antiroll-off bars on the right-hand side of the bed; this can be raised or lowered as required.

Once the log is on the bed, its position can be manipulated by hydraulic arms seen on the left-hand side. These arc in and also rise so the tip teeth lock into the wood and roll the log around as required.

The bandsaw can be set to depth easily and in the case of this log it took a few thin cuts on one top face so that it could later be rolled over onto a flat face, providing a stable platform on which to make further cuts. Of course each frame has a fixed maximum width of timber that can be passed through it; in this instance another skim cut was made on a side so that it could be processed easily. The cutting is very quick and so clean and easy to control. The hydraulic toothed arm seen in picture three makes the whole process simple.









The trunk was then ready for through-cut planking. I requested a 200mm thick section for some turning projects, but others required some 50, 75 and 100mm planks too. Of course by rotating the trunk around you can get the grain orientation and specific sections required. The tree was rotated a few times in this process to optimise the planking and grain pattern. Note on the left-hand side of the bed there is a black hydraulic clamp, this is used to hold the wood up against the uprights on the right-hand side. Security, safety and ease of use - all excellent points with this unit.

Now for the big sections of 6 timber. It took less than a minute for the arm to pass through the wood and there was no hint of it baulking at any point of any of the cuts made on the trunk. Again the trunk was shifted round so we ended up with straight sides and faces on the slabs of wood required. Again, note the clamp holding the wood securely.

The unit ripped through quickly and the surface finish was - I





was amazed - very clean, not torn and rough as I expected. I was also surprised at how true the cuts were. Now these units don't come cheap...

... but this whole trunk took less than 35 minutes to process including man-handling the wood onto the hydraulic forks; it is quick and very easy to use. Steve Levett, who owns and operates this unit, uses it as part of his every-day business, but has also realised that others might need such a machine once in a while, and hires himself complete with the Wood-Mizer out for the day, so landowners, clubs, woodland owners, etc. can hire a package where he will turn up and convert trees to





requested sizes. The machines are easy to use and invaluable when working within the wood industry when converting trees to usable planks and easy-to-manage sizes.

#### Mobile Sawmill:

Steve Levett Weldspray Contracting Ltd The Estate Office, Lulworth Castle, East Lulworth, Wareham, Dorset, BH20 5QS Tel: 01929 401 740

Web: www.weldspray.com

#### THE NUMBERS

#### LT15 Series specifications

Log capacity: 700mm diameter x 5.4m - 3 x bed sections

of 1.95m each

Log handling: Manual

Head drive: Manual feed and power up/down

Power options: 10HP diesel, 18HP petrol, 7.5kW electric

Standard equipment: Roller blade guides

Typical options: Cant hooks, computerised setting system for board thickness, debarker (AC models only), loading

ramps and trailer package Bed section: 1.95m or 2.7m

Price: Starting from £6,042 (Inc VAT) ex-works UK

#### LT20 Series specifications

Log capacity: LT20S: 80cm dia. x 4.8m, LT20M: 80cm dia. x 6.1m, LT20L: 80cm dia. x 8.4m

Log handling: Manual/hydraulic Head drive: Power feed up/down

Power options: 22HP diesel, 25HP petrol, 11kW electric Standard equipment: Roller blade guides, computerised setting system for board and electric blade guide arm

Typical options: Manual/hydraulic log loading, winch turner,

debarker and trailer package Bed extension: 1.8m, 3.6m or 7.2m

Price: Starting from £11,364 (Inc VAT) ex-works UK

#### Contact

Tel: 01622 813 201 Web: www.woodmizer. co.uk



OF

#### **My Working Day**

## James Hatter

Meet the WPP contributor who is the brains behind our new DIY series!

ames Hatter has been contributing to woodworking magazines for over 10 years, and as a woodworker whose projects consist almost entirely of improvements and furniture for his own home and for his two daughters, he was the perfect candidate for our new DIY series. James uses up everything he can find, and he attributes his resourcefulness and penchant for handywork, as many do, to his father: "I had a very practical father. He was an engineer who had that war generation mentality where anything of any use got used and never wasted - that certainly rubbed off on me!"

After years in technical electrical work, James earned a degree in Experimental Psychology, worked for the Ministry of Defence, and finally as a teacher before taking early retirement. However, retirement certainly hasn't stopped James from working, and when he isn't in the workshop or the allotment, he gives



DIY classes to adults in areas such as electrics, plumbing and of course woodwork. For this and for his own projects, there are many regulations which he has to keep up with.

Much of James's time is spent in his workshop – a converted summer house in his garden – making things for his home from tables and chairs to garden furniture and even a complete extension. He was halfway through making a wedge-shaped coffee table to fit an awkward space in his daughter's flat when we paid our visit, but he won't be putting his feet up once that's done – his skills are in high demand, and there's always more to make for his home, his family, and of course us at *WPP*!



The garden gate which you may remember James made for WPP 69



James at the compound mitre saw

#### **James's Golden Rules**

"Study all aspects of an intended task, share ideas with others, and welcome feedback – be prepared to make changes if necessary to get a better result. Don't take risks in personal safety or the safety of others."

#### Likes

The smell of freshly sawn oak.

The satisfaction of successfully completing a task, especially if it improves someone's wellbeing.

#### **Dislikes**

A cold or cluttered workshop, limiting the work that can be achieved in it.

Impoliteness, and inconsiderate actions shown by some to others, especially when they are not able to defend themselves.

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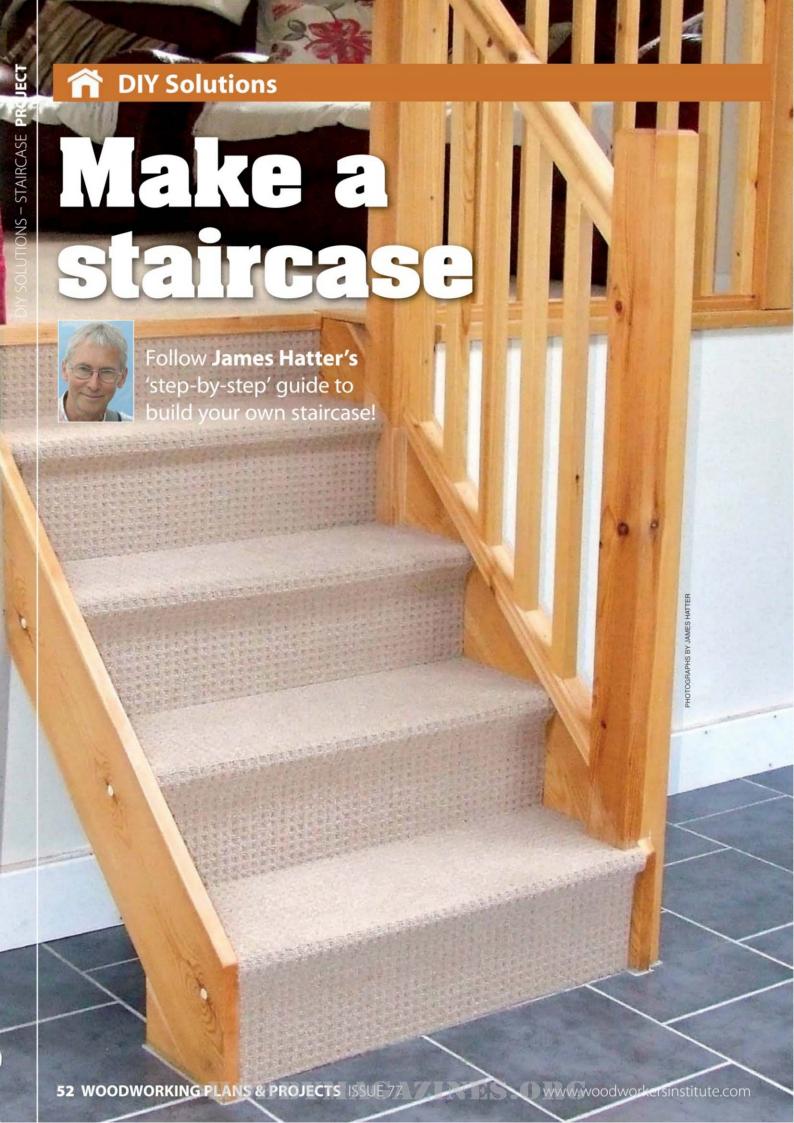
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NEW SERIES!

Woodworkers normally have the skills and methods to cover a wide range of general DIY tasks, either in full or part, where additional professional services

may be required. This new series covers methods and techniques used in a number of examples. The author has two daughters, and like all dads is happy and willing to assist where possible, to save them the money and inconvenience of calling upon others to perform the tasks. The main projects undertaken in recent times include a garage conversion for living accommodation, a loft conversion, and an extension. Additional to these are various projects at the author's home.

Many of the tasks undertaken require you to conform to strict Building Regulations; where this is the case, the regulations will be stated, and the project will conform to these regulations. It is, however, advised that you personally check where appropriate, to ensure that no changes have occurred since publication of the project.

his project describes the construction of a set of simple steps, with newel posts, handrail balustrade and spindles. This formed part of a kitchen extension, and was subject to Building Regulations. The information presented should provide the basis to customise a set of stairs to a particular requirement.

The steps and risers made use of a water resistant grade of MDF, with pine (*Pinus spp.*) supports and side stringers. The assembly is held together with adhesive, and screws. Jointing biscuits are used for attachments to the bottom of the stringers. The handrail and base rail use commercially available pine mouldings. These include a rebate to take 30 x 30mm cross section spindles. Newel posts were formed using 95 x 95mm PAR pine stock.

#### **DESIGN CONSIDERATIONS**

Accurately measure the distance between the levels you wish to include steps. Inspect the surround about the top of your level, and determine firm and secure attaching points. Take into account any obstacles. In the example illustrated in this project I wanted to make use of the outer layer of the cavity wall that was towards the top of the level, which reduced the amount of floor space needed at the lower level. Also decide the stair width.

Determine the number of steps you will require, taking into account the Building Regulation requirements.

Make a scale drawing, and check angles. Then, make a stringer template using plywood, or MDF, marking all the step positions. Test fit, and when satisfied transfer all the measurements to real stringers.

You may wish to have a handrail and bannister on both sides of the steps, so the methods suggested can be repeated for both sides.



#### BUILDING REGULATIONS

A summary of the current relevant Building Regulations is listed, and these have been adhered to in this project.

#### Maximum number of steps:

For domestic properties the regulations specify that the maximum number of steps in a straight line is 16. This is not normally a problem, as a typical domestic installation usually only requires 13 steps. However, the project described uses five steps, and it is suggested that a DIYer should only tackle a small number of steps, and leave a full staircase to a professional.

#### **Steepness:**

The maximum angle of pitch is 42°

#### Step size:

The maximum step rise is 220mm, whereas the step depth or 'going' is a minimum of 220mm – these measurements are taken from the pitch point. The step normally has a nose that projects 16–20mm in front of the pitch line. However, the ratio of sizes must not exceed the maximum angle of pitch requirement of 42° as stated. Any winders must have a minimum of 50mm at its narrowest point. The width of steps is unregulated, but in practice the winders, if applicable, are likely to limit the reduction in width.

#### Handrail, balustrade and spindles:

The height minimum is 900mm above the pitch line, and any spindles must have a separation distance such that a 100mm sphere cannot pass through, so for plain spindles 90–98mm separation is acceptable.

#### Construction methods

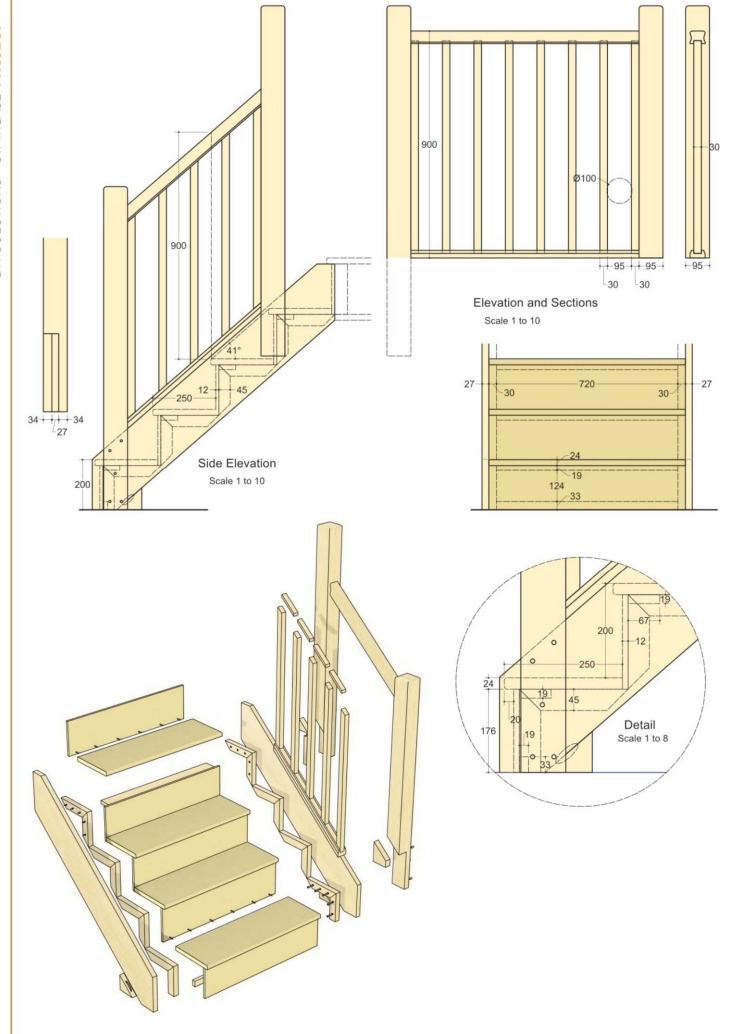
Once all the measurements are on the stringers, the stringer can be refined such as adding an attachment to the bottom inside of each stringer, so that it has a wider footprint on at the bottom.

Cut supports for each of the steps, and further supports for the step width. In this example, all the supports and stringers used pine. The steps made use of water resistant grade MDF, which keeps cleaner edges than standard MDF. The step consists of two layers of 12mm MDF glued and the riser uses a single piece of 12mm MDF.

The newel posts made use of 95 x 95mm pine. With commercially made stairs the stringer and handrail are usually mortised into the newel posts; however, with the example shown, the part where the stringer meets the post is rebated using a circular saw, so that the stringer is mid-position. The piece removed is reduced in thickness, and joined to the other side of the stringer.

The handrail, base rail and spindles, are assembled as a unit, using commercially available handrail, base rail, and spacer strips and spindles. These are placed between, and attached to the newel posts.

The completed assembly can be finished as required. A step-by-step of my particular staircase build follows; though the requirements of each staircase will differ, this should give you a good idea of how to build your own.





Make sure you have created a good 'seating' for the new staircase and measure it up exactly



Use a piece of ply to make up a template cut to fit your own situation taking Building Regulations into account

#### The staircase

1 Steps were required to give access to the extension floor below. Accurate measurements were taken, and the width, and steps decided, taking into account the required Building Regulations.

2 The first step is to make a template using the measurements taken, and fit to check it meets Regulation requirements.

From the template, the stringers can be measured and cut to size, in this example 27 x 215mm pine was used. Additionally, an attachment is biscuit jointed to the lower part to increase the footprint to the bottom part of the staircase.

The notches are also cut to fit over the brick protrusions, if this is appropriate.



A piece is biscuited on the underside of each stringer to take the weight evenly

5 Each step is made using two layers of 12mm MDF. These are cut to size, glue is applied, and each pair is joined together.

6 Screws are also used to pull the two pieces together.

A riser of 12mm MDF is attached to each step, again using both adhesive and screws.



Make notches to fit if required but do not allow it to weaken the stringers



For adequate thickness you will need two 12mm MDF boards bonded together



Screws help to ensure the two sheets are fully pressed together



The risers are half as thick as the treads as loading is 'edge on'



Fitting the the treads and risers is made extremely easy by using glued and screwed supports

- Pine step and riser supporting blocks are attached to the inside of each stringer using adhesive and screws.
- Support the stringers, and start to attach the steps, then attach risers to the supporting blocks.
- An added pine support is screwed and glued at the front of each step. The front edge is spaced the nose distance - 20mm - + the MDF thickness - 12mm - from the front edge of the step.
- Apply adhesive to the joining edges of the support blocks, and pine support, and then locate each step into position.
- Attach with screws into the support blocks and pine support.
- Allow the adhesive to set before moving.



Stand the stringers in their correct position resting on a length of timber before screwing the treads and risers on



Because each riser is simply sitting under its tread you will need a batten behind to form a solid crosswise joint



Apply glue as you go and screw each tread and riser in place for solid, reliable joints



Continue down the staircase fixing each step in place



Allow the glue to set overnight. The structure will now be a bit heavy but completely rigid



The simple but effective completed construction is visible here



Where the newel post is cut over the stringer refit the waste piece to strengthen the joint

A view of the rear of the steps shows the supports.

15 Place the completed stair assembly into position and fix into position using screws into the walls as appropriate. The gap to the right of the assembly will have the top newel post inserted.

16 Next, measure for the newel posts to the top and bottom. Both the top and bottom posts are rebated, so that the stringer sits mid-position. Retain the piece cut for the rebate.

17 Make good the inner side of the lower newel post by inserting the piece you have cut out, resizing as required.



In this case the top post has its waste piece cut to fit around the tread nosing

18 The top post has an insert for the same purpose, but this need to be cut to overcome the obstructions.

19 Counter-bored screws and adhesive are used to attach the post to the stringer and the attached insert. Use wood plugs to conceal the screwheads.

The handrails, base rails and spindles are assembled as units and then attached to the newel posts.



Check for fit and adjust if necessary. Use long screws and plugs to fix it into the surrounding masonry



Unless there are walls on both sides a newel post will be required to support the balustrade, if there are walls only then use a 'split newel' fixed to one wall



The newel posts are screwed and plugged to the stringer and the plugs trimmed flush



You can make up the balustrade as a separate unit and then carefully fit it between the newels



The bottom view of the completed stair assembly



View of the top balustrade



Inner view of the bottom step showing the supports



Detail of the stair join to the right



The completed stairs with carpet fitted

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# Gothic style washstand

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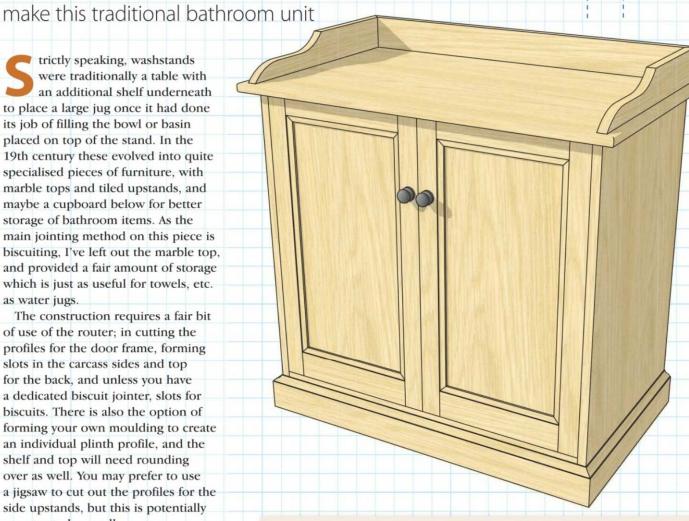
Simon Rodway shows you how to

trictly speaking, washstands were traditionally a table with an additional shelf underneath to place a large jug once it had done its job of filling the bowl or basin placed on top of the stand. In the 19th century these evolved into quite specialised pieces of furniture, with marble tops and tiled upstands, and maybe a cupboard below for better storage of bathroom items. As the main jointing method on this piece is biscuiting, I've left out the marble top, and provided a fair amount of storage which is just as useful for towels, etc. as water jugs.

The construction requires a fair bit of use of the router; in cutting the profiles for the door frame, forming slots in the carcass sides and top for the back, and unless you have a dedicated biscuit jointer, slots for biscuits. There is also the option of forming your own moulding to create an individual plinth profile, and the shelf and top will need rounding over as well. You may prefer to use a jigsaw to cut out the profiles for the side upstands, but this is potentially a router task as well.

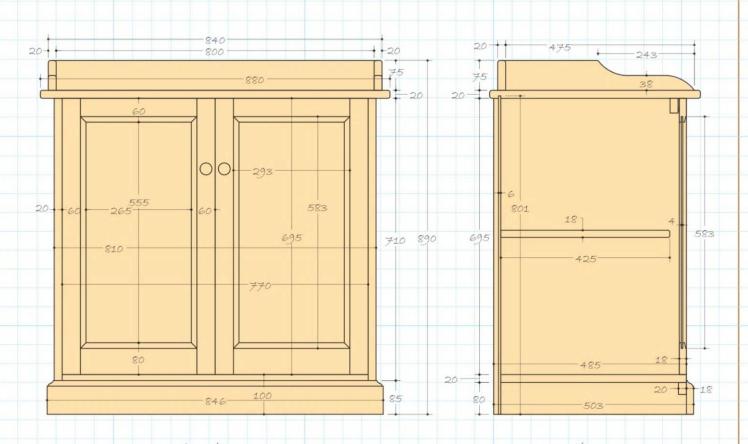
The carcass construction is the standard modern one, with bracing provided by an MDF or ply back glued into slots on the sides and back. Mark the sides up as a pair to ensure the biscuit slots match in height. Fix the plinth support below the lower shelf or bottom, screwing up into the shelf, and do the same with the door stop/ top brace, both of which can provide extra stiffness to the carcass if they are biscuited or pocket screwed in the sides. I have shown this top piece set back slightly to allow for magnetic catches to to fitted at the centre.

To get a good result with the shaped side sections of the upstand, draw out and cut a template in MDF or



#### **Cutting list**

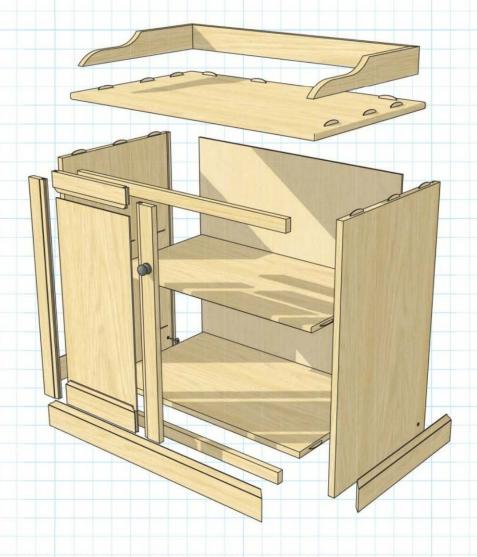
1	@	830 × 530 × 20mm
2	@	495 x 75 x 20mm
1	@	840 × 75 × 20mm
2	@	795 x 485 x 20mm
1	@	467 × 770 × 20mm
1	@	425 × 770 × 18mm
1	@	801 × 782 × 6mm
4	@	695 × 60 × 18mm
2	@	293 × 60 × 18mm
2	@	293 × 80 × 18mm
2	@	583 × 293 × 4mm
2	@	503 × 85 × 18mm
1	@	846 × 85 × 18mm
2	@	770 × 38 × 20mm
	1 2 1 1 1 4 2 2 2 1	2   @ @ @ @ @ @ @ @ @ @ @ @ @ @ @ @ @ @



Front Elevation Section

ply first. The corner joints are simple mitres, and the three sections are just biscuited and glued to the top. The plinth is another job for the mitre saw, and I have shown enlarged screw holes towards the back of the carcass sides at plinth level. This is a standard Kevin Ley technique; to allow movement along the plinth, which is only glued towards the front, the back fixing being a screw and washer through the enlarged hole from the inside of the carcass.

Last but not least, the door construction is formed using a router frame cutter, which makes the mortise and tenon with the same profile, and gives your frame an inner profile into the bargain. The profile I have used here allows for a 4mm slot for the panel, and this is something to consider when you are sourcing materials for the job. Finding veneer panels to match the frame can be tricky, so either a contrasting timber could be used, or a different cutter that will allow you to cut profiles on a solid panel as well. All that remains then is to hang the doors, fit the ironmongery and handles, and to go out and buy a large china hand basin to set your new washstand off.





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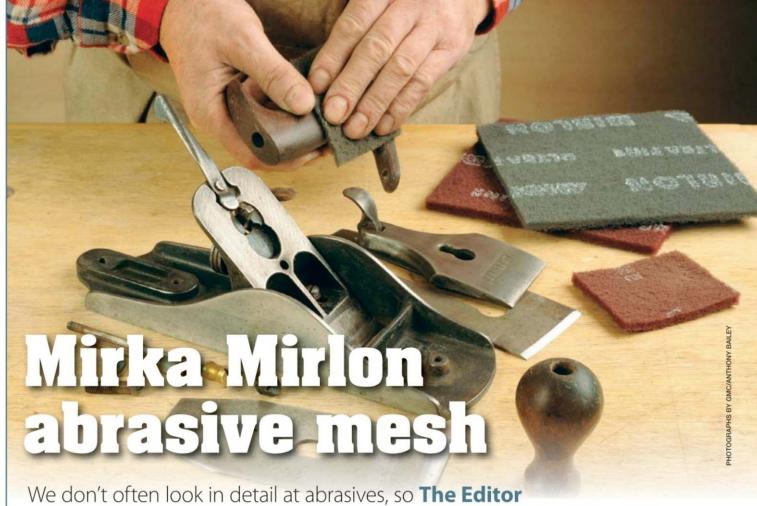
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thought it would make a change to try out these Mirlon pads...

irka are an abrasive manufacturing company based in Finland with offices in various countries including the UK. They cover the entire spectrum of abrasives but have a lot of products devoted to finishing in the automotive, metal finishing and furniture industries. It is a competitive market and Mirka are always busy developing new products, many of which suit woodworking.

On test I had two grades of Mirlon abrasive web which is intended for finishing after the initial surface preparation has been done, particularly between finish coatings or when improving metal surfaces. I tried the maroon coloured Very Fine 360 and the dark grey Ultra Fine 1,500 grades of Mirlon. If it looks familiar, it has a similar web structure to green kitchen scouring pads, but is loaded with very fine abrasive particles permanently bonded to the web. I needed a project to test both these grades on and a recent antique market acquisition presented itself; an American Sargeant wide smoothing plane dating from around 1910-18 which an antique dealer had

partially 'restored', i.e. used coarse abrasive paper. Once stripped down, all the metal parts, both painted and bare, were rubbed evenly with the Ultra Fine Mirlon until a clean soft matt surface was achieved without disturbing the paint. The rosewood handle and knob had the last traces of varnish scraped off and then worked over with Very Fine followed by Ultra Fine. Again it resulted in clean matt surfaces with a slightly polished sheen, ready for waxing along with the paintwork.

#### Verdict

attack ancient surfaces with standard abrasives which would have damaged them and removed any traces of patina. You can use old scissors or a utility knife to cut the Mirlon into convenient

Using Mirlon meant not having to

sized pieces. Definitely worth considering if you want to improve your finishing technique.

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## Skil Energy corded drill-driver

Most of us have 'cut the cord' and use battery only drill-drivers now, but **The Editor** nearly strangled himself with excitement when he got his hands on this drill-driver from Skil – so why all the fuss?

kil are a brand who tread their own path with regards to innovation and design. Everyone has at least one cordless drill so why on Earth would you want a drill with a whacking great six metre cable attached? It now seems a bit of an anachronism in a battery-driven world but it looks like a cordless if you hide the cable under your arm and pretend it isn't there! Have Skil made the right move? Yes, I think so and here are

theirs and my reasons why.

- It looks and feels like a typical cordless drill, so has operator familiarity
- A six metre long lead gets you almost anywhere from the nearest plug socket
- It has 19 torque plus drill settings, forward, reverse and two gear ratios
- The Energy weighs 1.2kg instead of the 1.7kg and 1.6kg for their 18V and 10.8V drill drivers respectively



- There's no battery and charger so there's no power loss, no charging time and no extras to cart around
- Less harm to the environment as no battery chemistry is involved and less cost in manufacturing
- Lastly, the thing Skil don't boast about – the price!

The downsides? It's got a long, potentially vulnerable trailing flex to get caught around human legs, and stepladder legs – it is a tough grade of lead, though.

#### Verdict

Plenty of power and no drawdown due to a weak battery, so long as you work within its power limits it will keep chugging. Quiet, comfortable to hold with its rubberised overmoulds and a keyless chuck. Cheap, reliable power. What's not to like?

### → Hand Built



# Tuning & using bench planes: Part II

In Part I we looked at choosing bench planes and a little of their history. This time **The Editor** shows you how to get a plane ready for use and how to use it

### Preparing the plane for use

Here are the basics for using different bench planes for specific purposes. Remember that to some extent planes are interchangeable for certain jobs, but you do need to recognise when one is more suited than another for best results.

Assuming the plane has a good flat sole – see *WPP* 69 for more – and

the frog is correctly set so the blade is square in the mouth without too big an opening in front of the blade, the first requirment is for the blade to be really well sharpened for use.

2 My own current recipe for sharpening a badly worn and damaged blade is to start by using a belt sander to grind the worst of the poor edge away, making sure the blade doesn't overheat by plunging



Don't be afraid to loosen the machine screws and adjust the frog so the blade lies flat on it and square to the sole



The blade must not get overheated, so keep a water bath handy to plunge it in at regular intervals, this method gives a 'flat grind' - a grinding wheel gives a 'hollow grind'



Note the raw edge burr and slight curvature, which won't matter in this case as it will be 'cambered' for jack planing



The same blade set against a benchmark gives a known distance and therefore honing angle

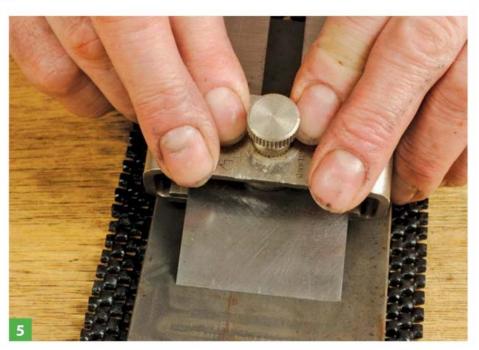
it in cold water regularly. An angle of about 25° is desirable.

The belt sander bed is not particularly flat, however, because of the graphite coated cork pad underneath; a large diameter wet stone grinder is better if you own one.

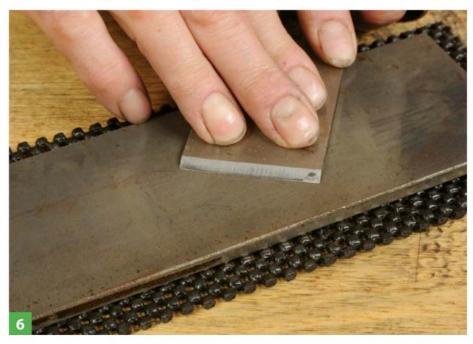
Set the angle by making a mark on the bench that you know gives the correct angle with the right amount of blade showing. This can first be determined by experimenting with a sliding bevel and protractor.

Next, I use a honing guide and a large 205 x 75mm 600 grit diamond plate with water or lapping fluid to get a raw but accurate secondary edge, known these days as a micro-bevel.

The back of the blade needs to be stroked sideways to remove the worst of the burr as well. It helps to lift the blade back a fraction to get a clean back face at the very edge.



Repeated strokes give this blade a good square edge and micro-bevel at a 30° angle



The burr left on the edge must be removed with sideways strokes on the back face. Lift it a fraction to ensure the burr definitely gets removed



I like using a ceramic stone after diamond because it improves on the slightly raw sharpness left by diamond honing



The same procedure for the back as before; you should now have a very sharp cutting edge. Note this blade has had its corners rounded for a No.4 smoother

"Throughout all these stages you need to check the squareness across the edge with an engineer's square"



If you want to finesse the edge completely, then stropping it will give a polished finish



A light coating of oil on all bare metal tool parts is important

7 The last stage is using a 1,000 mesh ceramic stone on the bevel again, with water and the honing guide. Note that throughout all these stages you need to check the squareness across the edge with an engineer's square.

Repeat the process on the back of the blade lifting it a fraction to get a really sharp edge. This removes the scratches imparted by the previous two stages and imparts a keen, sharp, burr-free edge.

A last worthwhile step is to use a sandwich of end grain faced MDF and fine abrasive paste to polish the cutting edge not just for appearance but to strop the edge to an even finer finish for a cleaner 'razor cut'.

10 Now the blade needs a clean up and rust prevention in the form of an oil. Traditional 3-in-1 type oils are okay but tend to smell and be rather sticky. My preference is for camellia oil sold for tool maintenance and polishing bonsai pots!



A bench plane blade and cap iron on the left, block plane blade on the right



The blade edge is barely visible on the left while the extreme opposite shown at the right. Some early blades are very thin and need to be set forward partly to prevent shavings jamming under the cap iron

The cap iron needs to sit flat on the blade back face which sits uppermost in fact with the bevel underneath, known as 'bevel down'. Some planes such as block planes have no cap iron and sit 'bevel up'. If the cap iron doesn't sit tightly on the blade you need to flatten the underside of the leading edge on a sharpening stone until it does.

12 Accepted practice says that the cap iron should be set near to the cutting edge to encourage the shavings to curl as they leave

the blade edge. However, there are some proponents who believe the cap should be set further back to give pressure over the rear edge of the bevel. Manufacturers don't allow for this, as you will find when the blade protrudes too far through the mouth. If you refine your technique you may wish to adjust the blade/cap iron relationship and then decide on results for yourself.

13 Mount the blade assembly on the frog and fit the lever cap on top. Nowadays some planes

have a brass screw-down knob to do the same job of holding the blade in place. Ensure the assembly is centred and square before pressing the lever down to lock it. If the action is too loose or impossibly tight, turn the cap holding screw accordingly until a firm grip is achieved.

14 The brass blade adjustment knob behind the frog is turned until the blade protrudes a fraction when sighted along the sole. The knob may need to be turned in a different direction according to the make of plane as they can have left- or right-handed threads.

15 You should see just a very fine black line of blade showing and if ground square and placed in the body squarely then it should need very little lateral tilt. The lateral tilt lever is pushed in the direction you wish to reduce the blade exposure. It should be showing evenly all across the mouth when viewed from the end.



Make sure the blade assembly is seated on the adjustment peg and sitting vertically



Antique planes often have a small knob which is hard to turn unlike this more modern example



A razor thin, even line of 'blade show' is what you should achieve



Shavings - coarse, medium and fine, after making adjustments



Edge profiles L to R: No.5 Jack - camber edge, No.3 and No.4 Smoothing - relieved corners, No.6 Fore, No.7 and 8 Jointer - straight

"You may wish to try working to the old regime and experience what flatting and truing boards is like"

Try your plane on a piece of wood – softwood is a good start – but without any blade jarring knots to contend with. Hold the plane level and see if you can raise a shaving. If it doesn't cut then turn the blade knob a fraction to extend the blade and try again. If on the other hand you take thick shavings and meet resistance you need to run the

blade into the body a bit. Practice will show you what setting works best.

# Blade edge profiles

17 Years ago bench planes were used for major preparation. Thus a No.5 jack plane was sharpened with a cambered edge profile to avoid dig-in and speed up the flatting process. Then a No.4 smoothing plane with a straight blade edge but the corners nicked back, was used to smooth out the unevenness left by the jack. Nowadays we tend to plane narrow components so blade edges are left straight; you may wish to try working to the old regime and experience what flatting and truing boards is like.

# **WORKING TECHNIQUES**



Always set your work in the vice level unless you specifically need it angled

A lot of this has to do with your stance. If you aren't standing correctly, you cannot move correctly and the plane will fail to deliver a good result.

Place the workpiece in the vice correctly marked up to show which faces and edges require the plane's attention. Clamp it tightly and level as you cannot expect to deal with it properly if it is canted at an angle to you.

2 Stand to the side of the bench and towards the front edge of the workpiece, i.e. not beside the centre of it, as you have to push ahead of you. Your legs should be apart a bit to create a solid triangulation – a solid base to push from. However, you should not keep your lower frame rigid but move it forward as you push the plane.



Always keep your feet apart, do not hunch your back, and push forward in a fluid motion



The big mistake is not to put enough pressure on the front knob at the start of the stroke; transfer the pressure to the rear as you slide forwards

Hold both the rear handle otherwise known as the tote and the front knob and press the nose of the plane down on the job. Push forward keeping the plane flat on the workpiece and alter the pressure so the rear handle is being used to follow through while pressing down on it at the same time.

If the blade is set correctly a cut should result but it may be hit and miss depending on how flat the surface is to start with. That of course is the purpose of planing, to level



Check the work as you go so you can correct the cutting attack angle of the plane or blade

and smooth uneven wood surfaces. Repeat the long through planing stroke paying attention to keeping the plane level. Angling the plane slightly as viewed from above will give an improved slicing action.

Once you have a continuous planed surface check for level by sighting along it and using a square to check from side to side. If the result is wrong in length plane the errant sections before doing a complete stroke to even the surface up. If it is wrong in width tilt the plane a fraction or use the lateral tilt lever to alter the blade angle. Once the error

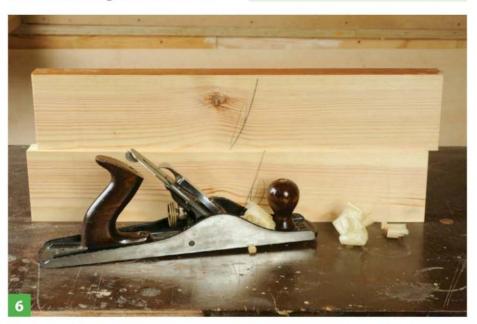


Once you master basic technique try a slight angle cut to slice the wood more efficiently

is corrected then revert to a normal through stroke.

Once you have managed to achieve a good result try marking accurately around a workpiece and planing so it just meets the line all round. This will help confirm your competence at planing. It takes time to get good results and persistence pays off. An acid test is planing two long meeting edges to make a light tight joint with the boards level to each other.

In the next issue we will look at chisels and gouges



A key test of planing skill is achieving a tight fitting perpendicular board joint

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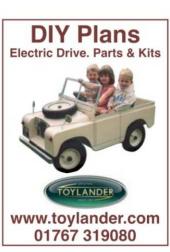
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The precision and complexity of these parts is astounding

# Colin Sullivan

tells the story of this 1920s Preston plane

he American inventor and plane maker Leonard Bailey spent several years perfecting the design of the 'Bailey' bench plane made by Stanley and used since by millions. Stanley kept the design well covered by world patents until 1930 when the demand for hand planes reduced, allowing firms like Preston and Marples to make the first copies.

Preston, based in Birmingham, away from the competing Sheffield tool manufacturers, were famous for quality tools with attractive decoration. Established in 1827 and run by the Preston family until 1932, they sold up to Record Tool Company due to the depression and competition from American imports.

This plane was probably Preston's answer to avoiding the Stanley patents in around 1925. I can't find any written evidence or catalogues from this period so we

have only the planes to testify for themselves.

The first thing to say is how complicated it is compared to the

Above: Here you can see the numbering system used Right: A similar frog adjustment to that used by Stanley to a to of pr to the su

Bailey design of about 70 years previous.

There were not only more parts, they also required more careful machining, so were more expensive to produce and perhaps added to Preston's financial woes.

The castings and finish are up to Stanley's quality with fine rosewood handles; the rear handle is held exactly as Stanley's and the

front knob uses a secret stud screwed into a boss on the casting. The cap iron is a substantial casting with a polished finish and proudly says 'PRESTON B'HAM ENG.', plus a clamping screw and cutter adjusting nut. With the back iron exposed you can see how different it is; longer than the actual blade to engage with the adjusting nut on the cap iron, shaped on the edges with a grinding template for the blade. This detail was stamped on the Record back iron after they took over production. The blade is a bit thicker than Stanley's, clamped to the back iron with a well made screw that engages with the hole in the lateral adjustment lever. The lever pivots on a central bolt which holds down the cap iron and is twisted at the top for grip.

The frog is cast iron and adjusts much the same way as the Stanley by loosening the two holding down screws and turning the screw on the back. The cast iron sole has 'PRESTON' at the front and 'No.9' behind the frog, likely

chosen as the plane is 230mm (9in) long. Setting up is not as easy as the Stanley and despite its complexity the performance falls short compared to planes I am used to using.

On hardwood the blade tends to swing over to one side, giving a tapered shaving – with a lot of use you could overcome these problems. It was a clever attempt to overcome patent problems, but the number of surviving examples suggests they did not sell well.



The original decal showing the red and gold graphic and famous Preston symbol





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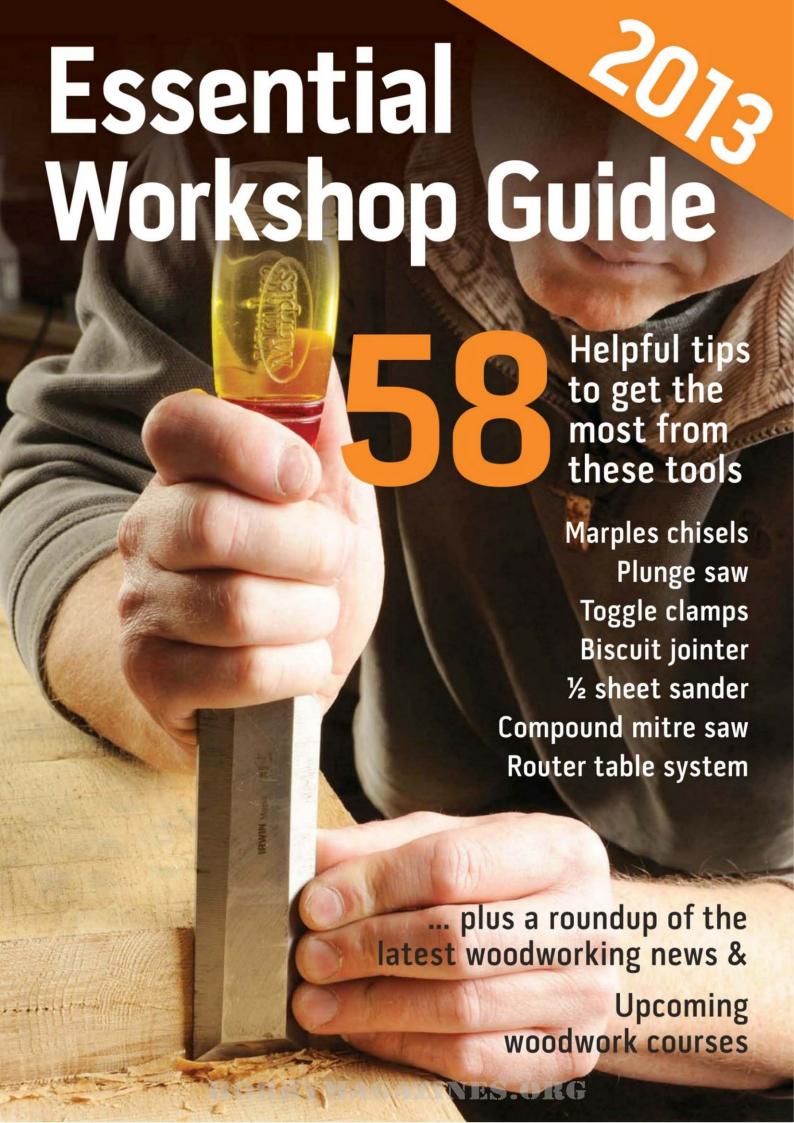


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# Welcome to The Essential Workshop Guide

# Meet the contributors



Mark Baker Editor of Woodturning and Woodcarving and Woodworking Group Editor of GMC's four wood titles



Anthony Bailey Editor of Woodworking Plans & Projects and Chief Photographer of all of GMC's titles



Derek Jones Editor of Furniture & Cabinetmaking

# Introduction

Welcome to this Essential Workshop Guide, brought to you by your favourite woodworking magazines -Furniture & Cabinetmaking, Woodturning, Woodworking Plans & Projects and Woodcarving

Join us as we guide you through some of the great tools currently on the market, and show you how to get the very best from a range of projects designed to make life in the workshop that little bit easier. From routers to plunge saws, biscuit jointers to 1/2 sheet sanders, we've got it all covered, with top tips on using a range of tools essential to any woodworker. To ensure your workshop is properly stocked up, we'll be testing a range of tools, bringing you a roundup of many others, and giving you plenty of pointers on how to get the most out of your kit.

Whatever your woodworking discipline, you'll find heaps of useful information in the following pages, making this a handy reference to your working needs. Enjoy!

GMC woodworking magazines' team

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**GET THE BEST** FROM YOUR TOOLS

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# Getting the most from your tools

Even though all workshops are different and cater to specific woodworking disciplines, the truth is that they all have something in common – they all serve as our area in which to be creative and work on our latest creations, be it a piece of general woodworking, turning or carving. Mark Baker introduces you to the The Essential Workshop Guide

Tools are used by all of us in some way in our everyday life. Woodworking is one area where no matter whether we use them as part of a hobby, in our workshops, around the home or professionally as part of our day job, we often find ourselves using similar tools that make life easier, faster or just simpler. But irrespective of why we use them, we are using them to be creative.

#### **BUYING & USING TOOLS WISELY**

The decision of what tools to buy and subsequently use is often dictated by necessity and of course budget. The necessity comes from having to do something and cost will come into play as to what make or model you can afford to buy. You should also factor in something else; you have to assess how often you are going to use it. If it is once every six months or so and you have plenty of makes to choose from, check the spec and see if an item will do what you need it to when you need it. If it is something that is going to be used day in day out, then look harder still and make sure the make you buy is up to the rough and tumble of everyday use. I, like many, have made wrong choices before and have something fail on me when I can least afford it to do so. There is no doubt that we have more options available to us today than at any other time. But as with all things, weigh up all the factors and buy wisely.

That said, there are definitely items that most people will use more often than others and we have selected some of the latest products and explored using them more fully. This is by no means an exhaustive list, but we have selected items that can be used successfully, easily and quickly that may well make life somewhat easier for you. We hope you enjoy what we have selected for you in this essential guide.



# CHOOSING THE RIGHT TOOLS FOR YOUR WORKSHOP



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# Get more from your biscuit jointer

Anthony Bailey puts the BPJ180 biscuit jointer from Makita through its paces and offers some top tips for using it

Biscuit jointers are a great way to make quick assembly joints and the latest cordless version from Makita creates new possibilities by not having a flex dragging around and working away from a power supply on site. Here are some suggestions to help your working methods.





Make your reference board as big as practical so you have plenty of room for larger workpieces and still have space for a jointer, a quick and safe way to work accurately

TIP 3 A proper reference surface is my own biscuit jointing bench hook. This is a large board with a batten back and front; one below to clamp in the vice or press against the bench while the upper one at the back is used to press the workpiece and the jointer against.

TIP 4 Carcass work involves a lot of repetitious slotting; a reference stick enables you to mark out identical slot positions quickly, both on faces and edges.

TIP 5 Biscuits pick up damp quite easily making them hard to use as they swell up. You can put large amounts in big plastic containers but for everyday use choose a smaller one to put them in which will fit in your jointer case.



Here a router L-jig is pressed into service resting on a jointer bench hook. This is a fast, accurate way to machine face joints

TIP 6 An L-jig is the ideal way to do carcass face joints with the components standing upright. This is especially useful for drawer box construction.

TIP 7 Like other biscuit jointers the Makita can be used for board sawing so long as you move it into the direction of cut. You can easily remove the rubber anti-slip pads but you must replace afterwards.

TIP 8 The fall-front can be used without the fence as a reference surface when machining. The thickness plate can be added which alters the slot position in the edge of the workpiece, which is useful for thinner boards to keep the slots centred in thickness.



This is a quick, safe way to mitre and ensures the slot is low down and therefore penetrates the outer face. Do plunge slowly, though

TIP 9 With the fall-front set at 45° and the fence mounted you can do 'trapped mitres' making safe accurate corner mitre joints.



The weight of the Makita can make it tip back slightly but two slips of veneer are enough to level it

TIP 10 Makita have made a slight 'peg' under the casing for the machine to rest and keep it level. If it isn't quite so, place a thin packer underneath if you are using the base as the reference face. The fence can be used at the same time as a workpiece hold-down.

#### **DETAILS**

Price: £530; £241 (body only) (prices inc VAT)
Contact: Makita T: 01908 211 678
W: www.makitauk.com



Access to the blade and actual blade changing is incredibly easy, just remember to detach the battery first

TIP 1 The machine has a battery of course so the safe way to carry out blade changes and chippings clearance is to remove the battery. It also lightens the machine when you are working on it.

TIP 2 The Makita is very accurately machined but as with all biscuit jointers, the primary reference surface should be the base rather than the fence. This also gives more control if you can rest the machine down on a flat surface to make the slots.







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# Get the most from your chisels

Anthony Bailey provides his top tips on getting the best from various chisels in the IRWIN Marples range

ot a lot of woodworking gets done without a set of chisels. They are essentially for joint cutting and paring components to fit. After the saw and planer have done their work, sharp chisels can be relied on to finish the construction and fit of furniture, joinery and carpentry. Because chisels cover such a breadth of work you need to consider what types and how many you should own and use and keep them in good functioning order.



Square edge firmer chisels cannot undercut whereas a bevel edge chisel can

TIP 1 Most chisels sold nowadays are bevel edge pattern. This means the sides slope greatly, allowing them to be used for anything from chopping mortises without getting jammed in chippings, to cleaning up the undercut shape of fine dovetails.

TIP 2 Do not buy a cheap unknown or unbranded set of chisels. The steel and importantly, the treatment of the steel and weak handles mean they may break and the cutting edges will dull quickly.



The Blue Chip on the left is meant for benchwork, whereas the High Impact version on the right has a striking cap and the blade metal continues as a rod right up to the cap

TIP 3 I have always had two distinct sets of chisels. One, for fine cabinetwork such as the Irwin Blue Chip with its slimmer, comfortable handle profile. The other set needs to be tough enough to take on site and cope with a degree of mistreatment. You do not need exactly the same sizes in each set; they should suit the intended work.

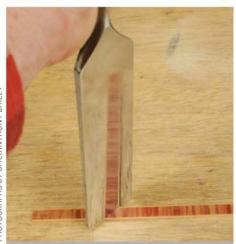
TIP 4 Always use a honing guide – never try to sharpen cutting edges by hand holding alone. A medium diamond plate is a quick and reliable way to get a sharp edge with a fine diamond plate for cabinet quality edge sharpness.



A 600 grit diamond plate with lapping fluid and a standard honing guide will give you the required 30° micro bevel very quickly



Always indent a chisel line all around the mortise markings so it delineates the cut area and severs the surface fibres neatly before chopping out



A mirror back on your chisel allows you to observe how perpendicular a corner meeting in banding will be so you can adjust the cut angle

TIP 5 If you are using chisels for fine work it is worth flatting the chisel back carefully so you can get it to a mirror finish. This takes some care and effort but it will allow you to use the reflection to accurately align mitre cuts by observing the angle of the cut that reflects in the blade back.

TIP 6 On site wider spaced sizes tending to run from 16mm for chopping lock recesses up to 50mm wide for heavy slicing work. The ability to take heavy hammer blows is important – the Irwin High Impact chisel is a perfect example of this. It has a striking cap with a connected rod inside which is integral with the blade.

TIP 7 When chopping a mortise, mark it out exactly and clearly, indent a cut all round using a broad chisel for the long sides and a narrow one matched to the mortise width. Then do a series of spaced cuts all the way along the surface, encourage the broken surface out with the narrow chisel and repeat the chopping process to final depth.

TIP 8 Now pare down both the sides and ends of the mortise; take care to keep the internal straight sided and not tapering in or out, in depth.

TIP 9 Cabinet work tends to need the widest range of sizes from 3.2mm up to 38mm at closely spaced intervals. A lot of work is done with sizes between 9.5mm and 25mm with the larger ones reserved for paring surfaces flat and improving the fit of joints.

TIP 10 Make a decent chisel rack for the workshop. My own solution has been to make a 'chisel pocket' formed from 6mm ply or MDF with vertical fillets separating the chisels and a long fillet across the bottom. Note the open section so you can see which chisel you want to select.

### **DETAILS**

Prices: Set prices from £27.20-£51.41 (prices inc VAT) Contact: IRWIN T: 01543 447 001 W: www.irwin.co.uk

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# Get the most from your plunge saw

**Derek Jones** looks at this intuitive TS 55 RBQ circular/plunge saw from Festool and gives his top 10 tips for getting the most from this machine



he TS 55 is responsible for converting more new users of Festool power tools to become life-long devotees of the brand. Don't think for a second that it's an entry level machine – a safer and more intuitive circular/plunge saw is hard to find if you are contemplating this type of machine for the first time. Guiderails have significantly transformed the way we use circular saws and choosing a good one will get you close to shop accuracy on site. Developments in blade technology and the increased use of hand-held machines means there's a greater choice of blades for cutting a wider range of materials, including laminated boards and aluminium.

#### THE UPGRADES

With such an important product as the TS 55 in their range, Festool have worked hard to upgrade what was already a tried and tested machine, so things like the 1,200W motor and cutting capacity remain unchanged. Similarly all your existing blades will fit the new model and integrate with the existing range of Festool tablesaw accessories. I'm glad they haven't tinkered around with the overall body shape too much; some compact machines can feel a little awkward and unbalanced when the fore and aft grips are too close together. The TS 55 is a good combination of size and capacity.

TIP 1 The TS55 is designed with a casing that completely encloses the blade making it one of the safest plunge saws available.



TIP 2 The rigid body is accurately cast to provide a 90° edge to the baseplate so that you can make parallel cuts to within 10mm of a wall or similar upright.

TIP 3 An automatic riving knife extends from behind the blade to register the saw in an existing kerf for joining longer cuts.



TIP 4 Depth settings are micro-adjustable from the dual scale on top of the body.



TIP 5 Set the saw to make bevel cuts at -1° at the push of a button for butt joining worktops.

TIP 6 View the cutting zone from both sides of the cut.

TIP 7 There is a detachable splinter guard for use on laminated material.

TIP 8 Use the guiderail system to perform accurate freehand cuts from pencil lines.



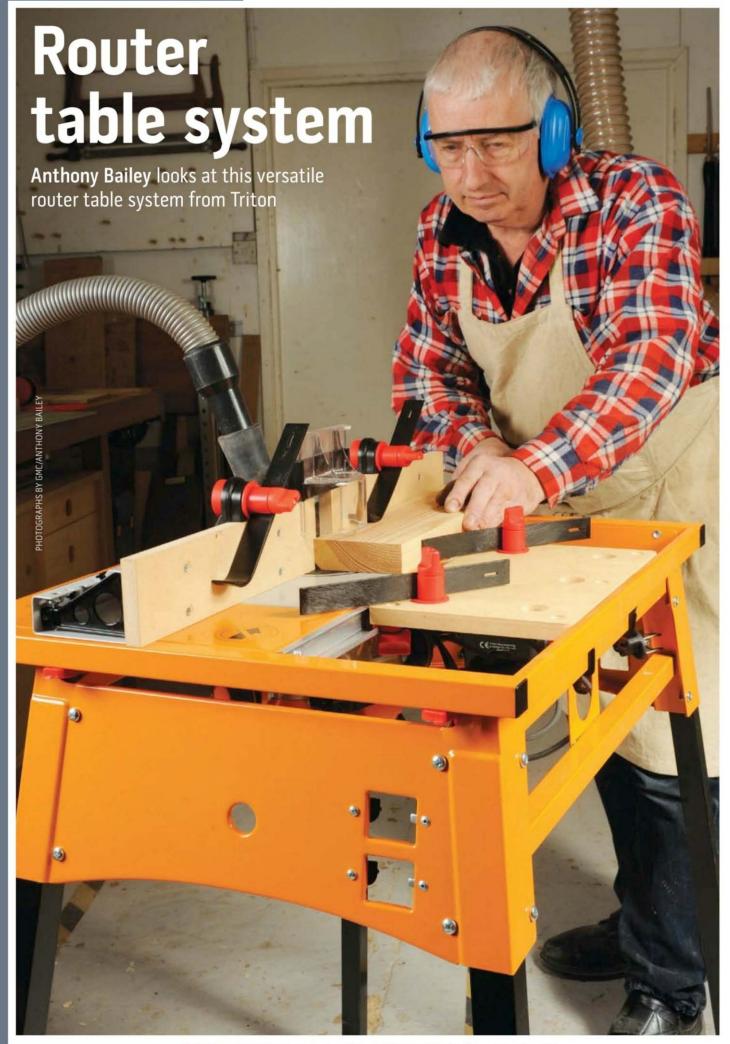
TIP 9 Fine tune your TS 55 to operate without play on the guiderail.



TIP 10 Single lever spindle lock with power shut-off for quick and safe blade removal.

#### **DETAILS**

Prices: 110V – £442; 240V – £492 (prices inc VAT) Contact: Festool
W: www.festool.co.uk



Above: Top of table

the height winder

handle – included with Triton routers

Left: Another unique Triton feature is the ability to remove the

spring return

height adjustment is made possible using

he best and most precise way to do any routing operation, if you have the choice, is to do it on a router table. Bringing the work to the machine is invariably the safest, most precise method unless the workpiece is simply too large or you need to make up a specific jig. The Triton router table and stand have some unique features which you can take advantage of, and adding some accessories will expand your routing repertoire even further.

TIP 1 If you don't own or want a Triton Workcentre, the router table base is compact and the legs easily demount if you want to take it on site or use it outdoors, if weather permits. If you already own a Workcentre then the router table will swap over with standard top very quickly.



Triton routers are unusual in being able to plunge right up to table surface level without resorting to an extension collet

TIP 2 The table insert is very low profile which means maximum cutter extension and the Triton routers are designed to fit it. They also all have extended plunge so the collet can be made to protrude through the insert ring.

TIP 3 The insert plate with router attached can easily be lifted in and out making adjustments simple if you need to do so. You can fit other routers using the optional fittings pack that comes with the table.



Push the sprung knobs down to be certain the bolts engage in the mounting plate holes underneath

TIP 4 To install a Triton router you need to remove the baseplate first; this has the advantage of removing thickness for cutter projection. Then use the two sprung bolts on the router base to mount it. Make sure both bolt positions are aimed at the arrows on the mounting plate so it is centred and locked in place.



TIP 5 For inverted use the plunge spring must be removed so there is minimal resistance when adjusting cutter height. Keep the spring safe and put the spring cover and locking screw back in the body plate so it is centred and locked in place.

TIP 6 It comes with a fence that can be adjusted so it is exactly vertical. You need to check on setup that it is indeed perpendicular to the table using a square on both infeed and outfeed ends of the fence.



Note the shims come in two thicknesses for different amounts of outfeed support; the second set are stowed on the fence brackets

TIP 7 A unique feature is the sprung sliding MDF fence facings. The advantage of sprung being the fact they can easily be slid apart or together and special packing shims can be inserted at the outfeed slide for take off support. If under heavy load the facings are likely to move, but you can always screw them up tightly for more resistance.

TIP 8 The safety-off paddle switch can be knee kicked if you need to shut off the router in a hurry

and both your hands are guiding the workpiece.



A secondary fence facing can always be fitted to the mitre face if required

TIP 9 Yet another feature unique to this table is the sliding MDF table; this takes a mitre protractor which has abrasive facings to give extra grip when doing scribing cuts such as frame and panel or tenoning.

TIP 10 There are various moving parts on the table, changes can take place with use so regularly check that everything is set so there are minimal tolerances and working surfaces are flush, etc.

### **DETAILS**

Prices: Router table RTA300 – £123; router stand RSA300 – £112; 1,400W router MOF001 – £175 (prices inc VAT)

Contact: Triton W: www.tritontools.com



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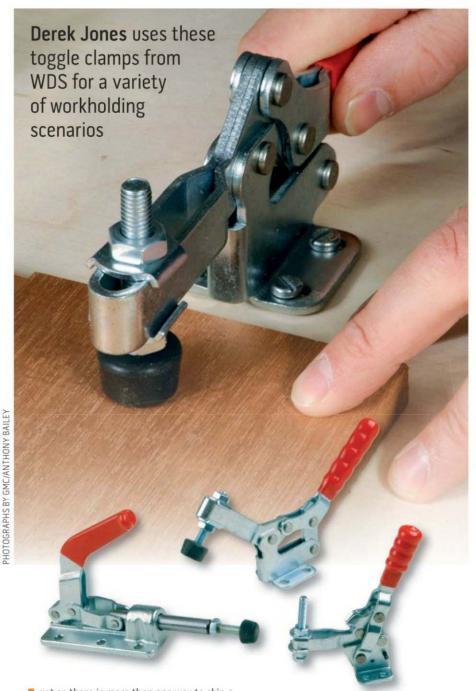


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# Toggle clamps



ust as there is more than one way to skin a cat, there is also a wide range of methods for holding down a workpiece. I know this isn't really a technical introduction, but one you will agree with when you discover these excellent toggle clamps from WDS. They can be used for securing small items to a jig for routing, sanding or sawing, as well as for securing lids or removable panels. They also work very well in place of clamps for holding down work.

TIP 1 Crosscutting small pieces can be hazardous on the tablesaw. Build a jig with toggle clamps to secure the piece in the knowledge that your hands will be out of the danger zone.

TIP 2 For increased stability and control, you can secure the workpiece in a jig for use on a bobbin sander.

TIP 3 For repetitive work a toggle clamp is instant. This piston clamp is perfect for use on a drill press or crosscut saw.

TIP 4 Make sure you don't lose the rubber bolt covers as these reduce the risk of marking.

TIP 5 To disperse the pressure point of the clamp, you can use it in conjunction with a suitable block.

#### **DETAILS**

Prices: From £10.55-£31.81 (prices inc VAT)
Contact: WDS Ltd

T: 0113 290 9852 W: www.wdsltd.co.uk



Build a jig with toggle clamps to secure the piece in the knowledge that you're safe



For increased stability, you can secure the workpiece in a jig for use on the bobbin sander



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To disperse the pressure point of the clamp, use in conjunction with a suitable block



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# How to best use a sheet sander

**Derek Jones** looks at this SV 12SD sheet sander from Hitachi and highlights some of its main features



his Hitachi qualifies for the title of half sheet sander, although half a sheet's width is also exactly the width of a standard roll of abrasive at 115mm, so you can either use cut pre-punched sheets or off the roll abrasives to suit. This machine has been around for a long time and certainly hasn't given way to the most recent Hitachi livery. It is big and heavy thanks partly to the heavy aluminium base and the motor on top of it. There are tough plastic levers that operate the sprung metal clamps at the back and front to hold the abrasive sheets. Underneath, a polished aluminium platen with extraction holes has a dense foam rubber covering applied to it. Apart from the on-off switch trigger and the slide on dustbag that is all there is to this sander.

This tool qualifies as a roughing sander; its size and weight alone make it a very effective

machine, although the 'scratch' left behind will depend on how fine an abrasive is used. For use in

on how fine an abrasive is used. For use in the joinery shop or on site this is not a great issue compared to cabinetwork with the need for fine finishing. This is an impressive sander, comfortable to use achieving rapid results with moderate noise and vibration. Here are a few tips on how to use it to its best.

vibration. Here are a few tips ts best.



TIP 1 The forward grip and body are contained within the footprint of the sanding platen so sanding working into corners is possible.



TIP 2 Toothed clamps pierce through the abrasive sheet to hold the abrasive firmly in the correct position.



TIP 3 The rubber sole features channels that ensure dust is drawn in from the edge of the sanding area to increase the capture of waste.

### **DETAILS**

Price: £182.84 (inc VAT) Contact: Hitachi T: 01908 660 663

W: www.hitachi-powertools.co.uk

# Tips for using the compound mitre saw

**Derek Jones** looks at this GMC 8 SJL compound mitre saw from Bosch and gives his top tips for using this powerful piece of kit



his compact and light in weight slide mitre/compound saw from Bosch benefits from a powerful 1,500W soft start motor. It features dual slide bars which allow for maximum crosscutting and large compound mitre capacity. There is also a handy laser which shows the exact line of cut ensuring you can align your work accurately; an added light also gives clearer working in all light conditions.

The clear mitre scale is cast into the bed with a very positive front lock. This mitre saw is fitted with a TCT 48-tooth blade as standard for fast clean cutting as well as control handles that have a soft grip making use and transportation easier. A work clamp is also provided for safer working. Overall, this is a great, well built saw with many features. I will now take you through my essential tips for working with this mitre saw.





TIP 1 The quick release table extensions at each side increase the working area from 440mm to 740mm.



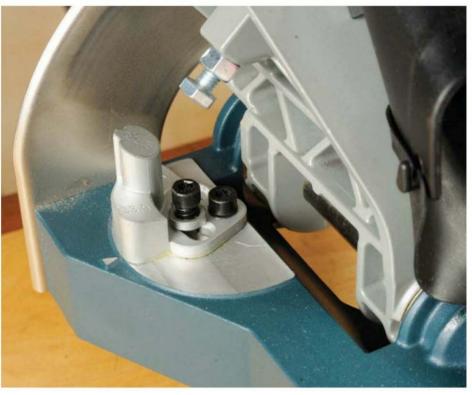
TIP 2 A compact unit with a conveniently placed carrying handle for easy transportation.

TIP 3 Mitre cuts from 60° right and 50° left with four presets in both directions.

TIP 4 Carriage lock allows free adjustment of mitre settings.



TIP 5 Twin extraction ports with a chip deflector for effective removal of dust.



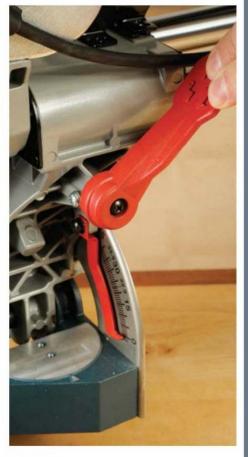
 ${\sf TIP}$   ${\sf 6}$  Switch between three presets for bevel cuts or custom angles from -2 and 47°.



TIP 7 The trenching facility with a tool-less fine adjuster is quickly activated or by-passed altogether for regular cuts.

TIP 8 On-board laser features a lens shield meaning you need never be left in the dark.

TIP 9 Quick lock cam lever for setting bevel cuts.



TIP 10 A rigid work clamp is a must especially for mitres and bevel cuts.

## DETAILS

Price: £439 (inc VAT) Contact: Bosch T: 0844 736 0109 W: wwww.bosch-pt.com



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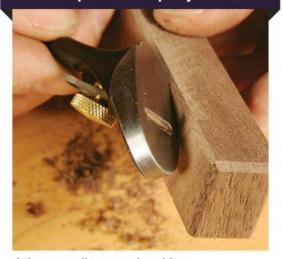
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# Real Bosch! How To Guide



Ever wondered how the professionals do it? Not sure and need some advice on doing a new task?

Not only is there the guide below, but you can also have the workshop wizard Alan Holtham run through this task in the online "How To" video by scanning the QR code with your smart phone or alternatively visit our You to channel at the bottom of the page.

# Making a Raised panel door

In this issue Bosch and Alan help you out with a guide to cutting and assembling a raised panel door using a router and worktop jig.



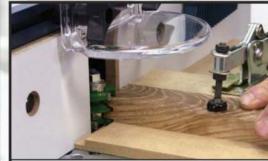
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You will need a powerful ½" router, a router table and a set of panel door cutters



The timber must be thicknessed precisely



Use a homemade jig to scribe the rail ends



Adjust cutter height to machine profile



Make trial cuts and adjust height until joint is flush



Machine the profile on rail and stile edges



Form the panel mould with progressively deeper cuts



Assemble the door, sand the joints and radius the outer edges









# **Titman router cutters**

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For more information call us today or visit our website:

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# Toolshow2013





On the back of the huge success that was Toolshow2012, PR Industrial Ltd are striving ahead to create Toolshow2013. The 2013 show will possibly be the biggest show of its kind in 2013 and is not to be missed.

With over double the space the show will feature a far bigger array of woodworking related demonstrations than in 2012 as well as increasing the range of woodworking exhibitors. The new space will incorporate the GMC village where you can browse your favourite publication whilst taking a breather in the re-designed food and drinks area. An innovation zone will keep everyone up-to-date with the latest techniques and products available and of course the biggest names will be in attendance with their experts on hand with great deals to be had.

PR Industrial Ltd looked at potential improvements that could be made to the show and recognised the potential for a much greater range of woodworking exhibitors and demonstrations. This is an event not to be missed in 2013.

#### **DETAILS:**

When: 20-21 July, 2013

Where: American Express Community Stadium, Village Way, Brighton, East Sussex, BN1 9BL

Contact: PR Industrial Ltd W: www.toolshow2013.co.uk

# **Turners Toolbox**

Turners Toolbox, a secure online woodturning, woodworking and carving store is run by

woodturner, David Martin. Having first-hand experience of using the different makers and the types of tools available on the market today, David stocks and supplies tools and wood finishing products from a wide range of well known manufacturers. David prides himself on offering a personalised service and aims to send out orders the same day they are placed. To see the full range of turning supplies for yourself, see the website: www. turnerstoolbox.com.

#### DETAILS:

Contact: Turners Toolbox Tel: 01873 831 589 W: www.turnerstoolbox.com





# **Titman** router cutters

The way that Titman cutters are machined and put together is more to do with engineering than assembly manufacturing. Cutter blanks are machined as small or large batches either under manual control or automated milling, then almost surgically cleaned ready for brazing on TCT blanks chosen from a myriad of sizes and types held in stock. If the brazing looks too neat to be done by hand, that's because it was done by hand, no automatic brazing present – just keen eyes and finely honed skill involved. The cutters are buffed to a finished state, then the chemically etched shank details added and the trademark Titman red hand painted. That is the way Titman operate and the results are flawless – Titman produce the Rolls-Royce of router cutters. Independent tests have proven titman router cutters to be one of the longest lasting in the world. To see the full range of cutters available, visit the website: www.titman.co.uk.

#### **DETAILS:**

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# Artistry in Wood – by George Foweraker (RPT)



Registered Professional turner George Foweraker lives in Somerset and creates a variety of projects from pens all the way through to large wall sculptures. He draws his inspiration from the natural and architectural environment and he enhances his work with texture and colour. He demonstrates turning and also offers tuition; see his website for further details: www.artistry-inwood.co.uk.

### Gerald Adams Woodcarvers Ltd

Gerald set up his business in 1986 after studying woodcarving at the London College of Furniture. A member of the prestigious Master Carvers association Gerald and his small team have completed many commissions for furniture manufacturers, interior



designers, architects and private individuals around the world. Qualified in adult education, courses are taught in a professional workshop atmosphere. There is a choice of courses available from two-day beginners classes to one-day returners classes. Full details can be found on the website: www.adamswoodcarving.co.uk.

## John Lloyd

John Lloyd offers a range of short courses in furniture making, antique furniture restoration, polishing, veneering and laminating and machining. John also offers longer furniture making courses in blocks of 12 weeks



up to 36 weeks and courses cover a range of traditional skills and techniques, all run from professional workshops in Sussex. Groups are intentionally kept small so that students gain the maximum benefit from the large amount of personal attention that this allows. All courses are designed to be intensive, whilst at the same time retaining a relaxed and enjoyable atmosphere. For more information, see: www.johnlloydfinefurniture.co.uk.

## Melvyn Firmager

The Melvyn Firmager School of Woodturning has an international reputation, receiving course participants from 35 countries and counting. The courses cover all levels of turning from raw beginner to advance level, working with both conventional and modern techniques, especially Melvyn's unique and immensely successful methods. His courses are about in-



spiration and freeing the mind to be creative, and really learning to turn and sharpen tools. Not rushing to complete the maximum number of pieces, but taking time to develop a full understanding and building confidence. At the same time there is plenty of fun and camaraderie. See the website: www.melvynfirmager.co.uk.

#### Peter Sefton Furniture School

Peter Sefton runs a private purposebuilt furniture school in the UK dedicated solely to teaching furniture making and woodworking. The school runs a wide range of long and short courses all year round. There are courses to suit everyone, whether you are an aspiring professional furniture maker or a keen hobbyist, just starting out, or looking to develop your skills further.



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For more information see www.peterseftonfurnitureschool.com.

#### Courses at Turners Retreat

Turners Retreat woodturning courses are catered towards, but not exclusively, to the beginner or as a refresher for

students wishing to brush up on their already acquired skills. They use only experienced craftsmen for your tutelage and have a maximum of three students per course to ensure the





courses provide a high degree of 'one to one' tuition. Further details can be found at www.turners-retreat.co.uk.

# Williams and Cleal Furniture School

Since 1990 Williams and Cleal have enjoyed designing and creating furniture and interiors to commission. As a small team they are committed to excellence in design and craftsmanship and are acknowledged to be a leading furniture workshop. Share this passion and learn how to become a successful designer/maker. There is a variety of courses on offer which all include:

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Visit the website to find out more or contact Williams and Cleal to arrange a visit to the workshop. www.williamsandcleal.co.uk.



# Chairmaking Courses at The Windsor Workshop

Professional chairmaker James Mursell offers two- and five-day courses in his West Sussex workshop. Over a weekend, students can make a four-legged stool, and over five days a double-bow arm chair. Numbers are limited to six so everyone is guaranteed individual attention. Most of the work is done with traditional hand tools and the minimum of jigs, with a strong emphasis on



making the finest possible chair. The price of the course includes all materials, use of tools and generous catering each day. Further details can be found at: www.thewindsorworkshop.co.uk.

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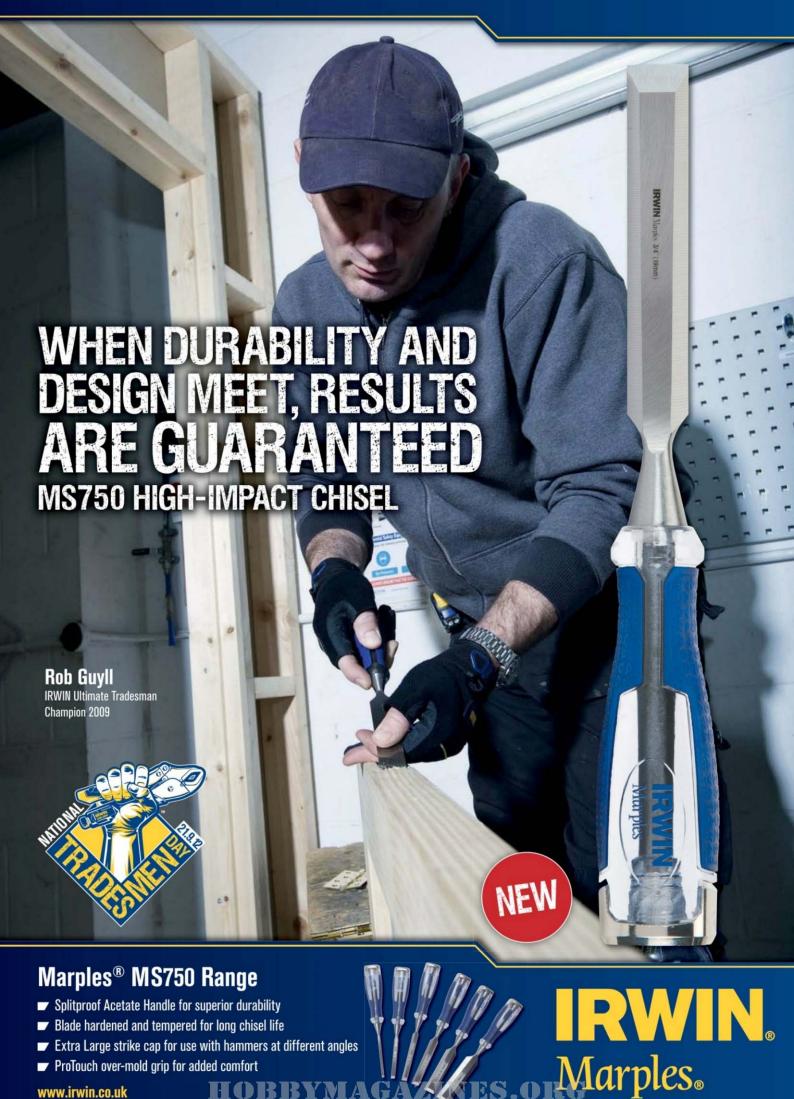


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