

Woodworking

CRAFTS

HAND, POWER & GREEN WOODWORKING • TURNING • RESTORATION • DIY

Create an Arts & Crafts bookshelf

PROJECTS

Coffee table plans
Making a shrink cup
Stacking ply toolcase
Fold-down workbench
Turn a thin-walled bowl

Feature
Ecological architecture

TECHNIQUES

Tricky veneer repair
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SCROLLSAW BASICS • CARD SCRAPER TECHNIQUE • RECYCLED PALLET STOOL





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What They Say...



Woodturning Magazine

Issue 214 June 2010

Review by Mark Sanger



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Welcome

to the January issue of
Woodworking Crafts

Hello everyone and welcome to the January 2018 issue of *Woodworking Crafts*. Yes, it's a new year full of new opportunities. Depending on the weather, it isn't always the most workshop-friendly time of year but at least having put the indulgences of the festive season behind us we can begin to plan those half-conceived projects that have been lingering in the back of the mind for a while and resolve to put them into effect. Me? I'll be doing more practical work than I have done for some time. It will be good to get the wood shavings going once more. As an editor, desk work is a fact of life but at heart I am much more of a practical person and, despite the occasional cussing and chaos, I much prefer bench work to desk work – it's healthier too. I've recently rebuilt a veteran small Hegner scrollsaw and I'm raring to have a go with it, so the article on scrollsaw basics in this issue is opportune. Also workshop-oriented are the fold-down bench, handy for a garage or confined space, and a rather splendid stacking tool case project. All good articles to

set you thinking about the year ahead. If you are planning anything interesting wood-wise do get in touch and let me know what you'll be getting up to. In the meantime I hope you have a happy and successful New Year and thank you for staying with us.

Anthony Bailey, editor
Email: anthonyb@thegmcgroup.com



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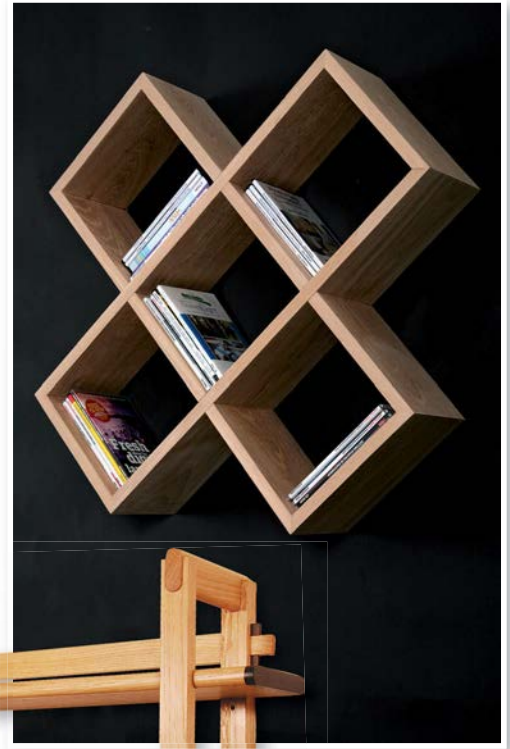


'Flying' shelves
are very popular

Design INSPIRATION

On the shelf isn't necessarily a bad place to be. Here's a selection of unusual storage solutions

PHOTOGRAPH BY ALAN HOLTAM



Above: A
diagonal shape
is an efficient
way to store
discs

PHOTOGRAPH BY ROB STOKLEY



Left: Wedged
tenons make
this design rigid

Left: A witty
way to re-use
old cutlery

Below left: A
house of fun
to show off
ornaments and
books

PHOTOGRAPH BY PETE JONES



Above: An old
ladder finds new
purpose

Left: A slight nod
to the Arts &
Crafts style

PHOTOGRAPH BY JIM ROBINSON



PHOTOGRAPH BY EMMA NOREN



PHOTOGRAPH BY EMMA NOREN





ARTS & CRAFTS WALL SHELF

Hollow, quartersawn columns and traditional inlay elevate an easy project by **Nancy Hiller**

While looking through a book on home design several years ago, I noticed a small cabinet hanging above a claw-foot bathtub. With its inlaid columns and beveled caps, the shelf was wonderfully British in style and was quite distinct from American interpretations of Arts & Crafts design. Although the original cabinet had a pair of doors, its shallowness seemed more suited to open shelves.

The design of this cabinet may be simple, but making it involves using a number of valuable techniques, such as mitred joints for the columns, decorative inlay, and a finish for quartersawn oak that makes new work look old. Although quartersawn oak is the traditional choice for

English Arts & Crafts furniture, this piece would look equally good if it were made of cherry or non-figured maple.

Mitred columns showcase oak grain

The columns are the focal point of this piece. They are hollow, made of three vertical boards mitred together at the front corners so the quartersawn figure is visible on each face, with a fourth board inserted as a back filler.

Even if you are not using oak, these mitred corners will give the columns a much cleaner look than simple butt joints. While you certainly could use a single, thick block of wood for the columns, doing so seems clumsy for a delicate piece of furniture, and the columns would



MITRE AND GLUE UP HOLLOW COLUMNS

This method of construction allows the hallmark Arts & Crafts ray-fleck to appear on each face.



Attach an auxiliary fence. Using a supplemental fence on a right-tilt saw prevents the thin, already mitred edge from creeping under the sliding rip fence (above)



Insert the filler piece in the back. Once the back is in place, use bar clamps to apply pressure



Start clamping at the front of the column. Because the pieces that form the column are now cut to length, make sure to get the ends level with each other

be less stable when subjected to seasonal changes in humidity.

Cut the mitres in one pass on the tablesaw, holding the board down firmly all the way along the cut. If it lifts even a little or wanders away from the fence, the mitered edge will not fit tightly.

After cutting the mitres, you can go ahead and cut the pieces to length. Dry-clamp one of the columns to work out any kinks in the process. Now you are ready to glue them.

There are a number of ways to approach this glue-up, but the method I use has proven efficient and easy for somebody working alone, and it yields great results. I use Ulmia picture-framing mitre clamps (www.garrettwade.com

or www.collinstool.com) because they are lightweight and easy to handle. While the pointed ends of the wires do leave small indentations in the wood, the coarse grain of the oak distracts the eye enough that the marks disappear when filled with wood putty.

I match the putty to the piece only after the third step of the finishing process. If you don't want to buy Ulmia clamps or if you are using a finer-grained lumber such as maple or cherry, you can use tape or picture-framer's mitre clamps to avoid these marks.

As soon as each column's mitres are clamped, insert and clamp the filler board at the back. After the glue is dry, run the back face of each column over the jointer to level the joints. ➤

COLUMN INLAY TECHNIQUE

Prepare the inlays by resawing stock (on the tablesaw or bandsaw) to $\frac{3}{32}$ in thickness. Regular commercial veneer is too thin and doesn't leave any margin for error.

Trace the outline on to the inlay stock and cut each part to shape, using a scrollsaw or a coping saw, files, and coarse sandpaper.

After the inlays are shaped, mark the position of the flower and leaf on each column, taking care to centre them in the width and align each element with the other. You can use double-sided tape to ensure that the inlays don't slip out of position while you are scribing around them. Score the outline with a sharp knife or awl. Carefully rout out the main portion of the recess, using a $\frac{1}{8}$ in straight bit set at just less than $\frac{3}{32}$ in deep.

Pare away the remaining waste with carving gouges and a knife, making sure the bottom of the recess is uniformly flat. Cut the recess for the stem using a $\frac{1}{8}$ in straight bit (also set at slightly under $\frac{3}{32}$ in), and a router equipped with a fence.

Using yellow glue, with cauls to distribute clamping pressure, glue in the flower and leaf. After the glue is dry, sand them flush. Finally, trim the stem to fit and glue it in place.



1 Score the outline. Press lightly at first to avoid getting caught in the grain, then more deeply a second and third time



2 Remove most of the recess. Rout close to the inlay border, leaving a bit of waste to clean up by hand



3 Pare to the line. Carving gouges make it easy to clean up and shape the recess accurately



4 Rout for the stem. After routing the groove, rip stock to fit tightly into it



5 Glue in the flower and leaf. Use a caul to apply even pressure. Newspaper prevents the caul from sticking to the inlay



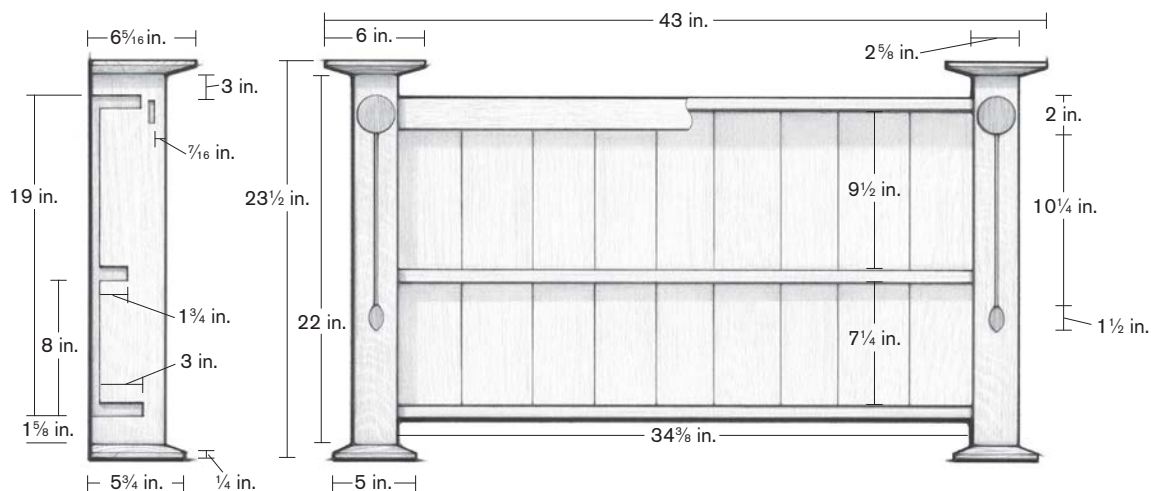
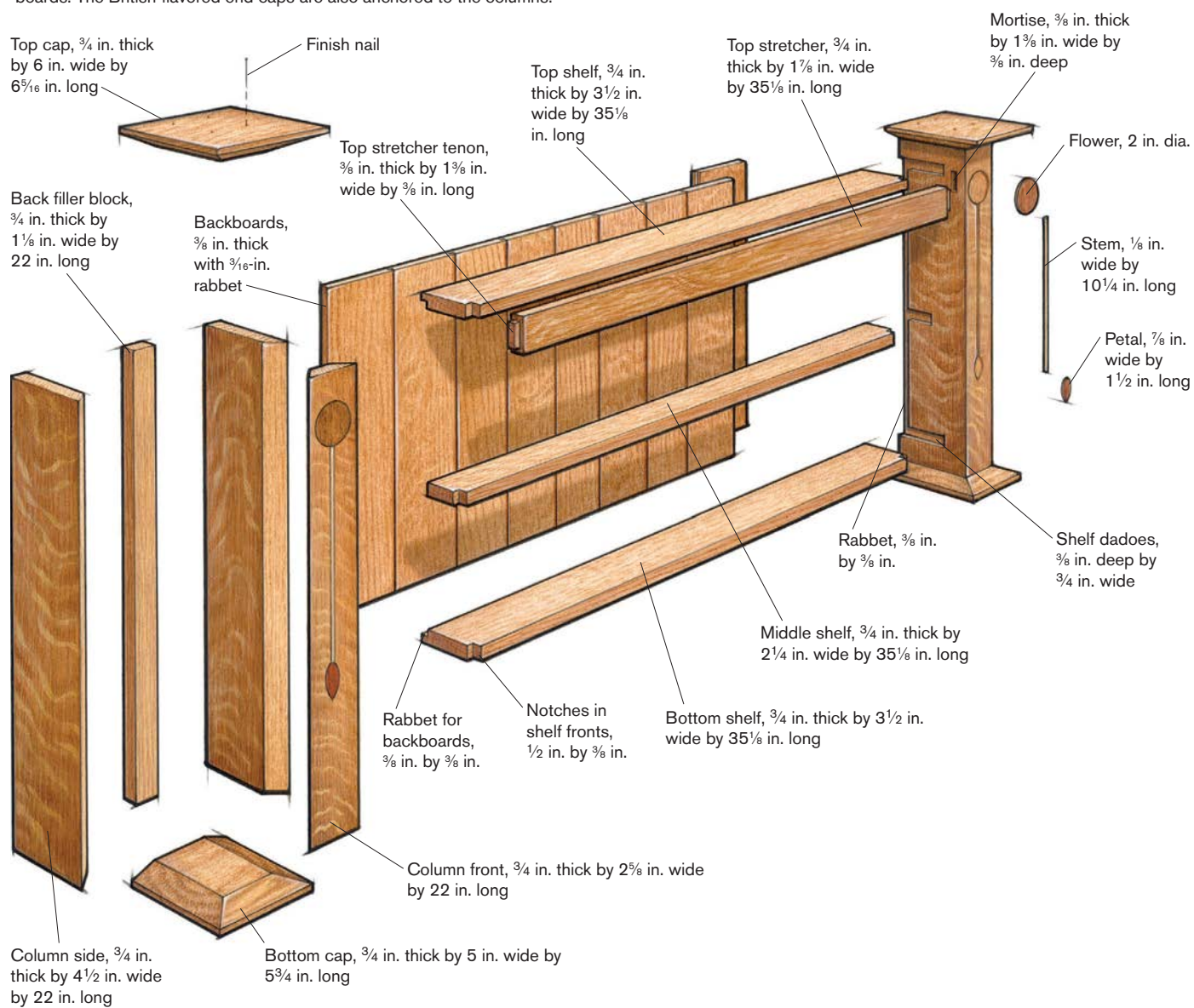
6 Insert the stem and finish up. Glue and clamp the stem in place



7 Once the glue is dry, scrape and sand the inlay flush ➤

ANATOMY OF A WALL SHELF

The foundation of this simple but stylish wall shelf is the columns, which are dadoed for the shelves, mortised for the stretcher, and rabbeted for the backboards. The British-flavored end caps are also anchored to the columns.



CUT THE DADOES AND RABBETS



Above: Rout shelf dados while columns are clamped together. Clamp a straight edge to the columns to guide the router

Inset: Square the dado. Use a chisel to square up the front edge of the dados by hand

Rout the shelf dados, rabbets and stretcher tenons

The shelves will be housed in stopped dados routed into the columns. Mark the columns and rout the dados while the two columns are clamped together. When marking the dados, there are two things you must remember: Because the centre shelf is set back more than the other shelves, its dado begins farther back than the dados for the top and bottom shelves; and all of the dados are stopped short of the shelf fronts to accommodate the notch in the front of the shelf.

Cut the dados in one or two passes using a $\frac{3}{4}$ in straight bit, guiding the router with a straight edge clamped to the work. With a chisel, square up the front ends of the dados.

While milling stock for the shelves (after you have finished cutting the dados), be attentive when you get close to $\frac{3}{4}$ in thick and keep checking the stock against the dado. The fit should be hand-tight, requiring some pressure to push the stock home but not so tight as to need heavy pounding with a mallet.

Next, rout a rabbet for the backboards on the underside of the top shelf and on the upper side of the bottom shelf. ►



Rout a rabbet for the backboards. A rabbetting bit works well, with the guide bearing running against the side of the column. Stop the rabbet in the shelf dados

ASSEMBLE THE SHELF



Clamping the case. Use enough pressure to pull the shelves into their housings, but avoid excessive strain on the hollow columns

The columns also need a rabbet to hold the backboards. When cutting the rabbets in the columns, stop them in the upper and lower shelf dadoes. Check how everything lines up.

The top stretcher will be tenoned into the columns. The small mortises for these stub tenons can be cut using a router guided by its own fence or just drilled out and then finished with a chisel. I cut the stub tenons by hand with a backsaw.

Fit the shelves

When the piece is finished, there will be three distinct shelf setbacks. The top shelf will have a stretcher in front of it, so even though the top and bottom shelves are cut to the same depth, the top shelf will sit nearly at the front of the column. The bottom shelf, which does not have a stretcher, will be set back about $\frac{3}{4}$ in more, and the centre shelf will be the farthest back.

Cut the shelves to size, remembering to rip the centre shelf narrower than those at the top and bottom in order to accommodate the extra setback as well as the backboards. Mark out for the notch on the front edge and use a backsaw

to remove the waste, or you can cut these notches and the joints for the stretcher on the tablesaw. Test-fit the shelves in their dadoes.

Case assembly

At this point, the piece should be ready to dry-fit. First, sand all of the parts to P180 grit. Dry-fit first then glue the front stretcher and the shelves into place at the same time. The stretcher should also be glued and clamped to the front edge of the top shelf. When the assembly is dry, sand the entire piece to P180 grit.

While the columns are the visual anchor, the bevelled end caps give the piece its British flair. Cut the caps and bevel them on the tablesaw.

Now mill the backboards, rabbeting alternate edges on the tablesaw. Sand the backboard faces and use a block plane to work a small bevel on the front edge of each board. Apply finish to the backboards. Once all the other parts also have been finished, attach the backboards using small screws.

When the shelf is completely assembled, rout the slots for keyhole hanging and install the hardware. Attach the caps to the columns with finish nails. ■



Apply finish to the parts before screwing the backboard in place



Route two depths for hanging hardware. The first step will hold the hardware, while the deeper step allows the hanging screw to be inserted



Attach the end caps. Countersink the finish nails and fill the holes with matching wood putty

This article is an extract from

Shelves, cabinets & bookcases

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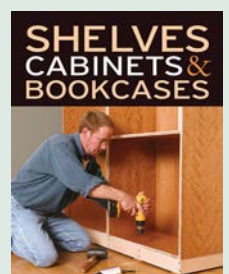
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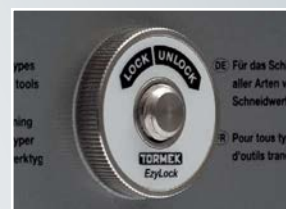
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PHOTOGRAPHS BY PAUL PURNELL

Recycled pallet stool

Paul Purnell earns his stripes with a line-by-line description of his latest recycled project

I mentioned in a previous project that approximately 60 million new pallets are made each year in the UK. The majority of these are made from softwood, mostly yellow pine, and considered disposable items to be scrapped after their journey.

Occasionally, you will find a pallet that is well constructed – and harder to disassemble – and of a higher-quality wood. I rescued such a pallet after a delivery of lawn turf to a new estate. It

has well-patterned grain, but I have no idea of the wood species. I have used the wood for this simple project of a slim, stylish stool. You can tuck these compact stools anywhere around the house or garage.

Construction

1 The dimensions of the planks of the pallet I am using are 85mm wide and 15mm thick. If your wood is thicker it will obviously make the stool

Tools

- Tablesaw
- Bandsaw or jigsaw
- Belt sander or similar

Materials

- One pallet, ideally, with well-grained pattern
- Assorted screws
- Sandpaper with 80, 120 and 240 grits
- Wood glue
- Varnish

deeper but the process is the same. If the wood is wider, rip down to 85mm.

Cut the pieces to length as follows: eight horizontals at 430mm; eight legs at 410mm and six spacers at 70mm. As I intend this stool for inside use, I have cut the pieces avoiding the screw holes and other blemishes. After you have cut everything, check the accuracy, especially the legs. Rip the legs and the

spacers on a tablesaw down to a width of 70mm.

2 Use your belt sander, or other sander, to sand all the pieces with 80 then 120 grit. Hand-finish all pieces with 240 grit – avoiding splinters.

3 Lay out the pieces in the correct order as shown. This will ensure you have everything you need and that it is to the correct size.

4 Use the drawing to make a template from plywood for the cutout section of the legs. Using a bandsaw or jigsaw, cut out these sections from all legs.

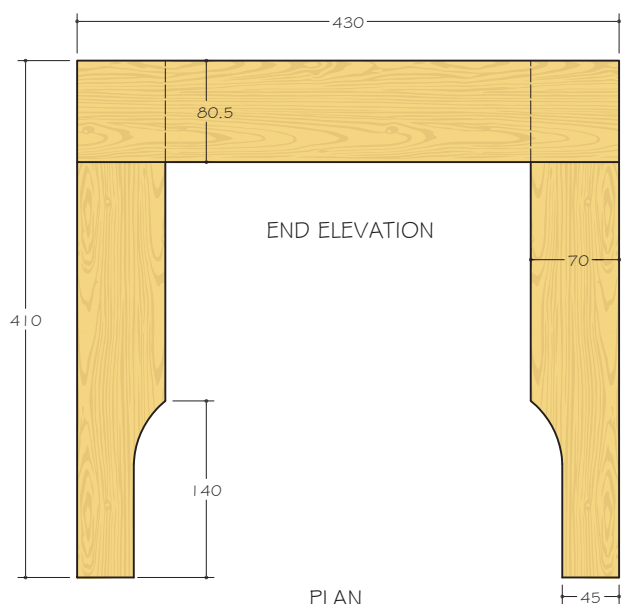
5 Now glue the pieces together in small stages. You cannot glue all the pieces in one go because of the design, as will become clear in the next step. Start with the first three pieces: a horizontal, a pair of legs, followed by another horizontal. Glue together, clamp and leave overnight or for the time recommended by the glue manufacturer. Make sure everything is square, especially the legs. In addition to using a setsquare, measuring across the bottom of the legs helps.

6 To ensure rigidity, use screws as well as glue. Drive the screws through the inside faces so that none show on the finished stool. Countersink first, then insert two 45mm screws in the corners as shown. Remember the position of the screws – when screwing together the next sections you will need to place them in the opposite corners. The screws need to go through pieces three and two and penetrate about half of piece one. If your stock is of a different thickness you may have to alter the length of the screws.

7 Glue the next two pieces: a set of spacers followed by a horizontal. Glue and clamp as before. Then secure with screws in the opposite corners to where you placed them in Step 6. The length of screw is not critical providing it penetrates through the last two pieces added and into the previous glued section.

8 Continue with this sequence of adding two pieces at a time. This photo is after the completion of four rounds: the first section of three pieces and three rounds of two pieces. ➤

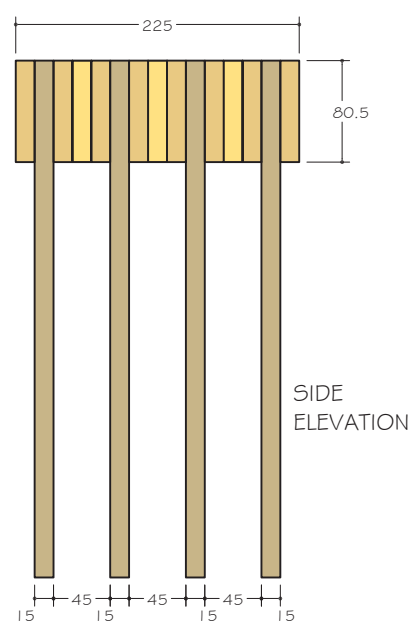




COLOUR CODE

- LEG
- HORIZONTAL
- SPACER

Plan and Side Elevation
colour coded to show
construction sequence



CUTOUT TEMPLATE

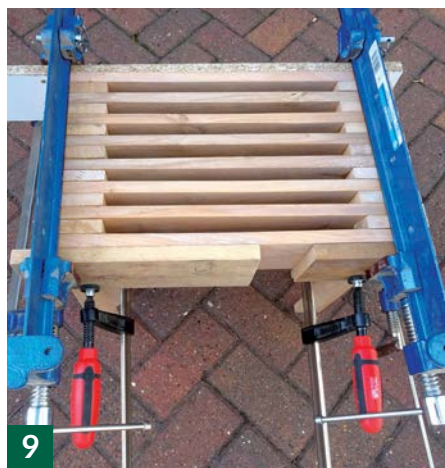
LARGE SQUARE = 25mm, SMALL SQUARE = 5mm

9 This is the photo of the last two pieces, a pair of legs and horizontal piece glued into place.

10 Once the glue has dried, drill a pilot hole at an angle to ensure the screw will penetrate through the last section and into the section before. Connect with a 70mm screw. If you countersink this hole, you can apply wood filler over the screw head if preferred.

11 When assembling, it is important to make sure the legs of each side line up and sit evenly on the floor. Because of the vagaries of pallet wood, when ensuring the legs are in the correct positions you may have to jiggle them slightly higher or lower than the pieces either side. This will leave some hard edges to knock off. Give a final sand with an electric sander and 240 grit paper to create a smooth top surface.

12 Use your choice of varnish to finish. This is the finished stool just waiting to be sat on. ■



Tip:
To help
remember the
pattern – a spacer
will never touch
either side of
a leg.



Sharpening a card scraper

Michael T Collins goes against the grain to show us how to scrape through

Every so often, we woodworkers come across beautiful pieces of wood where the grain is recalcitrant (take a cherry crotch for example). Planing wood with such swirly grain would invariably lead to ugly tear-out. A card scraper is the ideal tool for cleaning up such grain and leaving a beautiful finish that requires no further treatment.

A card scraper is about the simplest shaping and finishing tool available. It excels when working hardwoods, where it is often used instead of sandpaper. It is a myth to think that you need to use sandpaper after scraping – sandpaper does not smooth the surface of wood, it roughens it.

Scraping produces a cleaner surface than sanding and does not clog the wood's pores with dust.

There are many articles giving detailed techniques for sharpening a card scraper. Some are lengthy, complicated and, for some, it might seem a bit of a mystery – but it needn't be. The whole process can be done in just a few minutes. In this article, I will give you my simple sharpening method.

Over the years, there are just a few basic woodworking principles that I have adopted. For instance, all processes should be repeatable, consistent and quick, and, above all else, the process must be simple enough that it can be done without interfering with the workflow. After all, many of us don't get paid to sharpen tools, we get paid to make furniture... ➤

The surface of a piece of cherry sanded with 320 grit and scraped – note the wonderful sheen on the surface



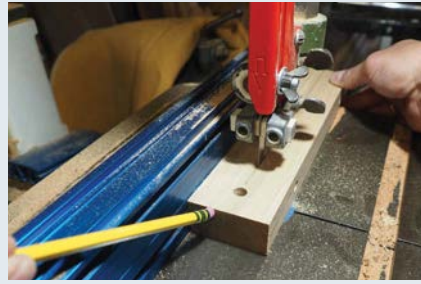
I tell people that a card scraper is 'grain agnostic' as it produces a fabulous finish regardless of gnarliness or the grain direction

TOOLS REQUIRED



- Good quality card scraper
- Shop-made jig
- A burnisher. This must be harder than the metal of the card scraper (a screwdriver will also work)
- A very fine bastard mill file

MAKING THE JIG – THIS GIVES YOU THE CONSISTENCY



The jig consists of nothing more than a block of hardwood (in this case oak) that is kerfed to hold the card scraper. I added a hole at the non-kerfed end of the block to allow even force on the card.



I used a couple of furniture bolts to hold the card in place.

LET'S SHARPEN THE SCRAPER

Step one – square the edges

1 The key task of sharpening a card scraper is to joint the edges and flatten the faces. This results in a 90° profile. Position the card in the jig so that it is slightly proud of the jig. Use your index finger as a feeler gauge. Secure the card in place.

2 Place the jig in the vice or hold in the hand. With the file, proceed to joint. It should only take a few passes of the file.

3 When filing, remember to only file away from you and never pull the file backwards across the metal.

4 Now move the card slightly proud of the jig again and secure. Finish the jointing by honing the edge on a diamond plate, I am using 600 grit (this step is optional).

5 You will be able to see that the edge is straight and flat by the way light reflects off the surface. Having the scraper set low in the jig prevents the edge from being rounded.



Step two – clean up the card faces

In the process of jointing the edge, the faces may have become rough.

To remove this roughness, remove the card from the jig and pass the faces of the card over a diamond plate – here I am using a 600 grit, however abrasive paper would work just as well for this step. The goal is to have the faces meet the jointed edge at 90°.

At this point the scraper will produce nice shavings in exactly the same way that the edge of a piece of glass will produce nice shavings – I used this method for many years.



Step three – drawing out the edge

Drawing the metal off the faces creates a small amount of excess material that can be converted into a burr. With the card scraper held firmly on a flat surface (I use the bench), take several strokes across the face while holding the burnisher flat on the card scraper. Repeat for the other faces (remember to keep track of the edges and faces you have worked).

A bit of saliva on the burnisher will help to reduce friction. I call this my 'spit and polish' technique. This is not a process that needs excessive downward force – in fact, too much force will ruin the process.

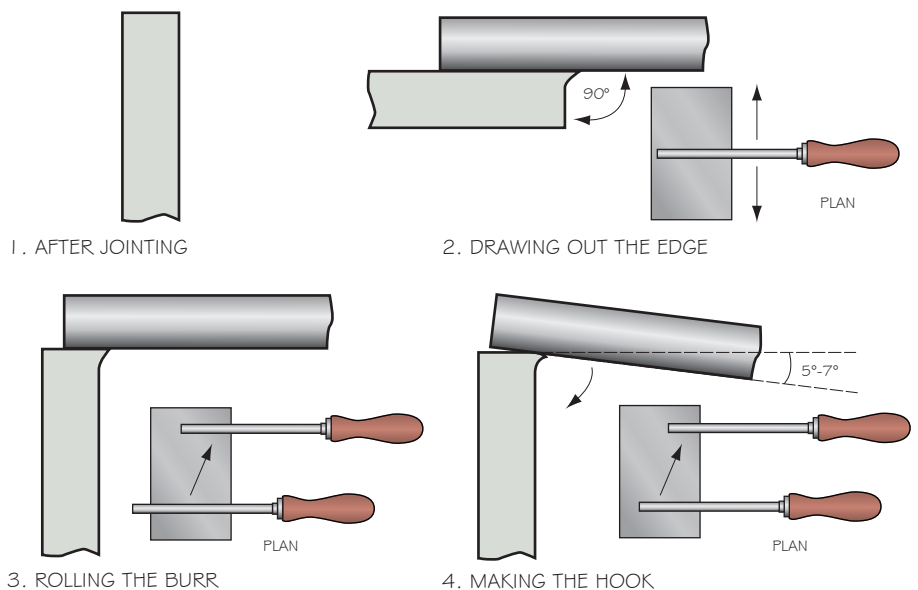
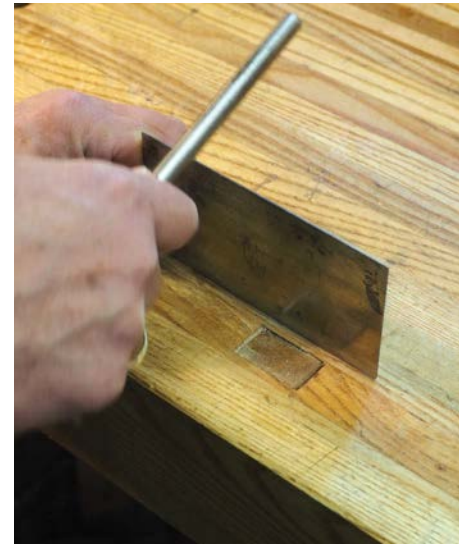


Step four – rolling the edge

Rolling the edge creates the burr or hook that is used for scraping. Place the card edge down. With the burnisher held at 90° to the card, use a steady and controlled forward single, sideways motion to draw out a burr. Repeat this two or three times.

To finish the process and roll over the burr to create a hook, take another two or three passes, this time holding the burnisher at an angle of 5°. You should be able to feel the hook with your fingernail.

Note: The illustration shows the process with which to sharpen the card.



HOW TO USE

The card scraper should now be ready to take gossamer shavings and produce a glassy smooth surface, even on troublesome grained wood. Now that you have a sharpened card, let's put it to use. Hold the card so that the index fingers are on the top of the card, thumbs placed at the back of the card – I like to rest my ring fingers on the wood's surface. Tilt the card slightly away from you and at a slight skew angle. This will allow the card to slice through the surface and keep the edge longer.

Using a piece of scrap wood of the same species, find the optimum tilt angle. The degree of tilt controls the burr's cutting angle. In addition to the tilt, flex the scraper slightly by pressing in the centre with the thumbs. This flexing will lift the bottom corners of the scraper off the surface and prevent ugly score marks marring the workpiece. It also concentrates the action to the centre of the card. To produce more aggressive shavings, simply tilt the card farther forward.

The durability of a card scraper's edge is dependent on the size of the hook and the hardness of the wood. There are four edges you can experiment on – I have found that scraping an area approximate one sq. metre will require at least two sharpenings before needing to be re-edged.



Note: There is no need to work fast – using a card scraper can generate a lot of heat so take breaks as your thumbs may get very sore and hot. It's also good to let the card scraper cool down. You can add a piece of masking tape to the face of the card to insulate your thumbs.

And there you have it – a quick, simple and repeatable way to sharpen a card scraper and start producing beautiful surfaces in no time at all. ■

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A woodworking glossary

The letter H

HAND PLANE A tool to smooth and true wood surfaces, consisting of an adjustable blade fixed in a metal or wooden body at a suitable cutting angle and fitted with a hand grip and knob to move and control it along a board, creating shavings.



A No.5 Jack hand plane

HAND SCREW CLAMP Clamps made with hardwood jaws and two hand screws, one on each side of the jaws, can be tightened independently so the jaws may be angled to each other.



Hand screw clamp

HARDBOARD A combination of ground wood pulp and resins pressed into 2440 x 1220mm sheets, typically 3mm or 6mm thick. Another version of this material, known as perforated

hardboard or by the brand name Peg-Board, consists of a 6mm thick sheet with pre-drilled holes at regular intervals to receive hooks that are often used for tool storage.

HARDWOOD Wood derived from broadleaf trees – oak, walnut, ash, and cherry, for example. In temperate regions, these trees are deciduous, dropping their leaves annually. Called angiosperms, the trees produce seeds in the form of fruits or nuts. Not all hardwoods are hard and heavy. Balsa, for example, is classified as a hardwood although it contains light, soft wood.

HAUNCH A secondary shoulder cut into the edge of a tenon.

HAUNCHED MORTISE AND TENON JOINT Similar to a blind mortise and tenon joint, it is used mostly with frame and panel doors. The groove for the panel is allowed to run through the end of the stile, simplifying the work. The haunch on the tenon fills the groove.

HEART SHAKE A shake (i.e. crack or split) radiating out from the heartwood. The resulting flaws can be enough to prevent the timber having any constructive use.

HEARTWOOD The wood from the centre pith extending to the sapwood, darker in colour due to gum, resins, and other materials, which make it less susceptible to rot.

HEAT TREATMENT The process of heating a piece of steel (typically to 1450° – 1500°) to harden it so it will take a keen edge. After the steel has been hardened and quenched it will be brittle so it must be then tempered at a lower temperature (325°) to toughen the edge for cutting wood.

HIGH VOLUME LOW PRESSURE (HVLP) A type of spray system used for finishing, in which a large volume of material is sprayed under low air pressure.



Stay put box hinges

HINGE A mechanical fitment that connects a door to a frame or carcass, allowing the door to rotate. There are standard types such as butt hinges or kitchen cabinet hinges, but there are infinite varieties of specialised hinge available.

HOLD DOWN A type of iron or steel clamp, fitting into a hole in a bench, tightened or loosened by hammer taps or screw adjustment, depending on the type.

HOLE SAW A cylindrical saw for cutting large circular holes in wood or other material, depending on the construction of the saw.

HOLLOW GRIND OR GRINDING A concave bevel on a chisel, gouge or knife. It can give a very fine cutting edge but without care in grinding it can weaken an edge or cause it to become overheated and 'lose its temper'.

HONE To refine a cutting edge by rubbing it against a hard abrasive surface, usually an oilstone, waterstone or diamond plate, or an abrasive sheet. ■



A 30° honed edge

Making a shrink cup

– Part 1

PHOTOGRAPHS BY PAUL ADAMSON

Our latest green woodworking recruit, **Paul Adamson**, shows us how to make one of his favourite drinking vessels

This article introduces the basic shrink pot, but with a twist. Making little pots for holding pens, change or lidded versions for dry foodstuffs or whatever else you can think of storing, such as crafting materials, is a fun, easy green woodworking project. If you are new to these items, then the general idea is that you use the movement of green wood as an advantage, and combine this with the stability of seasoned dry wood.

After felling a silver birch tree as part of a thinning operation a couple of years ago, I eyed up all the potential wooden-ware projects on the floor before me, for the coming months. One section grabbed my attention as it had the perfect diameter, length of clean, knot-free wood and a side branch at just the right size and angle which shouted: 'Tankard'.

Sealing wood for cold liquids is really easy, and shrink cups are straightforward to make, so I started to experiment with these as an alternative to kuksas for larger drinking vessels, and they are proving to work very well indeed. The following tutorial will guide you through the process of making one.

1 First off we need to find that perfect piece of wood, which is the tricky bit, but after a while you get your eye in. The best places to go are broadleaf plantations that are in need of thinning works. Volunteering for a local conservation charity or coppicing group will provide plenty of tree work and material.

2 Next up is the first batch of tools needed to get working. I use a Silky Gomtaro 300 for all my sawing in the



woods and at home. They are brilliant, and my favourite for tree surgery work too. If I'm removing the bark and shaping the outside of the cup then I use a drawknife and a shave horse. A straight woodcarving knife is handy throughout the project – I use a Mora (Frost) 106 laminated blade knife.

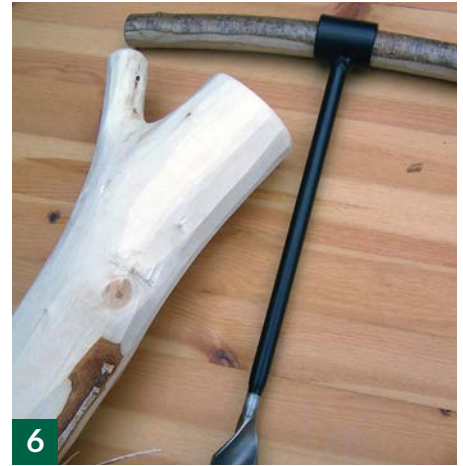
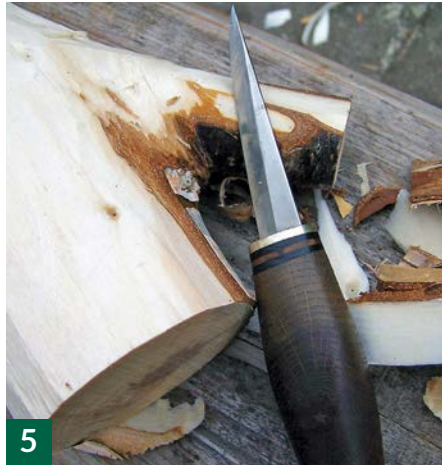
3-5 Saw the top of the cup and handle roughly as you would like it to look when finished, but leave the rest of the length of wood, as we need this for improved grip in a shave horse and vice later on. Start working the external shape of the cup, taking more off to get the desired diameter in proportion to the length. You might want a small cup for the kids' juice or a pint-sized container. You need to choose based on the wood you can get.

6-8 Once the outside and the top are all sorted, we need to drill a large hole all the way through the piece that will form the cup. I use 'eyed' augers for this in combination with a vice for holding the wood. If you are finding them hard to get hold of, then modern auger bits for power drills and a mate handy with a welder is the way to make up the shafts and tubes for the wooden handle. Once the bit has been sharpened it goes through the wood well, but does burn a few calories in the process.

9-11 The next stage in the process is to widen the hole, aiming for a wall thickness of around 5mm. A straight gouge with a medium sweep really speeds up the job, in combination with a mallet. Aim to make small corrections with the hand holding the gouge to remove nice long parallel sections. Curved spoon-type knives then take over when the majority of the material is removed to refine the inside surface and generate the required final thickness.

In the next article we will finish off the shrink cup by fitting the base and drying and decorating it. ■

Ed note – If you don't have the luxury of a shave horse or a vice, you can use a workmate instead as I have done before. However if you want to build a shave horse, these were featured in WWC14 – Peter Wood and WWC19 – Lee Stoffer. Readers can request article PDFs from me if interested.



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Meet the contributors...

We put all of this month's professional and reader contributors here, so you know exactly who they are and what they do

Louise Biggs

Having completed her City & Guilds, Louise trained for a further four years at the London College of Furniture. She joined a London firm working for top antique dealers and interior designers in London before starting her own business designing and making bespoke furniture and restoring furniture.

Web: www.anthemion-furniture.co.uk



Michael T Collins

British-born Michael has been working with wood off and on for 40 years. He moved to New York in 1996 and, over the years, has made bespoke furniture, including clocks, inlay work, Adams fireplaces, book cases and reproduction furniture.

Web: www.sawdustandwoodchips.com



Stephen Hogbin

Stephen lives in Ontario and is a world-renowned woodturner known for his groundbreaking techniques. He exhibits his work in Canada, the US and beyond. Primarily a studio artist with an inclusive and multidiscipline approach, he is also an occasional curator and author. In 2012 he received the Queen Elizabeth II Diamond Jubilee Medal and more recently has released a book: *Hogbin on Woodturning*.

Web: www.stephenhogbin.com



Paul Adamson

Paul runs green woodworking courses in his native Derbyshire and likes to hand carve and use woodenware from the green wood he gathers during local woodland management works. Bushcraft, spooncarving and kuksa vessels are among the many things he enjoys teaching out in the local woodland.

Web: www.pauladamsoncraft.co.uk



Simon Rodway

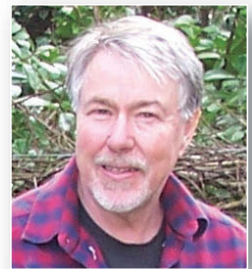
Simon Rodway has been an illustrator for our magazine since 'the dawn of time', drawing on his experience in the field of architecture. He also runs LineMine, a website with articles and online courses on drawing software. A new course, SketchUp for Woodworkers, is proving really popular.

Web: www.linemine.com/courses



Gary Marshall

Gary has had a life-long interest in woodlands and the countryside. He trained in countryside management and subsequently ran a company working with the local County Councils and Unitary Authority and their Countryside and Rights of Way Teams, as well as a wide range of conservation organisations.



Your face and details could appear here in our 'rogues' gallery' if you write an article for the magazine, and you could be rewarded for your efforts too.

Editor **Anthony Bailey** Email: anthonyb@thegmcgroup.com, Designer **Jan Morgan**, Head of Woodworking Design **Oliver Prentice**, Senior Editorial Administrator **Karen Scott**, Illustrator **Simon Rodway** (www.linemine.com), Chief Photographer **Anthony Bailey**, Group Editor, Woodworking **Mark Baker**, Production Manager **Jim Bulley**, Production Controller **Amanda Allsopp** Email: repro@thegmcgroup.com, Publisher **Jonathan Grogan**, Advertising Sales Executive **Russell Higgins** Email: russellh@thegmcgroup.com, Marketing **Anne Guillot**, Subscriptions **Helen Johnson** Tel: 01273 402 873 Fax: 01273 478 606 Email: helenj@thegmcgroup.com

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Woodland ways

Don't throw your old wood away

We've allotted Gary Marshall two pages to talk about rubbish wood – are we mad?

Don't throw your rubbish wood away... offer it to an allotment holder first.

Do you hoard old wood and even poor-quality new wood? Does some look so dodgy that you're inclined to chuck it out? Stop – don't skip this valuable commodity. Offcuts, pallets or even split or broken posts can all be offered to a willing re-user on your local allotment.

Liz and I have now been happy allotment holders in East Sussex since April 2017. Although we're completely new to it, we've been dabbling with veggie growing in our rather difficult garden for years. All the allotment holders started with bare ground – full of creeping thistle and rabbits. Despite this, in our first year all the allotment holders have been bowled over with their bumper harvests.

Usable materials

One thing us 'allotmenters' can't have too much of is wood and other usable materials – new or old. Scaffolding or other planks too rotten to be used for much else can be used for a while around a compost area, for instance – it's all about rot in that area after all. Yes, some old wood is sacrificial and won't last much more than a season – but it can be so useful when nothing else is to hand, propping up water butts or compost bins, making raised beds, supporting rabbit or other netting, making drills or edges – and more elaborate structures. Some people make beautifully crafted anti-pest cages while others, often through lack of spare time, throw up makeshift supports.

When carrying out clearance of branches around the perimeter, we sorted out any reasonably usable



Treated wood is best avoided right next to growing plants, but of course it can be used elsewhere. Even old bits of ply can be used as in this temporary 'man flap'



All the allotment holders started with bare ground



Right: A raised bed for growing marrows and a netting-covered frame

lengths for stakes. Forked branch cut-offs can be used as pegs, and of course there's always a need for bean poles and pea sticks. Allotments tend to be functional. They don't have to be pretty or over-neat to fulfil their function – which is, after all, being productive. However, some holders do have exceptionally fine allotments.

Enthusiastic recyclers

Established allotments gradually take on the eccentricities and habits of their minders. While in Cornwall I visited some allotments in Redruth. Not only are the plot holders enthusiastic recyclers of all materials but they even have an award-winning mainly wooden toilet, for their convenience. This adds an unusual centrepiece to the plots and is a source of pride.

Other interesting re-use in Redruth

includes at least one double-glazed shed and two-dimensional beach huts. While principally for growing veg, flowers and fruit, some people love to use their plots as havens of retreat. I'm looking forward to our allotments evolving, becoming ever-more productive and, yes, gaining some interesting and unique mini-structures. In fact, I may revisit this subject in a couple of years time when I've collected more photos.

Happy recycling. ■



The eco toilet in Redruth is twinned with a latrine in the Kabele district, Uganda



Left: two-dimensional beach hut fronts, Redruth



Eccentric allotments



A haven of retreat

KITTED OUT

Take a look at the tools, gadgets and gizmos that we think you will enjoy using in your workshop

Makita CP100 CXT multi-cutter

The Makita CP100D CXT multi-cutter has an automatic self-sharpening rotary blade that runs up to 300rpm and 6mm cutting capacity. It is suitable for cutting carpet, cardboard, vinyl and lino flooring, artificial grass, roofing felt, fibreglass rendering mesh, damp-proof course, weed control membrane, tarpaulin, pallet strapping, various plastics, etc. The ergonomic soft-grip handle gives accurate machine control and the steel base plate slides smoothly over the material. CP100DSM £131+VAT (total £157.20) CP100DZ body only £65+VAT (total £78)



Makita CF100D CXT portable fan

The Makita CF100D CXT portable high-performance, 180mm fan has three speed settings – 180m/min highest setting, 150m/min and 120m/min medium and low settings. Corresponding run times powered by a 4.0Ah 10.8v Li-ion battery of 275, 380 and 630 mins. The fan head can be adjusted up and down, left and right. It has a wall-hanging hook, tripod mounting and a wall mounting. Comes with an AC mains adaptor. £49+VAT (total £58.80)

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Makita PT354 CXT pin nailer

The PT354 CXT pin nailer fires 23 gauge, 15, 18, 25, 30 and 35mm nails x 100 pin nails. This 2kg lightweight tool includes simple depth adjustment, anti-dry-fire mechanism, high-visibility nose tip, low rebound mechanism for easier long pin nailing, trigger lock and LED job light. Comes as body only. £290+VAT (total £348)



Trend PR/01/01 WRT workshop router table

This workshop router table will suit craftsman and woodworking enthusiasts. The large 804mm x 604mm laminate MDF top is 35mm thick and offers a durable and slick surface to help the work pass smoothly. It comes complete with a 6.35mm thick aluminium insert plate for securing the router, giving solid support while losing minimal plunge depth. It is easily adjusted for a flush fit to the table with the seven screw adjusters and magnets. Four corner holes allow the plate to be secured.

A 98mm aperture allows the biggest panel raisers to be fitted, two reducing inserts of 67.5mm and 31.8mm accommodate smaller diameter cutters. The plate is pre-drilled to the Trend Base Configuration (TBC) to suit the vast majority of routers available and has a 20mm access hole to suit the Trend T11's Quick Raiser feature for easy height adjustment.

The WRT has a 240v no-volt release switch, top and side finger pressure guards and a pushstick. There are storage positions around the table to keep them secure when not in use.

Laminated MDF sliding infeed and outfeed cheeks on the fence are adjustable to reduce the aperture for safe routing with various diameters of cutters. The outfeed also has a planing facility when used with the supplied onboard packing rods.

Accessories available include additional top pressures, an adjustable limit stop and castors.



The Trend PR/01/01 Workshop Routing Table is priced at £478.80. Available from all Trend Routing centres and stockists across the UK. www.trend-uk.com.

TEST – Z-Saws free angle guide F

The Editor gets excited all over again by this incredible Japanese guided pullsaw

Recently I had a query from a reader via our Woodworkers Institute website (www.woodworkersinsitute.com) asking whether the Z-Saws saw guide F was really as good as it was claimed to be. In fact, we tested it a few years ago and it brought back a memory of just how good we found it to be. So much so that I have just bought one to add to my growing arsenal of Japanese saws.

For the price you get a lot in the box: good instructions, which are also available as a PDF on the UK Z-Saws website, a free-angle guide plus its accessory fences, a dedicated pullsaw, a dummy setting blade and an angle setting gauge. All adjustments are made using a rather nice T-allen key stowed on the back of the guide and a spare allen screw is fitted to the gauge in case you lose one – nice touches.

The free angle version, unlike the slightly cheaper fixed gauge, allows you to set compound angles. The setting gauge allows you to set the guide precisely to any angle you want. The dummy blade is used for blade angle setting and marking before you need to cut. In its perpendicular position the guide will allow cuts up to 50mm thick before the saw leaves the security of the guide plate, meaning it can handle quite large carpentry stock sizes. You simply fit the fence, press the guide against the workpiece and proceed to cut straight and square with a good cut finish.

Perhaps its most bizarre trick is fitting the rip guide and then being able to cut down whole sheets of 8 x 4 ply at a speed not all that much slower than a portable circular saw and with a superior finish.



Verdict

The terms 'the best thing since sliced bread' and 'it's a no-brainer' are for once quite apt. For under £70 you too can have a beautifully made precision tool that doesn't need a plug on the end, fits in your tool bag and does a better job than many other fancy bits of kit. The website has lots more Z-Saws on offer, plus projects that people have made and useful advice for working with pullsaws. If you hadn't already guess I'm a fan, true...

Z-Saws Saw Guide F Kit £69.84
(free shipping)
www.woodworkprojects.co.uk



Snickers body-mapping climate control workwear – ideal for the winter

A change of season means a change of focus on what you wear on site, so Snickers FLEXIWork, RUFFWork, LITEWork and ALLROUND Workwear ensures you keep your cool when the heat is on, or stay warm and comfortable when the temperature drops.

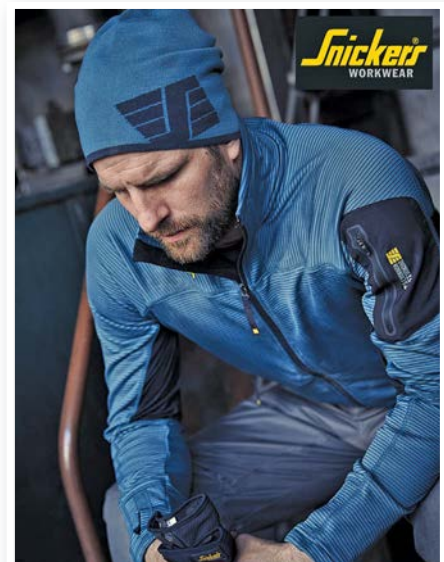
Interweaving 37.5 Technology fabric into Snickers' working clothes means a wide choice of waterproof and windproof jackets, mid-layer fleeces and stretch hoodies. Base-layer undergarments, gloves and headgear excel at ventilation and moisture transportation to keep you working comfortably wherever you are on site. So, to make sure you get the

right protection, flexibility, durability and ventilation, check out the newest Workwear in Snickers' latest autumn brochure for precisely the right garments to fit your workday.

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1200 jacket £100.00
9409 leggings £48.78
9418 shirt £58.54
9217 socks £15.00

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Fold-down workbench & router table

We build this two-in-one small workshop station

Many of our readers have limited workshop space – for instance a garage that doubles up as your working area.

Conscious of this we came up with this design for a workbench and router table that folds away flat to the wall after use. We wanted a sturdy construction that would stand the test of time, so opted for an 18mm birch ply top, with a 12mm facing edge, and a sturdy construction using 75 x 50mm softwood.

Because of space constraints we chose a small woodworking vice without a quick-release function, but you might want to shop around.

We have fitted a router table to our workbench with a plate for when it is not needed, but this is optional, and it would be simple enough to do at a later date anyway.

You may also need to modify the bottom wall plate for your own circumstances. The wall we fitted

ours to had 400mm centred studs, so rather than just fit pads to the wall, as outlined in our plans, we fitted an entire wall plate. We had to cut out recesses in the wall plate to take the legs of the table when it was folded down, or else the legs clashed with the plate. If you are fixing to a solid wall, then fixing the pads does mean less work for you.

Workbench top

1 The birch ply was marked up, checked for square and cut to size, then I used this as the template to cut the timber forming the carcass of the top, ready for the facings, mitred at the corners.

2 I screwed and glued the carcass together at the corners before using a clamp to ensure it was square. I then put in four temporary screws from underneath, screwing and gluing the carcass to the ply, so that when

I turned the whole thing over, the carcass stayed in place.

Plugs

3 Obviously on a woodworking bench you don't want any screw heads to blunt your tools on, so I used a router bit to drill plunge holes for the screws, and another to cut wooden plugs. Take it nice and easy on the plunging as its very easy to burn the timber, and you don't want to slip a fraction either. The ply was then screwed securely to the carcass.

4 Our workshop had some offcuts of maple. I used a plug-cutting router bit to cut these out, and simply pushed the maple on edge through the bandsaw to release the plugs. These were then glued into the screw holes and tapped home.

5 Next I cut the edging to size, marking from the assembled top



1



2



3



4

and carcass, and cut the edges with a mitre saw and stand. I tacked the facings in place to get the best possible positioning.

6 After all the facings were tacked in place and I was happy with the construction and fit of the joints, I glued up the facings and then fixed in place with a nail gun.



5



6

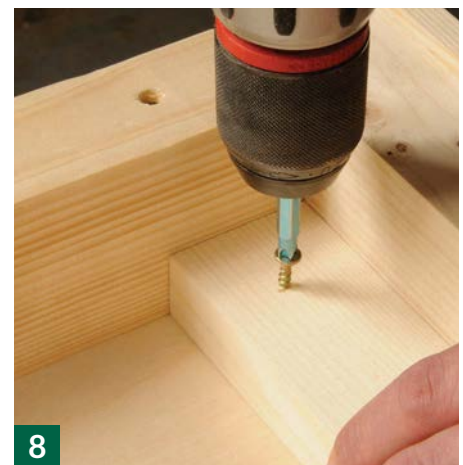
Sanding

7 By the time this was all finished the glued-in plugs were ready for trimming off with a sharp chisel, always chiselling with the grain to avoid breaking off the timber rather than cutting a smooth finish. I sanded the whole thing up with an orbital sander, and planed and sanded off any sharp edges on the whole thing.

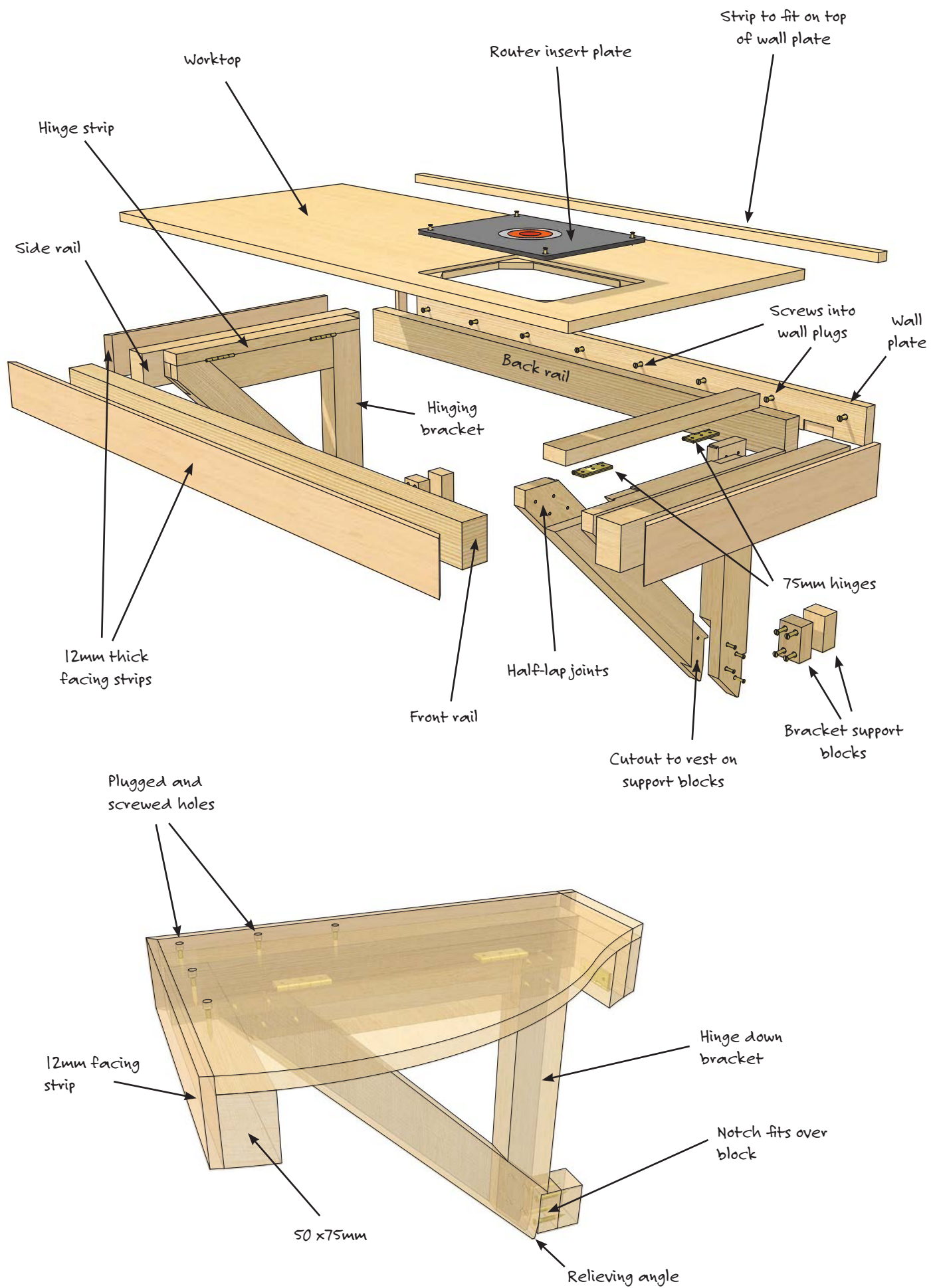
8 Next, the hinge members were sized and cut to shape, before being screwed and glued into place. ➤



7



8



9 The table supports were next and were joined with half-laps, with a simple right angle on one corner, and angled at the other two. The 90° half-laps were cut out quickly on the bandsaw.

10 For the other angles, I tried two methods. First, I cut them using the router with a fence clamped to the right angle, and then I tried with the mitre saw set for a trench cut. To be honest, I found both methods a little fiddly. Our mitre saw is a big fellow and I struggled with the accuracy, and the router needed a lot of support around each member I was cutting. I think if I was doing it again, I would just cut them by hand with a saw and chisel.

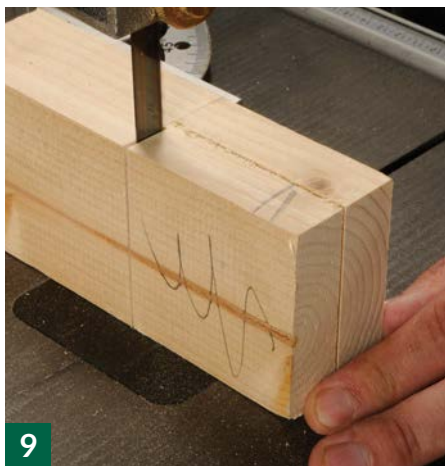
11 The support frames were screwed and glued together, using a tri-square to ensure the 90° angle was accurate. After the frames had cured, the bird's mouth was cut. As you can see, I also cut a small relieving angle on the bottom edge of the bird's mouth, just to help it locate when in use.

After the frames had cured, they were fitted in place with 75mm butt hinges. I didn't bother using recesses as it would make no difference to the operation of the bench.

12 Next job was making and fitting the two wall plates. As mentioned earlier, I used a plate rather than just pads for the bottom piece because of fixing issues.

The top plate was planed, thickened and cut to length, and then had the strip of ply glued to the top – I didn't pin or screw it, just clamped it up, being careful not to let the ply slide around because of the lubricating effects of the waterproof PVA glue.

I glued up the bottom wall plate as well, which was cut to fit inside the face edge of the top. Once dried, both were fitted to the wall. The top plate was fitted first and, after careful levelling up, was screwed to the wall into the 400mm centre studs. I simply screwed the 75mm butt hinges straight on to the plate and then, with a little help, screwed the table to the wall. You could recess the hinges if you prefer, but for a workbench the gap between the plate and top wasn't that important, by my reasoning. After the top was fitted, I lifted it until it was perfectly level, and then marked up the

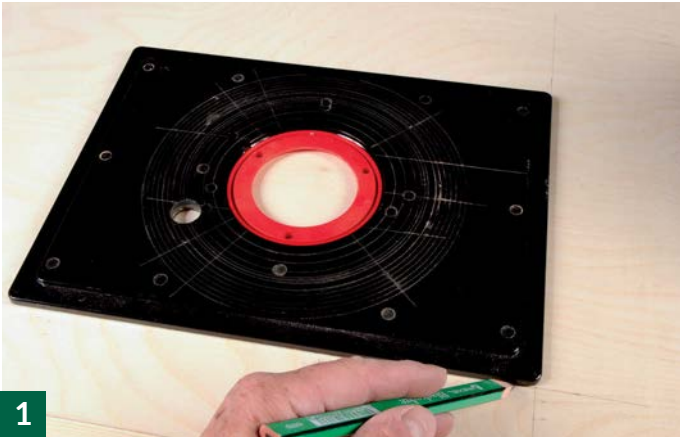


position on the wall where the wall plate should fit.

13 With the bottom wall plate now fitted to the wall, when the top was down, I marked up the place where the notches needed cutting in the carcass sides. I removed the tabletop and cut these out with a saw and chisel. While the top was fitted and in the down position, I had also marked up where the rebates in the bottom wall plate were needed to accommodate the legs. This was easy to do on the router table side, as you could see through to the wall plate when the insert was removed. I used this position to mark up a mirror image on the other end of the wall plate. I removed the wall plate, cut out the rebates, then the plate and top were refitted. To be honest, the positioning wasn't quite perfect first time around, and I had to shave a little more of the plate rebates to get the top to fold down fully, but that's it – your bench is ready for action. ➤



FITTING YOUR ROUTER TABLE



1

Take the router table plate, position it very carefully and draw accurately around it. You want to get the best possible fit



2

Using the router's sliding fence against the side of the bench top – which was very carefully squared itself – take a series of shallow cuts to make the rebate which the router plate will fit into. Ensure your depth of cut will allow the plate to sit flush with the workbench top



4

After cutting all the way down and round for the recess, the waste material will drop out and can be lifted clear



5

After the rebate has been cut all the way around, use the router to cut right through the worktop in a series of ever-deeper cuts with the appropriate inset from the recess edge, to allow for the rebate in your router table plate to sit snugly into the bench top



The router table fitted into the fold-down workbench makes the workstation a truly versatile addition to any workshop. You can also see our improvised fence of a batten clamped to the bench top. You could always fix a proper fence to the top, which would also allow for extraction, by drilling locating holes in the surface

FITTING THE VICE



3

Then, using a fence clamped to the bench top as your router guide, make the next series of cuts to the required depth for the rebate. To ensure the snug fit of the router plate, these steps (2 & 3) are the most important, and it is better to cut just under size, and then shave off a little more later



6

If you have measured up correctly, the router table plate should be a nice tight fit – remember, it's better to have cut slightly in from your pencil edge so you can feather it off with your router to get as tight a fit as possible



7

Again using the router table plate as a template, cut a rectangle of ply, complete with the correct corner radii, to act as an insert for when the router table is not in use. A bearing guided cutter is the ideal way of forming this shape, using the plate itself as a template. And there we are – job done.



This simple vice is quite small, which is useful for a fold-down bench, but with the addition of wider vice faces, it will cater for most small-scale woodworking needs

Fitting the vice is a straightforward operation, if done correctly.

First, I cut out the correct rebate in the edge facing and carcassing behind it with a saw and chisel to take the vice plate. This rebate needn't be a perfect fit, as it will be obscured when the vice facing is fitted. Once the required cutting and chiselling has been done, a batten was glued and pinned into place behind the carcassing to take the screws to hold the vice, which was screwed in place from underneath.

I then cut the two facing inserts for the vice, using the 18mm birch ply the workbench top is made of. I carefully marked up for the screw holes in the static vice jaw then screwed the facing in place, right through the holes in the vice jaw into the carcassing behind with 75mm (3in) screws. With this vice, the moveable jaw could be totally unscrewed, making fixing easy.

The other facing was similarly measured up and held in place with two screws and bolts. Once tightened, a hacksaw was used to take off the excess screw length, and a file tidied up the cut.

Your vice is ready! ■



Screwing the vice to the carcass edge. Here you can also clearly see the rebate cut out so the vice plate fits flush with the workbench edge. Also, you can see a batten fitted behind the carcass and glued in place to take the screws holding the vice in position from underneath.



The moving vice plate having its ply plate attached. Note the screwdriver held in the vice, which is preventing the screw from turning while the nut is tightened, making the job that little bit easier.

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Tricks *of the trade...* ...sealing wood



You can get close to a finish on your project but sanding dark wood next to light wood can make it mucky looking – what do you do?

Contrasting woods look good together, or at least they should. The problems come when you try sanding the surfaces and invariably the dark wood – maybe ebony, mahogany or something similar – will make the light-coloured wood look smudged and dirty. Sycamore, birch and lime are examples of very pale woods that can look less than sparkling when corrupted by darker wood dust. This could happen with a jewellery box, a parquetry table top or a chess and draughts board. You need a strategy to deal with the problem.

1 One way is to scrape rather than sand. The action of scraping, which drags a thin layer of wood off with each movement, is less likely to create the culprit dust so long as a proper sharp burr is raised and the scraper used properly. It isn't recommended for veneers unless you are skilful because it may cause the veneer to tear off.

The other method is to seal the light-coloured areas with sanding sealer or pale French polish. This assumes the overall surface is level to start with. Hopefully the sealer will have sunk into the light wood enough to reduce or

prevent migration by darker wood dust. Then sand carefully to level the surface.

2 Some sanding methods are better than others for avoiding transmission of wood dust. A random orbital sander will tend to move dust more efficiently and, with extraction, the added lift should clear the dust.

3 Once sanding is complete seal the surface overall to keep it clean looking. Then apply as many coats as you think are required to give a decent overall finish to the job. ■

PHOTOGRAPHS BY GMC/ANTHONY BAILEY

NEWS & EVENTS

All the latest events and news from the world of woodworking

Can natural beauty be quantified? asks Gary Marshall

A BBC news article late last year caught my eye. Researchers at Warwick University have used a database from which a complex algorithm is being developed. This enables computer power to 'approximate' views on what does and does not constitute natural beauty.

I admit my normal reaction to any kind of quantifiable assessment of beauty is one of extreme scepticism. I was minded of the indignity I felt when first reading Mr Gradgrind's view of education in Dickens's *Hard Times*: 'Now, what I want is Facts. Teach these boys and girls nothing but Facts. Facts alone are wanted in life. Plant nothing else, and root out everything else. You can only form the minds of reasoning animals upon Facts: nothing else will ever be of any service to them. This is the principle on which I bring up my own children, and this is the principle on which I bring up these children. Stick to Facts, sir.' Gradgrind did not hold with the subtleties of natural beauty or individual 'fancy'



PHOTOGRAPH COURTESY OF SHUTTERSTOCK

The rolling slopes of the South Downs National Park

– only parroted facts that could be quantified. A joyless and grim world view, although perhaps a smidgen of Victorian wisdom too, in these days of Fake News.

So how does the researchers' exercise differ from Gradgrindism and what earthly use can it be?

Here's where it differs: the database from which the algorithm stems, called Scenic or Not is made up and judged by the Great British Public. Postcard-sized scenes are scored from one, not at all scenic, to 10, very scenic. I've had several sessions on this growing database and my ratings are usually fairly close to the average. Motorway interchanges and pylons rate low and natural coastlines, bluebell woods, trees, mountains rate high with me. No surprises there then. Buildings and structures are also represented – my scores and the average scores here seem subtler and harder to quantify. Not many assessors seem to admire brutalism though. What would Jonathan Meades think, I wonder?

It is believed that the algorithm can help decision-making in developmental planning. Well maybe, though I'd still urge caution. The database can only have been compiled and assessed by

concerned or involved individuals – most of the population is no doubt silent on such matters. As our esteemed editor pointed out to me, they are only postcard-sized frames, a selective view of any given scene. What ugliness or stunning carving lurks around the corner?

I'd have given 10 out of 10 to a view I saw recently when walking across the South Downs. The glorious downs rolled in dappled light and shade towards a sea that glinted in the distance. Then out of the clouds, swooping down towards Eastbourne, the Red Arrows split the scene in glorious Technicolor formation. Some might have rated it one, as a natural view spoiled. Beauty is still subjective.

So I understand that this growing algorithm can be just one of many tools in town planners' copious toolkit. I would not be at all happy, though, if it were to become a major part of the decision-making process. Remember, tools and noble ideas can be misused, abused and rendered harmful or useless by dangerous practitioners...

See what you think constitutes beauty. Visit: www.scenicornot.datasciencelab.co.uk



PHOTOGRAPH COURTESY OF SHUTTERSTOCK

Is this scene in fact, less ugly at night?

The Great British Spring Clean 2018

2-4 March – Your chance to make a real difference cleaning up rubbish in your local environment along with thousands of other volunteers all around the UK
www.greatbritishspringclean.org.uk



PHOTOGRAPH COURTESY OF SHUTTERSTOCK

Design & Make Competition

Run by the Furniture Makers Company and sponsored by Axminster Tools, an exhibition and prize giving for all the entrants' work was held at the Furniture Makers Hall, City of London. The photo shows a detail of an innovative folding chair by Joseph Parker, Nottingham Trent University, which was just one of a wide range of projects from schools, colleges and universities across the UK.



PHOTOGRAPH BY MORITZ SCMITTAT/FURNITURE MAKERS COMPANY

Charter for trees, woods and people

The Tree Charter will reconnect people and trees. You can get involved in various ways, including joining your local Charter branch. Supported by various organisations, including the Woodland Trust, CPRE and the Ancient Tree Forum

www.treecharter.uk



EVENTS

The Midlands Woodworking & Powertool Show, 22-24 March 2018.
 Newark Showground, Notts,
www.nelson.co.uk/midlands-woodworking-power-tool-show.html

Yandles Woodworking Show, 13-14 April 2018. Martock, Somerset.
www.yandles.co.uk

Web links for you

Website

Creapills – a French creative website. Scroll down a very short way to click on a video clip of amazing transformational furniture.

<http://bit.ly/2fLnLhI>

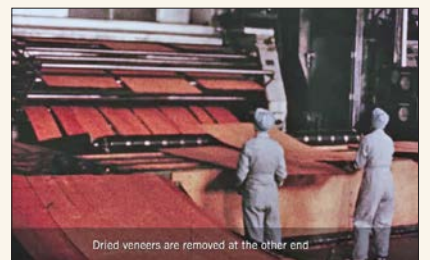


YouTube

Panel made of oak – Crystal River – this is Russian I'm guessing. They call themselves 'positive couple' and they show how to make an oak block table with a lit-up crystal river running through it. A fun and different thing to do.



Manufacturing plywood boards: then and now – This makes you appreciate that manufacturing plywood isn't quite as simple as you might imagine



Dried veneers are removed at the other end

The Spring Antiques For Everyone Fair
 The NEC Birmingham, 5-8 April 2018.
 Your chance to browse and buy antiques or just learn more by studying the huge array of good quality antiques on offer. Click the link within the NEC webpage for the organisers' website.
www.thenec.co.uk/whats-on/antiques-for-everyone-spring

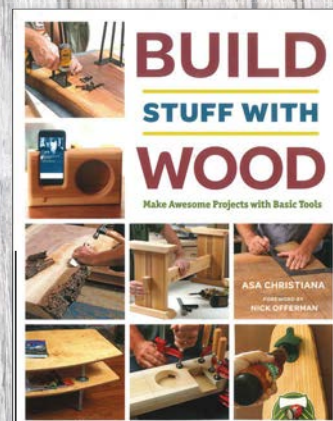
BOOK REVIEWS

New Year, new inspiration from this book selection

Build Stuff With Wood – Make Awesome Projects with Basic Tools

By Asa Christiana

The tagline on a book cover often tells you more than the title itself and this is no exception. There are some great ideas beautifully presented, often quite simple in concept but very effective in their execution. It starts with a fun-based analysis of why we choose to build things, followed by 'gearing up' – that is, finding a place to work and the tools to make it happen. The projects start with 'supercharging your workshop', making a saw guide and a rolling workstation. There are party projects – outdoor bench and planter, a cutting board, a post-modern coffee table and a natural-edged slab table with add-on hairpin metal legs. Floating shelves, a hanging lamp, transforming a table and even a passive speaker for a smartphone complete the list. Written in a fun but well-presented way with plenty of clear photography, it is imaginatively done. There is even a foreword by Nick Offerman, woodworker and sometime actor as Ron Swanson from the TV series *Parks and Recreation*.



ISBN: 978-1-63186-711-8

Price: £18.99

Published by Taunton Books

Available from:

GMC Publications

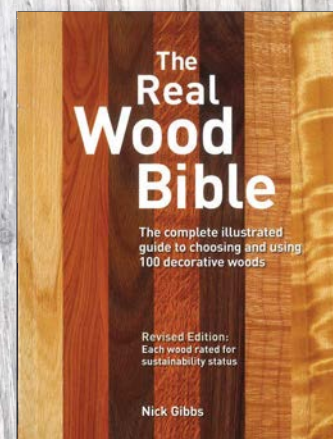
www.thegmcgroup.com

D1273 488005

The Real Wood Bible – The complete illustrated guide to choosing and using 100 decorative woods, revised edition

By Nick Gibbs

The original version of this thick tome has been around a while but it has now quite rightly been updated to include the sustainability status for each wood so readers can make a judgement about use based on the information. It is quite a comprehensive book, covering species that can be considered decorative timbers particularly suitable for furniture and cabinetry in general. Each entry covers a double page with a full page showing an unfinished/finished sample and the other page various key points, such as strengths, weaknesses, key characteristics, seasoning and stability and use in the workshop. Also covered are sustainability and cost, both of which are useful. There are sections on diseased wood such as spalt, figured wood, quartersawn surfaces and a glossary. All in all a very handy book to inspire and guide the woodworker.



ISBN: 13:978-1-77085-013-2

Price: £14.95

Published by Firefly Books

Available online – various sellers

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Koru Architects

PHOTOGRAPHS COURTESY OF KORU ARCHITECTS

Practising what they preach – architecture with an ecological vision – meet the team at Koru Architects, based in East Sussex

The team

Mark Pellant – director and architect

Mark was born and brought up in Surrey but with a Swiss mother it was inevitable he would be exposed to European design and ideas from a young age. At the tender age of 12 he knew he wanted to be an architect and worked hard to achieve his goal, eventually graduating with distinction after seven years at the University of Brighton. He then went on to work for a number of internationally acclaimed architectural practices. In the mid 1990s he spent three years travelling the world overland, experiencing different cultures, architecture and witnessing at first hand the effect of major environmental problems such as drought, flooding, pollution, deforestation and poverty. Following these experiences, Mark resolved to make a difference by creating his own architectural practice based on sound environmental principles – Koru Architects.

Issi Rousseva – architect

Issi is a fully qualified and registered architect, with a masters degree in architecture from the University of Brighton and an undergraduate degree from Kingston University. Issi joined Koru Architects in March 2016 and works closely with Mark and Christina Vakarelova on all stages of the design and management process. She has worked on architectural projects in Switzerland and Bulgaria as well as the UK, giving her an insight into the international diversity of architectural styles and building regulations. Before she started her career in architecture, Issi worked for four years as a Section Commander at the University of London Officer Training Corps, where she trained cadets and picked up strong leadership skills.



Left to right: Aylin, Mark, Issi and Oscar

Christina Vakarelova – architectural assistant

Christina grew up in Bulgaria and moved to the UK in 2009 to study architecture at the University of Brighton. In 2012 she graduated with a BA (Hons) in Interior Architecture. She has been working as an architectural assistant for Koru since 2014, working closely with Mark to deliver a range of residential and commercial projects, both new-build and extensions/refurbishment.

Oscar Berkhout – communications & marketing officer

Oscar was born and raised in Berkshire, before moving to Brighton in 2014 to undertake a degree in journalism at the University of Sussex. Graduating in the summer of 2017, he has started a marketing & communications internship with Koru Architects.

Aylin Metin – architectural assistant

Aylin is the newest member of the team, having joined Koru Architects as an architectural assistant in February 2017 to support Mark on design work for all projects. She is currently finishing her Part II Masters Degree in Architecture at the University of Kent, where her dissertation is on improving the quality of urban life through waterfront developments.

Case study one: low-cost suburban living

15 Lloyd Close, Hove, East Sussex – winner of several awards, including the RIBA Downland Prize 2011 and the international Green Apple Award for Sustainable Architecture 2016. The project was also featured six times in Brighton's Eco Open Houses Show.

This project is architect Mark Pellant's self-build home-office.

This detached zero-carbon three-bedroomed house and studio provides the living and working space for Koru Architects. The design creatively makes use of a constricted, sloping site to create a spacious, light-filled contemporary home with seamless connections to the garden. The structure is made up of cross-laminated timber (CLT) with European oak cladding the walls and a zinc roof. The CLT makes up all of the construction, the walls, the floors and the roof. There are no additional steel or structural elements.

Roof-integrated solar PV panels provide the electricity demand and solar thermal panels supplement a wood pellet biomass boiler to power the underfloor heating and domestic hot water. Rainwater is harvested for WC flushing and garden use. Natural materials, low in embodied energy, have been used throughout, including hemp and wood insulation, oak cladding, zinc roofing and lime render. The living room also features a green sedum (flowering plant matting, of the *crassulaceae* family) roof.

Because of these sustainable features,



the dwelling uses half the energy of the average UK household and emits 93% less carbon.

Mark says: 'After travelling for more than three years in the mid-1990s through Africa, Asia and South America I was able to experience the global environmental devastation and the onset of the effects of climate change. As the construction industry makes the biggest contribution to carbon emissions, I resolved to make a positive difference through designing sustainable, low-energy buildings. That was the main driver when designing my own home. I wanted to create a contemporary, comfortable, zero-carbon home office.'

So what are the benefits of living and working in this building?



'On balance, no bills and energy independence from the big energy companies, very comfortable, it doesn't get too hot or too cold, no draughts, and the natural insulation provides good acoustic buffering. Underfloor heating makes the spaces feel very comfortable, the spaces feel healthy due to the timber construction and the natural insulation as well as the natural finishes such as paints, sealants etc. It is low carbon so good for the environment. The timber is beautiful to look at both internally and externally, particularly as it weathers nicely'.

Cross-laminated timber

CLT construction allows very quick offsite manufacture and it's very quick to put up, taking only six days. The building is airtight, very energy efficient, very robust and very sustainable, and has a large amount of carbon locked in it. CLT can span in two directions, therefore it can replace concrete and steel in many scenarios which require more structural strength.

It also gives buildings more of a medium-weight, rather than lightweight construction unlike traditional timber buildings. ➤





Case study two: a house that's all grown up

Mill Lane, East Hoathly, East Sussex – a work in progress, but almost complete.

This three-bedroomed home is replacing an old bungalow on the site. The new dwelling is being built to Passivhaus standards of air-tightness and insulation, making the building very affordable to heat and very low-carbon. It also includes a green sedum roof to encourage biodiversity and mitigate rainwater run-off.

The house is timber-framed construction and features timber cladding which will weather to a silver-grey colour, slate tiles on the roof and a thin band of brickwork around the base of the building. This palette of natural materials keeps embodied emissions low and respects the local vernacular of the village setting.

The clients, Alex and Ruth House, explain what their intentions were in engaging Koru to design this new-build project

'We wanted a modest home,' says Alex, 'but with ample space for a family and, most importantly, a comfortable space. We wanted to keep the materials natural and sustainable, to have a minimum impact on the environment

and to create a healthier indoor space.

'We did a lot of the site management and construction work on the project ourselves so it was challenging at times, but that was due more to the self-build nature. The biggest benefit was how quickly the timber frame went up. We were also able to reuse the vast amounts of leftovers from the structural timber framing for the noggins and internal studwork, as well the bathroom for building out the studs for the shower. We were able to really reduce and reuse the waste materials, saving thousands in first-fix carpentry bills. We also got a very good understanding of the build's construction elements and exactly how the walls and roof are made up, which has been very beneficial'.

'It is very comfortable to live in, the timber forms a strong connection to nature and the use of natural materials creates a 'biophilic environment'. The timber allowed for thinner walls, while achieving low U-values even with natural Thermafleece sheep's wool insulation, creating a highly-insulated, energy-efficient home. We wouldn't change anything about the materials chosen for the construction'.



Case study three: the perfect rural hideaway

Garden library/studio, Lamberhurst, Kent – shortlisted for the RIBA Downland Prize 2006.

This sustainable, all-timber garden workspace has been designed for working in light and comfort with minimal heating or artificial lighting. Glazed timber sliding/folding doors and a roof light flood the internal space with light and allow low winter sunshine to penetrate the building to assist with space heating.

The walls, floor and roof are filled with environmentally-friendly recycled newspaper insulation to help retain heat. The timber frame is fabricated from Douglas fir and the cladding from western red cedar.

The client, Richard Platt, says: 'Sitting here in my library with the doors open, serenaded by birdsong... It's 21° inside... Perfect. Now that the grass and my bank balance have started to grow back I can enjoy this really wonderful working space.'



Design for the future

PassivPod is a new venture set up by Koru Architects and Strategic Management Partners, centred on the concept design for a zero-carbon pod-shaped Passivhaus that offers comfortable accommodation with an environmental conscience.

The four different PassivPod sizes

can have several different applications – for example as a luxury eco-lodge, holiday let in the leisure industry, school classroom module or even as a home and the smaller option – a home office.

PassivPod is 100% renewable, powered and designed using the latest Passivhaus and biophilic principles

with a gentle visual impact that blends into the landscape. (Biophilic principles are based on the idea that we all have a genetic connection to the natural world built up through hundreds of thousands of years of living in agrarian settings.)

With floor-to-ceiling windows, an organic shape and natural materials, PassivPod provides a truly immersive experience. It is an innovative, comfortable and sustainable building.

Every project Koru undertakes is different but they all have the same aim – to produce buildings that are economical to live in and help to improve the environment and we wish them well.

To find out more visit:

www.koruarchitects.co.uk

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Trees for life – elm

One of our enduring native trees that has come under attack, hopefully to survive...

Field elm

The elm, like pretty much any 'named' tree, isn't just one species but we look at the most commonly known cultivar, the field elm (*Ulmus minor* 'Atinia'). In the collective psyche, its often lofty but untidy 'figure-of-eight' growth characteristic makes it feel as sturdy and dependable as our native oak trees, yet it has endured the slaughter that is Dutch elm disease. Examples still exist and 'down south', especially around the Brighton area, these trees are closely monitored for any signs that the remaining elms are succumbing to this ravenous disease. Nowadays lone examples can be found on hedgerows or even cut as hedges where they cannot suffer the disease since coarse bark has not developed where beetle attack can usually occur.

'Fingerprint' DNA

Formerly called the common elm and the horse may, but more lately the Atinian elm, it was the most common field elm before disease struck. Considerable research, including DNA 'fingerprinting', has confirmed that identical elm species exist in Spain and Italy, being genetically identical clones of a single tree said to be Columella's 'Atinian elm' that was once used by the Romans for training vines. Indeed, the elm generally only propagates by producing suckers or by cuttings, thus confirming that this tree was introduced across the Roman Empire although a different cultivar, the East Anglian elm, was known to earlier civilisation.

The tree typically grows to 30m but has been known to exceed 40m in height. The largest-ever recorded specimen was at Forthampton Court near Tewkesbury, being 46m tall.



Elm leaves



Above: A very mature elm standing in private parkland in Lincolnshire



Right: Elm bark

Upper branches form a fan-shaped crown while heavier, more horizontal lower branches give it the distinctive 'figure-of-eight' shape. The buds are oval, pointed and hairy. Small reddish-purple flowers appear in early spring before the leaves. The leaves are lighter green in April but turn dark green and are rather rounded or oval without a pronounced tip. It does not produce long shoots in the canopy, therefore not the markedly pendulous habit of some other field elms. The bark of old trees is scaly and it suckers – i.e. produces growths that can propagate. The tree normally produces hermaphroditic sterile seeds so it can only reproduce by suckering. By the late 19th century urban stock was grafted on wych elm rootstock to eliminate suckering, although it seems it didn't produce good specimens. ➤



Elm display cabinet by Rob Stoakley

PHOTOGRAPH BY MICHAEL HUNTLEY

Typical uses

Elm wood is strong and durable with a tight-twisted grain, and is resistant to water. It has been used in decorative turning and to make boats and boat parts, furniture, wheel hubs, wooden water pipes and pumps, floorboards and coffins, wheel hubs, parquet, decorative veneer and weatherboarding. A typical use is for Windsor chair seats because wide boards can be had without any splitting.



Arts & Crafts-style writing desk



PHOTOGRAPH BY GMC/ANTHONY BAILEY

Elm seats used to be adzed



PHOTOGRAPH BY GMC/ANTHONY BAILEY

An elm & walnut chair by Stephen Cooper

The Elm in art

The elm tree in this lithograph had its lower branches trimmed and this vast hall of the Crystal Palace was built around it. Queen Victoria opened the Great Exhibition and the elm was very much evident in the background of the opening event. Elm trees have frequently been the subject of art such as James Duffield Hardings 'The Great Exhibition of 1851', several paintings by John Constable and Ford Madox Brown to name but a few. This is no doubt due to the grandeur of the fully grown tree.



PHOTOGRAPH COURTESY OF WIKIPEDIA COMMONS

Working characteristics

Elm has very low resistance to shock loads, very low stiffness and low bending and crushing. However, it is very resistant to splitting. It is not suitable for steam bending as it distorts on setting. Very sharp cutting tools are needed as it has a medium blunting effect. The surface tends to pick up during planing which can result in a rather woolly effect. It takes glues and stains well, screws and nails without splitting and will polish to a high finish. It is not easy to work with hand tools.



PHOTOGRAPH BY GMC/
ANTHONY BAILEY



An elm side table

Above: An
elm moon
platter by
Adrian Jacobs

Right: Typical
grain of
English elm



PHOTOGRAPH BY GMC/ANTHONY BAILEY

Fascinating fact

Before metal pipes were widely available, many English towns had water mains constructed from elm – places such as Bristol, Reading, Exeter, Southampton, Hull and Liverpool.



PHOTOGRAPH COURTESY OF SHUTTERSTOCK

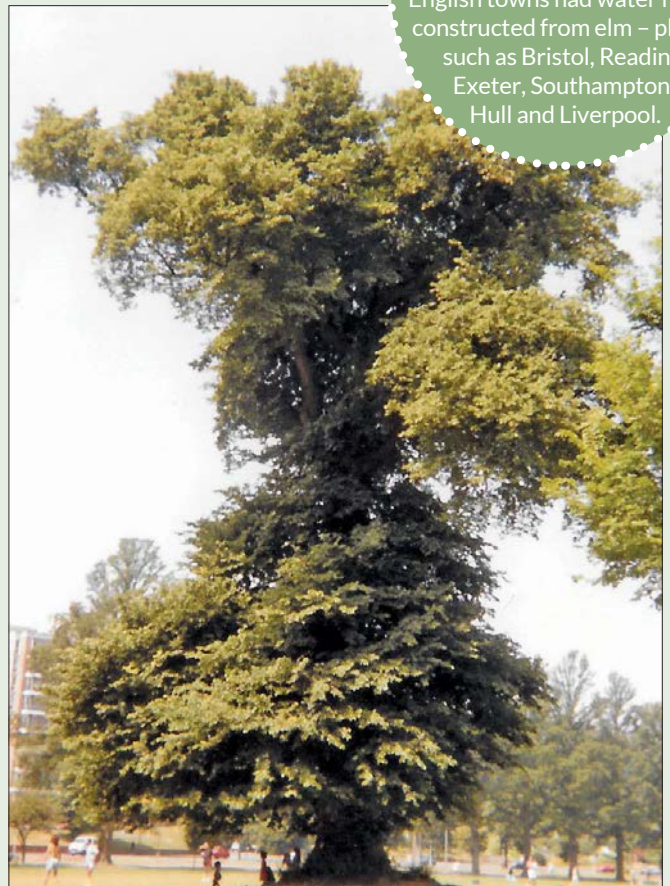
Mythology

Elms used to be associated with melancholy and death, perhaps because the trees can drop dead branches without warning. Elm wood was also the preferred choice for coffins. In Lichfield it was the custom to carry elm twigs in a procession around the Cathedral Close on Ascension Day, then to throw them in the font.

Diseases

Elms are highly susceptible to Dutch elm, a fungal disease which has devastated populations since it arrived in the UK in the 1960s. Elms can also be affected by galls from aphids, which migrate from fruit-cultivated trees.

In converted timber the heartwood is susceptible to decay and insect attack and moderately resistant to preservative treatment, although the sapwood is more permeable.



PHOTOGRAPH COURTESY OF WIKIPEDIA COMMONS

If you want to see more varieties of elm for yourself, visit Preston Park in Brighton where there is a wide mixture of elm species growing today. ■

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PHOTOGRAPHS BY LOUISE BIGGS

Birch occasional table

Louise Biggs relays her crafty method for covering up damaged veneer

A colleague recently passed a customer to me explaining a job warranted my expertise more than theirs. When I met the customer she was upset that an accident – the sort many of us hope will never happen – had damaged her treasured birch (*Betula pendula*) occasional table which had been passed to her by her parents. A candle momentarily left unattended had overflowed and spread its wax across part of the top. Her attempts to deal with the wax had

unfortunately gone through the surface veneer.

Stages of restoration

1 Having removed the top from the base and before anything else could be done, the wax had to be removed while avoiding spreading it further. Using thick brown paper spread over the top, an iron was used to heat the surface. The paper, changed frequently for clean pieces, absorbed the heated wax and, repeated enough times, the

Tool list

- Utility knife
- Palette knife
- Straight edge
- Cork block
- Panel saw
- Jigsaw
- Bag press or two stout boards and clamps

wax was slowly removed, leaving a clean top to be repaired.



1



2

2 The damage had formed a dip in the surface, cutting through the veneer and the first layers of the plywood. Whichever repair option we took the dip needed to be filled to prevent the new surface following the dip. A traditional decorator's filler (Polyfilla) was spread over the area, extending past the edges of the dip to ensure complete coverage. ➤

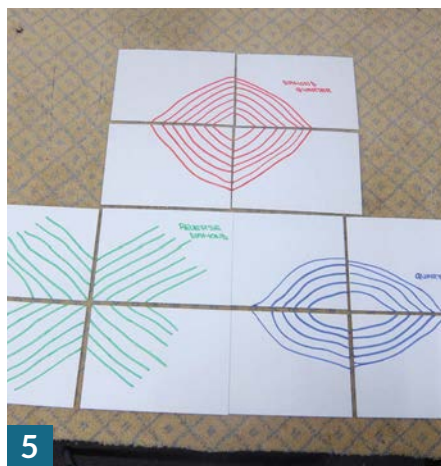
3 Left for 24 hours to dry thoroughly, the surface was cut back to the level of the top using a cork block and abrasive, working in a circular motion and moving around the edge and towards the middle. As the filler can be abraded quite easily, using a cork block was more controlled than using a power sander.



4 A long straight edge was used frequently during the sanding process to check the filled area was level in all directions, lest we landed up back at the beginning with a dip.



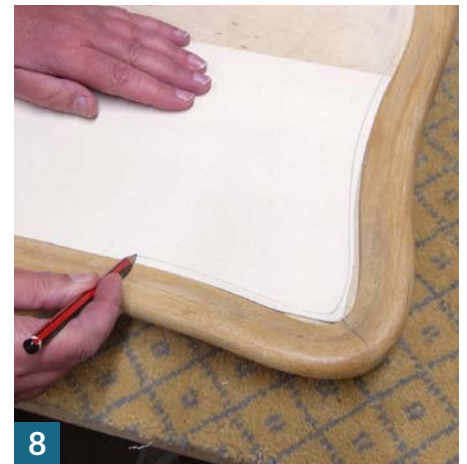
5 The shaped and moulded edge of the table was raised slightly from the table surface. With the customer we ran through the re-veneering options. One of the most accurate ways to cut the new veneer into the shaped edge would mean applying four sections of veneer and, once glued in place, cutting two joints through the middle of the top as illustrated with the card. This would have required four consecutive leaves of veneer, the grain of which could have been oriented to create one of three patterns – a diamond quarter (red, top), a reversed diamond (green, left) or quartered (blue, right).



6 As the original top was one piece of highly-figured veneer the customer expressed that she would like it to remain the same way. With the movement that would have been created in the veneer once the glue was applied, laying one piece of veneer to the shaped edge would have been difficult to create a tight fit.



7 We came to a compromise to lay the new veneer on a 2mm piece of MDF, at the expense of losing half the depth of the step on the moulded edge, but with the bonus of having a stunning piece of ice birch veneer.



8 A card template was formed, building it up in sections. This would allow the thin MDF to then be cut to a tight fit. Having rough-cut the card to shape and using my fingers as a gauge, the edge shape was transferred to the card.

9 The shape was checked against the edge moulding to assess the fit. Running a pencil against the inner moulded edge the template could be fine-tuned to the shape and trimmed out.



10 Following steps 8 and 9 again the templates for the other three corners were formed. Each one was taped in place before cutting and shaping four pieces to fit the sides and link the corners. The whole template was then glued and taped together.

11 Having cut a piece of thin MDF slightly over size, the template was taped to the board and, using a jigsaw, the shape of the template was carefully cut out. Once cut the board was test-fitted to the tabletop and any slight adjustments to the shape were made using abrasive wrapped around a cork block, one side of which had been shaped to a curve.

12 The section of veneer to be used was cut from the veneer leaf slightly larger than the MDF board. Before gluing the veneer the board was rubbed over with abrasive to cut the sealed surface of the board to aid the adhesion of the glue. Using a cold press veneer glue, the veneer was applied and placed in the bag press until dry. The top was joined in the bag press by two veneered test panels for obtaining the tinted finish prepared in the same way.

13 The veneer was then trimmed back to the board before being scraped and abraded. By cleaning up the veneer first a cleaner finish was achieved, especially around the edges where they met the raised moulded edge. The veneered board insert was glued to the tabletop. Having satisfied myself that there were no voids within the board, the top and insert were placed back into the bag press until dry.

14 At some point my customer had stripped the dark finish from the table, cleaned it up and finished it a natural colour with Danish oil. Knowing that the Danish oil would slightly darken the veneer I applied one coat of oil to the top and test panels to obtain a true sense of the



10



11



12



13



14

colour. Having de-nibbed the surface with 400 grit abrasive, the test panels had another coat of Danish oil tinted with yellow and red solvent stains in order to tone the new veneer to the



15

existing colour of the moulded edge and frame.

15 With the colour of the test panels correct the top was coated with a second coat. When dry and we were still happy with the colour match, the top had a final coat of pure Danish oil.

16 Once the top was dry it was refitted to the table frame and ready to go home – much to the relief of the customer who had her treasured table back to enjoy. ■

Water and solvent-based stain concentrates

Available in various colours, the highly concentrated solvent stains can be thinned using various solvents and also water. They can be used to tint spray finishes and oils and they can also be used to make up stains, either water or solvent-based. They are very strong and only the smallest amount is needed to tint a finish or oil. Available from Movac at www.movac.co.uk

Start scrollsawing

PHOTOGRAPH BY GIM/CANTHONY BAILEY UNLESS OTHERWISE STATED

One of the most versatile and fun ways to get into project-making is to use a scrollsaw. Here is what you need to get going

Using a scrollsaw – which is a form of motorised fretsaw – might not be the obvious choice to start making things in wood, but it is a discipline all of its own that doesn't demand tons of space and you can let the machine do the work while you simply give the guidance. Once you get the hang of it and learn the nuances of blade choice, types of material and how you can use designs to create patterns and cut out intricate shapes it becomes a really intensely enjoyable experience. Giving a project your entire attention can make this an all-consuming activity while a project lasts, and the satisfaction of creating something unique.

CHOOSING A SCROLLSAW

There are various makes and models on the market but I think you can guess that the more you spend the better the machine will be. A good, reliable scrollsaw with smooth, quiet reciprocating action is really important. It is generally recognised that Hegner is the past master when it comes to building scrollsaws but they come at a price. Axminster trade models are a bit on the large side but very good, and then there are various lower-priced or even budget models on the market. It does help to see your chosen machine being demonstrated and ask questions to see if there are particular reasons for buying a particular model.



PHOTOGRAPH BY FRED BYRNE

Hegner machines are renowned for their quality but are more expensive



Scheppach now come in a dark-blue livery and are reasonably priced

Size can matter

It makes sense to start with a compact machine that won't break the bank and takes up less room than one with a large cutting table, unless working on large pieces is your specific aim. If your first machine is good but not big enough or powerful enough and 'the bug really bites', you will at least have enough experience to make an informed choice for a larger machine and maybe keep the smaller one for certain jobs or let someone else practise on it. ➤

Right: Choose a machine with enough power to handle deep cuts. Blade choice is important too



Machines in the Axminster trade range are solidly built and come with plenty of features



PHOTOGRAPH BY FRED & JULIE BYRNE

PHOTOGRAPH BY FRED & JULIE BYRNE



Being able to tilt the table is a very useful feature. The digital gauge here is used to confirm the angle



A dust blower, quick blade release, perforated table extraction and a hold-down on this premium model



A hold-down works on larger pieces but is a hindrance with small components

Things to look out for

Key features are: the length of the table if you need greater clearance for large work; a tilting table because this is more useful than you can imagine, partly for jobs where depth in a design is important; a worklight which doesn't have to come with the machine; then all-important extraction and a blower. This sounds at odds with itself, but general extraction underneath the table needs to be complemented by a flexible blower that is directed at the

cut area. Be aware that some materials, such as sea shells, can emit a toxic dust, so wear a decent dustmask. Look for an efficient method of blade holding and tightening that allows quick changeovers, and good blade tensioning which may have a rapid setting lever. Some machines have a work hold-down foot and a clear vision guard. On a good machine neither are necessary or helpful so discount these. A foot switch pedal allows you to keep both hands on the work.



PHOTOGRAPH BY FRED & JULIE BYRNE

A foot pedal allows continuity of working, keeping both hands on the table

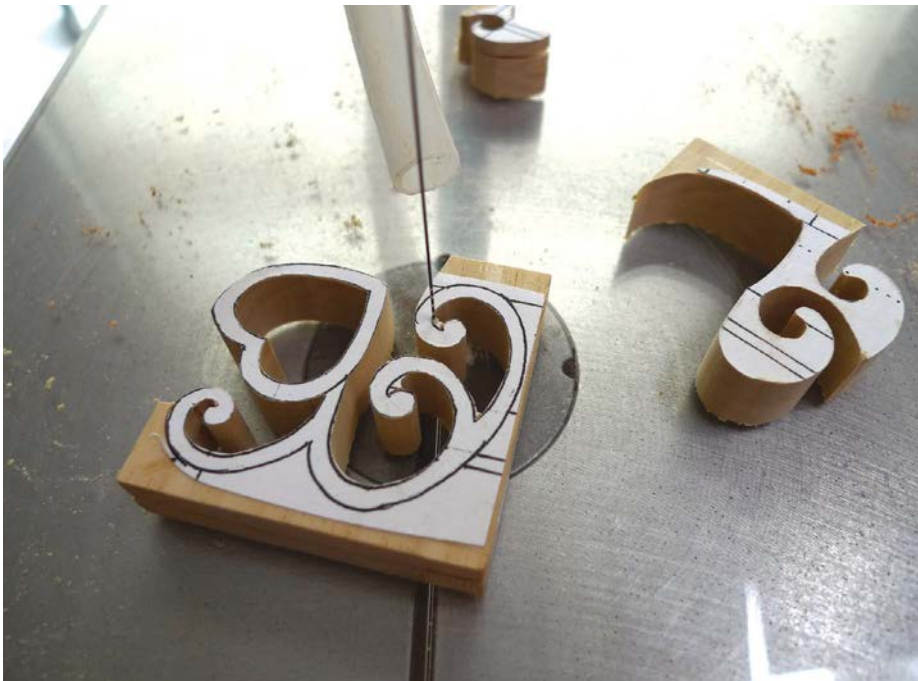
Left: A trial board using an entry-level pyrography tool shows a variety of patterns



A corded Dremel tool kit with various sanding, cutting and drilling tips

Is that all I need?

If you have seen what other 'scrollers' get up to, you may well be aware that just owning a scrollsaw is usually not the end of the matter. Although it is a very versatile machine for creating both simple and complex shapes, once you have mastered the basics and made all manner of things, a hand-held Dremel or other shaping, sanding and drilling tool and a pyrography pen expand your options considerably. A scrollsaw is a means to an end, as with all tools.



Small, thin or complex pieces need good insert support and the correct blade



You can make your own sub bed, which gives maximum support for small pieces

Something to get your teeth into

The choice of blade very much depends on the thickness of the material, the type of material and the desired fineness of cut finish. Cutting out deep, large lettering needs a coarse blade, while fine wooden jewellery needs an equally fine blade. There is a rather bewildering array of blade types, so it is important to understand what they do and when to use them. I would suggest a starter pack such as the one from Pegas, which has a couple of blade types and in various sizes of tooth. However, if you want to cut metal, then obviously you will need the correct blades. Likewise, a spiral tooth blade with its more file-like action can have its uses. I wouldn't suggest using 'pinned' blades unless it is the only type your machine will accept as there is much less variety available. ➤

Top to bottom – skip tooth, reverse skip, reverse modified geometry, spiral tooth and pinned



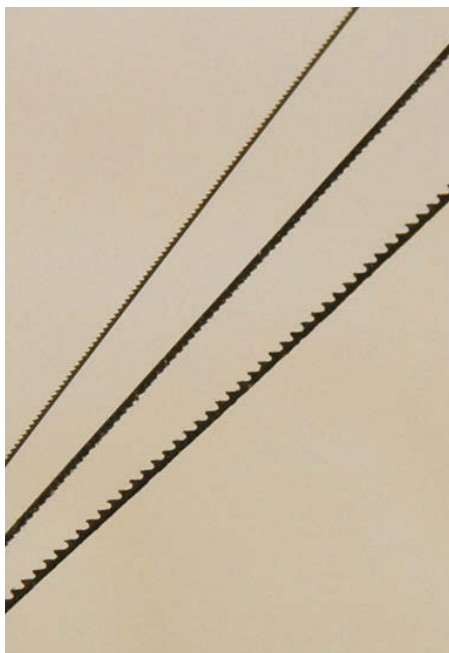
The kindest of cuts

Fortunately the action of a scroll saw is relatively safe, even in younger hands – however, it's as well to keep a small box of plasters to hand just in case. The real issue is cutting sensibly – don't force the cut. Generally a scroll saw table will have an insert that fits around the blade position. After a while, and especially if you do slant cuts, the insert will get damaged and open up quite a bit. This is a problem when cutting very small pieces as they can get trapped, jump around and even snap. This is exacerbated by wrong blade selection.

You can make a thin sub bed that sits over the existing metal table. Just drill a tiny blade hole, fit the blade and let the sub bed find its own position that doesn't bend the blade. Then glue and clamp small fillets of wood underneath pressed against the table sides and front end. Remove, wipe away surplus glue, refit and you have a fully supporting surface that can be replaced when it too gets worn.



A fine-tooth blade cuts cleanly, minimises rough edges and avoids lots of sanding



Only the top and middle blades are suitable for cutting metal, the lower one is suitable for thin wood

A starter for ten

The chart above doesn't list all the blade sizes – the range is big and confusing, especially in certain types of blade. So here is an easy selection to get you going. Once you find out what does or doesn't work you can concentrate on specific types and sizes and try new ones if you are doing different sorts of project.

Start with standard skip-tooth fretsaw blades in say, grades 1, 5 and 9. In blade grading the smaller the number the finer it is, the larger the number the coarser the blade. Incidentally, wood cutting blades are called fretsaw blades, while metal cutting are piercing saw blades and can be fitted in a hand piercing saw, not just a machine. If you want to work with plastics use spiral cut blades, but don't expect them to

follow straight lines in wood – they are handy for tight internal curves. Adjust tension to suit the blade, a fine blade can snap more easily, a coarse blade will bend if it isn't tensioned enough. The key thing is to keep practising on scrap wood, following complicated shapes and planning where to pre-drill blade access holes in intricate work.

All scrollsawers have their own tricks and techniques and you will no doubt develop your own as you progress.

It is a brilliant machine and, with some imagination perhaps fuelled by patterns in scrollsaw books, you can go as far as you like.

Visit www.thegmcgroup.com for a selection of scrollsaw and intarsia project books. ■



Sawn marquetry can be very finely executed. Three portraits from one 'packet' of veneers.

BLADE CHOICES

Type	Material	Cutting
Skip tooth	Wood, plastic, bone, Corian, fibrous	Fast, good chip removal. Rough to smooth finish depending on tooth size
Reverse skip	Various	Prevents splitting on the underside
Modified geometry	Hardwoods, acrylics	Wide tooth spacing prevents burning
Spiral	Various	Cut in any direction – internal curves
Spiral tooth	Various	Cut in any direction – internal curves
Super skip	Hardwoods	Intricate fretwork
Super cut	Any material	Fine teeth
Regular progressive	Faced material, veneers etc.	Fine entry teeth and coarse waste removal teeth
Metal cutting	Metal up to 3mm thick, ferrous, non-ferrous	Precision cuts
Pinned	Various materials	Regular teeth, straight cuts



A thick workpiece requires a blade with wider tooth spacing to clear the sawdust



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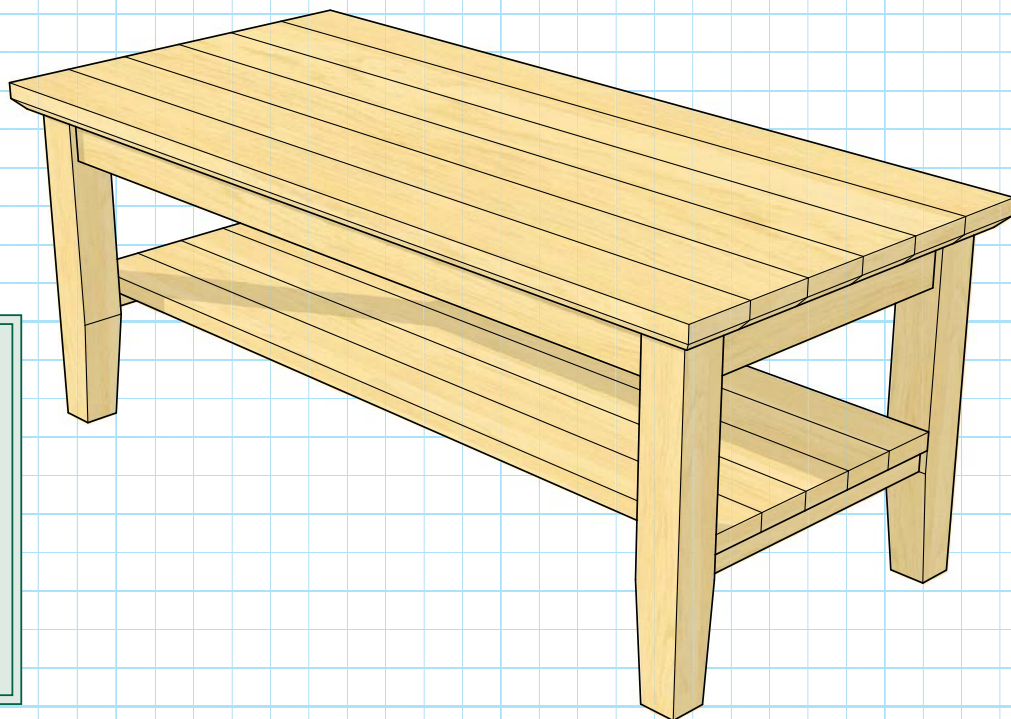
PLANS 4 YOU

Coffee table

Simon Rodway says
it's time for a break
– a coffee break

Cutting list

Top	4 @ 1006 X 77 X 30
Top	2 @ 1006 X 78 X 30
Legs	4 @ 370 X 50 X 50
Side rails	2 @ 928 X 50 X 20
End rails	2 @ 387 X 50 X 20
Stretcher rails	2 @ 387 X 26 X 20
Shelf	3 @ 956 X 63 X 20
Shelf	2 @ 956 X 60 X 20
Buttons	10 @ 33 X 20 X 24



The coffee table that features as this month's project could probably be described as contemporary traditional, both in appearance and also construction. The woodworking techniques used are mostly on the traditional side, with a solid timber top fixed to the frame using buttons and top and stretcher rails joined to legs using mortise and tenon joints, but I have suggested using biscuits to join the top and shelf boards, so a bit of modern technology too. The simple lines and robust construction should also mean that this table will age well through the years.

Time warp

The big issue, of course, when making larger flat surfaces from solid timber, is the tendency for wide boards to warp over time, and to counteract this both the top and shelf are constructed using multiple narrower sections which are glued and either biscuited or joined with 6mm thick plywood splines inserted into stopped grooves. Kevin Ley, a furniture maker whose projects I used to draw regularly, recommended planing the joined surfaces very slightly concave along their length, so that

when you are clamping the boards together they meet first at the ends, and then as the clamps tighten the rest of the board edges meet.

Leg rails

All four legs are identical initially, with offset mortises on the two inner faces and a shallow taper on the same faces at the feet, so you can save time and match the profiles here by batch marking and cutting them in one go. Then you need to add the mortises on each end pair for the stretcher rails which will also support the shelf.

The pairs of end and side rails should also be matched accurately on shoulder-to-shoulder length, so more batch marking and cutting. The tenons for all the top rails are mitred at the ends to give a bit of extra length and glue area, strengthening the joints on the corners, and are set down from the top edge of the rails to give about 12mm of timber in each leg above the mortises.

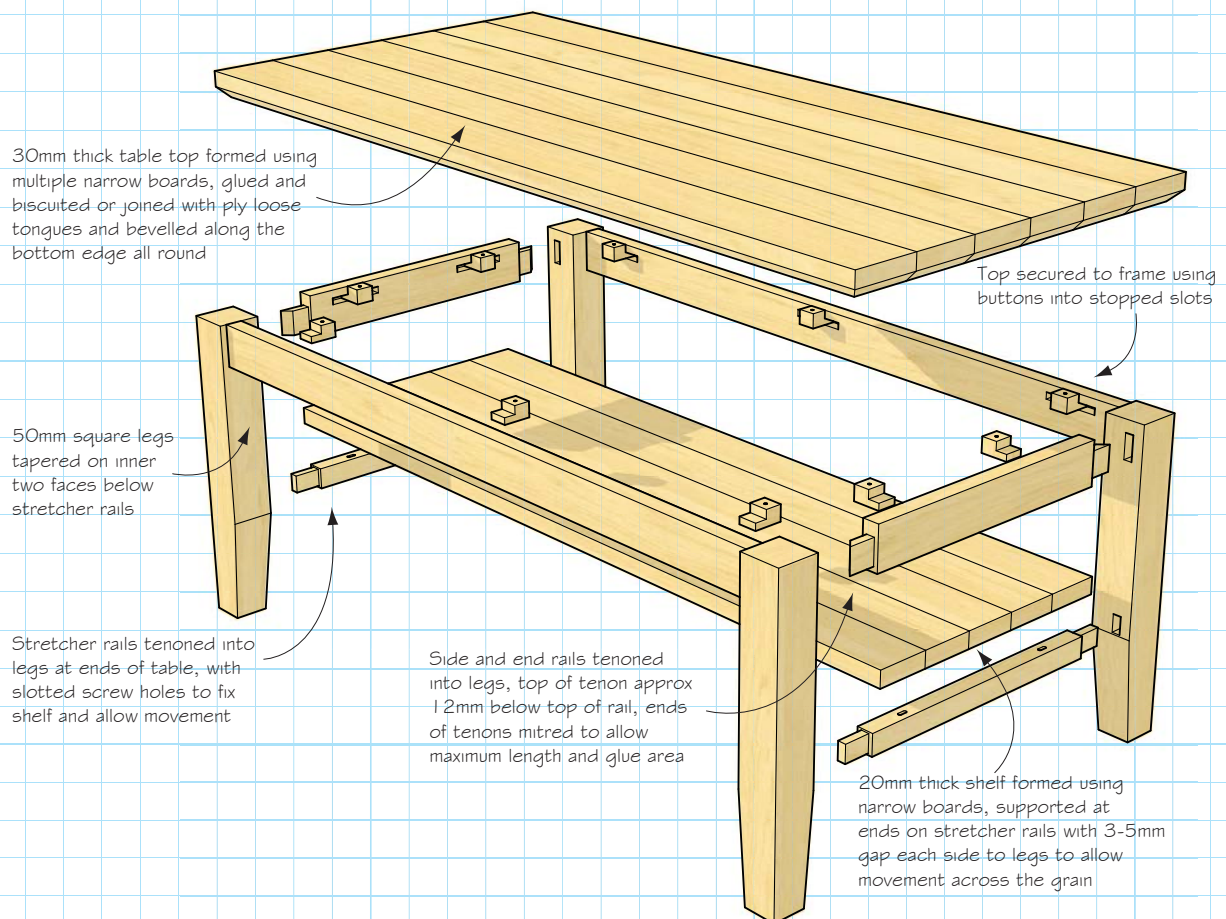
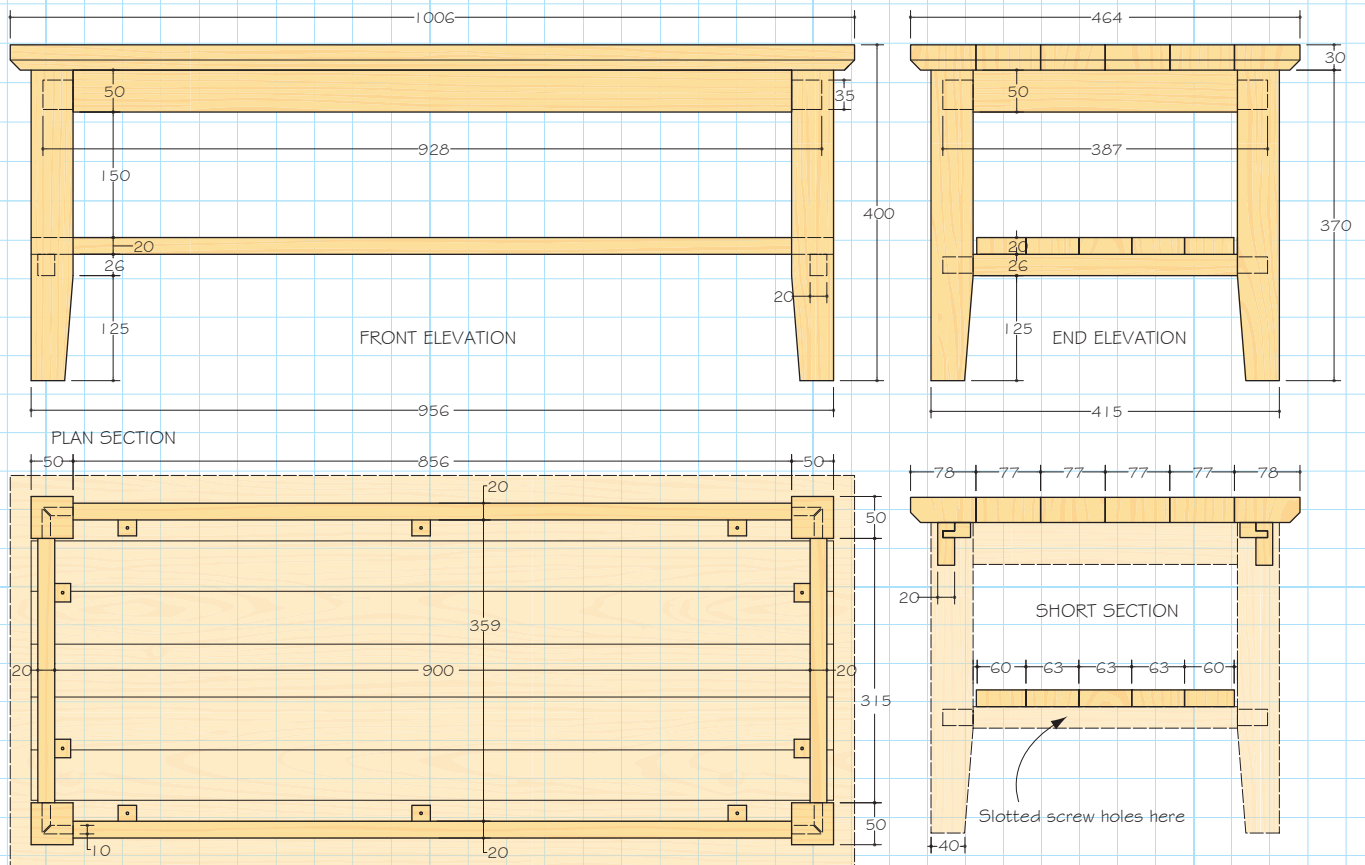
The inner faces of the rails are grooved to take the buttons which will secure the top to the frame. Some furniture makers run this groove the whole length of the rail, but I have

shown them stopped. Whichever you find easiest is probably a good rule here.

Lastly, cut the stretcher rails, again matching shoulder to shoulder length with the top end rails, and include a couple of slotted screw holes vertically in each rail to fix the shelf and allow a bit of movement across the grain. The shelves are fixed between the legs and a 3mm gap on either side between the shelf and the legs will also allow the shelf to move a bit without forcing the joints apart.

Button fixing

The table should be fairly straightforward to assemble, checking the frame for square across the diagonals. The top has a small bevel worked on the bottom edge all round, and when it comes to fixing it to the frame with the buttons, I like to be able to rotate them so that the top can be removed, which means setting the shoulders slightly back from the inner face of the rails. They do need to be pulling down on the top to avoid it moving around if you do this, but this is a good idea anyway as it keeps the top well clamped to the frame. ■



Constructing a stud wall

PHOTOGRAPHS BY JAMES HATTER

Another handy skill to add to the DIYer's repertoire, from **James Hatter**

Timber stud walls provide a quick and effective method of building a wall. This guide provides information to tackle a range of stud wall alternatives. Such walls can be used to divide a large room, or form a room within a room to create, for example, an en-suite. They can also be used to provide extra thermal and sound insulation to an existing brick or block wall.

In either case, plasterboard can be used to clad one or both sides, and insulation included between the cladding to give thermal and sound insulation. Vapour barriers can also be added where appropriate. If you have a garage or an outbuilding with a single brick or block wall, then adding an inner stud wall would enable you to make a workshop, or storeroom with better sound and thermal properties. If you want to use such an area for habitable accommodation, then the construction will have to meet the necessary Building Regulations requirements.

Stud walls can be used to give an inner wall to an exterior wall. If building an inner wall then the outer brick wall must first be coated with a damp proof membrane (DPM).

Insulation is added – for a habitable room, the Building Regulations must be consulted. For a store room or workshop, then it is still advised that adequate insulation is included.





1 Measure the lengths for the floor and ceiling plates, then cut to size. Place them side by side and mark the matching positions for the studs to give 400mm centres

Design, measuring and fitting

Decide on the position and form of the intended wall – take accurate measurements so that you can calculate the materials you will require. Determine the fixing points – these will normally be the floor, the ceiling, and adjoining walls. Decide on the position and size of any openings. If you intend to include a door then incorporate a door frame in your plan.

When satisfied with your plan, mark out the position of the new wall. A plumb line or laser beam are useful to transfer ceiling and floor reference lines.

Start by cutting the lengths for the floor and ceiling plates. Place them together and mark matching stud positions at 400mm centres, or 600mm centres if you use 12mm or thicker cladding material. Attach the floor and ceiling plates, and measure and cut a stud to attach to each adjoining wall.

Cut the studs to length to give a snug fit – a powered mitre saw is particularly useful for this – and join each stud to the floor and ceiling plates at the chosen intervals, using either nails or screws angled into the plates from either side of each stud. If using a hammer, drive the first nail in until it just enters the plate then drive the second nail fully, returning to the first nail. This will prevent the stud from being knocked out of position.

Continue to attach each stud, including a door frame if appropriate. Next, cut the noggings to length, and attach these between the studs. They can be staggered to give better access for fixing them, but aim to get alternatives to 1200mm centres with ceiling and floor plates for fixing the cladding. ➤



2 Attach the ceiling plates with screws. In this example, the joists are exposed, so the ceiling plates can be attached to these. If the ceiling is plastered, then determine the positions of the joists using a stud detector, or tap to find them



4 Cut the studs to length then attach the end studs to the existing walls with suitable screws and plugs, or use frame fixers



6 The studs are attached to the plates with nails or screws. Angle one through each side of the stud. This technique is referred to as 'toenailing'. If you wish to include a doorway then include a door frame in your studwork



3 Use a plumb line from the ceiling plate to mark the floor plate position, and attach the floor plates in position with screws. It can be beneficial to attach the floor plates first, especially when dealing with partition walls



5 Continue to add studs at 400mm with centres marked on the ceiling and wall plates



7 Attach noggings to give the frame further stability and added fixings for the plasterboard. They can be staggered to ease attachment. Always consider the standard size of plasterboard when including noggings



8 If you intend to attach fixtures to the wall later – for example, kitchen units or radiators – fix plywood plates on battens within the studs



11 The stud can be reinforced about the bore holes by screwing added short lengths of studding. Fix the studs into position by toenailing into the floor, and ceiling plates as before

If the final wall is to have fixtures attached to it, then incorporate support plates between the studs. These can be pieces of 18mm plywood attached to battens fixed to the studs. Also, consider if you intend to have service pipes or cables within the wall, and organise their installation.

Cladding

The next stage is cladding the wall. Internal walls can use plasterboard, that is in sheets 1200mm x 2400mm with a range of thicknesses, 9.5mm and 12.5mm being the most commonly used. You can also get sound shield and fire-resistant grades. If you are building the wall in connection with a workshop then it is worth considering using a sheet timber cladding that will give a greater range of flexibility for fixing items later, whereas for an en-suite consider using a water-resistant aquaboard, especially in a bath, or shower area.

The sheets can be mounted vertically or horizontally. Cladding requires the plasterboard or alternative to be cut for sizing, and, if necessary, to fit around obstacles.

The plasterboard is measured and cut with a sharp utility knife against a straight edge.



9 At this stage the services can be incorporated. Electrical cables must follow specific routes to conform to the Regulations. Get an electrician to first fix at this stage, unless you have the qualifications to do this yourself



10 For plumbing services, with rigid service pipes such as those made from copper, bore holes in the studs and thread the pipes through the studs as they are being positioned. Plastic pipes allow more flexibility



12 Insert insulation between the studs. This can be a slab foam Celotex or similar, or can be mineral wool fill. The mineral wool is particularly useful when the area incorporates services or obstacles. Wear protective equipment when using more aggressive insulating materials



13 With all the required services, support plates, and insulation in place, the wall is ready to receive a plasterboard cladding. Mark the positions of the centres of the studs on the floor and ceiling, so you will know the fixing points for the plasterboard



14 The standard sheets of plasterboard are 1200mm x 2400mm. To cut to size, score the front face of your chosen plasterboard, with a utility knife against a straight edge



15 Bend the board about the score to break the board, then cut through the backing paper with a utility knife. Once fixed in place, any cut-outs for electrics can be done with a keyhole saw or an electric multi-tool

The board is then bent to break it, and the knife used to cut through the backing paper. Any cut-outs, for example for electrical socket boxes, or to cut around obstacles, can make use of a keyhole saw.

Attach the board to the studs using bugle-headed drywall screws. Use 3.5mm x 32mm with 12.5mm plasterboard and space them about 200mm apart, just taking the head below the surface. If the cladding material is sheet timber, then use a handsaw or circular saw to cut to size. For an inner skin wall, fill the spaces between the studs from the other side with an insulating material. This can be a mineral wool or foam slab, and you could incorporate a sound quilt. Then clad with the plasterboard.



16 Fit the board in place with dry wall plasterboard screws, with about 200mm spacing. Just sink the heads slightly below the surface without breaking the facing paper

Finishing

The usual finish for plaster walls is a skim to get a fine finish, and unless you have the necessary skills it is probably better to employ a plasterer to do this. Paint the new plaster after it has completely dried, initially with a dilute coat of emulsion, with a little PVA added, or use one of the plaster sealing products.

Attach skirting if required, and finish with the required finishing coats. For areas where water is used then the wall could be tiled.

Second-fix electrics and any plumbing requirements can follow, and installation of any required fixtures and fittings. Once the job is completed it will look professionally done and very neat. ■



17 Fit edging strips to any external corners, and joining tape over all joins between plaster boards. The wood-framed section shown in this photo is for an access panel for connection of services later



18 Have the plasterboards skimmed to give a fine finish, and allow to dry thoroughly



19 Apply a sealant coat to the area – this can be dilute emulsion, with a little PVA added. The area not painted has received clear PVA and will receive tiles later



20 Finished plasterwork completely concealing all the hard work that has gone on behind. ■

Ask the experts

Another selection of awkward questions for our experts to answer



ANTHONY BAILEY
Editor,
Woodworking
Crafts magazine



MARK BAKER
Group Editor,
GMC woodworking
magazines

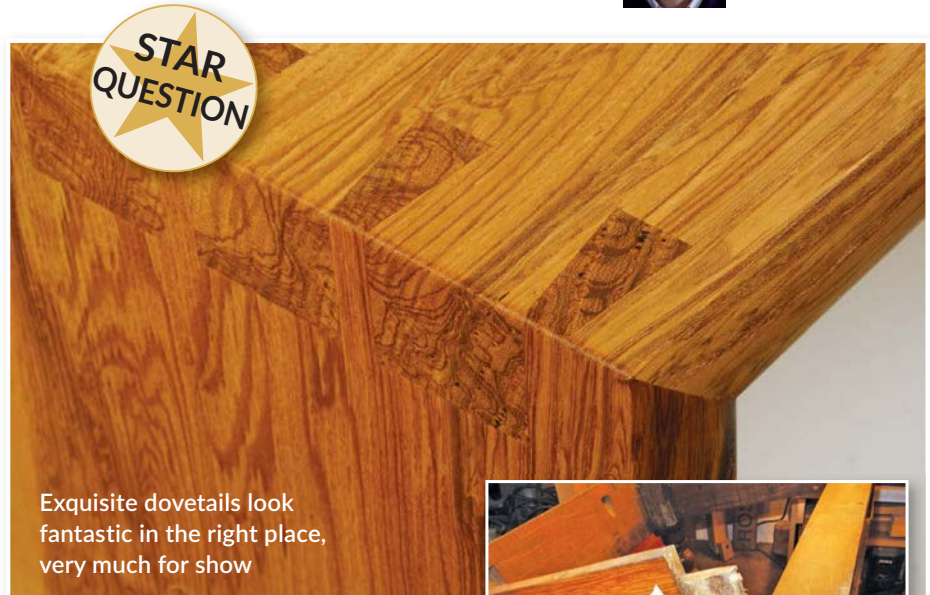
NEATLY DOVETAILED

Si Munday I keep reading about how important dovetail joints are, cutting them neatly, making special kinds of dovetail joints such as secret mitred dovetails etc. I've tried cutting through dovetails and my best attempts are OK-ish. I think a lot of people feel a bit inadequate not being able to cut these fancy joints well. Does it matter really?

Si Munday

Anthony replies: Dovetails were and are functional joints designed to give 'resistive strength' to things such as drawer boxes, where the force of opening a drawer would possibly wreck other joints. They used to be hidden away, you only noticed them when a drawer was opened. However, more recently with the likes of the late James Krenov, the dovetail came out in the open and has been transformed into a highly decorative feature or, in other hands, artfully hidden away in things such as expensive jewellery boxes, making use of the secret mitred dovetail which you mentioned.

Recently, I chanced upon some dovetails I cut while at school and,



having told people over decades that I could see daylight through the joints, in fact they were quite tight and I'm probably not much better at cutting them now. Why? Well, I haven't needed to cut a dovetail in many a long year. There are so many other ways nowadays to give strength to joints using router cutters, the biscuit joiner, Miller dowels, etc. For me, perhaps the most useful are the flat single or twin dovetails used on a top rail above a drawer, where they are let into the tops of the legs, purely functional and



Purely functional twin dovetails connecting a top rail to desk legs

never to be seen. 'Show' dovetails are beautiful to look at but there are other ways to express detail and no, we don't all have to create perfect dovetails to call ourselves woodworkers.

STICKING TOGETHER

Gary Westbrook I want to use white plastic sheet material to cover a bathroom ceiling that tends to get mouldy. Is there an adhesive that will hold it securely in place?

Gary Westbrook

Anthony replies: The answer is slightly more involved than the question suggests. First of all what are you fixing the sheet on to? Is it painted plasterboard or some other ceiling material? The plastic sheet you are referring to, is it intended for this use? Has it got anti-bacterial properties built in? Does the supplier have its own adhesive solution for this application?

You see it throws up a number of queries in my mind.

Let's hazard some answers. There are special clip-together lightweight ceiling boards which are nailed discreetly in position. They are made of polystyrene and have a cell-like insulating core. If you are using just a sheet of plastic instead, it needs to be designed to resist bacterial activity. It can, in theory, be bonded to a ceiling surface but that surface needs to be treated to kill the existing mould and the surface needs to be level. You can buy a special bonding mastic for plastic sheet or panels but it is designed for vertical surfaces. Whether it will cope with the weight of a sheet bonded horizontally on a ceiling I do not know. You can

buy special cover strips that will hold wall sheets in position quite neatly so I would suggest you need those as well as the bonding mastic.



Plastic wall sheet and bonding mastic for hygienic wipe-clean walls

EDUCATION, EDUCATION, EDUCATION

☪ I enjoy reading your magazine as it has lots of different things to try, but I feel I need to do some regular woodworking evening classes to give me more confidence. Unfortunately I commute so have long days and sometimes late and tiring ones too. I'm hoping another interest in something quite different might just perk me up. Have you got any suggestions about where to go for learning woodwork? ☪

Alison Newman

Anthony replies: I'm glad you enjoy the magazine – unlike in class or workshop learning the content is quite varied from issue to issue, which is good in one way, but I suspect you need continuity – starting a project and then carrying it on week after week, learning as you go. In the November issue there was an article on this very subject. I think it should give you some pointers so I will send you a PDF, which other readers can also request. It is a useful guide but the truth is that some parts of the country are better served for practical adult education courses or private teaching workshops than others. Try Googling your area for woodwork teaching and see if anything comes up nearby.



PHOTOGRAPH COURTESY OF SHUTTERSTOCK

A good tutor can give support and confidence to learn new skills

Like a lot of people I used to commute for many years and it isn't much fun. However, if you do sign up for evening classes and you aren't able to attend or you arrive late you will probably still have to pay the full course amount, so that is something to consider. However, woodworking is a stimulating mental and physical challenge which can be very satisfying.

FEELING EDGY

☪ I've tried using veneer edging tape, the iron-on sort. It sometimes catches and pulls off in places, but at least I can iron it back on. I have been wondering about solid lipping but I'm not sure I can safely level it or fit it exactly in place, even if it is the same thickness. I've already part-built a storage cabinet project so I need to solve the edging problem. ☪

Oliver Peart

Anthony replies: I agree that iron-on tape can come loose if it isn't applied properly. Professional veneer tape edgers are designed to avoid problems experienced with just using a heatgun and roller. You can improve your technique by running the roller at a very slight tilt towards each edge in turn – this helps to seal the edge down before trimming off the waste.



A heat gun plus a roller provide the basic way to fix iron-on edging tape

If you want to add solid lippings they will add to the width of each panel – in other words, the depth of the cabinet by at least 5mm and maybe more depending on the width of the lipping you decide to use. No doubt you can take this into account during the construction, possibly by trimming down the back edge of each panel by the same amount. If the lipping is the same thickness as the board and you have glued and taped it in place securely all round, then sanding should



An extended ply base and hold-down knob used for levelling solid lipping

take care of any minor levelling. If the lipping stands above and below the thickness of the board edges, you are best advised to fit an extended base with a grip knob to the base of a router and very carefully set the cutter depth. Keep it plunged, press down firmly on the extended base, move the router along and let the cutter do the rest. You will still need a bit of finish sanding afterwards.



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N.B. If you do need help or advice you can email me: anthonyb@thegmcgroup.com or visit: www.woodworkersinstitute.com where there are lots of useful articles, either way the service is free!

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Thin-walled bowl

Philip Greenwood makes a 3mm thin-walled bowl from a piece of walnut, using only a basic selection of tools

Personally, I just like a simple flowing curve on a bowl. Sometimes, with a nice piece of timber a simple shape is all you need. The most important point with any curve is not to have any flat spots along it, as these can be a challenge when you first start turning. You need a continuous cut and to hold the bowl gouge close to your body for stability, rotating your body to produce the curve. Practise from the first cut through to the last cut to achieve the flowing curve. Once completed and placed at eye level, you will see how powerful a simple curve can be.

People often ask me how I manage to turn a bowl so thin. The answer lies in the technique and the fact that you need to keep practising until you achieve the wall thickness you are happy with. I advise everyone to start with a wall thickness of around 10mm then turn the next bowl to 9mm and

so on, until you are happy. One of the best tips I can offer is to take light cuts and hold the handle of the bowl gouge lightly; too tight and you can potentially cause vibration, which will result in the bowl surface being covered in vibration marks.

‘Practise from the first cut through to the last cut to achieve the flowing curve’

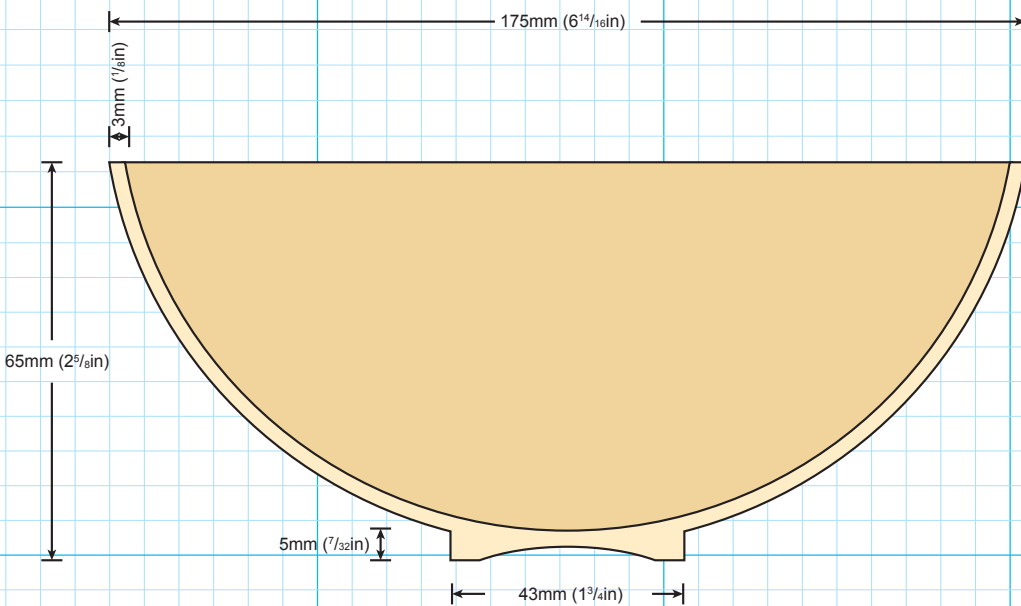
These types of bowls can be turned with dry or unseasoned timber. Dry timber will move less, and unseasoned will move a lot more.

With unseasoned timber, you will also have to turn your bowls quickly, as the timber will be drying as you turn, and moving as well. I have used all

types of timber to make these bowls, but some can become translucent if turned very thin – say around 2mm. Sycamore (*Acer pseudoplatanus*) and monkey puzzle (*Araucaria araucana*) are two such timbers. The wall thickness can be measured with callipers or by using a low-voltage light. However, do not use a mains voltage lamp near timber that may still contain sap, and make sure you have circuit breakers on your electric main as well. Using this method will allow you to see the light that transmits through the walls of the bowl.

The timber for this bowl is walnut (*Juglans regia*) – I like the markings this species of timber has. Make sure you remove all the tool marks and sanding marks on the bowl. With this continuous curve any tool or sanding marks will show, so take your time and finish your bowl to a very high standard.

BOWL DIMENSIONS



INFORMATION

TIME TAKEN: 60 mins

COST: £11

TOOLS & EQUIPMENT

- 10mm bowl gouge
- 25mm French curve scraper
- 3mm parting tool
- 20mm skew chisel

ADDITIONAL TOOLS

- Chuck
- Pencil or bradawl
- Ruler
- Range of abrasives
- Pair of callipers
- Anti-slip matting
- Nyweb pad
- Finishing oil
- PPE: facemask, respirator/dust mask and extraction

TIMBER REQUIREMENTS

A piece of walnut (*Juglans regia*) measuring 185mm dia. x 70mm deep



1 The first step is to find the centre of the bowl blank. I find that using a disc is the best method – I have several different sizes to suit the bowl blanks I use. Use a pencil or bradawl to mark the centre and then drill a hole to suit your screw chuck.



2 Using a bowl gouge ground at 50°, true up the outside with the bevel in contact. This will give you optimum tool control and will also help to minimise grain tear-out. Continue until the blank is round.



3 Using a pull cut with the flutes facing the direction of cut at around 45° and with the handle held low, start at the centre moving towards the outer edge. True up the base and take several cuts until the bottom is flat. The result does not have to be perfect at this stage. ➤

Handy hint

It is very important that you use sharp tools on your pieces, so always keep your tools well sharpened. This will ensure clean cuts and will also reduce vibration when turning thin-walled items.

4 While the lathe is running, mark the centre of the base with the tip of a pencil – you will find this is easier to see when the lathe is not running. Once the lathe is stopped, take a ruler and measure 25mm from the mark you made with the pencil. Draw the circle by rotating the blank by hand. This will give you the spigot size for your chuck.

5 Next, using a parting tool, cut a groove to the left of the pencil line around 5mm deep. Hold the parting tool just below horizontal, around 10° , and push into the timber to create the groove.

6 Using the bowl gouge, start to shape the profile, starting at the base and working towards the rim. Start at the corner taking multiple cuts with the flutes facing towards the rim, and try to maintain bevel contact to minimise ridges. You are looking for a curve from base to top.

7 You will see a step near the base; this will allow you to complete the flowing curve when you remove the spigot after completing the inside of the bowl. You are still looking for a flowing curve from step to rim.

8 The last part to complete is the dovetail on the spigot – you need to cut this with the skew chisel. Hold the skew chisel horizontally on the toolrest and, using the long point, cut the dovetail, taking small cuts. Take care to make sure it is cut cleanly at the base – this will allow the jaws to locate correctly.

9 Most items you place in the chuck will run slightly out, so take a small cut from the base to the rim to true up the outside. This may only be 1mm or less but will ensure an even wall thickness when removing the inside. Use abrasives to remove any tool marks.

10 Take a cut across the face of the blank with a bowl gouge to clean up the surface. Use a push cut with the flutes facing towards the centre of the bowl.

11 Use the bowl gouge to remove the centre, working towards the rim, leaving the wall thickness around 6mm. Keep removing the waste until you are 15mm deep inside the bowl. Now take a finishing cut from the rim down, until the wall thickness is 3mm.



12 If needed, use a scraper to remove any tool marks or ridges. Use this very lightly or you will risk causing vibration marks on the bowl walls. Always use in a trailing mode to avoid catches.

13 Using callipers, check the wall thickness on the finished part to ensure it is even. If it is not, then remove any high spots. Now use abrasive to up to 400 grit to remove any marks. Stop the lathe and check if any marks are still left and, if necessary, sand again.

14 Now remove the next section, starting in the centre and going around 15mm deep with the bowl gouge. Then it's just the same process as before – refine the surface down to 3mm and finish to completion.

15 Here you can see I am now almost in the base of the bowl. This is where you have to be careful with the wall thickness. Remember that you will return to the base to remove the chucking point and refine the shape later, so this must be taken into account. The best advice is to follow the curve from the upper part of the bowl.

16 Here you can see a close-up shot of the bowl gouge bevel. The first bevel from the tip is at 50° and the second bevel is around 40° – this helps to reduce marks and ridges in the base due to the heel rubbing on the bowl surface.

17 It is a little awkward to achieve an accurate measurement near the chuck but it will give you a good indication of the wall thickness. If you find the wall is still thicker than the rest, take a small cut with the bowl gouge and check with the callipers.

18 This is a final cut with the bowl gouge and it will remove any ridges and torn grain – this will only remove around 1mm. Take this cut slowly to achieve a good surface finish on the bowl. Use the scraper, if needed, to remove any marks from the bowl gouge. ➤

Handy hint

Always use a dust extractor when sanding and a dust mask at all times when turning.



19 This will be the last time you will be able to sand the inside of the bowl while on the lathe, so be sure to take your time and ensure the piece is finished to the very best standard. Go through all the grades and check in a good light to make sure you have removed any scratch marks.

20 I covered this discarded, part-turned bowl with anti-slip matting to serve two purposes: to provide grip and to prevent the inside of the turned bowl from marking. Make a recess on the back; this will enable you to hold your bowl on the chuck.

21 Now you can start to blend the base into the side, bearing in mind that this is thin so small cuts are needed to prevent vibration. You should be reducing the base diameter as you go.

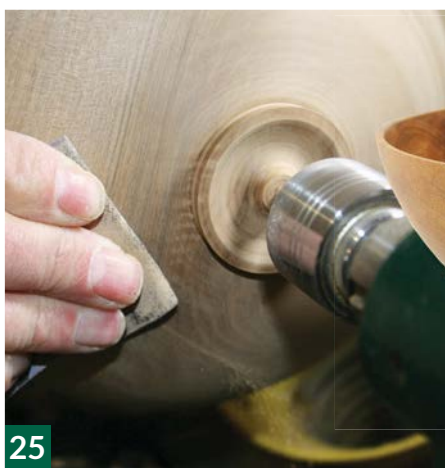
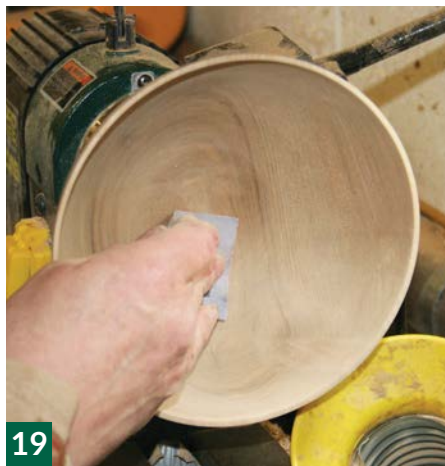
22 You can now reduce the base to around 43mm. Hold the bowl low down to shear cut from the base and try to remove any marks or ridges to reduce the amount of sanding required. If needed, use the French curve scraper to refine the surface of the bowl prior to sanding.

23 Now take a cut across the base – this needs to be flat or concave so the bowl will sit on the base without it rocking. Use the skew chisel to sharpen the side of the foot. Here you can see this still needs sanding through the five grades of abrasive.

24 Remove the centre from the foot or it will look and feel heavy. The underside of any turned item is just as important to finish as the part that is on view. The centre part needs to be removed by hand off the lathe – I use a small carving tool or a small gouge and then sand by hand.

25 The last process on the outside walls of the bowl is to sand, going through all the grades and stopping the lathe to check all the tool marks have been removed. Use a dust extractor to remove the dust; you can see the dust being drawn into the extractor. Now oil the bowl, which may require up to five coats to achieve a good lustre.

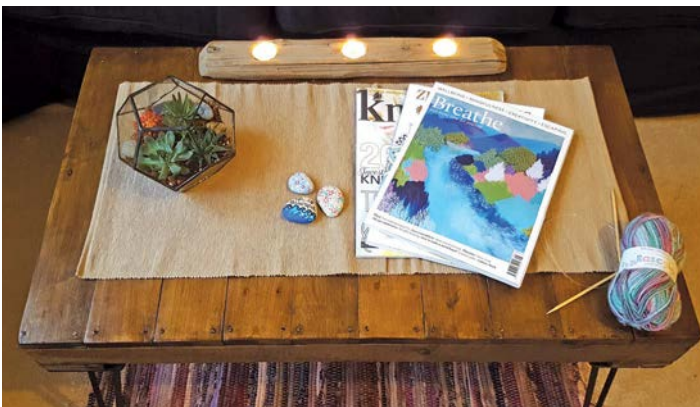
26 Your completed thin-walled bowl in walnut should look something like this. ■



Coming next month in
Woodworking
 CRAFTSO

ISSUE 36
 ON SALE
 18 JAN

*Kevin Ley creates
 a coffer chest
 from walnut
 and cedar
 of Lebanon*



- Carve a black swan Derby walking stick
- Learn to make knuckle joints with Michael T Collins
- Make a coffee table from recycled pallets
- Make a Shaker peg rail shelf

PLUS: • Shrink cups – part II • Decorating wood with wood
 Tricks of the trade – avoiding splits • Carving bramble leaves

'Intersections' tool case

Stephen Hogbin shows us how to make an ever-so-clever tool case to be really proud of

Intersections Wood Gallery and Studio of Owen Sound, Canada, opened in 2016. The shared studio workshop soon became a learning environment for woodworkers. Each participant needed a basic tool kit of their own while taking a class. Intersections is primarily concerned with things made of wood, so the decision was easy that the carrying case should also be made of wood. Pierre Rousseau designed the tool case and became the lead instructor for the Fundamentals of Woodworking course.

Pierre's design has a number of features that make it distinctive. There is no hardware but there is a carrying handle, which is unexpectedly tucked away inside the case. The lid works as a surface on which to cut a length of wood, especially when working on site. The lid removed and turned over becomes a tray for screws and hardware for the project. Inside the carrying case is a tray for smaller tools, which lifts out to reveal a space for larger tools. The tray, when replaced into the carcass, rests on the interior partition and carrying handle. The tray projects up above the main carcass by 19mm to help locate the lid when replaced. The carcass has the sled foot so it sits comfortably on the ground and off potentially wet surfaces. It also helps the stacking of more than one case.

As we needed eight carrying cases, Pierre decided to make them stackable. In a learning environment space is often at a premium and with this tapered construction each case will interlock with the

one below. It would be possible to make the sides parallel which, for a novice woodworker, will be easier when the stacking is not needed.

The carcass is made from 12mm birch plywood. There are no screws or nails, just tongue-and-groove connections with lots of PVA glue. The interior tray has a solid wood frame. The plywood was not great quality, having voids that needed to be filled and some laminations needing more glue. The edges of the plywood were painted to colour code the top and bottom. Numbers added to the end keep the lid aligned for grain pattern on the sides. For those who have colour vision deficiency, the numbers are an alternate way of keeping things connected as the number cuts in half connecting the top and bottom.

Pierre produced a measured drawing and then made a prototype so we could assess the size and weight. The

finished case is bigger than the prototype.

The final dimensions are 250mm high x 580mm long x 240mm

at the base tapering to 215mm at the top. The

weight with no tools is 5.45kg. The prototype

was a few inches smaller and weighed in at 4.76kg.

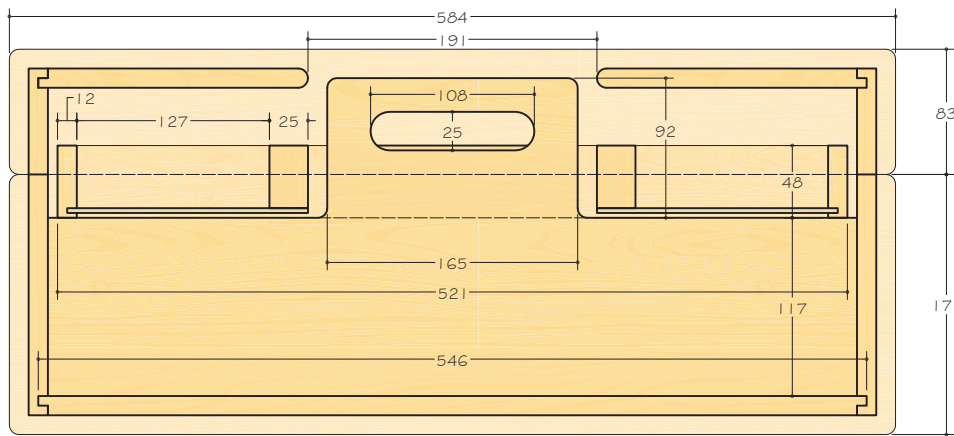
After careful assessment of the prototype we decided to increase the size and change

some details. The recessed handles on the end of the box are

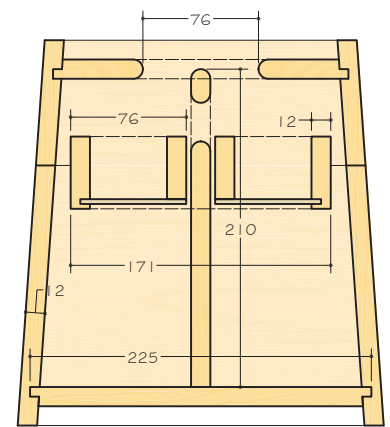
redundant. To lift off the top just hold it at the centre. The construction

was expressed clearly through the two panelled sides projecting all the way around.

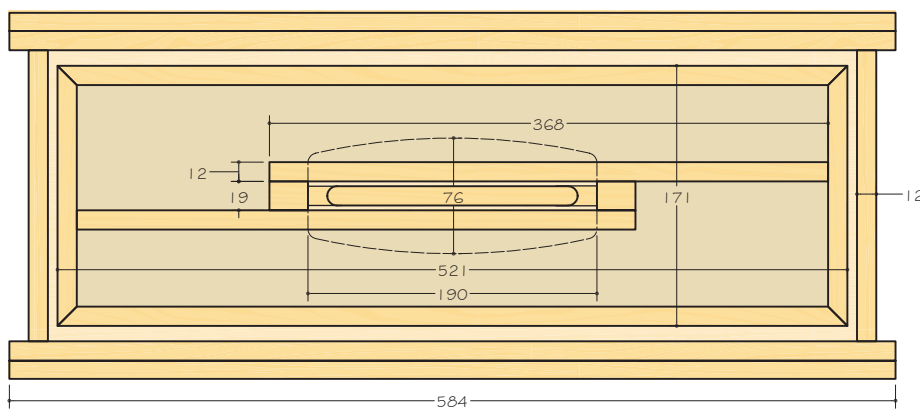




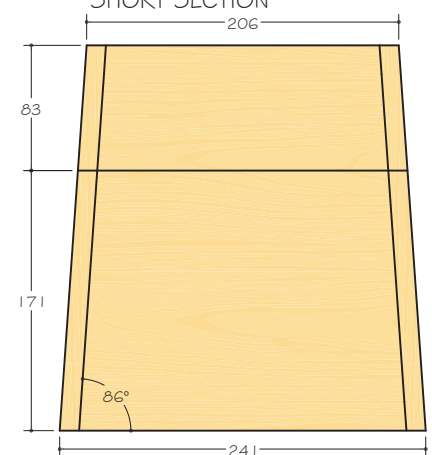
LONG SECTION



SHORT SECTION



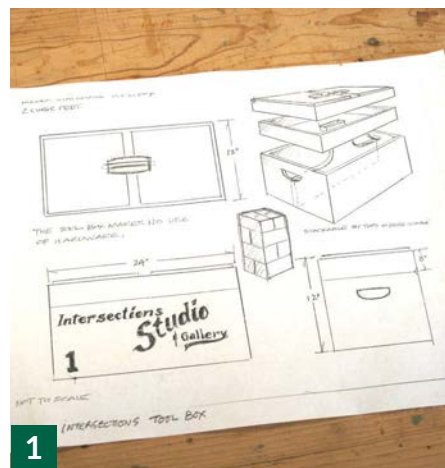
PLAN / SECTION



END ELEVATION

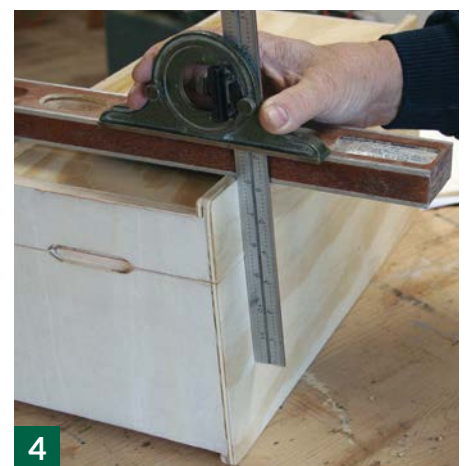
What's in a name? The prototype was more like a 'tool box' than a 'carrying case'. The new design reflects on the traditional doctor's bag or leather carrying case. Does a name suggest a difference of use and approach to the problem at hand? Might the name influence an attitude to the work in hand? Having made your tool holder, deliberately decide what it should be called.

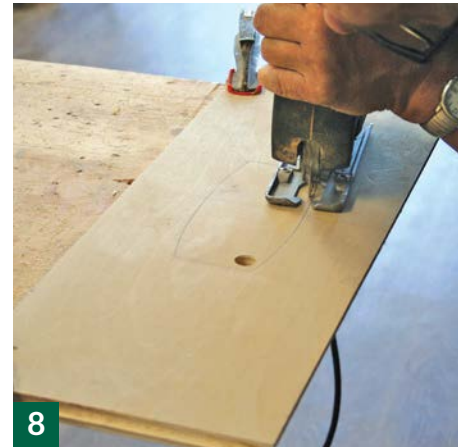
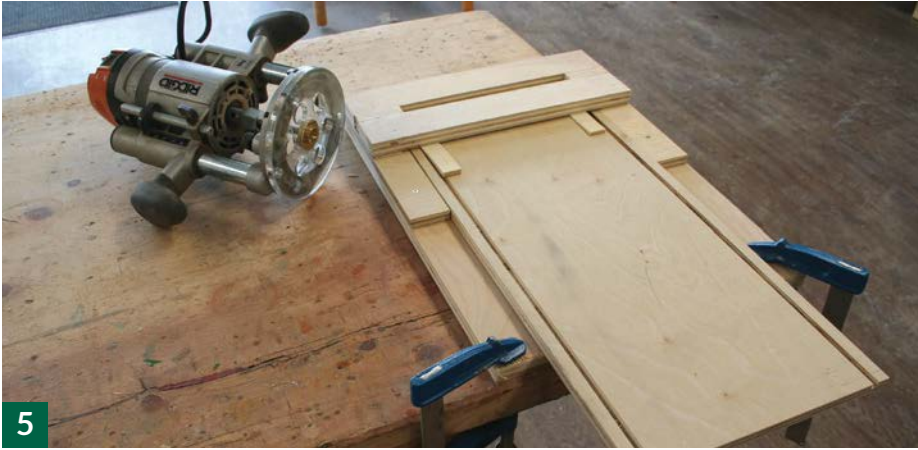
1 Scale drawing for the prototype design of the Intersections Tool Carrying Case. Note the parallel sides and a method of stacking the eight tool cases.



2 Pierre making notes and drawings for changes to the prototype. Change is not inevitable but will, on occasion, make things better.

3-4 Establishing the angle of the sides is done using a digital angle gauge, protractor or sliding bevel. The 4° angle is then translated to the table saw. Cut the height of the sides. At the same angle cut a 6mm wide groove x 6mm deep for the bottom and the top. ➤





5 To cut the 12mm groove for the end pieces, set up a perpendicular slotting jig for the router, fitted with a guide bush.

6-7 Machine the edge of the top and bottom of the carcass. The step in the tongue-and-groove allows for a flush top to the carcass at the ends. You may also consider a mitre joint between the top and ends. Its neater looking but it makes it trickier to get a tight joint.

8 Mark out the hole for the handle. Drill and then jigsaw out the space for the handle in the top.

9 Clean up the cut-out as it becomes the template for all the other lids, so accuracy is important.

10 Double-sided tape will hold the template to the next rough-cut top.

11 Flush trimming router bits follow the template while cleaning up the edge of the next lid.

12 A round-over router bit will remove the sharp edges, making them kinder to the hands.



13 Assemble the four sides with PVA glue and wait for the glue to dry overnight. To make the lid, cut through the end of the carcass. Use a biscuit jointer or a router with a groover fitted and cut down the sides to remove the top from the bottom.

14 Cut out the centre dividing panel with the carrying case handle and clean up the edge. This will become the template for all the other handles. Mark out by tracing around the edge. Hold together with double-sided tape. Drill the two holes, rough cut with the jigsaw

15 Use the flush trimming bit to clean up the edge, followed by the corner roundover bit to make the handle comfortable to carry.

16 Glue the centre dividing panel into the carrying case and clamp from end to end.

17 Make the tray using a hardwood strip 45mm x 9mm. Glue 3mm-thick plywood into a groove for the tray bottom. The tray needs to project up above the bottom half of the carcass so the lid is caught and held in place.

18-19 Turn the tray over and mark out where the hole goes for the handle. Cut out with a jigsaw.

20 Cut the strips and separating blocks for the tray – note how they fit around the hole for the handle.

21 Glue them together in the frame but do not fix them into the tray yet. To lift the tray out of the case a pinch grip is used. The small dowels offer some grip. The nipples shown are different sizes – it only really needs a small protrusion to get the desired amount of grip. ➤



13



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22 The dowels also hold the strips and separating blocks together.

Glue the assembled strips into the tray. The tray hardly needs a dowel in the end to make it secure but the mechanical fix will support any potential for glue failure.

23 The plywood is filed back to make a finished surface between tray bottom and strips.

24 The edges of the plywood are filled, filed and sanded before painting. The corners are given a small radius as this plywood is vulnerable to damage in a work environment.

25 So why paint the edge? The coloured edge is distinctive. The colour also covers the flaws in the manufacture of the plywood. With more than one carrying case it is desirable to keep the same lid with the same case. There is invariably small variation, especially in the grain



26



23

pattern, which does look better when aligned between the top and bottom of the carcass.

26 Two carrying cases stacked showing different coloured edges, and now each case is numbered. The numbers are cut in half to go with the top and base of the case – another way of ensuring alignment and identification. All eight of the cases are ready to go. We discussed a urethane finish and decided to leave well enough alone. A urethane finish would help to keep the wood clean and even pull up the grain pattern.



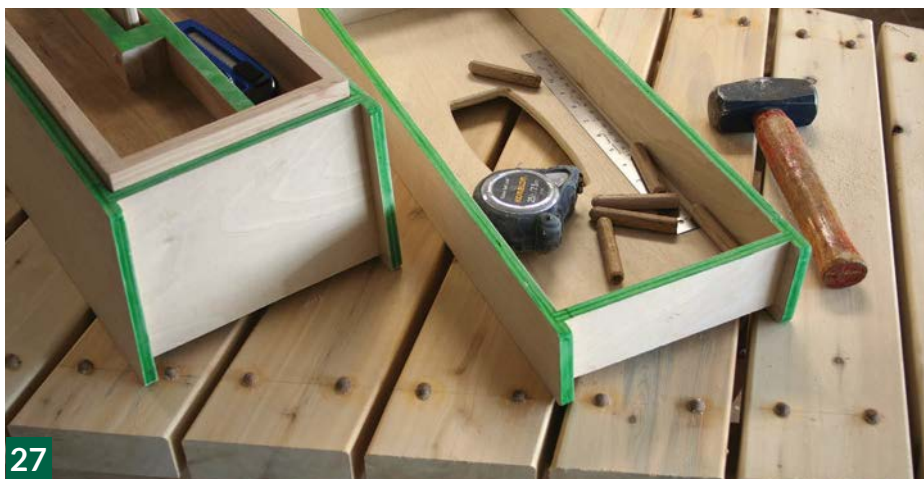
24

27 Lift the lid from the centre and there you have the tools displayed ready to use for the next project. By the way, the lid turns over and can be used to hold screws and tools for the project. For this project, to build a deck, it holds the dowels and tools.

Compact and ingenious, this carrying case has become popular for home use as well. Orders have been placed, which is a bit ironic, as the tool box was made for people to make their own projects. ■



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Devil 900	24.9	£139.98	£167.98
Devil 910 SS*	17.6-24.9	£159.98	£191.98
Devil 1600	36.6	£169.98	£203.98
Devil 2100	49.8	£259.00	£310.80
Devil 4000	70-131	£398.00	£477.60

Clarke **DUST EXTRACTOR/CHIP COLLECTORS**

FROM ONLY **£139.98** EXC.VAT
£167.98 INC.VAT

METABO ALSO AVAILABLE

Powerful 750W motor

56 litre bag capacity

Flow rate of 850M³/h

MODEL	MOTOR	FLOW RATE	BAG CAP.	EXC.VAT	INC.VAT
CDE35B	750W	450 M ³ /h	56Ltrs	£139.98	£167.98
CDE7B	750W	850 M ³ /h	114Ltrs	£159.98	£191.98

Clarke **CORDLESS DRILL/DRIVERS**

CON18LI

FROM ONLY **£39.98** EXC.VAT
£47.98 INC.VAT

powered by **Li-Ion**

MODEL	VOLTS	BATTS	EXC.VAT	INC.VAT
CON18NI	18V	2 x Ni-Cd	£69.98	£83.98
CON18LI	18V	2 x Li-Ion	£89.98	£107.98

Clarke **BOLTLESS SHELVING/BENCHES**

Simple fast assembly in minutes using only a hammer

SAVE 10%

FROM ONLY **£29.98** EXC.VAT
£35.98 INC.VAT

WHEN YOU BUY ANY MIX OF 4 FROM THIS RANGE SAVE AT LEAST £23.99 INC.VAT

CHOICE OF 5 COLOURS
RED, BLUE, GREY, SILVER & GALVANISED STEEL

MODEL	DIMS WxDxH (mm)	EXC.VAT	INC.VAT
150kg	800x300x1500	£29.98	£35.98
350kg	900x400x1800	£49.98	£59.98

ONLY **£119.98** EXC.VAT
£143.98 INC.VAT

EVOLUTION **FURY5-S TABLE SAW**

- 1500W motor
- 0-60° mitre gauge
- Cutting depth: Steel 3mm, Wood 85mm at 90° or 58mm at 45°

3 YEAR WARRANTY

FROM ONLY **£149.98** EXC.VAT
£179.98 INC.VAT

Clarke **ELECTRIC HEATERS**

DEVIL 6003

BEST SELLER

FROM ONLY **£49.98** EXC.VAT
£59.98 INC.VAT

MODEL	VOLTAGE	HEAT OUTPUT KW	EXC.VAT	INC.VAT
DEVIL 6003	230V	1.5-3	£49.98	£59.98
DEVIL 7003	230V	3	£59.98	£71.98
DEVIL 6005	400V	2.5-5	£74.99	£89.99
DEVIL 7005	400V	5	£84.99	£101.99
DEVIL 6009	400V	4.5-9	£119.00	£142.80
DEVIL 7009	400V	9	£139.98	£167.98
DEVIL 6015	400V	5-10-15	£179.00	£214.80
DEVIL 7015	400V	15	£199.98	£239.98
DEVIL 7025	400V	22	£299.00	£368.80
DEVIL 7030	400V	30	£349.00	£418.80

Clarke **POWER PLANERS**

CEP1

BLACK & DECKER

FROM ONLY **£28.99** EXC.VAT
£34.79 INC.VAT

82mm cutting width

MODEL	MOTOR	DEPTH OF CUT	EXC.VAT	INC.VAT
Clarke CEP1	650W	2mm	£28.99	£34.79
Einhell TE-PL850	850W	3mm	£52.99	£63.59
B&D KW750K-G8	750W	2mm	£57.99	£69.59

Clarke **CROS3 450W RANDOM ORBITAL SANDER**

FROM ONLY **£29.98** EXC.VAT
£35.98 INC.VAT

- Adjustable front handle improves control
- 7000-14000rpm

Clarke **ELECTRIC POWER FILE**

CPF13

FROM ONLY **£49.98** EXC.VAT
£59.98 INC.VAT

- Variable belt speed
- Tilting head
- Black & Decker

MODEL	MOTOR	BELT SIZE (mm)	EXC.VAT	INC.VAT
CPF13	400W/230V	13x457	£49.98	£59.98
KA900E*	350W/230V	13x455	£59.98	£71.98

Clarke **WHETSTONE SHARPENER (200MM)**

- Produces razor sharp cutting edges on chisels, planes, etc.
- Inc. 3 tool holding jigs, workpiece clamp & support frame, polishing paste & water trough

ONLY **£119.98** EXC.VAT
£143.98 INC.VAT

Clarke **WOODWORKING VICES**

STANLEY **Record**

FROM ONLY **£14.99** EXC.VAT
£17.99 INC.VAT

MODEL MOUNTING JAW (WIDTH/OPENING /DEPTH)mm EXC.VAT INC.VAT

Clarke Bolted 150/152/61 £14.99 £17.99

CHT152 Bolted 150/152/61 £14.99 £17.99

Stanley Clamped 72/60/40 £17.99 £21.59

Record TV75B Clamped 75/50/32 £20.99 £25.19

Clarke VW7 Bolted 180/205/78 £29.98 £35.98

Clarke **STAPLE/NAIL GUNS**

FROM ONLY **£22.99** EXC.VAT
£27.99 INC.VAT

- All models include nail/staple pack and tough moulded case

NEW

CONSN18LIC

SPARE NAILS / STAPLES IN STOCK

ELECTRIC AND CORDLESS MODELS IN STOCK

MODEL	TYPE	STAPLE/NAIL GAUGE	EXC. VAT	INC. VAT
CCT48	Cordless	4.8V Ni-MH 22/18	£29.98	£35.98
CESN62	Electric	18/18	£39.98	£47.98
CONSN18LIC	Cordless	18V Lithium-Ion 18/18	£109.98	£131.98

Clarke **BELT SANDERS**

BS1

FROM ONLY **£36.99** EXC.VAT
£44.99 INC.VAT

was £113.99 INC.VAT

ABRASIVE SANDING BELTS IN STOCK

Clarke BS1 900W 380 £36.99 £44.99

Clarke CBS2 1200W 480 £79.98 £95.98

Makita 9911* 650W 75-270 £89.99 £104.39

Clarke **CIRCULAR SAWS**

CON185

FROM ONLY **£41.99** EXC.VAT
£50.39 INC.VAT

- Great range of DIY and professional saws
- Ideal for bevel cutting (0-45°)
- *Includes laser guide

MODEL	MOTOR	MAX CUT 90/45 (mm)	EXC.VAT	INC.VAT
CCS185B	1200W	65/44	£41.99	£50.39
CCS2	1300W	60/45	£59.98	£71.98
CON185*	1600W	60/40	£62.99	£75.59

Clarke **PLANERS & THICKENERS**

CPT800

FROM ONLY **£184.99** EXC.VAT
£221.99 INC.VAT

Ideal for DIY & Hobby use

Dual purpose, for both finishing & sizing of timber

MODEL	PLANING WIDTH	MAX THICK. CAPACITY	EXC. VAT	INC. VAT
CPT600	6"	120mm	£184.99	£221.99
CPT800	8"	120mm	£209.98	£251.98
CPT1000	10"	120mm	£289.00	£346.80

Clarke **QUALITY CAST IRON STOVES**

8kW

OVER 22 QUALITY STYLES ON DISPLAY

FLUES, COWLS & ACCESSORIES IN STOCK

FROM ONLY **£219.00** EXC.VAT
£262.80 INC.VAT

BARREL II

Clarke **MULTI FUNCTION TOOL WITH ACCESSORY KIT**

CMF7250

- Great for sawing, cutting, sanding, polishing, chiselling & much more
- 250W motor
- Variable speed

FROM ONLY **£39.98** EXC.VAT
£47.98 INC.VAT

Clarke **TURBO AIR COMPRESSORS**

airmaster

FROM ONLY **£89.98** EXC.VAT
£107.98 INC.VAT

Superb range ideal for DIY, hobby & semi-professional use

*V Twin Pump

MODEL	MOTOR	CFM	TANK	EXC.VAT	INC.VAT
8/250	2HP	7.5	24ltr	£89.98	£107.98
7/250	2 HP	7	24ltr	£94.99	£113.99
11/250	2.5HP	9.5	24ltr	£109.98	£131.98
8/510	2HP	7.5	50ltr	£119.98	£143.98
11/510	2.5HP	9.5	50ltr	£139.98	£167.98
16/510*	3 HP	14.5	50ltr	£209.00	£250.80
16/1010*	3 HP	14.5	100ltr	£259.98	£311.98

Clarke **HARDWOOD WORKBENCH**

CHB1500

FROM ONLY **£144.99** EXC.VAT
£173.99 INC.VAT

- Includes bench dogs and guide holes for variable work positioning
- 2 Heavy Duty Vices
- Large storage drawer
- Sunken foot trough
- LxWxH 1520x620x855mm

VAC KING **WET & DRY VACUUM CLEANERS**

FROM ONLY **£49.98** EXC.VAT
£59.98 INC.VAT

*SS = Stainless Steel

Compact, high performance wet & dry vacuum cleaners for use around the home, workshop, garage etc.

MODEL	MOTOR	CAPACITY DRY/WET	EXC. VAT	INC. VAT
CVAC20P	1250W	16/12ltr	£49.98	£59.98
CVAC20SS*	1400W	16/12ltr	£59.98	£71.98
CVAC20PR2	1400W	16/12ltr	£64.99	£77.99
CVAC25SS*	1400W	19/17ltr	£67.99	£81.59
CVAC30SSR	1400W	24/21ltr	£99.98	£119.98

Clarke **OSCILLATING BELT & BOBBIN SANDER**

COBS1

FROM ONLY **£139.98** EXC.VAT
£167.98 INC.VAT

Provides exceptional finishes for deep & wide work pieces, front edges & narrow inner curves

- Dust collection port
- Inc. 6 sanding sleeves/bobbins

Clarke **4" BELT/6" DISC SANDER**

- Dust extraction facility
- 4" x 36" belt tilts & locks 0-90°
- 225mm x 160mm table, tilts 0-90°
- 370W, 230V motor
- CS4-6E

FROM ONLY **£92.99** EXC.VAT
£111.59 INC.VAT

Clarke **6" BELT/9" DISC SANDER**

- Includes stand
- 1 HP/230V/1ph motor
- CS6-9C

FROM ONLY **£239.00** EXC.VAT
£286.80 INC.VAT

Clarke **1" BELT/5" DISC SANDER**

- Includes 2 tables that tilt & lock
- Quality induction 300W motor

FROM ONLY **£69.98** EXC.VAT
£83.98 INC.VAT

CSB1-5

Clarke **8" BELT/8" DISC SANDER**

- Includes two tables
- 550W 230V motor

FROM ONLY **£159.98** EXC.VAT
£191.98 INC.VAT

CS4-8

Clarke **DISC SANDER (305MM)**

- Powerful, bench mounted 900W
- Dust extraction port

FROM ONLY **£129.98** EXC.VAT
£155.98 INC.VAT

CDS300B

Clarke **SHEET SANDERS**

CON300

FROM ONLY **£16.99** EXC.VAT
£20.39 INC.VAT

- Ergonomic design for optimum comfort

Clarke **PORTABLE THICKNESS**

CPT250

FROM ONLY **£219.00** EXC.VAT
£262.80 INC.VAT

- Max thickness cap. 125mm and 250mm wide
- Planing depths adjustable from 0-2.5mm
- Powerful 1250W motor

Clarke **OSCILLATING BOBBIN SANDER**

COBS1

FROM ONLY **£139.98** EXC.VAT
£167.98 INC.VAT

Provides exceptional finishes for deep & wide work pieces, front edges & narrow inner curves

- Dust collection port
- Inc. 6 sanding sleeves/bobbins

Clarke **OSCILLATING BELT & BOBBIN SANDER**

COBS1

FROM ONLY **£179.98** EXC.VAT
£215.98 INC.VAT

- Can sand concave, convex, straight or multi-curved work pieces
- Dust collection port
- Inc. sleeves, drum & belt

Clarke **CLIP-ON SHARPENERS**

FROM ONLY **£29.98** EXC.VAT
£35.98 INC.VAT

Simple fast assembly in minutes using only a hammer

150 (evenly distributed) Strong 9mm fibreboard shelves

350 (evenly distributed) Strong 12mm fibreboard shelves

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**Clarke SLIDING COMPOUND
MITRE SAW**

- For fast, accurate cross, bevel & mitre cutting in most hard & soft woods
- 1800W motor
- Laser guide

**£139.99
EXC.VAT
£167.99
INC.VAT**

CMS1052

MODEL	BLADE DIA/BORE (mm)	MAX CUT DEPTH/CROSS (mm)	EXC. VAT	INC. VAT
CMS210	210/30	60/120	£59.98	£71.98
CMS1052	254/30	78/340	£139.98	£167.98

**MITRE
SAWS
TC-SM2131**

**FROM ONLY
£59.99
EXC.VAT
£71.99
INC.VAT**

- Laser Guide
- Sliding Compound
- Quality Range of Mitre saws and blades in stock

**2 YEAR
GUARANTEE**

MODEL	BLADE DIA/BORE (mm)	MAX CUT DEPTH/CROSS (mm)	EXC. VAT	INC. VAT
Einhell TC-MS 2112	210/30	55/120mm	£59.98	£71.98
Einhell TC-SM2131	210/30	62/310mm	£129.98	£155.98
Einhell TC-SM2131	250/30	75/340mm	£159.98	£191.98

SM2534

**Clarke FOLDING
MITRESAW
STAND**

CFMS51

- Suitable for most sizes/makes of saw
- Inc. outriggers & rollers

**FROM ONLY
£66.99
EXC.VAT
£80.39
INC.VAT**

Clarke DRILL PRESSES

- Range of precision bench & floor presses for enthusiast, engineering & industrial applications

**FROM ONLY
£66.99
EXC.VAT
£80.39
INC.VAT**

CDP152B

B = Bench mounted
F = Floor standing

MODEL	MOTOR (W)	SPEEDS	EXC. VAT	INC. VAT
GDP56B	350/5	5	£66.99	£80.39
GDP102B	350/5	5	£79.98	£95.98
GDP152B	450/12	12	£139.98	£167.98
GDP202B	450/16	16	£185.00	£222.00
GDP10B	370/12	12	£198.98	£238.98
GDP452B	550/16	16	£229.00	£274.80
GDP32F	550/16	16	£229.00	£274.80
GDP502F	1100/12	12	£499.00	£598.80

**Clarke CONTRACTOR
JIGSAWS**

- Professional
- Bosch

CON750

**FROM ONLY
£15.99
EXC.VAT
£19.19
INC.VAT**

MODEL	POWER (W)	DEPTH OF CUT (WOOD/STEEL)	EXC. VAT	INC. VAT
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Clarke CJS380 420W 55/6mm £15.99 £19.19
Clarke CON750 750W 80/10mm £27.99 £33.59
Bosch PST700E 500W 70/4mm £44.99 £53.99

£ was £34.79 inc.vat

BISCUIT JOINTER

- 11000rpm Operating Speed
- 860W motor • 14mm Cutting Depth • Inc. dust bag, storage case and face spanner for cutter change

NEW

**2 YEAR
GUARANTEE**

**£49.99
EXC.VAT
£59.99
INC.VAT**

TC-BJ900

Clarke SCROLL SAWS

CSS400C

**FROM ONLY
£82.99
EXC.VAT
£99.99
INC.VAT**

- 50mm max cut thickness
- Air-blower removes dust from cutting area
- Table tilts 0-45°

MODEL MOTOR SPEED RPM EXC. VAT INC. VAT

CSS400B 85W 1450 £82.99 £99.99
CSS116VB 90W 550-1600 £94.99 £113.99
CSS400C 90W 550-1600 £114.99 £137.99

**Clarke 13" MINI
WOOD LATHE**

CWL325V

**£149.99
EXC.VAT
£179.99
INC.VAT**

- Ideal for enthusiasts/hobbyists with small workshops
- 325mm distance between centres • 200mm max. turning capacity (dia) • 0.2HP motor

MODEL WATTS EXC.VAT INC.VAT

PS105 105W £19.98 £23.98
CDS-IV 280W £29.98 £35.98

ALL MODELS INC. SANDING SHEETS

**Clarke DETAIL
SANDERS**

- Perfect for smooth and fine finishing along with hard to reach areas or curved surfaces

**FROM ONLY
£19.99
EXC.VAT
£23.99
INC.VAT**

MODEL WATTS EXC.VAT INC.VAT

PS105 105W £19.98 £23.98
CDS-IV 280W £29.98 £35.98

ALL MODELS INC. SANDING SHEETS

**Clarke BENCH
BANDSAW**

- Produces fast, precise mitre & longitudinal cuts • Cuts in all types of wood

**£129.99
EXC.VAT
£155.99
INC.VAT**

CBS190B

MODEL	MOTOR	THROAT SIZE	EXC. VAT	INC. VAT
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CBS190B 350W 7.5" £129.99 £155.98

**Clarke MORTISING
MACHINE**

CBM1B

**£174.99
EXC.VAT
£209.99
INC.VAT**

- Accurately creates deep square recesses
- Table size 150 x 340mm • Max. chisel stroke 76mm
- Robust cast iron base & column ensures stability & accuracy
- 95mm depth of cut

**CHISELS AVAILABLE FROM
£8.39 INC VAT**

"Lost and accurate with a good solid feel... Excellent value for money."

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**Clarke STATIC PHASE
CONVERTERS**

- Run big 3 phase woodworking machines from 1 phase supply
- Variable output power to match HP of motor to be run

**FROM ONLY
£229.99
EXC.VAT
£274.99
INC.VAT**

PC60

**CONVERT 230V
1PH TO 400V 3PH**

MODEL MAX. 2HP HP FUSE EXC.VAT INC.VAT

PC20 2HP 10Amps £229.00 £274.80
PC40 3.5HP 20Amps £269.00 £322.80
PC60 5.5HP 32Amps £319.00 £382.80

Clarke 12" DOVETAIL JIG

- Simple, easy to set up & use for producing a variety of joints • Cuts work pieces with thickness of 8-32mm • Includes a 1/2" comb template guide & holes for bench mounting

**FROM ONLY
£57.99
EXC.VAT
£69.59
INC.VAT**

CDTJ12

Clarke PROFESSIONAL BANDSAWS

- Top Quality Bandsaws - ideal for professional workshop use. Strong steel body with solid cast iron table
- Table tilts 45° • Adjustable blade guide
- Supplied with stand, 4TPI wood cutting blade, rip fence, mitre guide, mitre gauge and push stick • Induction motors
- Includes stand

**£399.99
EXC.VAT
£478.80
INC.VAT**

CBS300

MODEL	THROAT DEPTH	MAX CUT 90°	EXC. VAT	INC. VAT
-------	--------------	-------------	----------	----------

CBS300 305mm/12" 165mm 115mm £399.00 £478.80
CBS350 340mm/14" 225mm 160mm £498.00 £597.60

Clarke ROUTER TABLE

CRT-1

Router not included

**£69.99
EXC.VAT
£83.99
INC.VAT**

- Converts your router into a stationary router table
- Suitable for most routers (up to 155mm dia. Base plate)

**Clarke CONTRACTOR
ROUTERS**

BOSCH

- Powerful heavy duty machines ideal for trade and DIY use

**FROM ONLY
£46.99
EXC.VAT
£56.39
INC.VAT**

CR1C

**CR2 INCLUDES 15 PIECE
KIT WORTH OVER £20**

MODEL	MOTOR (W)	PLUNGE (mm)	EXC. VAT	INC. VAT
-------	-----------	-------------	----------	----------

CR1C 1200 0-50 £46.99 £56.39
Bosch 1400 0-55 £86.99 £104.39
POF1400ACE

CR2 2100 0-60 £119.98 £143.98

£ was £149.99 inc.vat

**Clarke GRINDERS &
STANDS**

- Stands come complete with bolt mountings and feet anchor holes
- 6" & 8" AVAILABLE WITH LIGHT

**FROM ONLY
£32.99
EXC.VAT
£39.59
INC.VAT**

**STANDS FROM ONLY
£47.98 INC.VAT**

MODEL DUTY WHEEL DIA. EXC. VAT INC. VAT

CBG6RP DIY 150mm £32.99 £39.59
CBG6RZ PRO 150mm £42.99 £51.59
CBG6RSC HD 150mm £54.99 £65.99
CBG6SB PRO 150mm £54.99 £65.99
CBG6BWC HD 150mm £59.98 £71.98
CBG6W (wet) HD 150/200mm £56.99 £68.39

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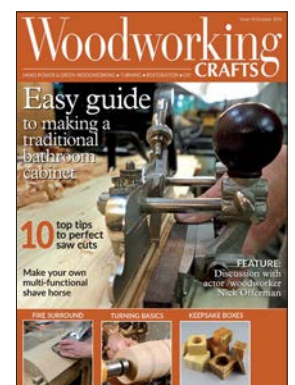
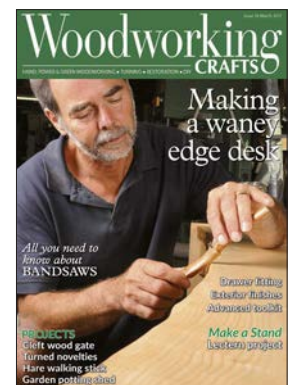
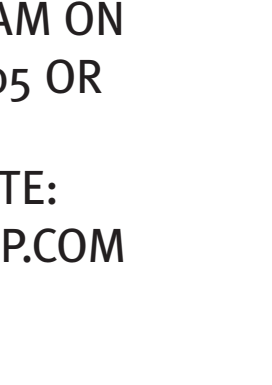
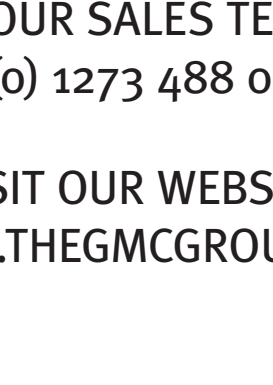
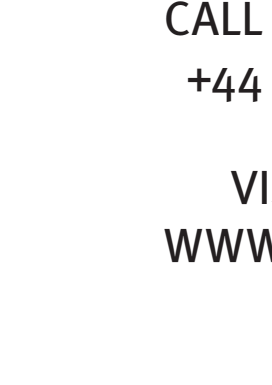
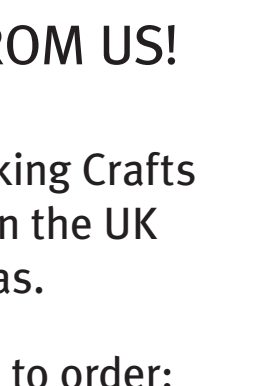
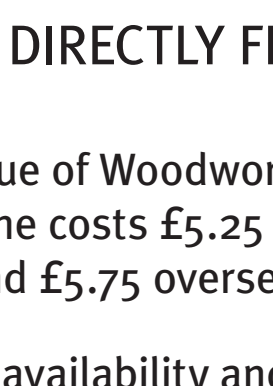
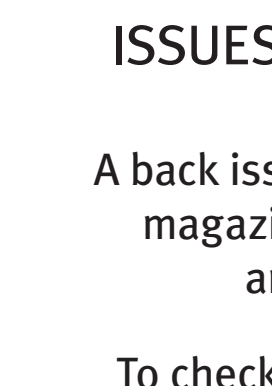
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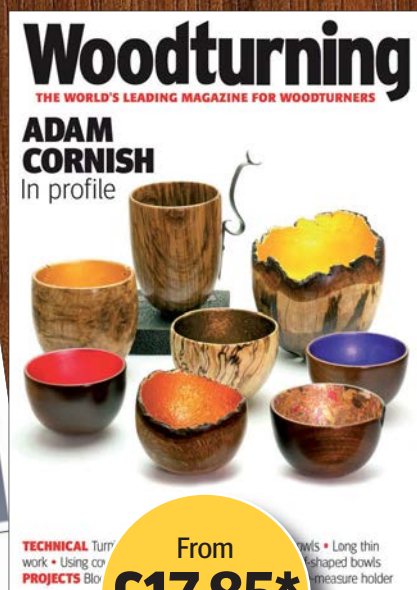
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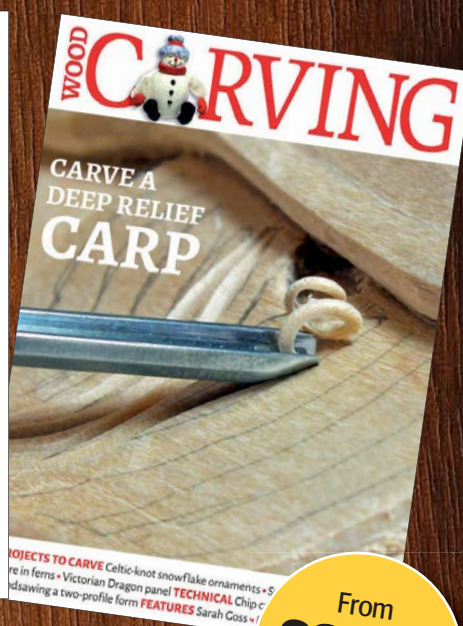
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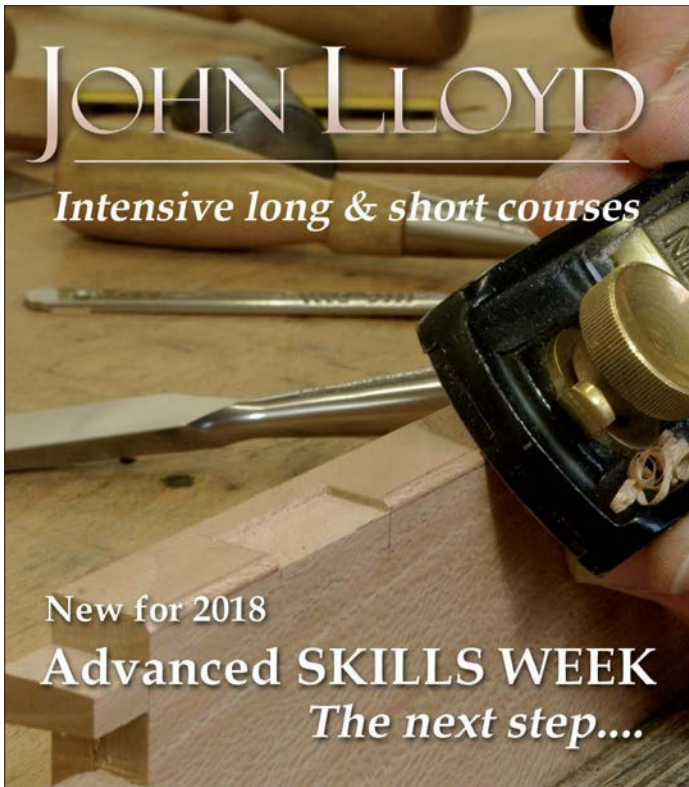


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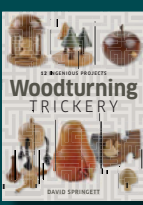
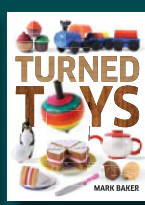
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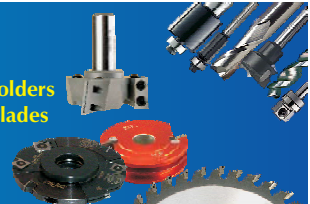





Write to:
Emma Foster, Publishing Coordinator,
The Guild of Master Craftsman Publications Ltd,
86 High Street, Lewes, East Sussex, UK, BN7 1XN
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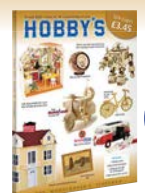
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Focus on...

Circa 1820 suite

Biedermeier furniture

We think of a fashion or trend as being something we have just discovered, but of course that isn't true. One period that was in a class of its own was Biedermeier

The term Biedermeier refers to an epoch in German history that lasted from 1815 to 1848. It was a mood and a set of trends that grew from the circumstances in central European history of that period. There was growing urbanisation and industrialisation, which led to an emergent urban middle class who were a new audience for the arts. At the same time there was political stability under Klemens Wenzel, Prince of Metternich, a German diplomat and statesman following the ending of the Napoleonic Wars. As a result artists and society in general concentrated on matters domestic and, superficially at least, non-political. Writers, painters and musicians kept to safer territory, the growing middle class resulting in a blossoming of furniture design and interior decorating. The period was extended into Scandinavia as numerous states that composed the German nation were not unified under rule by Berlin until 1871.

The Biedermeier style was a simplified interpretation of the influential French Empire style of Napoleon I, which introduced the romance of ancient Roman Empire styles, adapting these to modern early

19th-century households. Locally available timbers such as cherry, ash and oak were used rather than expensive timbers such as imported mahogany. While this timber was available from trading ports nearby, such as Antwerp, Hamburg and Stockholm, it was taxed heavily whenever it passed through another principality, making it very expensive to use. So a lot of local cherry and pear wood was stained to imitate more expensive timbers. Stylistically, the furniture was simple and elegant. Its construction utilised the ideal of 'truth through material' – something that later influenced the Bauhaus and Art Deco periods.

However, as the period progressed the style moved away from an early rebellion against 'Romantic era' fussiness to an increasingly ornate style demanded by the rising middle class eager to show off their new-found wealth.

Furniture from the earlier period (1815–1830) was the most severe and neoclassical in inspiration. It also supplied the most fantastic forms which the second half of the period (1830–1848) lacked, being influenced by the many style publications from



1820 schreibsekretär – writing desk

England. Biedermeier furniture was the first style in the world that emanated from the growing middle class. The ending of this fascinating period of design and thought coincided with von Metternich ceasing to be German chancellor of state and the increasing changes and tensions of the politically and geographically complex states and principalities that made up the European continent at that time.

To see more examples of Biedermeier-period furniture visit: www.google.com/culturalinstitute/ and search – Biedermeier. ■



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