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DM 1500	£24.99	1500	13	1.8	Variable speed
DM 2000	£29.99	2000	13	2.0	Variable speed, LED light
DM 2500	£34.99	2500	13	2.2	Variable speed, LED light, clutch

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Good Woodworking

Issue 138 September 2003

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Now and again we come across a power tool, accessory or machine that sparks off lively debate here at *Good Woodworking*. Safety is usually the important issue, and this is certainly the case with Skil's new Orca saw. Surely a portable circular saw without a riving knife is a bit like a car without a handbrake? Apparently not in the USA, where this tool is built. I suspect very few American saws have riving knives at all.

The Orca definitely has KEMA and CE marks, so it's approved for Europe. It certainly performs well enough, so perhaps it's just something we'll have to get used to. Our man in America, Mark Corke, will be reporting back on the US woodworking regulations soon, so watch this space!

It will be interesting to see who follows Skil's brave lead. Let's hope that no manufacturer decides to turn their attention to the table saw, however...

Phil Davis

£1185 of pro Makita cordless tools to be won!

For your chance to win one of three fantastic tools, turn to page 17

Great new tools on test...

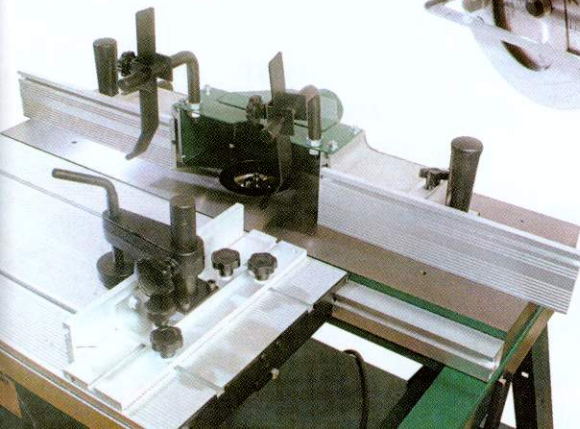


Trend beadLOCK

Does Trend's novel new loose tenon system signal the death knell for dedicated morticers **p20**

Skil Orca

Great name, great looks, but how does it perform? And what about that riving knife – or rather the lack of it? **p22**



Router tables

Five new offerings from the biggest names in the business **p45**

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We aim to offer the best advice, projects

Masterclass

David Savage discusses how design issues influence the making of doors **p74**



Jardiniere

Turn this elegant piece, with its innovative foot technique **p88**



Coffee table

A classic and simple piece made from reclaimed timber **p62**



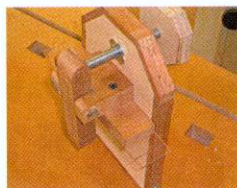
Cheltenham

Ten top tips for making sure that your pieces stand out at the show **p30**



Mitre table

Get more from your mitre saw with these table extensions **p54**



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& techniques, plus the most authoritative tests. All testing is independent, based on years of experience

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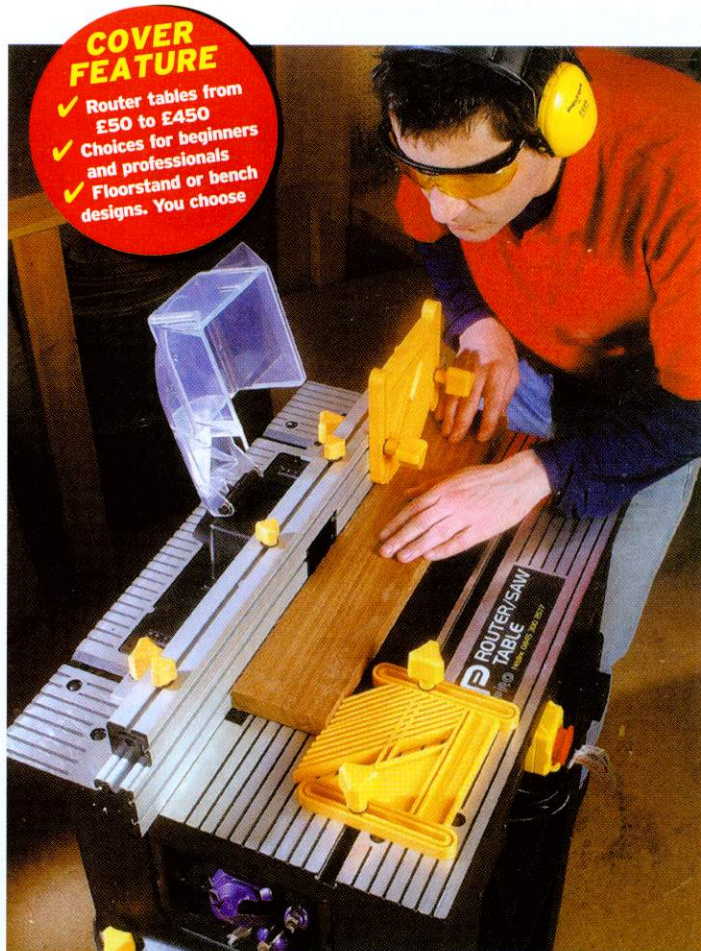
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Router tables

A selection of five models on test from across the price range **p45**



Summer House Easy-to-build garden retreat **p6**

House of Tudor



This pretty Tudor-style summer house from **James Hatter** is far easier to build than you might think and will give you a fabulous garden retreat to relax in

Do you yearn to build your own house but, like me, find the prospect overwhelming? Well, this summer house project may satisfy some of your aspirations. The design described here allows for insulation to be added if required, extending the seasons when the house can be used.

The project is not difficult or complicated but does involve a lot of work, so be prepared to allocate several weeks. Most of the work can be done single-handed but assistance is useful when fitting the clad side frames together and lifting the roof panels into place.

Tudor Theme

This summerhouse has a Tudor theme, with exposed beams inside and mock timber framing outside. The overall size is approximately 2400mm square by 2700mm high, making best use of generally available standard size materials.

The structural frames are made using CLS 38x63mm pine studding, the sides clad with 12mm WBP exterior grade plywood. The components for the frames are stain varnished before assembly and the cladding panels are painted before being attached. This saves a lot of awkward paintwork later.

The ridged roof with a dormer at the front is made in three frame sections and clad with painted 18mm WBP plywood, before being sealed and covered in roofing felt underlay followed by tiles made from 6mm WBP ply. Other roof coverings include cedar or asphalt shingles. Cedar shingles are sold in packs to cover about 5ft square. The roof would

Foundations and floor frame



01 The floor will rest on 4in concrete blocks laid on to a bed of mortar on small concrete foundations



02 Ensure the outer floor frame is perfectly level all round before letting the mortar set

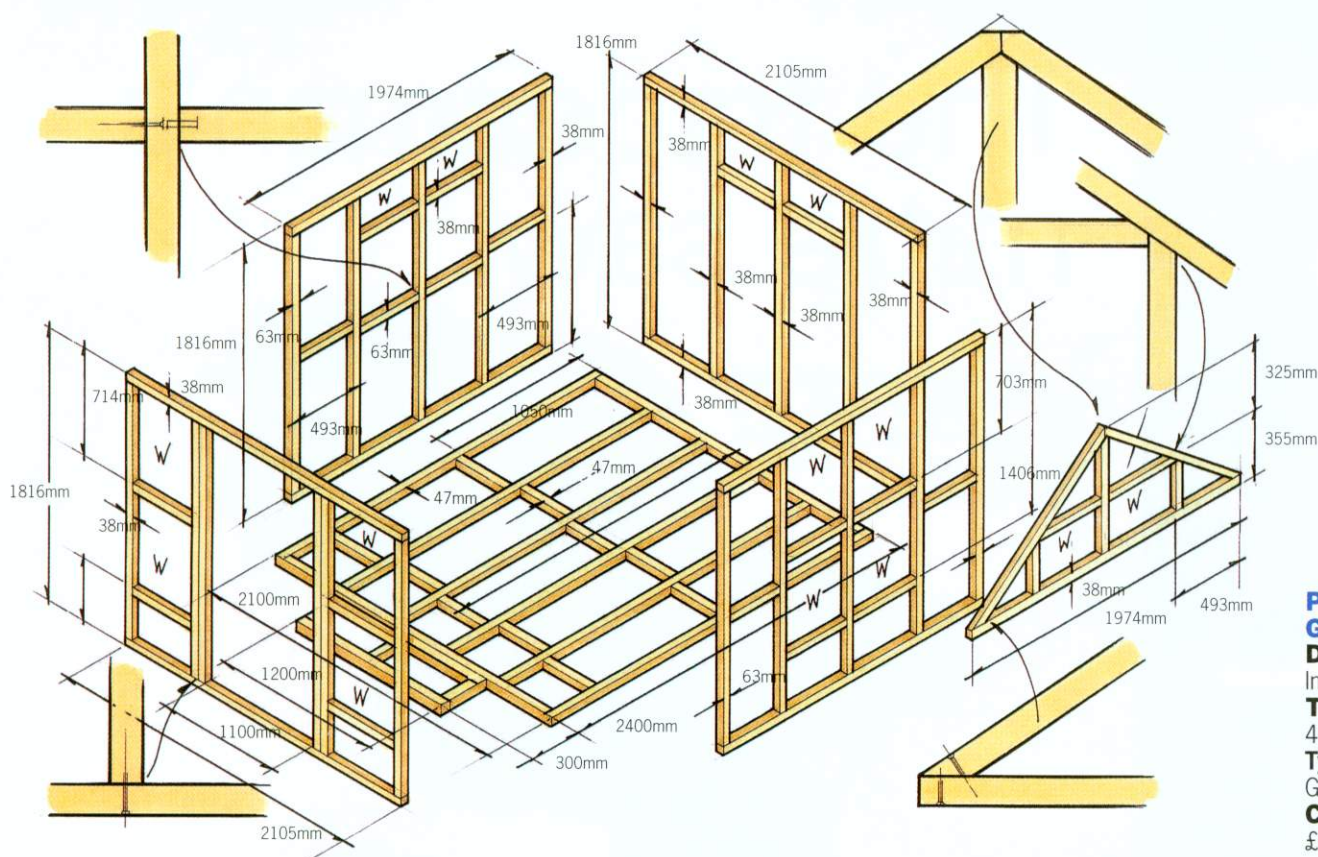


03 Add the other through timbers then stiffen up the framework with a couple of rows of noggins



04 The finished framework is bolted down to the foundations through the DPC with blocks attached at the corners

CONSTRUCTION DETAILS: Main carcase frames



PROJECT GUIDE

Difficulty

Difficulty
Intermediate

Time

400 hours

Type

Garden

Costs

require about four packs and cost approximately four times that of asphalt or the plywood tiles used, including surface treatments. I reckon on applying a coat of exterior grade Woodstain varnish to the plywood tiles every few years to extend their useful life.

Screws are preferred as a method of fixing because of better control and the clamping action. They are also quieter to use. Nails would be cheaper and quicker, so use if you prefer.

As for glazing, for maximum safety consider using safety glass. I used horticultural grade glass for its slightly imperfect look; it is the most economic grade. I also used lead tape to give the windows a simple leaded light appearance.

Groundworks

1 A cleared area of about 2400mm square is required, plus access for construction and maintenance. The building must rest on a firm and level foundation, with provision to secure it in high winds. On a level site you could lay a concrete raft and rest the floor assembly onto this via a damp proof membrane. With a two-way slope to deal with, I decided on foundation supports at corners and midpoints. This also gives good under-floor ventilation. The base frame was attached to corner supports with coach screws. Four 800mm lengths of 25mm steel tubing, driven in at an angle, form ground stakes to further anchor the floor base.

Finishes for the house

All water based finishes are used. Extensive surface preparation and protection is a chore but should reduce future maintenance. All wood surfaces were treated with a combined wood preservative and insect repellent. For surfaces where the grain is a feature (frame members, window frames and doors), these had one coat of dilute Ronseal exterior grade woodstain varnish in Dark Oak, followed by two full strength coats. The plywood cladding had primer, undercoat and white eggshell finish topcoat to the inner surfaces, and Magnolia Dulux satin, quick dry Weathershield to the outer surfaces. The inner roof surfaces had the same eggshell finish while the outer surface had one coat of dilute woodstain varnish followed by one coat full strength. The best type of brush for water based paints has artificial bristles.



05 Board out the floor with tongue and groove flooring. You could use cheaper OSB or MR flooring chipboard



06 James screwed his stud frames together for neatness but you could just as easily use nails



07 Take care to mark out the spacings accurately and set the nogginns at the appropriate angle where necessary



08 James used a combination of screws and glued dowels where noggins line up for the windows

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Mark the area with stakes and strings. It also helps if the timbers are cut for the base frame, so they can be used for checking levels.

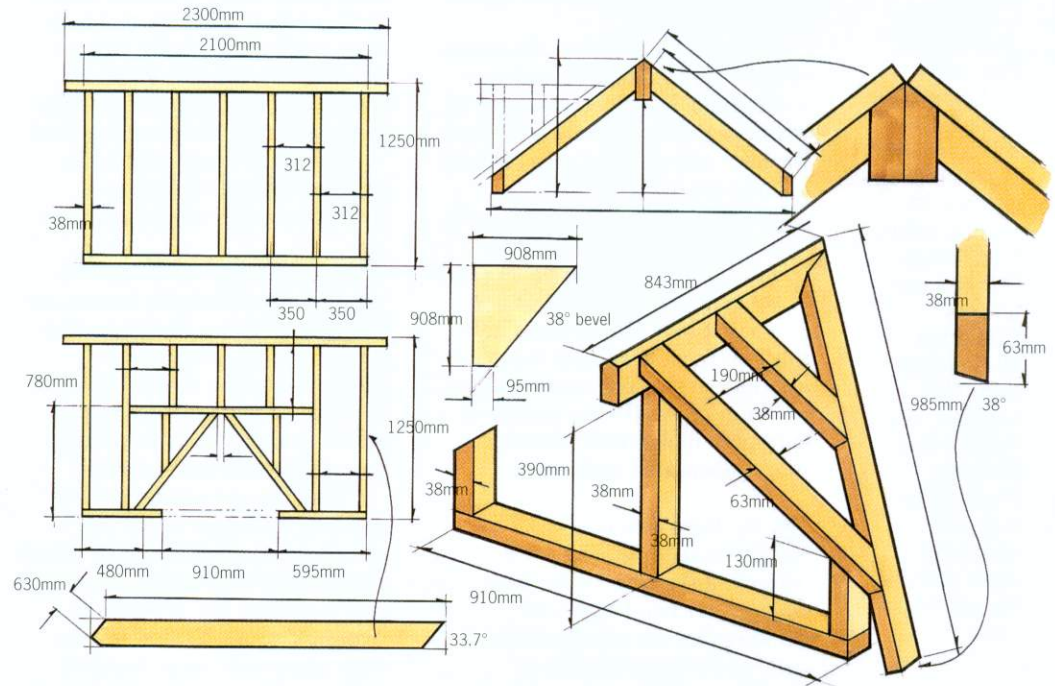
2 Each corner support consists of a concrete footing on a compacted hardcore base, onto which is accurately bedded a 440x200x100mm medium density concrete block. Put a stake out a little at each corner and mark on this the level of the foundation, and a point 115mm above to denote the top of the corner support. This should be at least 50mm above ground level within the total perimeter to ensure that no part of the wooden base frame touches the ground.

Dig out a 600x300mm hole at each corner, the depth depending upon the type of soil. For a fairly heavy clay I dug to a depth of approximately 400mm, then filled with 200mm of hard core and compacted this before filling with one part cement to five parts ballast concrete mix to the mark on the corner stake.

Temporarily rest a concrete block onto the footing, flat side down, and make level. Use the first corner as your reference and repeat the procedure at the remaining corners. After checking levels, remove the blocks and cross-hatch the top of each footing to give a key to the mortar. Leave overnight to firm, then bed the blocks using a one part cement to four parts building sand mortar mix. Position the blocks to extend 50mm beyond the limits of the floor base frame. Check levels and allow to set.

3 Intermediate supports were placed midway between the corners. These simply consist of a little compacted hardcore, onto which is bedded a 300x300mm concrete slab. On top was laid bedded bricks to the same level as the top of the corner supports.

CONSTRUCTION DETAILS: The roof



To reduce weed growth beneath the base use a layer of landscape fabric or similar, then cover with a layer of pea shingle.

The Base Frame

4 The base frame is 2100mm wide and 2400mm long, and consists of pressure treated timber joists onto which is attached pine tongued and grooved floorboards. Sheet materials such as 18mm plywood or OSB could be used if preferred. Extra preservative was applied to the floor joists, and the boards treated before assembly.

The joists are 47x100mm pressure treated pine. Cut all components to length, mark the positions for the joists and use two 6x90mm screws at each joint. First join the outer frame and position it onto the foundations, then add the inner joists followed by the cross supports.



The base frame is fixed to the foundations by attaching a block at each corner of the frame and using a 6x100mm coach screw through each into a plug inserted into the foundation corner supports. Ensure that the base frame is square by checking the diagonals are equal, then drill through the corner blocks into the foundations and insert a suitable

The roof was actually built in three pre-assembled parts, the rear, front and dormer

Making the side frames and gable ends



09 Construct all four vertical frames in the same manner, adding windows and doors as you desire



10 Build the gable ends as separate triangular frames. Fix the centre vertical then cut the angles to suit and fix



11 Make sure the noggins are parallel to the bottom rail and line up with each other as you fix these in place.



12 A mitre saw is not essential but certainly makes easy work of cutting the bevel and compound angles

MATERIALS YOU'LL NEED

Timber

CLS studding from Wickes. This costs £1.59 per 2.4m length and comes with slightly rounded corners. Its section differs from normal PAR or sawn timbers.

Claddings

All claddings were WBP certified, also from Wickes

Finishes

Preservatives and paints contributed about £180 to the overall costs

wall plug to take the coach screw. Slip a damp proof membrane between foundation and frame, check again for square and tighten the coach screws.

I added a support in the centre of the frame to cut any tendency to flex here. I screwed an offcut of the floor timber to the centre cross member and rested it on a slab via a damp proof membrane.

Further anchoring is achieved by driving 800mm lengths of 25mm steel tubing into the ground at an angle, two at the front and two at the rear. Drill a 6mm hole through the tube so that it can be attached to the base frame using a 6x50mm screw. If your garden is subject to high winds consider more substantial anchoring.

5 My floor area is 2100x2100mm. The extra 300mm at the front of the base frame is for two lengths of decking that are attached later. I used 18 2100mm lengths of 18x120mm PTG softwood floor. Before attaching, treat both sides

with wood preservative followed by dilute woodstain varnish.

The boards are attached to the floor joists with 3.5x40mm screws at the ends and 40mm oval nails at an angle through the tongue into the intermediate joists. A couple of quick grip clamps help to press the boards close together.

Cover the floorboards with polythene sheeting to stop scuffage during the construction.

The Structural Frames

6 The structural side frames are formed using 38x63mm CLS pine studding, joined with 4x75mm decking screws. Some cross-joints use 4x65mm screws one way and dowels the other way. You could nail if wished.

The size and position of the window openings suited my situation, ie, small and high where they border neighbours' property, and large and low to the front overlooking my garden. Adjust sizes and positions as required and note any changes required to the cladding and glazing. Where

the frame requires components of the same length, it is advisable to use a stop on a power mitre saw. Angle cuts are required for the roof trusses and some are compound angles, so a compound angle mitre saw is useful. Some of the angles are outside the range of the normal table settings so a 45° fence offset can be used.

Cut the required lengths for each frame. Mark the positions for the uprights and crosspieces. Drill two 5mm clearance holes at each joint and countersink. Where two cross members meet at the same point either side of an upright, first drill two 5mm clearance holes, then counter bore one side using a 8mm brad point bit to a depth of 20mm. Use dowel-marking pins to give the position of the matching holes in the crosspiece, then use the 8mm drill to give a depth of 22mm. Alternatively, put the crosspiece in position and mark through the drilled 5mm holes.

Position the crosspiece using two 4x65mm screws. With a little glue on two 8x40mm dowels, insert them into the counterbored holes and matching crosspiece holes. The inline crosspieces are used for the window openings; some strengthening cross pieces can be staggered.

Before assembly, apply a wood preservative to all members, then a dilute coat of woodstain varnish, followed by a full strength one.

7 Cut all frame components to length, then assemble as per the drawings. The back and front frames are straightforward to assemble, leaving space as required for the window frames.

The rear frame has two openings, each 478x350mm high. The front has two long windows and a low panel either side of two opening doors, and is assembled as two sub frames joined top and bottom.

CLS studding used for the frame components usually has a BS marking along one face. If you intend varnishing the frame components, remove the marks that will show. I used jointer planer to skim these off. I also removed any rough surfaces at the same time. A sanding will also work.



Constructing the roof frames



13 The ridge timber of each roof frame is bevelled to suit the angle of the rafters. Rip it down or plane the angle



14 The bottom frame rail is similarly treated. Note how the bottom of the rafters are trimmed square



15 Cut the top of each gable frame flat to accept the bottom of the ridge board as the rafter frames drop into place



16 It may be easier to construct the basic roof frames separately then lean them together to add the infill rafters

8 Each side frame consists of a rectangular lower section and a triangular upper section with a rise of 680mm. The lower side frames have four windows, their size and position determining the positions of the crosspieces in the centre sections. The upright at the front of each side frame is positioned so that its 38mm side faces the front, so as to give a better view through the front windows. The crosspiece in the outer sections is also in the same plane. You will need 4x95mm screws for the front attachment.

For each of the two triangular upper sections cut a 1974mm length of 38x63mm pine for the base and two 1186mm lengths for the angled sides. The latter require a 33.7° angle at the top end and a 56.3° angle at the bottom end. Cut 16mm off the top end to give a flat for the top of the roof frames to rest on. The centre upright has a double bevel of 33.7° at the top end, and the outer two a single 33.7° bevel. The two cross pieces that form the tops of the window openings have a corner cut off at an angle of 56.3°.

The Roof Frames

9 Rather than built in situ, the roof has three pre-assembled frames – the rear, front and dormer. At the top of the rear and front roof frames is a 2300mm length of 38x88mm pine with a 33.7° bevel along the top edge. The bottom member of the rear roof frame is 2100x38x63mm, and has a 33.7° bevel along one edge.

Cut the bevel on the two 595mm long members for use at the bottom of the front roof section. Then cut 11 1204mm lengths of 38x63mm timber for the rafters, followed by a 33.7° angle across the face at each end, both in the same direction. Cut the sharp corner off the lower ends of each, so that the length of the angled end is 63mm.



Use the side upper frames to assist assembly. Use a length of 38x63mm timber to simulate the top of the rear frame and rest the bottom member of the rear roof frame onto it. Place the top member in position and connect each roof truss in turn between the two using two 4x75mm screws.

10 The front roof frame has two 1204mm rafters towards each end, but with the bottom members each 595mm long with a 910mm gap between the two. Next, connect the 1360mm long cross member between the two inner rafters, loose fit to make further assembly easier. Then attach the three 470mm rafters with a 33.7° angle at the top end. The dormer opening is formed by attaching two 910mm long members with a 36° angle at the top ends and a compound angle at the other with a mitre angle of

41.3° and bevel angle of 32.8°. Check the fit and adjust. You will need to cut the bottom corner off so that it does not project below the bottom member. An additional 440mm rafter with a 54° angle at the bottom end is fitted either side of the dormer opening, between the long cross member and the angled dormer bearers.

11 The dormer frame requires fairly accurate compound angles for close fitting joints. These can be achieved using a compound mitre saw. It helps if the dormer components are test fitted to the dormer opening, formed in the front roof section frame, to allow for any required adjustments to get the correct fit. Use the two side upper sections and clamp the front roof frame to them, and place a length of 38x63mm studding along the front to act as the top of the front frame.

Can there be a better way to relax on a sunny afternoon – ask Tiddles the cat

PLANNING CONSENT

Before starting, check that no Planning Regulations will be breached, especially if you live in a conservation area. Provided the height of the ridge does not exceed 4m, and the building is more than 5m from your house, then permission is rarely required. A visit to your local council office will ensure you meet all local requirements.



17 The front roof frame is trimmed as shown to accept the front dormer. This isn't essential but looks great



18 Mark off the dormer angles from the centre and cut diagonal trimmers to the correct angles and screw in place



19 You'll need to cut compound angles on the bottoms of these trimmers where they hit the main bottom rails



20 This is the front frame trimmed ready to take the dormer extension. James used the gable ends to support the frames

TOOLS YOU'LL NEED

Your most useful piece of kit will be a **mitre saw** for cutting the compound roof angles

The dormer frame will be eventually attached to the top of the 18mm plywood used to clad the roof frames, so temporarily attach some 18mm spacers to the members of front roof to which the dormer will attach. Attach a spacer at the top of the dormer opening; mark on this the centre line and a point 450mm from the top of the front roof frame. Mark a line 19mm either side of the centre

line. This will give the position of the angled end of the top member of the dormer section.

12 For the dormer top member, cut a 843mm length of 38x88mm pine. Cut a double 36° bevel along the top edge, and cut a 56.3° angle at one end in from the double bevel. The two angled bottom pieces are each 985mm long using 38x63mm pine, although use longer lengths initially, say 1100mm, to give spare for adjustment. Cut a 38° bevel along one edge of each. You will need to cut a compound angle at one end of each so that it can be joined to the top member. Using a compound mitre saw, I found that a table setting of 44° and a bevel setting of 29° gave a reasonably good fit. Remember that the sense of the angles is opposing for each. Check the sense and the fit by lining the pieces in question with the front roof frame dormer opening side members and the marks made for the dormer top member. When you are satisfied with the fit of the joint, cut the lengths to 985mm. Clamp them into position.

13 For the dormer front, cut one 910mm length, one 390mm length for the centre upright and two 130mm lengths for the side uprights, all of 38x63mm pine. Cut a 36° angle at one end of each 130mm length. Attach the 390mm length to the centre of the 910mm length, and the 130mm pieces to the ends of the 910mm piece, with the angle cut at the top towards the centre. Line up this assembly in the 910mm gap at the front of the bottom of the front roof frame. Position the top member so that it can be joined to the compound angled ends of the lower pieces and to the top of the front centre upright. I used a single long screw through the top member into the

top of the centre upright. Check that the top member is level; adjust the position of the top rear of the top member slightly, if necessary. Use 4x50mm screws to attach the compound angled ends to the top member.

14 The two front angled dormer trusses require two 640mm lengths of 38x63mm pine, with a 36° angle at one end cut across the 38mm face, and a 49° angle at the other end cut across the 63mm face. Attach the 36° ends to the top member so that they line up with the position of the top of the front centre upright. Attach the 49° end to the top edge of the lower angled pieces. These should be found to rest on the top of the angle faces of the short uprights. Attach these using 4x75mm screws to form the dormer frame. Two additional trusses are added; these are 355mm length versions of the front dormer trusses.

Testing the Frames

Test fit all structural frames before attaching the cladding panels. You could join all the frames together then apply the clad panels in situ. However, attaching the plywood cladding panels with the frames laid flat gives better precision.

Quick grip clamps will assist and it is only necessary to use the minimum of screws to attach, but drill all the clearance holes that will be required for the screws to attach the frames to each other and to the floor. Aim to have at least four screw attachments at each frame-to-frame intersection. Check that the frames fit together well and can be made square, then disconnect from each other ready for cladding.

NEXT MONTH

James concludes his summer house build by cladding the frames and adding windows and doors

CUTTING LIST

Part	Qty	Mats	Length	Width	Thkns
Base					
A Base frame	2	PT Pine	2400mm	100mm	47mm
B Base frame	2	PT Pine	2006mm	100mm	47mm
C Floor joists	4	PT Pine	2306mm	100mm	47mm
D Floor cross supports	8	PT Pine	364mm	100mm	47mm
E Floor boards	18	Pine	2100mm	120mm	18mm
F Decking frame	2	PT Pine	1200mm	100mm	47mm
G Decking frame	3	PT Pine	206mm	100mm	47mm
Front and back frames					
H F&B frame T&B	4	Pine	2105mm	63mm	38mm
I F&B frame uprights	11	Pine	1740mm	63mm	38mm
J B frame cross rails	2	Pine	478mm	63mm	38mm
K Front frame cross rails	4	Pine	386mm	63mm	38mm
Side frames					
L Top and bottom rails	6	Pine	1974mm	63mm	38mm
M Uprights	10	Pine	1702mm	63mm	38mm
N Cross rails	2	Pine	411mm	63mm	38mm
O Cross rails	2	Pine	436mm	63mm	38mm
P Cross rails	8	Pine	456mm	63mm	38mm
Upper side frames					
Q Angled rails	4	Pine	1186mm	63mm	38mm
R Side centre uprights	2	Pine	612mm	63mm	38mm
S Side short uprights	4	Pine	298mm	63mm	38mm
T Side cross rails	4	Pine	456mm	63mm	38mm
Roof frames					
U Top cross members	2	Pine	2300mm	88mm	38mm
V Rear bottom member	1	Pine	2100mm	63mm	38mm
W Front bottom member	2	Pine	595mm	63mm	38mm
AA Long rafters	11	Pine	1204mm	63mm	38mm
AB Front short rafters	3	Pine	470mm	63mm	38mm
AC Front short rafters	2	Pine	440mm	63mm	38mm
Dormer					
AD Front supports	2	Pine	910mm	63mm	38mm
AE Front mid cross rail	1	Pine	1360mm	63mm	38mm
AF Top member	1	Pine	843mm	88mm	38mm
AG Front bottom rail	1	Pine	910mm	63mm	38mm
AH Front centre upright	1	Pine	390mm	63mm	38mm
AI Front short uprights	2	Pine	130mm	63mm	38mm
AJ Rafters	2	Pine	640mm	63mm	38mm
AK Short rafters	2	Pine	355mm	63mm	38mm
AL Angled bottoms	2	Pine	985mm	63mm	38mm

CLS timbers used for the basic framework may vary in section from standard PAR sizes so check these and adjust lengths as appropriate

The dormer assembly



17 The dormers involve careful cutting of compound angles. Check angles against the main roof as you progress



18 Apart from the compound angles where rafters meet valleys these are fixed in the same way as the main rafters



19 Make a dry run of the frames to check everything fits. James stored the frames until ready for final assembly



20 Next month we'll show how to clad the walls and roof and add the doors and windows and outer trims

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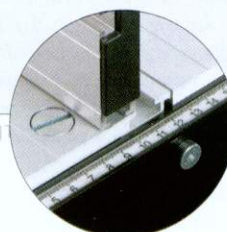
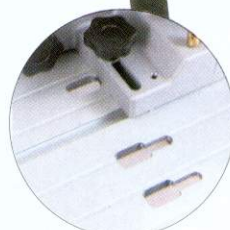


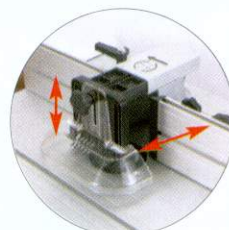
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Letters

Something to get off your chest about the world of woodworking? Write to us at Good Woodworking Letters, 30 Monmouth Street, Bath BA1 2BW

A real benchmark

Getting married in 1952 and waiting for our first house to be built, I knew I would need a bench for woodwork. I decided that the top should be two pieces of beech, 8x3inx6ft long, with a well in between for tools.

I ordered the wood from a local timber yard and waited patiently for its arrival. After several weeks the yard admitted they could not get the beech, as there were still shortages after the war, but suggested keruing instead. This also failed to arrive, so I pestered management for a positive result.

Arriving home one day, I found in the garden two pieces of timber, accurately planed to size, with a note which read 'We hope you will be please with these two lengths of African mahogany' – cost 10 shillings (50p) delivery included.

As we were living in temporary

accommodation with a small shed, I decided to make a bench which could easily be assembled and stripped down for storage. The stout uprights and cross rails of the leg assemblies are surmounted by 3x3in angle iron, each side of the leg tops giving large bearing surfaces on which to bolt the top. A strip of wood under each top member holds captive bolts which retain the floor of the tool well. I have found it very useful to remove this for certain projects.

In all the years of service the

top members have remained perfectly straight and spirit level in all directions, which aids setting up and levelling legs of tables and chairs. When planing wood I can make a quick check of straightness by simply placing the piece against the front edge of the bench.

The ease with which my bench can be dismantled meant that 20 years ago I was able to load it into my old Landrover and take it to the north of Scotland to carry out restoration work on a cottage.

Despite a career in engineering

I have always enjoyed woodworking and have carried out extensive DIY on houses. In recent years I took a hand-crafted qualification in Cabinet Making and have turned my attention to furniture making.

Now 76, I have many tools collected since the age of 14, but my rock solid bench with 51 years of service is my best investment.

Ian Morrison, Leamington Spa

Old Wives' Tale No 82 Considered by Jeff Gorman

Corrugated Bases Are Less Sticky

Some people mistakenly think that corrugations reduce friction. Others who accept that this is unscientific think instead that the corrugations are intended to help when working resinous woods. However, the resin can accumulate in the grooves and make cleaning much more difficult.

Readers Gallery Nicholas Stirton, Suffolk

After moving into my first home and having some spare time, I decided to take up woodworking as a new hobby. I'd seen some



programmes on Sky relating to the subject and then set about making the garage into my new workshop, much to my wife's dismay. A little after three years of hard work and investing I now have a reasonably comprehensive workshop.

Some of my first attempts left a lot to be desired but with some forethought and investment in better tools I began to turn out

some acceptable results.

When my wife and I were on holiday last year I bought a chess set which looked very nice. The idea I had was to incorporate it into a table as you can see. It took approximately four weeks to complete and now sits in a prominent place in the lounge.

I constructed the drum section out of American white oak joined together with biscuits, with the top being inlaid with red oak veneer. I also inset two drawers into the middle section for storing the chess pieces. I am fortunate to own a Trend dovetail jig with a 1/4in dovetailing plate so I was able to machine the drawer dovetails rather than cut them by hand. I also finished the top with a red and white inlay. This all rotates on a lazy Susan bearing on the main shaft which was constructed of French oak and iroko.



WIN a TREND router

The Letter of the Month wins its author a Trend T3 variable-speed router, plus a box of cutters. For details of Trend tools and stockists ☎ 0800 487363 www.trendmachinery.co.uk



To finish off, I used a medium oak stain and lemon shellac to achieve a really nice finish. I then used a fine wax paste and polished with beeswax, which I think achieves a good end result.

My next project will be a full glass corner cabinet to finish off the lounge, then possibly a new bedroom suite.

We would like to hear what you have to say about woodworking, good or bad. Please send your contributions to:

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Emails to:
goodwood@futurenet.co.uk



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candles was melted into the end grain of the hive stand legs with a hot air gun until no more could be absorbed. The hive stands were then able to be exposed to all weathers, standing on bare earth or grass for years with no ill effects.

D.R. Cox, Hants

Free time

Thank you for a really excellent all round woodworking magazine. I haven't yet made any of the projects, despite having nearly four years' copies, but I avidly read each one as there are so many useful tips and general pointers. When time permits, some day!

I particularly like the tool and group tests. I have both made and avoided purchases based on these; again it's the practical and application information that is so useful. I was very interested in the GW 135 tests on wet and dry grinders, owning only the high speed 'dry' ones, with the associated problems of overheating blades, but one rather important point appears to have been missed.

All the grinders I have looked at are not continuously rated, and must be turned off after (usually) 10 minutes and left to cool for 15 minutes. This is usually somewhere in the instructions but can easily be missed. Others I have spoken to had no idea there was a limit. I have put Dymo Tape notices on my motors to remind me. I also use an old kitchen timer (clockwork ones are louder than electronic beepers) to remind me to turn off on time.

This might not seem important, but I am sure others, like me, have re-grinding sessions, and 10 minutes is not a long time when sharpening a number of tools, taking time to keep edges cool.

I note from the pictures that only Axminster's Universal appears to have a cooled and therefore continuously rated motor. The slower sharpening on wet stones could lead to longer sharpening times. I haven't decided what to buy yet or how much I can afford, but at least my timer was free!

Simon Wilson, Wirral

Cheap power

Your reviewer of Bahco chisels (GW 137) states that "...you can get by with budget power tools...."

Letter of the Month

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WIN a TREND router

No no nanny

Can I be the only reader who gets angry at the assumptions of stupidity and incompetence that the 'Nanny State' makes? Month after month we are told that some useful item cannot be sold because some government department (in place to serve our wishes) frowns upon it.

I do not particularly want to own or use a dado head, but I feel strongly that that decision (and the responsibility for any consequences) should be mine. Similarly the decision to cut a groove using wobble saw techniques or not (even though using a router makes more sense), should not be imposed upon me by do-gooders.

Of course, such tools are potentially dangerous, but so is a jigsaw, a power planer and even a chisel! Is the sale of such things banned? No, and this lack of uniformity is where the rules become doubly annoying.

On the other hand, where action could usefully be taken, nothing is done. For example, it is normal practice to deliberately sell wood chisels in the most dangerous state possible – blunt! If nanny was doing even half a job this would be stopped.

But the saddest aspect of the whole thing is that it is self

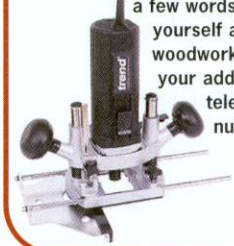
defeating. A friend (who doesn't have a router) made a couple of tapered washers for his powered saw, giving a wobble saw that is probably more dangerous than a properly manufactured arrangement would have been.

My table saw has a guard over the blade. I suspect that Nanny says that it has to have one, but it is opaque, meaning that I can't possibly see what the blade is doing. The result? I have removed it of course. I claim to be bright enough to be aware of the dangers, and will accept the consequences. But if Nanny had specified a transparent cover, or better still minded her own business, I would not have needed to bypass the restriction.

I recently bought a Power Devil router specifically to build into a router table that I made. Unfortunately the makers have been infected with the 'Nanny' fixation because the mains switch does not latch. For now a cable tie produces a fix more dangerous than a latching switch would have been, but as soon as I buy an NVR switch for the table the router will be opened up and its silly internal switch bypassed – and a sensible length of mains cable fitted of course, as I have done to all my other tools.

The one thing to take heart

Each reader whose work we feature here will receive a Trend T3 router. Send us some sharply-focused, 6x4in colour prints and a few words about yourself and your woodworking, plus your address and telephone number.



from now is that the situation will certainly get worse!

A. Jacques, Manchester

The danger with doing away with regulations is that an ill-informed novice can now get his hands on a potentially lethal piece of kit like a table saw, and injure himself in a blink of an eye. I, for one, would rather that we could show how to safely use such a machine beyond its normal legally prescribed limits, rather than hide behind a "You can't do that" stance and let a determined reader learn the hard way, but it is difficult in this day and age. Editor Phil Davy recently had cause to cut timber with an unguarded blade to test a new safety device, and commented that even he, as a trained machinist, felt very vulnerable. Imagine an untrained novice in a similar position. PM

My experience of budget power tools and budget hand tools is that 'getting by' is a euphemism for wasting your money and good wood, producing an inferior finish and being conned into thinking that cheap tools are less expensive only because they are made by people on low wages.

In the last few years, I have added to my woodworking tool set on the basis of buying as cheaply as possible to try out a tool to see if it will make tasks easier or improve a finished product. A mitre saw, bought for £30 from a national DIY store, could not cut square. A table saw, £40, has a useless guide that makes it nearly impossible to cut to a line. Cheap drill bits which make hole boring

hard work and are easily broken. A spirit level that did not have a flat base. A saw guide that is hard to clamp firmly and tends to move off square, etc etc. Spending even a few pounds on tools like these is not just false economy. They are a waste of money and should not be imported into the country. If cars as badly made as these tools were offered to the public, the motoring press would hound them off the roads. So, come on woodworking journalists, do a Jeremy Clarkson: test these budget tools honestly and expose them ruthlessly.

Charles Pollock, Cumbria

Andy's comments were primarily to do with hand power tools, and most of we have tested do what they are intended to do. The major faults

with imported budget tools are quality control, resulting in a high proportion of rogue tools and cheap accessories such as blades. Replacing these can often improve a tool no end. Manufacturers aim their budget tools at occasional users who simply require a drill to drill a hole and are not worried about a bit of vibration or run-out. If an item does this adequately, then it is fit for its purpose, and we comment accordingly, though we usually indicate that it may not be suitable for much more. Budget tools may often be a false economy, but they can also sometimes prove useful. That said, I would not expect any table saw that cost only £40 to be of any use whatsoever. PM

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NetWorks

There's all manner of useful information to be found on the Internet for the woodworker. We help separate the screws from the sawdust

How did they do that?

'Regia Anglorum' was a term used by early English writers to describe the English state. It means 'The Kingdoms of the English'. It's also a nationwide society with many independent local groups, from Scotland to the south coast, who all work within a tight set of common sense rules. Regia Anglorum attempts to recreate a cross section of English life around the turn of the first millennium. "Our self imposed brief is AD950 – 1066, although events may sometimes be set a few decades either side of these." Among their excellently-composed pages at

www.regia.org I found a series of drawings illustrating the construction of a Viking ship. I'm sure this site will please those who agree with Luigi Zanasi (below).



Something new

When admiring the designs in the portfolio at www.nicholashobbs.co.uk, I was struck by the layout of the dovetails on this desk. It



looks as though this elegant end-grain pattern is achieved by varying the size of the tails. Decorative effects have traditionally been achieved by 'cogging' the dovetails, but for me, Nicholas has made a novel addition to the woodworker's repertoire. If you want to know about decorative dovetails, look in the 'Dovetailing Detailed' section at www.millard.demon.co.uk

Chatter box

Larry Hancock (www.homestead.com/turnedtreasures), who has a full time job as an industrial mechanic, spends his spare time woodturning. He says, "I would like to share with everyone some of the information and techniques I use in my woodturning in the hope it will help with some of the questions you might have or just inspire you to try something different. I have photographed and documented the processes below to give a variety of woodturning projects that have elements you would find useful in many other turned pieces." Projects include: a gavel, a wearable wooden cowboy hat, a birdhouse ornament, a long stem goblet, a wooden crochet hook, a



mushroom and a textured and coloured solid egg. The photo, from the series describing making a finger top with chattered decoration, indicates the quality of Larry's photography.

Signposts

Small Boxes: If you are puzzled by this drawer construction go to: www.harvestwoodworks.com
For more small boxes try:



www.geocities.com/mvrl.geo/boxes.html
www.woodveneers.com/g14/jb ox0007.html
www.popularwoodworking.com/features/fea.asp?id=1083
For Shopsmith Users:
www.woodshoptips.com
<http://groups.yahoo.com/group/shopsmithusers/>
www.ssug.org
Restoration And Conservation (Hide glue is also known as Scotch Glue or Pearl Glue):
www.deller.com/news.htm

Gleanings from the Net

Harvested by Jeff Gorman

A Break in Time Saves

John Carlson: I recall a post by a guy who ran a one-man professional shop. He had an ironclad rule that if he made three mistakes in a day – no matter how minor – he quit for the day. His rationale was that three mistakes indicated that he just wasn't thinking and if he kept at it he would either ruin a job or hurt himself. He said it didn't happen often, but if it did he figured that it was better to lose a day's work than to risk damage or injury.

Motivational Woodworking

John: After 40 years of using and abusing alcohol, I finally realized that I am addicted to the stuff and

enrolled in a program put on by my hospital and Alcoholics Anonymous. I long ago realized that I had a serious problem, but jeez it felt so good. One of the things that got me off my drunken butt was a small voice that got through the daylong buzz that said "You can't use any power tools in your state". I feel better than I have in a long time. I can also make some sawdust now.

Archaeologists! Dig Deeper!

Luigi Zanasi: Archaeologists have recently found the oldest wooden coffin ever made in Egypt (5000 years old). But what do they talk about? Is it important stuff like the joinery, construction,

wood preparation methods, use of glue? No! All they seem to be interested in is how the mummy was preserved. Who cares? I'm interested in the real details: what kind of wood was it (apparently cedar, so were they trading with Phoenicians or their predecessors that early to get the cedar?); was the wood riven or sawn; what was the joinery? How did they drill the holes? It also looks like a floating panel construction. I want real information!

Wince-Making Demos

Michael: I've been bothered for some time by a number of shows that depict power tools being used unsafely. I suppose I'm being hypersensitive, but I think that if a power tool is going to be used, it ought to be with the correct method and guarding each and every time it is turned on. I've

seen a TV home improvement expert using a reciprocating saw without removing the bangles from her wrists, failure to use safety glasses, guards removed, and other examples of how not to do things. I realize that in some cases, guards must be removed for demonstration purposes, and if the reason is pointed out I don't mind it. It just seems that we collectively have enough missing digits due to these tools that we don't need reinforcement of poor practices.

Net Hints & Tips

Cutting Dowel Rod: It can be difficult to saw dowelling without getting a breakout as you finish. Use a plumber's tubing cutter to make an indent around the dowel. For smaller diameters (3/8in and less) insert a long knife blade in the indent and roll it several times.

Makita

COMPETITION

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Makita take the winner's tape this month with these superb prizes. The Combi Elite Kit comprises an 18V 8443DWD combi drill, a 5261RD 18V circular saw and a MAKML180 18V torch along with two 2.6Ah NiMH batteries, all in a fitted case with the drill and saw fitted with Makita's Marathon motors for extended life.

We put the saw through its paces back in GW 90, with superb results. Supplied back then with 2.2Ah batteries, I managed to cut about six metres of 50mm thick softwood. With the extra beef in the new battery, cutting performance should now be even better. Combined with an alloy sole plate and cutting capacities of 40mm at 45° and 54mm at 90°, you have a saw that's worth entering for on its own!

The 8443DWD combi drill, meanwhile, has a 13mm keyless chuck, maximum torque of 45Nm and an auxiliary handle. A two speed gearbox for drilling and driving gives you maximum hole diameters of 38mm in wood and 13mm in steel.

Finally, the torch has three hours of continuous light from a single charge and a four-position head should throw plenty of light on the matter in hand.

Don't despair if you don't come first though, the 14.4V 6228DWE drill driver is ideal for the workshop or around the home. You have 16 torque settings which will drill 24mm in wood and 10mm in steel. A two speed gear box and a 10mm capacity keyless chuck are standard. The T handle design minimises fatigue when you're working, and there's two batteries supplied.



How to enter and win

To enter our Makita competition simply answer the following three questions. Put your answers, plus address, on a postcard or on the back of an envelope (not in it), and send to: **Makita Comp, Good Woodworking, 30 Monmouth Street, Bath BA1 2BW** to reach us no later than Friday September 5, 2003. As usual, no multiple entries please.

1 This year's Pill marathon had to be cancelled when the plank bridge over the creek was stolen, but who set a new marathon record in London this year?

- 1 Paula Radcliffe
- 2 Angus Bell
- 3 Angus McCoatup

2 Makita's combi Elite kit will give good all round performance, but who was responsible for the hit 'I get around'?

- 1 Alan King
- 2 The Beach Boys
- 3 The Mudflat Lads

3 The combi Elite kit will give you consistent reliable performance. Heroic defenders of the nation and men in

balaclavas, the elite SAS achieve the same. But what do the initials SAS stand for?

- 1 Sausage and Spuds
- 2 Special Air Services
- 3 Shoot and Survive

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On Test



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Tormek Universal Support

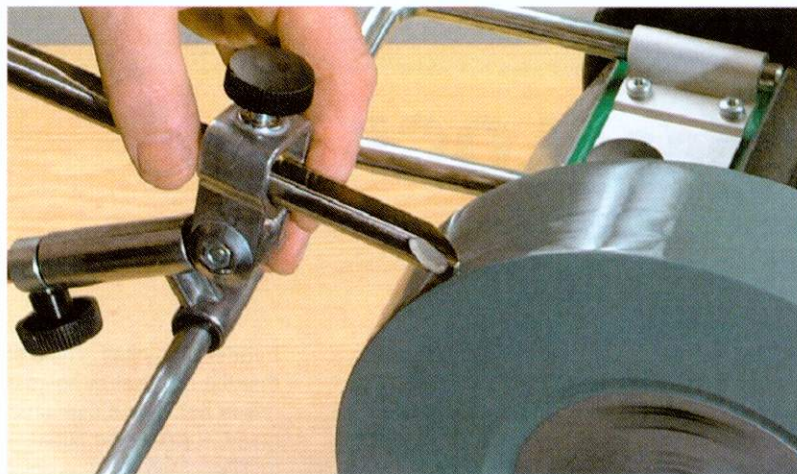
£19.00 (upgrade) ☎ **0845 3309100**

www.brimarc.com

Owners of the Tormek system will be aware of what a fantastic and versatile piece of kit it is. For the woodturner especially, this is an absolutely superb grinder, achieving consistently accurate bevels every time on skew chisels and gouges alike. And, for the general woodworker, practically any edge tool, whether it be an axe, knife, plane iron or chisel, will benefit from a visit to a Tormek.

So, how do you improve an already close-to-perfect system? To all intents and purposes, the Tormek still looks the same, but closer inspection now reveals a new tool rest, designed to retro-fit to existing machines, and shipped as standard with all current models.

What is so good about it? Well, simple as it may seem, merely threading one of the support legs and fitting it with a round height adjusting nut was all that was needed to make setting any bevel quick and easy to do. You still use the setting gauge to determine the angle of bevel, but the threaded rod makes it so much easier to set. Once a hit and miss affair, adjusting the height with a slight tap here and there, now all you need is a simple twist of the nut to fine tune the angle once



the bevel has been roughly set. I found the toolrest a little on the tight side initially, but this seems to ease in as you use it, and a light oiling allows it to move more freely.

Of course, the Tormek itself still performs as well as ever, and our workshop edge tools (and my own from home!) are getting a good overhaul while it's here. If you

The precise adjustment allowed by the upgraded tool rest is perfect for sharpening turning tools

already own a Tormek, for less than twenty quid you can't go wrong by ordering the new rest. If you don't have one, well go and buy one – but make sure it has that handy little threaded rod.

Prices

We show manufacturers' list prices where possible, including VAT. Value for Money ratings are based on these prices. Many items will be cheaper in the stores, so it pays to shop around

What the performance ratings mean

●●●●●
Superb. Can't be faulted

●●●●○
Excellent performance

●●●○○
Good, but not the best

●●○○○
Scope for improvement

●○○○○
Don't bother

GW verdict

- ⊕ Setting bevels couldn't be easier
- ⊖ Toolrest bar is initially tight

Value for money
Performance



Achieve precise settings with just the turn of a nut



Trend beadLOCK

£41.07 ☎ **0800 487363**

www.trendmachinery.co.uk

The loose tenon joint isn't a new innovation, it is a simple solution to joint two pieces of timber together and a classic technique for repairing furniture. For those that haven't come across it before, two pieces of timber to be joined are morticed, and a matching slip of timber machined to act as a tenon that is inserted into both halves of the joint.

Trend have taken this a step further with their beadLOCK jointing system which utilizes the same method but with a fluted rather than flat tenon that serves to lock the joint and increase surface area for the adhesive. Conventionally, mortices would be cut with a router or morticer, but now the nature of Trend's beaded tenon profile allows them to be made with no more than a power drill.

The jig works in the same way as a pocket hole jig, with the drill bit kept in line and square to the timber by a thick steel guide bush. Bush plates have a series of holes, three on the $\frac{3}{8}$ in one and two on the $\frac{1}{2}$ in, fitting to a chrome steel plate, held in position with two small knobs which allow the bush to slide to two positions on the plate. A crescent-shaped hole punched through the plate is used to align the jig.

No elaborate marking out for joints is needed as the jig works from a centre line. With this established on both components, the jig is clamped into position, aligning the crescent hole against the centre. The principle of jointing is simple. The first set of holes are drilled, then the knob is slackened and the bush moved

to offset it by half a hole so that the next set of holes are drilled between those already made, forming the fluted mortice. Each bush is set to drill centrally in 19mm stock, the minimum thickness for $\frac{3}{8}$ in joints (25mm for $\frac{1}{2}$ in joints). A set of five plastic shims are included to keep $\frac{3}{8}$ in tenons central, or to offset them in thicker timber.

Four 305mm lengths of beech tenon (two of each) are supplied, and are available separately (£4.95 for three). To reduce long term costs, a pair of router bits are available to mill your own stock.

BeadLOCK sounds good, and the practice is easy, but the jig does need to be clamped very tightly, especially when drilling the second set of holes, when the bit attempts to

'walk' into the previously drilled ones. Unfortunately, it is difficult to tighten the knobs securing the sliding bush, as they are too small to apply decent pressure (a particular problem for elderly users).

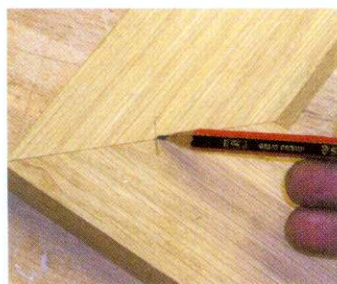
With both the jig itself and the bush plate tightened sufficiently, the jig produced good joints in both sapele and oak, but I did have a few mishaps when the plate 'walked'. The resulting joints proved difficult to assemble as the mortices and tenon profiles no longer matched. On a well cut joint, the supplied tenon stock is a very good fit, snug enough to hold the joint secure but with just enough give to 'waggle' it apart. You aren't limited to single joints either. A wider rail can have double joints, and the tenon stock can be ripped down for thinner rails. You can also make angled joints as easily as square ones

On paper this jointing system deserves full marks, as it has the potential to bring accurate mechanised jointing within easy reach of hobbyist woodworkers without a full range of kit. But, as it stands, I would be apprehensive about using beadLOCK joints for a project. Even though the joints can be made quickly, it is difficult to ensure consistency, and I would worry about ruining possibly days of work with a couple of slips. A simple upgrade to the knobs used on Trend's router fences would enable more purchase and ensure a firmer lock on the jig, which in return will make joint cutting more successful.

GW verdict

- ⊕ Quick and easy. Strong joints
- ⊖ No bit. Better knobs needed

Value for money
Performance



01 As with biscuit joinery you simply mark a centre line across both pieces of timber to align the jig



02 Cramp the jig in place on each component, lock the bush to the left stop to expose all holes, and drill



03 Now push the bush to the right so that one hole is half covered, lock off firmly and drill again



04 Cut a length of the fluted dowel to suit. These can be homemade if you buy the relevant Trend cutter

Elektra Beckum KGS255 Mitre Saw

£311.38 ☎ **023 8073 2000**

www.elektrabeckum.co.uk

Motor: 1300W **Speeds:** 550rpm **Weight:** 16kg
Blade: 210mm, 20 tooth TCT **Noise:** 95db(A)
Capacities: Max thickness 60mm @ 90°,
 30mm @ 45°; max width 225mm @ 90°,
 177mm @ 45°

Mitre saws fall into two main categories, fixed or pull-over, their capacities governed by the size of blade and the length of the support rods on which the latter's head travels. Elektra's latest machine is the KGS255, a pullover saw with a 210mm blade which will cut 60mm timber with a maximum 255mm crosscut at 90°. It's not quite up to the capacities of some new saws out there but is diminutive in comparison, which for transportation purposes makes it ideal for the second fix carpenter fitting skirtings and architraves, or the kitchen fitter fitting cornices.

The turntable is indexed for common angles, 15°, 22½°, 30° and 45°, with other angles locked using the front twist grip. The head turns to 47° both left and right to cope with out-of-square corners.

The pullover design makes trenching cuts an option. A jacking screw limits depth of cut and is locked with a flat knurled disc. As with other such saws this function leaves a scoop at the back of the cut, so work needs to be packed forwards. This limits crosscut capacities, but is handy for shelf housings or door linings.

The supplied blade, though sharp enough to zip through 200x25mm oak boards,

produced an unclear finish with a slight rippling. It wasn't so pronounced in softwood and in theory could be rectified with a better blade.

Unlike the seriously robust KGS301, the KGS255 uses lighter components, but some look a little flimsy, especially if the saw is to find its way to a building site. The turntable indent lever and locking knob certainly look suspect, as does the blade guard release lever, but they do their job. Guarding is pretty good, the blade shrouded with an upper alloy casing, with a thick plastic retractable one on the bottom.

The table action isn't the smoothest, but it doesn't bind and locks out firmly on indents. The compound tilt is better. A large Bristol lever locks it firmly; 45° is the maximum, with adjustable screws for 45° and 90° settings, but there are no indexing positions for other standard angles. For basic chop cuts, the pullover function can be locked with a small wingnut which clamps on to one of the twin extension rods. Again, this is basic.

Cuts at 45° and 90° to check the accuracy straight from the box showed the tilt setting to be spot on, but the turntable settings were a fraction out. This isn't a flaw



within the tool, as settings can shift in transit, and there are adjusting screws on the 50mm deep fence to tweak it.

Keeping a housing cut parallel to the timber's face over the length of the travel is hit and miss on most pullovers. You can easily apply more pressure as cuts progress, flexing the bars or the head slightly, or release the tension on the saw head. Here a ribbed beam above the rods links them to the saw head to minimise flexing, but cuts were still about 1mm deeper at the front. There don't appear to be any adjusters to tweak this. In most situations this won't be the end of the world, but anyone planning to use this saw for high class furniture making would need to be aware of it.

Elektra seem to be leaning here more towards the lighter second fix market rather than

heavy first fix work. Its light weight and relatively small footprint, combined with decent capacities, fit this bill pretty well, and the general level of accuracy make it a reasonable choice for the home workshop too. The brush motor is a little noisy, but there's enough power to achieve the saw's capacities easily. I'm not overly impressed with the flimsiness of the basic adjuster components, and the blade's unsuitable for fine work, but it's competitively priced for a 'badged' tool. Get a new blade and treat the saw nicely, and it should serve you well.

GW verdict

- ➕ Good capacities for a small saw
- ➖ Poor finish, flimsy adjusters

Value for money
Performance



You'll need to pack timber off the fence for flat-bottomed housing cuts



The protractor scale on the saw's tilt facility is large and easy to read



Skil Orca Saw

£99.99 ☎ **01895 834466**

www.skileurope.com

Motor: 1500W **Capacities:** 66mm @ 90°, 51mm @ 45° **Blade:** 190mm 24 tooth TCT **Noise:** 99db(A) **Weight:** 5.3kg **Speed:** 5500rpm

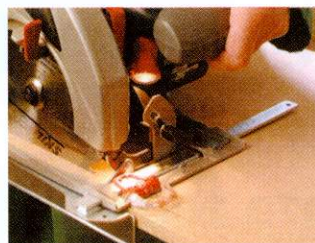
Skil made their first saw back in 1924 and, such was the impact on the woodworking market, the name is now a generic term for any hand-held circular saw. With the Orca, the saw has had a radical makeover, replacing the Skil Classic, long established as the flagship of the range. Powered by a 1500W motor, the Orca has a maximum cutting capacity of 66mm at 90° but, more importantly, it cuts 51mm at 45°. This is an important specification for site workers doing roofing and joist work.

The new design features a wraparound front handle which allows various grips for good control of the saw when making both 90° and bevel cuts. This, like the standard trigger handle, has a soft grip for comfort. The sole plate is powder coated pressed steel. I prefer alloy bases, but this does sell for less than £100. Even so, this is one of the better steel ones on

the market, adjusted to alter the depth of cut by a large red lever between the handle and the saw guard. Angles are set with a small locking knob at the front.

The lower guard has two levers to retract it, the standard one on the outside of the guard and an inner one which can be operated with the trigger hand. This ensures both hands can be kept on the handles when starting a cut.

Two neat touches are included to aid cutting. A clear plastic flip-out cursor has two thin red lines to help you follow a line at 90° or 45°, and can be moved to the left or right so the cut can be made to the waste side of the line. The second feature is a built-in light. Lasers abound at the moment but are prone to misalignment. There's not much benefit on a circular saw as you follow a pre-marked line and if the saw veers off, the laser line goes with it! A normal light is far



The front light works before the blade is activated



You can pull back the guard using the trigger hand



A hinged cursor can be adjusted to follow the left or right side of the cut



The biggest potential drawback to the Orca is its lack of a riving knife

better as it illuminates a marked line, making it easier to follow. The beam is reasonably bright and focuses directly on the cursor just in front of the sole plate. It's operated by depressing the trigger safety button, enabling you to set the saw in position and light the work without pulling the trigger.

The Orca has one radical difference that is unique in Britain; it has no riving knife! In this safety conscious age it seems odd that a saw can be built for UK use without one but, apparently, changes in legislation have brought us in line with Europe where riving knives on hand held saws are not a requirement. This opens up a variety of uses for the circular saw, such as plunge cutting (ideal for kitchen fitters cutting hob and sink holes) and for sawing through floorboards to lift them for access.

I tried a few plunge cuts through some worktop, with good results. The saw is certainly powerful enough and the supplied 24 tooth blade cuts cleanly. As long as the work is well supported, the lack of a knife when cutting manmade boards presents no problems as there are no stresses to close around the back of the blade. Where it becomes a problem is ripping along the grain, more so on thick, wet timber. If the blade is pinched it can climb out of the cut and jump back at you. To combat this,

the saw has a solid alloy lower guard as opposed to the normal split type, and far stronger springs to ensure it closes around the blade quickly once it's free of the cut. This doesn't eradicate the problem, though, and, in wet softwood - especially, the dust tends to accumulate inside the guard and cause this to stick open. A riving knife offers some protection against a saw jumping back at you in this situation, but the Orca blade would be exposed in this event.

I tried some ripping cuts on 50mm softwood to see if the saw pinched. Our timber was bone dry and had no inherent stresses so the saw cut with ease. This can't always be guaranteed though.

To sum up, I have reservations about the validity of a saw that does away with a tried and tested safety device. Personally I think it is a backward step, especially as the saw is otherwise well constructed with good specifications. A shop-fitter or kitchen installer may never come into contact with wet timber, so may not be exposed to the pinching caused by the lack of riving knife, but a site worker on first fix, where a Skil saw tends to earn its keep,

6 to be won next month



GW verdict

- ⊕ Shaped grip, light, flip cursor
- ⊖ Lack of riving knife

Value for money
Performance



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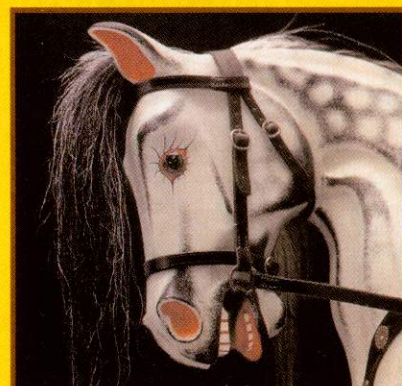
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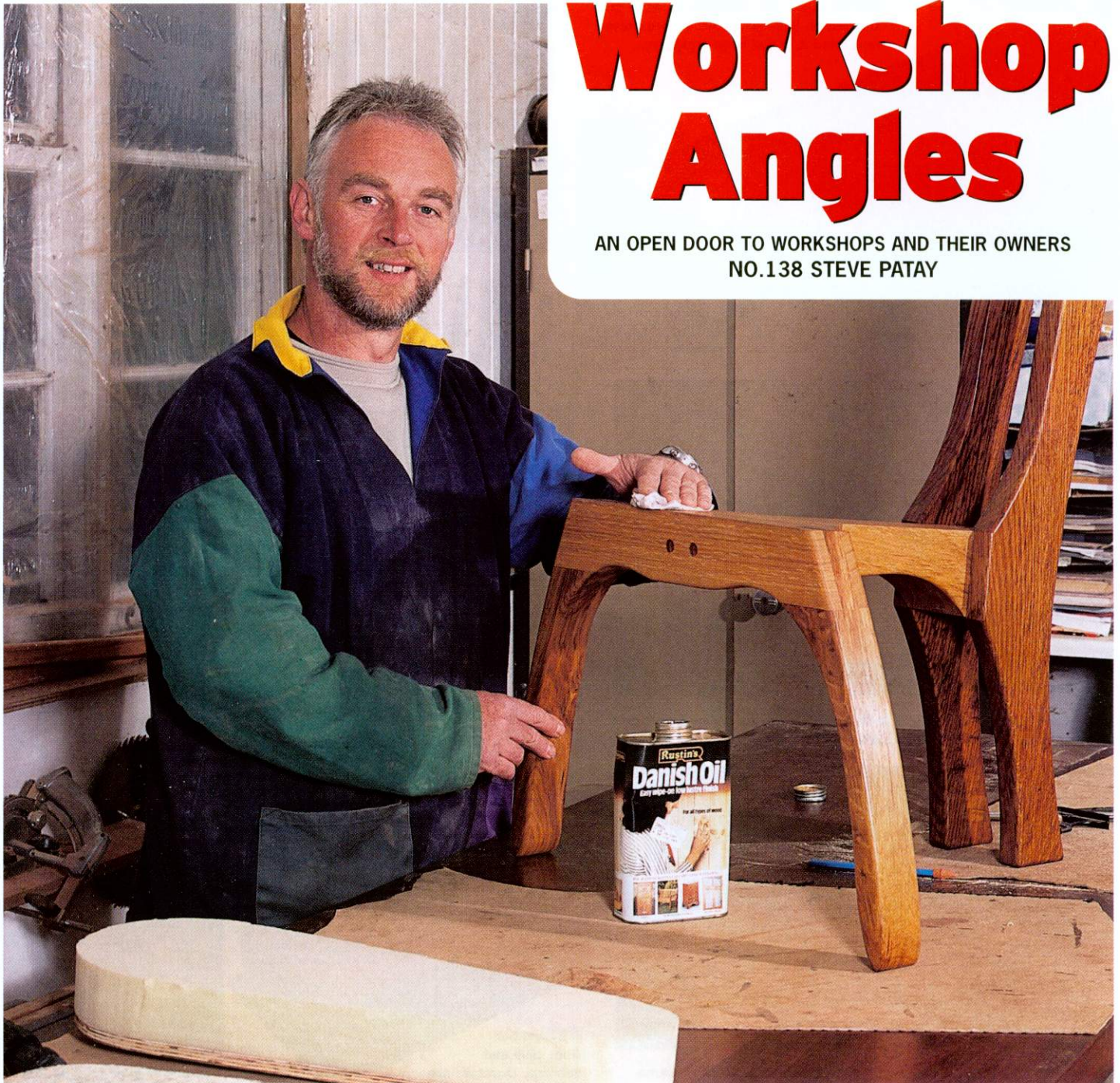
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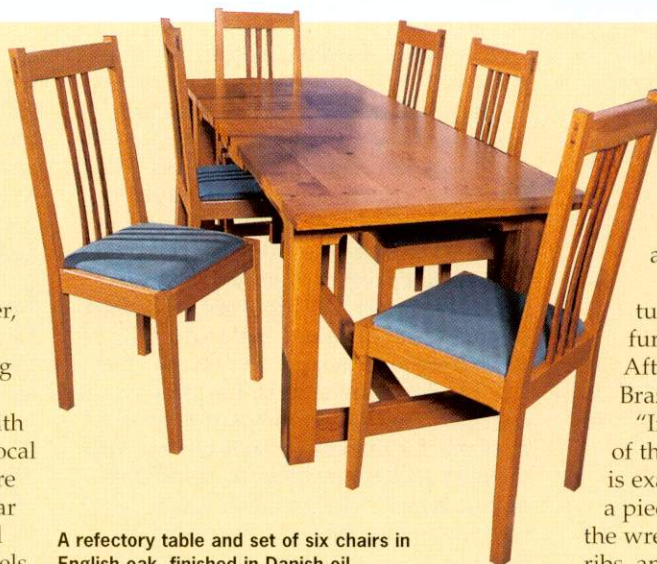
Workshop Angles

AN OPEN DOOR TO WORKSHOPS AND THEIR OWNERS
NO.138 STEVE PATAY



Pieces of driftwood hanging from the ceiling and piled in the corner of Steve Patay's Dorset workshop hint at a nautical background. In fact, he was checking equipment for a scuba diving trip when I arrived. Much of Steve's contemporary furniture is inspired by what he sees underwater, his *Skeleton* table being a prime example. He got the idea on a diving trip to Chesil Beach.

"It was a fantastic sunny day, with good visibility for a change in our local English waters," Steve recalls. "There was the wreck of a second world war landing craft, and its skeleton is still lying in the shingle, though the panels

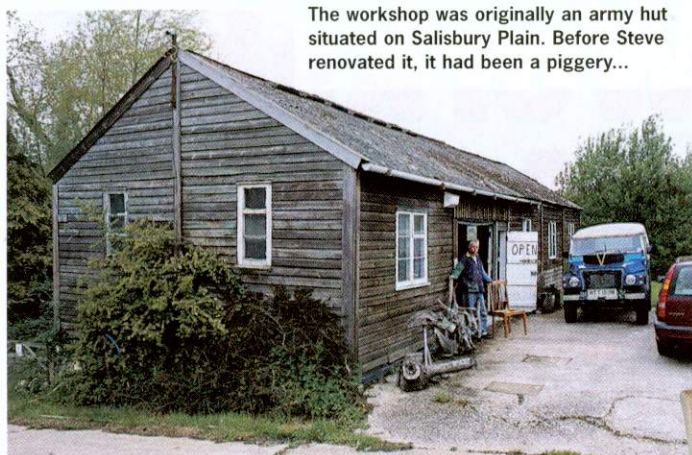


A refectory table and set of six chairs in English oak, finished in Danish oil

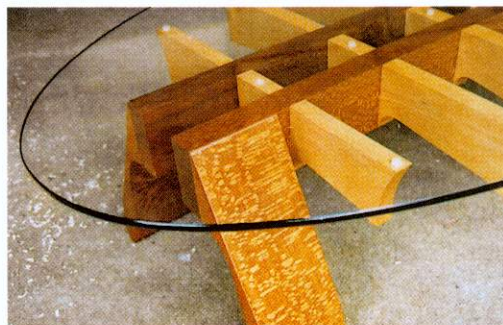
have all come off in storms over the years. It was red with rust, mottled, blistered and barnacled. With the sunlight coming through the water rippling over the seabed and across all this rusty metal, it was absolutely beautiful."

Steve wondered how he could turn the idea into a piece of furniture and depict the colouring. After some research he came across Brazilian rapaulo lacewood.

"If you cut it at a tangent the effect of the medullary rays when polished is exactly what you see underwater on a piece of red, rusty metal. It portrayed the wreck beautifully. I added maple ribs, and the brown streaks gave a



The workshop was originally an army hut situated on Salisbury Plain. Before Steve renovated it, it had been a piggery...



This *Skeleton* coffee table was inspired by a wreck 90ft under the water. Steve used rapaulo lacewood to give the effect of sunlight rippling through the water



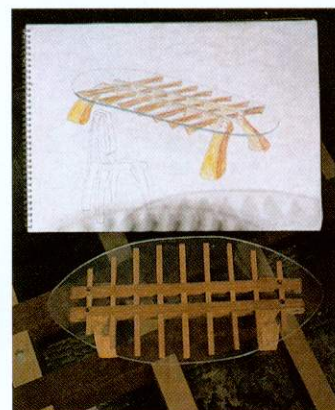
This table is made from chengal, a Malaysian timber, while the bench is sequoia, having grown at nearby Forde Abbey



Steve collects sticks when out walking and may whittle them the same day: "I don't go anywhere without a Swiss Army knife!"



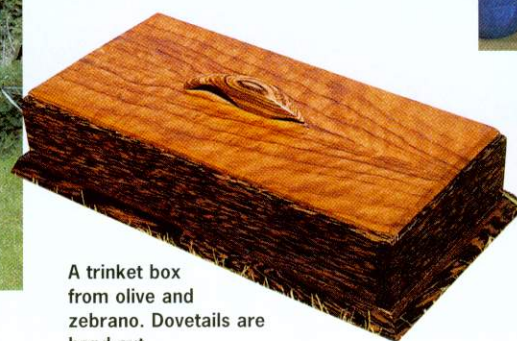
A set of six dining chairs under construction. When upholstered, they are far more comfortable than they look!



Steve's original illustration and maquette for the *Skeleton* table



The Shopsmith is Steve's favourite piece of machinery



A trinket box from olive and zebano. Dovetails are hand-cut



This *Spider* table (without top) houses a nest of dinosaur eggs



An oak dining chair with laminated back slats. This increases the springing effect and gives greater comfort

similar feel to rippled sunlight. It worked really well," he admits.

Steve got into woodworking after a major car accident some years ago.

"I suffered post-traumatic stress syndrome, which stopped me getting in the car for at least six months. Being a salesman and driving from one end of the country to the other every day, it made my career rather difficult! I got pensioned off due to ill health and had to do something for a living," he reflects.

"I looked around at all the local colleges to find out what courses were available for retraining. I was toying with the idea of either metalwork, smithing, or woodwork." Bridgwater College seemed to offer the best options for training in wood and metal.

"The furniture-making course was in-depth and comprehensive, as was the smithing. Because smithing is hot, dusty and dirty, you come home absolutely black every day. So I decided to choose wood! I did two years and was hoping to do an HND, but a second accident scuppered my plans.

At the same time I met a farmer who had a big old ex-army hut that was rotting. He was about to torch it and use the land for something else. He heard I was looking for somewhere, so offered it to me. As a result the course went slightly by the wayside as I threw myself completely into renovating the workshop and getting it up and running."

The spacious workshop has a stream running behind it and has water

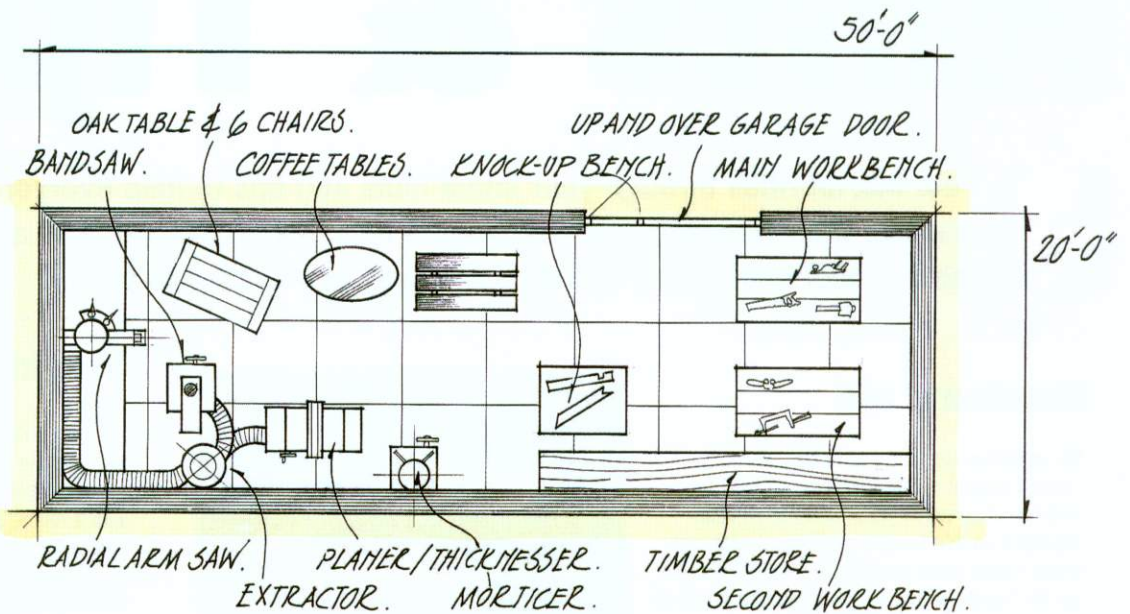
SHOP LAYOUT: Steve Patay



Driftwood in a corner collected after storms at Lyme Regis

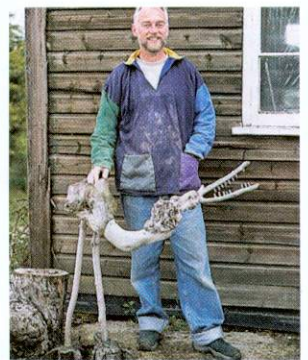


Elegant saw sharpening chops from ash and maple



There's plenty of space in this timber workshop, but it gets pretty damp in winter. The farmer was going to pull it down before Steve showed an interest

Steve made this bird from driftwood to scare off a heron that was attacking his koi carp. It worked for a while!



This old Cooksley radial arm saw was bought from a local joinery that went out of business

underneath it much of the time. Because of the condensation and dampness during the winter months it's virtually unusable, so Steve works elsewhere then.

He uses a variety of timbers, but English oak is his favourite.

"It can have so many eccentricities, grain defects and faults. Many furniture-makers avoid it because it may not be structurally sound. To me, the more cracks, knots and waney edges it's got the more beautiful it is. Build a piece of furniture to highlight its natural attributes and it's a stunning timber."

"I've always got my eyes and ears open looking for a piece of strange wood, something more eccentric than the norm. I find timbers like iroko very bland. You can make anything from it and you're not

having to pander to its needs.

It's not just from the sea that Steve gets inspiration. He was commissioned to make a table to display a nest of dinosaur eggs. This resulted in his *Spider* table, with upturned legs, after spotting a dead spider on the floor.

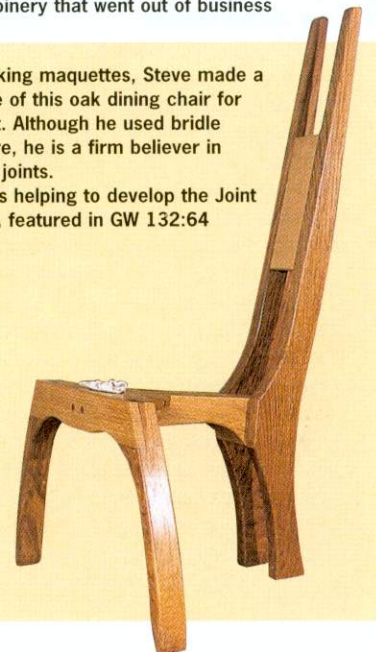
"I seem to have a morbid fascination with dead horses, insects, things like that. I think they're very organic, and incredible structures."

Steve has several gallery shops earmarked to sell his work. So if you come across a piece of his furniture, spare a thought for the lengths (or depths) he's probably gone to. He may have got very wet in the process...

Words by Phil Davy
Photos by David Askham

After making maquettes, Steve made a prototype of this oak dining chair for the client. Although he used bridge joints here, he is a firm believer in doweled joints.

Steve is helping to develop the Joint Genie jig, featured in GW 132:64



Hints & Tips



Pete Martin rifles through your latest hints and tips to help everyone improve their woodworking. This month includes an extension to a bandsaw table, a tool rest steady and a budget way to source new tools

Bandsaw aid

My workshop is 8x8ft, but there's worse to come. I bought a bandsaw and the only problem I had with it was that I had to keep moving it so that I could cut longer lengths of wood. I then came up with the idea that I could put the bandsaw on a piece of $\frac{3}{4}$ in board and fit it to the bottom of the bandsaw.

I bought a set of draw runners (make sure you buy steel ones to be on the safe side). I then fixed a chain from the back of the bench to the rear of $\frac{3}{4}$ in board, making it just long enough to stop the bandsaw coming off the end of the bench.

Mr J. Morton, Killamarsh

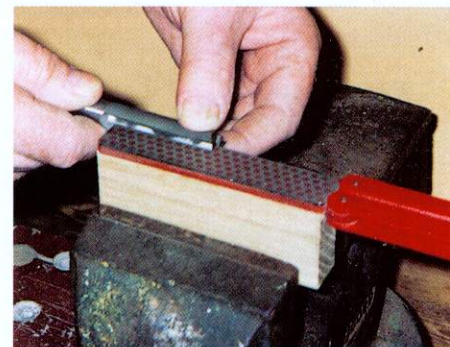


Staying sharp

I bought a DMT diafold whetstone a few years ago to hone router cutters and saw blades. It's great for saw blades, but I find accuracy difficult with a router cutter in one hand and the whetstone in the other.

The large sized bench stone is expensive so I use my glue gun to attach a small off-cut to the back of the diafold and hold it in the vice. Both hands can then be used to control the cutter with vastly improved results. The off-cut is easily removed when finished.

James Brolly, Llanidloes



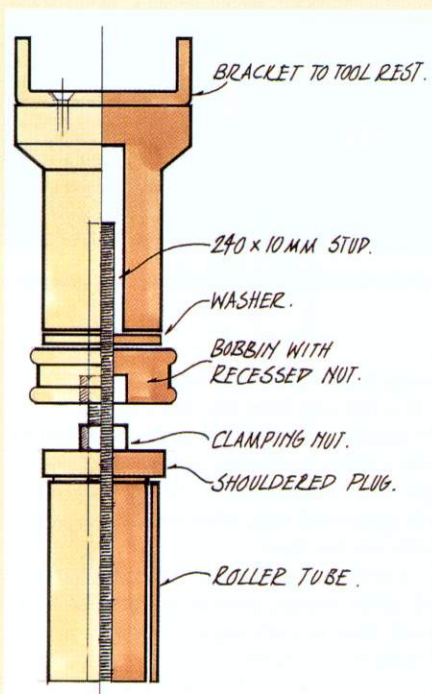
Tool rest steady

Items required: A telescopic stand (roller stand), 240mm of 10mm studding, nuts and washers to fit and some short ends of beech. Take the 'head' off your roller stand and turn a 150mm long plug with a 15mm shoulder that is a sliding fit in the top tube. Then drill the plug to accept a piece of 240x10mm studding. Run a nut on one end of the stud and rivet over to prevent it coming undone. Next, slide the plug onto the stud and clamp in place using another nut; place the plug and stud into the top tube.

Turn a bobbin out of a piece of 25x45mm beech, drill to accept the stud and then carefully chop out a recess to accept a nut. Using araldite or similar adhesive, glue the nut into the bobbin. When set run the bobbin onto the studding with the nut facing down.

Make a U-shaped bracket that is a neat fit to the underside of your tool rest arm (I used a piece of heavy gauge aluminium). Turn a cylinder slightly less in diameter than that of the bobbin from a piece of beech wide enough for the bracket to sit on, leaving a shoulder to fasten the bracket to. Drill the cylinder to a depth of 60mm to accept the studding. Fix your bracket and drop onto the top of the studding. Place the roller stand under the tool rest extension, extend till the bracket fits, lock the roller stand and take up the final adjustment with the bobbin.

This design works well and of course



provides work for a stand that would otherwise be idle. When you've finished with it, lift it out of the stand and put it away for the next time.

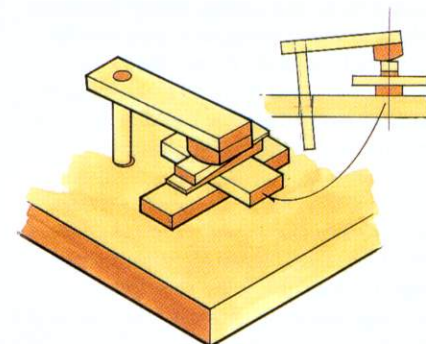
A. L. Brownrigg, Dulverton

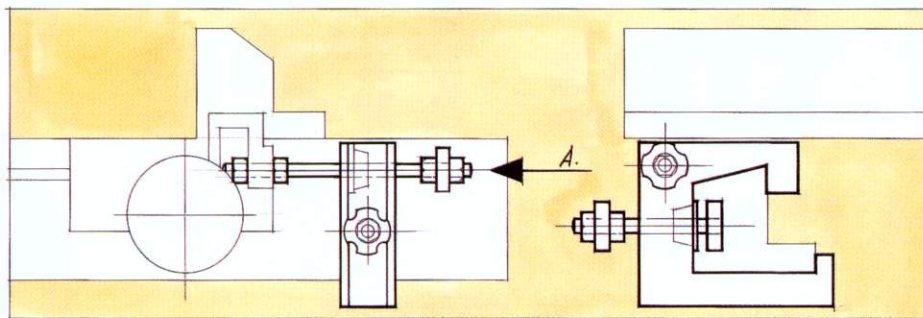
Wood Holdfast

I use a metal bench holdfast, but often need to use a second one. This wooden design I made applies pressure by using a pair of folding wedges instead of a screw, and works quite well.

The stem is $\frac{3}{4}$ in hardwood dowel rod while other parts are softwood. The stem goes through a slightly oversize hole and holds by the friction of tilting as pressure is applied. The pad at the end of the arm has a curved surface to allow for slight variations in tilt. A pair of folding wedges under it will put on plenty of pressure.

Peter T. Jenkinson, Barnsley





FRONT VIEW OF SAWBENCH

A. LOOKING ON ARROW A

Micro-adjuster, micro-pence

Good Woodworking's recent table saw test (GW 135) mentions the lack of micro-adjust facilities on the Kity 419: a simple, cheap, yet very effective adjuster for the rip fence may be made as shown in the drawings. The design can be modified to suit any table saw that has a rip fence carrier bar.

Basically, the adjuster consists of a saddle made to fit the rip fence carrier extrusion leaving space for the saddle's floating head (if you can't make your own floating head, cannibalise the head and screw from an old G-cramp). The saddle is tethered to the rip fence using M6 screwed rod and nylon insert nuts, and has its own locking knob. The nuts should be snug against the web of the rip fence casting insert yet free enough to allow rotation of the micro adjusting knob. Because the saddle is tethered in its unlocked state, it moves along as the rip fence is moved along.

Both the locking knob and the adjusting knob should be scalloped in four places to allow finger purchase, and are fixed tightly by an M6 nut either side. If one scallop on the adjusting knob is painted it gives easy visual indication of how

many turns (or part turns) you make when adjusting. An M6 thread has a pitch of 1MM, thus each full revolution of the knob will move the rip fence 1MM.

Because off-the-shelf screwed rod is not a precision thread it will inevitably have a small amount of backlash; you'll soon get the feel of this free movement and when it's overcome, the rip fence will be moved to or fro.

Most of the dimensions are common sense but if you make the micro-adjusting screw about 100mm long in total, you'll have plenty of adjustment available.

To use the micro-adjuster, loosen its locking knob, slide the rip fence along to where you think the cut should be and lock the fence. Make a test cut in scrap and check the dimension. If adjustment is needed, lock the micro-adjuster and free the rip fence.

Adjust by turning the adjuster's knob, reload the rip fence and proceed with cutting.

Brian Butters, Doncaster

TIP
of the
month

Bargain tools

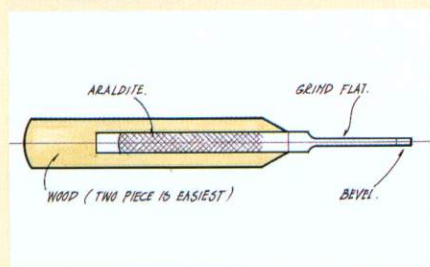
Miniature chisel

If you require a miniature chisel, a good one can be fashioned from a parallel pin punch (small sizes £1.13 from Axminster in tool steel). Grind the sides and back flat, then form a bevel and hone.

The metal knurled body can then be set into a wooden handle with Araldite.

Burnisher

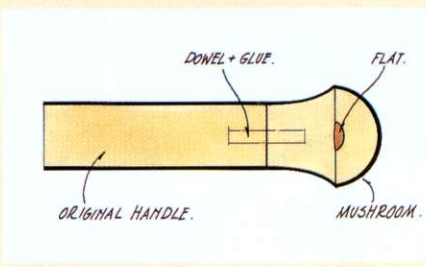
The largest size of pin punch, 1/2in at £1.29, left round and also set into a handle, makes an excellent cabinet scraper burnisher.



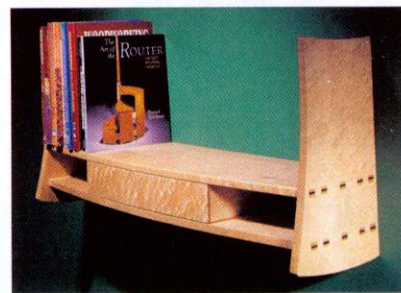
Modified car boot rejects

I bought two carving gouges at a CBS for £5 the pair, both rusty with damaged handles. The blades were cleaned up, ground and honed and performed well. The damaged section of the handles (approx 2 1/2in) was cut off. I turned two hardwood mushrooms and these were fixed with glue and a dowel, and a small flat filed to prevent bench rolling. This old fashioned type of handle is very comfortable and allows pressure to be extended without bruising one's hand.

Peter Giolitto, Surrey



win BriMarc Tools



Stop for a moment.

Think a while about your workshop. What clever tips have revolutionised your woodworking, making it easier, safer and more fun?

Perhaps you've picked up hints from other woodworkers or just worked them out yourself. However large or small they are, other readers are bound to benefit from your tips. So send them in to us at *Good Woodworking*, along with simple sketches or photographs if necessary. It's well worth the effort as each month we will award the winner a £35 BriMarc voucher, while each of the runners-up will receive a £25 voucher.

The BriMarc catalogue, which we'll send to the winner and all the runners-up, is jam-packed with great ideas that have been turned into clever woodworking tools. If you would like a BriMarc brochure and details of your nearest stockist just telephone 01926 493389.

Send your ideas to Hints and Tips, Good Woodworking, 30 Monmouth Street, Bath BA1 2BW. Don't forget to include relevant sketches and photos.

Tip of the year



In addition to Tip of the Month, we will also be awarding a **Tip of the Year** prize to the best idea published in these pages during the year. The winner will receive a complete **Leigh D4 Dovetail Jig** worth £375 from **BriMarc Associates**. This innovative Canadian jig was tested in GW 86 along with nine other dovetail jigs and was highly recommended by Phil Davy. It will cope with material from 3mm to 30mm thick and up to 610mm wide. It's beautifully engineered and simple to adjust.



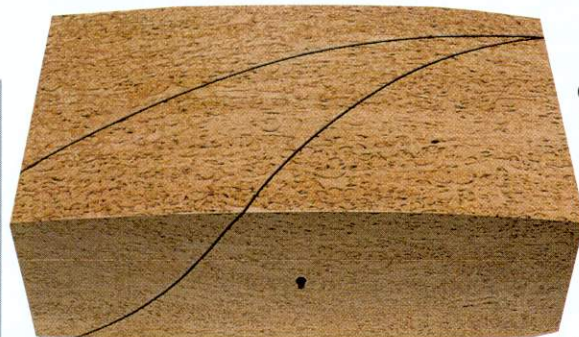
Top of the tree

And how to get there...

Nick Gibbs considers how to get your work selected for exhibition at the Celebration of Craftsmanship

One can only imagine the lengths to which movie stars soar to outshine competing egos on Oscar night. Gowns from Milan, jewels from gay Paris and gritted teeth whitened by Tippex. At the Celebration of Craftsmanship, furniture-making's annual jamboree in Cheltenham, designer-makers are faced with a similar challenge of standing out amidst the best in the land.

As a spectator, there's a risk, if you know the makers personally, that your reactions to exhibits are influenced by prior knowledge. So last year I made my first and second 'passes' around the galleries without opening the show catalogue, choosing pieces to discuss before checking their lineage. I couldn't help recognising some of the work, old and new, but here are my 10 tips for being spotted at this year's festival.



2 Try a new approach

"Have I gone over the top?" Colin Jones asked me of Young Jones' curved box, a giant leap away from their typical square-

edged designs, decorated with intricate floral patterns.

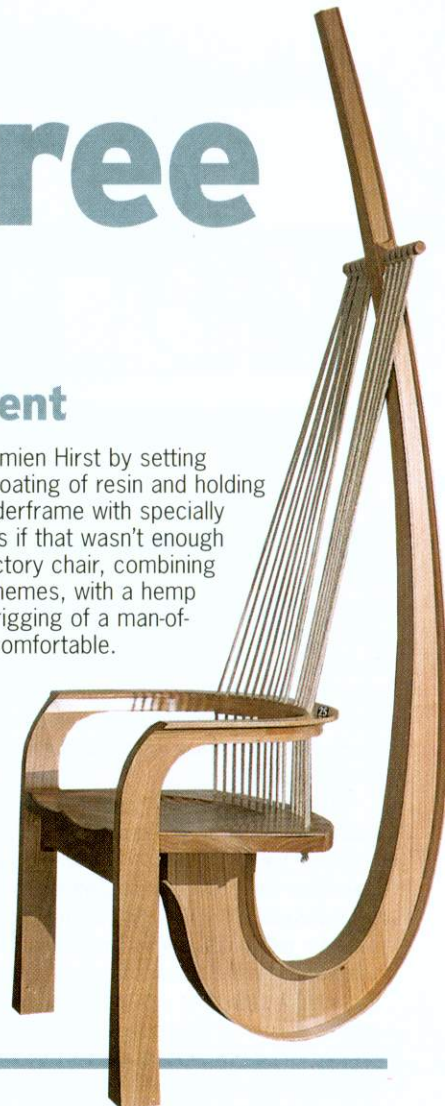
"We've been toying with curves for three years, and took small curved

boxes to Chelsea Flower Show to listen to what people were saying.

"The first one was too heavy, so we brought it up at the ends. I do worry, though, that people will panic that their commission might end up like this!"

1 Be different

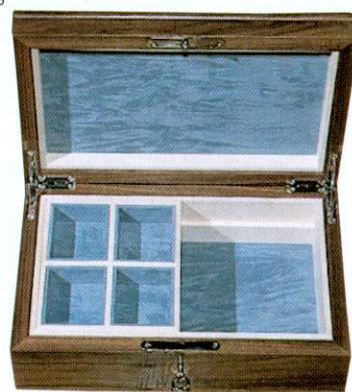
John Barnard did a Damien Hirst by setting slithers of wood in a coating of resin and holding the table top to an underframe with specially made brass fittings. As if that wasn't enough he also showed his Victory chair, combining nautical and musical themes, with a hemp back that mimics the rigging of a man-of-war. It is surprisingly comfortable.



3 Attention to detail

If you want to learn how to finish your projects, come to Cheltenham. I remember putting a pair of side tables made by Richard Williams when he was at Bucks College on the cover of a rival magazine some 13 years ago. His skill and attention to detail was clearly evident then, and he continues to produce the finest work to the highest quality. He chooses the most exotic timbers and honours them with a perfect finish. I also love Brooks Handley's

jewellery box, particularly for the flames of its ripple sycamore lid and the luscious blue lining inside.



4 Stick to your style

Certain makers have such a clear and identifiable approach to shape and colour that their work always jumps out from the crowd. Senior Carmichael use cylindrical frames and seem always to achieve a natural glow to their work, typically produced from home-grown timber. Waywood tend to follow a similar, if less geometric route, this year producing a circular dining table in ash, burr ash and black walnut. The underframe is Waywood through and through, with the timber choice for the top distinctively organic but the design perhaps more classical in shape than usual.



5 Make it move

David Bowerman's wooden clocks are not only examples of engineering in wood being a good thing, but always hypnotise visitors with the intricate moving parts. If only I could establish how they work.



6 Be simple

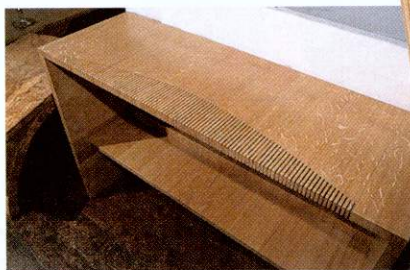
I doubt Matthew Burt's dressing table won universal applause last year, but I loved the way the stool revolves. I liked the raw sawcuts along the front edge of Paul Gower's simple oak sideboard (bottom left) and the uncluttered lines of Sean Casey's zebrano table (bottom right). Or is it a bench?



7 Be small

There's something special about models and miniaturisation. Tony Portus of Bristol-based Cato showed a maquette of a dining table his client needed at the last minute, but has used models before to demonstrate their skills and style.

"We've found that people really like the smallness of a maquette as they can judge the quality of our work from the tininess of the piece. At other exhibitions we've built corner cabinets to take four or five maquettes to show our range, and we've had a great response."





8 Walk bright and tall

You can always expect something unusual from Johnny Hawkes, whose work so often exhibits a touch of humour. His trio of poplar Light Quivers may, like many pieces, had been sold already, but they certainly attracted a crowd, standing proud above most of the other pieces. The spring legs supporting Hawkes' burr oak Highly Sprung table were less conspicuous but just as imaginative. I doubt everyone thoroughly approved!

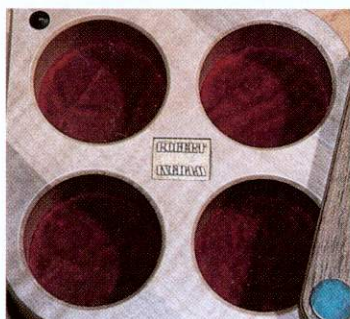
9 Be functional

And it helps if your furniture does exactly what it says on the label. Robert Lewin's occasional table in pippy oak and walnut incorporates a central section for storing magazines, so that your favourite piece need not be obscured by coffee table books. Inside Matthew Burt's beautifully curving Wave cabinet (right) are useful compartments, and yes, the drawers of Daniel Lacey's sycamore and oak chest (opposite) do actually work.



10 Sign your work

Since retiring from Parnham and setting up in business in Denbighshire, Robert Ingham has continued to make exquisite boxes and furniture. The style, all subtle circles and colours, is distinctive, but Ingham reinforces the brand with delightful brass plaques, cast with his name and aged with chemicals.



Storage holds the key

Last year Daniel Lacey stole the show with his extraordinary curved chest of drawers in sycamore and oak, made specially for a Celebration of Craftsmanship. "It sold within half an hour," he recalls. Lacey usually makes special pieces for the exhibition, recognising that visitors are more intrigued by work that's for sale. It's an opportunity to produce something

new, perhaps a shape he's been thinking about but not yet had an opportunity to develop with a client.

"I might have an idea that I haven't got around to doing, or I might pick something out of the air. This year I'm making a writing desk and a dining table and chair. As usual everything will be curved. The show gives me freedom."

The quick sale of Lacey's chest last year confirmed a theory of his that the items that do best at Cheltenham are those that incorporate some form of storage. Which doesn't mean he'll be reproducing last year's spectacle.

"That took six weeks to make and I've only made one. I got bored of the making, and the interest and enthusiasm have gone. If a piece is easier to make I don't mind making a few, but that didn't lend itself to being produced [in quantity]."

Cheltenham this year

This year marks the 10th anniversary of A Celebration of Craftsmanship, with over 75 exhibits expected to attend, showing around 300 skillfully produced pieces. The exhibition runs from August 23 – 31 at the Thirlestaine Long Gallery Cheltenham College, Bath Road, Cheltenham, Gloucestershire. It's open from 10.00am – 4.00pm daily, with tickets available at £4 each on ☎ 01242 238582 and www.celebrationofcraftsmanship.com.

Exhibitors promise to include some of the finest woodturners, furnituremakers, sculptors and boxmakers in the country. With most of the exhibits for sale at the show (including no commission to the organisers), the chance also exists for visitors to take some of this extraordinary work home with them.



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Quick & easy Upholstery

No2: Pin cushion work



This month **Joanna Foster** helps you get to grips with pin cushion upholstery techniques, as found on piano stools and the occasional chair back

MATERIALS YOU'LL NEED

Black and white webbing or modern Pirelli webbing.
10,13 and 16mm tacks
Hessian
Linen mattress twine, size 4
Coir fibre
Linterfelt
Calico
Top covering fabric
Braid

Pin cushion - or pin stuffed - upholstery is almost as simple as the basic drop-in seat which I covered last month. With this method a shallow pad sits directly onto, or is rebated into, a show wood frame, and requires fabric edges to be covered with some form of braid to cover the tacks or staples. It is most often seen on piano stools, some dining chair backs and to replace damaged caning on dining chairs.

It's very quick and simple to do with traditional materials such as hair and linterfelt, or foam. The main skill is in not damaging the show wood. Here I've shown pin cushion upholstery using traditional materials, but you could just as easily use foam and polyester wadding.

I'm re-upholstering the lid of a friend's piano stool. The stool is

in generally good condition, apart from a place where a previous attempt at upholstery had driven tacks into the show wood. Hopefully a bit of wax and wood filler TLC will work wonders.

Strip and Make Good

Strip off old upholstery layer by layer, taking great care not to damage the show wood. It's usually best to drive the ripper along the grain of the wood, but you may find it safer to work inwards away from show wood.

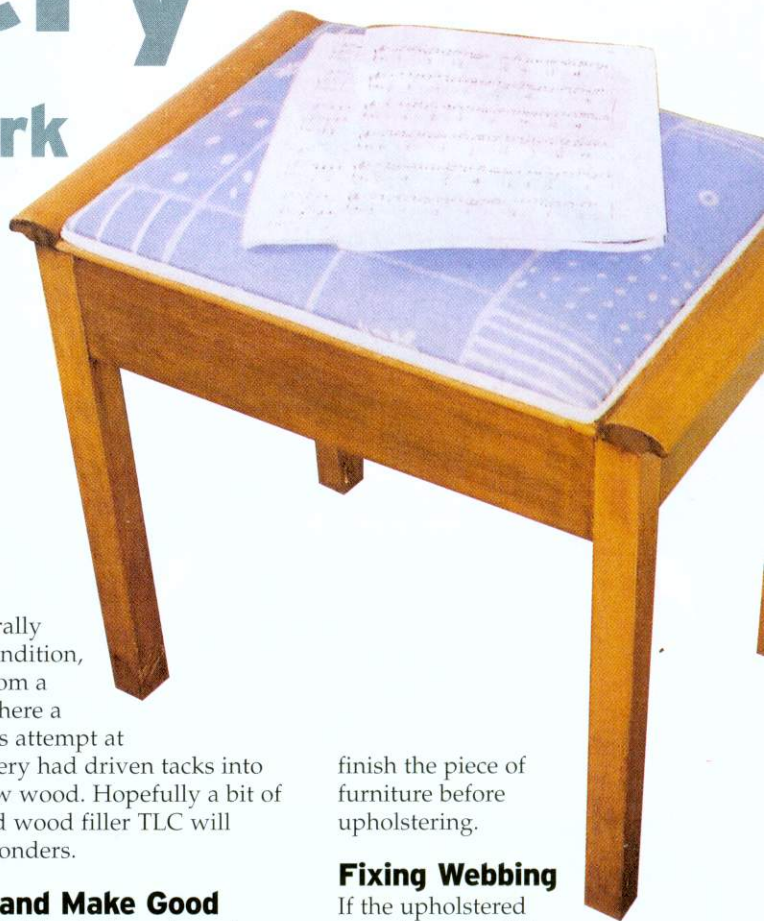
Repair any joints and treat for woodworm and rot. If the frame is very holey, fill with a tack friendly woodfiller or a porridge-like mixture of wood glue and sawdust. Take the opportunity to polish or re-

finish the piece of furniture before upholstering.

Fixing Webbing

If the upholstered area sits on a solid panel, like mine, move to the next stage. If it's an open frame, such as a previously caned chair, you'll need to create a firm base using webbing. Before starting, plan where your webbing will be fixed. At least 50% of the space should be covered by webbing. Always web from front to back and then side to side.

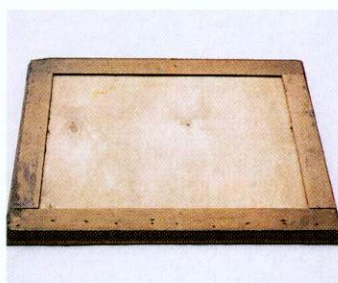
If there is a very small border between the inner edge of the frame and the show wood,



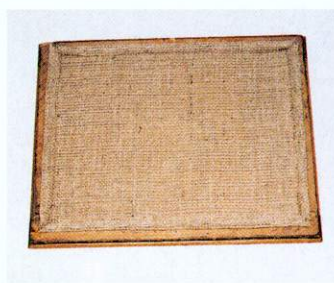
Fixing a new pin cushion



01 A previous attempt at upholstery on this stool needed to be fixed with a new cushion and TLC to the show wood



02 Strip off any old upholstery and take the opportunity to repair any woodworm and rot, as well as fill holes



03 Position a piece of hessian $\frac{1}{2}$ in larger all around than the frame and tack or staple into place



04 Bridle stitches are used to hold the stuffing place. Use size four line mattress twine and a curved needle

UPHOLSTERY DETAILS: Knotting

stapling rather than tacking would help to reduce bulk. Arguably, stapling is the better option if the furniture is old or just delicately proportioned, as it may not withstand having 16mm tacks hammered home. Instead use 13mm tacks or a mixture of 13mm and 16mm if standard 16mm are too chunky.

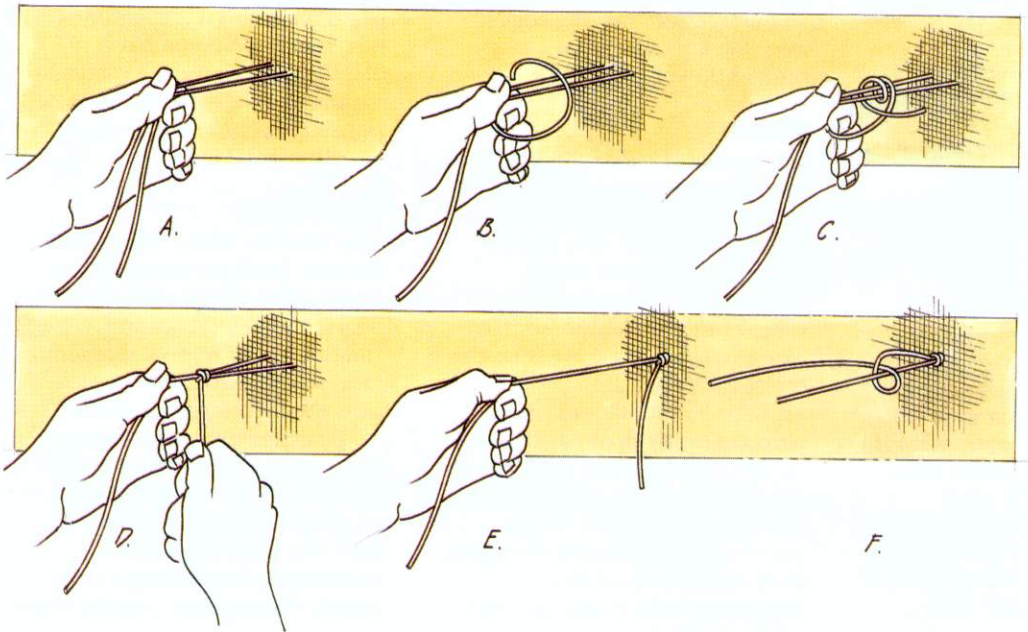
Starting with the furthest edge, staple or tack one end of the webbing to the frame. Use your web stretcher to pull the webbing taut, using the edge of the workbench, rather than the workpiece, to lever your pull. Once it is as taut as a guitar string, use your spare hand to staple or tack in place. Then cut and tack/staple the fold.

Hessian

Cut a piece of hessian $\frac{1}{2}$ in all round larger than the seat area. Position centrally over the seat area, fold the edges over outwards and tack using 13mm tacks or staple into place. The hessian does not have to be stretched tight but must be square within the grain. Ideally the folded edge should just cover the folded edges of the webbing but be aware that there are still two more layers of fabric to be fixed within your border or rebate, and work accordingly.

Bridle Stitches

The point of bridle stitches is to hold the stuffing in place, both while you are working and once the chair is in use. Use size four linen mattress twine and a curved mattress needle. Start with an upholsterer's knot in the far left corner (see drawings). Using the fingers of your left hand to measure the width of each loop, work from left to right, down one, right to left, down one and so on until the seat area is covered in loops. Do not tie off the end until after the hair is in place.



Coir Fibre

Take one handful of hair and tease so that it is a loose mass with no lumps or hard bits. Push this under the first loop and tighten by pulling the next loop. Take another handful, tease and push under the next loop. Tease them both together and continue until the whole seat is covered. Aim to make each handful the same quantity. The hair should be domed in the middle and sloping gently to nothing at the side, so, when covered and evenly teased all over, gently pull away some of the stuffing around the sides. Pay special attention to the edges - these must be soft and even with no gaps or lumps.

Linterfelt

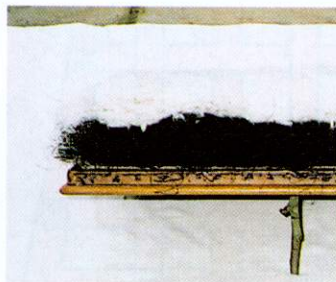
Tear a piece of linterfelt the same size as the seat area. Do not attempt to cut it with scissors as it



Where possible it's worth taking a little extra time with the design of the top fabric so that it brings out the best of the wood



05 The stuffing is made up from a series of handfuls of coir fibre, held in place by the network of bridle stitches



06 Position the linterfelt on the coir fibre, making sure the edges meet the top of the wood when pushed down



07 As you tighten the calico over the linterfelt, aim to smooth it outwards and towards the corners with your hands



08 Take the time to plan how the top fabric will sit over the seat, including fitting the pattern in with the wood grain

TOOLS YOU'LL NEED

Tack remover or ripping chisel
Mallet
Staple remover and pliers
Staple gun and staples
Webbing stretcher (for b&W webbing)
 Curved mattress **needle**
Magnetic upholstery hammer
Fabric scissors
 Electric bread or meat **carving knife** if you are using foam instead of coir fibre

will certainly blunt them.

Pinch out some bulk all the way around so the edges are evenly feathered or chamfered. Be quite certain that the edges meet the top of the wood when pushed down.

Calico

Cut a piece of calico slightly larger than the seated area, allowing you sufficient 'finger pulling' room. At the centre of each side, place a temporary 10mm or staple, making sure the grain of the calico is square. Temporary tack along one side, working from the centre outwards.

Repeat around each side, working from the opposite sides. At this stage it is best not to pull the calico too hard. Once all sides are stapled, then you can go round again, tightening the calico. Only remove one or two temporary tacks at any one time otherwise the tension may be pulled skewiff.

As you tighten, aim to smooth the calico outwards and toward the corners with the palm of your free hand, removing stray hairs as you go. Always work from opposite sides and from the centre outwards. You may have to go around the seat two or three times to get it

absolutely tight enough.

Remember that the top fabric will be tacked either between the calico tacks or slightly beyond it, depending on how much room you have. Stapling will give more room. To hammer home the tacks use a nail punch to avoid bruising the wood or splitting the fabric.

Top Fabric

Plan how the fabric will sit over the seat. Mark the centre of the design by marking with chalk or pencil on the wastage area. Using 10mm tacks or staples, temporary tack, starting with one on each side, then working outwards.

Be extremely careful where you position the tacks as these must be covered with the braid or gimp. Go round again at least one more time before hammering home using a nail punch. Placing card over the show

wood should be sufficient to help you to avoid bruising it.

Braid and Gimp

Put a tiny dab of glue on the end of your braid to help prevent fraying. Start in the back corner or back central, depending which is the most unobtrusive. Use a 10mm tack to secure the end into position on the wrong side, then turn the braid back on itself to cover the tack or pin and start gluing and pinning.

Finish by holding under the end and sewing the two ends together to secure. Flat braid is only really suitable for straight edges. Gimp or scroll gimp is narrow and flexible and suitable for curved edges.

NEXT MONTH

In the final part of her series Joanna helps you deal with stuff-over upholstery suitable for footstools

An example of another piano stool, this time with homemade braid to match the embroidered seat foam fibre

Pin cushion upholstery using foam

Use 2in thick firm grade foam and an electric carving knife to cut to the right size and chamfer the edges to a point. Tear eight 3in wide strips of calico, each 3in longer than the sides of the foam. The calico should be torn, not cut, to give a softer feathered edge.

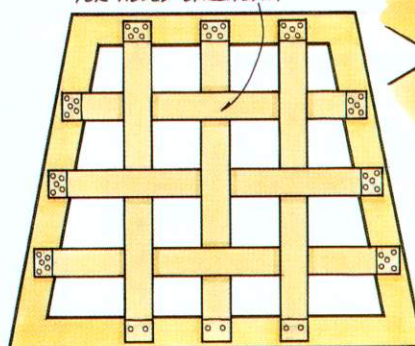
Using spray adhesive stick the calico to the foam, as shown, working opposite sides then opposite sides. Do not glue the

overhanging ends. Turn the foam over so the smaller side is uppermost and attach the other four strips in the same way. Cut the corners of the overhanging pieces so they are mitred at 45°.

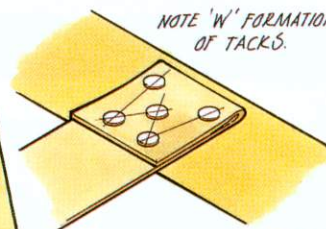
Position the foam on top of the frame, smaller side face down, then staple through the calico on to the frame. This method allows the thin fragile chamfered edge to be supported by two layers of calico.

UPHOLSTERY DETAILS: Webbing patterns

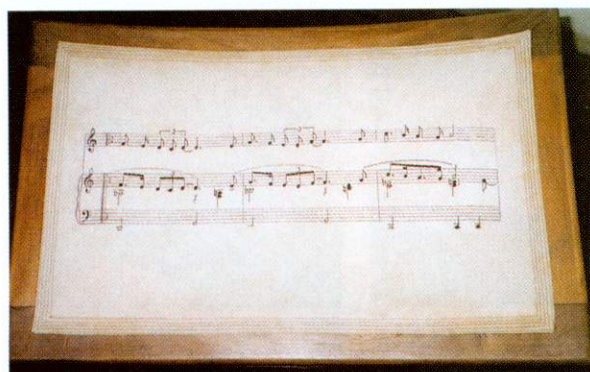
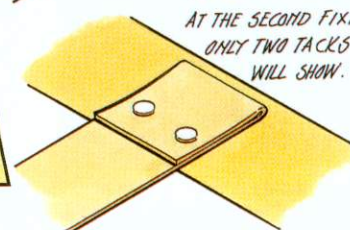
WEBBING IS INTERWOVEN FOR ADDED STRENGTH.



NOTE 'W' FORMATION OF TACKS.



AT THE SECOND FIXING ONLY TWO TACKS WILL SHOW.

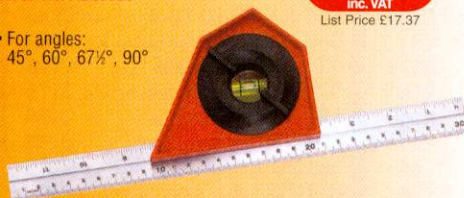


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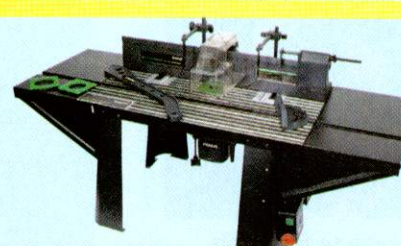
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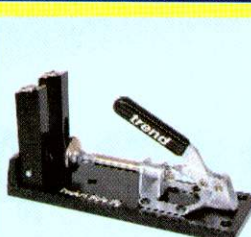
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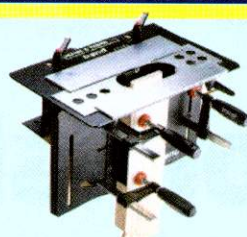
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The Workshop Guide

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■ Planning it ■ Building it ■ Equipping it ■ Using it

Part Eight

Workshop guide page by page

Power carcasing **p40**



A quick guide to installing cables for power and lighting

Keep it warm **p41**



Insulating the workshop and lining the walls

Connecting up **p41**



Be methodical and tidy, and you can do it yourself!

Power supplies **p43**



How to determine what you need. A reader's advice



Workshop power



Don't be afraid of the electrics, says **Andy King**. There's a lot you can do to keep costs down before calling in the experts

Our workshop build is drawing to its conclusion, but before we can do anything in it we need to consider an electric supply, without which all our modern power tools and machinery are useless.

Running an electrical ring for lighting and power is pretty straightforward, although the actual connection back to the main supply is something best left to the professionals, unless you are totally sure of your abilities.

Ring of Power

Sockets tend to be at a premium in any workshop in these power hungry days, so make sure you install enough. Industrial settings tend to surface mount power supplies, putting everything in heavy duty metal trunking and fixing all-metal sockets. For a domestic workshop, however, it's as good to run everything back in the walls, recessing sockets and switches into the linings. Face plates and back boxes are cheap enough not to blow the budget. All the electrical products were supplied by Screwfix (☎ 0800 0567689)

Having determined where you want to put your sockets, start the 'first fix' by setting noggins between studs to attach the back boxes to. These should be set back enough to allow the box to sit just below the surface of the wall

lining once this has been put up. The cable is 2.5mm twin and earth, run from box to box to make a continuous loop, starting and terminating at the mains box. You'll need to drill fairly slack holes in studs as you go so that the cable can easily be pulled through.

I used plastic conduit both to protect the cable and keep it from getting too hot as it will have insulation all around it. This can be bent around corners using a plumber's pipe spring. Bring a loop of cable out at each socket location through an appropriate hole knocked in the metal box, having fitted a rubber grommet to protect from chafing. Leave the loop large enough (about 150mm) to allow for cutting and stripping back to make the connections, and twist it so it doesn't get pulled back into the wall as you continue. Each box should end up with two cables, a feed and one to continue the power to the next box.

The connections to the face plates are made after the lining is in place, but are simple to do. Unlike domestic cables to appliances, carcaseing cables are coded red for live and black for neutral (as opposed to blue). Cut the cable and strip the sheathing back to expose the three cables. Each back box should now have six cables, two red, two black and two bare earth wires, which will need lengths of earthing sleeve fitted over them. Shorten the wires to suit the position of the terminals on the switch plates, but don't cut them too short and allow enough room to pull the plate away and work on it easily if you have to.

Connect each wire to the relevant terminal, two red in the live, two black in the neutral and two earth in the earth, making sure all unsheathed cable is hidden within the terminal. Finally, screw the cover back to the box, at which point it should be firmly positioned against the wall lining

Lighting Circuitry

Lighting is important in any workshop. I decided on four 4ft fluorescent tubes for my shop, siting them so as to give me shadowless light everywhere. Some people worry about the flicker from these causing saw blades to look static, but to be honest it shouldn't prove a problem and fluorescents are the most economical system to run. Consider fitting daylight tubes, so that you can colour match stains and timbers, etc.

You may want to consider

Building the perfect workshop



Follow Andy King's progress, month by month, as he builds a new home workshop

Part 8: Lining out and insulation



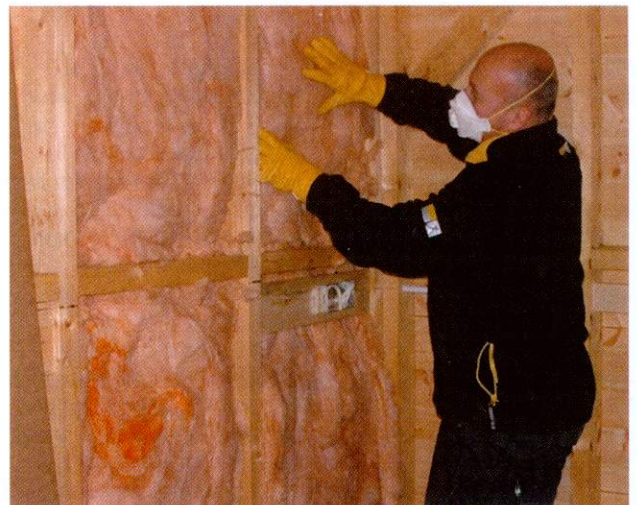
The outside of the shop is now protected from the elements and, once the first fix electrics have been completed, the inside can be sorted out – laying the floor, lining and insulating the walls and putting up a ceiling.

The main floor covering is 16mm bitumen faced OSB, laid bitumen side down. I'm still considering laying an extra 12mm MDF or ply top covering or, more likely, simply painting the boards with a floor paint. For now, the OSB boards are simply screwed into place at 300mm centres, with one panel left loose to allow for the infeed cable for the power supply to be brought in.

The walls are lined with 12mm MDF. This can be thinner (or even replaced with plasterboard), but I wanted solid fixings for shelves and cupboards without having to worry about finding a stud or noggin.

Insulation Matters

Before these boards can go up I need to insulate between the studs. I have used 100mm rockwool insulation, which is pretty cheap, but very itchy! A mask, goggles and gloves are essential here, and overalls would be an advantage.



The rockwool I used comes in 1200mm wide rolls and is ready split into 400mm or 600mm 'batts' to suit stud spacings. It cuts easily to length with a Stanley knife, so it is simply a matter of measuring and cutting to length, then pushing it into each void, making sure the edges are tucked in below the face of the stud work. I cut the batts around the electric cables in their conduits.

To keep condensation at bay I've placed a vapour barrier lining over the rockwool. There has been some discussion as to the merits of where this is placed in relation to the cladding, but

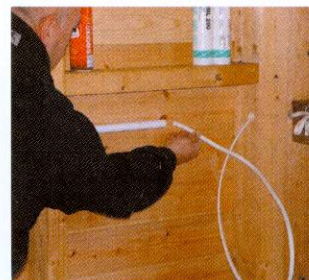
reader B. Kinane's response in issue GW 126 shows the reasoning for an internal barrier, and it suits me!

Building paper used to be the favoured material for this type of work, but is becoming difficult to source, plus it's quite expensive. The polythene I have used is sold at Wickes specifically as a vapour barrier and costs about £13 a roll with enough on it to line my workshop. It's stapled to the studwork at about 300mm intervals, overlapping at the joints. Slits cut through at the the

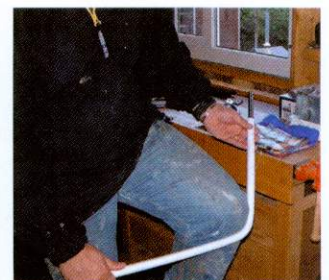
Wiring up the workshop



01 Decide where you want your power outlets and fix noggins to support these



02 Run the ring main cable through the walls from socket to socket, leaving a loop at each outlet



03 Protect the cable by running it through armoured conduit. This can be bent on a plumber's spring

correct spots will allow the back boxes to protrude through.

If your initial setting out is good, then the MDF lining boards should need minimal cutting, with only the holes for the back boxes to stick through. There are two ways of marking these. On plasterboard, the old favourite is to position the board and bang it in the area of the box, which leaves indentations on the board. MDF is a little too hard for this, so you can apply soft pencil to the rim of the box and follow the previous method, this time leaving a pencil mark. The final alternative is to measure it, using the floor and edge as a reference.

Position each board and screw at 300mm centres. Take care where you position the screws in relation to the electric cables, especially if the cable isn't in conduit!

The window and doors are trimmed with a narrow rip of MDF. In this case I have

added a bullnose radius, which allows the front edge to protrude beyond the face of the lining as a finish.

The ceiling is 9mm thick plasterboarded, screwed into place using drywall screws. I pushed the insulation into place after each board was fitted, to stop it falling down on my head as I work. The only exception were the final boards, which have the insulation pushed into place first.

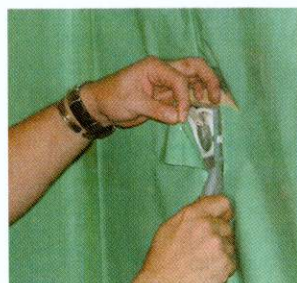
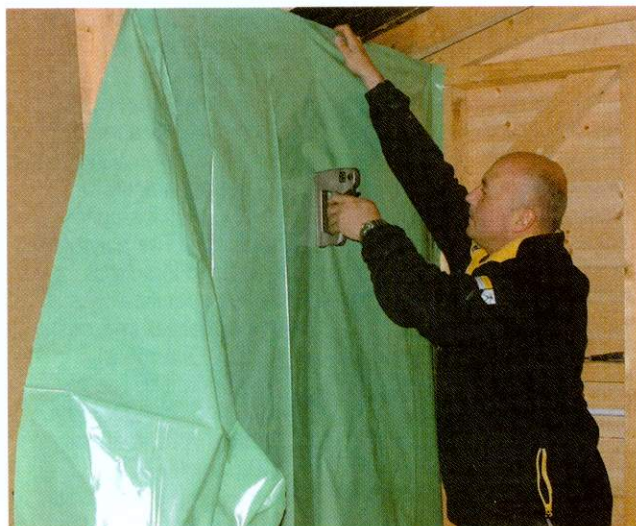
The metric/imperial anomaly rears its ugly head here, as the rafters are set out at imperial centres to match the OSB decking. With these rafters tied across with ceiling binders, the centres don't match the metric plasterboard. To help make life easier I used 900x1800mm boards as they are easier to handle. To get around the problem of a slightly shorter metric board, I fitted a couple of noggins and spanned an auxiliary joist between them to take the ends of the boards.



What's the cost?

Andy will be calling in a professional electrician for the final connections but did much of the electrical work himself before lining out the walls and ceiling. Here are his total costs to date, excluding Sparky's bill:

Foundations	£70.00
Blockwork	£175.00
Studwork	£170.00
Roofing	£327.00
Ext. cladding	£395.00
Rainwater goods	£60.00
Window	£120.00
Door and frame	£140.00
Flooring	£60.00
Linings	£132.00
Insulation	£45.00
Electrical work (excluding the final connections)	£140
Total	£1834.00



Builder's polythene, fixed behind the inner lining, keeps condensation at bay

dedicated lighting on individual machines or benches. Anglepoise lights are useful in these situations and can easily be plugged into the mains circuit, so bear them in mind when sorting out your socket needs.

Lighting circuits can get pretty confusing, especially if you have a lot of independently switched units. I went for a very simple circuit, basically just a single feed from the fuse box round in a loop to each fitting and on to a single switch which controls the lot. The cable is again twin and earth, but this time only 1.5mm, as a lighting ring doesn't draw as much power. Run the cable around the roof space, fitting noggins to the appropriate positions for the light fittings, and drop a looped tail down for each light. Before the fittings can go up, the ceiling boards are fitted. Once this is done, the fittings are wired up in much the same way as the power circuit, each terminal having an infeed and outfeed cable.

The Mains Supply

Connecting to the main house supply and the workshop fuseboard is something I wasn't prepared to do, so I employed a

Useful tools

Strip and crimp tool

If you're going to be doing the basic electrical work yourself it pays to get a decent wire stripper to keep everything neat and tidy – and safe – behind the socket covers. Axminster carry a range of these, from £7.95 for a basic tool to £90 for one capable of stripping even 10mm armoured cable. A basic but heavy duty one like that shown will strip cables from 0.13mm to 8mm.

£14.220 ☎ 0800 371822

Running the cables and lining the walls



04 Cables for lighting should be run in the ceiling, dropping down to switches and fittings as appropriate



05 Even in the roof space keep the cable runs clipped back and tidy, and out of reach of errant nails



06 Drill the cables through studs and joists, ensuring the holes are large enough not to chafe them



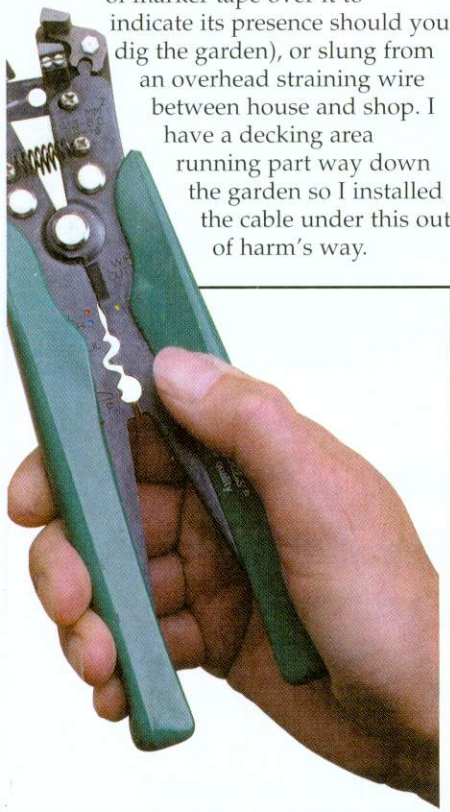
07 With the electrical carcasing complete, you can board out the workshop, cutting holes for pattresses



Three phase sockets are red, 16A ones blue and 110V ones yellow

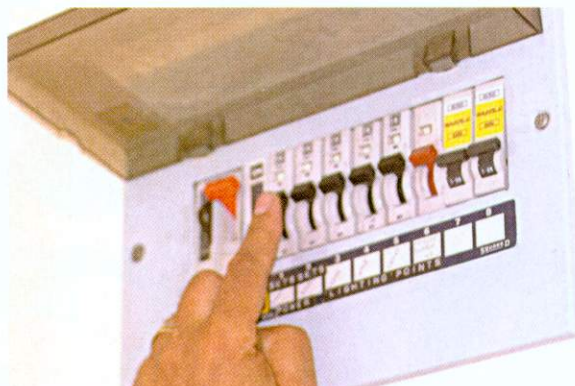
professional electrician to make sure everything was safe and up to correct regulations.

The supply to the workshop is armoured 30A cable, the additional amperage allowing for the drain of power when running supplies over a distance. For safety's sake this should be sheathed in a protective conduit and dug into a trench back through the garden (with a strip of marker tape over it to indicate its presence should you dig the garden), or slung from an overhead straining wire between house and shop. I have a decking area running part way down the garden so I installed the cable under this out of harm's way.



Readers' Workshops

Electrical engineer **Ian Dalziel** considers the basic electrical needs for a home workshop



Any workshop feed should sit on a dedicated circuit on the main house distribution board

Most homes in the UK are supplied with single phase electrics on a 100A supply, which is then distributed via either a fuse box or circuit breaker board. Some will even have an ELCB (earth leakage circuit breaker), now standard fitting in all new homes and factories.

When considering the power demands for your workshop, determine what equipment you will be running at any one time. As an example, a 2hp table saw and 1hp dust extractor will obviously be drawing down 3hp, and will require firstly either a dedicated and suitably sized breaker or fuse for your main household distribution board, preferably 45A, followed by a heavy duty cable running to your workshop. The latter should preferably be 10mm three-core wire, armoured and dug into a trench at a reasonable depth. The longer the run the heavier the cable has to be.

For my own workshop I fitted a lock-off stop button inside the house and also inside the workshop, so that if I forget to isolate outside I don't need to go out to do it.

Once you've brought the cable into the workshop,

wire it up via another distribution point (breaker box), with an ELCB if the house distribution board doesn't have one. Ensure a minimum of one mains isolator and two distribution breakers, preferably three if you need 16A supplies. One will be for lighting and one for sockets. Lighting only requires a 6-10A fuse or breaker, but a 240Vt ring mains circuit will require a 32A fuse or breaker,

If, like me, you have some 3hp equipment, you'll require another 32A fuse or breaker for 16A supply sockets, easily available from electrical distributors. These are easy to identify as they look like a 110V plug but are blue instead of yellow, and should be sited close to your heavy duty equipment.

Siting sockets is very important. Do a rough sketch of where you will put stationary equipment such as bench drills, grinders, etc, and install your sockets so they are within easy reach of the on/off switch.

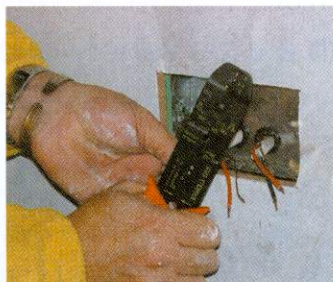
Also consider putting sockets on your ceiling or trusses, near where you think your main work area will be, for sanders, etc. A cable hanging from the ceiling is easier to work around and less prone to damage. I have also fitted a foot switch to my table saw. I must have my foot on this the whole time the machine is running, so if I suffer a dizzy spell, blackout or get a kickback, I know the saw will stop pretty quick.

If you use a lot of 110V power tools, consider putting in a 110V supply, sockets for which are available from retailers. Wire them in a similar fashion to a ring main but make the final wiring to a transformer hidden under a bench.

Finally, any power tools with ceramic plugs should be changed for safer and more modern rubber ones as ceramic is so easily cracked or broken.



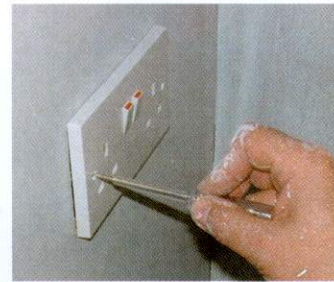
08 Measure or mark out the apertures carefully so that the back boxes sit neatly in them. Fix the boards in place



09 Now you can cut the cable loop at each socket and strip back the wires ready for wiring up



10 Make sure there are no exposed bare wires as you connect to the terminals. Sheath the earth wires



11 There should be enough spare cable behind the finished socket to allow you to remove the cover if needed

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Router tables

There seems to be no end to the amount of accessories available for the ubiquitous router. **Phil Davy** investigates five new tables for turning this essential power tool on its head



Most woodworkers will want to mount their router upside down in a table at some stage. There are plenty of advantages in doing this, whether it's for accuracy, greater control or safety in certain situations. When moulding narrow pieces of timber it's safer than using the router hand-held. It leaves both hands free to feed the workpiece against the rotating cutter. With featherboards or hold-downs applying side pressure, there's little risk of a flaw at the start or end of the cut, as can sometimes happen when using the router from above.

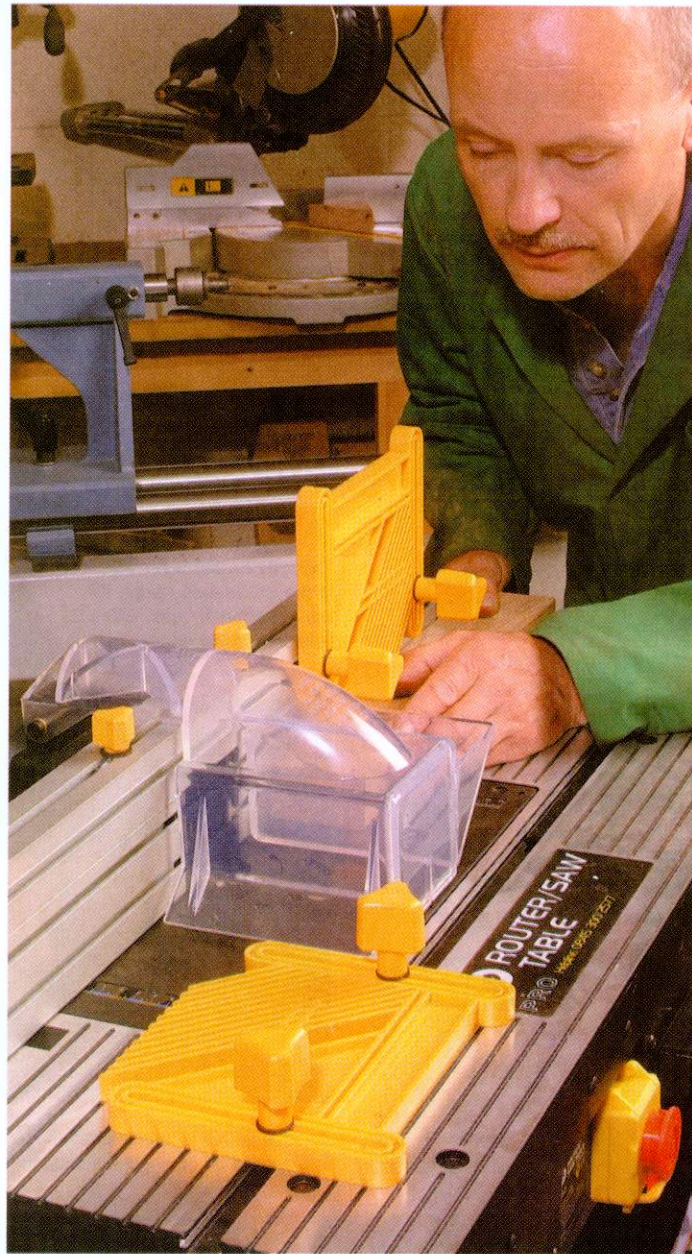
Large diameter cutters (more than 40mm) for $\frac{1}{2}$ in routers are designed only to be used in conjunction with a table, as they would be uncontrollable in a hand-held machine. Panel-raising cutters are an obvious example, their peripheral speed and size making them unwieldy.

Spindle Moulding

Some $\frac{1}{2}$ in routers are so large they are only really manageable inverted. This is often the case with older models which may not be fitted with soft-start electronics. When you switch one on there can be quite a kick. Most newer $\frac{1}{2}$ in machines reach full speed more slowly. Even so, some of them are still big and bulky.

With a $\frac{1}{2}$ in router fitted in a substantial table you'll be able to do work similar to that of a small spindle moulder. All the tables tested have a sliding mitre guide, either included or as an extra. This means you can cut grooves, rebates, profiles and so on across the grain accurately.

You are not restricted to straight routing work, either. Fitted with a bearing-guided cutter you'll be able to do template work incorporating curves. For this you'll probably need to remove the



fence, which is generally attached with a couple of locking knobs.

If you have just one router then you'll obviously need to remove it from the table for hand-held routing work. A second machine permanently fitted will save you a lot of time. This does not need to be large and expensive, either. A cheap $\frac{1}{2}$ in router without the bells and whistles may do the job, but you'll be limited for depth of cut. Not all the tables

we tested accept smaller $\frac{1}{2}$ in routers, though, so check first. You can get round this problem on a table with a removable insert by making your own plate. It has to be the right thickness, but all you need do is cut a panel to size, then drill to fit the baseplate hole configuration.

Fitting a Router

Routers are mounted in these tables either by clamps or machine screws. There are

pros and cons with both methods. Some tables have a drop-in insert plate, which is screwed into a recess in the top surface. Depending on your router, you may have to drill out the insert to suit the mounting holes on the base of the tool. These holes will need to be countersunk so the screw heads are flush with the surface. Initial marking out should be accurate, and it's best to use a bench drill. If the holes are not spot-on you may have problems lining up the screws.

Clamps fit over the edges of the router baseplate and are adjusted with a spanner or screwdriver. The advantage is that you can fit a router quickly, but if you need to remove and then refit it frequently, this can be a bit of a pain. With this method you should be able to fit virtually any router, irrespective of baseplate size and shape.

The screw-mounting method guarantees the router will be mounted in precisely the same position each time. This is not the case with clamping, though.

All these tables either have an NVR switch fitted as standard or as an extra. You plug the router into the socket alongside the switch, a further cable running from the switch itself to the mains supply. The router must be left switched on, which can be a problem if it has a double-action trigger. You can either wrap a Velcro strap or cable tie around this to keep it activated, though.

Testing Tools

We tested five new router tables, from under £50 to over £400. Some are DIY-rated, most are professional. A variety of routers were fitted, including a Trend T3 and T5, Ferm FBF6E, DeWalt DW625, Bosch GOF1300ACE, CMT 1850 and Performance Pro CLM2050R.

Charnwood W012

£49.00 ☎ **0116 251 1550**

www.charnwood.net

Charnwood's new W012 table is compact and sits neatly on the bench. In fact, you could store it underneath when not required. It's much smaller than the others tested and easiest to set up, with just four bolts that screw through the laminated MDF table into the steel leg sections. These have rubber feet so it stays put on the benchtop.

You can only fit small, $\frac{1}{4}$ in routers, as the centre cut-out in the 8mm thick table insert is only 36mm in diameter. To mount the router you need to drill out this insert. The one on our test table was badly bowed, which could lead to inaccurate routing. It's fitted to the table with four screws. Table size is 430x400mm.

Ten assorted bolts are supplied, so you should find a couple that fit your router. I fitted Trend and Ferm machines with no problems.

The rather basic fence is L section aluminium, and faced with 8mm MDF. A pair of locking knobs behind fit threaded inserts in the table, with a choice of two positions. Two plastic hold-downs are mounted on steel arms, and allow some springing against the workpiece. A clear guard is fitted on a steel rod behind the fence, but adjustment is limited. For dust take-off, a 40mm plastic tube is fitted at



an angle behind the fence.

A cheap sliding mitre fence is included and runs in a groove in the table. There's also a plastic featherboard which locks into the channel with knobs. An optional NVR switch is available and bolts to one of the leg sections.

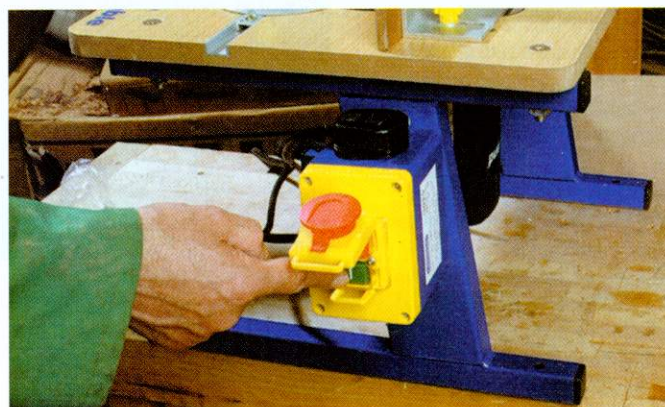
If you want to use a $\frac{1}{4}$ in router, Charnwood have two bigger tables in their range, both costing under £100.

The W012 table is the smallest in the Charnwood range. It's designed for DIY use, which is reflected in the price

GW verdict

- ⊕ Compact, easy to assemble
- ⊖ Only accepts $\frac{1}{4}$ in routers

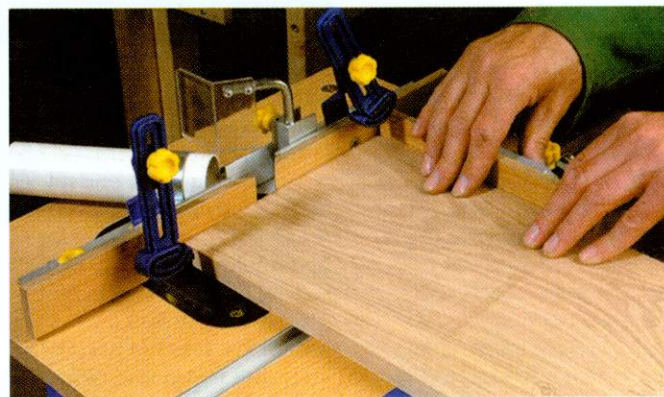
Value for money
Performance



An NVR switch is not included, but is available as an option at £14.99. This is mounted on the right leg support



Designed for small $\frac{1}{4}$ in routers, there are no pre-drilled mounting holes in the plastic table insert. You drill this to suit your own router



Hold-downs are basic and not the easiest to adjust. It's possible to machine grooves, rebates and profiles using the sliding mitre fence

Performance Pro CLM1000RT

£129.00 ☎ 0845 300 2577

www.performancepowertools.com

Somewhere between a DIY table and a professional model sits the Performance Pro CLM1000RT. It's unique in this test as it can be used with a circular saw or jigsaw. Two extra steel insert plates are provided for mounting suitable tools, which are clamped in place beneath the table.

Also included in the price is a stand from thin sheet metal. I found this really fiddly to assemble (with 60 bolts), but once together it's quite sturdy. This provides plenty of storage with three shelves, plus racks for storing $\frac{1}{4}$ in and $\frac{1}{2}$ in cutters at each end. Useful, but these are a tight fit so you need to watch your fingers when removing bits.

The ribbed cast alloy table has plastic end supports and is secured to the cabinet with four large knobs. It's easy to remove for benchtop mounting. Below the table is the NVR switch, mounted on a rather flimsy front panel. Displayed alongside are hole configurations for Performance Pro routers.

For mounting a router there are 18 countersunk holes in the 15mm thick plastic insert plate. You may have difficulty with $\frac{1}{4}$ in machines, as the cutter aperture is 71mm diameter. It would be possible to make a replacement plate from sheet material, though. I fitted a Performance Pro CLM2050R router, which has the most

common three-hole pattern. A plastic inner ring is provided.

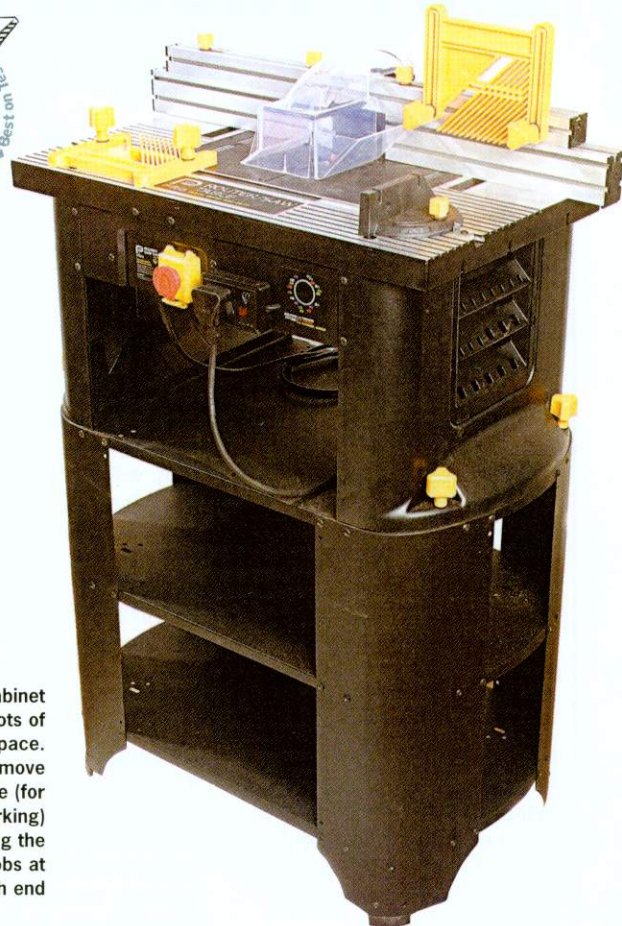
There are T slots in the table for the mitre guide, which is basic but sturdy. Two plastic featherboards are supplied, one of which is locked into the table slot, the other fitted onto the fence. There's 130mm of travel adjustment.

The two-piece extruded aluminium fence is 102mm high, with the sections linked with a bar across the top. Locking and adjustment is a cinch with easy to use knobs. The dust outlet at the back is 70mm diameter. A bulky clear plastic guard is hinged and is flipped back for cutter access. It's bevelled at the leading edge, so will lift as you pass the workpiece underneath. It hits the deck with a bit of a clunk afterwards, though, which could become annoying.

At £129 all-in this table is excellent value and should suit many home workshops. If the router plate was steel like the two saw inserts, it would be even better.



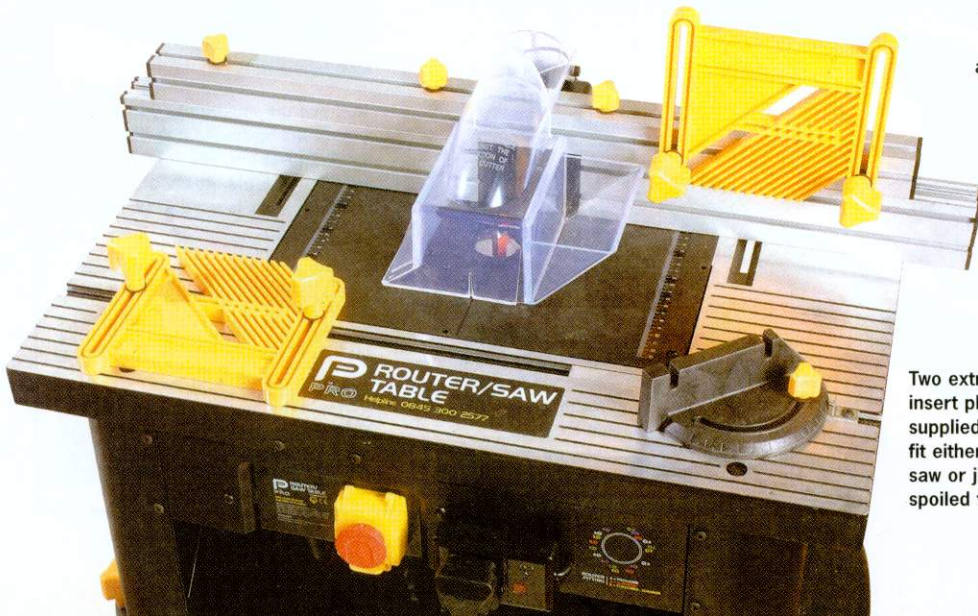
The switch can be padlocked off, but the mounting panel is rather flimsy



The steel cabinet provides lots of storage space. You can remove the table (for benchtop working) by unscrewing the yellow knobs at each end



There are plenty of holes for mounting the router in place. A snap-in ring is provided



Router cutters can be stored at both ends of the table



Two extra steel insert plates are supplied so you can fit either a circular saw or jigsaw. You're spoiled for choice...

GW verdict

- ➕ Can be used as a saw table
- ➖ Difficult to fit small routers

Value for money
Performance



CMT Industrio

£399.94 ☎ **0845 604 0064**

www.cmtuk.com

Fans of flat-packed furniture will love the Italian CMT table. Or rather, its cabinet base. This is made from 18mm thick melamine-faced MDF, and assembly is easy using a screwdriver, even though instructions are poor. Steel cross dowels and posts are used for jointing the panels. Door hinges are substantial and are unlikely to fall apart after a few weeks. There are adjustable feet for levelling the cabinet.

The phenolic table is 20mm thick, very solid and completely flat. Measuring 790x590mm, it's secured to the cabinet with four hex bolts, or you can fix it to your own base. A 60mm wide section of extruded aluminium is fitted to the front of the table, with two T slots to accept a sliding mitre guide. This is an extra, at about £13.

You have a choice of insert plates for mounting the router. If you own a CMT 1850 router there's a plate ready drilled with four holes to suit the baseplate. For any other router you'll need the alternative insert, which has to be drilled out. Cutter height loss is 12mm, as the router cut-out is recessed.

A two-piece aluminium ring is included, giving a choice of 68mm or 110mm diameter cutter openings. You can set the plate completely flush with six grub screws for levelling, a useful feature.

The heavy fence is very sturdy from aluminium L section. It's mounted on a nylon block at each end, tightened against the table edges with locking knobs. Aluminium metric scales across both ends help to align the fence accurately. This is 910mm long and 103mm high, with 20mm thick dense nylon facings. These slide nicely in towards the cutter, locked with knobs at the back. A plastic dust hood clips into the back of the fence (50mm dia.) and there's an adjustable vertical clear guard that can be fitted in front of the cutter. A second guard is fitted horizontally above the cutter for limited bearing-guided routing without the fence.

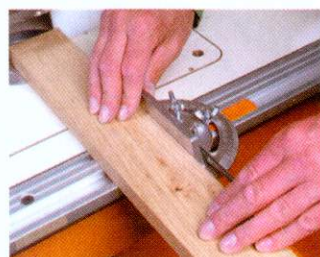
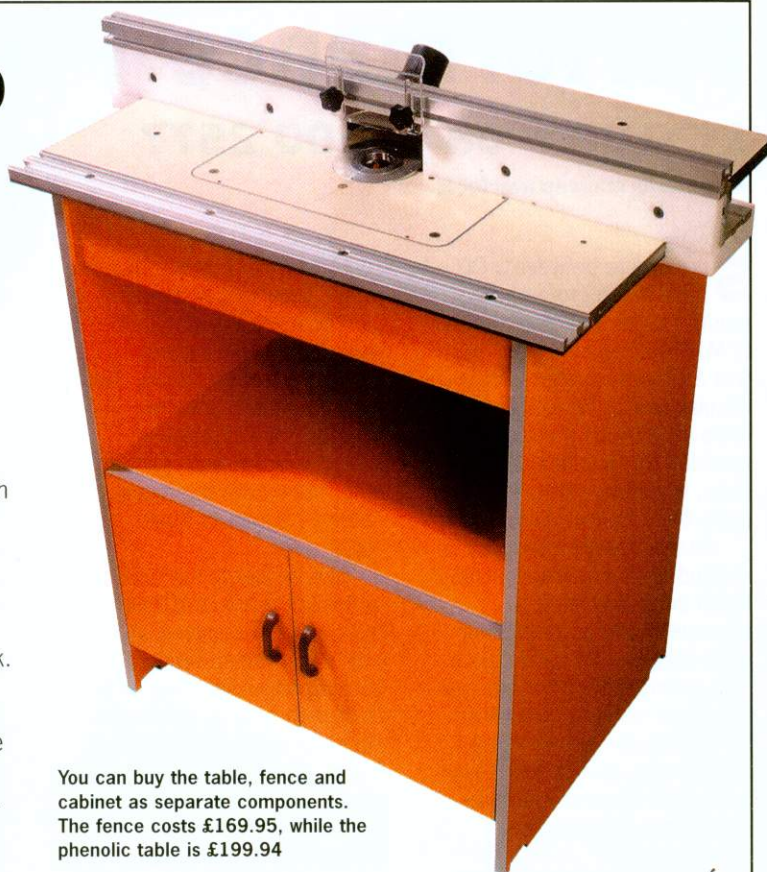
Available as separate components (table, fence and cabinet), we tested the complete unit. An NVR switch unit is not included, but costs

You can buy the table, fence and cabinet as separate components. The fence costs £169.95, while the phenolic table is £199.94

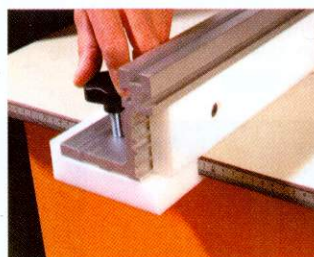
an extra £29.99. A featherboard is about £15.

This is a serious piece of equipment designed for $\frac{1}{2}$ in routers. You could make your own insert plate for a $\frac{1}{2}$ in

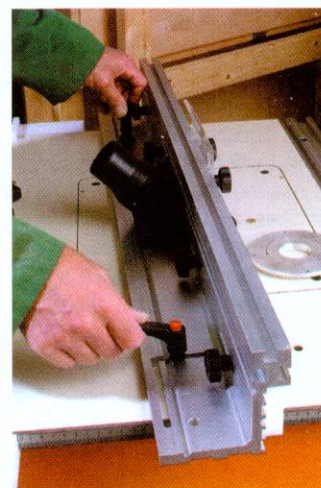
machine if necessary. CMT will be adding further accessories over the coming months to enable you to build a complete system. Expect to see yet more high quality kit.



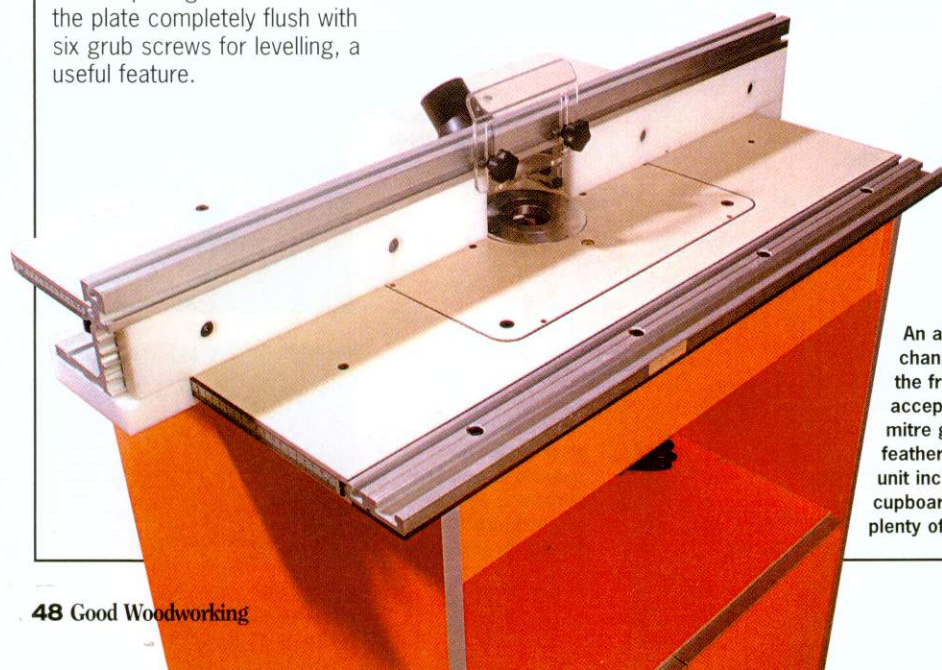
The optional mitre fence and featherboard slide in the aluminium channel on the front of the table



The fence is gripped firmly at each end through hefty nylon blocks that slide along the edge of the table



Remove the end blocks and you can fit the fence via a spring-loaded pivot pin, which locates in a hole in the table. At the other end a Bristol lever is used to lock the fence rigidly



An aluminium channel runs along the front edge and accepts a sliding mitre guide and featherboard. The base unit includes a cupboard and offers plenty of storage space

GW verdict

- ⊕ Build quality. Impressive fence
- ⊖ Only accepts $\frac{1}{2}$ in routers

Value for money
Performance



Record Power RPMS-R

£299.00 ☎ **0114 251 9102**

www.recordpower.co.uk

Certainly the heaviest of the lot, Record Power's new RPMS-R table is built in Taiwan. It takes some time to assemble the legstand, which is solid steel angle. Adjustable rubber feet are fitted and an NVR switch unit fits to a front leg.

You'll need an extra pair of hands to help lift the table into position and bolt it down. The rear half is cast iron, while the 310mm wide front section is ribbed, extruded aluminium and acts as a sliding carriage. A catch at one end locks this in place. Overall table size is 785x563mm, and you'll lose 17mm in cutter height when fitting a router.

The mitre fence fits into a pair of T slots in the sliding carriage, and is locked down with a pair of knobs. A protractor scale means you can set it at any angle, with 45° mitres easy by repositioning the fence in the slots.

A substantial steel hold-down is built into the mitre guide, and this locks timber very firmly. However, as you tighten it down the back of the mitre guide tips back slightly.

Access to the router is good, as you actually lift and tilt the table upwards from the back. A couple of stays hold the table open, while two rubber bungs on the top of the legstand mean it sits flat again neatly. Four heavy adjustable clamps are provided, running in any of four slots so you can position them to suit the router baseplate. They're locked in place with a spanner.

Fitting DeWalt and Bosch

routers was straightforward, although a couple of the slots needed deburring first for the clamps to slide. I tried a couple of smaller $\frac{1}{4}$ in machines, which were fine with packers under the clamps to accommodate the thinner baseplates.

The two-piece fence is from ribbed, extruded aluminium, and similar to that on a small spindle moulder. It's 75mm high, and you can set the outfeed fence in front of the infeed fence, necessary if you want to use the set-up for planing edges of timber. Rear adjusters make this easy. Two vertical knobs lock the fence down on to the table, with threaded holes giving a choice of three positions.

A 60mm diameter steel dust hood is built into the rear of the fence, while a couple of solid posts support flexible steel hold-downs.



The sliding carriage and heavy hold-down make cross-grain routing easier, and is particularly good for tenoning. You need to check the mitre guide setting with a square, as there are no markings to help set this accurately on the carriage. It's easy to lock for 45° mitres, though

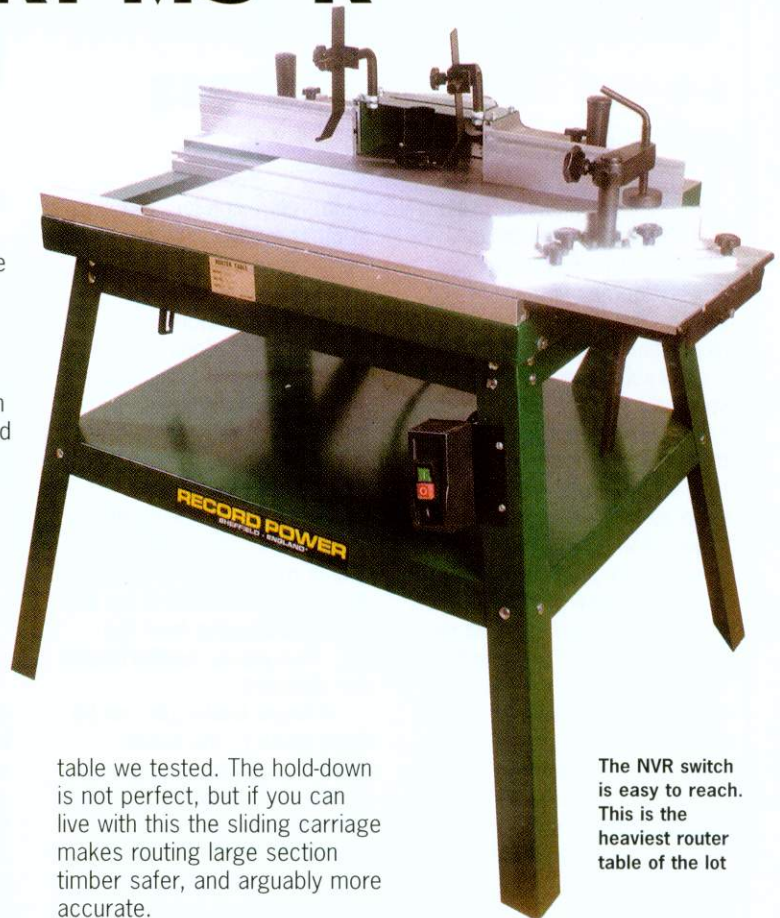
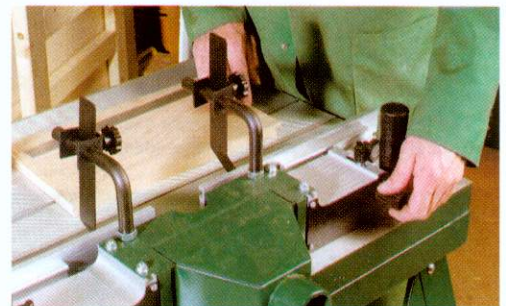


table we tested. The hold-down is not perfect, but if you can live with this the sliding carriage makes routing large section timber safer, and arguably more accurate.

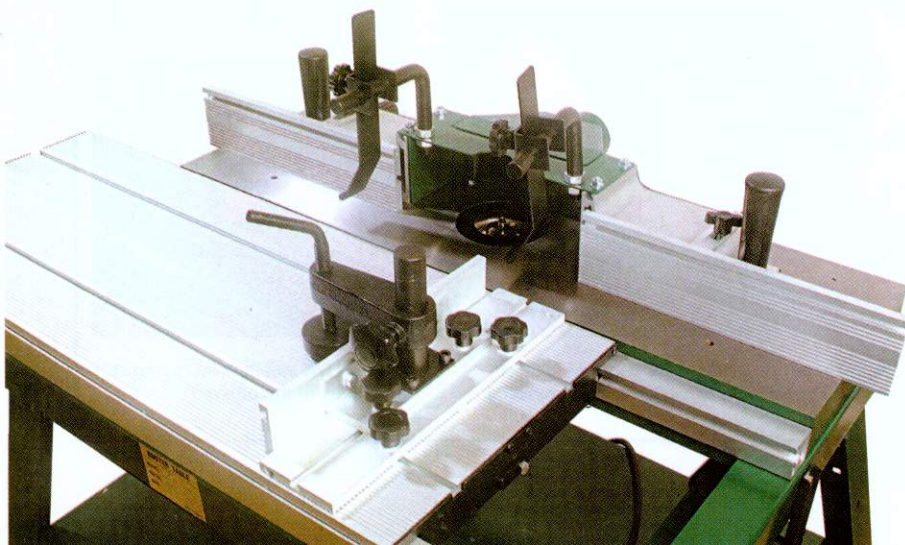
The NVR switch is easy to reach. This is the heaviest router table of the lot



You lift the hinged table from the back for access to the router. This is heavy, although stays are fitted



Like a spindle moulder, each fence can be adjusted independently for front to back travel



GW verdict

- ➕ Sliding carriage, most routers fit
- ➖ Hold-down can tip mitre guide

Value for money
Performance



The only table tested to have a sliding carriage, this can be locked off with a catch at one end

Trend PRT

£440.63 ☎ **0800 487363**

www.trendmachinery.co.uk

Hot off the press is Trend's PRT brand new table.

Definitely a professional piece of kit, it comes virtually ready to use. The ribbed extruded aluminium table is mounted on a steel subframe, with welded, splayed tubular steel legs. You can use it on the benchtop, or fit the four extending legs for floor mounting. These are dead easy to fit and are locked with sturdy knobs. To adjust for uneven floors you simply withdraw one leg a bit further as necessary, then re-lock. Rubber feet are fitted. The whole set-up is extremely stable, and access all round for the router is particularly good. An NVR switch is fitted at the right end and a Velcro strap provided for the trigger.

Three countersunk holes are provided for router mounting, and fit the Trend T5 and T9 machines, plus several models from DeWalt, Bosch, Makita and so on. This is arguably the most popular $\frac{1}{2}$ in router hole configuration. If necessary you can remove the

centre extrusion and redrill to fit other models. Full marks to Trend for giving a router compatibility chart in the manual. A pity more manufacturers don't do this...

Although the table is flat and rigid, its thickness is just 8mm, which means minimum cutter depth will be lost. An important consideration.

Three T slots along the front of the table enable the sliding mitre guide to be used, though I was unable to try this as it was missing from the kit... Two plastic featherboards are standard.

A brass lead-in pin can be fitted close to the cutter aperture, which has four plastic snap-in rings of varying internal diameter. The range is from 90mm down to 21mm. Metric scales across each end of the table can be calibrated, although you'll need to use a straightedge against the fence to read off the measurements accurately.

The two-piece extruded aluminium fence is 110mm

high. Each section locks to the substantial rear alloy dust hood with four knobs, and can be adjusted completely tight against each other if need be. Above the fence is a hinged hold-down and clear guard. This works well and can be locked down with a swivel lever once set.

There are three pairs of elongated slots in the table to

Trend's latest table is designed solely for $\frac{1}{2}$ in routers. Construction is mainly from extruded aluminium and steel



The Trend table is the only one with a lead-in pin. This is handy for routing with bearing-guided cutters



Access to the router is pretty good. Legs can easily be removed to lower the table for benchtop routing



You tilt back the clear plastic guard and hold-down for cutter access. A lever locks it in the closed position



Slots enable the fence assembly to be fitted in three positions. The centre table extrusion can be removed

accept the fence, so there is plenty of front to back travel. A second featherboard is included and fits into the front table slot. There's even a plastic pushstick thrown in.

Trend's PRT is a beautifully-built pro table. It's sturdy but still easy to move around, the removable legs making it more portable than most. I tried it with a DeWalt DW625 fitted and found cutter changing and depth setting pretty straightforward. You'll need to save up your pennies for this one, though.

GW verdict

- ⊕ Build quality. Good cutter height
- ⊖ You may need to drill for router

Value for money
Performance



Trend's NVR switch is more robust than most of the others

What you need to know about router tables

Make	List price inc VAT	Overall table size mm	Working height	Distance from bit to front edge	Other tools?	Fence* travel	Max cutter opening	Warranty
Charnwood W012	£49.00	430x400	289mm	254mm	x	60mm	36mm	2 years
CMT Mk11	£399.94	790x590	900mm	250mm	x	460mm	94mm	1 year
Performance Pro CLM1000RT	£129.00	684x457	985mm (370mm high without stand)	270mm	✓ (saws)	158mm	71mm	3 years
Record Power RPMS-R	£299.00	785x563	848mm	428mm	x	215mm	90mm	5 years
Trend PRT	£440.63	650x550	860mm (355mm high without legs)	274mm	x	163mm	90mm	1 year

* Fence travel is maximum possible front to back, using all mounting positions in table

Dust extraction

It's important to use a dust extractor connected to all these tables. The fact that the router is sitting upside down means it will rapidly fill with waste material as

you make a cut. Too much debris clogging it and the tool could overheat...

There is no standard dust outlet size. Every table is

different, ranging from 40mm to 70mm (outside diameter). You can get hose adaptors from Axminster ☎ 0800 371822 or Trend ☎ 0800 487363.



FINAL VERDICT • Router tables

None of these router tables are perfect. If you could combine features from most of them you'd probably have the ultimate routing system, though. The **CMT**, **Trend**, **Performance Pro** and **Record Power** models are designed for $\frac{1}{2}$ in routers. With a bit of ingenuity you could get a $\frac{1}{4}$ in tool to fit most of them, apart from the **Trend**. If you want to fit both $\frac{1}{2}$ in and $\frac{1}{4}$ in routers you can only do this easily with the **Record**. You'd need to substitute your own insert plate to do this on the **CMT** or **Performance Pro** models, however.

The **Charnwood** is the cheapest by far, but is only a DIY table for $\frac{1}{4}$ in routers. Even so, build quality is not nearly as good as a similar one we tested from them some nine years ago. The original table was Italian... At least this one is compact and can be stored easily.



The router is mounted on an insert plate in the **CMT**, **Performance Pro** and **Charnwood** tables

The working surface of the **Performance Pro** is quite high, and maybe awkward if you're short. Of course, you can unscrew the upper table from the cabinet and fit it on your own stand.

Cutter projection is significant, unless you buy long-reach cutters for certain jobs. These can be expensive. This is where the **Trend** and **Charnwood** score, as you only lose 8mm by inverting the router. Worst is the **Record Power** where you lose 17mm through the table.

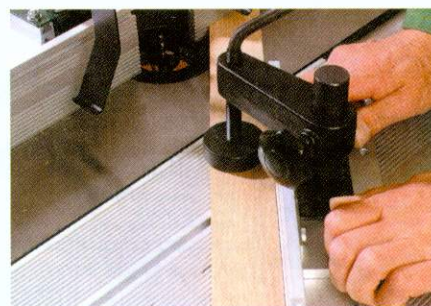
Reasonable cutter access is important. Removing the router to change a bit is a waste of time. Fortunately, with all these tables there's no need to do this. Access is best on the **Charnwood** and **Performance Pro** tables. Although the hinged table on the **Record** is good for fitting the router, I didn't find it a huge advantage when actually replacing a cutter. It's very heavy to lift, and I'm not sure I would entirely trust the end support stays. Even though there are problems with the hold-down, the sliding carriage on the **Record** makes routing heavy timber safer.

I love the fence on the **CMT** table. It's big, heavy and locks solidly. If you want to build your own router table you can buy this component separately. The table itself is pretty impressive too, with a choice of insert plates. It's a pity you've got to pay extra for the mitre fence, featherboard and NVR switch, though.

These add about £58 to the overall cost.

If your workshop is cramped and you're shifting machines around constantly, the **Trend** is worth considering. It's easy to move, but still a sturdy piece of kit. This is an expensive table, but at least everything should be included. The hinged guard and hold-down work well, but to set the fence accurately you'll need a straightedge. The downside is you cannot fit a $\frac{1}{4}$ in router.

Pros and cons of the **CMT**, **Record** and **Trend** tables cancel each other out, so there's no Best on Test this time. The **Performance Pro** is Best Value, though.



The **Record Power** is the only table to have a sliding carriage and hold-down assembly

NEXT MONTH: Glue guns

Ian Wilkie tests a range of glue guns from DIY through to professional level. Find out just what you can do with one, too.

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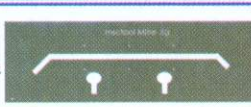


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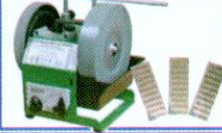
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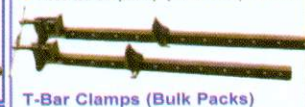
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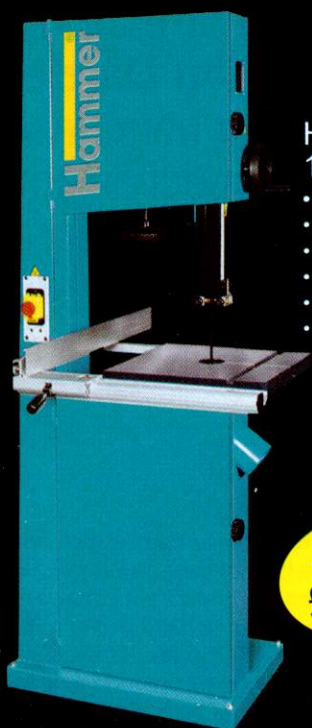
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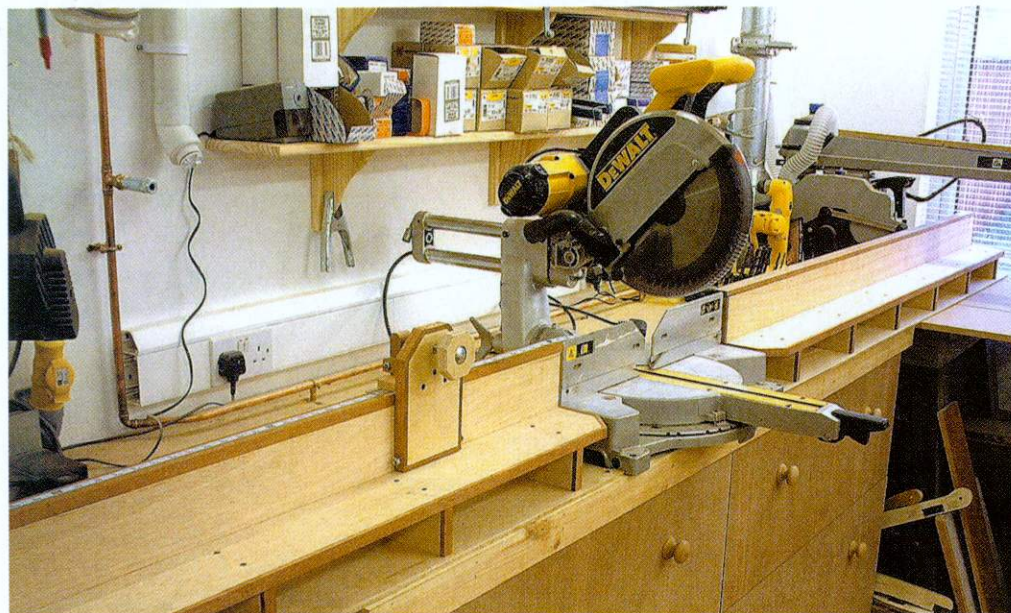
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Mighty extensions



These useful table extensions for your mitre saw from **Ian Dalziel** have a homemade stop mechanism to enable accurate cross-cutting of long lengths

Powered mitre saws have not changed much in the last 10 years. OK, they've been tweaked to give sliding and compound cuts, but the basic table support hasn't altered. They all lack decent tables to support long timbers. There are purpose-built stands for the upmarket machine, but not all saws will fit these.

I decided to make my own, with tables that stay accurate and don't need constant checking for alignment. I was building my own workshop at the time and needed a lot of repetitive cuts for identical noggins. It was a perfect job for the mitre saw, but this had the disadvantage of a very small table.

I looked at a number of stands but they were expensive and difficult to store. So I examined what other people had and ended up with this design. When I want my bench space back I just remove

four screws and hang the tables on ceiling hooks. It only takes a few minutes to realign them with a straight edge.

Making the Tables

1 Sit your mitre saw on a level flat surface, ie, a workbench or MDF across two sawhorses, and measure the height of the back fence from the base, and the height of the table. This revealed 190mm and 90mm respectively for my saw. Subtract 15mm from the first dimension for a hardwood rail on the top edge of the back fences, then 6mm on the second to allow for a 6mm ply base. Then measure the width of your mitre saw table – mine is 130mm.

2 Cut two back rails of 175x1800mm from 18mm ply or MDF, then two tables of 130x1800mm. Mark a line 84mm

up from the bottom of the back rails ($90\text{mm} - 6\text{mm} = 84\text{mm}$). Set up an 18mm straight cutter, either in a table or a hand router with a quality edge guide, and rout an 18mm wide by 6mm dado along the length of both back rails at this table height. Check your fit with the table boards; firm pressure should be all that's needed. Cut the corners off the table boards at 45° on both ends, 50mm in.

3 Check the measurement to the bottom cheek of the table groove – it should be 66mm. Also, when pushed home, the table should project 124mm from the back. Now cut 12 blocks to 66x124mm from 18mm ply; these must be dead square or your table won't be! Once cut, mark out each back rail for six blocks with a sharp pencil, the two end ones 107mm in from the ends and the

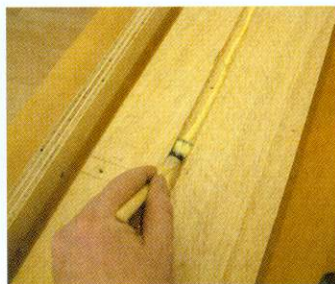
Constructing the extension tables



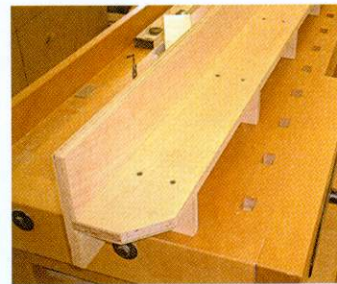
01 Determine the exact height of your mitre saw's table and custom-build your extension tables to this



02 Arrange the groove in the fence for the table so that its top edge will match this exactly



03 Mark out for the table supports and cut these to fit then glue up the fence and table assembly for each side



04 The tables are mitred where they butt up against the saw. Make sure the assemblies are perfectly square

CONSTRUCTION: Extension tables

middle ones at 309mm centres. Drill and countersink the backs and tables for fixing screws (6x40mm drywall screws), two in each face. Sand off any tearout. Finally, drill along the centre of the dado for fixings to hold the fence table in place.

4 Run a bead of PVA along the length of the dado and insert the fence table, make sure that it seats properly along its entire length, then screw together. Glue and screw all the blocks in place, making sure that the fence table is square to the fence back rail

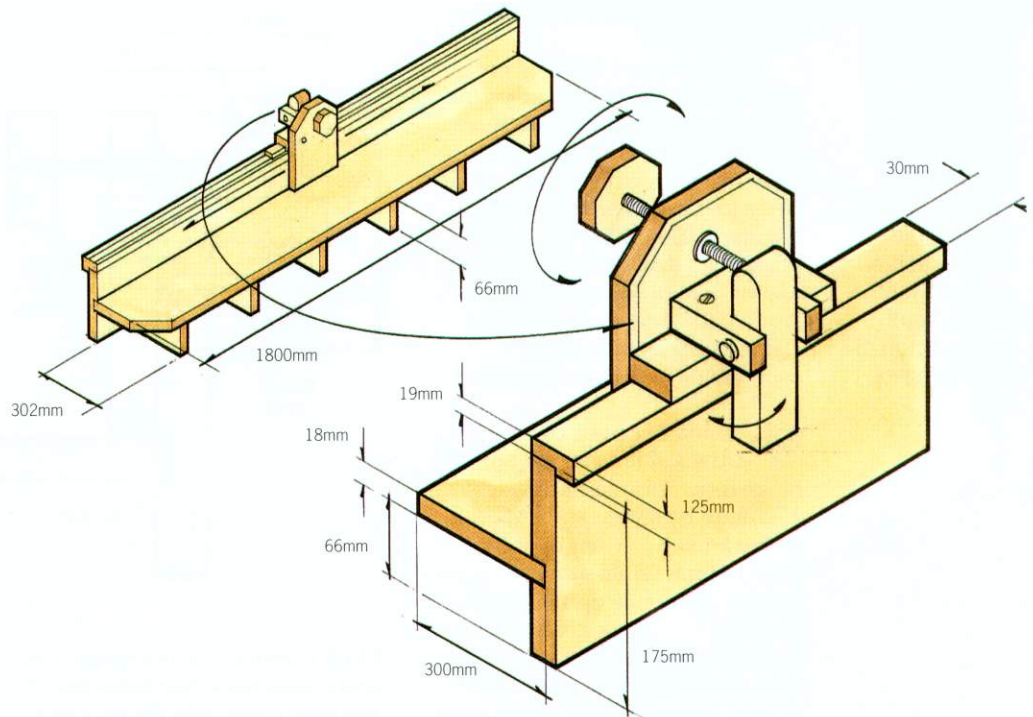
5 Cut two pieces of 30x25mm hardwood to 1816mm for the top of the back rail, then four 18x18mm strips to 1800mm to face off the plywood edges. Rout an 18mm rebate in the top strips 6mm deep, then glue and nail these onto the top of the back rail. Cut, mitre and fit the strips to any exposing edges around the mitre extensions, using glue and brads.

6 Cut two lengths of 6mm plywood to 1800x180mm, and mitre off the front two corners the same as the table. Turn the extensions upside down and screw the ply onto the back rail and blocks. Don't glue them in case you ever need to replace them. Once completed, turn the extensions back round and place them against your saw, when they should be the exact height of your mitre saw table.

Marking and Cutting

7 Cut a piece of 18mm ply to 120mm wide by 180mm high, and mark a centre line from top to bottom on both sides. From this, at the top mark off 30mm both sides and clip off the top corners at 45°. Lip all the edges of the whole piece in 18mm hardwood as before, using glue and brads

Now mark 25mm from the top



The rag bolts project beyond the sides and form the stops, aligning with the cursors

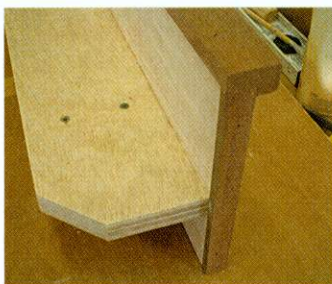
on the centre line and drill a 12mm hole. Tap home a 10mm tee nut on the back face. Mark up 12mm from the bottom of each side and drill a central 5.5mm hole 20mm deep in the edges for the adjustable 6mm rag bolts that act as the fine stops.

CUTTING LIST

Part	Qty	Mats	Length	Width	Thkns
A Table fences	2	Ply	1816mm	175mm	18mm
B Tables	2	Ply	1800mm	300mm	18mm
C Table support blocks	6	Ply	124mm	66mm	18mm
D Table lippings	1	H/w	4000mm	18mm	8mm
E Fence top rail	2	H/w	1816mm	30mm	25mm
F Stop	1	Ply	180mm	120mm	18mm
G Stop lippings	1	H/w	650mm	18mm	8mm
H Cursor block	1	H/w	136mm	30mm	20mm
I Cursors	2	Perspex	50mm	30mm	2mm
J Pivot fork	1	H/w	65mm	45mm	20mm
K Pivot piece	1	H/w	120mm	25mm	25mm
L Knob	1	Ply	75mm	75mm	18mm

Cutting lists give the full length of a piece including the joint but not wastage. Allow 25mm for length and 5mm width and thickness for sawn stock.

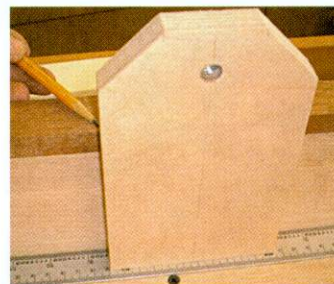
8 Stand the stop block up against the fence of an extension table, on a 3mm spacer (most adjustable square rules are about this size). Draw a line across the back face to align the runner along the back rail. Cut a piece of 30x20mm hardwood to 136mm



05 The top of the fence has a wide lip, rebated to fit the board. Face other members to match their thickness



06 Shape the stop piece and set out and drill for the T nut that accepts the locking screw before lipping



07 Raise the stop about 3mm and mark the fence height on the rear face for the rear assembly



08 Rout a groove the length of the cursor block to clear the tape then rout the ends to accept the perspex plates

MATERIALS YOU'LL NEED

Use 18mm ply or MDF for the tables. It is not essential to lip the edges but this makes the tables look smarter and protects the corners better. Any hardwood will do. You'll need a scrap of 2mm perspex and

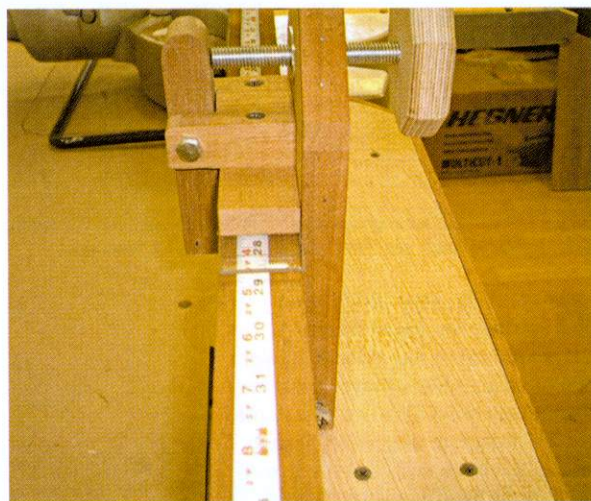
and rout an 18mm wide dado 3mm deep along the centre of the underside to clear the tape measure that will be fixed to the top of the fence.

Next, rout out 3x25mm on both ends across the grain for the 2mm Perspex. Cut two pieces of Perspex to 30x50mm and mark them at 40mm with a utility knife. Use a black marker to highlight the mark. Clamp the Perspex in place, then drill and countersink to fix it into position. Align the hardwood along the pencil line clamp in place, then drill, countersink and screw together.

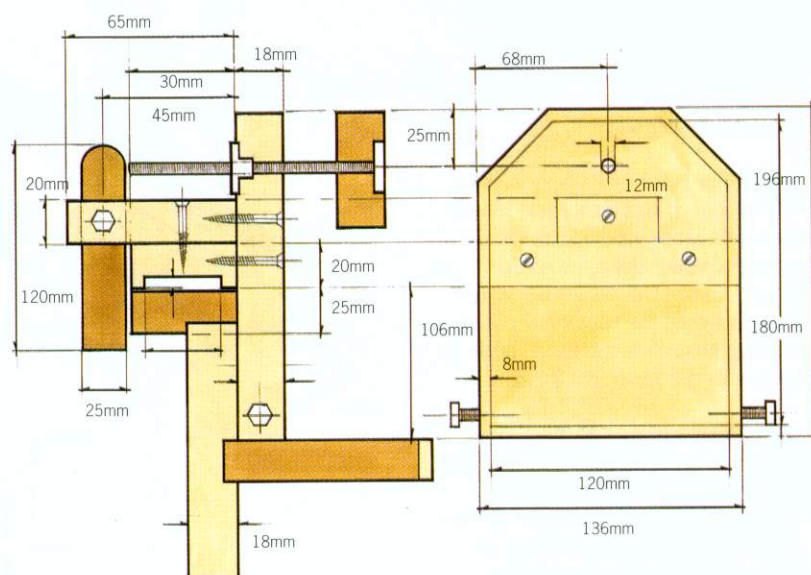
9 Cut another piece of hardwood for the pivot piece hinge fork. This measures 45x20mm by 65mm long. Mark a centre line up the length of the block, turn it on its side and again mark a centre line up the length. From the end mark down 45mm and drill a 6mm hole through the side of the block. Turn the block onto its face and mark 30mm from the front then 13mm either side of the centre line to give you a 26mm wide slot for the pivot arm. Cut the slot with a jigsaw and tidy up the edges with a file.

Clamp on to the top of the back rail runner using the stop

Rotating the knob pivots the back arm, locking the stop in position



DETAILS: Stop construction



block's centre line as a guide. Drill and countersink two holes into the top then screw into the back rail runner and put one screw in from the front, again using the centreline as a guide.

10 Cut a piece of 25x25mm hardwood to 120mm for the pivot piece and mark a centre line. Measure up 70mm from the bottom and drill a 6mm hole through the centre. Clean up any untidy edges and, using a 6x55mm bolt, install into the pivot piece with fork.

11 For the stop block knob, cut a piece of 18mm plywood to 75mm square and mark the centre. Drill a 10mm hole for a 10x100mm coach bolt, then clip off the corners. Use a 6mm radius round over in your router to round off the edges on both sides. Hammer the coach bolt into place, then thread this into the stop block. Install the two 6x25mm rag bolts on either side of the block.

Cleaning up

12 Using a laminate trimmer or a small router with a flush-trim bit, run along the top of the back rail to ensure that the hardwood is flush with the plywood. Then use a chamfer bit to clean up all the sharp edges of the facings

Using a long straight edge, align both tables either side of the saw and screw down into position through the 6mm base plywood. Four screws on either side should be enough to hold them in situ.

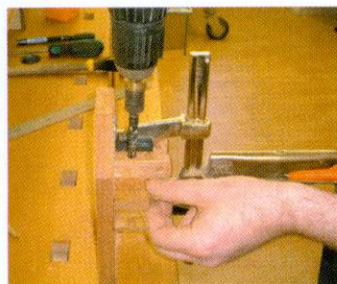
13 To install the self adhesive tape measure, measure off 400mm from the blade and, with a sharp pencil, mark the top of the back rail. Clean the top of the hardwood then align the 400mm mark on the tape measure with the mark and stick down with firm pressure, keeping it central the whole length of the hardwood back rail.

Finally, fit your stop block and fine tune this to your mark.

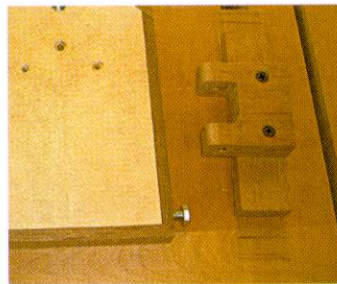
Assembling the stop block



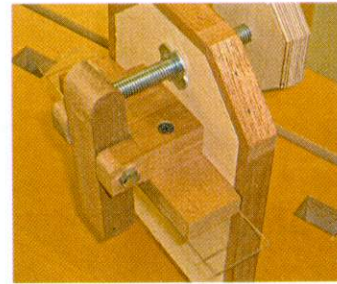
09 The perspex cursor plates should be recessed in by 1mm to clear the tape on the top of the fence



10 Screw the pivot fork block to the top of the cursor assembly and attach to the stop block



11 The rag bolts on the main stop block will be adjusted to align with a cursor scribed across the perspex



12 The finished stop block. Screwing in the bolt pushes on the pivot bar and locks the stop onto the fence

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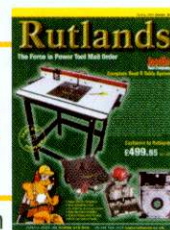
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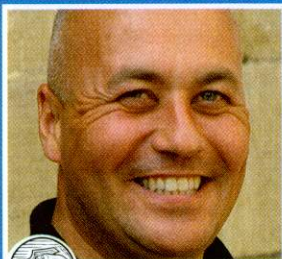
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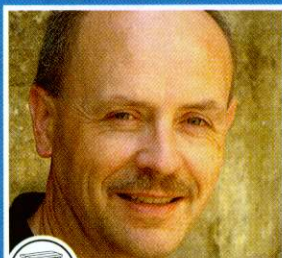
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Our experts answer questions on cutting worktops, inlaying veneer and foot controls for a fret saw

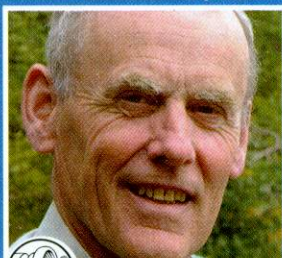
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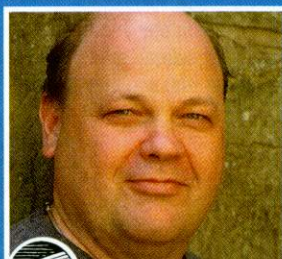
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Cutting corners



I'm about to fit a new kitchen and intend to hire a worktop jig to cut joints. Unfortunately the corners are not 90° but run beyond at an obtuse angle. How can I make sure that the angles are correct before cutting the joint? Do I require any guide bushes, and what size router bits?

R. Pearce, Essex

Cutting the joints in a worktop can be hairy, especially as mistakes are costly! Even so, as long as you are methodical in your approach it is quite a simple operation to cut the joint out of square.

Start by cutting the first through piece of worktop to length. This will be the piece that will be routed along its postformed edge to accept a shorter piece butted into it. Position the jig using the supplied location pegs to rout the

joint perfectly square. Don't forget to orientate the cutter to the joint correctly to prevent chipping. If the router is cutting away from the laminate the worktop needs to be flipped upside down so that it cuts into the laminate. Rout the slots on the underside for the 'dog bone' bolts at the same time.

Put the worktop back into position and cut the next piece that runs at the correct angle to the joint. Leave this oversized by about 50mm and drop it into position. Depending on which way the first part of the joint was cut, ie, face side up or face side down, the worktop will need to either rest on top of the first one, or be slid underneath it.

Make sure that both pieces of the worktop are pushed back to the walls and in the correct position, then strike a pencil line around the pre-cut joint. This will provide the

perfect joint to correspond with the walls.

Cut the bulk of the waste away with a jigsaw before routing the final cut. Use the jig with the pins to position the part of the cut where the roll starts, but pull the jig around to line up with the mark made previously. Drop the router into the slot with the guidebush in position and drop the cutter so that it touches the surface of the worktop. Line up the jig so that the cutter just grazes the line, checking at both ends of the jig to make sure it strikes perfectly.

Once you are happy, clamp it in position and make the cut. Cut the other half of the dog bone bolt slots and drop the top into place.

You should now have a parallel joint line with the tops touching the walls. You may find that the curve on the postformed edge is very slightly open on an obtuse angle or

Routing inlays



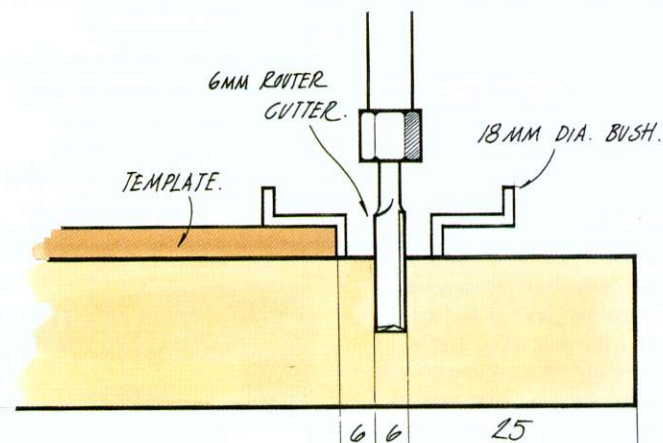
I want to inlay a 1/8in veneer band in a piece of ash 1in from the edge with a router. Can you tell me how to do this.

E.H. Cornwell, Essex

As you might expect, routing an inlay into a table top, where the edges are straight, is easy, but trying to do the same on an irregularly edged item can throw up a few problems. There are two basic ways of dealing with the matter – using a guide wheel and using a bush and template.

Many routers can be fitted with a single-wheel fence accessory. This replaces the standard straight fence and allows you to follow an irregular curved shape at a fixed distance from the guide wheel (you could also make a wooden version of this). This can be very effective but suffers from one drawback, notably that you must keep the fence's central axis at 90° to the work at all times or the inlay groove will drift and not remain at a fixed distance from the edge. This is relatively easy with a simple curve but not so following an irregular line as you must keep adjusting the angle of the router to suit the curve.

I'd be inclined to forget the



guide wheel and concentrate instead on using a guide bush and template. With this you'll need to have a guide bush for your router and make up a suitable reduced template appropriate to the relationship between the cutter diameter, the guide bush diameter and the inset from the edge. The drawing should make this clear, based on an 18mm bush and a 6mm cutter.

Of course, you'll need to make an accurate template and the best way to do this is to make a full sized template from the original, then reduce this to the appropriate size all round. Strike vertical and horizontal axes across this first so that you can reset it

exactly onto the centre of the original later. To retain the accuracy, reduce the edges with a mixture of bearing guided cutters. For example, to reduce by 25mm, use a 12.5mm rebate cutter to cut a rebate in the edge, trim back to the shoulder cut from this with a guided trimming cutter, then repeat the operation.

Set the finished template on your original board and align the axes on both, securing the former with double-sided tape. Run the guide bush/cutter assembly all round to cut the groove for your inlay, taking care not to tip the router or allow it to run off the template's edge.

Pete Martin

Delving into detail

A Coffee Table Leg Joint by Jeff Gorman

Hints For Making The Cross Halving Joints

● Although they can be simple to make, these joints are prone to splitting along the line that the drawing indicates. This can even happen when striking one side of the joint to jerk it apart, especially if they fit too tightly. The striking is good practice, better than trying to separate the parts by strenuous waggling, but the inertia of the 'overhanging' part tends to make it want to stay in place while the other moves.

● Half of the cross-halving joint is shown ghosted; the other half is, of course, almost the same except that the cut-out is on the other side. As an insurance against one of those 'woodworker moments' when you remove the wrong part, it would be wise, as is usual, to cut the joints before doing any shaping.

● Prepare the material as usual, but slightly full in thickness, taking care that the opposing wide faces are parallel.

● Cut the notches, checking with a small engineer's square that the notch faces are parallel and at right angles to the face sides and face edges.

● When all other work on the components is finished, finally fit by gingerly planing the reverse faces (ie the faces opposite to the

face sides). If you intend a coated finish of some kind, mask off the glue-receiving areas to prevent any small increase in thickness interfering with your best-laid plans for perfection.

The Leg Joints

● Plane face sides and face edges, ensuring that the wood has not 'diamonded' in storage.

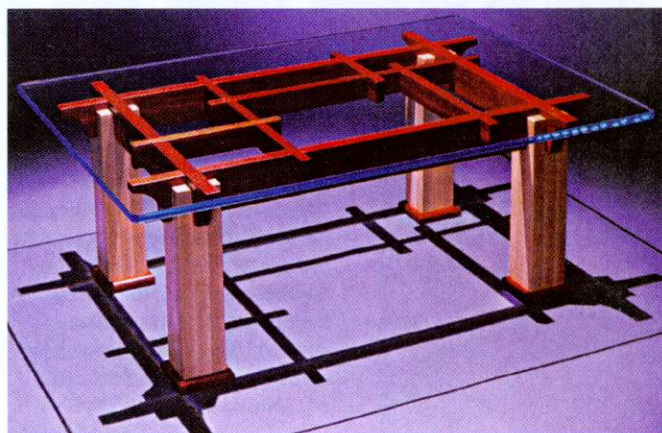
● Since the exact final thickness of each rail will not be known until it is almost complete, avoid the temptation to prematurely mortise gauge the slots.

● To simplify cleaning up the final assembly, it is best to make leg tops come slightly lower than the rail tops. This also anticipates the slight but almost-inevitable long-term shrinking of the rail widths.

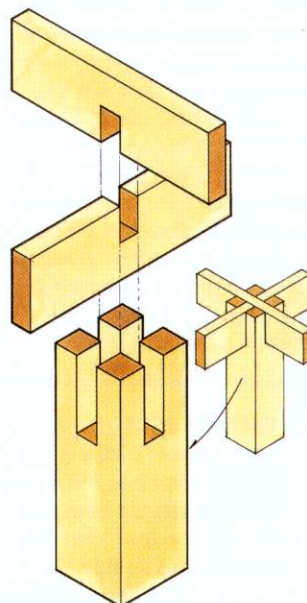
● Before sawing the slots, you might like to bore two intersecting holes (slightly undersized) to save time when paring the lower faces.

● Use the same sawing technique as you would when sawing a tenon or bridge joint, but unless you are supremely confident of your sawing technique, make a small allowance for finishing their faces by paring with your widest chisel.

● When installed, forbid the household from dragging the table. I can foresee splits starting at the base of a leg prong.



This Lattice Coffee Table by Grady Mathews in Maple and Padauk appears in Design Book Seven, The Taunton Press 1996. ISBN-1-56158-1 24-0.



I've shown here the basic form of the cross-halving joint - Veteran GWers who still have their copies can find rather more complex forms in GW 44:53.

nipping on the front for an acute one. Ease the curve of the joint to tighten it up using a fine flat file. Chances are, unless your walls are really out, the gap will be minimal and a proprietary filler will mask it.

As for cutters and bushes, these worktop jigs are designed to be used with a 1/2in cutter and a 30mm diameter guidebush.

Andy King



The Proxxon DSH fretsaw, with two speeds of 990 and 1500 strokes per minute, plus a stroke length of 19mm, it also features an on/off switch that should be suitable for conversion for foot pedal control

use a cheap small router that can be removed from its base and mounted in a 43mm dia drill stand collar to give you accuracy against a fence.

Ensure you buy a cutter with a bottom cut (such as made by CMT or Trend) so that you can plunge the bit.

Pete Martin

Forstner finder

I need a 7mm Forstner bit for a particular job (a short bit would be fine), but it's not a regular diameter-size I can find. Are there any specialist suppliers of such tools, or maybe some firm who will make me one?

Josh Bond, via email

I put your query to Clico who are a specialist manufacturer of Forstner bits. They informed me that the smallest they can realistically do is 8mm, which equates to a 5/16in dia. It is not possible, they reckon, to

grind down an 8mm bit to the size you require as there would be no material left for an adequate cutting rim. Axminster sell 5/16in dia bits, but these then increase in 1/64in increments, which brings us back to 7/16in or 8mm. Their metric bits start at 8mm; quite why I don't know.

Your options to cut a clean 7mm hole would therefore be to use a lip and spur cutter or its precision cabinet counterpart, which are available in 7mm

(Axminster) or a flat bit. The latter are available in 7mm but you'd need to buy a decent quality one as they often suffer from run out.

The centre point may be a problem as this is usually quite long, but this could be filed back to produce a smaller point, especially if you are drilling in a bench drill.

Another alternative if you only need a shallow hole might be to use a 7mm cutter in a router, although you'd need a jig to guide your router into place. Alternatively,

Pedal pusher



I am interested in a variable-speed fretsaw.

All the models I have seen have had the speed controlled by a knob. As I am now very arthritic, I would like to control the speed by means of a foot-pedal, in a similar way to that of a sewing machine. Do you know of any such machines at a reasonable price, or could a foot controller for a sewing machine be fitted? If so, what alterations would be needed to wiring and/or motor?

Edwin Gimlet, Gwent

There are several factors to consider when purchasing a powered fretsaw if you have difficulty in manipulating small knobs because of arthritis. Firstly, blade changing usually presents a problem because many of the machines have small knobs which are fiddly at the best of times.

One way of overcoming this is to select a machine which can use pin-ended blades as well as plain-ended ones. Pin-ended blades simply slip into the blade holder above and below the table, and therefore no locking mechanism is required.

Secondly the on/off switch and the variable speed control knobs are invariably small, as you have already observed. The really effective variable speed fretsaws tend to be very expensive, and the machines at the lower end of the range are often disappointing. I suggest that you consider a two-speed fretsaw which would offer you simple and effective control.

If the fretsaw has a straight forward on/off switch, rather than a magnetic NVR switch, it can be connected directly to a on/off footswitch with no need for any electrical expertise. I do not know of a variable speed footswitch which would be suitable for a powered fretsaw but a footswitch such as that sold by Hobbies of Dereham (☎ 01362 692985) at £26.50 plus p&p would be ideal for a two-speed machine. This would mean that you could set your high or low speed merely by pushing a button, and control the machine by pressing the footswitch. This leaves both of your hands free to manoeuvre the wood for cutting.

A fretsaw I would recommend at a reasonable price, ie, below £200, is the Proxxon DSH at £158.35. This model gives two speeds of 990 and 1500 strokes per minute at the push of a switch. The on/off switch is not an NVR one, making it suitable for use with a footswitch. It has a stroke length of 19mm and a table size of 362x180mm which tilts to 45° for mitre cutting. The throat depth is 400mm and the maximum depth of cut is 50mm.

This is a twin parallel fretsaw action machine which is very well made from cast iron with a machined aluminum table and it weighs 20kg. The dust extraction system, when linked to an extractor, is extremely effective.

BriMarc (☎ 0845 659 0000), will be able to give more information. They also stock pin-ended blades.

Ian Wilkie

Reader to reader

Plastic fantastic



In GW 136 Mr. G.

Skingley asks for

information about

turning nylon and plastics, plus a supplier of nylon.

GLR Distributors Ltd of Unit C1, Geddings Road, Hoddesdon, Hertfordshire, EN11 0NT can supply lengths of PTFE rounds up to 25mm, with larger sizes possibly available on demand, and Nylon 66 rounds up to 50mm. They have a website at www.uk-prime.com/glr distributors and e-mail pete@glrdistributors.co.uk

Richard G. Cook, via email

Major success



I was interested in the

query from Graham

Jefferies in GW 135

regarding renovating a Coronet Major lathe.

I bought my Coronet Major in 1971 for £214.00, and it is still in regular use. The only modification I made, apart from servicing the

motor, was to fit the multi-speed pulley wheels, for the drive belt. With hindsight, I would have sourced a gearbox, which I couldn't afford when I bought the machine.

The drawback with the pulley system of speed changing is that tension on the drivebelt is maintained by the weight of the motor, which has to be mounted on a 'swinging arm' as opposed to the original fixed mounting. It also interferes with the use of the planing attachment, as the original belt for that needs to be changed.

Because the shaft carrying the pulleys was also renewed (a job requiring access to an engineering workshop), I am stuck with this. However, the machine continues to perform well as a lathe, a 10in circular saw, a morticer and a thickness planer, ideal for work too short for my large planing machine. So I would not part with the Major. I would advise Graham to hang onto his too, if he is able to get it working.

Still in regular use, the Coronet Major



The Coronet Major might not have the sophistication of the modern combi-machines, but the motor is extremely quiet, easily powerful enough for light cabinet work and, once set up properly with a TCT saw blade, is capable of extremely fine work. It will rip 2in thick oak with ease, providing a sensible rate of feed is used.

The saw blade will need to have a 1/8in imperial measure bore as I have never found reducing washers to be satisfactory, unless made to a high standard of tolerance. All of those I have used had some degree of eccentricity, so I look after my original TCT 1/8in bore blade!

John Walker, via email

YOUR QUESTION FOR THE GOOD WOODWORKING EXPERTS

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How do you overcome that sticky problem holding up your latest project? What is the best way to tackle that new job you're planning? Ask the *Good Woodworking* experts – they're here to help readers with tips, hints and advice. Jot down your question or problem on this form and send it to us. We'll do our best to contact you with advice as soon as possible and print the answer, which will help thousands of other woodworkers too. If you cannot fit your question on the form, please send an extra sheet.

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Fill out your question then send this form, or a copy of it, to our team of experts at:

Woodworking Answers, Good Woodworking, Future Publishing, 30 Monmouth Street, Bath BA1 2BW

Oak coffee table



Left over oak posts from a barn renovation provided the inspiration for **Mark Houghton's** easy-to-build; heavyweight coffee table

TOOLS YOU'LL NEED

A **biscuit joiner** to joint the table top and a **morticer** or **router** to make the mortice and tenon joints. A **mitre saw** is useful but not essential

After retraining as a cabinetmaker I wanted to replace my existing furniture with items a little more pleasing on the eye. The first thing to go was a wobbly pine coffee table, so I came up with a chunky design that made the most of some very solid oak left over from the renovation of my barn roof

For a piece of furniture to be any good it has to fulfil its purpose. To that end I came up with overall dimensions for the table top of 1400x540mm, which matched closely the length of the existing sofa that the coffee table would be used with. An overall

height of 450mm seemed ideal being neither too high nor too low to cause backache in use. The chunky leftover timber dictated a solid looking design, but to add more visual impact I opted to fit a recessed panel in the centre of the table. To give the table a lighter contemporary look a limed wax finish was chosen.

How To Make The Table

1 To begin, cut four legs from 100x100mm oak to roughly 420mm, then plane square and thickness down to 90x90mm. With oak, any timber thicker than roughly 50 or 60mm is prone to

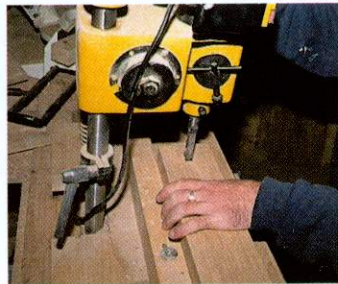
longitudinal cracking, but this does little to reduce the overall strength of the timber and adds to the charm of what is, after all, a natural product.

Mark out the positions for the mortice and tenon joints, making the width of the mortice roughly one-third the thickness of the apron rails. The joints are haunched to give a full height joint and the mortices meet in the middle of each leg, with the ends of the tenons mitred to suit. This makes for the strongest possible joint. Lay out the mortices using a marking knife, which is more accurate than a pencil. I use a

Making the main leg carcase assembly



01 Cramp together various matching components as pairs and mark out as such to ensure consistent accuracy



02 The mortices are set out as one third the thickness of the rails. You may need to cut these in two passes



03 The tops of the leg joints are haunched so as to lock the joints together better



04 I pinned the joints through with beech dowels. These could be draw-bored to pull them up tighter

CONSTRUCTION: Carcase assembly

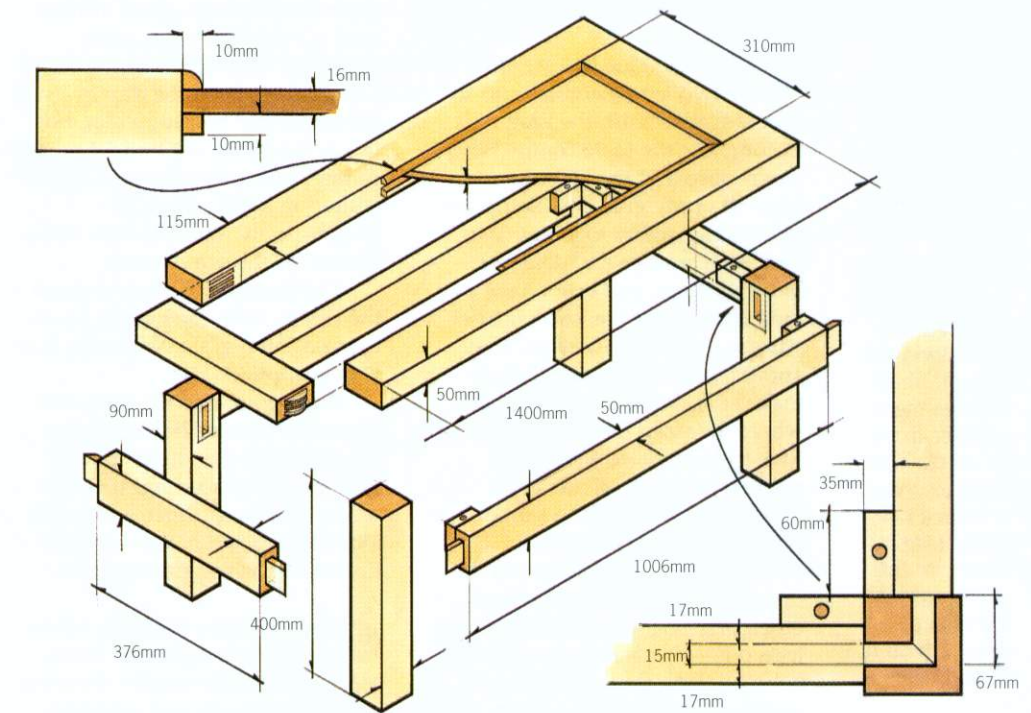
Perform morticer, although a router or mortice chisel are also viable options, if a little slower.

Once the joints are cut the legs can be cut to length. The 90x90mm dimensions are just small enough to be cut with a mitre chopsaw.

2 Machine the apron timber to the correct thickness from 50mm board, then cut the four rails overlength. Mark the tenon shoulders with the knife and the tenon width with a mortice gauge. Cut the tenon shoulders to the correct depth. A tenon saw can be used but my preference is for a Japanese crosscut pullsaw. Held tight against a squared off piece of batten, this gives a perfect cut. One of the long rails had a small amount of sapwood. Rather than throw out a perfectly usable piece of timber, I decided to use it but cut the joint so that the sap was on the inside face where it's not seen.

The tenon cheeks are removed with a router, although they could also be cut with a tenon saw if you are happy with your accuracy. The tenons meet inside each leg in a mitre which is cut on the chopsaw. This makes for the longest possible tenon and therefore the greatest glue area, and accordingly a stronger joint.

3 If your table's going to be lime waxed, the timber is best prepared for this before the table



frame is glued up (see box). Following this, dry cramp two legs and a short rail to check that everything fits together properly. Brush glue onto the tenons and cramp up the assembly. A sash cramp holds everything nice and tight whilst the glue dries. To make sure that the two legs are correctly aligned, it helps to rest

the three pieces on a piece of MDF or ply on a Workmate and then clamp down the legs. Check that the legs are perfectly square with the rail and then drill through each tenon and knock through a length of 10mm beech dowel. This locks the joint solid and helps resist sideways movement if the table is ever dragged around.

Design options

This particular coffee table is made from oak but there is no reason why you couldn't use other hardwoods such as ash, beech or even pine. An even more striking option would be to veneer the table top insert panel with a contrasting timber. For example, a table in beech with an insert of burr walnut would work well. It's also important to remember that you can adapt this design to your own needs. If you don't like the chunky solid look, it's perfectly possible to reduce the thickness of the legs, table top and rails for a lighter look, and to get the rails and other components out of 50mm sawn stock.

CUTTING LIST

Part	Qty	Mats	Length	Width	Thkns
A Legs	4	Oak	400mm	90mm	90mm
B Side apron rails	2	Oak	1140mm	60mm	50mm
C End apron rails	2	Oak	510mm	60mm	50mm
D Table top long rails	2	Oak	1400mm	115mm	50mm
E Table top short rails	2	Oak	310mm	115mm	50mm
F Table top panel	1	V MDF	1170mm	310mm	16mm
G Panel battens	1	Pine	3000mm	10mm	10mm
H Mouldings	1	Oak	3000mm	10mm	10mm

Cutting lists give the full length of a piece including the joint but not waste. Allow 25mm for length and 5mm width & thickness for sawn stock.



05 When cutting tenon shoulders by hand I often cramp a timber to the line to act as a guide for the saw



06 Mitre the ends of the tenons where they meet inside the leg mortises. A mitre saw is useful but not essential



07 Assemble the end frames first and make sure they are square and out of twist. You may want to lime wax first



08 Strap cramps are a good way of pulling the legs in tight as you add in the side rails. Make sure all is square

MATERIALS YOU'LL NEED

Timber

Mark used cheap French oak that cost him about £50. You could use English if you want obvious figuring, or the cheaper American if not. If you can't find (or afford) the 4in material for the legs, then laminate them together from 2in stock. You might also want to reduce rail thicknesses to 45mm for the same reasons. You'll need about 2.5 cu ft of 2in timber

Alternatively, you could draw bore the joints before assembly. Repeat the procedure for the other two legs and short rail.

4 When the glue has set, take the two leg assemblies and fit them together with the long rails to complete the table frame. When you're sure that the joints are a good fit apply glue and clamp the finished assembly together. Two long sash cramps are ideal here but if, like me, you don't have any long enough for the job, a ratchet strap is a good alternative. They apply plenty of pressure but do make sure to protect the timber where the strap touches it. A set of four right-angle corner blocks made from MDF offcuts are a good solution. With the frame cramped up check that it's accurate by measuring across the diagonals from one leg to the other. Sighting across from one leg to another and across the rails also helps confirm that everything is square. Finally drill the joints, pop in some glue and insert dowels. Once the glue has dried, trim off the excess dowel.

5 The table top uses 115x50mm timber. Cut two lengths to 1400mm and two shorter pieces of 310mm, making sure that the ends are cut perfectly square. I had initially thought of using mortice and tenon joints but the size of the timber ruled out using my morticer so I opted to use the biscuit jointer instead. A little

measurement confirmed that three rows of two Number 0 size biscuits would just fit and give more than enough glued surface area to ensure a strong joint.

To cut three joints in the wood I could have used the depth setting on my biscuit jointer, but this is flimsy on my budget model so instead I rested the base of the jointer on MDF offcuts to progressively raise the base of the jointer for the same result.

The next step is then to scrub the timber with the bronze brush to expose the grain before the lime wax is applied later.

Brush glue into the slots and insert the biscuits before gluing the table top. Two long cramps hold the assembled top together, while battens cramped across the joints above and below keep the timber flat as the glue hardens.

6 The insert for the table top is made from a piece of 16mm MDF, marginally smaller than the 1170x310mm gap and veneered with oak. Two lengths of veneer are enough if joined together side by side. First trim the edges neatly using a scalpel and a metal straightedge. The two pieces are then joined with masking tape, glue is spread on the MDF panel with a roller, and the veneer laid on top. To exert enough pressure for a good bond between the MDF and veneer, offcuts of MDF and ply were laid over this and then clamped up using substantial battens and cramps. My own workbench was designed with this in mind as the tool well can be removed allowing for more flexible clamping operations.

7 Lime wax the veneered panel, after which the panel can be inserted into the table top. The depth is controlled by mounting the panel on offcuts of timber pinned and glued to the inside edge of the table top. In this case

Jargon Busting

Draw boring

When cross dowelling a mortice and tenon joint, the hole in the tenon can be drilled slightly closer to the shoulders than in the morticed piece, pulling the joint together closer as the dowel is knocked in.

22mm thick lengths of softwood are fixed with the bottom in line with the table top. This means that the insert sits 11mm deep.

With the insert in place, machine up some strips of 10x10mm oak. You need two pieces at least 1200mm and two of 330mm. These are given a bevelled edge and mitre-cut to length to fit within the table top to hold the panel firmly in place.

8 Lime wax the entire table top, before joining this to the base by screwing offcuts to the inside edge of the rails and screw upwards into the table top frame.

9 By its very nature a coffee table is likely to see its fair share of spilt drinks, and lime wax alone offers very little protection against heat and liquid spills. A quick experiment proved that a water based varnish would take over a limed finish, and so two coats were applied with a brush, with the first coat being cut back with 400 grit abrasive. The great advantage of water base varnishes is that they dry quickly, allowing multiple coats to be applied in the same day. It's also easier to wash out brushes or foam applicators under the tap instead of using white spirit.

NEXT MONTH

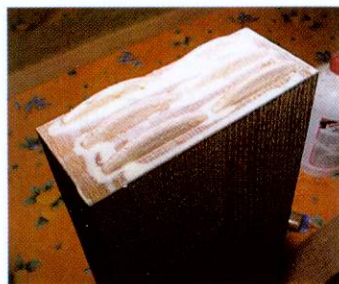
Bryan Blow shows how to make a handy storage cabinet for a home cinema unit

PROJECT GUIDE
Difficulty
Simple
Time
20 hours
Costs
£100



A lime wax finish works well with oak and would also suit other open grain timbers such as ash

Assembling the top frame and veneering the panel



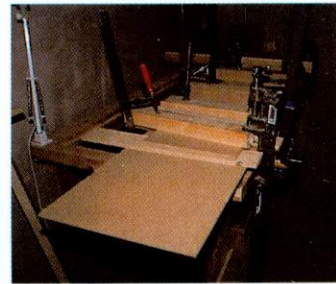
09 The top rails and stiles are simply biscuited together. Three biscuits in each rail will give a strong joint



10 The top panel will simply rest in on battens glued around the inside edges of the finished frame

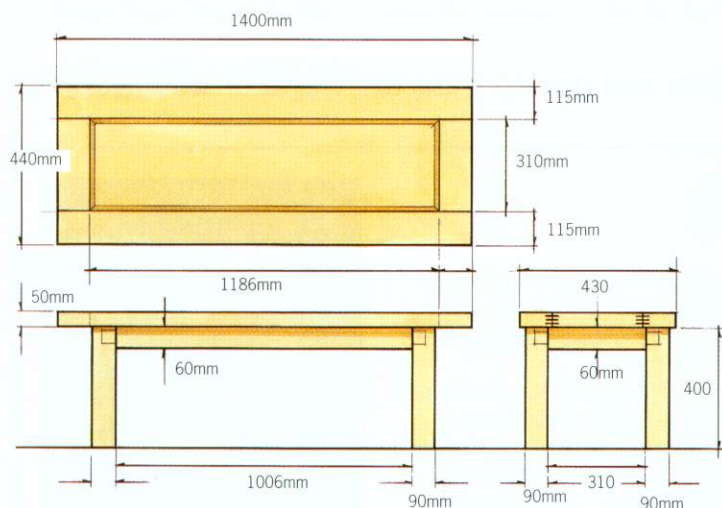


11 You could veneer your own board for the top if you wish or if this is too difficult buy pre-veneered MDF



12 Make up a series of cauls to help spread clamping pressure across the board as you glue up the veneers

DETAILS: Elevations



Lime waxing

Lime wax is used to give furniture a lighter look by leaving traces of white lime wax in the grain of the timber. It is especially well adapted to oak because of the deep grain. The process of lime waxing first involves rubbing along the grain with a bronze bristle brush to clean up and expose the grain. Then rub the liming wax into the timber. My own preferred method is to

use a green pan scourer rather than the more common wire wool as the latter is prone to leave minute lengths of wire in the grain. To complete the job, immediately buff up the timber with a clean cloth. Depending on the nature of the furniture that you're making it might be easier to lime wax separate components or sub-assemblies prior to final assembly as access is easier.



Rubbing with a bronze brush opens up the grain for the lime wax



Rub the wax into the grain with wire wool or a stiff brush or scourer



13 Simple 'go bars' apply spring pressure to the top mouldings. Mitre the ends neatly as you fit them



14 Four blocks screwed to the tops of the legs act as fixings. Simply screw up through these into the top



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News from the wood

Pete Martin brings you all the latest news, products and gossip from the world of woodworking

The folly of flatpack

Britain is in danger of becoming a nation of "identikit homes" full of "wobbly, box-like furniture that falls apart", according to a group of furniture makers and wood users.

The Dean Oak Company and Co-operative, based in the Royal Forest of Dean in Gloucestershire, was formed as part of growing campaign for wood workers to work with home-grown timber and produce popular furniture in an as environmentally friendly manner as possible.

With over 60 members, comprising furniture designers, makers, sculptors, flooring suppliers and even coffin makers, the company formed

to market their products and has drawn up a strict environmental 'Total Tree Policy'. This means that it aims to use 100% of every tree, no material should travel more than 30 miles before sale to a wood user, and that for every tree felled, another is planted.

Tim Orsen, director of the Dean Oak Company, said: "Far from being original, the main purpose of mass-produced flat-pack furniture is to be cheap and easy for the manufacturers to produce. They are based mostly around flat panels, which makes them look box-like and unoriginal. Fortunately, people are rediscovering the effect that having a striking, one-off furniture centrepiece

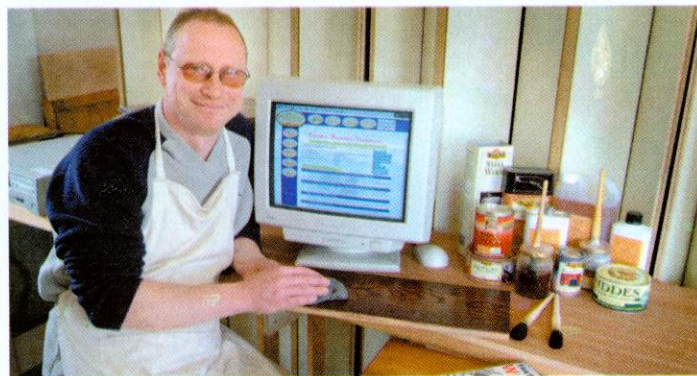
made from a solid, beautiful wood such as oak, beech or sweet chestnut can have on their homes.

"The old situation with wood in the Forest of Dean was a real 'coals to Newcastle' affair, where we watched perfectly good timber leaving the area and wood from elsewhere coming in. Now we can make sure we get exactly the right raw material we need to create some stunning, original pieces of furniture and sculpture designed to last a lifetime."

For further information on the Co-operative and their practices, e-mail coop@deanoak.net or check out their website at www.deanoak.net.



A piece from the Dean Oak Company – certainly not flatpack



A polished performance

One of the great finishing skills for successful woodworking is staining and polishing wood. To help the beginner learn how to do this correctly, Finney's Wood Finishes have set-up their own instructive website at www.mdfinney.co.uk.

This very useful resource is aimed primarily at hobbyists, professionals and homeowners. It includes advice and information on the maintenance and refinishing of antiques, the creation of high-class finishes on furniture, floors, doors and staircases, as well as the opportunity to buy Finney

products on line.

One particularly useful feature of the site is the 'Choose a Finish' section where a drop-down menu asks specific questions about an individual project, before giving detailed step-by-step advice.

The 'Ask a Craftsman' section, meanwhile, provides remedies to common problems with furniture maintenance and finishing. Elsewhere, the library provides a resource of articles on woodworking and wood finishing that could well be of use to beginners and experienced woodworkers.

Win Cheltenham tickets

We're pleased to have 10 pairs of tickets to give away for the *Celebration of Craftsmanship* exhibition in Cheltenham over August 23-31. To have a chance of winning, simply answer the following question:

Cheltenham is famous for its annual horse-racing festival, but what is the name of the prestigious race that is the highlight of each event?

- 1 -The Tin Cup,
- 2 -The Bronze Cup,
- 3 -The Gold Cup.

Send your answer, together with your name, address and contact telephone number, to: Craftsmanship Competition, *Good Woodworking*, 30 Monmouth Street, Bath BA1 2BW to arrive no later than August 8, 2003. The first ten correct entries drawn from the entire entry will win the tickets.

This colourful carving of John Bull by Ian Norbury was a popular exhibit at last year's *Celebration of Craftsmanship* exhibition



We're in the money

The Weston Woodturning Circle based in Weston Super Mare, formed only in November of last year, has received a grant from the Awards for All division of the Community Fund (formerly the Lottery Fund). The grant, in the total sum of £2650, will be used for the purchase of tools and equipment, together with training aids and the like. It will also enable the club to develop a youth section and implement a skills development programme for all members.

According to Club Secretary, John Warren, the club applied for and was awarded the grant before the criteria for applications was overhauled in favour of helping minority ethnic groups and deprived areas in particular.

"I must confess to being surprised that we actually received such an award, and to the full amount of the sum we

asked for, and am now in the process of being nominated for sainthood by fellow members," said John.

With a membership of over 30, and still growing month by month, the club welcomes all prospective members, regardless of the level of skill or experience. The Club Chairman, Bryan Jackson, commented, "We are thrilled that we have been awarded this grant, the club can now look forward to a bright future."

The club meets on the second Tuesday of each month at 7.30pm at Weston Football Club, Winterstoke Road, Weston Super Mare. Any enquiries to John Warren Secretary at above address.

If your club is looking for funding, check out the Awards For All website at www.awardsforall.org.uk to see if it qualifies under the new regional and national guidelines.

Cut price Ryobi

Any promotion that reduces the prices of power tools will be welcomed by readers. So you'll be pleased to hear that Ryobi are offering a number of their power tools at lower prices until the end of August.

15 cordless, 17 mains and 11 benchtop tools are included in the offer, with savings of up to £80 and a free two year warrantee included. In addition, a number of tools are available

with free extras, such as a moulded case, TCT blades and a third battery, or even a free S33K sander, as in the case of the Ryobi PD-161VR 13mm impact drill at just £59.95.

Other promotions include the STP-1801 hammer/drill/driver for £139.95, including a free third battery. For more information go down to your local Ryobi dealer or contact them on ☎ 01491 848700.



The Ryobi RTS-2285U table saw, cut from £289 to £239 for the whole of August

Diary dates

NEWS, events, exhibitions, shows and courses for the woodworker

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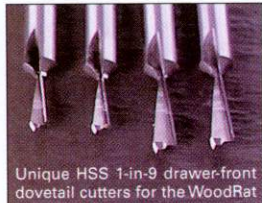
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Bookmark

We review the latest woodwork books & videos

Home Storage Projects

By Paul Anthony

Publisher: Taunton Press
ISBN 1-56158-498-3
Price: £16.95



Is there no end to the number of woodworking project books emanating from the US of A? Every month sees another dropping through our letter box, and by and large they beat our home produced tomes into a cocked hat, both in terms of the projects and the production values of the books themselves. Here's another, and surprisingly it's not lifted from the pages of *Popular* or *Fine Woodworking* for once!

Subtitled 'Creative Solutions for Every Room in the House', this book provides just that – and quite nice they are too, all 13 of them, full of clean lines and elegant joinery. At one end of the spectrum you get simple CD and cassette cabinets, at the other my favourite – a

superb storage bench made of cherry with a distinctly Shaker look to it. In between lie wine racks and printer stands, even a bed project with plenty of built-in storage. Plenty of choice. The combination of clear photography, detailed drawings and simple (Imperial) cutting lists will help you get to grips with each project, but do bear in mind (as usual) that American techniques are not always strictly kosher here in the UK, so take care if you try to emulate them. And do check out page 37, which has a very useful tip for routing spline mitres!

Pete Martin

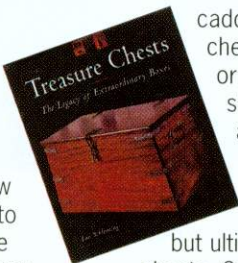
Home Storage Projects

Words	●●●●○
Photos	●●●●●
Drawings	●●●●●
OVERALL VALUE	●●●●●

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By Lon Schleining

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ISBN 1-56158-362-6
Price: £27.95



"Chests, no matter how humble, always seem to have a story" reads the introduction to this glossy tome, a celebration of this ageless example of the woodworkers' art. Illustrated with superb colour photographs and clear line drawings, the book starts by explaining the history of the chest and follows it with basic construction techniques. Hinges, joints, wood types and basic construction are all lightly covered before you're introduced to examples of the art through the ages.

What follows are rugged treasure chests, dainty tea-

caddies, elegant silver chests, wonderfully ornate bridal chests, simple blanket boxes, artistic hope chests and, my personal favourites, wonderfully detailed but ultimately practical tool chests. Some are quiet ancient, others merely historic and a few hail from the modern day, but all serve the purpose of providing inspiration for the reader to go out and design and build one himself.

Ian Waller

Treasure Chests

Words	●●●●○
Photos	●●●●●
Drawings	●●●●●
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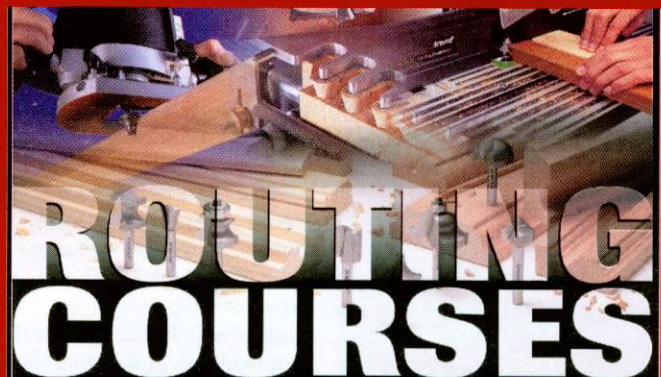
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Letter from



AMERICA



As Mark Corke discovered, there is an indubitable link between the passions of a woodworker and those of a boat builder. So when he had the chance to visit the workshop of a friend with a foot in both camps, well Mark couldn't hold himself back – and who could blame him? Anchors aweigh and all that!

Fibreglass or wood

I make no apology for liking boats and boat building, so, if you are reading this issue having scanned your eye across the pictures thinking that I visited a part-time boat builder only a couple of months back, then you would be right. It is just that as soon as word gets out that you are interested in something you find yourself imperceptibly drawn to other like-minded souls. You only have to look in the pages of *Good Woodworking* where you often see a whole page devoted to woodworking and woodturning clubs.

Although I haven't advertised the fact, plenty of people and friends in my neighbourhood know that I have been building a boat. Anyhow, one thing lead to another and before I knew it I had fixed up to visit John Turner. John lives not more than 45 minutes from me, close to the banks of the Housatonic River in central Connecticut, and it was there that I visited him.

An accomplished woodworker, John was a one time house building contractor, so no stranger to working with wood. As many, if not all, of the houses in New England are built of wood it follows that the workshop and shed in John's garden should be made in a similar fashion.

Although the workshop is large there are part-built rowing boats scattered about outside. Many of these are made from glassfibre. Now, while John likes to work in wood, he sees glassfibre as a



marvellous engineering material. Many of the rowing boats that he has built either for himself or for others start out in wood before being made into lightweight glassfibre structures.

Making glassfibre boats is time intensive and there are several stages that one must go through before the craft hits the water. First a wooden plug is produced; this is an exact facsimile of the finished boat. Sometimes this plug can in fact be outfitted as a boat or often it will be constructed of cheaper materials that can be discarded later. The plug

has to be as smooth as possible, any imperfections in the surface will be transferred to the finished craft.

From this plug a glassfibre mould is made, from which an almost unlimited amount of boats can be produced. In fact, John has produced just a single boat from many of the moulds he has created in an on-going effort to find the perfect boat. He is still striving for perfection.

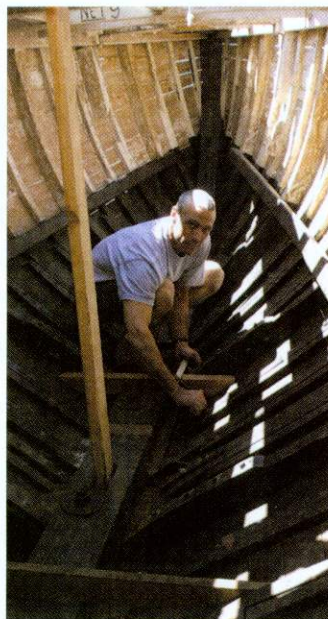
Workshop Angle

The main workshop has a plastic corrugated roof, which John admits is hot in summer



(Above) This is a large shed. John stands against the side of a 58ft rowing eight and there is still about 50ft at each end of the boat. The eight weighs about 200lb all up

(Left) Rowing coach and part time boat builder John Turner atop his partially restored Hillyard yacht. Although over 70 years old, the planking is remarkably sound. Pitch pine is highly resinous and very heavy. Once plentiful in England, the Victorian thirst for railways consumed much of this wonderful timber for sleepers. The pine is attached to steam bent and sawn oak internal frames with bronze screws and rivets, creating a very strong boat



One of the part complete boats that adorn the floor in the workshop. A small rowing skiff, it has yet to be outfitted with sliding seat and oarlocks. The larger boat is a whaler type that is being built for recreational rowing



(Left) John hard at work fitting in timbers called floors that eventually support the cabin sole or floorboards. You can see the frames that support the planking

(Above) John at work in his plastic roofed workshop. The chop saw gets a lot of use and sits atop one of the workbenches

“His expertise told him that some renovation work was needed”

and cold in winter. To keep the shop up to some sort of bearable working atmosphere in the winter months, he uses a woodstove over which he hangs a large fan to encourage some of the warm air to make its way down to the far end of the workshop.

Like many boat builders, John does not have the need for a fancy bench and much of the work is done on the

boat. The benches that are in the workshop line the walls so as to keep the centre clear for the boat.

Ship Shape

Although I could happily have spent longer in the workshop, John was keen to show me his pride and joy so whisked me off in the pickup to a boat yard at the water's edge. Here he is restoring a 70

year old wooden boat. Designed by David Hillyard, she was built in Littlehampton of pitch pine on oak frames. Massively constructed, she has stood up to her years very well. John has been working on her for the past year since he bought her from a sailing school in Maine. Although at that point he could have just sailed her for season or two, his

expertise told him that some renovation work was needed.

In particular the pine planked deck had been overlaid with plywood in an effort to keep out the water and, as is often the case, this had exacerbated decay problems. Rainwater had crept underneath and was attacking the decking and deck beams.

At 34ft, it is a remarkable

boat and although he has much to do, John feels that this is going to be time well spent. After stripping out the inside furniture and fittings, he has already started on repairing the hull.

On a traditional carvel planked hull such as this, the gaps between the planks are filled with cotton oakum which is then overlaid with a special putty which was originally made up from lead paste. The gaps between the planks have got larger over the years and John took on the painstaking task of cleaning up every one of the plank edges. With a circular saw mounted in a home made jig, he ran down each join adding glued splines to one of the edges so as to close the gap somewhat.

Although traditionally planked hulls tend to leak somewhat when they first go into the water, John felt that the gaps were just too large and anyway, a smaller gap means a fairer hull once it has been painted.

Eight Go Rowing

When he is not building or restoring boats, John it seems is actively engaged as a coaching rowing for the Sacred Heart University. Right next door to the yacht is the very large boat shed where they store the impressive rowing boats.

Now, as a kid and later, I used to watch the famous annual Oxford and Cambridge boat race. These races and many like them take place in a boat called a rowing eight, so named because they somehow cram in eight rowers or oarsmen and a cox. Having seen one close up I now quite understand why you need a big boat shed.

At just a shade under 60ft, this is one boat that you are not going to be able to keep in your average garage! For all the size of these boats they only run out at about 200lb in full racing trim, so now I understand why they go so fast – the power to weight ratio is very high.



Some years ago John built a small rowing skiff for his son. I was unable to get a picture of the boat in its entirety but was stuck by this detail of the sliding seat. Lightweight yet functional it is good study in laminated construction



The makers' brass plate screwed to the main deck beam on John's Hillyard

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MASTERCLASS

David Savage's expert comment from his own furniture training workshop

Doorways to design

David Savage sets out to demystify the principles of good design by considering how the design and construction of cabinet doors are interrelated. Put another way, how we joint a door can affect how it looks, and vice versa, but there's no need to worry about this, he says, it's quite simple really!



This month I am going to be talking about the design of the doors of a cabinet that we might like to make. Doors, if you like, can be seen simply as bits of wood that fill holes, and in the plain Yorkshire sense 'puttin' wood in't ole' is exactly what it does. Or we can get rather sniffy and talk about design and the relationship between the components of the door, the

stiles, the rails, panel and the surrounding carcase, and then about rhythms and how to make the very best of the few elements we have within a door to make a cabinet somewhat more special than just a bit of wood in a hole.

Yet, if we place a door within our carcase frame and make it out of solid wood, the inevitable will happen and, especially in our climate, that wood will swell up in the

winter months, expanding across the width and jamming in the opening. This is why we don't see too many very plain, simple solid wood doors. There are exceptions – and I have illustrated one we made a few years ago – but they are just that, exceptions.

Integrity of Wood

Most woodworkers overcome this problem and retain the integrity of solid wood by leaving a frame around the panel. The purpose of the frame is to lend stiffness to the door. Don't make the mistake of allowing this frame to be too light, thin and delicate. If you do, you will find that the panel has enough strength to twist and warp that door, and that the frame isn't actually doing its job. The idea is that the panel does the expanding and moving around with the wet weather, and the frame holds it still within the opening of the carcase.

The joints in the corners of the frame can be run vertically, horizontally or diagonally. With a vertical joint shown in the diagram opposite (3), you will be placing your cramp when you glue the job up across the narrowest width. If you look at most joinery jobs, the rails (the horizontal components) would meet the stile (the vertical components) with this kind of a joint.

Most cabinet work you see features rail meeting styles with a horizontal joint, as in my diagram opposite (1), or with a mitre joint (2), as



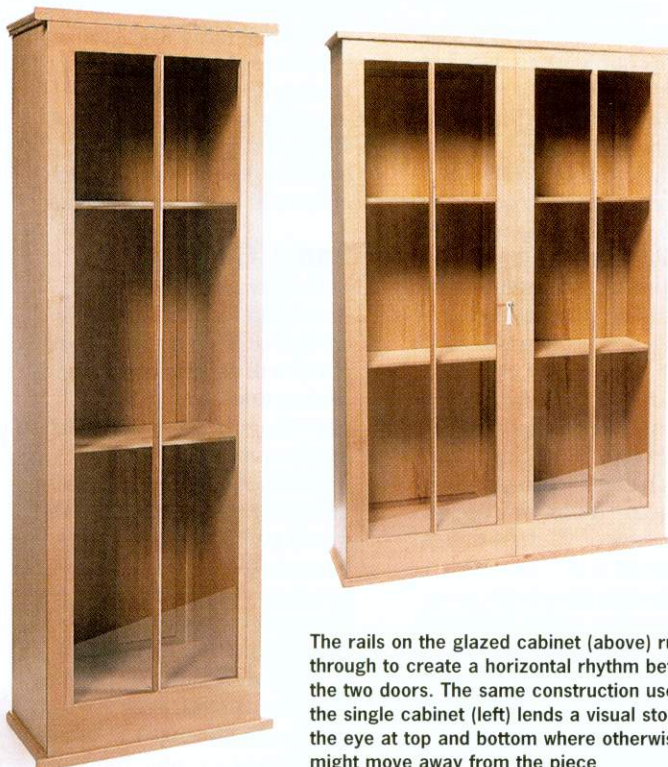
A scratched bead detail where the doors meet helps take the eye away from any gap that might develop, and emphasises the vertical lines of the figure

shown. Those of us who have any sense try to stay away from mitred frames, but the horizontal mortice and tenon joint is a very common feature of cabinets, especially if they are two-door in the meeting or closing stile. This enables the cabinetmaker to make the pair of doors with just one glue up, with the rails running through both doors. The two doors are made in one assembly,

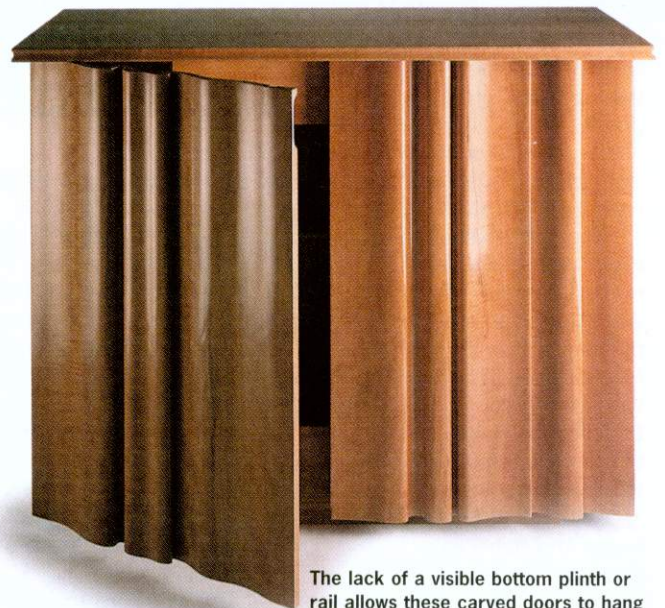
allowing a waste gap of approximately 3mm between the two closing stiles which can be cut off later.

The rails are extended beyond the mortices and tenons with short 'horns' which allow you to tap the job apart after carrying out a dry assembly. This is essential as, once you have got the panel in place, it's pretty damn difficult to get the thing apart without damaging it. So

“Horns perform two functions: to whack and to support a delicate piece of short grain”



The rails on the glazed cabinet (above) run through to create a horizontal rhythm between the two doors. The same construction used on the single cabinet (left) lends a visual stop to the eye at top and bottom where otherwise it might move away from the piece



The lack of a visible bottom plinth or rail allows these carved doors to hang like drapes floating above the floor

horns perform two functions: to whack to help you tap the thing apart; and to provide a useful support to what can be a relatively delicate piece of short grain in the haunch of the joint.

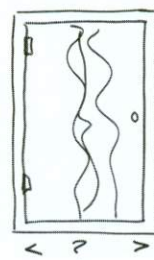
What's a haunch? Hang on, I shall be talking about haunches in a while, along with mortices, tenons, rails and stiles, when we discuss the design of the joint.

Door Components

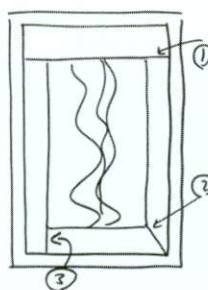
First of all let's concentrate on the design of the various components of this door. As you can see from the photograph of the pair of pearwood cabinet doors, I don't always make my doors the way I've just

described. These doors are made with the stile running to the very top of the doors and the rails jointing into them from the sides. This is an especially tall and slender cabinet. The features of the door were thin and delicate, and almost non-existent. There are no great big hairy raised panels here – all I had was the wafty purply browns of the pearwood to play with. I managed to scratch on a few lines down the closing stile (that's the pair of stiles that meet when the doors close) to take your eye away from the joint created between the two doors. I also managed to create a full stop of the escutcheon

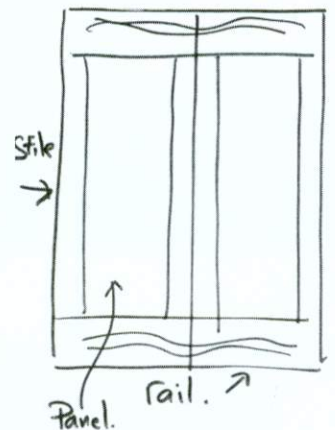
DETAILS: Door details



Here a veneered door is constrained by the carcass sides, with no frame visible to complicate the design



A framed door can be jointed in one of three different ways, each with their own strong design statement



Pairs of doors, especially when laid onto the carcass, benefit from the top and bottom rails running through to create a horizontal sense of rhythm

around the key hole. I softly covered the whole thing in a very dull and glowy wax polish, then brought out a bright shine to contrast with a few delicate dark lines cast with a scratch stock.

You don't have to use every trick in the book to make a fine pair of doors but you do have to make each of the elements work to their fullest effect. My pair of doors were pretty flat and plain but I think were quite successful because I let the wood work to its best advantage.

When you decide to use frame and panel as a construction for a door, try and use it in the same way as you would use a frame and a mount around a picture. That panel could be seen as an inspiring piece of art, so choose it carefully. To help you do this, cut out the shape of a panel out full size in a

These solid doors have a ledged and braced design. The raised centre panel floats between the two fixed outer ones and creates shadow detail

piece of card then lay this on the timber and see what framing the figuring of your wood does for it.

Once you have done this, choose how wide the frame that you are putting round the panel has got to be. Choose it with care, remembering that you're going to be putting your frames inside the carcase, so you have the thickness of this outside your door frames to consider as well.

The relationship with the panel, the frame and the carcase itself will determine how your eye will move across that surface. If it's intrigued and interested by its journey, then you will have done your job as a designer. If



not then you have just bored everybody to death and you might just as well pack up your tent and go home.

Frame Joints

Returning to construction, the usual joint used on frames around these panels is the mortice and tenon. This joint is immensely popular because of its great strength and capacity to help lock one piece into the other to provide support at the corners right out to the edge of the frame in a way that no other joint can do. This is because the tenon is reaching quite deep into that rail, and in so doing it helps to give support and stop that frequently wide rail from cupping or twisting.

You could achieve a joint with a couple of biscuits, although it wouldn't be as good as a plain old-fashioned mortice and tenon.

The mortice and tenon also relates well to grooves. These are really useful in this situation because it's the groove that the panel sits in. Usually both tenon and groove are of the same width which is generally chosen according to the size of our tooling. Most of my tenons are cut on a morticing machine and we have 6mm, 8mm or 10mm mortice bits.

So one of the first things we do is decide which mortice bit we are going to use when we're designing a particular joint. This, in turn, will have a knock-on effect on the thickness of our panels and the way they relate to the frame.

It's wise to make a mortice deeper than the length of the tenon, so there is a small gap at the bottom. We do this because, when a tenon is fitted, it wipes quite a lot of the glue off the side of the joint and deposits it in the bottom of the mortice. That's also another reason why these joints are not always made as tight as one could make them because the glue in this action can act as a kind of hydraulic lock. Many a time I've seen students make beautifully tight joints only to find the bloomin' things won't go up when they put glue on them.

Another feature of a tenon is the haunch. This step on the outside edge of the timber is there partly to prevent twist and partly to fill that groove. It enables you to run the groove through without stopping when machining it, which is a considerable benefit when making a batch of framed panel components.

Panel Thoughts

Let's now return to the panel and its relationship to the frame. The centre of the panel will as often as not be thicker than its edges, providing an opportunity to incorporate some form of decoration, the traditional one being to raise and field it. The raised part is the small step towards the centre of the panel and the field is the area where the panel is diminishing in thickness.

This field can be straight, plain or tapered, even curved, and is usually created with a moulder or a router, though it

“Doors can be seen simply as bits of wood that fill holes”



The challenge here was to create glazed doors that would work well with the plain veneered surfaces of the lower ones

The arched door bottoms on this sycamore sideboard add detailing to the design without detracting too much from the beauty of the highly figured timber



can be shaped in any one of a number of other ways.

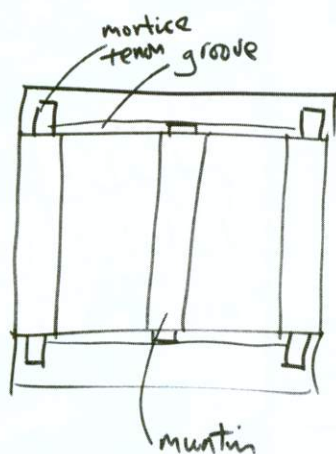
This combination of raising and fielding a panel is one of the most common decorative elements used in the design of doors. It allows you to place a shadow line just where the panel raises, or to make your fielding slightly curved, dead flat, wide or narrow, according to your choice as a designer. Don't just put it where everybody else puts it, use your inventiveness to create something that's a little bit unusual. Surprise the eye, and let it enjoy a journey across a panel that's been interestingly divided, not divided in the same old way that everybody else has done.

Glass and Veneers

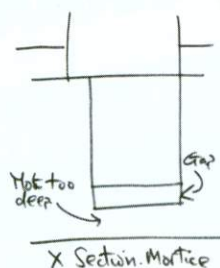
You may not always have a captured panel. Sometimes it may be a glass panel and in this case you have the challenging feature of allowing the glass to be replaced at some time, so you can't have it sitting in the central groove, as it would if it were wooden.

Usually the panel will be removable from the back and so will sit in a rebate. This is run through both the rails and stiles to create a surface that the glass can sit in and, just as the haunch is there to fill the hole in the groove, now you need stepped shoulders on

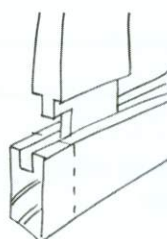
DETAILS: Frame and panel thoughts



This basic section through a framed and panelled door shows the relevant constructional details. Central muntins need do no more than sit in the panel grooves

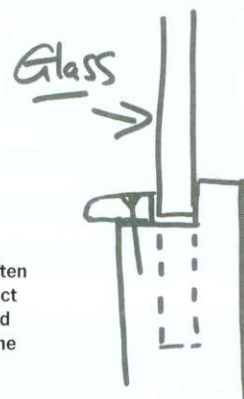


Tenons should always be a few millimetres shy of the mortice bottom



Raised solid panels need careful fitting to ensure that the bevelled face always sits snugly in its groove without leaving a visual gap

Glazed doors should always be beveled on the inner edge so as to disguise the beads



The constructional aspects of a mortice and tenon joint will often affect the visual aspect of the piece, and need to be considered at the design stage

your tenon. The inside shoulder will thus need to be slightly longer than the outside one by the depth of the rebate.

Of course you can avoid all the trouble and trauma of framing and panelling doors by using a veneered door. But as you would imagine, this has its own complications.

The veneered door has a

dead flat surface, which may be appropriate to the purpose in hand, allowing the figuring of the timber to become the main event. Consider carefully in this situation how this smart plain door relates to the sides of the carcass, as well as how you want to edge the door. Do the lippings that you put around that door need to show? Do they need to be a

decorative part of its structure or are they just there to make the door look like solid wood? You can also consider using marquetry on such doors or contrasting inlaid lines.

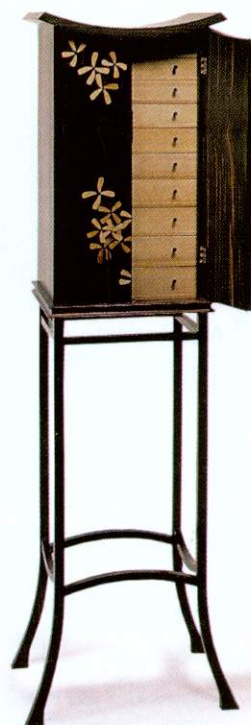
All of these things form decorative elements that need to be considered as a part of the design process before you even start waving a cutting gauge around.



Made to complement pieces of William and Mary furniture, this walnut cabinet has marquetry designs laid on to manmade panels. The raised and cushioned walnut lippings serve no structural purpose and are simply glued around the door like a picture frame



In this delicate cabinet in macassar ebony the doors are veneered and overlaid onto the cabinet. The hinge edges are relieved at the rear so that the doors sit back into the carcass while leaving just a thin edge visible. The hinges are set into bead details



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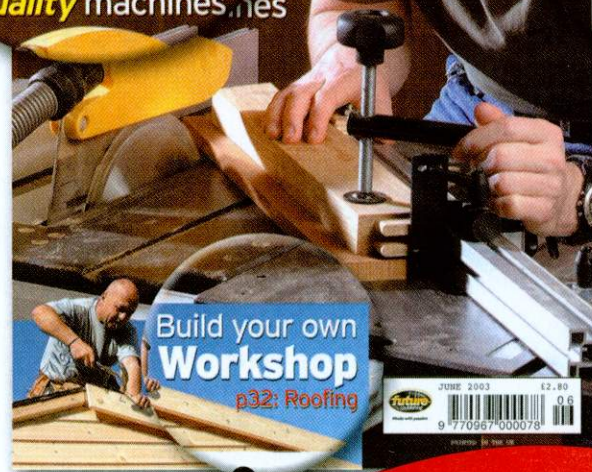
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Mirror stand



With careful positioning of the cutting patterns, **John Everett**, managed to keep the amount of mahogany he used to construct this simple mirror stand to an absolute minimum

This little mirror stand has been designed using reclaimed wood, in this case mahogany, although many other types of hardwood could be used equally well. The two main tools used are the scrollsaw and a miniature router table – from Proxxon – to make use of miniature router bits for producing finely detailed edge moulding to the various parts which go to make up the mirror stand.

By some judicious juggling of the cutting patterns for the various pieces involved, only two fairly small mahogany blanks were actually needed to make the mirror and its stand. Even then there were scraps left over which will go to make up some 12th scale pieces for a dolls house.

The remaining parts which make up the mirror are a set of four feet (which in this instance came from Plug-It and were never really intended to be used as feet but they work so well) and, of course, a mirror.

Here I used a bevel-edged oval



mirror from Kaye-D Mirrors (☎ 01908 612236 for a list). I have to say that these little mirrors, which come in all manner of shapes and sizes, are of quite spectacular quality and staggeringly cheap.

Cutting patterns

1 Begin by drawing up a set of cutting patterns to the size you intend making your stand mirror. You may need to adapt my dimensions to accommodate the mirror you end up with, but you'll need a pattern for the main upright, one each of the two support buttresses and another for the base. By juggling with the patterns once you have cut them to size, you will find that the main upright, as well as the two buttress patterns, will fit on the larger blank, leaving only the base for the smaller blank.

2 A fairly fine scrollsaw blade, such as a No5, will leave a good polished edge to the cut surface of 12mm material as you cut around the pattern, requiring no finish sanding other than a little at the top and bottom of each edge. Begin by cutting away the internal cutout. This should be a couple of millimetres smaller than the dimensions of your mirror so that it can ultimately be held in place by what will become a lip once you have got around to cutting the rebate behind it.

3 Don't do any more cutting out at this stage as it will be much easier to rout the rebate behind the mirror cutout with the entire blank left intact, with the exception of the cutout.

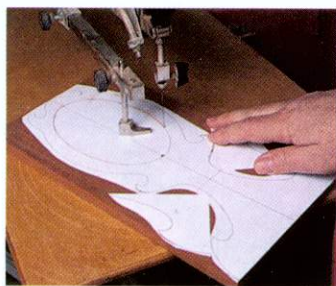
Make up a template for cutting the rebate. Set up your router with a rebate cutter – a small one will be fine as you only need to make a shallow rebate (the difference between the actual dimensions of your mirror and the 2mm overlap you left on the mirror cutout).

With a 12mm thickness of wood, around 8mm will need to be removed by the 2mm depth of cut. Measure your rebate cutter from the guide bearing to the outer edge of the cutting surface and subtract the 2mm you need for the actual cutting depth. This will give you the dimensions of the cutout you need to make in the 6mm MDF to guide the bearing on your cutter around the oval shape for the mirror. As most cutters will be fairly deep compared to the thickness of the wood in use, a layer of material will also be removed from the MDF as you cut. No problem, as the bearing will still run happily around the remaining material and accuracy will not be affected.

4 Fix the template to the underside of your blank so that you have an even amount of pencil line and template showing, and your template is nicely centred on the cutout.

Screw the template in place using small countersunk screws

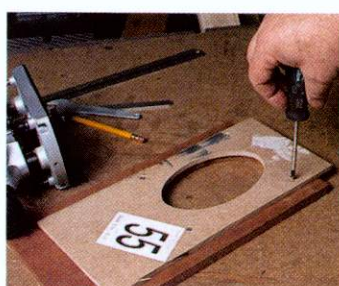
Cutting and rebating the mirror aperture



01 With careful arrangement, the upright panel and its two buttresses can be cut from one piece of wood



02 Use a pencil and scrap wood of the right thickness to mark out for the routing jig to cut the rebate for the mirror



03 Centre the MDF jig over the back of the mirror panel placing screws in the waste areas. Rout with a rebate cutter



04 Set up the miniature router table and run a test piece from scrap timber to check the routed pattern

from the underside of the MDF and into the waste areas of your blank. Rout the rebate and remove the template. To tidy things up, you can fit a rounding-over bit in your router and run it lightly around the top surface of the mirror cutout.

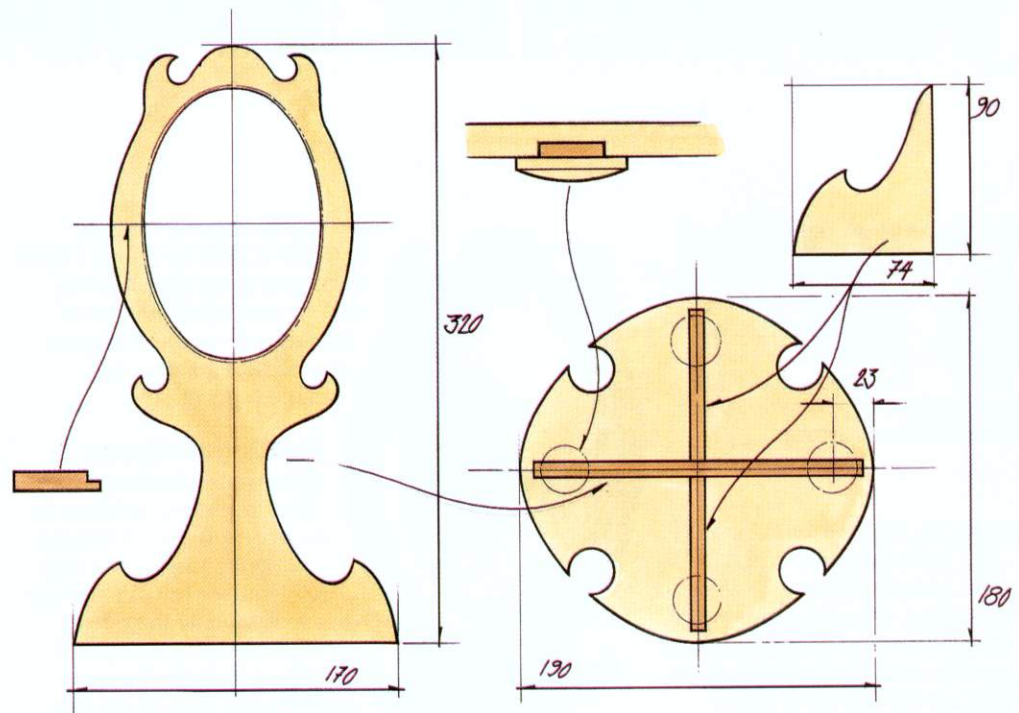
5 Now return to your scrollsaw and make the outer cutouts, leaving you with the main upright and the two support buttresses. The base can be cut out in the same way. Once cutting is complete, set up your router with an appropriate cutter for your preferred pattern of edge decoration. A small ogee bit was used here in a miniature router table. Miniature router bits can be had from most mini-drill suppliers and a very good set in a fitted wooden case are available from Proops Bros (☎ 0116 2403 400 for a free catalogue). This set costs around £12 for ten different shapes and compares very well with others available.

The buttresses and main upright panel have both outer edges routed to form a symmetrical pattern, while the base, of course, only has the upper surface routed with the matching detail.

6 Once the routing is complete, make sure everything will fit square on the base and adjust as necessary, so that the upright panel really is upright and the buttresses fit good and square to it on the base. The remaining jobs are to make an oval retaining panel to secure the mirror in its housing, and to fit the feet before final assembly.

7 Mark the position of the upright on the base and drill clearance holes for fixing screws. Countersink these from underneath the base, and similarly

CONSTRUCTION: Simple mirror stand



mark the position of the two buttresses and make similar holes to secure these later.

Next mark out the positions for the feet and use a Forstner bit to cut the holes about 6mm in depth to take the mushroom head plugs which form the feet. With the rounded heads of these plugs, it is a very simple matter to sand a little off any of them if you need to make the mirror sit level on a flat surface.

Glue the feet in place and leave to dry thoroughly.

8 Mark the positions for pilot holes on the upright panel and drill these accordingly. Glue and screw the upright panel in place, then use this as a fixed reference to similarly mark and drill pilot holes for the buttresses which can also be glued and screwed in place.

9 The last bit of woodworking is to cut out the retaining plate for the mirror to match the rebated oval. The mirror is not fitted at this stage as it is easier to keep it clean if the finish is applied first and then the mirror fitted afterwards. Apply your finish and, when dry, fit the retaining plate by whatever method suits you best – I simply glued mine in place around the edges, and this provides more than adequate support for the small mirror in use with this design.

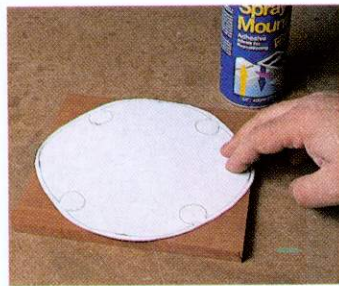
CUTTING LIST

Part	Qty	Material	Length	Width	Thkns
A Blank for uprights	1	H/W	350mm	200mm	12mm
B Base blank	1	H/W	185mm	200mm	12mm
C Back panel	1	H/W	150mm	100mm	4mm
D Feet	4	H/W	25mm	25mm	6mm

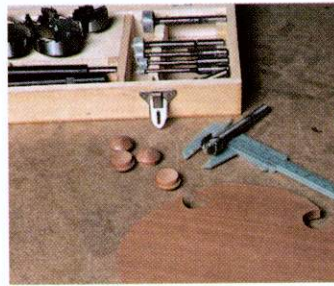
Adding the base and feet



05 Rout the edge details on the mirror panel, using a bearing guided ogee bit on a small router table



06 Stick down the cutting pattern on the base blank using spraymount adhesive to keep it in place



07 Match the diameter of the feet against a Forstner bit before drilling the base for these



08 Mark out for the mirror retaining plate with a pencil before completing the finishing

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This charming little money box isn't

simply a quaint reminder of childhood days, it's also a good reason for Ian Wilkie to make full use of Forstner saw-tooth bits and take a good look at the range of these useful tools currently available on the market

Your Guide to Better WOODTURNING

Turning over the pages

● Money box: p86 ● Tool test: Flex Abrasives: p85 ● Saw Tooth Forstner Bits: p86 ● Dave Roberts: Jardinière p88

Post box money box

How many of us remember putting our pocket money into tin savings boxes shaped as mini post boxes? I seem to remember that once full they had to be opened with a can opener. This is a wooden version where the money can be extracted in a less ruthless way, although four little brass screws offer sufficient deterrent to stop any quick raids! The box will hold 50 £1 coins.

A drill chuck fitted with a Forstner saw-tooth bit is used to remove as much wood as possible before turning – a useful technique. The money box is constructed in three pieces and makes good use of the jam-chucking technique. I used the Record 4000 scroll chuck with standard jaws in the Jet Mini lathe. As the box was to be air-brushed I used some well-seasoned poplar which was pale in colour with very little grain pattern.

Turn the Money Box

1 Mark and centre pop all three blanks at each end



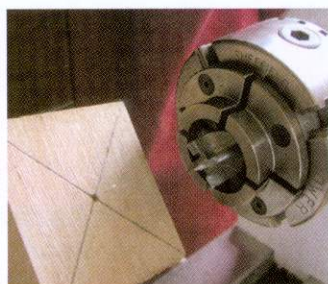
and mount in turn between centres. With a roughing out gouge turn each one to the round and form a dovetail spigot on one end, 36mm dia x 18mm long, to suit the Record 4000 chuck with standard jaws in compression.

You'll notice that the Record four-prong drive is shown here mounted in the chuck jaws. This is a standard 1MT four-prong drive with a modified shank which has been cut to a length of 25mm. The shank has been reduced to a parallel diameter of 12mm. If you have a metal turning lathe this is a relatively simple operation, although the job can be done using a woodturning lathe set at slow speed with a file.

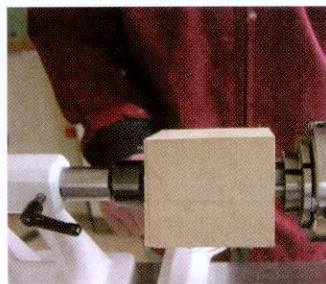
The advantage of this modified drive is that it can be held in the chuck jaws enabling a dovetail to be turned without the necessity to remove the chuck from the lathe.

2 Turn the body blank to a diameter of 64mm. Fit a 2MT shank drill chuck in the tailstock with a saw-toothed Forstner bit – the larger the better. The largest size I had was 32mm. Set the lathe to its slowest speed and drill to a depth of 75mm, withdrawing from time to time to allow the shavings to clear.

Turning the body



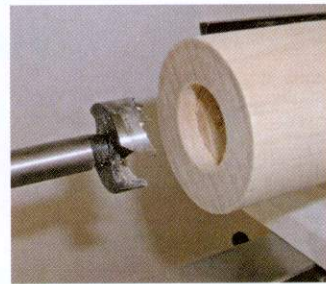
01 My modified four-prong drive, with a shank cut to a length of 25mm, held in a Record chuck.



02 Mount the body blank between centres before turning it to a diameter of 64mm

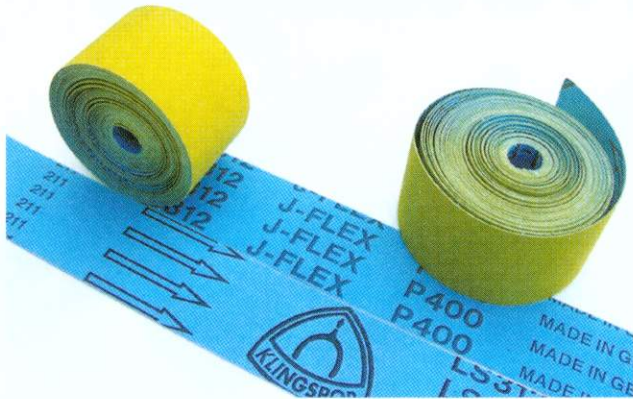


03 Form a dovetail spigot on one end of the body and fit it into the jaws of the Record chuck



04 Drill into the body of the money box using the biggest Forstner bit possible to a low speed

Klingspor J Flex Abrasives



I have been using J-Flex RB 406 cloth-backed abrasive for many years now because it keeps its cutting edge for a long time, which makes it economical. It is flexible and comfortable to use. Now Turners Retreat are stocking a J-Flex which is 50mm wide and retails at £1.40 a metre.

The cloth back ensures even heat distribution, making it ideal for turning projects. The German-made abrasive comes in 80, 120, 240, 320 and 400 grits. J-Flex Yellow is especially effective on hardwoods, and its semi-open construction reduces clogging. J-Flex Red gives improved performance

on soft woods.

I ordered several metres of J-Flex yellow in 120, 240 and 400 grits, these being the grades I use most. It is a great advantage to be able to buy this abrasive by the metre, and I find the 50mm width ideal for the work I do and far less wasteful.

GW verdict

Value for money ●●●●●
Performance ●●●●●

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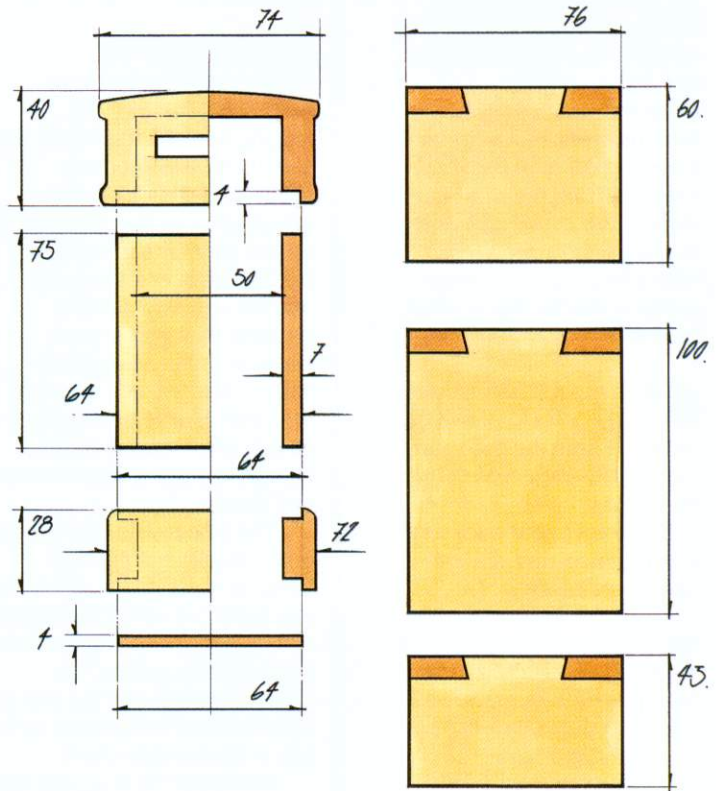
3 Increase the diameter of the hole to 50mm, taking gentle cuts with a 10mm square beading tool. Sand the inside. Mark off 75mm from the outer edge and part off with a parting tool. With the wood remaining in the chuck, make a jam chuck to take the reversed body so that the end can be cleaned up. Remove the jam chuck but keep it as you'll need it later.

Turn the base blank to

72mm outside diameter and drill to a depth of 28mm; widen the hole to 50mm as before. Turn a 64x4mm deep recess. Stop the lathe and check this against the turned body. Slightly radius the edge as shown in the drawing.

Part off at 28mm and make a jam chuck to hold the base so that the bottom edge can be cleaned up. Turn a second recess 64x4mm to take a ply disc to seal the box.

DETAILS: Money box



Anti-Vibe Gloves



If you find the palm of your hand becomes sore when you are using tools, you could consider these fingerless gloves. Apparently designed for cyclists, they are made of top quality leather, four-way stretch spandex and absorbent terry cloth. The palm area has a gel insert which shields against repeated impacts and shocks. I have used them now in the workshop for about a month and have found them

comfortable and non restrictive but I need a longer period before I can assess how well they wear.

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05 Reverse the body of the money box on to a jam-chuck so that you can tidy up the other end



06 Use a beading tool to carefully turn a 64x4mm deep recess in the base blank of the money box



07 Take time to check the depth of the base to ensure that it matches the turned main body section



08 Once you've finished turning both pieces, check that the body fits into the recess in the base

Remove from the chuck, and again, keep the jam chuck.

5 Turn the top blank to 74mm diameter and face off. Drill to a depth of 28mm and widen to 50mm. Cut a recess 64x4mm deep. Shape the outside as shown in the drawing and then part off 40mm in from the front face. Make a jam chuck and push on the partly-turned top. With a 9mm spindle gouge, gently dome the top surface. Sand to a smooth finish.

6 With the top still held on the jam chuck, prime the surface. Prime the base and body in the same way. When dry put each piece back on the lathe and sand back to the wood to prepare a smooth base for painting.

7 To cut a slot large enough for £1 coins in the side of the top, drill a series of small holes and then use a file to form the slot. I have highlighted the slot for the purpose of the photographs.

8 The plywood cap is held in position by four very small brass countersunk screws. Cut a 64mm diameter disc to match the base recess from 4mm diameter birch plywood. To get an accurately round disc, spin the plywood between pressure pads.

9 Mask off the areas to be glued. Paint the parts separately. Glue the box together and screw the cap in position. Add a name to the front of the box with dry transfer lettering.

NEXT MONTH

Ian Wilkie tests glue guns while Dave makes a walking stick

Saw tooth Forstner bits

A glance through the catalogues from the major firms show Forstner bits ranging from £5 to £50 for the same size, and choosing between them is a dilemma; indeed you can buy a boxed set for the price of one expensive bit! Saw-tooth Forstners are popular with woodturners because they give a good, clean cut when an accurate hole is required, and they are very useful for removing wood quickly when making boxes, bud vases, hollow form vessels and so on.

The bit consists of a centre point, usually in a pyramid form, an outer ring in which the saw teeth are milled, two radial cutting edges either side of the point and two gullets. The shank is parallel and the end is often reduced in diameter to fit into a Jacobs-style chuck.

A Forstner bit is usually held in a drill chuck, mounted in the MT hole in the quill of the tailstock, and it is advanced into the rotating wood. It is sound practice to face off the wood blank first and to produce a centre pop. As the bit



Three Planet bits of varying sizes

advances into the blank and the centre point locates in the prepared pop, the saw teeth start to cut a circle and the radial cutting edges pare off the wood between the teeth and the point to produce a neat, virtually flat-bottomed, hole. The shavings escape through the two gullets.

So, do you go for lots of inexpensive Forstners so that you can cover any size you may want or just for a few expensive ones? When you look critically at a cheap Forstner bit and compare it with an expensive one, you can immediately see the difference in the quality of machining on



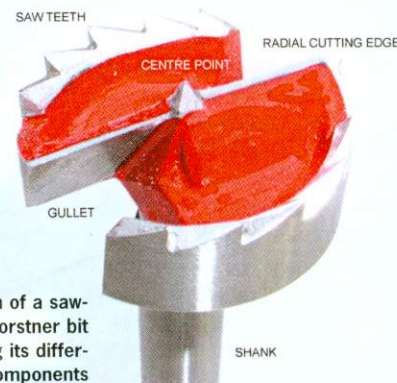
Peter Child's titanium nitride coated Forstner bit

the saw teeth, the cutting edges and the point.

I looked at examples across a wide range of prices. The best quality undoubtedly were those from Trend, Clico and Peter Child. Trend bits can be purchased with long or short shanks, the latter of particular interest to those with short-bed



A selection of 1in diameter Forstner bits – but which is best?



A section of a saw-tooth Forstner bit showing its different components

Shaping the top and cutting the slot



09 Use a jam chuck to hold the top section firmly in place so that it can be completed



10 With a 9mm spindle gouge, gently dome the top surface and then sand to a smooth finish



11 It's always advisable with type of project to do a dry run to make sure the three parts fit together



12 Prime the top while it's re-mounted on the jam chuck, carefully rotating the work with the handwheel

lathes. These Forstners are expensive, a 1in costs £22.90, but they are of excellent quality and have a long life so they are a good investment.

The Peter Child Forstners are coated in hard wearing titanium nitride giving them a gold appearance. This coating prolongs the effectiveness of the cutting edge but once the bit has been sharpened with a file or slipstone, the advantage is lost. These bits are well machined and competitively priced – a 1in costing £14.75.

Planet Engineering have brought out a new Imperial range and have standardised on a shank size of $\frac{3}{8}$ in (9.52mm). The bits are reasonably well machined and offer good value for money; the 1in size I used in the project costs £5.30.

Now for the bargain basement! We have all been tempted, and fallen for, special show offers of wooden boxed sets of Fortner bits. They appear to be something not to be missed! For the occasional one-off hole they are probably fine but for serious use they are not the answer; not only is the machining poor but you are going to end up with sizes you will never have a need for.

Sizes

Saw-tooth Forstner bits are invariably sold in Imperial sizes although some manufacturers, such as Trend, offer both metric and Imperial ranges.

Be absolutely sure that the diameter at the end of the shank is suitable for your particular drill chuck because they do differ considerably. The shanks I looked at varied from 8 to 13mm.

Ten tips for use

- ❶ It is essential that the headstock and tailstock are lined up accurately before starting to drill. This is particularly relevant if the lathe has a swivelling headstock. Check for alignment both horizontally and vertically.
- ❷ The MT shank on the drill chuck must be clean and in good condition.
- ❸ The MT hole in the tailstock quill needs to be cleaned, lightly oiled and blemish free.
- ❹ The Forstner bit must be held securely in the jaws of the drill chuck so there is no possibility of it rotating, resulting in damage to the shank. Most keyed Jacobs-style drill chucks have three holes for the key and it is good practice to place the key in each hole in turn to tighten the jaws.
- ❺ The saw teeth, radial edges and point can all be sharpened with a triangular file or slipstone.
- ❻ Reduce the lathe speed when drilling to prolong the life of the drill and cut down the risk of burning the wood.
- ❼ Withdraw the drill from time to time to remove any build-up of shavings, especially in a deep hole.
- ❽ Use coloured tape to act as a depth stop.
- ❾ Store the bits carefully to avoid damage to the cutting edges.
- ❿ Try to standardise on the sizes that you are likely to use the most.

Drill chucks

There are many drill chucks and I have selected one from the Peter Child's catalogue (☎ 01787 237291 for a copy) which would be particularly suitable for lathes with hollow headstocks such as the Jet Mini lathe I recently tested.

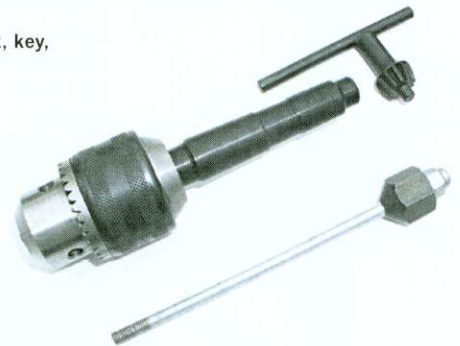
The Jacobs-style keyed chuck, at £19.70, has a maximum capacity of 13mm and comes with either a 1 or 2 MT shank and is ideal for holding a wide variety of drills in the tailstock. However, it has an advantage over other drill chucks, which is why I have picked it out, in that it is drilled to take a threaded draw-bar which comes as an extra for

£3.75. The bar will only suit lathes with hollow headstocks and means that the chuck can be used in the headstock and secured without any risk of it working loose.

It is useful to be able to use the chuck in this way to hold small items for turning; for example, when making knobs with spigots up to 13mm diameter.

Record lathes do not have hollow headstocks and therefore their own drill chuck, which can be screwed straight on to the headstock spindle, is more suitable. For use in the tailstock this drill chuck is fitted with a MT shank.

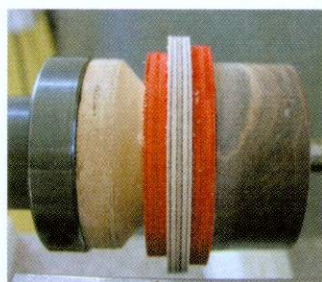
Peter Child's drill chuck, key, draw-bar and nut



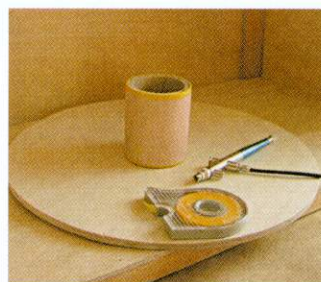
A short-shanked Trend bit mounted in the tailstock. These short shanks are particularly useful where distance between centres is limited



13 With the initial slot formed with a series of drilled holes, use a small flat file to clean up the coin slot



14 To produce an accurately round disc, spin the plywood between pressure pads



15 You can make a simple ply spray booth with a rotating turn table for airbrushing each piece of the project



16 A small, battery operated mixer makes mixing the paint properly for airbrushing an easy task



La jardinière



Dave Roberts devises an interesting method of turning feet for his elegant jardinière – plant stand to you and me!

Very popular in Victorian times, the French term ‘jardinière’ means basically a pot or a stand for potted plants or cut flowers, and though many were produced in ceramics, the most enduring memory is of a high wooden stand with an aspidistra flying gently on the top. Even so, you’ll find a variety of sizes and designs, with many in mahogany.

This is a three-piece stand, but with a collar between column and top, on a set of feet. It provides a mixture of faceplate and between-centres turning, with the feet turned in an unusual way (more on this later). Although I used old timber, freshly turned mahogany is very pale and to achieve the dark and older look that most people expect of a Victorian style, you will have to stain it to put more life into the wood.

Turning the Base

1 The base can be mounted onto a face plate with short screws. When it’s turned around you will be able to turn out the screw holes. If the wood that you use isn’t thick enough, you can mount it on a screwchuck.

The first job as with any disc is to balance it up. This does not mean turning it to the finished diameter, only to a workable state, for which a speed of around 800rpm is plenty. Then bring the toolrest across the face of the base and true this up using a 9mm gouge – you will find it easier pulling the gouge from the centre out towards the outside edge. This is the underneath of the base so it has to be flat for the feet to sit firmly on to it. Check from time to time with a steel rule.

Sanding will kick up a lot of dust so use an extractor. Sand with the lathe running. Use 120 grit then stop the lathe and wrap the sandpaper around a cork block and sand with the grain. Follow with 180 and 320 grit.

2 I wanted to achieve a deep mahogany colour here. The first coat of stain dried too light so a second coat was needed. Three hours between coats should give enough drying time. Apply the stain with a brush in the same direction as the grain, putting it on evenly. Once the second coat has dried, flatten it down with 0000 wire wool.

Then apply a coat of sanding sealer. Once this has dried, rub back with 0000 wire wool with the grain. Then you can give it a light coat of polish.

3 You need a lot of support while you turn the detail, so a face plate is used to anchor it firmly to the lathe. Four screws attach plate to wood; the holes will later be covered up with the feet.

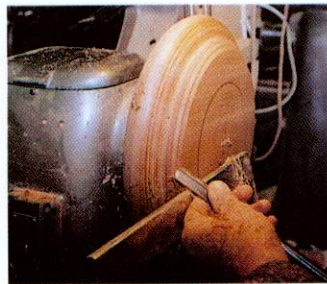
Turn to the finished diameter. Use the 9mm gouge to roll the bead and turn the concaves, and a 6mm parting tool for the fillets. A point to remember when turning bowls or a base like this is the problem of endgrain. Quarter and face grain are not too bad but the endgrain, if not worked properly, will soon look a mess. All woods react differently and it all boils down to tool control; keep the bevel rubbing at all times. For the final cuts make sure the gouge is sharp and the toolrest at the correct height. Moving the gouge slowly will help you to achieve that perfect finish.

With the turning complete work through the grades of sandpaper, making sure you don’t sand it away.

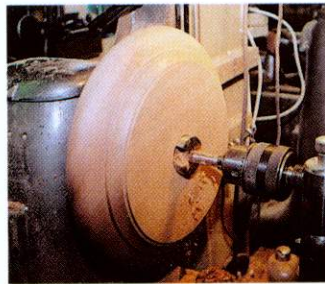
Turning the base and column



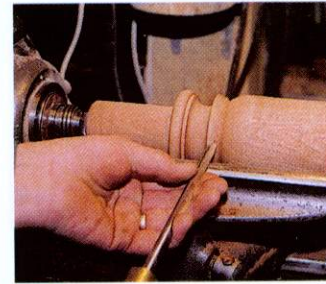
01 Balance the base, face the rear and stain it before mounting on a face plate. The feet will cover the screws



02 Turn the front face flat and shape the profile using a 9mm gouge with a parting tool for the quirks



03 Drill a central hole for the centre column with a Forstner bit in a Jacobs chuck in the tailstock



04 Rough out the column diameter, then turn the top and bottom spigots before cutting the details

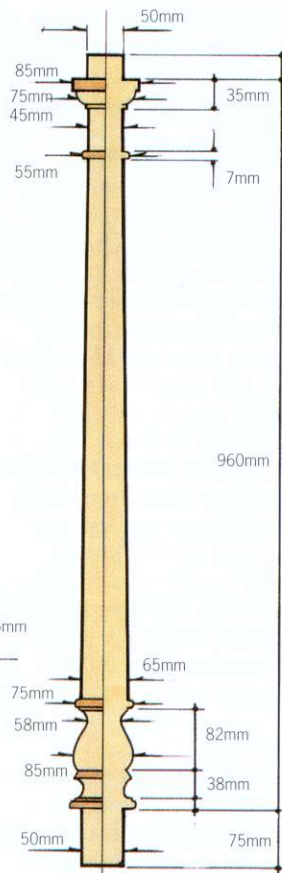
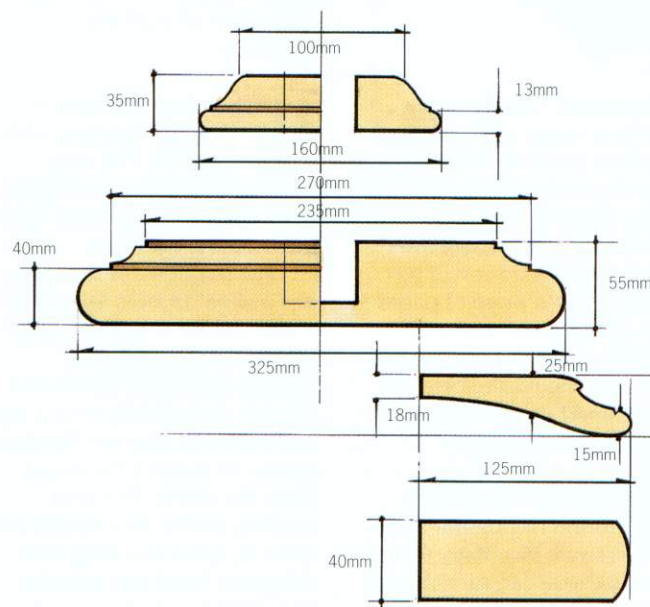
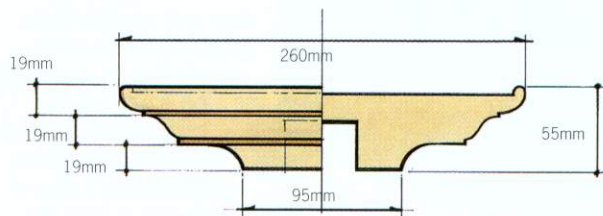
The Column

5 The column is turned in one piece. If your lathe isn't long enough you could make this shorter. Fix the piece of wood between centres and turn it to a cylinder, then turn a 50mm spigot. Make sure this is long enough to go through the collar and into the base. Take the column out of the lathe and try it in the base to see if it fits. You are looking for a snug fit and not a hammer fit. Remember you have to put some PVA glue on it.

There is also a shorter 50mm spigot at the other end for the top.

6 Start turning the detail at the bottom of the column, first the beads and the bird's beak with the detail gouge. Use the parting tool to turn the fillet and the 6mm gouge for the concave.

The main part of the column is tapered. The best tool for this is the roughing down gouge. To help reduce the vibration you can hold the roughing gouge in one hand and support the column with the other, pushing the gouge along with your thumb. Keep a close eye on the taper. Place a steel rule along the column to check that it's flat. Don't forget the detail turning at the



top. Sand with the lathe rotating then stop the lathe and sand with the grain. With careful sanding you should be able to get rid of any marks. Stain and finish.

The Collar

7 The collar fits between base and column, and is best mounted on to the lathe on a jam chuck, for which you will first need to drill a 50mm hole in the centre of the block. Turn the jam chuck so that the disc fits on this tightly.

Turn the bottom of the disc first, making sure that it's flat, then turn the disc around and turn to the finished diameter. Place the toolrest across the face and turn it flat. Now you can start the final turning. Just like the base, use the gouge to turn the concave and the parting tool to turn the fillet. Sand and stain.

The Top

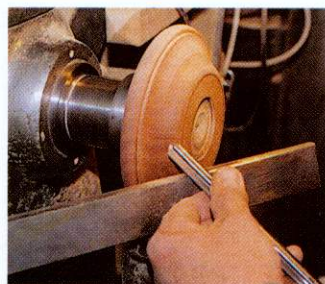
8 The top is also turned using a jam chuck, but first mount it onto a screwchuck and face up the bottom. Then drill a 50mm hole and reverse it onto the



05 With details finished turn a graceful taper down the column, supporting the timber and tool with the left hand



06 You'll need a jam chuck to support the collar. Drill a hole to match the column spigot then a chuck to suit.



07 Turn the collar in a similar manner to the base. It should be a tight fit on the jam chuck.



08 Face the underside of the top then mount on a jam chuck. Rough out the rim with a parting tool

jam chuck.

This top has a slight rim which looks better but also makes it harder to finish. A top without a rim would be easier when it comes to sanding but that would be too simple.

Turn to the finished diameter then turn the flat top. This won't be easy, so take your time. Use the 9mm gouge to remove most of the wood. Then mark out the rim and use the parting tool to turn this. Keep checking with a steel rule to see if it's flat.

Once you are satisfied with the top then you can carry on with the underneath. Move the toolrest around the back of the top and use the gouge and parting tool to turn the concaves and fillets. Turn slowly and keep a close eye on the end grain. Make sure you don't tear it out. Stain and finish.

The Feet

9 I found the feet the most rewarding part of the whole project. You could turn a disc out of one piece of wood and cut the four feet from this except that you need the grain running vertically. This will be stronger and looks better.

In addition to the mahogany you will need another wood, something

Tools you need

6mm, 9mm, 12mm gouges
6mm parting tool
Faceplate
Screwchuck
50mm Forstner bit
Jacobs chuck
9mm detail gouge
Roughing down gouge



inexpensive. Cut the scrap into four equal squares. Then cut three pieces of mahogany, two short pieces and one long piece. When it is all glued up it will measure 360x360mm. When it is turned it will be 350mm. Slip a piece of paper into each joint as this will make it easier to separate the feet from the waste. Leave it all clamped up for at least 24 hours before turning.

10 Bandsaw the disc as round as possible then fix to a small faceplate. Once mounted you can turn the top and bottom in one go. Get it balanced up first, then turn the outside and face up the front. Now start to shape it.

Remember when turning that this disc is only held together with paper. Providing you have done a good job at gluing, everything should be OK, but turn it on a low speed.

Start with the back first, don't rush it, take your time. Keep everything crisp and sharp. Stop the lathe from time to time and check that everything is still holding together. There is a large flat area on the back. This will be glued and screwed to the bottom of the base, so make sure it is flat. Hold a steel rule

against it to check.

Move the toolrest across the face of the disc and use the 9mm gouge to remove the wood. Keep a close eye on it and make sure you don't turn it too thin. Sand the disc but don't stain it just yet. Remove it from the lathe then take off the faceplate.

11 Separating the feet can be done by tapping with a rubber mallet. The long piece of mahogany will have to be cut into two pieces. Cut these on the bandsaw.

The back end of the foot has a slight radius, for which a disc sander is useful. Put a square on the table and against the disc to check that it is 90° then slowly round the end (you can also use the disc sander to remove the paper from the sides). The final sanding on the feet should be done by hand working with the grain. Sand and seal the feet. Drill two holes in each foot so that the screws are a snug fit, then countersink.

Assembly

12 It will look better if you position the feet so that two are on the end grain and two on the face grain. Glue and screw one in position then use a try square to help get the rest square. Glue the collar onto the column then into the base. You can put a long screw through the bottom of the base into the column to hold it firmly while the glue sets. Then glue the top on. Before the glue sets, make sure that the grain on the base, collar and top is facing the same way.



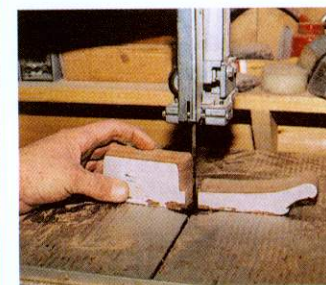
16 The top spigot is long enough to pass right through the collar into the top. Check the fit before gluing!



15 Align the feet with the grain (or at 90° to it) and screw in place. They should cover mounting holes in the base



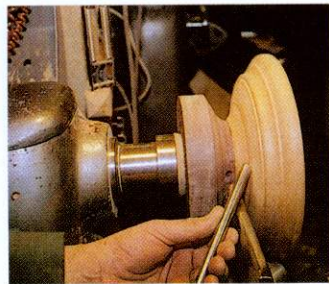
14 Round off the inside corners and clean up the sides on a disc sander, taking care not to scorch the wood



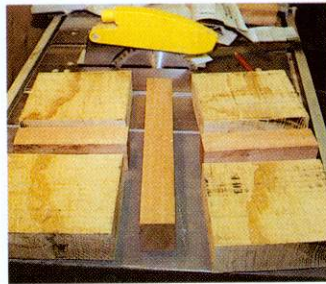
13 With the profiles cut, separate the four pieces and cut to length on a bandsaw. Sand off the papered edges



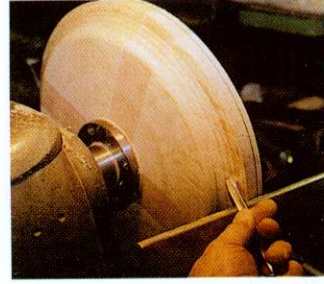
09 Turn the rim to shape then use a gouge to flatten off the top. Check constantly with a short rule



10 The jam chuck allows you to shape the back face of the top without turning it round



11 The timbers for four feet are cramped up with scrap blocks as shown so that their grain radiates out



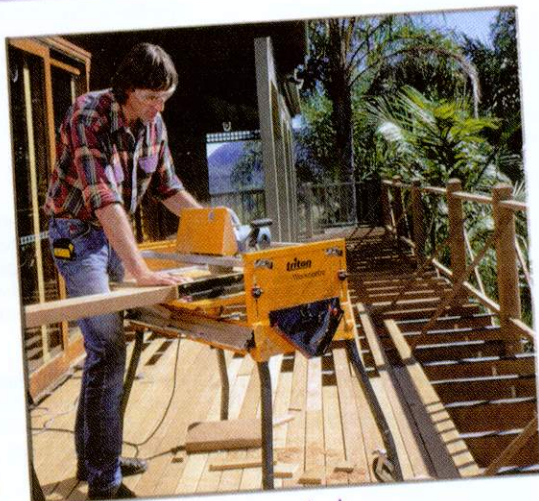
12 You can see the feet as the profile is turned on the laminated blank. Paper slips allow the joints to be broken

Shaping the top, base and feet

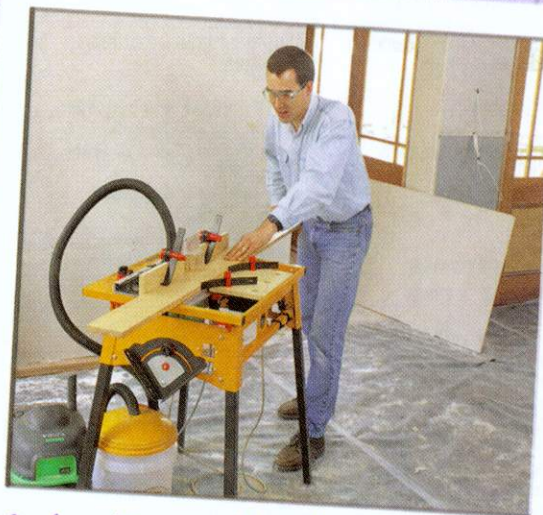
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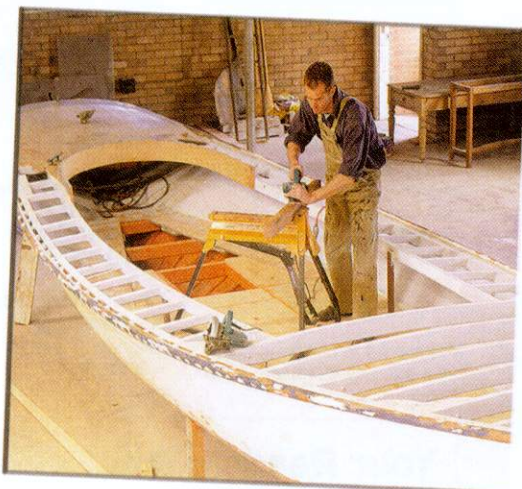
Gary building the rear deck



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☎ 01132 606450

Elu router plus attachments plus bits, £75. Emco bandsaw and blades, £50. Pronto vertical disc sander, £50. Black and Decker circular saw, £20.
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☎ 01535 273368 (H) 01274 588066 (W)

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☎ 01902 791656

2HP Ryobi heavy duty router table and steel bench table £150. Freud Biscuit Jointer JS100 £60
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☎ 01795 873609

Triton work centre with router table, £200.
J. Milbourne, Liverpool
☎ 0151 920 4634

Axminster/Jet 16in wide belt sander, less than one year old genuine reason for sale, £420 ONO.
Richard Shilton, Chester
☎ 07811 690107

Large Coronet lathe, £200. Illness forces sale.
William Reilly, Kent
☎ 01732 850621

Bandsaw AEG SAR 400 floor standing on rollers factory and Carter USA ball bearing guides. 2 HP 1 phase £108. Buyer to collect, includes spare blades.
Jim Rothering, Lincs
☎ 01507 466440

Record woodworking lathe number DML 24X in nearly new condition, hardly used. All Allen screw locking replaced with quick change locking handles or new large brass thumbscrews with locations for 'C' Spanner locking. £120 ONO. Delta 28-185 two wheel bandsaw. Ideal for small workshop. Cast aluminium table 45° tilt, with 180° protractor bevel cutting fence, quick locking parallel cutting fence. Plus a selection of used blades and two brand new blades. The bandsaw, £65 has a stand with wheel for easy movement in workshop, £15 and the afore mentioned blades £10. Reason for sale - bought a more comprehensive machine.
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Elektra Beckum HC260 planer thicknesser, little used, £400 with stand.
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DeWalt radial arm saw DW320. Good working order £160
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Record DX1500 Fine Dust Extractor £100.
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WANTED

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DeWalt radial arm saw - any or all accessories wanted: router bracket, dado heads, etc.
Kevin Matthews, Essex
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Peter Reynolds, West Midlands
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Peter Duffy, Surrey
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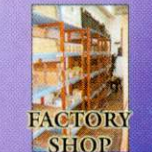
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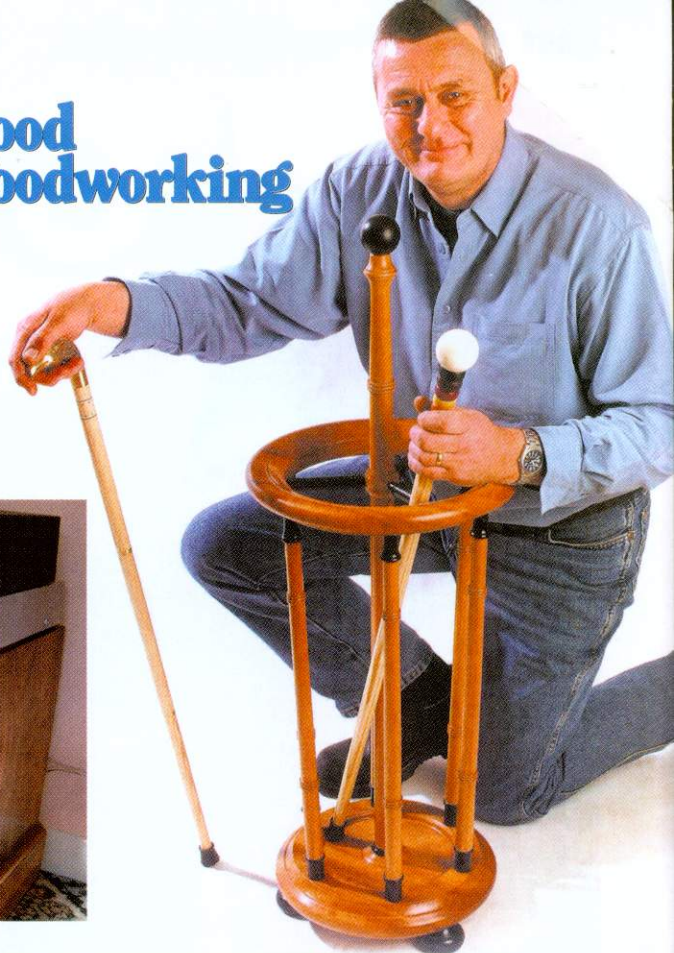
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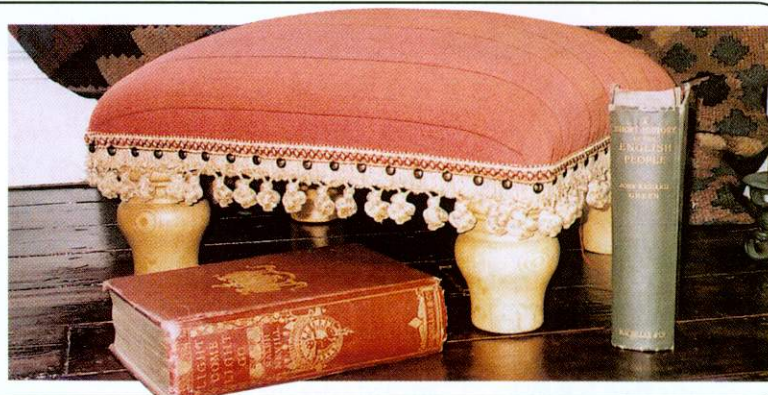
Projects

- Transform a redundant corner into useful bedroom storage with our pine corner wardrobe
- Turn one of Dave Roberts' unique walking sticks and this elegant hall stand to keep them under control
- Why put up with plastic rubbish when you can build our home cinema unit?
- James Hatter puts the finishing touches to his summerhouse



PLUS

The final part of our basic guide to upholstery for woodworkers shows how to tackle a simple footstool



Tools on test

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End Grain

Ian Waller meets Richard Medmed, a man with a real passion for sourcing and prolonging the useful life of wood



For many of us, the intrinsic appeal of woodworking is the beauty and form of the material that we work with. Wood is a wonderful resource, full of character and variety, and capable of being transformed into a range of furniture, art and household items. So why then is it that so much of it is simply thrown away to become part of an ever-increasing landfill wastepile when it should be recycled and re-used?

Well that was exactly the thought that went through the head of Richard Mehmed some five years or so ago when he was looking for the material to build a simple playhouse for his daughter.

Even back then Richard, a former insurance salesman who was taking time out from work to consider a change in career (and who could blame him?), was a self-confessed skip-diver.

"I was always going around with my nose in other peoples' skips and I soon realized how fed-up I was getting seeing so much good wood going to waste as it was discarded and turned into landfill," he recalls. "So I

"I really don't want to see this resource being wasted"

started phoning around groups like Friends of the Earth to see where I could get hold of recycled wood, and there didn't appear to be anybody dealing with it."

So, being a pro-active type of person, Richard contacted the *Evening Argos* in Brighton and explained that he was planning to start up a venture to deal with this gap in the market, and wanted to get hold of some waste wood. The coverage from the *Argos* helped Richard to persuade the local council to give him some space to store the wood. In no time the Brighton and Hove Wood Recycling Project was born and timber was flooding in.

"Mainly it came from builders of all sizes, as well as organizations that generate a lot of waste wood packaging from boxes and crates. Now we're getting hold of all sorts of wood – soft and hard, off-cuts, chipboard and ply, floorboards and planks, 4x2, 2x2, everything really.

"We sort it out and

anything that can be used for DIY we sell from a small shop in Brighton, mostly for people building decking, sheds or putting up shelves, but also sculptors, turners and furniture makers.

"We also get a lot of old wood like oak and mahogany, plus occasionally hard woods, teak, greenheart and beech that's quite difficult to get hold of these days. In fact, a lot of this stuff appeals to antique dealers restoring old furniture, or builders dealing with older properties."

Grading the Wood

Richard and his team sort all of the wood they get into three basic grades. Grade One is the sort of material that they can sell back to the DIY/builder market – over 2m in length, free from splits and generally in good nick. "Even though the wood we collect might look dirty, it is perfectly adequate for lots of uses and, as we learn more about timber and our market, the kind of wood defined as

'grade one' will expand," explains Richard.

Grade Two wood is sound material but in shorter sizes than Grade One and as such is ideally suited to the art and craft market. Grade Three, meanwhile, covers the small amount of material that's pretty much beyond re-use and can be sold on as kindling and firewood.

Discount Prices

Being a not-for-profit organization, Richard and his team make a great effort to keep the price of the wood on sale to a minimum, generally resulting in a 50% discount over most other high-street outlets, although a higher price is charged on the rarer hardwoods.

Through this project, Richard is helping to cut back on waste, save resources, provide low cost timber and provide employment for like-minded enthusiasts. He also finds that their work is having a rub-off effect on the builders and organizations that they collect the wood from, replacing the 'We'll just dump it' attitude with considerations for how they can cut their waste down and possibly even re-use suitable materials.

Looking back on what he has achieved so far, Richard explains, "Between you and me, I never did finish that playhouse for my daughter, but I really love wood and basically I really don't want to see this precious resource being wasted."

Recently Richard received a government grant to help set up projects like his all around the country, something that he finds an exciting prospect.

"I feel that we're nibbling at the waste stream and with more groups, that means less wood going into landfill." To find out more, log on to www.woodrecycling.org.uk or call the Brighton and Hove Wood Recycling Project on 01273 696900.

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