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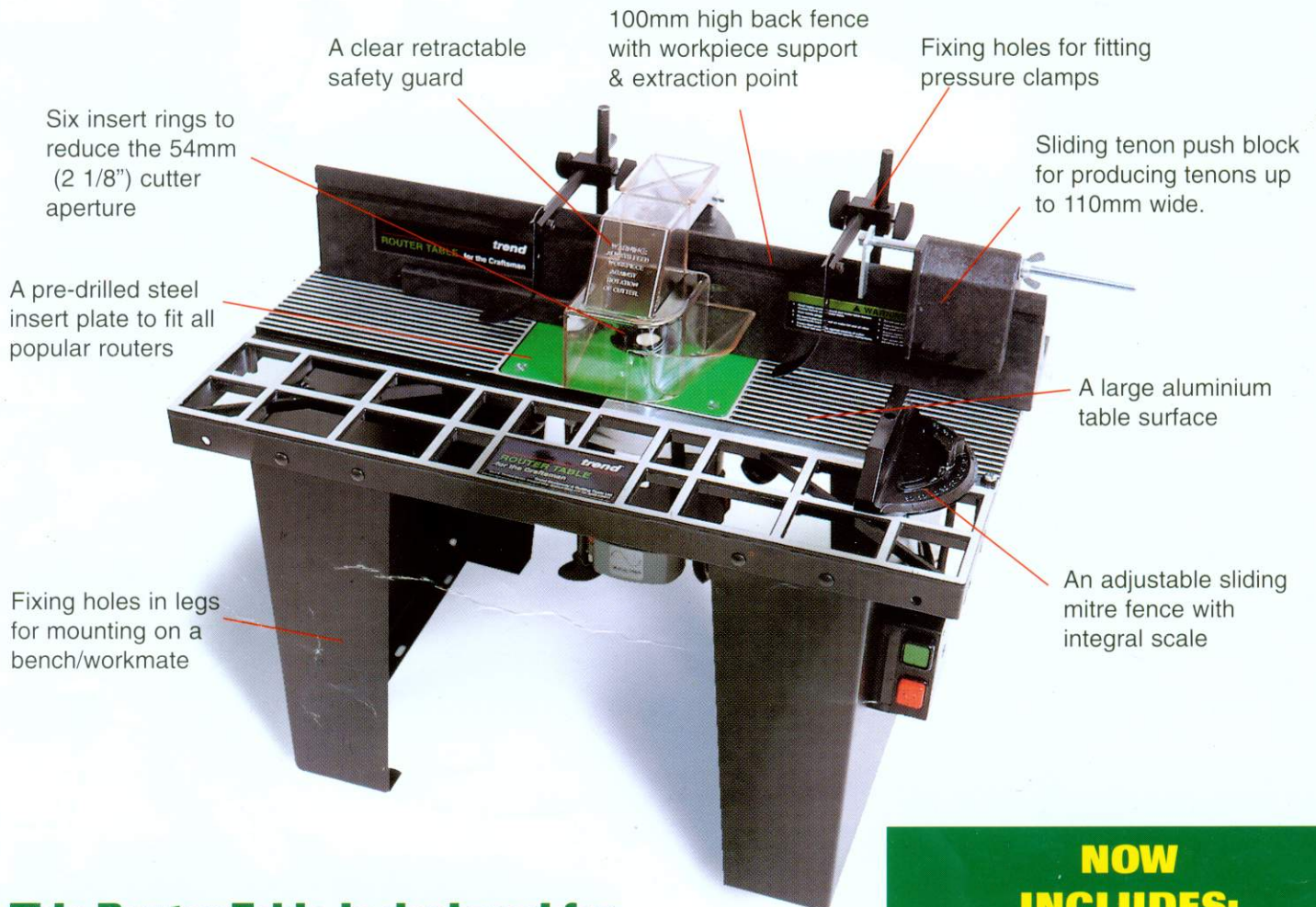
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Issue 23 - 6th Mar - 30th Apr 1998

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What an exciting time we all had at our International Woodworking Exhibition at Wembley. The projects sent in by readers for the various competitions proved beyond doubt just how talented Routing readers are. The objects produced were first class and made everyone who saw them gasp in admiration for the skills and creativity demonstrated.

We hope that many more of you will be entering our next competition to be held during our Exhibition at Birmingham's NEC in October.

Meanwhile, to encourage you to further develop your skills with the router, we know you will enjoy the free cabinet door booklet that is attached to the front cover of this issue.

In addition, throughout this edition we bring you a number of ideas for producing jigs, templates and guides as well as a number of home improvement ideas.

Peter Roper
Editor.

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EDITORIAL

Editor
Peter Roper

Group Editor
Mark Ramuz

Editorial Administration
Lynn Bugden

PRODUCTION

Designer
Mark Mathewson

Illustrators
Grahame Chambers
Tony Burlinson

Production Administrator
Theresa Davis

Printed by
St. Ives Roche plc

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SALES

Group Sales Manager
Tina Cardy
Classified Sales Executive
David Sanvoisin

Southern Area Sales
Jo Casemore

Northern Area Sales
Colin Walker
Thornley House, Carrington,
Urmston, Manchester, M31 4DD.
Tel: 0161-776 4460
Fax: 0161-777 6524

Sales Administration
Lynn Bugden

MANAGEMENT

Group Managing Director
Tony DeBell

Business Manager
Stuart Cooke

Circulation Manager
William Pearson

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What's new

Heavy duty saw

Latest introduction from Clarke International is a heavy duty 12in. saw. Manufactured from tough, galvanised steel it is driven by a 3hp, 230 volt motor. The 305mm blade operates at 2830 rpm and can handle cross-cutting and ripping in hard and soft woods. The blade can tilt up to 45 degrees and a 45 degree mitre is possible when cross cutting and ripping. Maximum depth of cut is 70mm.

Price is £299.95.

Further details from:

Clarke International, Hemnall Street, Epping, Essex, CM16 4LG.
Tel: 01992 565300.

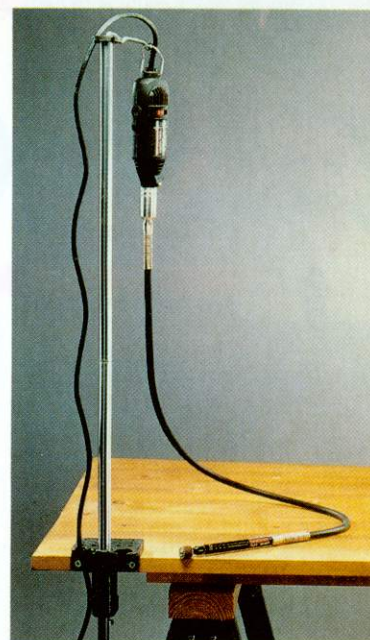


Dremel attachment

A flex-shaft attachment is now available for use with the Dremel Multi. Featuring a 36in. shaft that can be attached to the Multi, the other end of the cable shaft features a hand-piece with a quick change nut to hold the relevant accessory. Price is £38.95.

Further details from:

Dremel Hotline on 01895 838434.



Disposable tip cutter

A solid tungsten carbide disposable insert straight router cutter, Versofix, is available from KWO Tools. Designed to eliminate re-sharpening costs and problems, the cutters are said to be chip thickness limited and kick-back free. Cutters are produced in both 1/4in. and 1/2in. shank sizes and in cutting diameters from 8mm up to 22mm. In addition a long reach cutter offering a 50mm cut length is available for use in all types of work top jig.

Further details from:

KWO Tools (UK) Ltd., 4 Strawberry Vale, Vale Road, Tonbridge, Kent TN9 1SJ. Tel: 01732 364444.

Junior tool set

Minicraft have introduced a versatile educational kit especially for the younger enthusiast with a creative flair and interest in craft and model making.

This 12 volt kit includes a 20W mini drill that runs at 18000 rpm, plug-in transformer, two collets 2.3mm and 3.2mm plus 10 accessories. Price is £24.99.

Further details from:

Minicraft, Macford Products Ltd., 1 & 2 Enterprise City, Meadowfield Avenue, Spennymoor, Co. Durham DL16 6JF.
Tel: 01388 420535



Safer working

Using a router creates a lot of dust, so 3M have produced the Premium Powertool respirator. It is designed to protect the lungs from fine dusts caused by powertool work.

It is CE marked and said to be suitable for working with MDF. It is light, easy and comfortable to wear. A valve reduces the heat naturally generated when a mask is worn and maximises exhaled air. Price is £4.99.

Further details from:

3M United Kingdom PLC, 3M House, PO Box 1, Market Place, Bracknell, Berkshire RG12 1JU.
Tel: 01344 858617.



Top range fretsaw

Power tool manufacturer Kity has designed and developed a new addition to its range with the 417 Fretsaw.

Said to be simple to use, extremely accurate, it can be used on timber, alloys, plastics and many other materials. Ideal for jig making, marquetry and other fine detail work it is built to the highest standards for accuracy, reliability and long life performance.

The Kity 417 measures 480mm by 260mm and weighs only 16.5kg for easy movement around the workshop. Powered by a 100W motor, it is quiet and includes a number of innovative features such as large adjustable tilting table with an aluminium reflective coating, a non-slip blade tightening system using a 'clock-screw' system, knife-edge blade clamps and a converging V blade clamping system for secure

blade mounting. This system even allows the blade to be changed when in the middle of a work-piece.

It features two blade speeds for fine or course cutting and a dust extraction facility. Price is £256.00.

Further details from:

Stayer Power Tools Ltd., Unit 9, Guildford Industrial Estate,

Deaconfield, Guildford, Surrey GU2 5YT. Tel: 01483 454502.



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Around The Home



Michael Waite designs a range of shelves to store books and ornaments

For many years my collection of books has been scattered in various locations in my house and even packed away in boxes, which did not make it easy to consult some of them. However, when my wife and I recently moved house, I realised that there was a large blank wall which would be an ideal place for a purpose-built range of shelves for books and ornaments.

A radiator occupied part of the wall and obviously this could not be moved so the shelving was built around this.

Design considerations

Planning of the shelves was started even before the old wallpaper had been stripped off. The main outlines of the shelving were sketched to establish the general concept. The final version followed the initial sketch quite closely except for the large open space in the centre, which had been intended to take a large picture. However higher authority prevailed (my wife objected) so this idea was discarded.

It was important that as much of the weight of the books as possible should be carried down to the floor level, therefore the outer four uprights were full length. The rest of the construction involved using two full width rails screwed to the wall and to which the uprights were notched and screwed. This has proved to be simple, but very

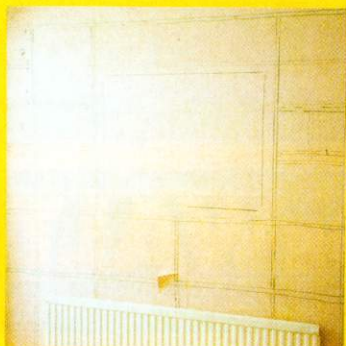


secure. Fig. 1 shows the basic construction. It was not considered necessary to make the shelf spacing to be adjustable, so a form of KD fittings was used, which meant

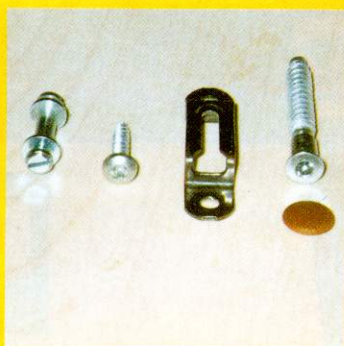
that the shelves were drawn tightly together to give an extremely solid construction. The method of joining also meant that the fixings were almost invisible.

This is known as the Modular

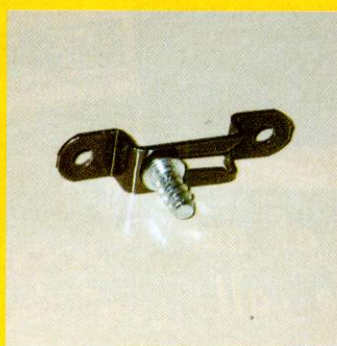
Wall Bookshelves



Sketch on wall with broad concept



Hardware



Modular fitting with screw inserted



Shaping bottom of centre upright C or D

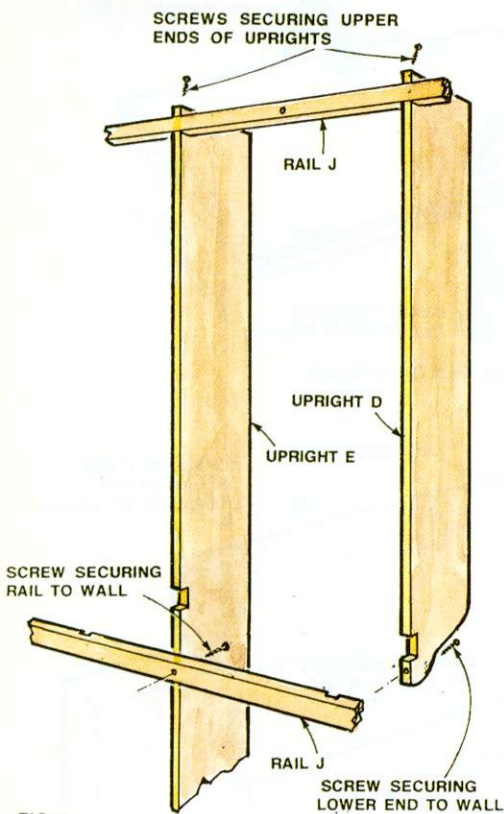


FIG 1

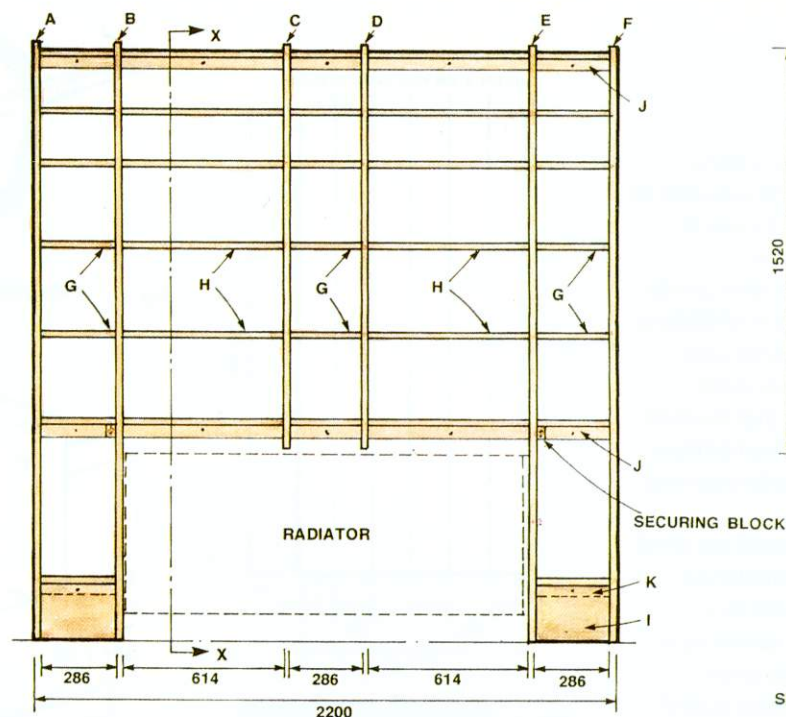
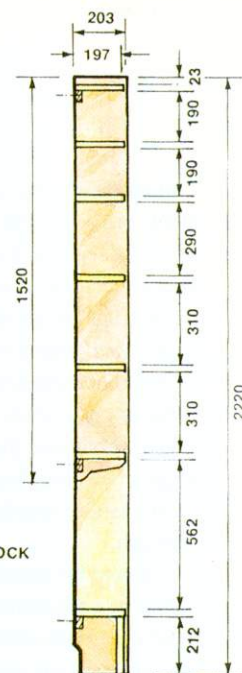


FIG 2



SECTIONAL ELEVATION THROUGH X-X

connecting system and details of the source of supply are given at the end of this article. The system offers various fittings, which give wither permanent or removable

attachment of shelves or panels to a leg unit or vertical panel. The principle of the action of the fittings is as follows: there are two parts (a) a slotted cranked

plate which is screwed into a recess at the end of a shelf or partition and (b) a screw with a specially shaped head which is screwed into the upright. The

head of the screw is introduced into the open end of the slot in (a) and pushed towards the closed end. As this is done, the shelf is drawn tightly towards the upright.

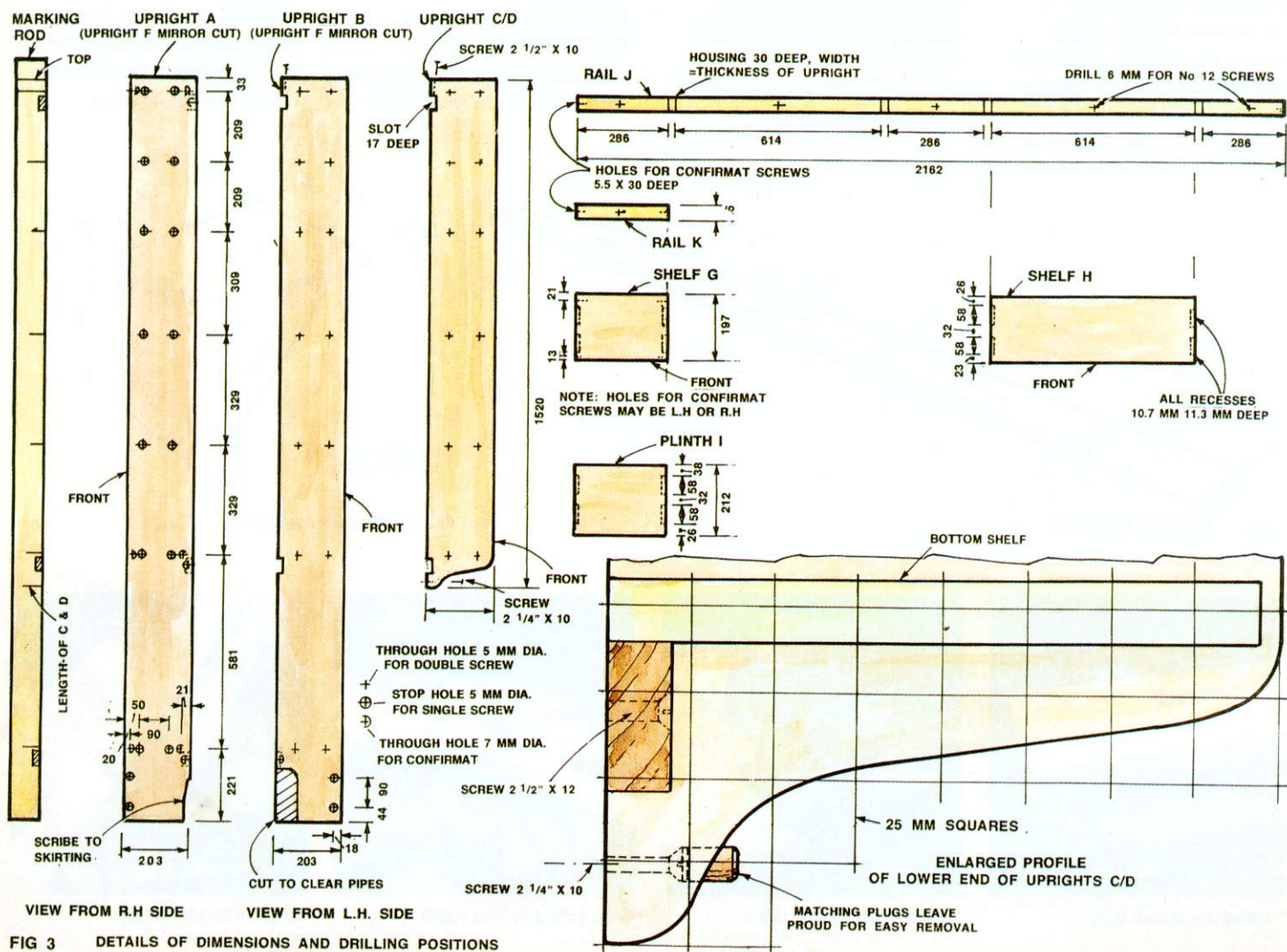


FIG 3 DETAILS OF DIMENSIONS AND DRILLING POSITIONS

In addition to the Modular fitting, extra strength was given to the end panels by the use of Conformat connectors.

The length of the shelves was limited to a maximum of 614mm, so that there should be little deflection of shelves under loading. Note also that the shelf lengths have been standardised to only two to simplify machining to length.

It should be pointed out at the outset that the bookshelves must be constructed very precisely and the special jig for recessing the ends of the shelves must likewise be very accurately made. It is suggested therefore that anyone intending to tackle a similar project should have good experience in routing techniques.

A scale drawing showing principal dimensions was made initially (Fig. 2) and also a components drawing, which showed the various cut outs and drilling position centres on each piece (Fig. 3).

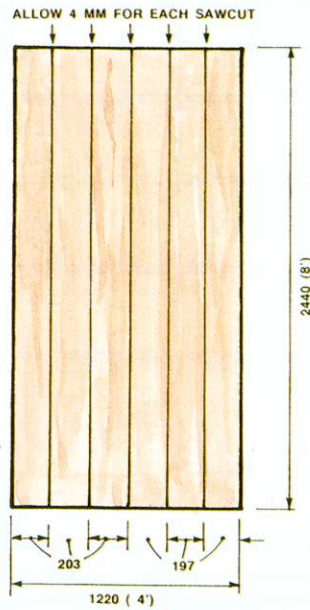


FIG 4 DIVISIONS OF STANDARD VENEERED BOARD

Materials

It would have been gratifying to use solid wood for the project, but this was ruled out for two main reasons; first the cost of the required quantity of solid timber would have been prohibitively high; second the presence of the radiator would have given

excessive expansion and contraction in the material. Therefore furniture grade chipboard veneered in sapele was used, which was supplied with a

matching edge banding. The thickness was 3/4in. (19mm), which is the minimum needed to take the weight of books. Do not use the thinner veneered

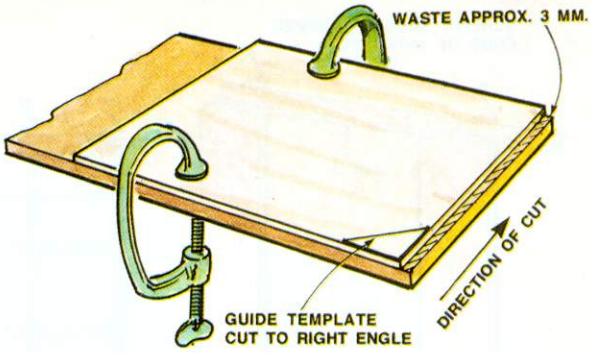


FIG 5 SQUARING END OF UPRIGHT

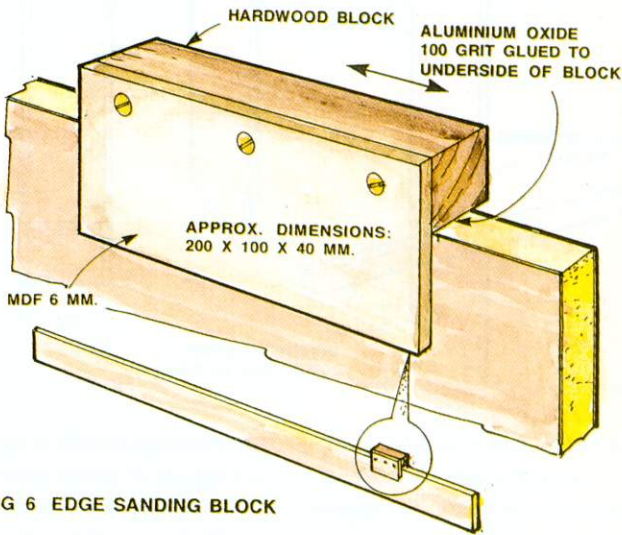


FIG 6 EDGE SANDING BLOCK

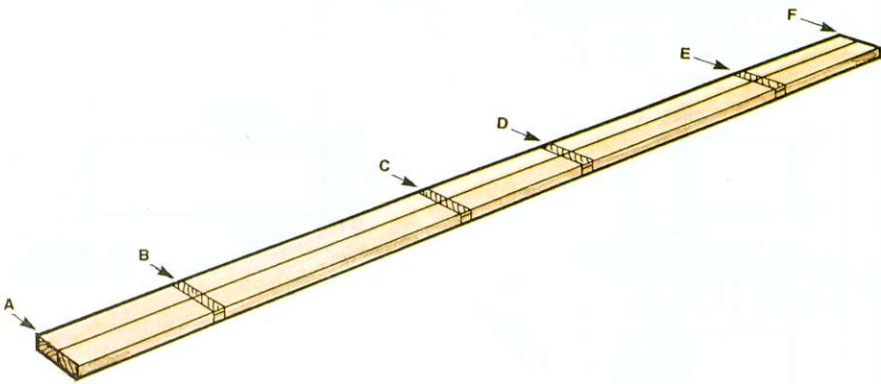


FIG 7 MARKING RAILS (J)

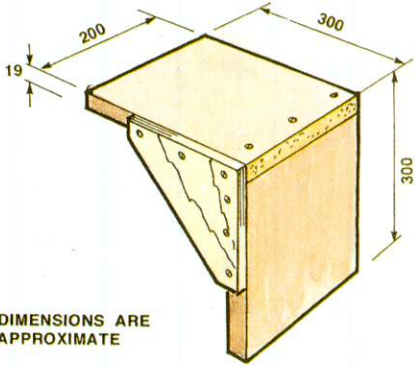
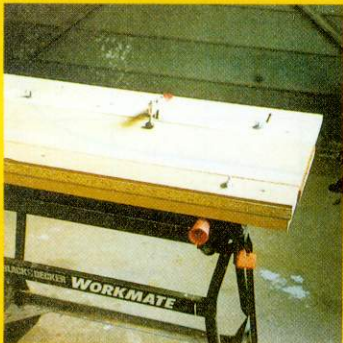
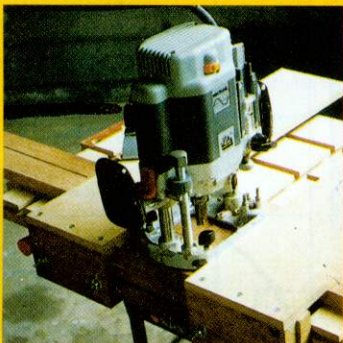


FIG 8 SUPPORT BRACKET



Trimming end of shelf in jig



Cutting housing across rails J



Cross cutting housing in rails J



Using rod to mark uprights

Cutting List

Part	Description	Qty	Length	Width	Thick	Material
ABEF	Uprights	4	2220	203	19	Veneered Chipboard
CD	Uprights	2	1520	203	19	Veneered Chipboard
G	Shelves	20	286	197	19	Veneered Chipboard
H	Shelves	12	614	197	19	Veneered Chipboard
I	Plinths	2	286	209	19	Veneered Chipboard
J	Cross rails	2	2156	45	20	H/W to match
K	Cross rails	2	286	45	20	H/W to match
	Edge band		30 metres approx.	To match panels		

Hardware

Confirmat screws Ref. 264.43.194	Qty. 20
Standard Modular fitting Ref. 262.47.021	Qty. 136
Screws single Modular Ref. 262.47.807	Qty. 40
Screws double Modular Ref. 262.47.923	Qty. 48
Hospa pan, head screws Ref. 015.71.937	Qty. 300
Steel Screws csk 21/4 x 12	Qty. 12
Steel screws csk 21/4 x 10	Qty. 2
Steel screws csk 11/4 x 8	Qty. 6
Cover caps brown 045.01.033	Qty. 20

Where references are given these are from the Hafele catalogue and the components are obtainable from:

Isaac Lord,
185 Desborough Road,
High Wycombe,
Bucks. HP11 2QN.
Tel : 01494 462121

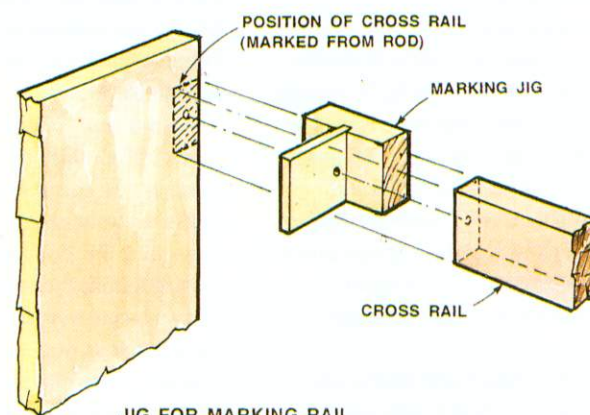


FIG 10
JIG FOR MARKING RAIL
AND OUTER UPRIGHTS

chipboards readily available in most DIY outlets and which are only 5/8in. (15mm) thick.

The dealer from whom the chipboard was purchased was able to offer a cutting service and it was well worth availing myself of this. The appearance of the shelving is improved if the uprights are slightly wider than the shelves and these were cut to 203mm and 197mm respectively. These sizes were chosen to divide up economically two 2.4m x 1.2m sheets of veneered board. Each board was cut into three panels at 203mm wide and three panels 197mm wide. Allowing for 5 sawcuts each at 4mm wide this totals exactly the board width of 1220mm. See Fig. 4. The planed matching hardwood rails were also obtained from the same source.

The shelf depth of 197mm may seem rather shallow, but it was not desirable for the shelving to project too far into the room and most of my books could be accommodated within this depth.

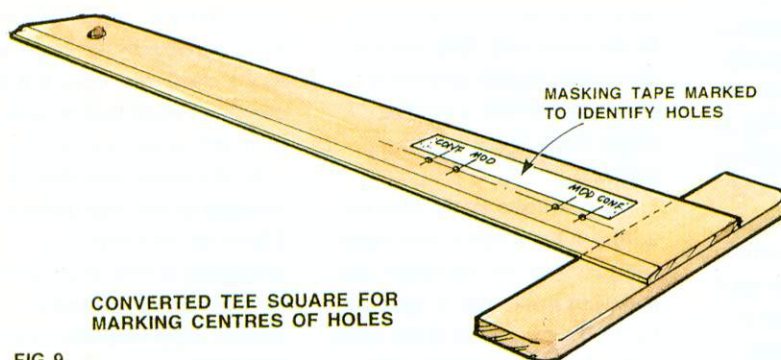
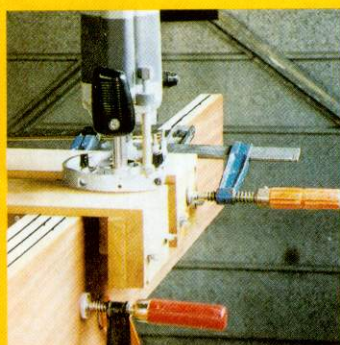


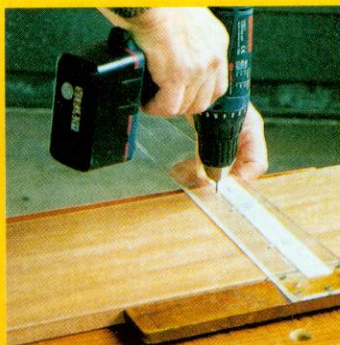
FIG 9

Marking out and cutting materials

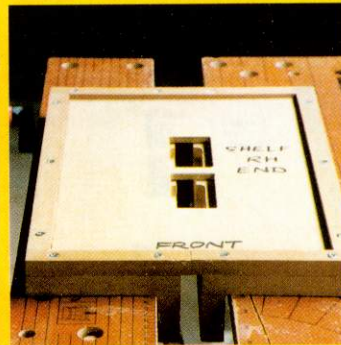
All uprights and shelves were cut to approximate length, leaving some 3mm oversize for final trimming. If the factory finish is satisfactory only one end needs to be trimmed. At this stage the uprights were identified by letters A - F. To trim the uprights A, B, E and F the following procedure was adopted. A piece of 6mm MDF approximately 900mm x 600mm was prepared with two adjacent sides at an exact right angle. This was cramped to the upright with one of the true edges level with the edge of the board and the



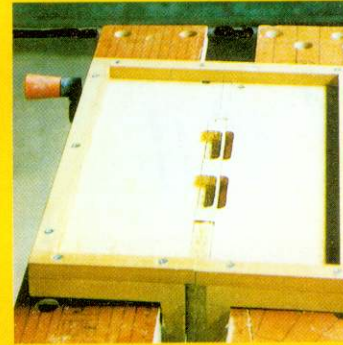
Routing slots in rear of uprights



Drilling pilot holes for shelf screws in uprights



Recessing jig with template



Recessing jig with template removed

other prepared edge at the finished length. A bearing guided cutter was then taken across the upright as shown in Fig. 5. A heavy duty 19mm cutter was used. The waste was removed in one pass. The lower ends of the centre uprights C and D were similarly roughly shaped by a jig saw and to final profile using a shaped template and bearing guided cutter.

The shelves and plinths were trimmed to final length using the jig which was described in Issue 18 of Routing. This speeded the production of these parts considerably and even more importantly ensured the perfect accuracy which was required for the construction.

Edge banding was next carried out on the front edges of the shelves and top and front edges of the uprights. This should be done at this stage because the front edges must be identified so that subsequent marking and drilling of the uprights and recessing of the ends of shelves is always carried out from the front.

The edges of the panels had been cleanly sawn by the supplier, but to ensure that the edge banding made perfect contact when it was ironed into place, the edges were rubbed with a simple block as shown in Fig. 6.

The edge band was applied to the lower shaped ends of upright C and D by heating a short section of copper tube, applying it to the band already in place and

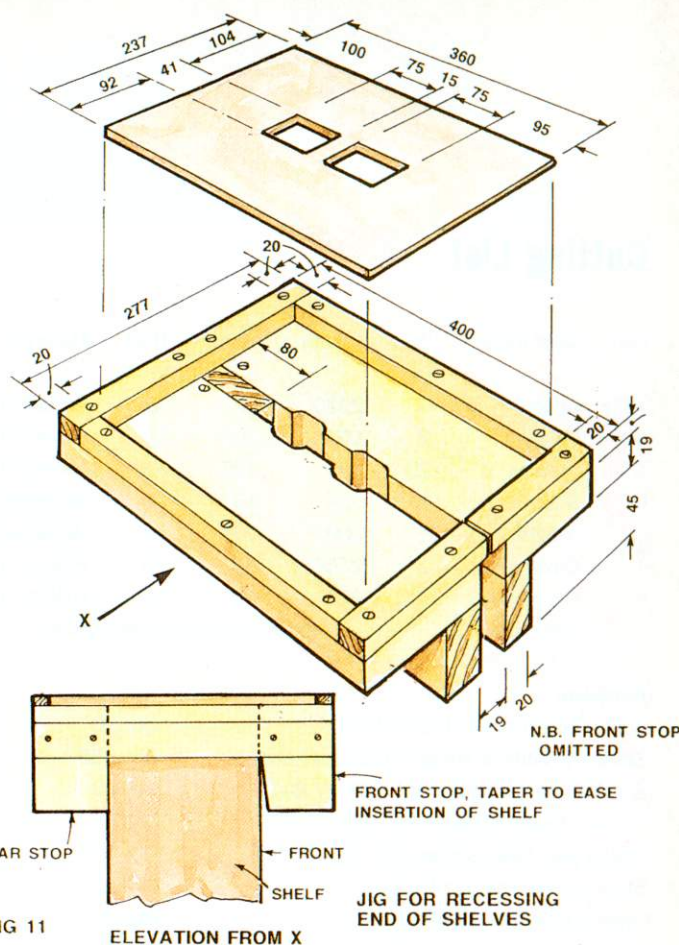
rolling it along the curves, followed immediately by rubbing the edge band down with a wooden block.

The two main cross rails (Parts J) were taped together using masking tape at the ends and middle, to facilitate marking out and cutting the 3mm deep housing to take the uprights. The left hand ends were lined up and the right hands were roughly cut to length, being trimmed to final length with the router similarly to the method used for the uprights. A scrap piece of wood may be taped to the rear edge to prevent breakout in the rails.

All intermediate pairs of lines for the uprights were precisely marked and squared across as shown in Fig. 7.

The cross cutting of the housings was carried out using the jig described in this Issue and it proved its worth in this operation. The cutter used was a 16mm straight with a 30mm guide bush. Only a single pass was needed to cut to the final depth.

A full length rod made from 6mm MDF was marked off for the setting out to the screw positions supporting the shelves, also the Confirmat screw positions on the inside of the uprights. See Fig. 3. The marking out of one upright is shown in photographs. Some of the holes were required on both sides of the uprights and some only on one side, hence the need to be methodical and careful at this stage. The same rod was



also used to mark out the positions of the cross rails on the uprights. All of the lines were squared across the uprights lightly in pencil.

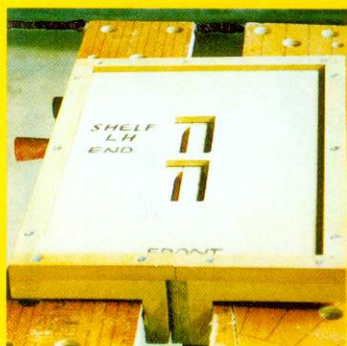
The slots in the rear edges of the uprights B, C, D, and E were cramped together and cut at the same time using the same jig as for the cross rails. Note that the jig required support at the rear edge. Fig. 8 shows a suitable simply made device for this purpose.

The pilot holes for the Modular screws in the uprights were made using a converted Tee square with a perspex blade. This is shown in Fig. 9. The centre line of the holes in the blade were lined up with

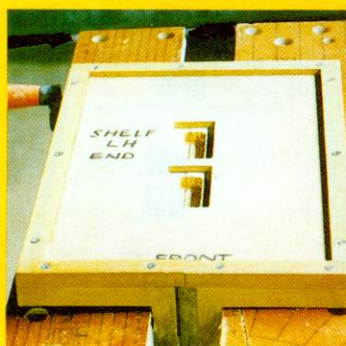
the previously marked lines across the uprights and the pilot holes drilled.

The final operation was to mark the ends of all cross rails onto the outer uprights A and F and lower ends of inner uprights B and E. For this a simple jig was made which contained a pilot hole and which was exactly the same width as the cross rails. Using this jig, pilot holes could thus be drilled from both sides. See Fig. 10.

All pilot holes could then be enlarged to their final diameters, 5.5mm for the Confirmat connecting screws and 5mm for the Modular screws. Use a suitable depth stop when drilling blind holes.



Routing LH end of shelf (before cutting)



After routing LH end shelf



Checking depth of recess



Components before assembly

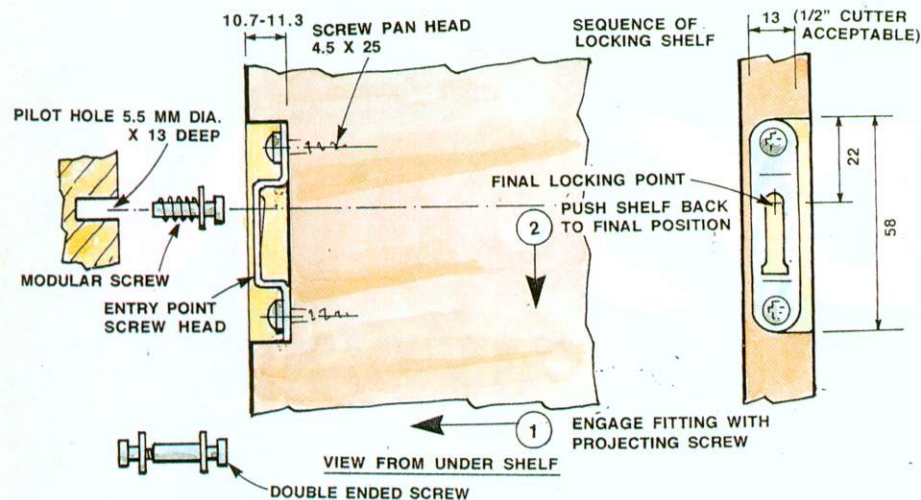


FIG 12 DETAILS OF MODULAR FITTINGS

The lower ends of uprights C and D were drilled with clearance and counterbore holes to take the wall fixing screws. Tapered plugs were made for these and fitted later. Fig. 2 shows one of these.

The tops of uprights B, C, D and E were drilled with clearance holes and countersunk to take the top securing screws.

Recessing Jig

Next came the most critical part of the whole construction: making the jig for recessing the ends of the shelves to take the Modular fittings. The jig and dimensions are shown in Fig. 11.

Since the top guide template had to be turned over according to which end was being recessed, left or right, it was necessary to indicate on each side of the template which was the front and which was left or right.

To be perfectly accurate, the Modular fitting calls for a 13mm cutter, but a 1/2in. cutter will prove acceptable. The template was designed to make use of a 30mm guide bush. The path of

the router was always made in a clock-wise direction within the template guide. When inserting the shelf into the recessing jig it was vital to ensure that the front of the shelf was always placed to the front of the jig.

The most critical part of this stage of the work was in ensuring that the depth of the recesses was exactly right. If the depth was too shallow, the shelf would not pull up tightly to the upright and if it was too deep, the shelf would not easily slide back into its final position. The specified depth of cut is 11.3mm, but it was found that this made the shelf too tight and 11.0mm gave an easier fit. To ensure the correct fit it is recommended that several trial cuts are made and the optimum one used. Fig. 12 shows an end elevation and end view of one of the fittings. Pilot holes were drilled into the ends of the shelves to take the Confirmat connecting screws where required. The modified Tee square was again used to mark the hole positions. A 6mm spacer piece was inserted between the stock and the front of the shelf. The pilot holes

were then enlarged to the final diameter of 5.5mm. Pilot holes for the fixing screws for the Modular fittings in the ends of the shelves were next drilled. The position of the

screw holes was marked by placing one fitting into the recess and drilling through the centres of the end holes. The Modular fittings could then be screwed into position.

A trial run was made to ensure that all parts fitted together satisfactorily. The top securing screws were also fitted temporarily. All components were finished before assembly and were first rubbed down with fine abrasive paper to remove all finger and pencil marks. All visible corners on shelves and uprights were eased off to a slight radius. Two coats of Ronseal quick drying varnish were applied to all surfaces, being rubbed down with fine wet and dry paper after each coat. A third coat may be given to the upper surfaces if required. The two types of Modular screw: a single and double ended could now be fitted into the uprights.

Installation

The two outer uprights were connected to the main cross rails by Confirmat screws and positioned

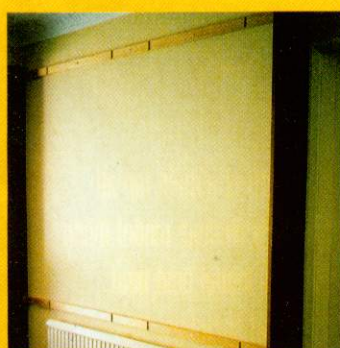
against the wall. They were checked for perpendicular with a spirit level and this was also used to check that the cross rails were horizontal. If necessary pack up one of the uprights to ensure that the rails are correct. When it was certain that all was in order, the wall was drilled to take the plugs and fixing screws. Screws 2 1/4in. x 12 were used to ensure that the rails were completely secure.

Next the inner pair of full length uprights B and E were secured by screwing into the top rail and with a small block where they cross the lower rail. The bottom short rails were also connected at this stage.

Finally the centre uprights C and D were secured into the top rail and the lower ends were screwed into wall plugs.

All shelves were now fitted by being dropped onto the projecting screw heads and pushed back to the wall. It was necessary to fit the plinths before the two lowest shelves could be fitted between the outer pair of uprights.

Finally the Confirmat screws were driven through the outer uprights into the top, intermediate and bottom shelves. Matching cover caps were pushed into the screw heads. The finished bookshelves look very impressive, although it must be said that they require a fairly large room so that they do not appear too dominant. Anyone wishing to adapt the principle of their construction could of course vary the sizes and shelf spacing to suit their own requirements.



Outer uprights fitted to wall.



Shelf with recesses and modular fittings and upright with modular screw heads



Bookcase fully fitted to wall



Completed shelving

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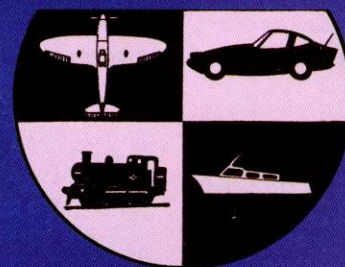


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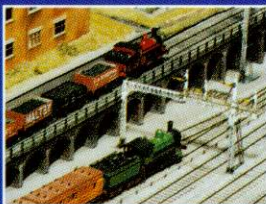
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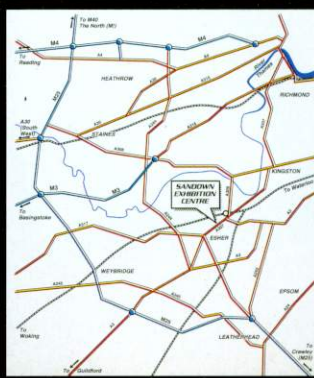
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Plant Shelf

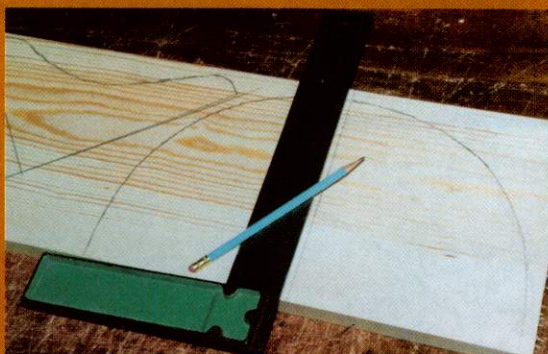
These shelves, designed by Peter Badger can have a multitude of uses around the home

The first of these small shelves was intended as one of a group arranged randomly to liven up a blank wall with plants or vases of flowers, but it could have other uses, such as a telephone shelf, or the method of construction could be used for shelves of other sizes or with several bracket.

The original shelf was made of building quality softwood and painted, but almost any wood could be used and given a finish to suit surroundings. The wood used in the shelf illustrated was sold as '1 inch nominal', which means it is supplied planed about 13/16in. (20mm) thick.

Support

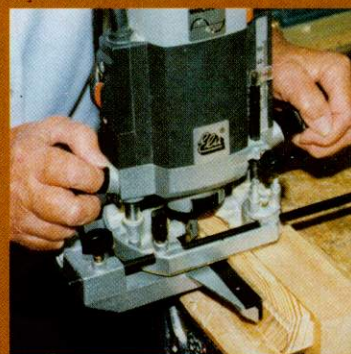
The shelf is supported on the wall by two screws and the bracket merely rests against the surface.



Mark out with grain the long way



Cut groove with router against guide strip



Piece alongside gives extra bearing when cutting dovetail on bracket

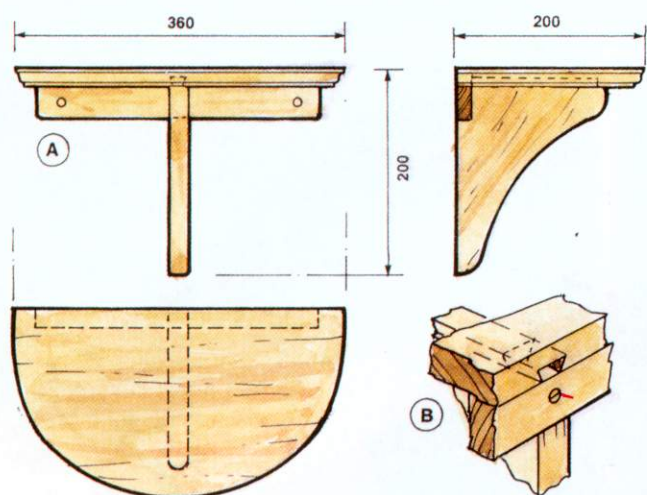


Fig. 1 Suggested sizes for plant shelf.

Cutting List

Sizes in inches (millimetres)
All wood 13/16 (20) thick

	No.	L	W
Shelf	1	14 (360)	8 (200)
Bracket	1	10 1/2 (270)	6 (150)
Supports	1	12 (305)	1 1/4 (32)

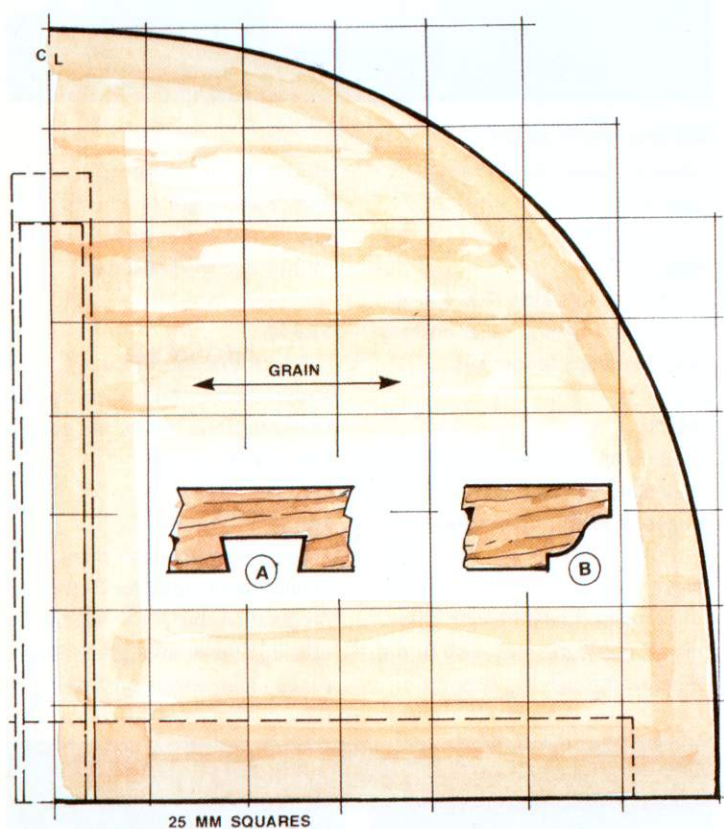


Fig. 2 Sizes and sections of shelf.

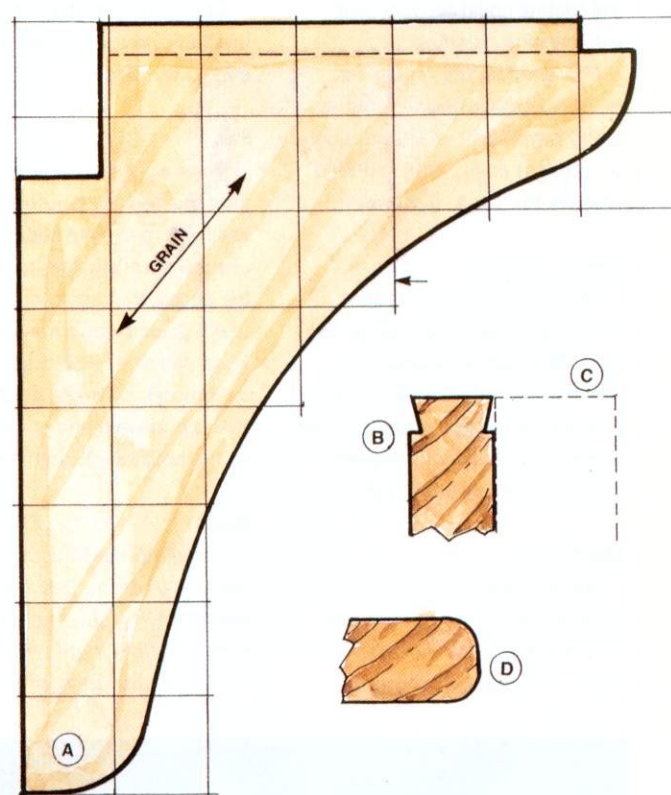


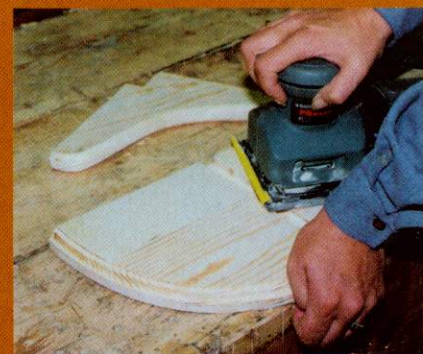
Fig. 3 Sizes and sections of bracket.



Mould all round curved edge



Round over shaped edge of bracket



Palm sander helps sanding surfaces

Project

The supporting strip is glued under the shelf and is notched into the bracket, which has a dovetailed housing joint to the shelf. This is a very strong joint that prevents the shelf warping.

Router cutters needed are one for moulding the edge of the shelf and another for rounding or moulding the edge of the bracket. A plain cutter will remove most of the waste in the housing groove before a dovetail cutter undercuts the edges of it and prepares the top edge of the bracket to match. A router mounted in a table could be used for some cuts, but all the routing could be done with the machine held freehand.

The shelf is shown with an elliptical outline (Fig. 1), but it could have another shape, such as straight edges with rounded corners to increase top area.

Step 1

Mark out the shape of the shelf (Fig. 2) and the bracket (Fig. 3). Note direction of grain. To avoid any risk of the shelf tilting forward, increase the angle of the bracket to a couple of degrees more than 90 degrees (Fig. 3A).

Step 2

You will probably find it best to do some of the router work before cutting the parts fully to shape, as the waste wood

provides something to grip. If you delay cutting out the notches at the top of the bracket, the dovetail cutter can be taken through and if it falters at the start or end of a cut, that will be in waste wood.

Step 3

When you cut the dovetailed top to the bracket (Fig. 3B) it is helpful to have a piece of wood cramped beside it to give a broader base for the router sole to slide on (Fig. 3C).

Step 4

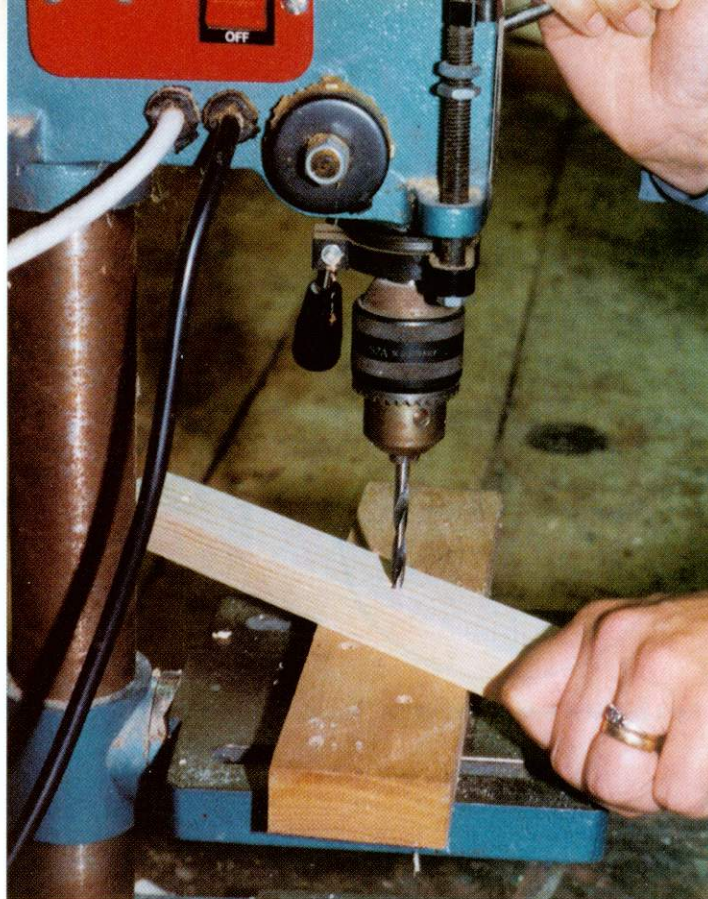
Complete the shaping of the bracket and round over the front edge (Fig. 3D).

Step 5

Remove all the waste you can from the housing groove in the shelf with a straight cutter, then use the dovetail cutter to undercut the edges of the groove (Fig. 2A). Use a guide piece across the wood and work progressively so the bracket will make a push fit. Trim the forward end of the groove so the bracket will push fully in.

Step 6

Complete the shaping of the front edge of the shelf and mould it (Fig. 2B). The section shown suits a shelf above eye level, but you could choose



Drill three holes in support

another design for a lower position.

Step 7

The support strip (Fig. 1A) is plain with rounded lower corners and two holes for screws.

Step 8

Sand all parts at this stage, especially the forward-facing edges of shelf and bracket.

Step 9

Assembly could be with glue alone, but if you may wish to put a screw through the support

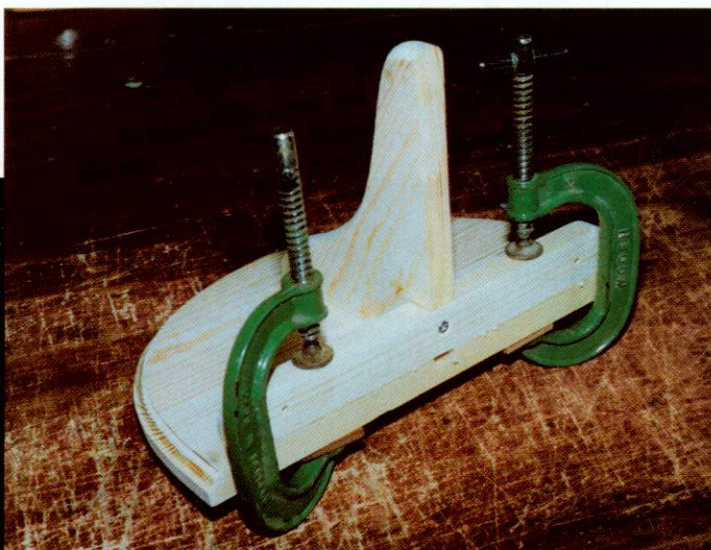
strip into the bracket (Fig. 1B). The short length of housing groove above the strip does not matter and will not show.

Step 10

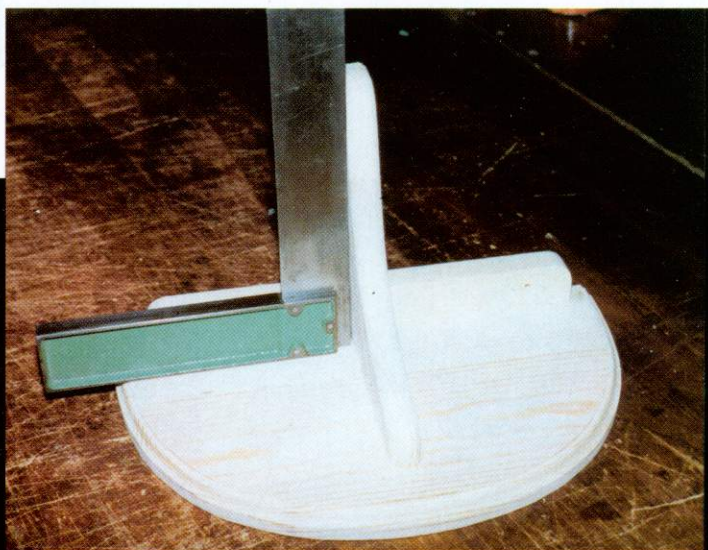
Check that the bracket is square to the shelf when viewed from the front, before the glue has started to set.

Step 11

For a painted finish there should be no need for further preparation, but if you will be staining, make sure there is no excess glue on the surfaces.



Cramp parts when gluing



Check bracket is square

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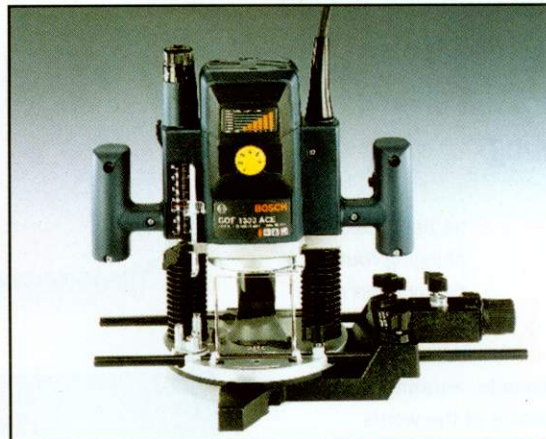
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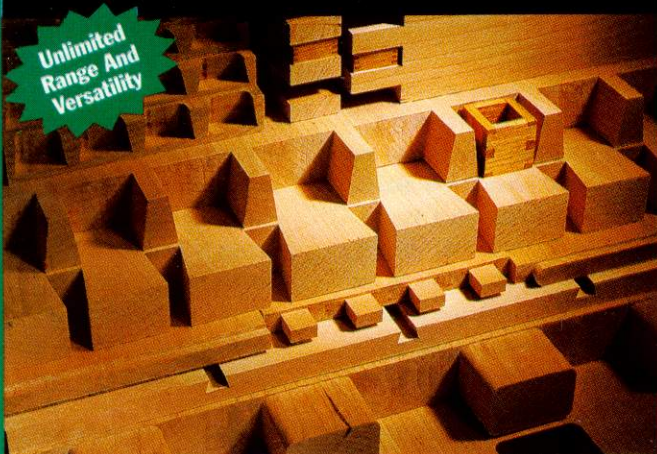
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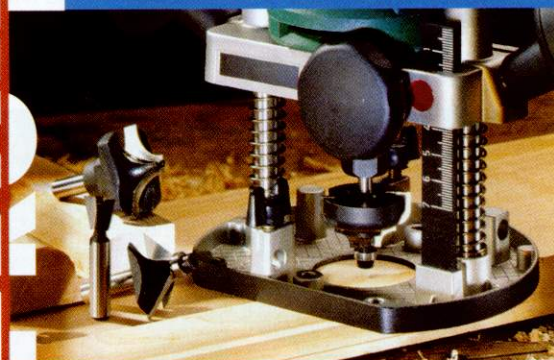
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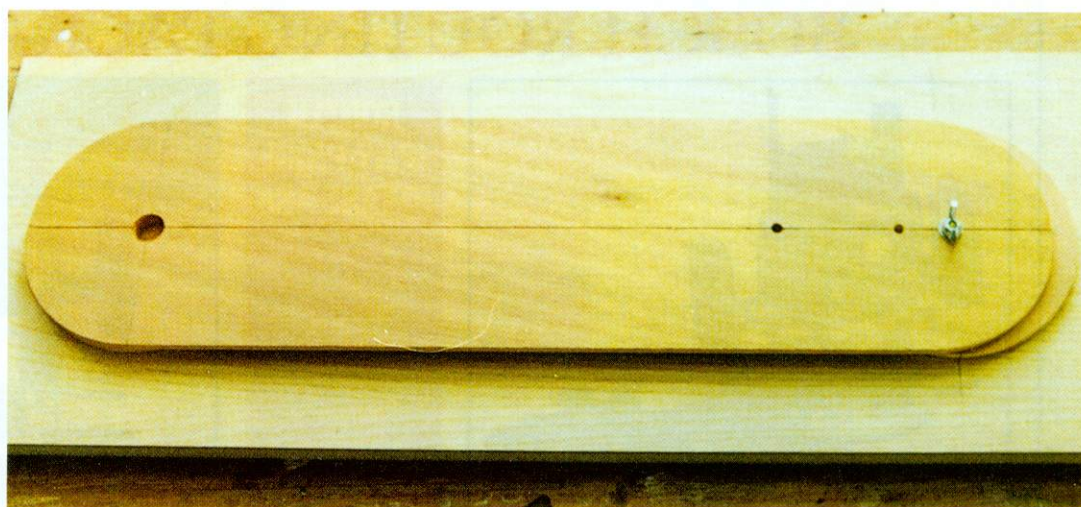
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Robert Avery offers some help and advice for producing an essential element of routing

The hand held plunging router has rightly been called woodworking's most versatile hand tool, remarkable, amazing, incredible just some of the words commonly used to describe this power tool.

Even with the vast range of cutters now available the potential capabilities and versatility of this tool would be very limited without jigs, templates and other various aids. Most of these items needed to increase the use of the tool can be purchased and although generally well made and permit accurate work to be produced, they can be expensive. Unless the jig, template or guide is to be used extensively or in a professional workshop, make your own, not only is it much cheaper but the satisfaction is well worth the effort. Making the jigs and templates can occasionally be more interesting than the project itself.

Before spending time and possibly money on making equipment to extend the use of the router it is worthwhile to contemplate how the jig or template could be used for future



Jigs Templates & Guides

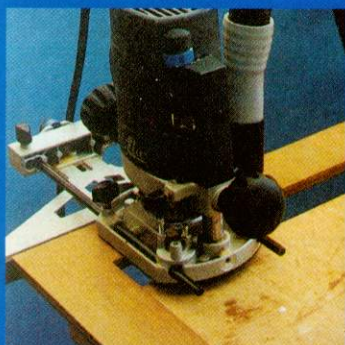
projects, a minor adjustment may only be required which would justify spending a little more time, effort and thought on it. In my workshop I have many jigs and templates which can without any further work spent on them, be used on a variety of projects and occasionally for a use for which they were never intended or designed. One of the difficult and time consuming tasks is to cut and trim perfectly square, whether this be man made boards or solid timber. The material used for most projects will need to be finished

accurately to size and squared off in thickness and width. The router with the aid of a purpose made square and workboard will do this extremely well.

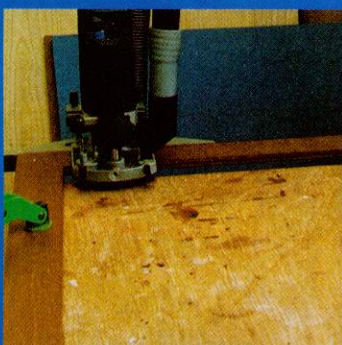
The Square/Guide

This is the wood version of the traditional carpenters roofing square revised of course to suite routing and joinery. It is always difficult to decide what size to make an item such as this, no doubt it will occasionally be too big and conversely too small. The one that I made and use is 750mm x 600mm x 12mm

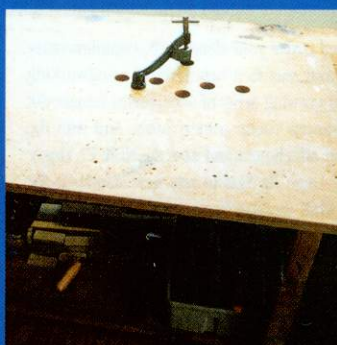
thick this has proved to be about the right size but if in doubt make it larger as the length of the arms could be cut shorter if necessary at any time. The width of the arms should be about 75mm this width allows for stability, ease of handling and is wide enough for the base of the router to rest on when using the square as a guide when machining. The thickness of 12mm is also suitable when machining with the router coupled with ease of handling and reasonable weight. It would be impracticable to make this



The square/guide and the workboard compliment each other



The bench holdfast is used to hold down the workboard



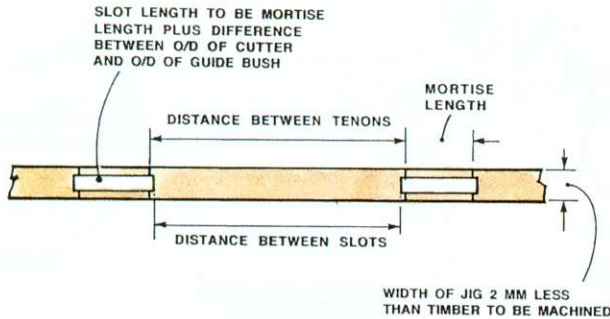
Being able in effect to move the bench top around is most useful



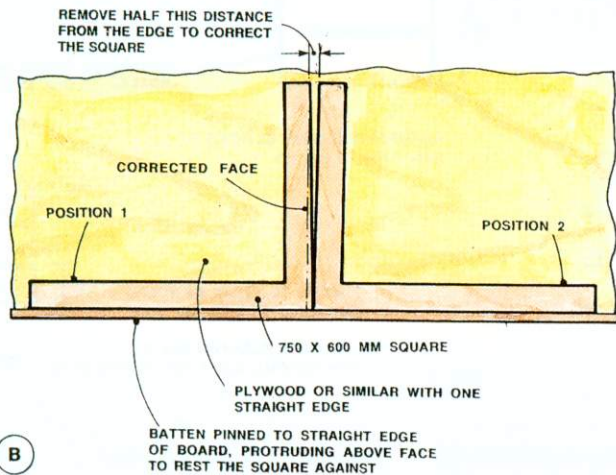
When a true and square edge is needed the workboard becomes invaluable

square out of two pieces with a joint at the corner, it is much better cut out of one piece, although it would be satisfactory to cut two pieces of 6mm thick plywood and glue them together. The router can be used to machine all the edges of the square using a template profile cutter. Cut the square approximately 4 - 5 mm oversize to allow for final trimming and then fix a straight edge to one of the arms leaving about 2mm to trim off with the template profile cutter, this will finish this first edge straight and true. To machine the second outer edge the straight edge should be fixed as square as possible to the first one, this will obviously be is better if carried out with as large a square as possible.

When both outer edges have been trimmed the squareness can be checked. This can be done on a piece of plywood or similar material at least 1400mm long by 600mm wide and with one long edge straight Fig 1 B. Lay the square on the board with one arm pointing to the left and draw a line against the right hand edge of the square turn the square over with the arm pointing to the right and draw a line against the left hand edge of the square, make



A JIG FOR MORTISES
MADE FROM 9 MM PLY

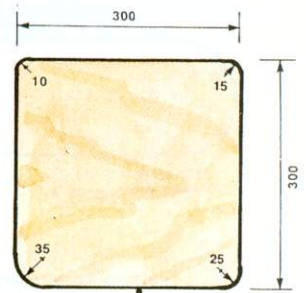


B TESTING SQUARE / GUIDE

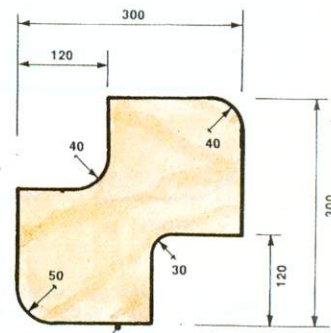
sure when carrying out this check that the bottom edge of the square is flush with the board. Alternatively, pinning a batten on the edge of the board would help. If the lines are not coincident trim off half of the difference that the lines are apart, the straight edge can be fixed onto the arm to carry out and simplify this operation, a little trial and error may be needed to get the square accurate. The short return at the

end of the arms can be trimmed off square to the outer edges. Finally the two arms can be trimmed to width, this can easily be done with the router.

The side fence should be fitted on the left hand side of the router as this is an internal cut and the direction will therefore be clockwise. Any straight cutter will suffice for this operation. Providing no more than 3mm needs to be trimmed off to obtain the finished width, only



A RADIUS TEMPLATE EXT.
MADE FROM 12 MM PLY



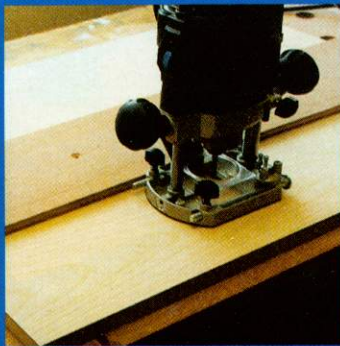
B RADIUS TEMPLATE INT. & EXT.
MADE FROM 12 MM PLY

FIG. 2

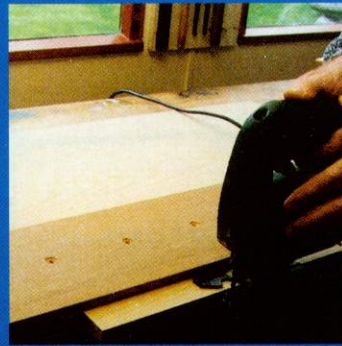
one pass will be required. The fence should be set to the required dimension from the edge of the cutter and traversed along the outer edges in two separate operations as the router will have to be turned at 90deg. Care will be needed to keep the fence tight to the edge of the square as the inside edge of the square is just as important as the outside, additionally it is possible to overrun at the internal corner



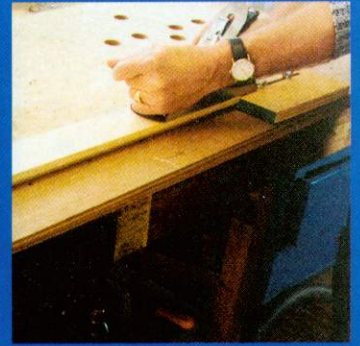
A self-guiding trimming cutter will need effective dust extraction



The straight edge guide is ideal for many routing operations



Even a small trimming with the jig saw can be made easier using the guide



Inverted position the guide can be used to hold the work for sanding or planing

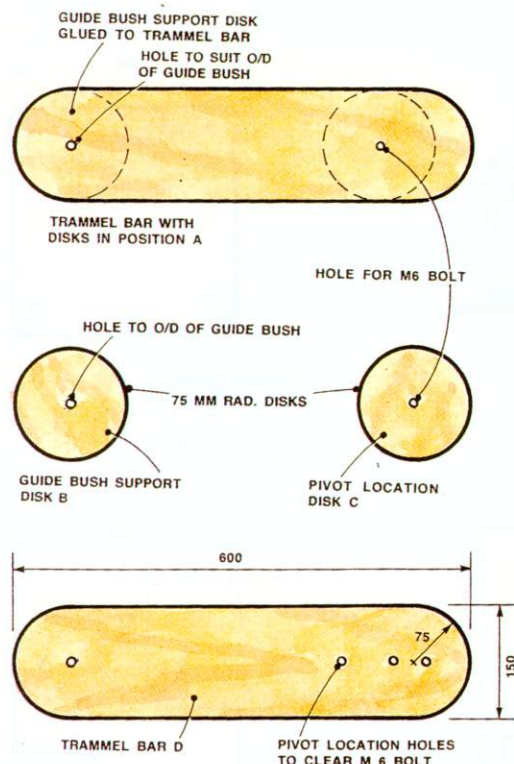
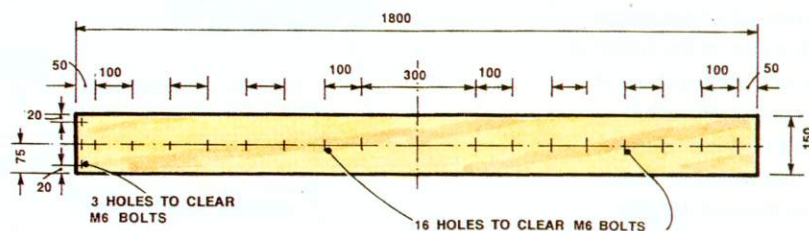
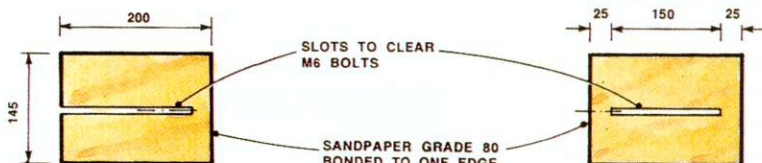


FIG. 3 CIRCLE CUTTING JIG
MADE FROM 6 MM PLY



STRAIGHT EDGE BODY A
MADE FROM 12 MM PLY



ADJUSTABLE GRIP BLOCKS B
MADE FROM 12 MM PLY

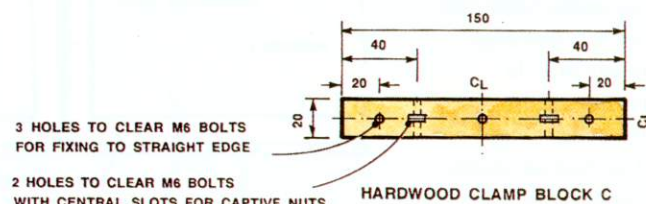


FIG. 4

and this should be avoided, the small radius left by the cutter can be trimmed out by hand later.

A workboard will be found to be singularly the most useful item. The top of the workbench, quite naturally comes in for harsh treatment over a period of time and it is helpful to work on a surface that is accurate, smooth and moveable.

The thickness of the top should be a minimum of 15mm and not much more than 18mm, remember this top will have to be lifted on and off the bench from

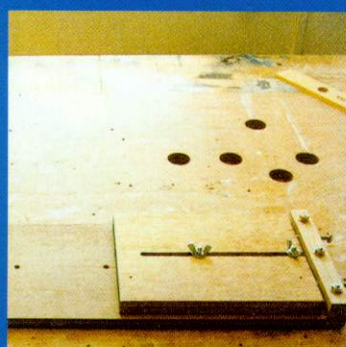
time to time. The overall size will depend on space and use but 600mm wide x 1200mm long should be large enough. If a bench holdfast is to be used in conjunction with this board several holes will have to be strategically drilled. To make full use of this board with the router, the front and return edge will need to be trimmed straight, square and blemish free. First trim the front edge by pinning or clamping a straight edge onto the board allowing about 2mm to be machined off with the profile cutter. The return end can be

squared off by clamping the square onto the board and running the profile cutter along the edge of the square. Finally check the end of the board with the square.

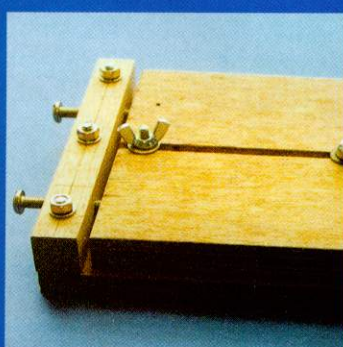
The straight edge guide will not only be ideal for routing grooves and straightening sawn and uneven edges but also marking out, and as a sawing guide. Rather than have one long guide to cover the majority of lengths envisaged it would be more useful to have at least two lengths, as the clamping block and grip blocks could be used for

any number of guides, providing of course not more than one would be needed at the same time. The main body of the guide should be made from plywood 12mm thick and approximately 150mm wide which would be sufficiently rigid up to 2440mm long Fig 4A. The holes along the centre are spaced at 100mm intervals which means the grip blocks need to be 200mm long, if shorter blocks are preferred the hole centres can be reduced.

The adjustable grip blocks Fig 4B, should be a minimum thickness of 15mm, 18mm



Sandpaper bonded onto the ends of the grip blocks effectively hold the guide



The hardwood clamp block and grip block in position



Prior to trimming using the external radius template cut off the waste



A template profile cutter with shank bearing used to finish off the round

would be ideal as this extra thickness allows for a larger area of friction material on the edge and greater stability for the pressure screws. Slots 6mm wide along the centre of the blocks can be cut with the router, simply pin the block to the workboard and with a 6mm cutter fitted and the side fence set to centralise the cut, the slot can be machined. Several passes will be required with this small cutter as anything deeper than 3mm could break the cutter. The sandpaper bonded onto the edge of the grip block was 80 grit which holds the guide sufficiently without damaging the edge of the piece being machined. The clamping block which is relatively small will have to be tough enough to take the stress of continuous use and should be made out of hardwood. All of the bolts used are m6 and have proved to be adequate in general use. The two m6 bolts used to provide the pressure, screw into a captive nut recessed into the block Fig 4 C.

To hold the guide in the required position set the grip block on to the clamping end against the two bolts which should protrude about 6mm and then tighten the two wing nuts holding the grip block so that the block will move when pushed firmly. With the guide in position bolt the other grip block tight against the work piece, tighten up the wing nuts sufficiently so

that the block will not move. The two pressure screws can now be tightened enough to stop the guide from moving, a little practise will soon get it exactly right. The two wing nuts in the grip block at this end can be tightened to prevent the block moving.

Unless a project is already planed where a number of rounded corners are to be applied which would determine the radii for the template Fig 2A, it is worth considering having one or possibly two templates ready made with the radii ranging in size from 10mm upwards in 5mm increments. If time permits making templates such as this to have at hand saves stopping in the middle of a project. It is far faster than cutting by hand and is a lot more accurate. The bearing on the template profile cutter is about 5mm deep therefore in theory a 6mm thick template should be sufficient but it is not. There is a space between the bearing and the cutting edge which takes away some of the bearing surface available and trying to make sure the bearing has a safe amount of template to run against is not recommended. In addition the template has to be stable and withstand being used over a long period of time. The minimum thickness of plywood should be 9mm or preferably 12mm, and the overall size 300mm x 300mm this will enable the template to be clamped down

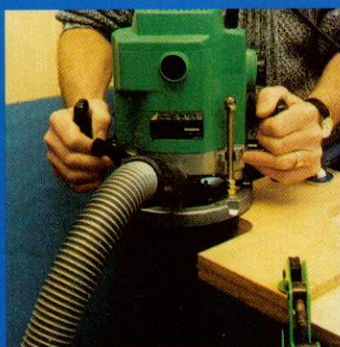
and the router traversed without fouling the cramps. With this template and probably many others the problem is often obtaining the shape on the template accurately in the first place. Drawing the radius directly onto the template with a compass and then trimming by hand would produce the desired result. If the desire is to use the router only for producing the radii on the template one method is to use cardboard and if care is taken this works well. Cardboard about 2mm thick is required and preferably a plastic radius aid used by draughtsman, otherwise using various round items from the house or workshop with as near a radius as possible will suffice. Two pieces of cardboard for each radius about 100mm square will be needed, and with a sharp knife cut the required radius on the first two pieces and then hold them together with double sided tape or glue, making sure the radii are flush. Using double sided tape fasten the cardboard to the template and then cut away the surplus plywood as close as possible to the cardboard. Before trimming make sure as much as possible of the bearing on the template profiler will be in contact with the cardboard and then very carefully trim the template. This process sounds a bit long winded for a simple round but once organised takes only a few minutes.

The external/ internal radius template is basically the same

as the external template but to make as much use as possible of the template external radii have been added. The amount cut out to form the internal radii Fig 2B, should not be much less as it becomes less accurate to line up with the straight cuts, conversely if any more is cut out the template may become weak. If more is required to be cut out increase the size of the template.

I would think that most people would associate the router with traversing around a work piece or as I would imagine the original idea was to design a power tool to machine out housings or trenching for stairs etc. It seems surprising that cutting a mortise is so easy as they are usually associated with a lot of hard work and heavy banging, even now the mortiser is invariably a hefty piece of machinery. Unusual then that the hand held router performs this task quickly, accurately and cleanly. In those immortal words " you can't go wrong " this is one task that once set up correctly is difficult not to get exactly right.

It is preferable to use a cutter designed for mortising and it is quite possible to get excellent results with normal straight cutters but they must be suitable for plunge cutting. With a through mortise a longer shank cutter may be needed, or machining from both sides could overcome the necessity of buying longer cutters and no



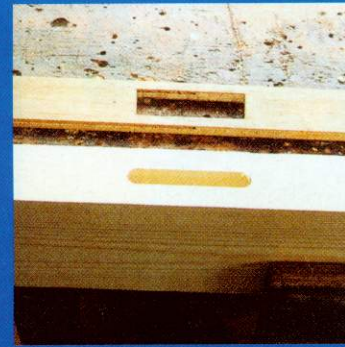
The internal radius template used similarly to the external template



The router is set to position the mortise in the centre of the stock



The L/H fence was designated the face side for all mortises



A chisel to square up the corners is all that is now required

doubt for many mortises there will not be a cutter long enough to machine from one side only.

The template serves only to regulate the length of the mortise and should be made a little narrower than the workpiece, the thickness can be from 9mm upwards. A thicker template may be required if the guide bush protrudes below the base of the router more than 8mm. The slot in the template can be much wider than the width of the mortise, providing there is sufficient material left to hold the template together Fig 1 A. The majority of mortises are cut on the edge of the workpiece and consequently the router could be unstable on thinner material. It is therefore much better to use two side fences, not only does this prevent the router becoming unbalanced but effectively prevents it wandering off course. All the side faces of the workpieces should first be face marked in the usual way and the mortises located from this face. Set one of the side fences to position the mortise from the face side and lock. From the face side of the workpiece set one of the fences so that the mortise is in its correct position and lock it securely. The mortises will now be positioned from this side fence regardless of any inaccuracy in the thickness of the material. The other fence is pushed up to the workpiece ensuring that the router will still

slide but not have any sideways movement. This adjustment of the second fence may have to be repeated a number of times depending on the accuracy of the material. The length of the mortise will be determined by the length of the slot in the template which is simply calculated by adding the difference of the outside diameters of the cutter and guide bush to the length of the required mortise. If for example an 18mm O/D guide bush is used and an 12mm cutter, 6mm plus the length of the mortise will be the slot length. Setting up the router and checking on a test piece is essential and at this time the depth of the mortise can be set with the depth stop on the router. Basically there are two ways of cutting the mortise either by plunging in about half the diameter of the cutter and traversing a number of times or plung cutting to the full depth and length of the mortise.

The circle cutting jig

The original idea for this jig came about because I needed to produce quadrant shelves with a laminate facing already bonded onto the faces of the M. D. F board and fixing through the facing was not acceptable.

Using the sizes as detailed the trammel bar could be doubled in length but it may be better to have a long and short bar to accommodate most radii that would be needed. The pivot

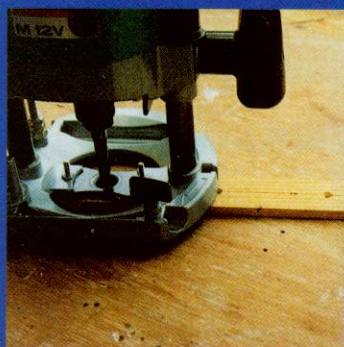
location disc could be used for a number of bars.

Initially one or both of the discs can be cut, if cutting and shaping the first disc by hand is preferred the second one could be shaped using the router with a template profile cutter.

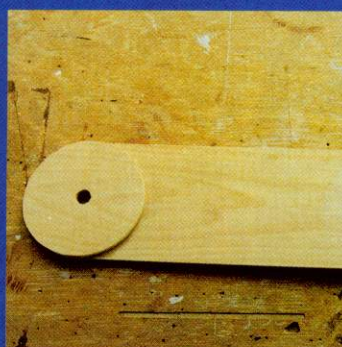
Preferably the two discs can be cut with the router using a temporary circle cutting jig, although this appears crude, with care this works well for a one off use. A batten not less than 50mm wide and 9mm thick is required and about 300mm long. Mark a line down the centre and from one end mark a position approx 100mm as the centre line for the guide bush. This hole should be drilled so that the guide bush fits tightly if in doubt make the hole slightly smaller and carefully file it out. The location for the next hole will be dependent on the size of the cutter used to cut the discs, this will be 75mm plus the radius of the cutter from the centre of the guide bush hole to the pivot position. The two pieces of plywood to cut the discs should not be less than 200mm square as some support for the router is necessary. The two pieces of plywood can be pinned together on to an offcut of board so that the discs and the outer offcut will be held in place after the final cut is made. Make sure the pins are well clear of the circular cut. Pin or screw the batten onto the plywood so that it can be rotated smoothly, with the guide

bush fitted on to the router push this firmly into the pre drilled hole and make sure the base of the router is tight down on to the batten. Depending on the size of the cutter used rotate the router plunging after each rotation. When complete remove the batten and make sure the centre position has been marked on the lower piece of plywood. These discs can now be used to shape the ends of the trammel bar, pin them on to the ends of the previously cut piece of plywood, cut off the surplus and trim using a template profile cutter. One disc can be glued onto the end of the trammel bar and a hole cut to receive a guide bush. Before cutting this hole choose a guide bush with an internal diameter large enough to clear a 12mm dia cutter. The holes for the circle centres will of course be drilled as and when required. The pivot location disc can be drilled to receive the m6 counter sunk bolt, when drilling this hole it is useful to drill it undersize so that the bolt screws in tight, this saves it dropping onto the floor when dismantling. One other useful tip is to make sure that all the centre lines are clearly marked before cutting and drilling and stay that way for future reference also any useful information is written on the body of the trammel bar.

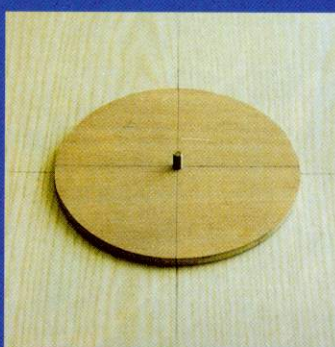
When the pivot location disc is fixed in to position for use it can either be pinned, screwed or held down with double sided tape.



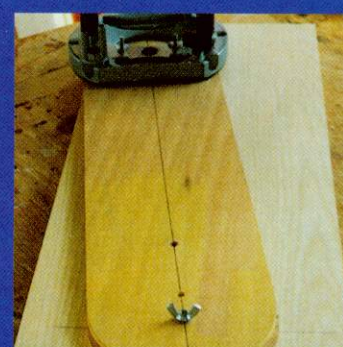
A temporary trammel used to produce the two discs



The base of the jig showing the discs in position



The pivot location disc in position. Note the centre lines used to locate the disc



The router on the trammel bar using the guide bush for location

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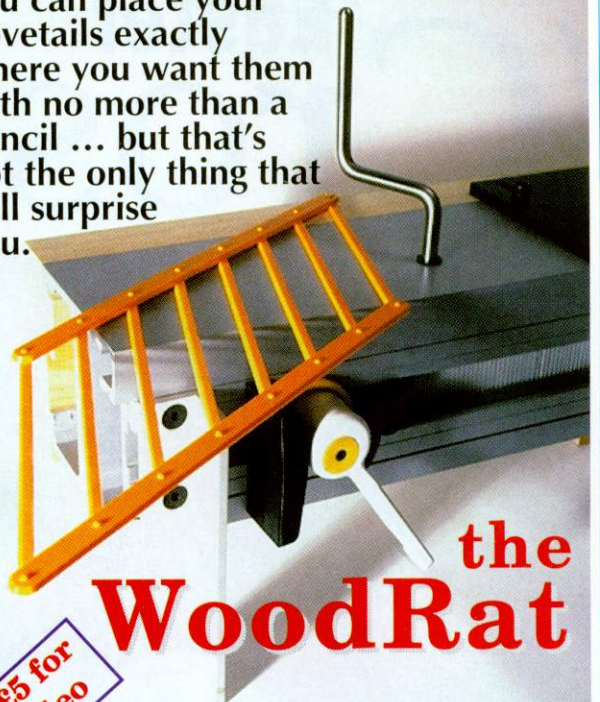
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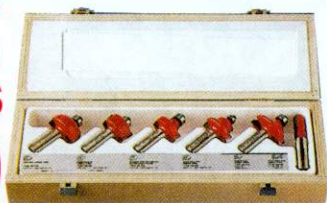
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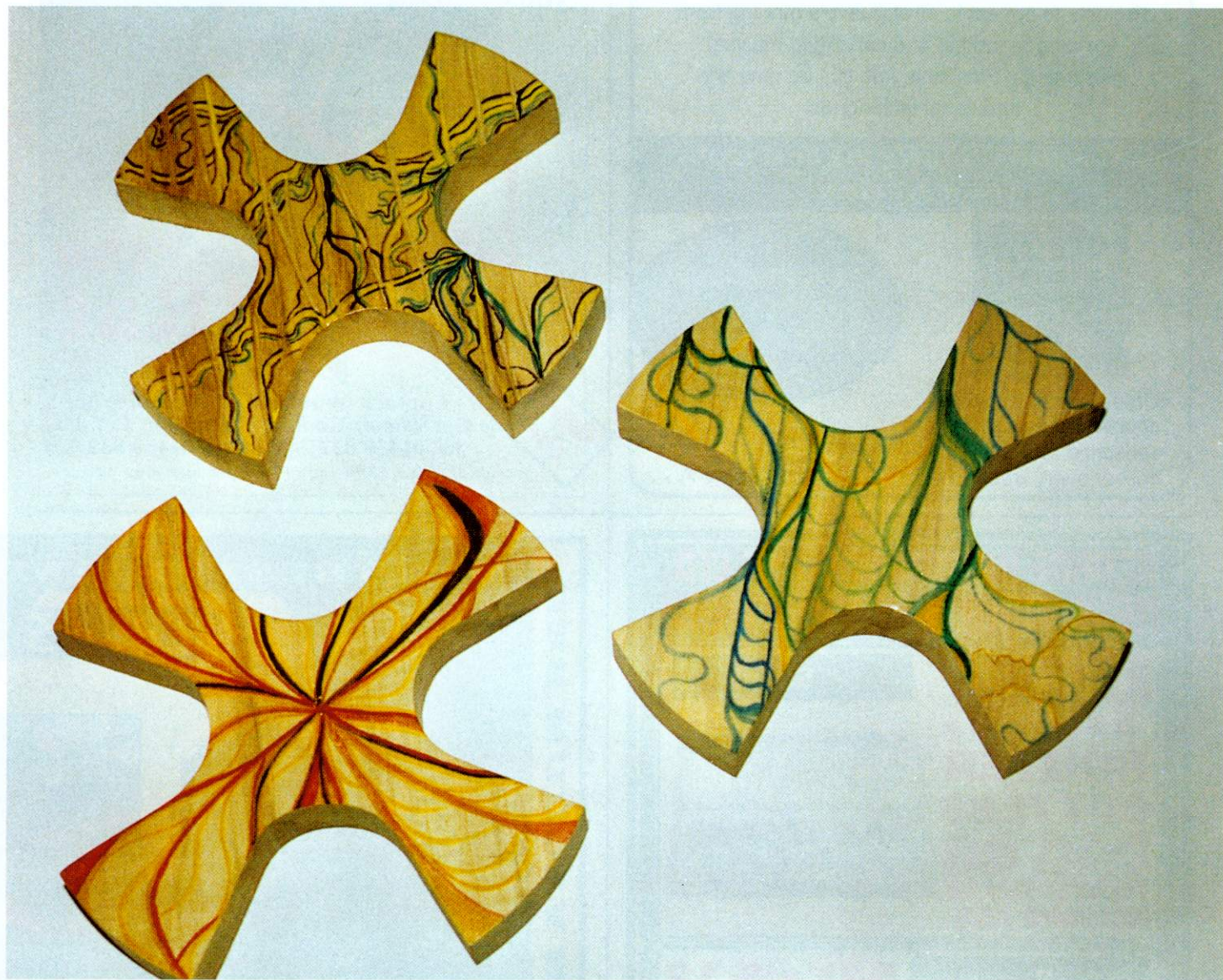


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Easter 'Crosses'

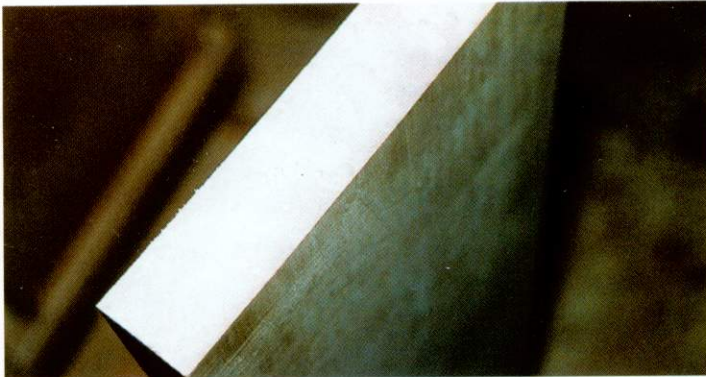


Sycamore gives a smooth finish



Template in position

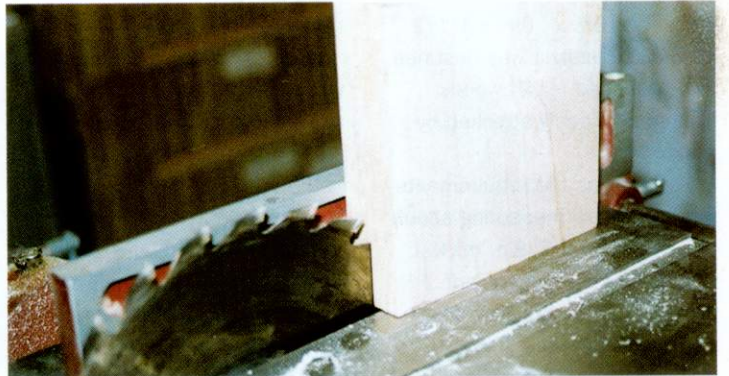
Ray Everest demonstrates how to create some useful presents



Some of the timber had been attacked by woodworm

Having been asked to produce some form of a 'Cross' suitable

for decorating or carving, to result in Easter gifts, several designs were produced and the lady who requested the work chose the design shown.



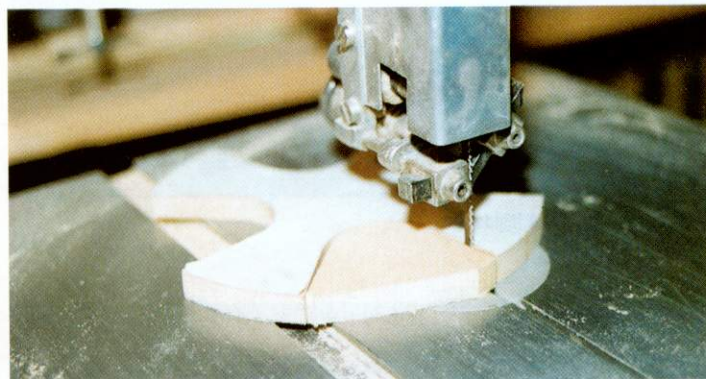
Resawing the timber



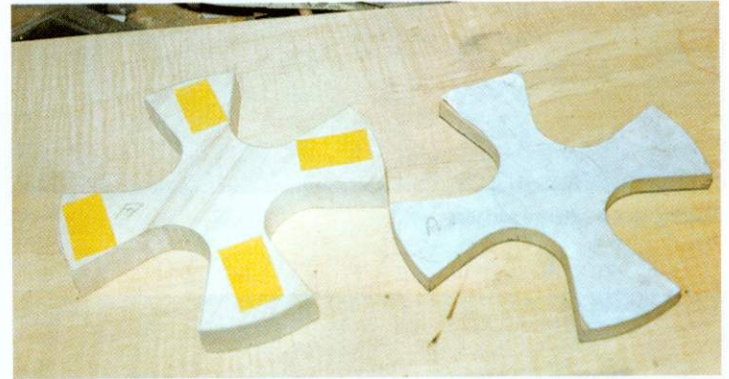
Stack of 6in. square sections cut and ready



Sanding plank smooth with a trusty belt sander attachment



Rough cutting the cross using a bandsaw



Rough cross and MDF template



Stack of crosses cut and ready for finishing



Final trimming using a bearing guided trimmer cutter

For a smooth even grain finish I recommended sycamore, but of course any decent hardwood could be used.

I recommended the sycamore simply because I had a plank measuring 6ft. x 10in. x 1 1/2 in. Unfortunately it was destined to be chopped for firewood, having been badly attacked by woodworm.

However, as the requirements were for a size measuring about 6in. square and 5/8in. thick, I was able to cut a sufficient number of 6ins. squares which were then resawn.

These were stacked and cramped in batches of six, and sanded on the work bench with

a very useful Australian belt sanding attachment which I have had for a considerable number of years and which is permanently chucked onto an old Black and Decker drill and always ready for use.

Once sanded the 6in. squares were then ready for bandsawing and routing, as can be seen in photo's.

The top cross in the pile was completed from start to finish to ensure the semi mass production world run smoothly.

The template was made from 12mm MDF, and cut using a bandsaw.

After cutting the outline must be cleaned up smooth as any

irregularities in this outline will be repeated throughout all the crosses.

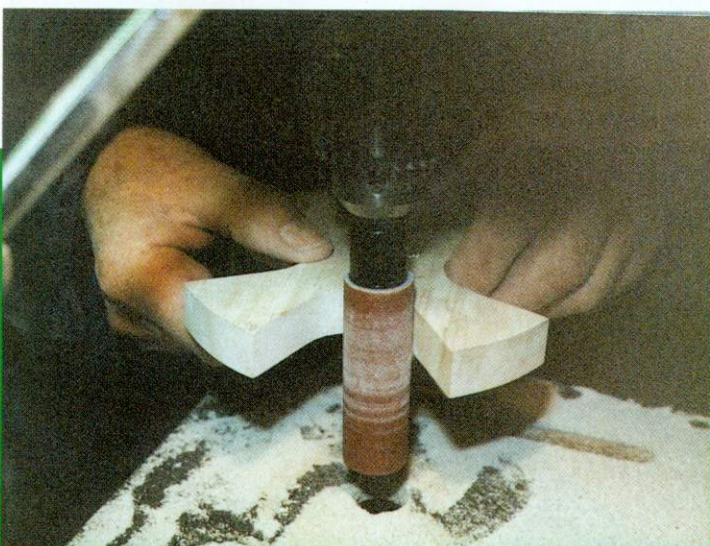
This MDF template was used for pencil outlining the blanks ready for cutting out on the bandsaw. Each time the template was used to draw the outline, the 'A' on the template was repeated on the workpiece to allow for any discrepancy and so when using the double sided tape for attaching the template to the work piece they always self aligned. The photographs show the use of the router table using a timmer cutter with a bearing guide (Guard removed) and final finishing by light sanding.



Cleaning up the external surfaces



Cleaning up part of the inside



Finishing off the inside surfaces using a sanding attachment



Stack of finished crosses

DECORATIVE ROUTING

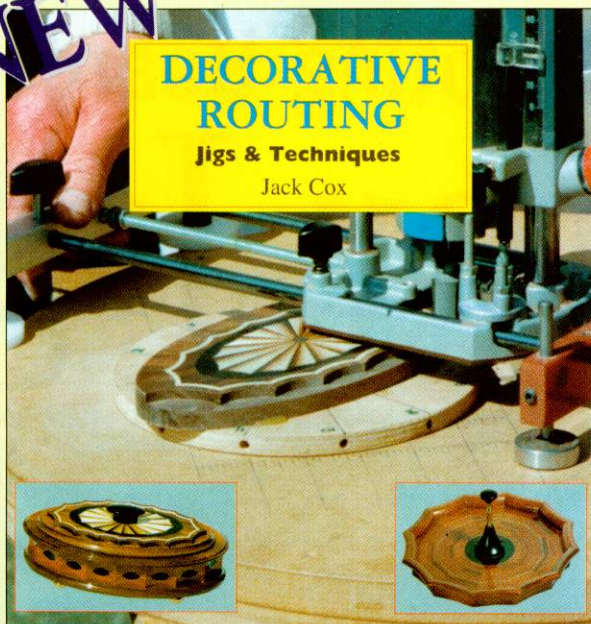
Jigs & Techniques

NEW

DECORATIVE ROUTING

Jigs & Techniques

Jack Cox



This is an extremely practical and innovative book for all router enthusiasts.

Jack Cox explains in clear terms how to produce beautiful decorative work to inlay mirror frames, jewellery boxes, clock faces and other work; how to make lovely oval and round boxes, platters, trays, and delightful scallop shapes for those special gift projects.

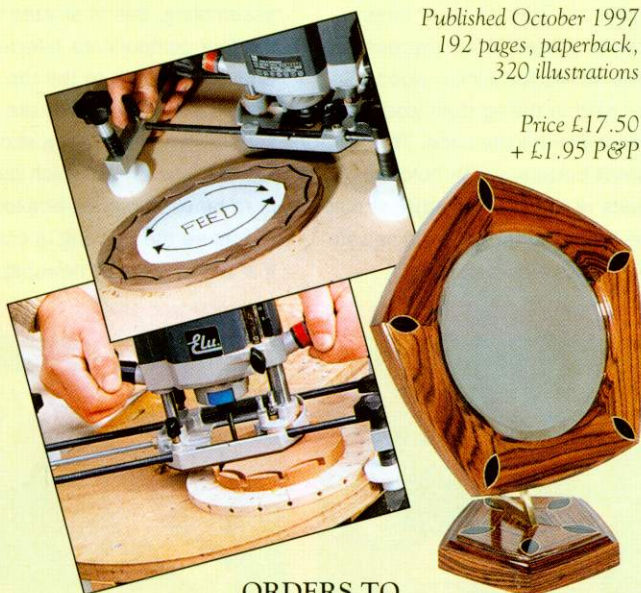
The book includes instructions and drawings to make the many jigs and fixtures designed by the author, including his recently invented pivot frame jig and his pivot frame ellipse jig. These last two have opened the possibilities for decorative router work to an entirely new level – to what could simply be termed 'ornamental routing'. A complete chapter on how to develop your own designs is also included.

There are several project ideas with shapes based on the circle and ellipse complete with detailed drawings and techniques to enable all router owners to achieve a very high level of superb work that is simple to accomplish.

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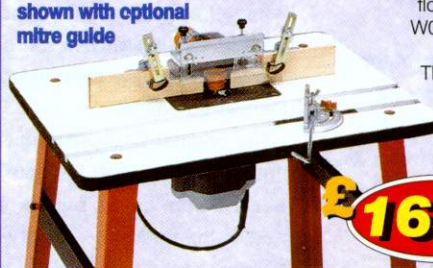
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Combined Mitre Shooting Board & Router Jig

Gordon Warr comes up with a dual function idea

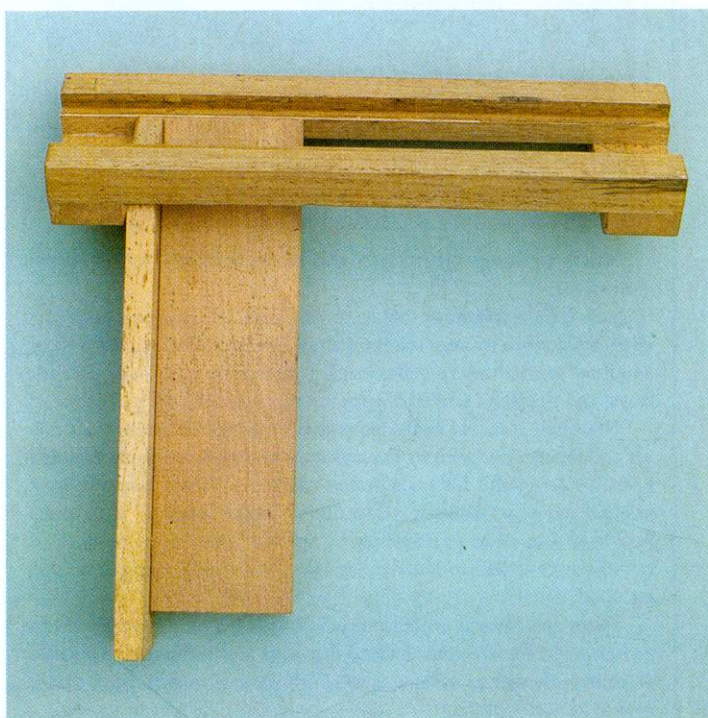
This jig serves the twin roles of operating as a mitre shooting board for use with a plane, preferably a jack and as a jig for use with a router preferably for forming grooves in the mitred surfaces. It will, though, also serve as an excellent way of using a router simply as a drill for preparing holes for dowels as a way of strengthening this joint. Mitre joints on their own, without any reinforcement, have limited strength even when the best glue available is used. And a mitre joint where the members are not exactly at 45 degrees is going to be very unsatisfactory for several reasons.

The jig is designed to hold material up to approximately 150mm x 25mm - mitre joints are rarely used on wood over this width. It is intended to be used when held in the vice,

which at the same time secures the workpiece in place. It is also possible to use G-cramps to further hold the wood in place in the jig. Although a high level of accuracy is needed when making the jig, minute adjustments to the mitre angle formed on the wood can be achieved by altering the lateral setting of the blade in the frog of the plane. When used with a router the fence of the router is guided by the upper rail gravity helping to control it. If a second fence is available, then the use of this will provide even more positive guidance.

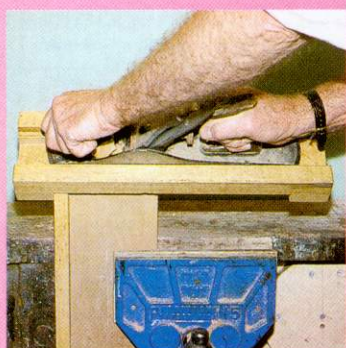
The original jig illustrated was made to suit a steel jack plane with a 50mm blade, but can be readily adapted to be used with a similar plane with a slighter wider blade. The critical aspect of this is the overall width of the body, this must slide in the guide rails in a free way, but without unwanted slack.

Hardwood should be used for this project and the components prepared to the sections shown. Those parts with square ends should be marked and trimmed to length and the rebates

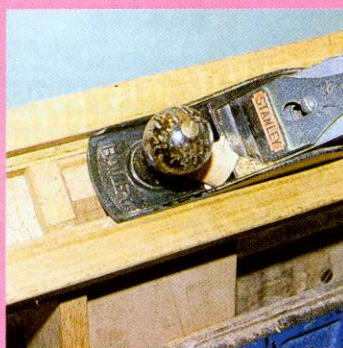


formed in the upper rails. The lower one has its lower inner corner planed at 45 degrees, this allows for thicker wood to be held in the jig than would otherwise be the case. The small battens which hold the ends of the rails together should be prepared for assembling with two screws at each end.

Glue is used throughout when assembling, this is started with the four components referred to. Glue the battens to the top rail first, checking that they are square. When fixing the second rail, the plane with which the jig is to be used can be employed to ensure the spacing is correct. If a single piece of newspaper is



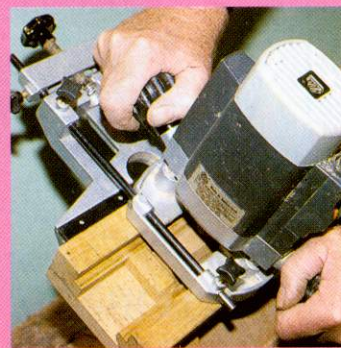
Mitre jig in action with a hand plane



Close-up of finish



Mitre jig in action with a router



Router guided by side fence

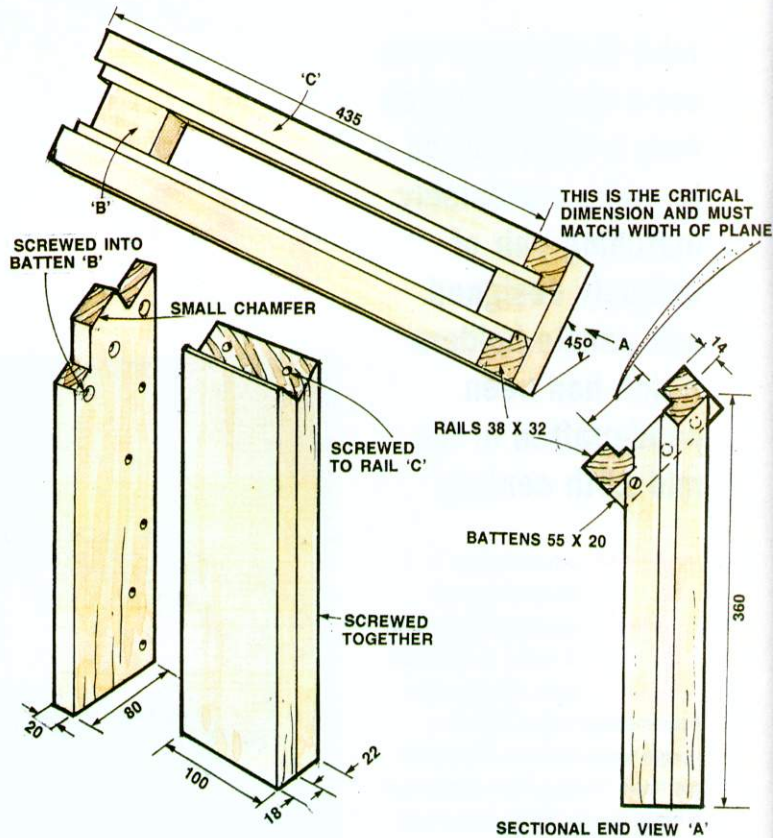
positioned on the sole of the plane then raised on each side, this will ensure the rails are parallel and with just the correct amount of clearance. It helps if the assembly is first held in place with G-cramps until the glue has set, before inserting the second set of screws.

The left hand vertical member should now be prepared to the shape indicated in the drawing with the main top surface cut at precisely 45 degrees and ensuring that the outline produced is an exact fit in the upper assembly. It is essential that the top centre part of this component is exactly level with the lower surface of the rebates, as this acts as a support for the edge of the wood being trimmed and thus prevents spalching. To prevent damage to the component, the rear sloping corner should have a chamfer formed on it. Screw holes need

preparing as shown, with the countersinking of these being on opposite sides. Glue and screw to the right hand batten.

Note that the remaining two vertical components are of different thicknesses, with their ends trimmed to 45 degrees - oh for a mitre shooting board to form these ends! The thicker of the two is also prepared with four screw holes for securing together, with two additional screw holes near the top drilled so as to be at right angles to the mitred surface.

These two pieces are screwed together, with the edges trimmed flush when the glue is dry. The final stage of construction is to screw this sandwich to the rest of the assembly. Rubbing a candle on the surfaces over which the plane and router slide reduces friction and makes for smoother operation.

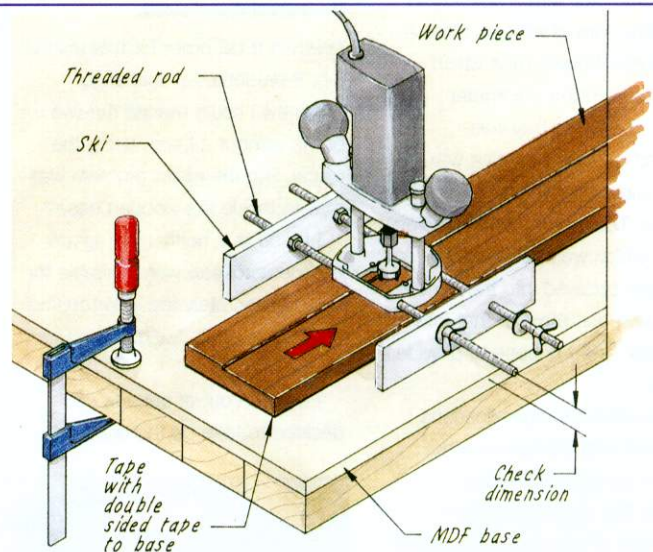


Ski system for router

Reader David Selway comes up with a simple idea to help make doll's houses

In making doll's house furniture I needed to produce small sheets of wood with reliable thicknesses from as little as 2mm. Not having access to a thicknesser or a bandsaw and finding that a power plane gave unreliable results when working with such fine materials, I was encouraged to build a 'ski' system for my router - based on an idea from an earlier issue of 'Routing'. Using two pieces of threaded rod

250mm long (length is determined by the width of the material you wish to 'plane' and bearing in mind that the threaded rod may flex if the chosen length is much greater), diameter to be a good fit in the router's parallel guide, together with the necessary 4 nuts, 8 washers and 4 wing nuts for fitting. I chose to make the skis from two pieces of flat aluminium (200 x 50 x 3mm thick) - this I felt would give more consistent results over a long period. Two holes were drilled in each piece to accept the threaded rod 25mm from the lower edge and spaced to suit the router guide holes in the baseplate - it is vital that the positioning of these holes is accurate with respect to the lower edge of the ski. This



measurement is best calculated taking into account the maximum thickness of workpiece likely to be used and the plunge depth of your router (will it give the minimum final workpiece thickness required). For the skiing surface I used a piece of 18mm MDF giving a true and stable surface, my Hitachi FM8 router is fitted with a triple-fluted face trimmer. I find that this set-up gives me a fine finish. Thickness is settable between

2mm and 15mm with the use of the standard depth-stop on the router.

My method of holding such fine material beneath the router is to use a good quality double-sided adhesive tape. Choose a wide variety or use a number of strips and ensure the area is clear of dust. The best results are obtained by using a light skimming action, taking off as little as 0.5mm at a time.

John McQuiggan was set a challenging job from a local church - to make a precisely matching pair of uniquely designed oak candle holders which had been hand-crafted in the mid 19th century

Each of the two identical holders consisted of 3 pieces of wood, (i) the main base, (ii) a circular saucer-shaped bowl and (iii) a wedge which secured the bowl to the base. The oak bowl supported a brass candle holder, which had also been hand-crafted in 2 pieces:- a circular brass tray about 4in. in diameter with a hole cut in the centre, into which was fitted a 1in. length of brass tube which supported a 50mm diameter candle. The brass tray was designed to collect running wax and to slip over the tube for cleaning. The tube had a brazed-on bottom which was permanently glued and screwed into the centre of the bowl and through that into the wedge and the base to provide stability.

These were the specifications I was faced with. I have no lathe, nor am I an adequate wood-sculptor. The only alternative I could think of was the router, but it

A Challenge for the Router



The presentational result.

seemed a tall order for this unique job. It presented a challenge.

I knew I could manage the two bowls without a lathe, using the router. But the major problem was how to tackle the wooden base?

I found that neither the jigsaw nor the scrollsaw were suitable for cutting accurately the main outline of 2in. thick oak. Might the router do the job?

I had run out of options so decided to take up the challenge.

Base Unit

To match the shade of the original wood, I needed English or European oak. I got some from a friendly builder and the rest from the excellent wood collection at John Boddy's in Boroughbridge, North Yorkshire. Having thoroughly measured all aspects of the original I took some pictures from different angles and I drew a pencilled outline on thin card of the side profile of the base,

incorporating the separate wedge. I decided to make the base and the wedge in one piece, so long as I made the angle at that part of the base match that at the bottom of the bowl, (see Fig. 2).

Gluing the cardboard outline onto a piece of 9mm plywood, I cut out most carefully the shape of the side profile using the jigsaw table, then sanding. This I called Template No. 1. it was vital to make this template a precise



Completed parts before assembly.

replica of the original, (as is needed with all routing templates), because when a template is routed any flaw in the template however minute, becomes magnified on the workpiece.

Next, I set up the router, with a 6.3mm diameter two-flute straight bottom cutter and a 14mm dia. guide bush and using double sided tape fixed the template No. 1 on to the middle of another larger (16in. x 9in.) piece of 9mm ply. Before routing round Template 1 carefully, it was necessary to fit a piece of 15mm scrap MDF underneath, again using double sided tape. This enabled the ply to be cut through completely whilst protecting the bench top. The MDF was stabilised on the workbench by a router-mat. For stability of the router, again using double sided tape I also fixed scrap pieces of 9mm ply close to the proposed line of cut.

Finally, before routing, I inserted 2 screws, one at each end of template No. 1. long enough to penetrate through the larger piece of plywood and into the MDF beneath it. This was needed to avoid the 'island' which would be formed at the end of this routing stage, from moving as the cut was completed, thus ruining the exercise. The screws had to be countersunk so as not to foul the router-base. Accuracy is essential in the routing by keeping the router and the template guide tight to the template edges and to avoid the tendency of the router to 'wander'. I did have a minor fault develop at the delicately shaped end, but before dismantling corrected this by filling with Rustin's quick hardening wood filler, which when set, enabled me to repeat the routing process again and I got a good result.

The 'island' was removed leaving the large piece of plywood with a cut out (slightly) larger than the replica and this I call template No. 2. (See Fig. 3). The inside of this template had one or two sharp corners which had to be rounded in order to facilitate the passage of

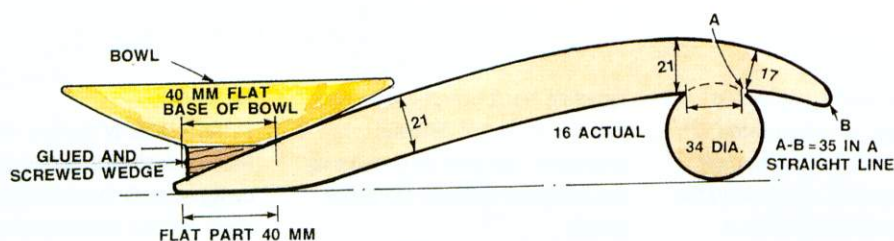


FIG 1 ORIGINAL (19TH CENTURY) VERSION

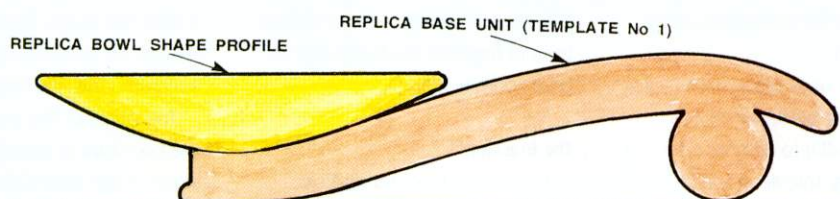


FIG 2

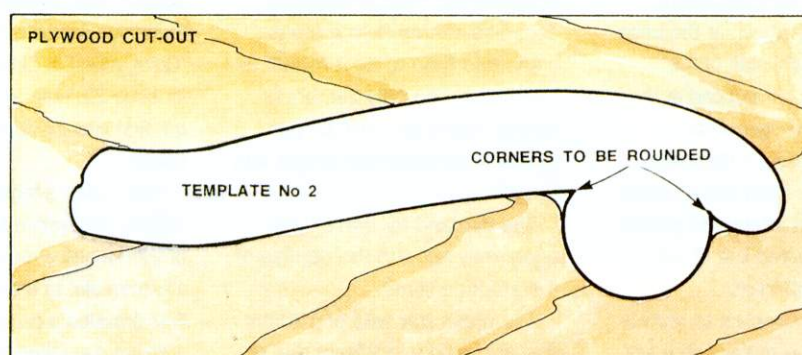


FIG 3

the template-guide during the following stage of the operation.

The next stage was to place a router-mat on the workbench and under the piece of 2in. oak from which the candle base is to be made (I used a piece 10in. x 2 1/4in. x 2in. thick) and to fit over it the template No. 2 affixed with double sided tape. Thought needs to be given to the direction of the grain of the oak, before fitting the template.

Keep the same template guide (14mm) and the same cutter (6.3mm.) but of maximum depth fitted to the router. The longest cutter of this size I believe cuts to a depth of 25mm.

With this setting, rout round the inside of template No. 2 most carefully and patiently, using a depth gauge to control cuts of only 3-4mm increments each time. The

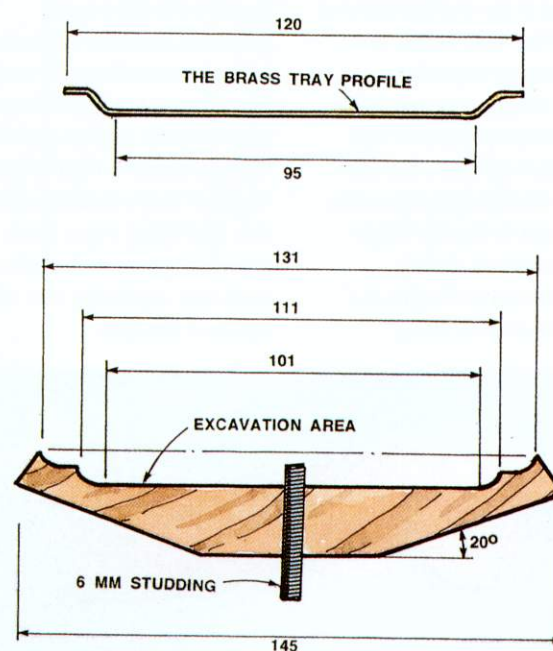


FIG 4 THE BOWL, PROFILE OF INSIDE EXCAVATION

channel will need to be cleared after each cut, of accumulated waste and dust, not only to save wear on the cutter, but to avoid the danger of heat and possibly a small fire.

Repeat the last cut 2 or 3 times to get a smoother finish. At this point remove the workpiece, which is routed only half way through (because of the limitations of the cutter depth).

I now set up a jigsaw table using a fast cutting blade for curves (Bosch T244D) to complete the cut into the near middle of the bottom of the routed channel and thus to separate the main body of the waste.

The routed side of the workpiece will now be an exact replica of the original, apart from two sharp corners of the 'wheel' at the base. The other (rough) side of the workpiece can be reduced at the edges, after the jigsaw has separated it, using a Garroway Sanding wheel fitted into a bench drill, but do not attempt to get too close to the routed line of cut, which I deal with next.

The way is now clear to replace the cutter in the router with a self-guided bearing trimmer, the template guide being discarded. The router can now be used with the bearing of the trimmer following the line of the routed edge, to shape the rough edge of the workpiece into the required profile, cutting in small increments until the workpiece becomes a precise replica of the original candle-holder base, (except for the two 'wheel' corners mentioned above).

These corners can be marked precisely in pencil by fitting

template No. 1 over the workpiece and the small, but delicate excavation can best be done using the Scroll saw to follow the pencil lines.

The construction of the oak base unit was now complete. I fitted into it at the point which would coincide with the centre of the bowl, a brass threaded socket. This was to accept a 6mm thread to hold together the base and the brass candle fitting.

The Brasswork

I intended to purchase two small brass shallow dishes like a pair of ashtrays, to the middle of which I would fit a piece of 2in. brass tube, drilling a screw hole in the centre of both. In the end, it turned out much cheaper to commission this from a brass craftsman than to do it myself as I intended. The only 2in. brass tubing I could get cost £8 per foot and the minimum length was 8 feet!

The demand for brass tube apparently fell with the demise of the steam engine!

The brass tray was of 120mm dia. at the lip and 95mm dia. at the centre, the depth of the tray being 2.5mm (see Fig. 4). I arranged with the brass worker to make the 50mm dia. cylindrical cup from brass tubing, with a threaded hole for a size 6mm thread in the centre of the tube (and the tray) to enable them to thread on to a 40mm length of 6mm studding which was later fitted into a brass threaded socket in the top of the base unit, coinciding with the centre of the bowl.

The Bowls

The insides of the two saucer-like wooden bowls had to be designed to fit the brass trays. The piece of oak I used to make each bowl was 6in. x 6in. x 1in. (150mm x 150mm x 25mm). A circle of 145mm dia., (this being the diameter of the bowl's outer rim), was cut with the router, using a trammel beam. The bowl was shaped as shown in Fig. 4 to accommodate the brass tray.

The angle of the outer sides of the bowl had to coincide with the slope of the base (20 deg. where the two meet) to enable the bowl and the base to fit snugly. I shaped the inside of the bowls first with the router making 2 levels of cut for 2 different diameters. To achieve this I employed the technique explained in my article 'Going round in Circles' published in Issue 22, (see Note 2). I made the first circular depression in 4 stages.

First I used a template jighole of 142mm dia. with a template guide of 22mm and a rounded cutter of 12.7mm dia. to a depth of 5mm. This provided a circular ring of 131mm dia. I then levelled the middle of that inner circle, using a template jighole of 133mm dia. with template guide 22 and a two flute straight bottom cutter of 9.5mm dia. to a depth of 3mm. For the third phase of levelling,

I used a template jighole of 116mm dia. with the same template guide and cutter and finally I used a template jighole of 97mm dia. with the same template guide and cutter to bridge the centre of the bowl.

This gave me the first level, the edge of which would later house the perimeter of the brass tray.

The second inner circular depression which was to accommodate the lower part of the brass tray was achieved in a similar way, but in 3 stages by using first a 119mm jighole with template guide 17mm and 12.7mm rounded cutter to a depth of 3mm; the 3rd levelling with a template jighole of 116mm dia. with template guide 22mm and a two flute straight bottom cutter 9.5mm dia. and a final stage of

levelling using a template jighole of 97mm with the same template guide and cutter. The brass tray now sat comfortably in the recesses made by the router (see Note 3), which had produced a more accurate profile than would a lathe.

The outsides of the bowls were shaped last by fitting each bowl in turn onto a slowly revolving power drill and reducing it to shape (Fig. 2) using a power file, checking the angle for 20 degrees as the work progressed.

I finished the project by sanding out all the imperfections, (the router is so good that there were precious few) using P150 grit sandpaper, followed by 320 grit Garnet paper to smooth out any scratch marks. Next I applied sanding sealer with a clean rag, followed by a light sanding, again with the Garnet paper and finally wax and polish. (Figs. 5, 6 and 7).

Note

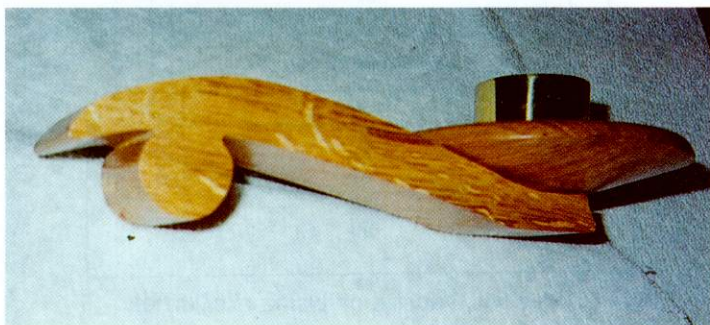
Such threaded sockets can be purchased from most woodworker suppliers. My supplier recommended drilling a hole for the socket with an 8mm drill. I experimented (fortunately) and found that a larger drill bit was needed for softwood (11/32in. = 8.731mm) and for the oak I was obliged to use size 25/64in. = 9.921mm in order to avoid the wood splitting at such a vulnerable place.

Note

I used the set of 'Jigholes', in conjunction with the formula referred to in that article. When using a rounded cutter one must take into account the depth of cut. Only a full penetration will give the 12.7mm diameter of the cutter I used, but a depth of only 5mm makes a smaller diameter cut and a depth of 3mm still less and these figures must be used with the formula.

Note

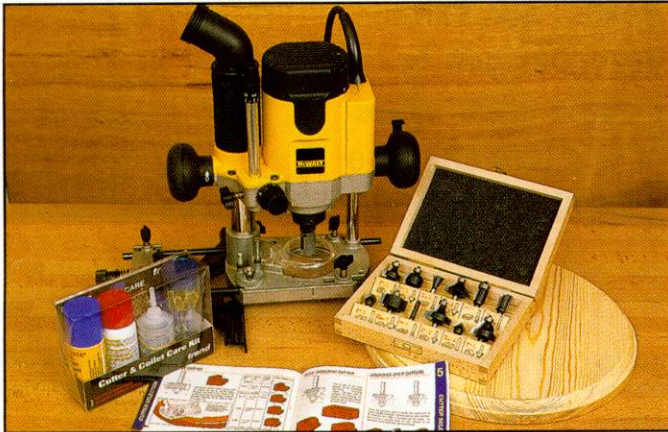
The different phases of levelling are needed to maintain stability of the router when employing the Jighole system as I did, but can be reduced into one simple levelling operation if you have a Trend Pivot Frame Jig.



Assembled product (includes the brass)

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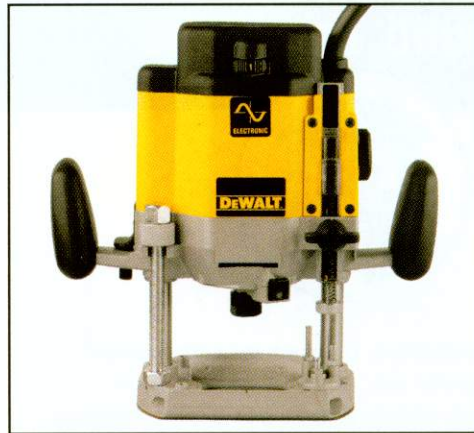
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The best in router tooling

Around The Home



*I wanted to go to the Woodworking show, but my wife she said I should not
As a gadget addict, she knew what I'd do, I'd probably just buy up the lot.
A solemn promise I made that I would not go, to the show at London's Wembley,
But she didn't know and I didn't tell her, about hall ten at the N.E.C.
So I bided my time, the weeks did pass by. My advance ticket arrived in the post,
I thought and I thought, but I could not decide, which gadget I wanted the most,
A router dovetailing jig was an obvious choice, but what put me off was the price,
A saw, a chisel and a marking off gauge, would be cheaper, and that would be nice.
As show time drew near, it became known, Ladies Guild day out was same day,
Their destination a secret, we men never knew. Where they went, they wouldn't say.
While she was away, I went to the show, so she did not know I was there,
Hall ten it was crowded with no one I knew, but I saw Peter Roper, I swear.
I walked round the stalls for two hours, resisting temptation to buy,
But the man selling jigs for dovetailing, was a very persuasive guy.
I know you've guessed, in the end, I surrendered, and purchased the costly jig,
But I feared for my life when she'd see it, there's no hiding a box that's so big.
Homeward bound I did pass hall seven, the 'Needlework' show was on there,
At the door stood a group of Guild Ladies, my heart sunk cos' my wife was there.
When she saw me her face was a picture, she put on a disarming smile,
For the size of the box she was carrying, was larger than mine, by a mile.
So we agreed that honours were even, her new knitting machine is just great,
I got a new warm sweater, and she got the nest of tables, like the old ones she had
seen at her friend's house, that she had been asking me to make for ages. I got away
with this purchase, but I won't be so lucky next time.*

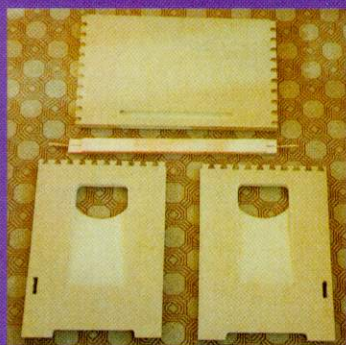
Reader Bob Curran describes how he made a useful piece of furniture after the guilt of buying a jig

That is how this article came to be written. I decided to make a prototype first to ensure I would be au fait with any problems that may arise during production and to check that the jigs were all right.

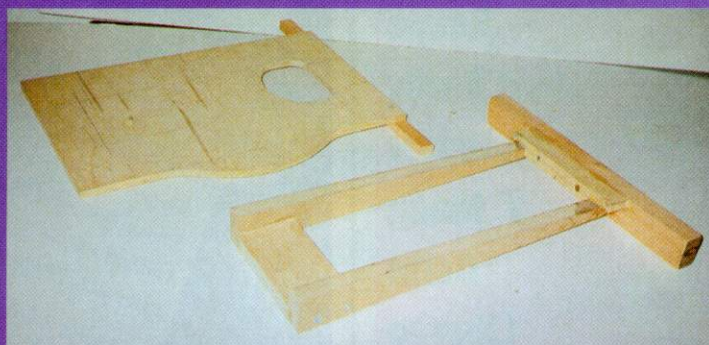
I had a piece of 18mm. MDF. to



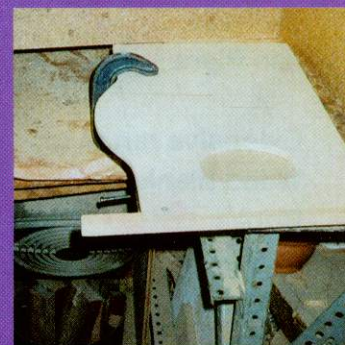
The plot that hatched a nest of tables



Prototype pieces



The two jigs



Leg in jig before hole drilled out

hand that was of a size suitable to make the next to smallest table. The 'in production photographs', were taken while making it. It turned out very satisfactorily so I finished it with some coloured polyurethane and it was immediately commandeered by a junior member of the family. I had not used MDF. before for an item such as this, but it could have been used for the complete set. I was fortunate to have some very old elm offcuts so the choice of material was made for me, any wood could be used, pine would look nice. Details of all the tables are given on figure no. 1. The number of tables that form a set could of course be varied to suit personal choice.

Having cut the MFD. to size for the top and legs I started on the jigs for routing the hand holes in the legs. The jig for the hole, detailed on figure no 2, was made from 3/8in. plywood. The overall sizes of the cut-out being the sizes detailed on figure no.1 plus the difference between the router guide bush diameter and cutter diameter, which in my case was 18mm. See figure 3. You will notice from the photograph that the plywood is shaped on one side. This was actually an old jig that I had used for the top of the panel in a fielded door panel. I always try to make my jigs multi-purpose, it saves on material and especially storage space. When making any jig, care is needed when cutting the profile to shape.

In this case with the exception of the 4 11/32 dimension, very accurate sizing is not as important as smooth blending of curves and straight lines. After cutting out the shape with my scroll saw and doing a little bit of cleaning up, the centre line of the hole was plainly marked on it's inner edges. This enables the jig to be accurately positioned on the leg centre line when in use. Construction of the jig was with glue and strategically placed screws.

The hand hole centre line was marked on each leg as indicated by 'D' in figure no. 1, remembering that the legs were right and left hand. The actual hole shape was then marked on each leg and the majority of the material drilled out. After carefully positioning and clamping the jig, the hand holes were cut. Again remembering that, with any deep router work, the cutter was lowered progressively. Care was taken on the breakthrough cut to avoid any splintering.

Next the jig for the tapered part of the hand hole, detailed in figure no. 4.was made. The most accurate dimension again being 4 11/32in., this must be exactly the same on both jigs to ensure the tapered portion and the hole line up perfectly. The two tapered pieces were cut together, thus ensuring they were identical. Again construction was with glue and strategically placed screws. The centre line being marked for positioning purposes as on the

other jig.

As seen in the photograph, a ski plate is required for use with this jig. A piece of 3/8in. plywood sufficed. The jig was then clamped onto the leg, accurately lining up the centre lines of the jig and leg. Before starting to cut the taper, the cutter was lowered so that it just touched the face of the leg when the router was in the lowest position on the jig. The plunge depth stop was then set to half the thickness of the material, i.e. 3/8in. in my case.

When using this jig, I started routing near the previously cut

hole, with about a 2mm depth of cut and lowed the tool in similar steps until the plunge depth stop prevented any further downward movement. The tapered surface produced required very little sanding.

Having prepared the legs and top, I used my new dovetail jig to cut the joints, making sure that any part tails were on the rail side of the table, thus out of sight when the tables were nested

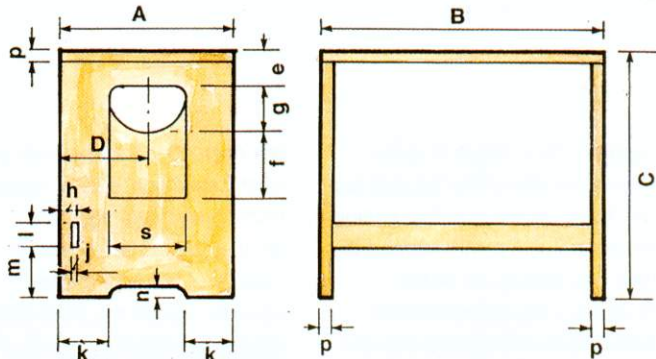


FIG 1

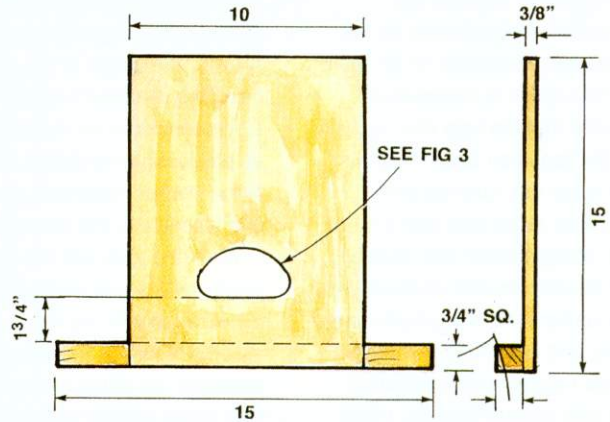


FIG 2

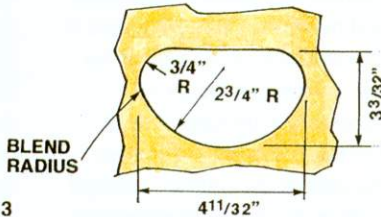
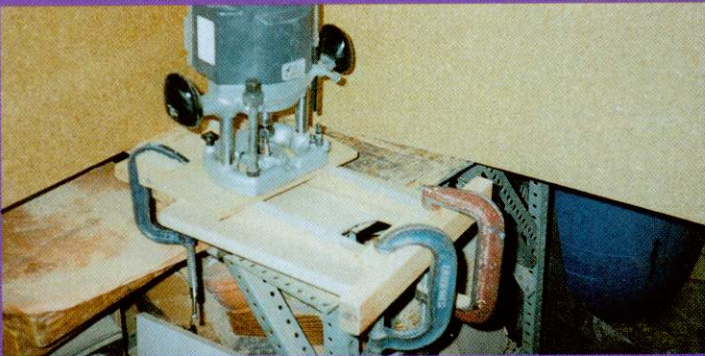


FIG 3



Leg in tapering jig, router on ski plate



Bottom of leg being cut away

together. Don't forget to check that the insides of the leg and top are facing outwards before cutting the dovetails. A point I learned the hard way. Having cut all the dovetails, I dry assembled the table and measured between the inside of the legs. This gave me the distance between the shoulders of the tenons on the lower rail, dimension 'a' on figure 5. This check is necessary to ensure that the legs stay square to the top when assembled with the lower rail. I then cut the mortises in the legs with a 5/16 dia. straight cutter and squared off the corners with a chisel. With the router in my shop made router table and fitted with a straight cutter I cut away the bottom of the legs to form the feet. I then changed to a round nosed cutter, and machined the finger groove in the underside of the tops of the four smallest tables. Is not necessary in the largest table. The fence was set 1/2in. from the edge of the cutter as detailed in figure no. 7. The finished depth of groove being half the timber thickness ie. 3/8in..This finger groove enables the tables to be pulled out from under each other and is well worth doing. I then planed up a piece of pine for the bottom rail, see figure no.5 and cut it to the length shown for table no.4 in figure no 1. While the router was in the router table, I machined the bare faced tenons on the lower rail, see figure no.5. and cut the wedge slots with a hand saw. This was one of the

few operations I did by hand in what turned out to be a mainly router project. Having done another dry assembly just to make sure everything fitted correctly, I glued the joints and assembled with four clamps. I used a spacer between the legs at the bottom at the front edge, to ensure everything was kept square. The length of the spacer being the distance between the tenon shoulders on the lower rail as previously established. The tenon wedges were then glued and tapped into the saw cuts. When the glue was dry the over length tenons and wedges were cut off flush with the leg. I used my new Japanese pull saw for this operation. Oh didn't I mention the saw, it was another purchase I made at the exhibition. I have managed to keep it hidden up to now from you know who. The table was sanded all over and the corners rounded, particularly around the upper portion of the hand hole. Being satisfied that everything was in order I prepared the elm offcuts I had. The timber I used was all 3/4in. thick and planed on the faces but was of various widths and lengths. The first operation was to join up various widths to form the tops and legs, with a small addition all round, so that after gluing together, they could be finished to the sizes given in figure no. 1. I used my biscuit jointer

to do this, but made sure that no biscuits would be exposed when the hand holes were cut in the leg pieces. I used cauls when gluing up to make sure assemblies remained flat. While the glue was drying I planed the bottom rails to size and cut them to length. When all the fifteen pieces for the tops and legs had been glued up, they were finished to width and length and the faces sanded. I then followed the same procedure as I had used when making the prototype, but of course did the same operation on each piece as the job progressed. When all five tables were assembled and finish sanded, I completed them with my usual mix of two parts matt polyurethane to one part satin. This gives a fine durable surface sheen to any piece which will get a lot handling. I would never have undertaken

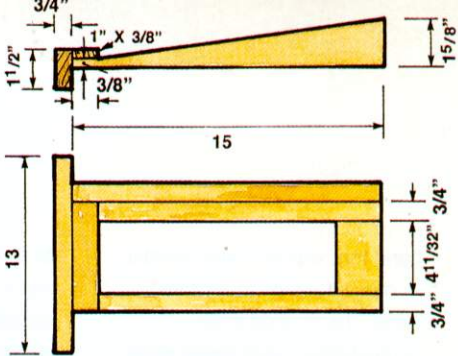


FIG 4

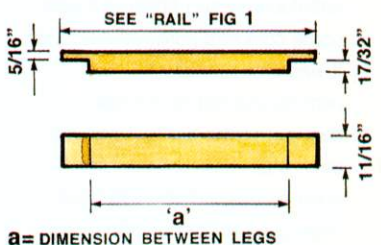


FIG 5

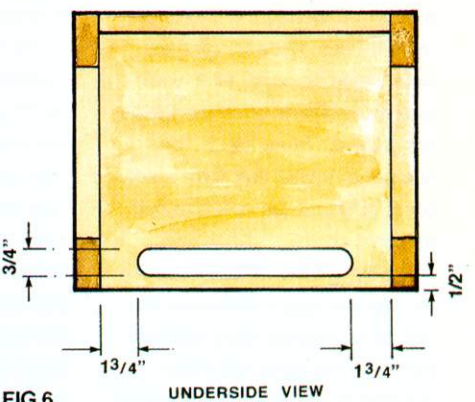


FIG 6

a project that required so much dovetail work without the aid of the jig. I wonder if the joints on the thirty year old originals were hand or jig made. I can smugly say, when the subject of spending comes up, the jig didn't cost as much as her knitting machine.

Table

No.	1	2	3	4	5	
TOP						
AxB	2x20	11x18 1/4	10x16 1/2	9x14 3/4	8x13	1 off each
LEG						
AxC*	12x15 3/4	11x14 3/4	10x13 3/4	9x12 3/4	8x11 3/4	2 off each
D	6 51/64	6 11/64	5 35/64	4 59/64	4 19/64	
RAIL						
C/Sec,	20 1/4	19	16 3/4	15	13 1/4	1 off each
	1 1/6 x 17/32					

The following dimensions are common to all tables.

'e' 2, 'f' 4 1/2, 'g' 2 3/8, 'h' 5/8, 'j' 5/16, 'k' 1 3/4, 'l' 1 1/16, 'm' 2 3/4, 'n' 1/2, 'p' 3/4

* Actual length of Leg is 'C' minus thickness remaining after dovetail is cut in top. This will depend on size of router cutter and make of jig used.

Key to Dimensions. All in Inches.



General view of tables.

Events & exhibitions

THE INTERNATIONAL WOODWORKING AND TURNING EXHIBITION

9th - 11th October

The National Exhibition Centre, Birmingham. Demonstrations of turning, carving and routing. Competitions and hands-on opportunities. Everything for the beginner, amateur and professional, plus plenty of bargains and lectures by industry experts. Further details tel: 01442 266551

JOHN BODDY'S FINE WOOD AND TOOL STORE

Free demonstrations held at Fine Wood and tool Store schoolroom. All start at 10am and finish about 3.30pm.

28th February 1st March

Woodturning with Tony Wilson

7th -8th March

Woodcarving with Dave Johnson

14th - 15th March

Woodturning with Tim Hope

21st - 22nd March

Finishing with Stephen Hardcastle

28th - 29th March

Veneering with Robert Cooksey

Further details: Tel: 01423 322370

WEST DEAN COLLEGE

18th - 20th March

Woodturning for beginners with George Carron

20th - 22nd March

Woodturning for not quite beginners with George Caron

Further details Tel: 01243 811301

THE SCOTTISH NATIONAL WOODWORKING SHOW

20th - 22nd March

The Scottish Exhibition Centre, Glasgow. Everything for the amateur

and professional woodworker as well as the complete beginner. Details tel: 01934 522240

YORKSHIRE WOODCRAFT SUPPLIES

All held at Finkle Street, Cottingham, East Yorkshire.

7th March

Monthly woodturning clinic. Get some ideas and advice.

14th March

Reg Sherwin woodturning plus others demonstrating. Everyone welcome.

4th April

Monthly woodturning clinic. Ideas and advice available.

25th April

Peter Neilson woodturning plus others demonstrating. Everyone welcome.

2nd May

Monthly woodturning clinic.

6th June

Monthly woodturning clinic.

13th June

Stuart Mortimer woodturning plus others demonstrating. Everyone welcome.

4th July

Monthly woodturning clinic.

15th August

Monthly woodturning clinic. Further details tel: 01482 844200

BRITISH DECOY WILDFOWL CARVERS ASSOCIATION

13th June & 14th June

Annual competition & exhibition, held at the Merchant Adventurers Hall, York. Open to public from 12.30pm to 4.30pm on 13th and from 9.30am to 4pm on 14th. Further details from Albert Holding tel: 01539 564037

ISSAC LORD

Woodturning club meetings

13th March - 14th March

Isaac Lord two-day show

4th April

Teach-in with Reg Slack

9th May

Spindle turning with Gary Rance

13th June

Subject to be confirmed

11th July

Turning with Reg Slack

8th August

Subject to be confirmed

12th September

Subject to be confirmed

17th October

Subject to be confirmed

30th October - 31st October

Isaac Lord two-day show

28th November

Subject to be confirmed

12th December

Question & answer day

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Bernard Saunders, 0171 381 3192

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14th July - 16th July

Great Yorkshire Show, Harrogate

Woodturning & Woodcarving

Competitions held in the Forestry Pavilion.

Entry forms from 1st March.

Further details: Tel: 01423 322370

CRAFT SUPPLIES

Free demonstrations held at The Mill, Millers Dale, Buxton, Derbyshire

7th March

Turning fruit with James West

8th March

Colouring techniques with Jan Sanders

Further details: Tel: 01298 871636

FAMILY MODEL & CRAFT SHOW

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Further details: Tel: Dave Bishop

01959 577550

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Further details from Sally Page Tel: 01539 733774

TRENT VALLEY WOODTURNERS

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11th March

AGM, all welcome

8th April

Carving with Peter Berry

13th May

Greenturning hints & tips with Viv Collins

10th June

Caddy spoons and more with Phil Irons

8th July

Topic is open to suggestion with Reg Slack

12th August

Xmas competition preparation with Viv Collins

9th September

Spindle turning with Reg Sherwin

14th October

Windsor chairs with Keith Rowley

11th November

Last chance competition preparation with Viv Collins

9th December

Xmas competition and social for all members

Further details from Peter Allen, tel: 0116 2677233

TOWN & COUNTRY FESTIVAL

29th August - 31st August

Held at the National Agricultural Centre, Stoneleigh, Warwickshire. Further details tel: Andrew Waters, 01203 696969

ART IN ACTION

16th July - 19th July

Held in the grounds of Waterperry House, Waterperry, Nr. Wheatley, Oxfordshire.

Many of the UK's leading craftspeople will be demonstrating their work.

Further details: Bernard Saunders, organiser, tel: 0171 381 3192

Around The Home



Book Rack

This small portable book rack has been designed by Percy Blandford to stand on a table or desk, so the books are near at hand for ready reference

The suggested sizes (Fig. 1) can be modified to suit your needs. Get your books together and design your rack round them (Fig. 2).

This is an opportunity to use up short ends left from another project. The rack illustrated is made from pine, but almost any wood could be used. A mixture of woods would look attractive.

The book rack provides an opportunity to make several interesting uses of a router in economically-sized pieces of wood. You cut the waste out of grooves with a straight cutter, then undercut the edges with a dovetail cutter. This cutter is



Cut grooves before shaping ends



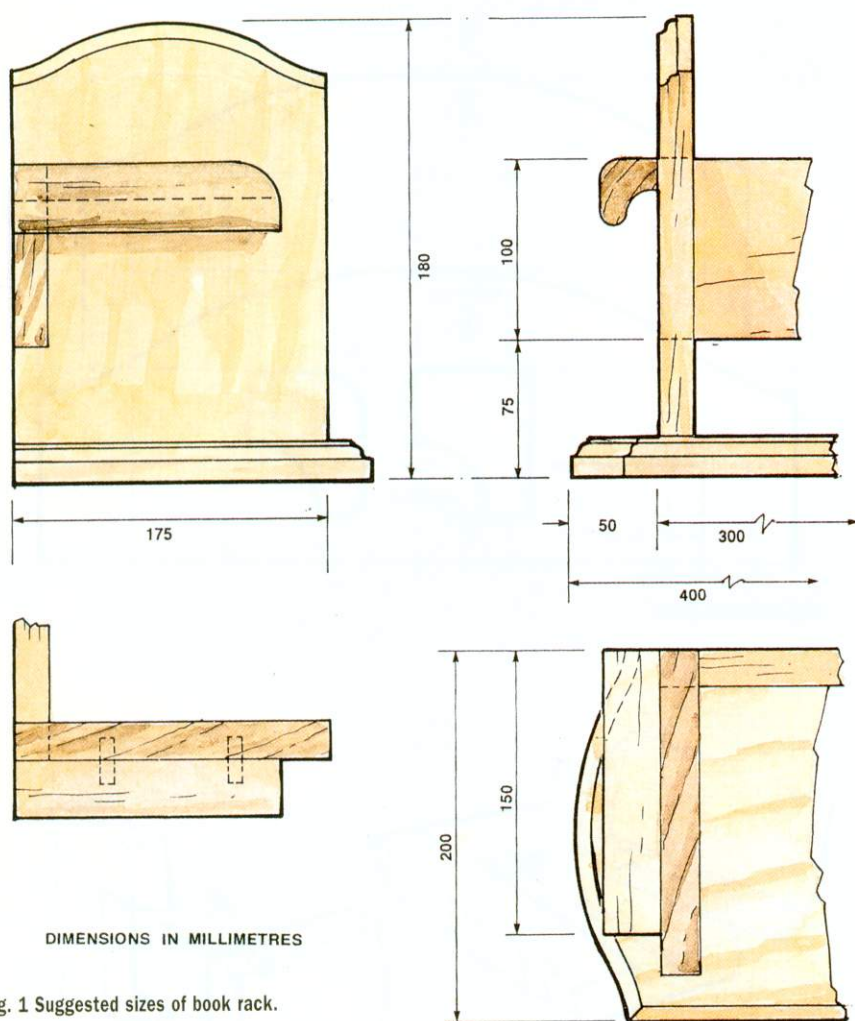
Saw shaped ends



Mould ends and edge



Use guide piece when dovetailing ends



DIMENSIONS IN MILLIMETRES

Fig. 1 Suggested sizes of book rack.

also used to shape the matching edge. The handles are hollowed for finger grip and their tops rounded over (Fig. 3). All of this can be done with the router used freehand.

First step

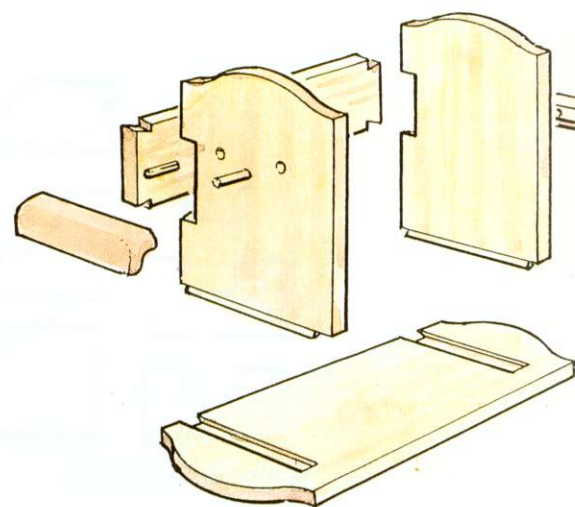
Finish all the wood to width and thickness, but leave a little

extra on the length, then joint sizes can be marked from the points that have to match to ensure good fits. Mark out all details on the base and ends, including the shaped parts (Fig. 4A and B). It is easier to prepare joints while the wood is square, so do not cut the curves until after you have cut

with the same depth setting for both parts of each joint. Aim for a sliding fit with hand pressure.

Mark the length of the back from the groove spacing on the base, so the ends will be held upright. You could fit the back into plain sockets, but it is better dovetailed (Fig. 5B). Leave the ends of the back

Fig. 2 Parts of book rack.



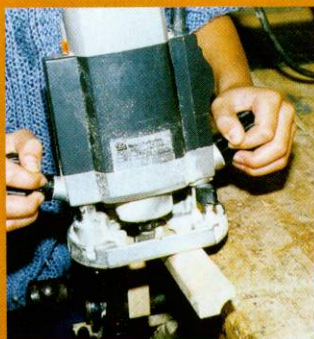
the joints. The dovetailed parts of the ends are cut back so front edges overlap 12mm (Fig. 5A). Cut waste out of the grooves with a straight router cutter, then use a dovetail cutter

slightly long for levelling after assembly.

When you are satisfied with the joints, cut and smooth the curves. Mould the outer edges of the tops of the ends and the curves and front of the base.

Prepare enough material for the handles to be made from one piece, with some spare at the ends for holding. Hollow the lower edge (Fig. 4C) sufficient for a finger grip and round over the top (Fig. 4D). Take the sharpness off the lower edges. Cut the handles to length and round their forward ends.

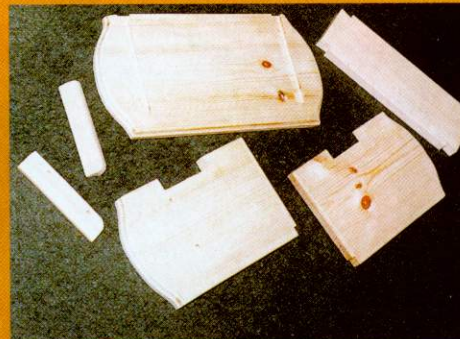
Glue alone might be sufficient to hold the handles, but two 1/4in. (6mm) short dowels on each handle ensures accurate positioning and increases strength (Fig. 5C). Arrange the tops of the handles level with the tops of the back joints.



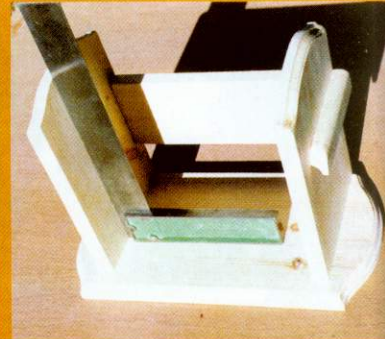
Hollow and round strip for handles



Sand pieces before assembly



Parts ready to assemble



Check squareness

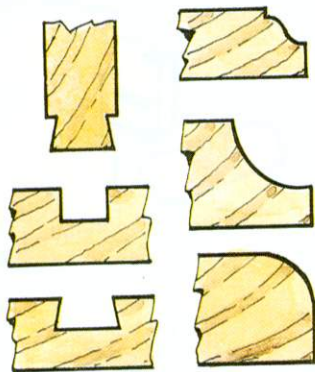


Fig. 3 Sections of router cuts.

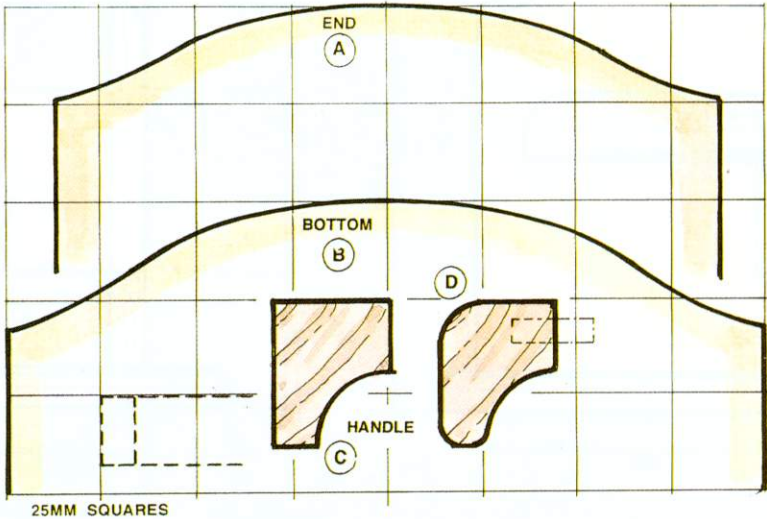


Fig. 4 Shaped parts.

Final stage

Sand all parts before assembly. Glue the ends to their grooves in the base, then add the back. You may need to use cramps to pull back joints tight. Use a try square to check ends are upright before the glue starts to set. Level the ends of the back after the glue has set, then add the handles.

Finish with stain and varnish. To prevent the rack marking a table surface you can glue cloth underneath, either all over or just strips near the ends. A neat and convenient material for this is self-adhesive green baize-effect Fablon.

Cutting List

inches (millimetres)				
Part	No.	L	W	T
Base	1	16 (400)	8 (200)	3/4 (19)
Ends	2	11 (280)	7 (175)	3/4 (19)
Back	1	12 (300)	4 (100)	3/4 (19)
Handles	2	6 (150)	1 1/2 (35)	1 1/4 (30)

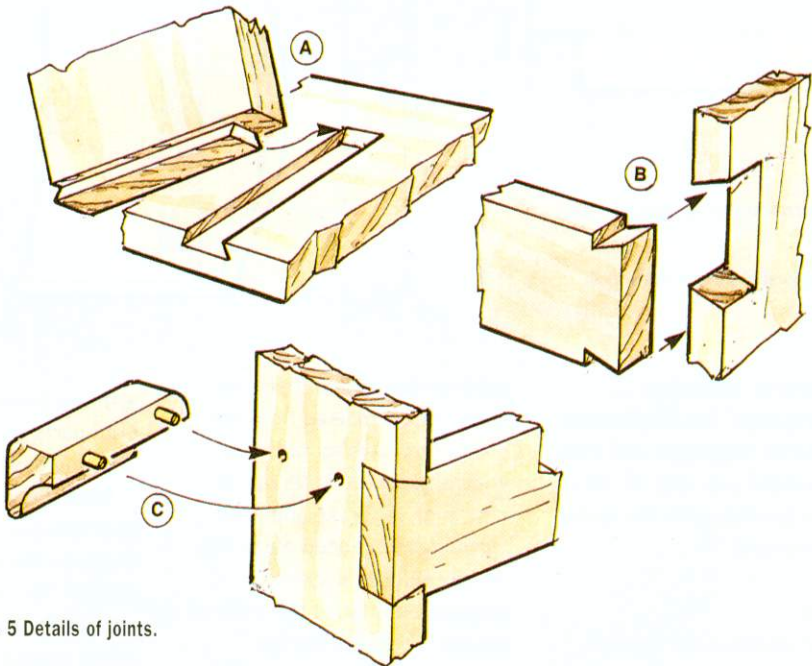
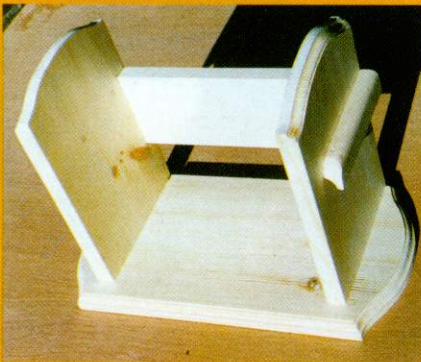


Fig. 5 Details of joints.



Ready for staining



Cloth under protects table



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Around The Home



Ray Everest shows how to tackle a typical home improvement



Marble effect fireplace

We moved house 11 years ago and since that time

have worked on improvements, the last room to be tackled was the 27ft. lounge with two fireplaces. One fireplace in use, the other as bequeathed, boarded up with a 42in. square of 1in. chipboard, this was removed, having been fixed with 3in. coach screws, to reveal a large heap of soot, cement, chimney rendering and three 4ft. lengths of 9 x 1 timber standing up the chimney.

Having removed all the loose debris we were left with that which is seen in the photograph. Attempts had been made to paint the slate surround, but it was now damaged beyond repair as the slate had been roughly plugged to take the coach screws. I envisioned a marble surround, but the economics ruled that out, but having had many years ago some experience with Formica as a cladding and learning that only a few miles distant there was a firm that specialised in Formica and similar materials, we called and looked at samples of marble effect sheets: as the suppliers could only provide by the sheet 4ft. x 8ft. priced at about £40.00 and not a very good imitation marble at that, we upgraded and saw a sample which was ideal, but priced at £80.00 a sheet, I only required half a sheet, so we settled for that thinking the other half sheet would do for the other fireplace if required. The



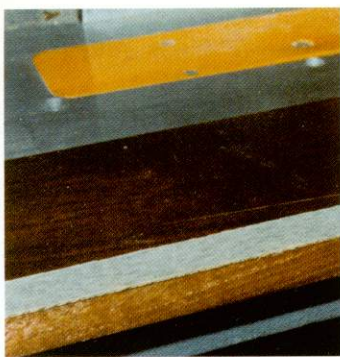
Fireplace opened up



Edge trimming



Gluing on the edge



Starting on the overmantle



Two flute cutter



Cleaning the edge



Bevel cutter



Fine adjustment allowed accuracy

completed work can be seen in the main picture.

Making a start

By using a router with a 45 deg. bevel cutter I was certain that I would get the effect desired, having tried a couple of offcuts on a piece of wood.

The intention was to cut the Formica slightly oversize on a fine toothed bandsaw blade, clean the edges with a straight two flute cutter and do the mitred edge as mentioned, with a 45 deg. bevel cutter. Having cut the 8 x 4 sheet in half with a fine tenon saw, it was seen that to handle a 4ft. square of material on the bandsaw was not very practical, so dealing with the largest pieces first, that was the mantle shelf and the face immediately below the shelf, these were cut with the tenon saw which made the sheet small enough to handle comfortably on the bandsaw. The photographs show a larger piece of Formica being edge trimmed on the router table.

Overmantle

Before the foregoing operation could start, the overmantle had to be dealt with. It was not only just 3/4in. thick, but also had ovolo edges and rounded corners, so a cover was made using 10 mm

MDF, this was made 20mm extra in length and 10mm extra in width to take a 40mm wide skirt glued and screwed to the underside edge of the cover a suitable length of MDF was fitted diagonally across the underside ends which made the false top a sliding fit over the original mantleself and when covered overall with Formica gave the appearance of a 2in. slab of marble.

Machining

There were many pieces to be cut and they had to be individually tailored which meant cutting, edging and chamfering and so changing cutters continuously. To avoid this as much as possible and for convenience in handling, an Elu MOF96 was mounted on an accessory table and a MOF177E mounted under a router table, a two flute bearing guided cutter was used in both machines and the bevel cutter was used primarily on the router table where the fine depth adjuster could allow a 'thou' or so to be taken off as required. Narrow strips were best handled by using double sided tape and fixed to a board.

Using either a prepared board or a piece of Contiboard I was assured of a perfectly straight edge where the bearing guided cutter follows exactly the true straight edge. When the chamfer cutter, is used, the fence is an essential part to allow the cutter to cut exactly the right amount of material. A hold down clamp is necessary to ensure the Formica does not ride up the cutter. The

material is worked with the face side attached to the timber. With two odd pieces butted up the photographs show the poor result if the edges are not accurately matched up, the brown outline in two places on the corner should not be there at all, otherwise when the corner is lightly sanded the brown imperfection will be emphasised.

The stage photographs also show an enlarged view of the top left hand pillar and the foot of the right hand pillar respectively. All the edges were lightly sandpapered to take off any sharp corners. There were a few small places where the brown colour of the base material showed through, this was touched in with a pink toned matt emulsion which blended in with the marble colouring.

The black cast iron surround with its rather attractive pattern was treated to a couple of coats of matt black spray paint. The fire place lining to the left and right was removed and the hearth screened and the side and back walls plastered. A 3mm steel plate was fixed to seal off the flue, but prior to fitting, a 3in. x 9in. hole was cut in the centre to take an open/close shutter to vent the chimney space. A low powered lamp of the relatively new economy design was wired into position concealed behind the top of the black surround and fitted under it, a piece of coloured cellophane which gives off a pleasant orange/red glow.



Material worked with face attached



Impact adhesive used to fix Formica



Top left pillar



Foot of right hand pillar

Around The Home



Betty McKeggie creates a useful item that will fit any home

Modern bathrooms tend to be small, yet have to provide storage space for medicines, first aid equipment, cosmetics, haircare products, bath toys, cleaning materials and much more. This combination of a wall mounted chest for medicines and a floor mounted cabinet with drawers and cupboard space below will cope with most of a family's needs. Both are fairly shallow from front to back, so do not stick out too much and the top of the cabinet, with its gallery round, is a safe place for putting down watches and glasses etc. while you bathe.

The Medicine Chest

If you are making the chest for your own or a friend's bathroom, check that the dimensions given will accommodate the bottles, jars, tubes etc. that are needed and that the shelf arrangements are suitable. Small bottles of pills are best kept together in a plastic box, as are fat tubes of ointments and creams, so if you propose to store them in this way, get the plastic boxes first and check that they will fit in. You may want to keep some medications together, e.g. spare asthma inhalers and this may affect the arrangement of the shelves.

Materials

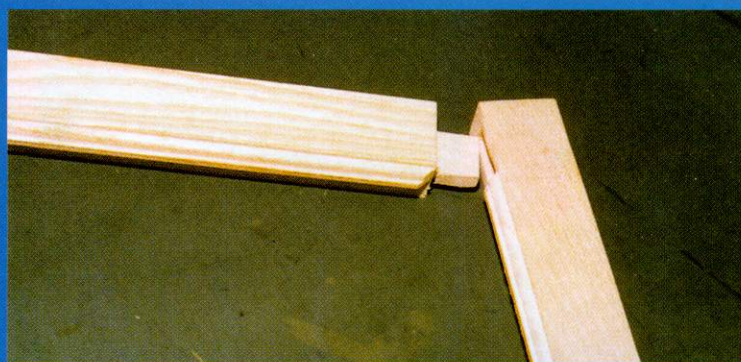
The chest was made of ash, a pleasant light wood, but any well seasoned hardwood would do. The shelves were made of 4mm MDF as this is strong enough for the purpose and thin enough not to take up much space. The doors were fitted with new



Medicine Chest



Chest, showing back and pads



Chest, stile and rail edge moulded, mortised and tenoned

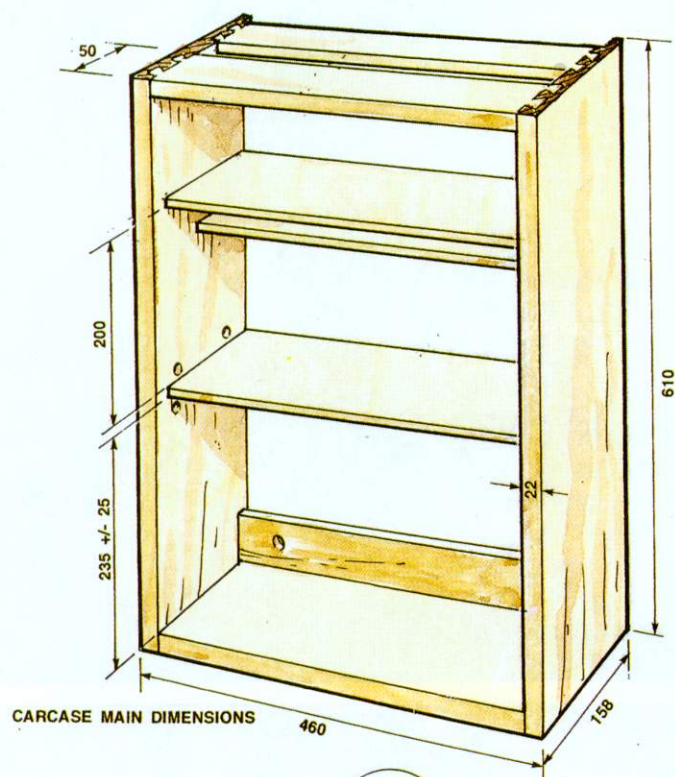


FIG 1

SECTION THROUGH BOTTOM

mirror glass. Plastic inserts and shelf supports gave some alternative positions for the shelves. The shelves were covered with white Fablon to give a clean washable, hygienic finish. The back was of marine ply, that would stand damp conditions. The doors were fitted with magnetic catches, solid brass hinges and wooden knobs.

Finish

The chest was finished with two coats of satin polyurethane varnish, inside and out.

Carcase

The rails to support the top and the base piece were lap dovetailed into the sides. The rails through which the screws attaching the chest to the wall go were stub tenoned into the

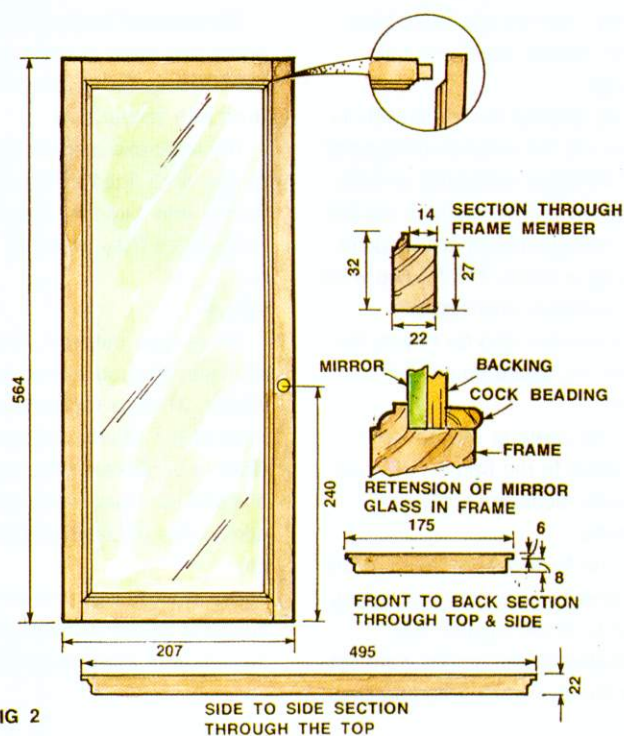


FIG 2

SIDE TO SIDE SECTION THROUGH THE TOP

sides. The back edges were rebated all round to take the plywood back. The carcase was assembled, checked for squareness, the joints glued and clamped and left to set. The sides were drilled to accept the plastic shelf

supports and the inserts were pressed into place.

The plywood back was fitted into the prepared rebate with screws and cup washers.

Small packing pieces of ply were glued to the back to the areas where the screws fixing the cabinet to the wall would go, to enable the chest to be screwed up to fit flush with the wall.

Top

This was made of one solid piece, with edge moulding cut on sides and front. It was attached to the carcase by screwing up through the top rails.

Doors

The frame pieces were cut to size. The stiles were dealt with first. Mortises were cut, then the edge moulding routed to the full length, using a 3.5mm ovolo cutter. The rebate was cut using a straight sided bit, to the same depth as the lower edge of the moulding.

The tenons were cut in the



Chest, showing bottom lap dovetails



Door of chest showing magnetic catch part and beading retaining panel



Chest showing shelves, door catches and fixing screws through back rails

rails, then the edge moulding and rebates cut to the full length.

By aligning the tenon with its mortise the inner meeting point of the edge mouldings on stile and rail can be marked and the mouldings mitred at that point, using a chisel. The frames were assembled, checked for squareness and for fit with the carcass, glued up and left to set.

Two coats of varnish were applied to the frames, plywood backs, beading pieces and knobs.

The frames were taken to the glazier to have the mirror glass cut to fit the frames. The rebates for the hinges were cut in the door frames and carcass.

The plywood backing for the doors was fitted in place with the beading, the beading being fixed with veneer pins.

The magnetic catches and hinges were fitted to the door frames and carcass. The door knobs were fixed in place.

Shelves

These were cut from 4mm MDF and covered with white Fablon, which is resistant to most of the liquids that are likely to be stored in the chest and can be easily wiped clean of sticky drips of cough mixture, etc.

The shelves just rest on the supports whose position can be moved up or down as required.

Cutting List

Description	No.	Length	Width	Thickness
Carcass sides	2	610	158	22
Carcass bottom	1	448	158	22
Top rails	2	448	50	22
Carcass top	1	495	175	22
Support rails	2	448	32	6
Back (ply or MDF)	1	604	446	4
Door styles	4	564	32	22
Door rails	4	195	32	22
Shelves (MDF)	2	418	125	5 or to suit
Shelf (MDF)	1	418	100	5 or to suit
Mirror backing (ply)	2	510	153	4
Mirror retaining strip	4	510	6	4
Mirror retaining strip	4	153	6	4

Hardware

1in. wooden knobs	2 off
2in. brass butt hinges	4 off
4mm. silvered glass	2 off to fit finished doors
Magnetic door catches	2 off
C/S brass screws and cup washers	
Veneer pins	
Varnish	



Medicine chest



Two units together

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Around The Home



This elegant chest provides as many as eight drawers in designer style

Although the construction has some craftsmanship refinements, it is not difficult to make. The router is fully involved using all its technical facilities.

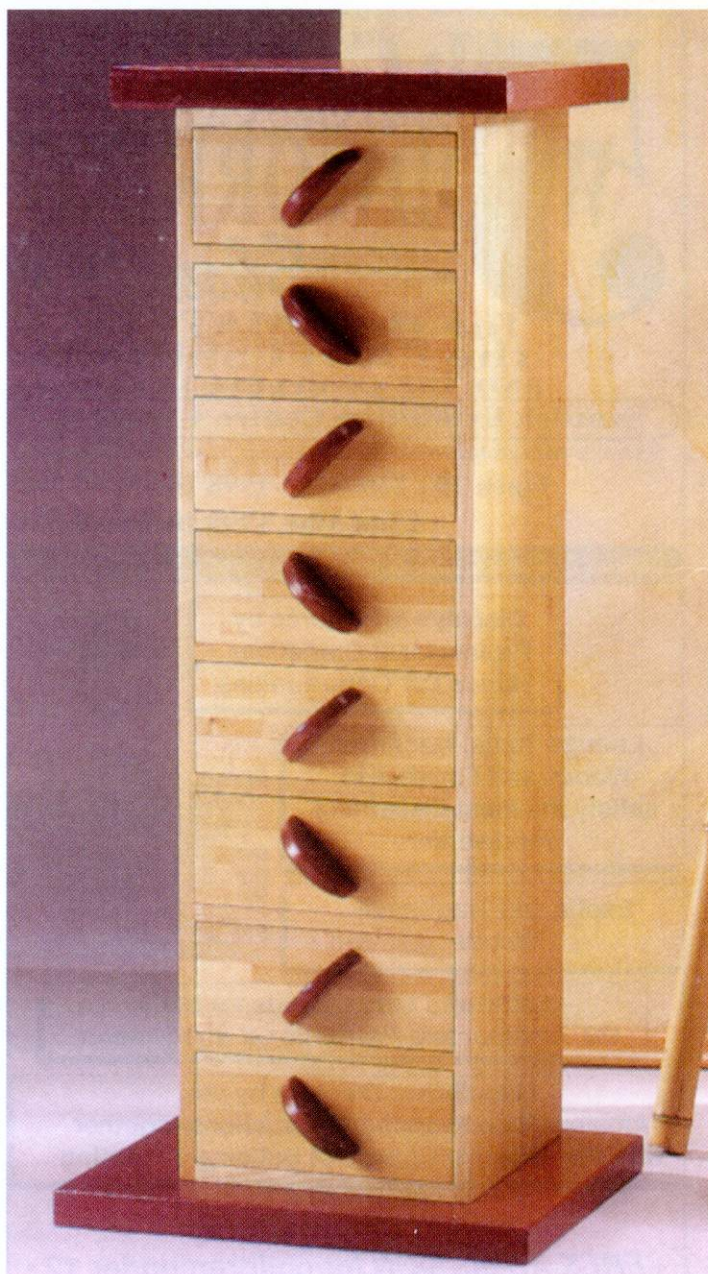
Since blockboard is available in different sheet thicknesses and format, it is no longer a problem to build solid wood furniture using classic cabinet-making techniques. Besides spruce and pine, precious wood has also been available for a long time in blockboard which is easy to handle. For our captivatingly designed slimline chest of drawers we have chosen American maple. The coloured base and top and the handles are made from MDF (medium density fibreboard). This manufactured board can be routed in a similar manner to natural timber.

Making a start

The exploded diagrams explain the construction. Start with cutting the blockboard parts to size - dimensions to be found in the parts list. The carcass parts and drawer sides are easily cut with a circular saw. More arduous, but not less precise, cutting is achieved with a portable circular saw which is guided along a fixed fence (it can be fixed with cramps) or a special aluminium rail.

Side panels

After the individual parts have been prepared continue to work on the side panels. Here, the router comes into action three times. The first operation cuts rebates into the back edges for accepting the back panel. The next step cuts



Chest of drawers



The side panels receive 8 grooves each to accept the side runners. The router is guided by a clamped on fence



The side runners must not be fixed with glue. They are fixed with countersunk wood screws to allow the wood to move



The four drawer sides are joined with dowels and glue. Cramp the parts together

Materials list

No.	Quantity	Name	Dimensions (mm)	Material
1	2	Side panels	1190 x 340)	
2	2	Bottom panels	303 x 340	19mm
3	7	Drw rails	303 x 45	American
4	16	Drw front/back	300 x 125	maple
5	16	Drw sides	296 x 125	
6	2	Base	550 x 450	22mm MDF
7	2	Top	450 x 450	
8	8	Handles	115 long	MDF 40 x 19mm
9	16	Side runners	305 long	Maple 15 x 12mm
10	1	Back panel	1172 x 322	5mm Gaboon
11	8	Drw bottoms	292 x 276	plywood

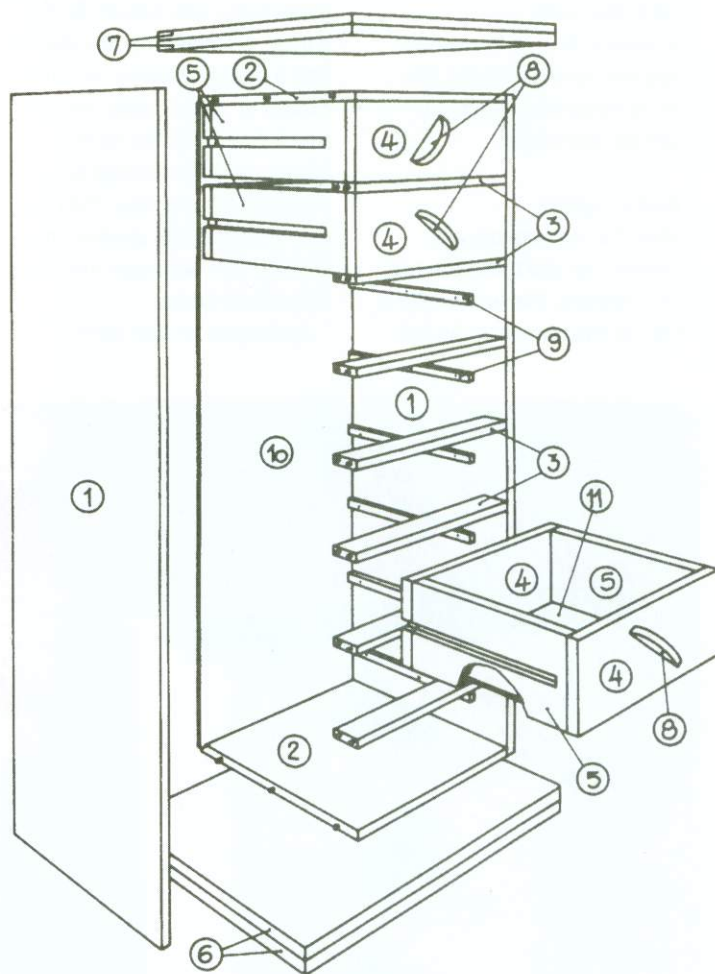
chipboard screws; dowels dia. 8 x 40mm; glue



The carcass is assembled from side panels, bottom panels and drawer rails. All joints are doweled and glued flush

dowel holes, which are needed for fixing the bottom panels and drawer rails. Here, the router proves how precisely it can work. Because of the baseplate, exact vertical plunging is guaranteed.

When working close to workpiece edges, a suitable piece of waste-wood must be used at the side to support the router baseplate and ensure that it does not tilt over the edge. When making dowel holes, set the stop block so that the dowels have 2mm air clearance at the bottom of the hole. This leaves the space for surplus glue and it ensures that the parts to be joined are assembled without problem.

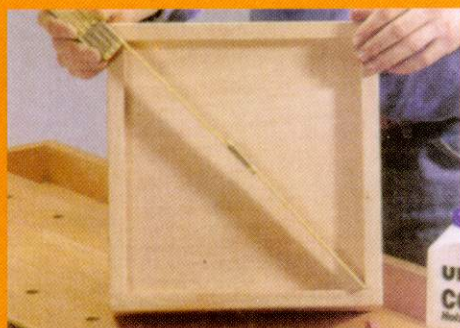


Side runners

The third operation on the side panels is to cut grooves for accepting the side runners, on which the drawers will slide later on. Cut 12mm wide grooves spaced to give exact clearance for the drawers housing. Stop the grooves 30mm from the front end and chisel a right angle afterwards. The drawer side grooves are set back by the

same 30mm so that the closed drawer is flush with the carcass.

Do not glue the side runners into the grooves. The grain of the side panel and the runner runs exactly against each other, so the blockboard could develop tension cracks while the panels are still drying out. This is likely to be a problem with kiln dried blockboard, therefore fix the runners with chipboard screws.



When gluing the drawers make sure that all sides are rectangular. It is best to measure and compare the diagonals



The runner grooves, stopped at the front, are cut into the drawer sides. Guide the machine with a straight fence



Base and top edges are also rounded with the ovolo. Do this in two operations

Pre-drill the holes and countersink so that the screw heads will not project. For this work, a battery-operated drill would be very useful.

Bottom panels

After the side panels are complete, we start with the two bottom panels. These also get a rebate at the back end. As the

dowel holes are drilled into the edges, it would be preferable to add a dowel template, to plunge exactly at a right angle into the wood. Now, only the seven drawer rails are missing to complete the carcase. They are also inserted with dowels and for this, drill two holes into each of the face edges.

Apply glue to side panels,

bottom panels and drawer rails and join by means of the dowels. Using large cramps, press the parts together until the glue has set. Take care, that bottom and side panels are rectangular. The back panel is only put in after the drawers have been completed and fitted. The already, cut-to-size drawer sides are equipped with dowel holes for later assembly, but before this, they get a groove running parallel to the lower edge, into which the plywood drawer bottoms can be inserted. Cut the grooves by using a router and a straight fence. To make this work easier, you could cut the grooves first into the boards and then cut out the drawer sides/back/front.

If you want to save material cost, you may use high quality hardwood for the drawer fronts only. For sides and back, pine can also be used as these parts are not visible. When gluing the drawers take care that the parts are in a right angle. Either check with a large try-square or, even better, measure the diagonals of the drawers. They must show exactly the same measurement.

Grooving the drawers

In the next operation, the prepared drawers receive the grooves in which the side runners slide. For this, use the router and straight fence. As already mentioned, the grooves must not continue to the end as they also form the stop for the drawers.

The router is used once again to cut mortises for the handles. A temporary fence, fitted at an angle of 45 deg. to the edge, takes care of exact guidance. The handles are cut as semi-circles. Use an ovolo cutter with guide pin for rounding so that the handles fit exactly into the slots. Of course, you can form the handles to your own ideas or use ready-made wooden or metal items.

Bottom and top

When carcase and drawers are complete, most of the work is done. Only the MDF base and top are missing. The 22mm thick square and oblong are first cut to size and then base and top edges are slightly rounded using a large ovolo cutter. Fasten the parts with screws from the inside of the carcase. But before this, the chest must be painted and varnished. As the face edges of MDF are strongly absorbent, seal the material first with a two-pack lacquer. Then sand again and paint the surface with a colour of your choice.

The blockboard surfaces of carcase and drawers can be treated with a clear varnish, wax or oil. The optimum surface build up is as follows: first rub in an undercoat oil until saturated. The next day when the oil has been fully absorbed, rub again with a soft cloth before wax is applied with a linen cloth.



The work was worthwhile. The chest of drawers represents a top modern design and is also practical

Tip

To make drawers smooth running, grease all side runners with candle wax, they will slide almost by themselves.

This article is an extract from the book *Making Designer Furniture for Children, the Home and Garden* by Hans-Werner Bastian published by Nexus Books price £6.50. For details telephone 01442 266551.

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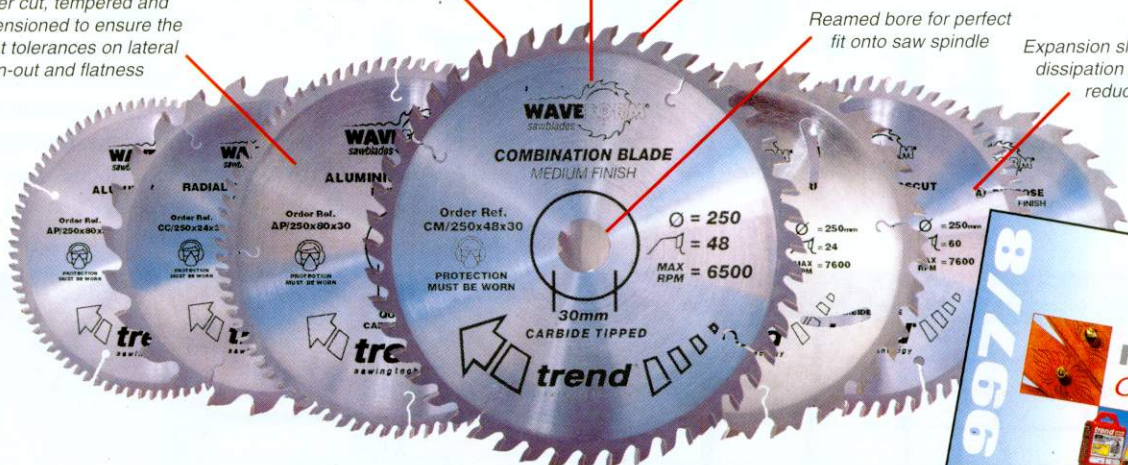
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Around The Workshop



Michael Waite produces a jig for cross cutting grooves and rebates with a guide bush and straight cutter

The jig which was eventually devised incorporates some interesting features, some of which are original and which are summarised below:

(a) it is versatile and will cut grooves at right angles to an

edge, or at any desired angle across a board.

(b) it can be used either with a guide bush, or with the router base itself working between the top cross guides.

(c) the material worked is very securely held. The down pivot clamp sets are much more convenient than loose G cramps.

(d) it is possible to cut material which is either flat on the baseboard, or on the edge of a board.

(e) if care is taken in the construction of the jig it should prove very accurate. On the jig which I produced, I can be confident that cross cuts are

exactly at right angles to the datum edge of a board.

(f) the offset gauges which are a particular feature of the jig ensure that the cross guides may be set quickly and precisely to work to a marked line.

(g) the material being worked upon may be rapidly and easily adjusted in position.

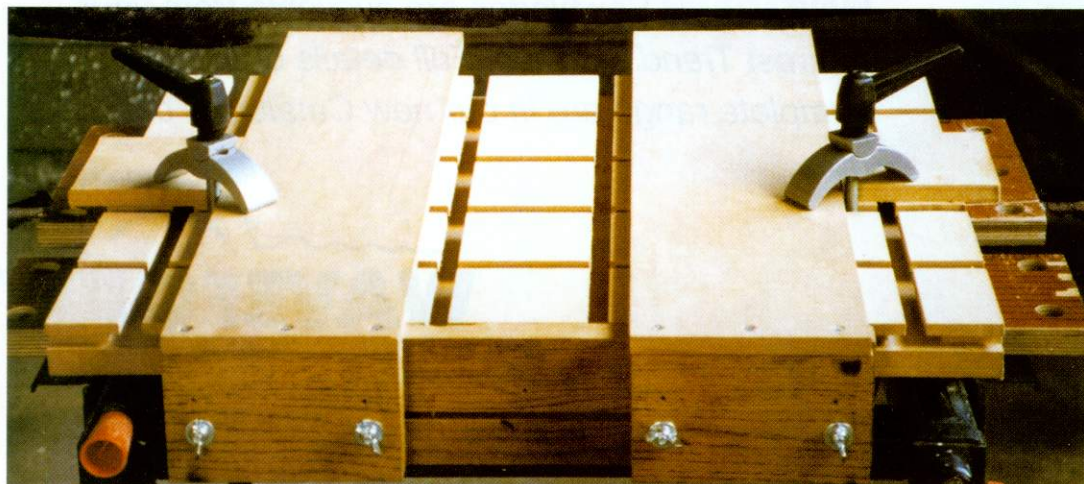
When I designed the jig, I was also looking ahead to the construction of a set of wall book shelving, which will be featured in a future article in Routing.

The complete jig, shown, will accommodate boards up to 480mm wide and of any length. If the baseboard was any larger, it would become rather heavy due to the double thickness of MDF used in its construction. Readers may of course vary the sizes to suit their own requirements.

One point which is worth mentioning at this stage is the maximum width of groove which can be cut is 82mm. If a wider groove were required, it would be necessary to use a wider sub base plate under the router such as the Trend GB/Plate, which would fit my Elu 177 router.

Construction

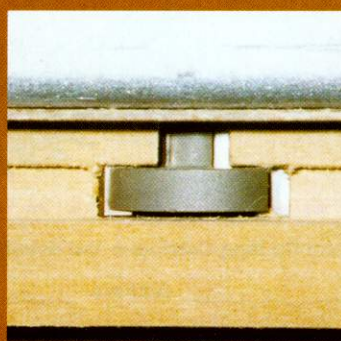
The jig comprises four main parts: two top cross guides, which are bolted to a sliding rail, all of these being then clamped to a slotted base board. The top cross guides and sliding rail



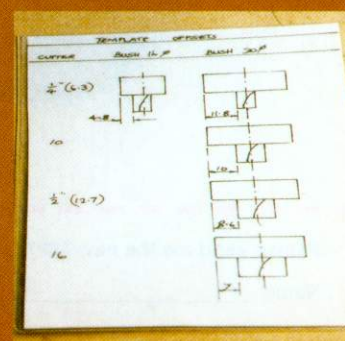
Cross Cutting Jig



Cross cut jig - first stage of making baseboard



Cross cutting jig - T Slotting cutter - second stage cutting



Cross cutting jig - reference chart

were made first. MDF 1/2in. thick was used for the cross guides, because of its clean machining properties and stability and oak for the guide supports and sliding rail. All material was brought accurately to final dimensions.

The inside of the sliding rail was grooved 21mm wide and 7mm deep. This was to take the 19mm washers and to recess the washers and heads of the machine screws below the surface of the inside of the sliding rail. A 1/2in. straight cutter was used with two overlapping passes working to gauged lines. The router's own fence working on the edge of the rail ensured accuracy. Next the centre slot, which was to take the bodies of the machine screws, was marked on the inside of the rail and also stop lines to show the length of these through slots. The rail was routed using a 1/4in. straight cutter, which gave a slight clearance for the 6mm machine screws. Again the router's own fence was used and three passes were needed to cut through the oak.

The holes in the cross guide supports were drilled using the same fence setting as previously to ensure that the cross guide supports lined up perfectly with the sliding rail. The holes were drilled using the router, which ensured that they were perfectly at a right angle to the surface.

Material

Part	Description	Qty.	L	W	T	Material
A	Top Cross Guides	2	610	150	13(1/2in.)	MDF
B	Top Cross Guide Support	2	150	90	23	Hardwood
C	Sliding Rail	1	450	90	23	Hardwood
D	Base	1	610	485	38	MDF
(two pieces each 19mm glued together)						

Clearance holes were drilled at the ends of the top cross guides and then countersunk to take the securing screws (1 1/4in. x 8 8ZP).

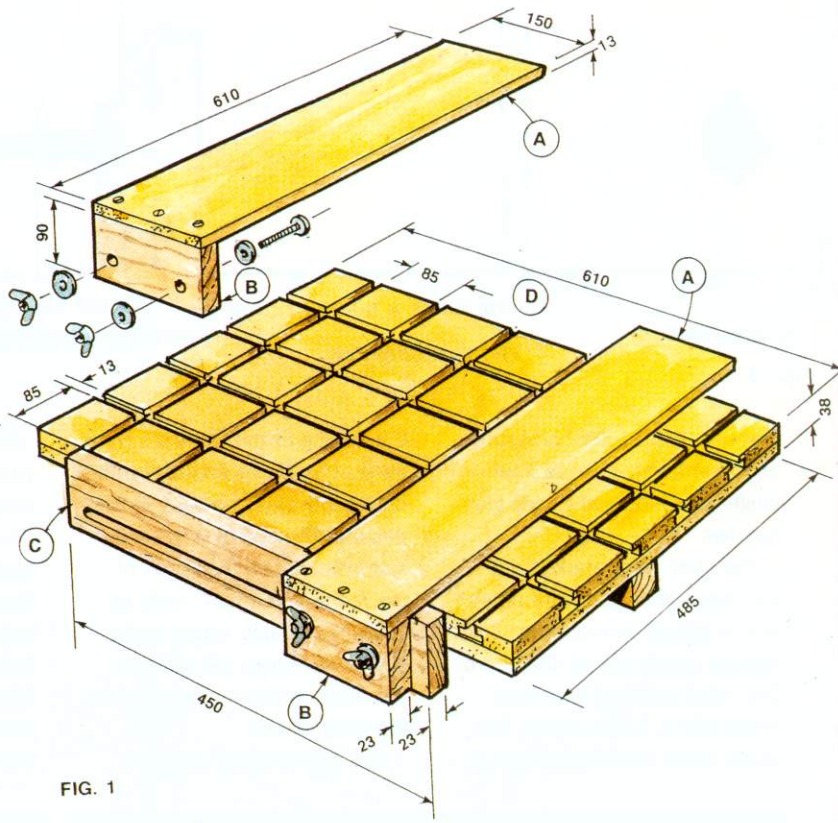
The top cross guides were screwed to the cross guide supports dry at first, then when it was certain that the inner edges of the top guides were perfectly at right angles to the cross guide supports, the components were finally glued and screwed. It is most important to ensure that this part of the work is carried out meticulously since the future accuracy of the jig depends on it.

The baseboard comprises of two pieces of MDF each 3/4in. thick glued together. This thickness is necessary because the T slots were cut almost through the first thickness and the extra layer gives strength and stability.

The two pieces were prepared slightly

Hardware

- 4 Machine screws hex head BZP 50 x 6mm
- 4 Butterfly (wing) nuts BZP 6mm
- 8 Washers BZP 19mm od
- 6 Screws 1 1/4in. x 8 Csk BZP
- 2 Sets Down Pivot Clamps Trend PIV/CL



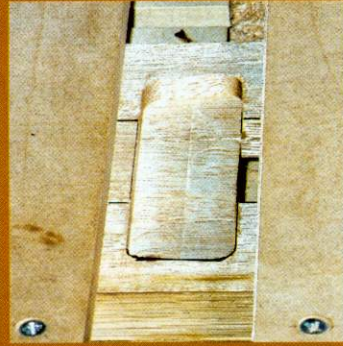
Cross cutting jig - offset gauge in position



Cross cutting jig - wide groove set up for routing



Cross cutting jig - completion of wide groove



Cross cutting jig - cutting tenon - first stage

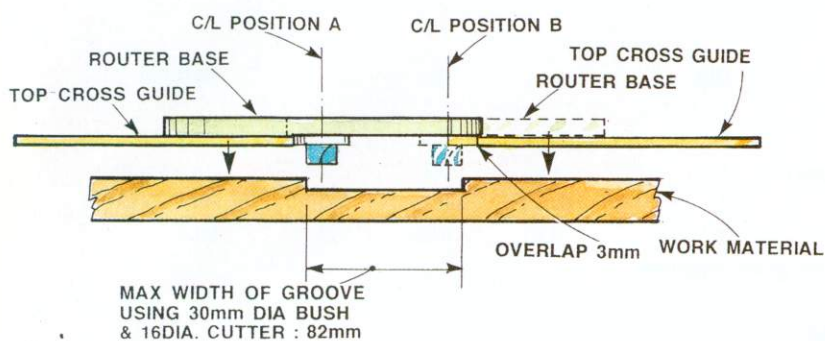


FIG. 2

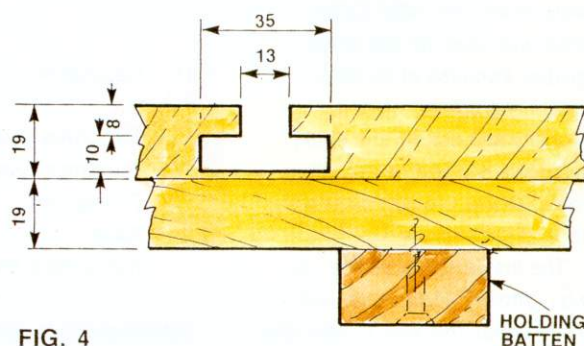


FIG. 4

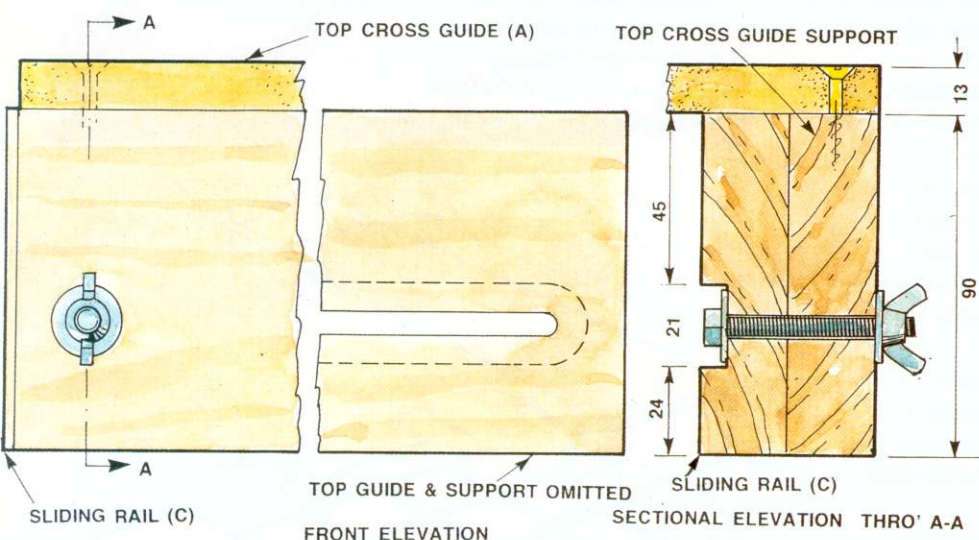


FIG. 3

oversize, glued under pressure and then taken down to final length and width, when the glue had set.

The slots were marked out with pairs of lines 13mm apart and at 85mm centres and spaced evenly across the board. The initial relieving cuts were made with a 1/2in. cutter. The router fence was used to guide

the cutting of the two slots from each of the four edges and the final depth was achieved in two passes. The centre lengthways slot was beyond the reach of the fence and it was made by using the already made cross guides set apart the width of the router base and cramped to the base board.

The final slotting using a

35mm diameter slotting cutter was done in a similar way to the initial relieving cuts as described above, with special care being taken to ensure that the shank of the cutter lined up exactly with the first cuts. The baseboard was completed by having a batten screwed underneath for fixing to a Workmate or bench vice.

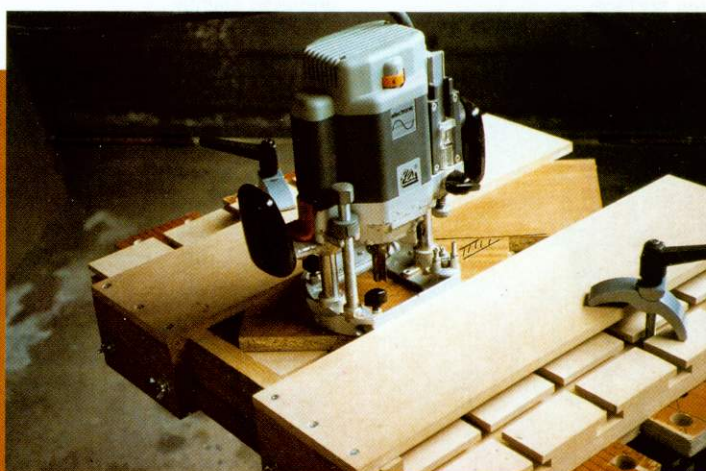
Using the Jig

The material being worked upon was securely held between the base and the top guides by the down pivot clamps, which could be placed exactly where required to give maximum security.

The key to the system depends on the production of one metal strip for each offset for each bush and cutter which one may possess. I made a quick reference chart, which I had laminated for protection and which was secured to the underside of one of the cross guides. The offset gauge is used in conjunction with a 30mm guide bush and 16mm cutter, which in this case requires a 7mm offset gauge. I made the offset strips from brass, which is easily filed yet durable in use. The length of each was 120mm the thickness 1mm and the width of course varied according to



Cross cutting jig - completed tenon



Cross cutting jig - cutting at 45deg. across board

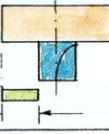
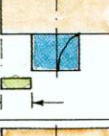
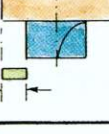
TEMPLATE OFFSETS		
CUTTER	BUSH 16mm DIA.	BUSH 30mm DIA.
1/4" (6.3mm)		
10mm		
1/2" (12.7mm)		
16mm		

FIG. 5

the combination of bush and cutter diameter. It is important that each strip is exactly the same width as the offset required and a dial caliper gauge was used to ensure accuracy.

Shown is a typical application with a 7mm offset gauge placed on a marked line and the cross guide moved up to touch the gauge, after which the pair of wing nuts are tightened securely. the offset gauge was also used at the right hand side of the groove. The groove was

made by one pass of the cutter.

Note that waste pieces of the same thickness as the work piece have been placed on each side of the material being routed. The one nearer the operator protects the sliding rail and the other one prevents breakout on the work.

If the width of the groove required is wider than the diameter of the cutter, the initial path of the bush against the cross guides is shown. The waste in the centre of the groove is then removed safely by a series of freehand passes.

The photographs show a sample of a 45 deg. groove being worked across a board: in this case a guide bush was not used, but the router base was guided by the top cross guides. In this example the groove was completed by a single pass of the cutter. An example of rebating the edge of a board has not been included, but I am sure that most readers will find no difficulty in applying the principle of the jig to this type of work.

I have been very pleased by the accuracy and convenience of the jig and I can foresee that I shall find it a worthwhile investment in the future.

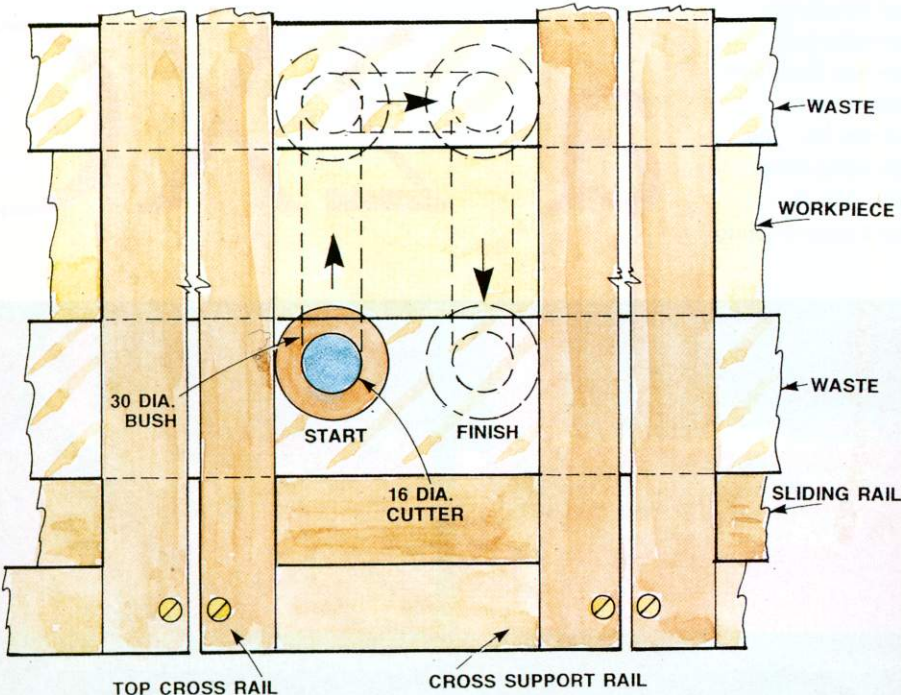
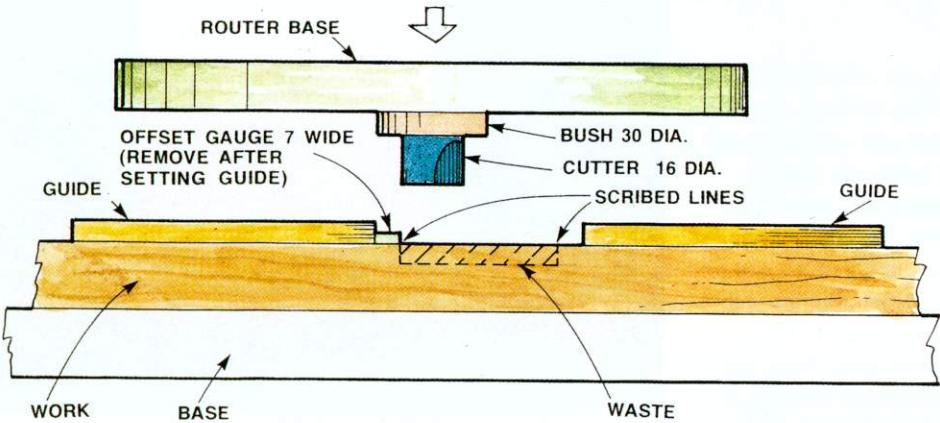


FIG. 7

Around The Home



With the aid of a router Alan Parry saved a door from becoming firewood and improved its security

Initially the decay in the back door appeared minor and easy to repair with a two-part epoxy filler, but within a few minutes of probing with a screwdriver it was obvious that the decay was severe and further investigation needed.

The door was removed from its frame and placed on the bench. The beading was removed and the glass gently

prised out and unfortunately cracked in the process, next the mortise lock was eased out and set aside for re-use. Digging with a sharp chisel showed the extent of the decay which was deepest at the top of the middle rail at its junction with the lock side stile, with sound wood about 250mm away. There was also a deep pocket of decay in the stile that had eaten away one of the three dowels that connected the rail to the stile making the door structurally weak. Normally a door with decay as severe and this would have been scrapped and replaced with a new one. The advent of the plunging router has made once impossible repairs a practical proposition to carry out.



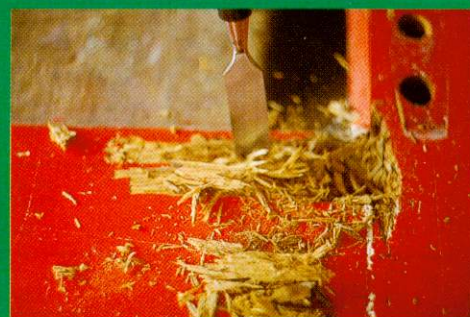
Repairing and a 2XG



Initially the decay appeared minor



Beading and glass removed



Digging with a chisel revealed extent of decay

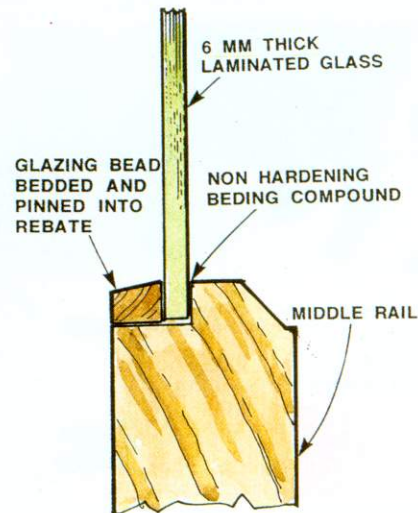
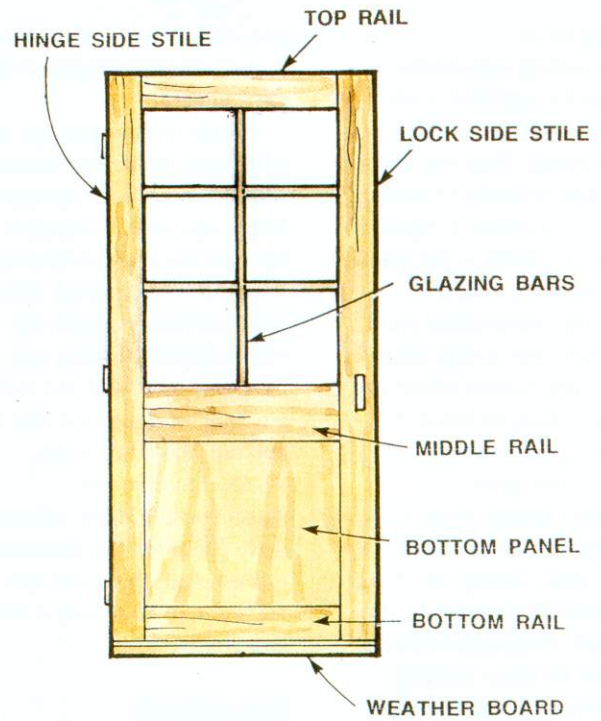


FIG 2 SECTION OF MIDDLE RAIL

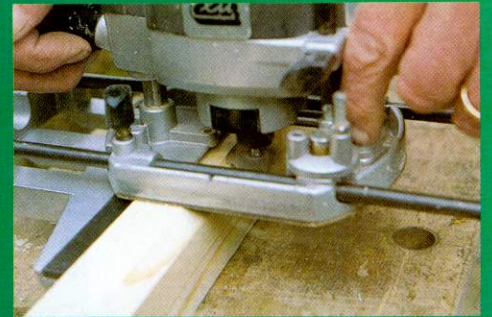
Improving door



The stile was also decayed



Decay cut away to reveal sound timber



Shaping the glazing bars

Removing the rot

The cutting was carried out with an Elu MOF96E router and a pocket single flute long shank cutter. First the shallow area was removed to a depth of 20mm followed by deeper cutting to 35mm in the badly decayed portion. It is essential that shallow cuts are made with 1/4in. diameter long shank cutters otherwise they are likely to break if forced to remove too much wood in one pass.

All the exposed wood was brushed with an organic solvent preservative solution to kill any rot spores and allowed to dry overnight. Fungi spores can lie dormant for years awaiting sufficient moisture to re-start the decay process, so it is important that the affected area is well soaked with preservative

to ensure a long and trouble-free repair. Repairing the middle rail and stile

A piece of pine was cut and glued into the deeper pocket with an epoxy resin adhesive. Resin was used because it hardens very quickly allowing the repairs to continue without the usual delay caused by most adhesives. Next, two pieces of pine were cut to fit the shallow pockets in the stile and rail, these were left slightly proud of the surrounding surface. After the resin had dried the pine was rubbed down flush with the surrounding wood with a belt and orbital sander.

Safety and Security

To improve the security and safety of the door it was decided to replace the large

piece of glass with six smaller panes by fitting glazing bars in the top opening and installing laminated safety glass in them. The router proved very successful in making the glazing bar which was unavailable from my local supplier.

Making the glazing bar

A length of pine was cut to 45 x 45mm with a power saw and smoothed with an orbital sander to give a finished size of 44 x 44mm, the thickness of the door. The chamfer to each side of the back of the bar was formed with a bearing guided cutter and the rebate with a straight cutter and two standard fences fitted to the router. When enough bar had been moulded it was lightly rubbed with a fine abrasive paper to remove odd fibres and provide a smooth finish for later priming.

Fitting the glazing bar

The vertical bar was cut to length and the ends scribed to the rebate profile and cut using a coping saw then pinned and glued in position. Next the horizontal bars were cut to length, ends scribed and cut then pinned and glued in place. Cascamite glue was used because it is ideal for exterior woodwork and sets slowly allowing plenty of time to carry out slight adjustments

necessary to ensure the bars are truly vertical and horizontal.

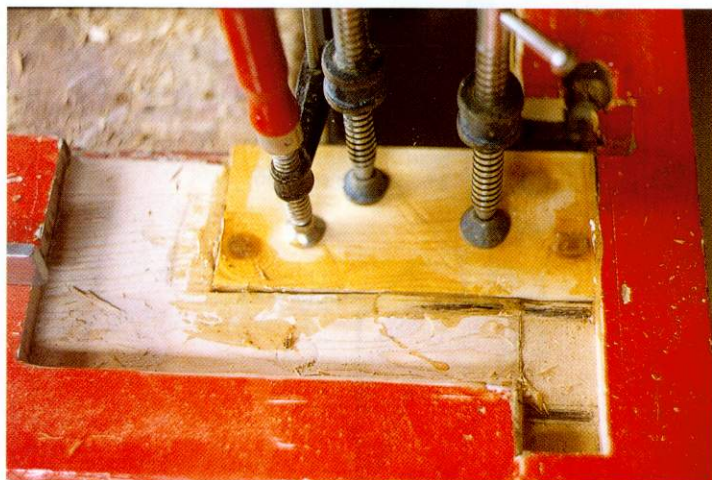
Glazing and painting

The bare wood was coated with a good quality pink primer and the glass bedded on a non-setting glazing compound and secured by wood beads and non-rusting pins punched below the surface and filled. The final job was painting the door with two undercoats and one gloss coat.

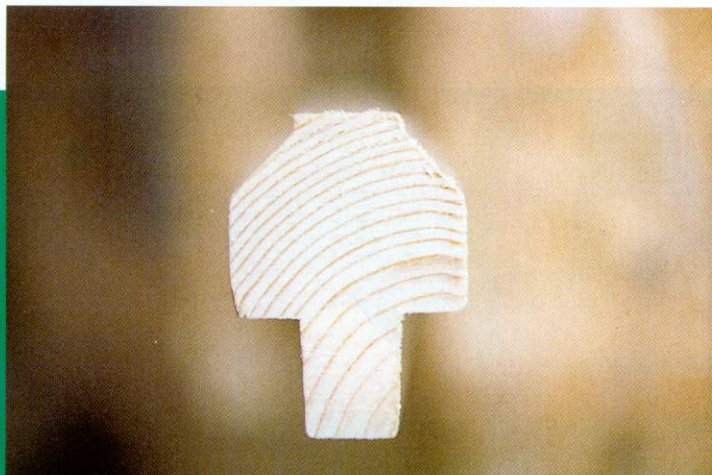
Repair v Replacement

Are repairs worth the time and effort involved? This project took about 12 hours to carry out excluding the time to get the glass and paint in. The most time consuming part of the project was cutting the glazing beads and bedding the glass and finally pinning the beads in position.

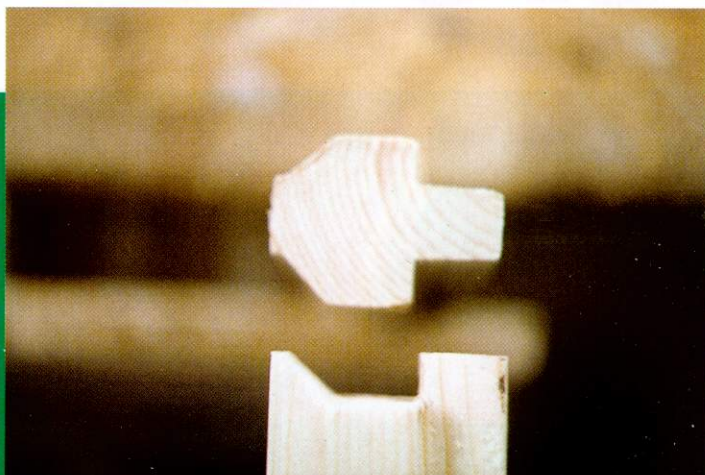
If a new door had been fitted it would have been considerably more expensive than the cost of adhesive and a few pieces of pine, but much quicker to shoot in and hang. Even so, the glazing beads would have required the same amount of time to fit correctly. All-in-all the project was a viable one for my home and enabled me to have some enjoyment with the router and save some money - what more could I ask for?



Pine cut and glued into the deeper pocket



New glazing bead



Scribed joint will be a perfect fit

Letter to the Editor

Dear Editor

May I pick up on two points from Issue 21 of *Routing*:

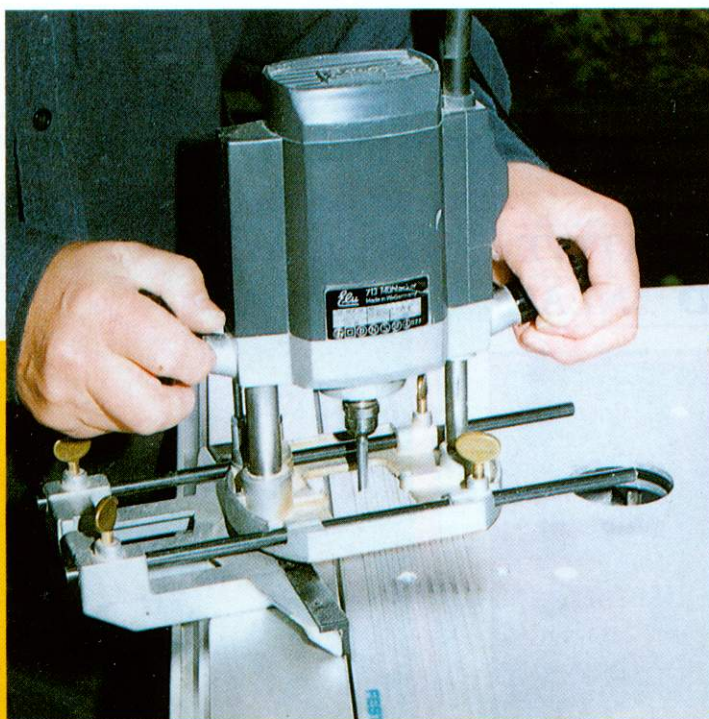
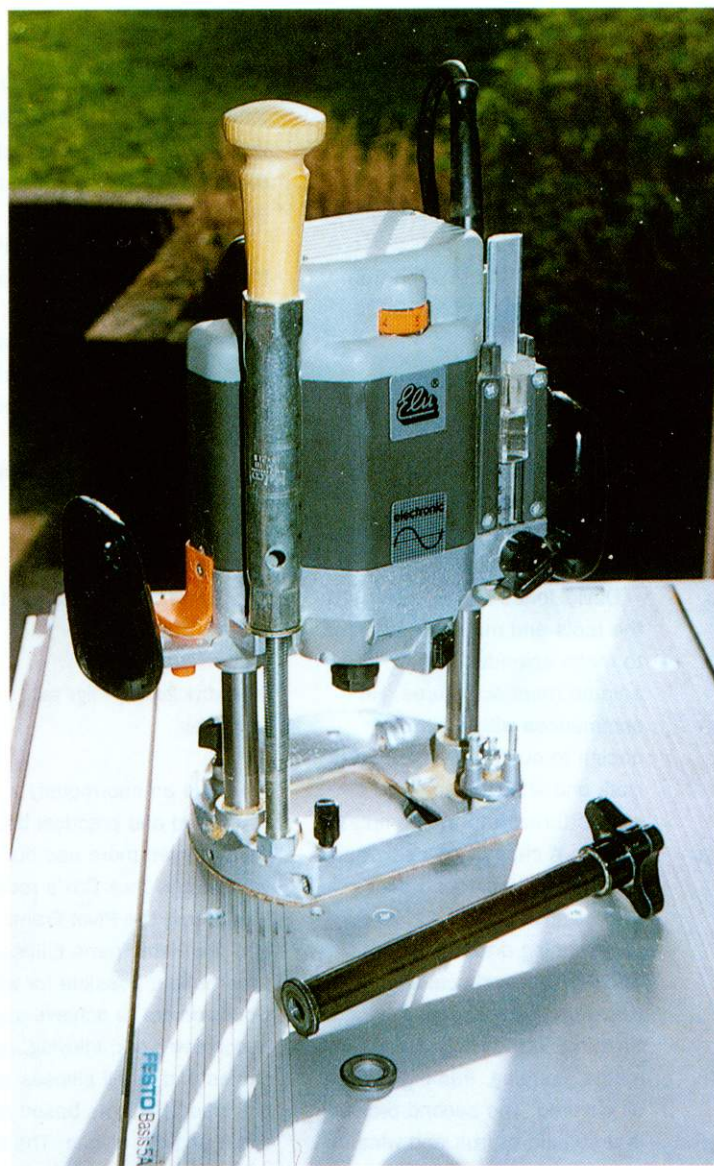
1. Fine Height adjuster for Elu 177. Mr. Colley (*Letters*, page 20) could have saved himself a lot of time and money by making his own fine height adjuster. I have been advising my students to do this for years. All you have to do is hammer a 19mm nut (I use Nyloc nuts) into the end of an 18mm box spanner and fit a handle. If you are not a woodturner a length of broom handle is sufficient. The photograph (left) clearly shows my 177E with home made adjuster fitted and the Elu original in the foreground. I make similar adjusters for the Hitachi range, Bosch 400/500/600 and 1700 and the Festo OF900E. Having said that, Mr. Colley would be much better off with the WoodRat PlungeBar which makes table

routing in particular much more efficient. I only took mine off the 177 in order to photograph it with the home-made adjuster.

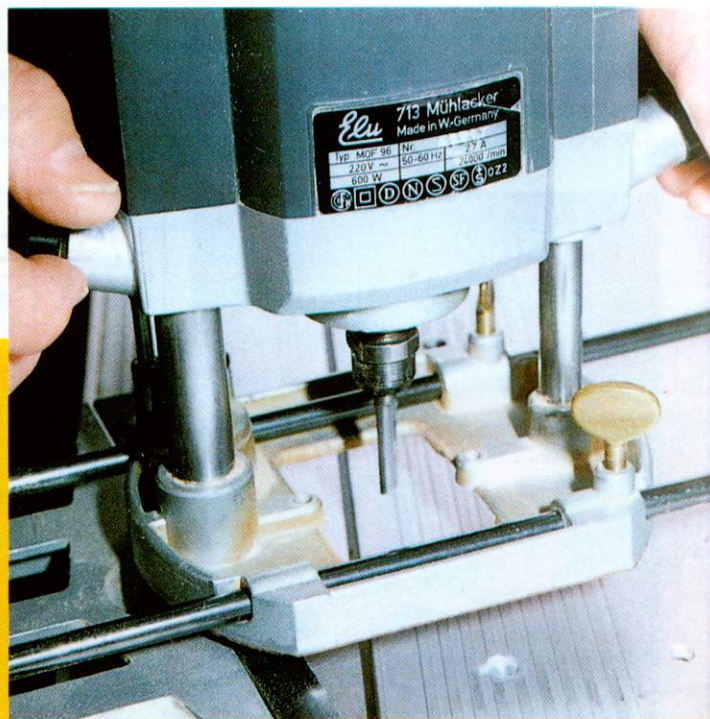
2. Elu 96E Router page 72

I fully agree with Jack Cox. I think that the 96E has more desirable features than any other router on the market - provided you do not need more than its 900W power. My model is even older than Jack's; as will be seen by the brass fence-rod screws and the label 'Made in W-Germany'. It wasn't even the first router I bought, that was a Black and Decker HD1250 non-plunging model of blessed memory to those who had one. Mine is still in first class working order and I also have the cast bracket made to fit the body of the router to a DeWalt radial arm saw.

*Ron Fox,
Horsham, West Sussex.*



Old, but still going strong



Elu 96 - made in W. Germany

New Books

Picture Framing Made Easy

by Penelope Stokes

In this practical, straightforward guide every step of the framing process is explained; choosing the mouldings, cutting the wood and the glass, making the mount, assembling and finishing the frame and hanging your picture. The techniques described assume little or no experience and unrealistic standards of workmanship are not expected; in fact, the author has included a list of remedies for basic mistakes, as well as a check list of preventative measures to stop them from happening in the first place.

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by E. M. Wyatt

Wonders in wood is a really super little book that is bound to intrigue and delight all woodworkers and puzzle devotees. This is the sequel to the author's hugely popular *Puzzles in Wood* which was reprinted by popular demand and which has been selling for over fifty years.

In this collection some 46 puzzles are just waiting to be made up and solved. They range from the simple to quite challenging pieces for those craftsmen who like to take a pride in having their work fit snugly and accurately.

A nest of thirteen pieces of dolls house furniture, bandsawn from a rectangular block of wood makes a striking demonstration of what can be done on a bandsaw or fretsaw. And the three-dimension jigsaw makes a great variation on the conventional jigsaw. Try squaring triangles or making the triple

dovetail puzzle, or the eighteen piece double-cross. And when you've finished these beauties go for the Marbles in a Maze! Happy Puzzling!

Price, £7.95

For further information from Stobart Davies Ltd., 01992 501518

Fret Cut Relief Work

by David Jones

A brand new book for all fretsaw and scrollsaw enthusiasts from this brilliant artist and sculptor.

David Jones briefly discusses the tools and materials required to make splendid fretsaw painted relief sculptures. He commences with a simple design to outline the method of work and shows step-by-step stages through to the completed project. A chapter on design and composition includes working drawings, working out a colour rough, using drawings and photographs and scaling up and transferring the design to wood. Shaping, introducing mixed media, painting, framing etc. are all covered. The second project is a still life of fruit and wine on a tray, still relatively simple to make, but which would make a very effective piece, perhaps for the dining room wall.

The third project, now more complex, is of a reclining woman

- a really stunning piece. Then finally, an extremely interesting landscape which would make a superb piece for the living room or bedroom.

This is a book which really brings the subject to life and gives some real scope for excellent work to the fretsaw user. David Jones ends with his gallery of work and gives many further examples of the possibilities for this exciting artform.

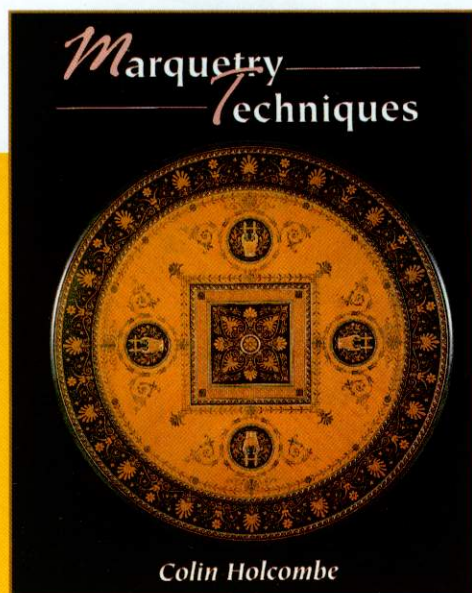
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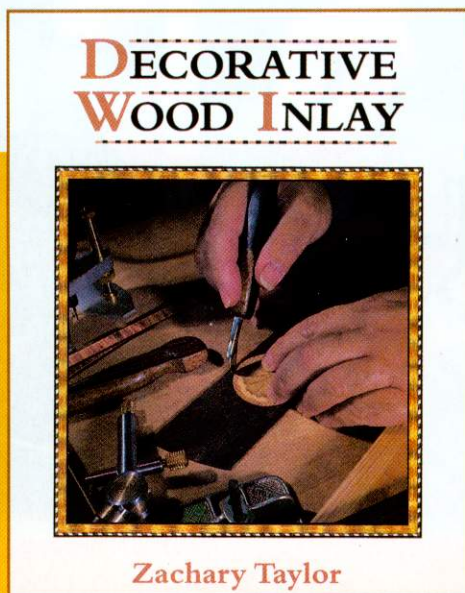
Decorative Routing - Jigs and Techniques

Jack Cox

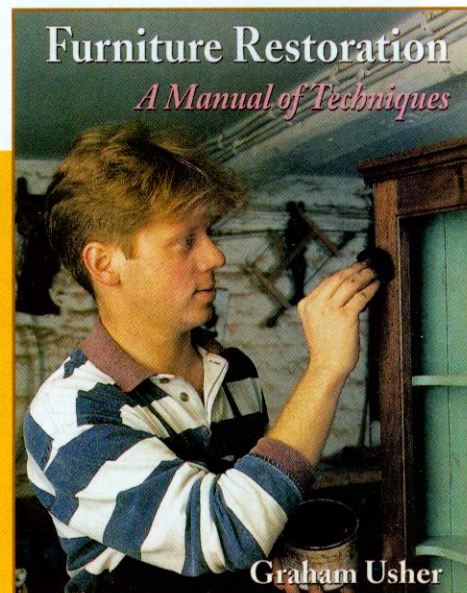
This is an enormously innovative and practical book on making even more use out of your router. Jack Cox's recent inventions, the Pivot Frame jig and the Pivot Frame Ellipse jig, now make it possible for all woodworkers to achieve superb decorative work, inlaying, routing circles and small ellipses and scalloped patterns based on the circle and the ellipse. The book includes many other jigs designed by the author and all jigs and fixtures are well within the compass of the home workshop. All the methods and procedures of these original



Colin Holcombe



Zachary Taylor



Graham Usher

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Hugh O'Neill

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Graham Usher

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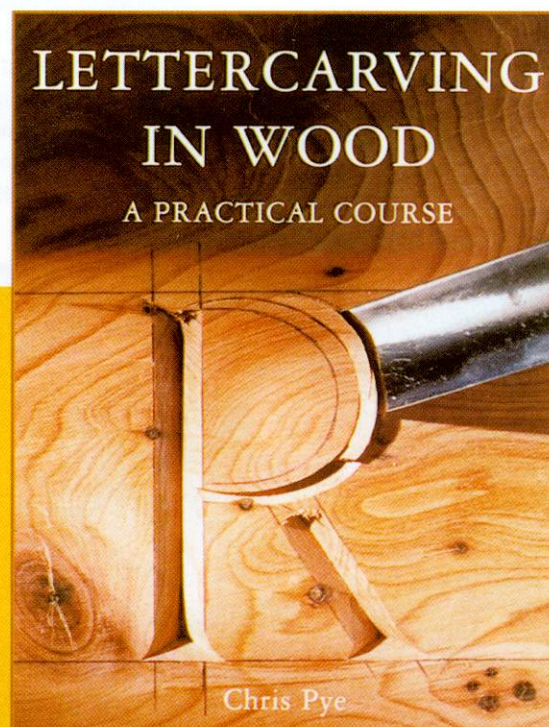
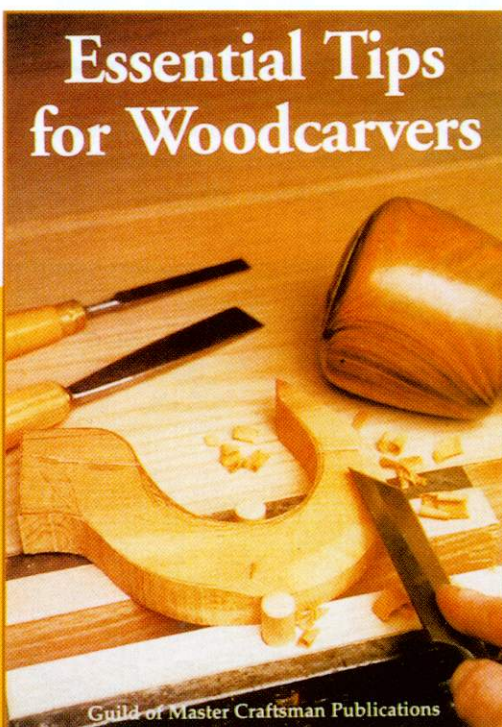
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Healy's opened in St. Albans Hertfordshire on Easter Saturday 1991, it had been Keith Healy and Patrick Clifford's ambition to open their own business and this was it

Both lads had worked for another local company, S. Gomm in Cheshire Street. Gomms were an old established, family run concern selling hand and power tools along with ironmongery and hardware. They had been with Gomms 17 years each, Keith was manager and Pat, assistant manager. In 1989 the managing director of Gomms decided that he would not sell or lease the business to Keith, so this was really the opportunity that they were looking for to make the change. They both handed in their notice and left.

Keith had known the local bank manager for some years, so he put a business plan together and contacted the bank. The bank liked what they saw and gave the OK. The next thing was finding premises.

It so happened that a local electrical shop was moving, Keith made enquiries and some

weeks later agreements and contracts were signed. The shop is 1100 square feet in size, light and airy, with plenty of space for customers to browse.

When they started they agreed to specialise in tools (hand and power), repairs and spares. As the months went by and they were getting more well known, more wholesalers were coming in to supply and the business grew from there.

The biggest volume of Healy's business is in power tools, both new and reconditioned. All popular, well known brands are stocked. The company buys in volume from Bosch, especially reconditioned tools where discounts of up to 45 per cent are offered to customers. Ever since the company began dealing direct with Bosch, sales have gone through the roof. (Reconditioned is either ex-catalogue returns or goods not required by shops etc. It is direct from Bosch to Healy and is guaranteed).

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Another aspect of success has been the ability to diversify into another area of the supply business. This has been in supplying tool kits to schools etc. Every year turnover has increased. We expect the

current year to prove no exception, with an expected turnover of about half a million. Not bad for a Company who started deep, deep down in the recession.

Keith's father, Tim joined about 2 years ago as business grew; Keith's wife Karen is responsible for the accounts etc.

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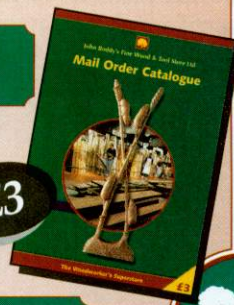
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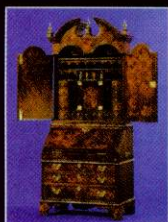
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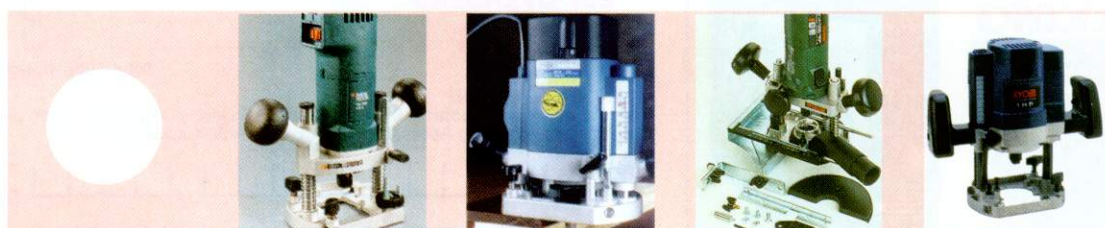
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110 Volt	No	No	No	No
Fixed rpm	27000	27000	30000	27000
Variable rpm	No	No	No	No
Spindle lock	No	No	Yes	No
Dust deflector only	No	No	No	No
Dust hood with spout	Yes	Yes	Yes	No
Max plunge depth	48	52	55	52
Collett chuck size	1/4	1/4	6,8mm, 1/4	1/4
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110 Volt	No	Yes	No	No
Fixed rpm	No	24000	No	No
Variable rpm	8-30000	No	12-27000	16-26000
Spindle lock	Yes	No	No	No
Dust deflector only	No	No	No	No
Dust hood with spout	Yes	Yes	Yes	No
Max plunge depth	55	50	52	55
Collett chuck size	6,8mm, 1/4	1/4, 3/8	1/4	1/4
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Router make	RYOBI	MAKITA	MAKITA	HITACHI
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110 Volt	No	No	Yes	Yes
Fixed rpm	33000	24000	30000	30000
Variable rpm	No	No	No	No
Spindle lock	No	No	No	No
Dust deflector only	No	No	Yes	No
Dust hood with spout	No	Yes	No	No
Max plunge depth	N/A	35	N/A	N/A
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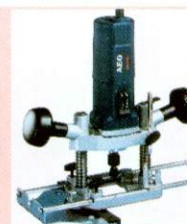
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Router make	VIRUTEX	DEWALT	DEWALT	AEG
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230 Volt	Yes	Yes	Yes	Yes
110 Volt	Yes	Yes	Yes	No
Fixed rpm	No	30000	27000	No
Variable rpm	8-24000	No	No	10-27000
Spindle lock	No	Yes	Yes	Yes
Dust deflector only	No	Yes	No	No
Dust hood with spout	Yes	Yes	Yes	Yes
Max plunge depth	50	N/A	35	50
Collett chuck size	1/4, 3/8	6.8mm, 1/4	1/4	1/4
Collets supplied as accessories	None	None	6, 8mm	None
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Fax. 01703 260784

PORTER CABLE

Hamilton Power
Products,
PO Box 2355,
Colchester,
Essex,
CO3 5FY.

Tel. 01206 762470

Fax. 01206 760537

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Ryobi Power
Equipment (UK) Ltd,
Pavilion 1,
Olympus Park
Business Centre,
Quedgeley,
Gloucestershire.
GL2 6NF.

Tel. 01452 724777

Fax. 01452 727400

Routers from £201-£222

				
Router make	HITACHI	AEG	AEG	FESTO
Model ref. number	M8	OFSE2000	OF5720	OF900Plus
Watts input	800	720	720	720
230 Volt	Yes	Yes	Yes	Yes
110 Volt	Yes	Yes	No	No
Fixed rpm	25000	No	25000	26500
Variable rpm	No	8-24000	No	No
Spindle lock	Yes	Yes	Yes	Yes
Dust deflector only	No	No	No	Yes
Dust hood with spout	No	Yes	Yes	Yes
Max plunge depth	50	75	50	50
Collett chuck size	1/4	1/2	1/4	1/4, 8mm
Collets supplied as accessories	6mm, 8mm	1/4, 8mm	6mm, 8mm	6mm
Net weight (KG)	2.7	2.5	2.5	2.7
List price Ex. VAT.	215.00	219.00	219.00	222.00

				
Router make	ELU	HOLZ HER	RYOBI	DEWALT
Model ref. number	MKF267K	2355	R151	DW620
Watts input	600	720	750	750
230 Volt	Yes	Yes	Yes	Yes
110 Volt	Yes	Yes	Yes	No
Fixed rpm	30000	25,000	27000	24000
Variable rpm	No	No	No	No
Spindle lock	Yes	Yes	No	Yes
Dust deflector only	No	No	Yes	No
Dust hood with spout	Yes	Yes	No	Yes
Max plunge depth	N/A	50	50	55
Collett chuck size	6,8mm, 1/4	1/4	1/4	1/4
Collets supplied as accessories	None	None	6mm, 8mm	6mm, 8mm
Net weight (KG)	2.2	2.7	2.8	2.8
List price Ex. VAT.	225.00	228.00	229.00	230.00

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Routers from £231-£272

Where to Buy Routers



Router make	DEWALT	FESTO	SKIL	HITACHI
Model ref. number	DW620L	OF900E Plus	1875U1	M8V
Watts input	900	900	1400	800
230 Volt	Yes	Yes	Yes	Yes
110 Volt	Yes	No	No	Yes
Fixed rpm	24000	No	No	No
Variable rpm	No	10-22000	8-22000	10-25000
Spindle lock	Yes	Yes	Yes	Yes
Dust deflector only	No	Yes	Yes	No
Dust hood with spout	Yes	Yes	No	No
Max plunge depth	55	50	63.5	50
Collett chuck size	1/4	1/4, 8mm	1/4, 1/2	1/4
Collets supplied as accessories	6mm, 8mm	6mm	12mm	6mm, 8mm
Net weight (KG)	3.1	2.7	4.5	2.8
List price Ex. VAT.	240.00	266.00	269.00	272.00

SKIL

Skil Limited,
PO Box 98,
Broadwater Park,
North Orbital Road,
Denham,
Uxbridge,
Middlesex,
UB9 5HJ.

Tel. 01895 838743

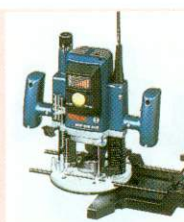
Fax. 01895 838802

STAYER

Stayer Power Tools,
Unit 9,
Guildford Industrial
Estate,
Deaconfield,
Guildford
GU2 5YT.

Tel. 01483 454502

Fax. 01483 454415



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Router make	BOSCH	AEG	ELU	DEWALT
Model ref. number	GOF 900ACE	OFSE850	MKF67	621K
Watts input	900	850	600	900
230 Volt	Yes	Yes	Yes	Yes
110 Volt	Yes	No	Yes	Yes
Fixed rpm	No	No	24000	No
Variable rpm	12-24000	8-25000	No	8-24000
Spindle lock	Yes	Yes	No	Yes
Dust deflector only	Yes	No	No	No
Dust hood with spout	Yes	Yes	No	Yes
Max plunge depth	50	50	N/A	55
Collett chuck size	1/4	1/2	1/4	1/4
Collets supplied as accessories	6mm, 8mm	6mm, 8mm	6mm, 8mm	6mm, 8mm
Net weight (KG)	3.5	2.5	3.3	2.8
List price Ex. VAT.	279.00	279.00	280.00	280.00

WATFORD

Watford Routers,
C/O William
Distributors,
108 Burghley Road,
Peterborough,
Cambridgeshire,
PE1 2QE

Tel. 01733 54352

Fax. 01733 555275

VIRUTEX

Ney Limited,
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Charter Avenue Ind.
Estate,
Tile Hill,
Coventry,
CV4 8UA

Tel. 01203 694794

Fax. 01203 695005

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Leicester LE3 9GP

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CMT TOOLS (UK)

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FREUD TOOLING UK LTD

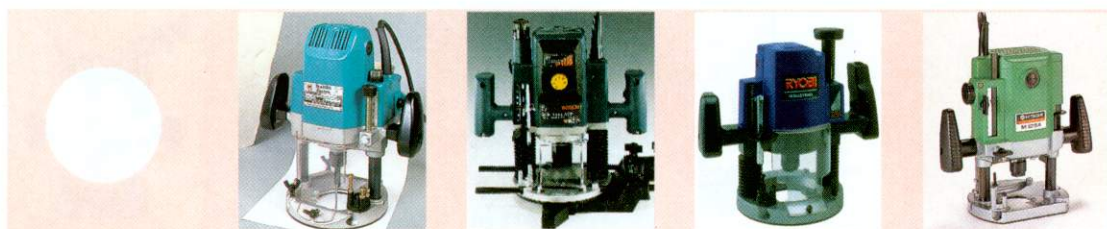
Unit 3
Emmanuel Trading
Estate,
Springwell Road,
Leeds LS12 1AT

Tel. 0113 245 3737



Router make	FREUD	DEWALT	METABO	MAKITA
Model ref. number	FT2000E	DW621KL	OF528	3612
Watts input	1900	1100	500	1650
230 Volt	Yes	Yes	Yes	Yes
110 Volt	Yes	Yes	Yes	Yes
Fixed rpm	No	No	27000	22000
Variable rpm	8-22000	8-24000	No	No
Spindle lock	Yes	Yes	Yes	Yes
Dust deflector only	No	No	Yes	Yes
Dust hood with spout	Yes	Yes	Yes	Yes
Max plunge depth	70	55	50	60
Collett chuck size	1/2, 1/4	1/4	1/4	1/2
Collets supplied as accessories	3/8	6mm, 8mm	3, 6, 8mm, 1/8	None
Net weight (KG)	6.0	3.2	3.0	5.8
List price Ex. VAT.	290.00	310.00	312.00	328.00

Routers from £328-£339



Router make	MAKITA	BOSCH	RYOBI	HITACHI
Model ref. number	3612BR	GOF1300ACE	R502	M12SA
Watts input	1600	1300	1600	1600
230 Volt	Yes	Yes	Yes	Yes
110 Volt	Yes	Yes	Yes	Yes
Fixed rpm	23000	No	24000	22000
Variable rpm	No	8-22000	No	No
Spindle lock	Yes	Yes	No	Yes
Dust deflector only	No	Yes	Yes	No
Dust hood with spout	Yes	Yes	Yes	No
Max plunge depth	65	60	60	62
Collett chuck size	1/4, 3/8, 1/2	1/4	1/4, 3/8, 1/2, 8mm	1/4, 1/2, 3/8
Collets supplied as accessories	None	1/2, 3/8, 6, 8, 12mm	None	6mm, 8mm
Net weight (KG)	5.7	4.8	5.0	5.2
List price Ex. VAT.	328.00	329.00	329.00	332.00

Where to Buy Cutters

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Tonbridge
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Tel. 01732 364444

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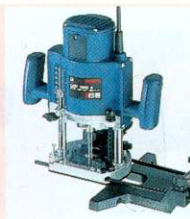
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Watford,
Herts WD2 4YF

Tel. 01923 249911

WEALDON TOOL COMPANY

31 Branbridges
Industrial Estate,
East Peckham,
Kent TN12 5HF

Tel. 0700 565000



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Router make	RYOBI	BOSCH	METABO	ELU
Model ref. number	R600N	GOF1600A	OF1028	MOF131
Watts input	2050	1600	1010	1300
230 Volt	Yes	Yes	Yes	Yes
110 Volt	Yes	Yes	Yes	Yes
Fixed rpm	22000	25000	27000	22000
Variable rpm	No	No	No	No
Spindle lock	Yes	Yes	Yes	Yes
Dust deflector only	Yes	Yes	Yes	No
Dust hood with spout	Yes	Yes	Yes	Yes
Max plunge depth	60	75	50	62
Collett chuck size	1/4, 3/8, 1/2	1/4, 1/2	1/4	1/4
Collets supplied as accessories	None	6, 8, 12mm, 3/8	3, 6, 8mm, 1/8	3/8, 1/2, 10 & 12mm
Net weight (KG)	6.2	5.7	3.3	4.8
List price Ex. VAT.	339.00	339.00	344.00	350.00

Routers from £370-£395



Router make	FESTO	METABO	HITACHI	BOSCH
Model ref. number	OF2000 Plus	OFE1229	M12V	GOF1700ACE
Watts input	1600	1200	1850	1700
230 Volt	Yes	Yes	Yes	Yes
110 Volt	No	Yes	Yes	Yes
Fixed rpm	25500	No	No	No
Variable rpm	No	5-25500	8-20000	8-22000
Spindle lock	Yes	Yes	Yes	Yes
Dust deflector only	Yes	Yes	No	Yes
Dust hood with spout	Yes	Yes	No	Yes
Max plunge depth	65	50	62	75
Collett chuck size	1/2, 8, 12mm	1/4	1/4, 1/2, 3/8	1/4, 1/2
Collets supplied as accessories	1/4, 3/8, 10mm	3, 6, 8mm, 1/8	6mm, 8mm	6, 8, 12mm, 3/8
Net weight (KG)	5.1	3.4	5.3	5.8
List price Ex. VAT.	370.00	371.00	389.00	395.00

Routers from £398-£449

					
Router make	MAKITA	RYOBI	DEWALT	FESTO	METABO
Model ref. number	3612C	RE600N	DW625	OF2000E Plus	OF1612
Watts input	1850	2050	1600	1800	1600
230 Volt	Yes	Yes	Yes	Yes	Yes
110 Volt	Yes	Yes	No	No	Yes
Fixed rpm	No	No	20000	No	24000
Variable rpm	9-23000	10-22000	No	12-22000	No
Spindle lock	Yes	Yes	Yes	Yes	Yes
Dust deflector only	Yes	No	No	Yes	Yes
Dust hood with spout	Yes	Yes	Yes	Yes	Yes
Max plunge depth	60	60	65	65	80
Collett chuck size	1/2	1/4, 3/8, 1/2, 8mm	1/4, 1/2	1/2, 8, 12mm	1/2
Collets supplied as accessories	1/4, 3/8	None	6, 8, 10 & 12mm, 3/8	1/4, 3/8, 10mm	6, 8, 12mm, 1/4, 3/8
Net weight (KG)	6.0	6.2	5.1	5.1	5.0
List price Ex. VAT.	398.00	399.00	420.00	436.00	449.00

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Router make	DEWALT	ELU	METABO	PORTER CABLE
Model ref. number	DW625L	MOF 112	OFE1812	7539
Watts input	1850	2000	1800	2423
230 Volt	Yes	Yes	Yes	No
110 Volt	Yes	No	Yes	Yes
Fixed rpm	No	18000	No	No
Variable rpm	8-20000	No	8-22000	10-21000
Spindle lock	Yes	No	Yes	No
Dust deflector only	No	No	Yes	No
Dust hood with spout	Yes	No	Yes	No
Max plunge depth	65	No	80	76
Collett chuck size	1/4, 1/2	M12x1	1/2	1/2
Collets supplied as accessories	6, 8, 10 & 12mm, 3/8	6, 8,10 & 12mm, 3/8 1/2	6, 8, 12mm 1/4, 3/8	1/4,3/8, 6, 8,10,12mm
Net weight (KG)	5.1	7.3	5.1	7.8
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Elu MOF96E + Dovetail Kit	£290
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*Elu PS274 110V 270mm Mitresaw	£523
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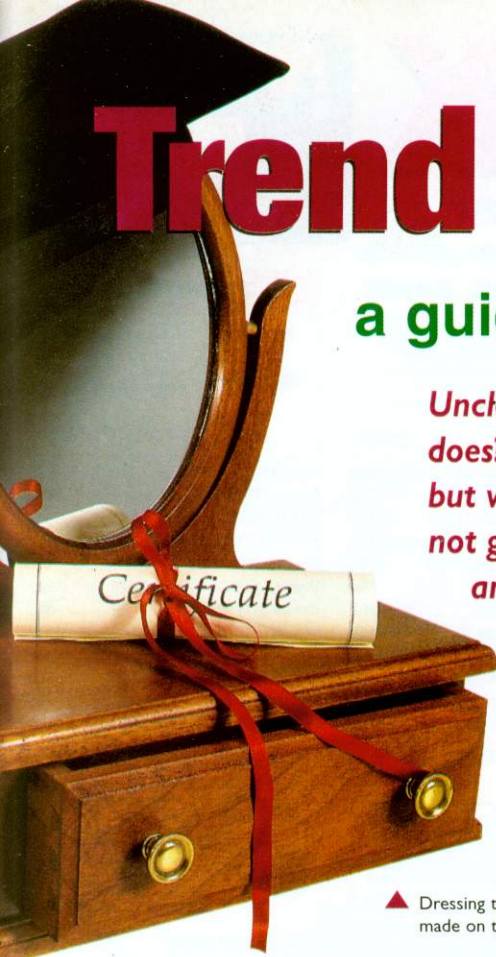
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214 Waterloo Road, Blackpool, Lancs, FY4 3AB

Tel: 01253 400066 Contact: Alan Goodwin

Course Details: Located close to Blackpool town centre and British Rail stations, this 2 day course deals with router control and discipline, highlighting all the safety aspects, identifying the features and includes in-class videos. The project involves the construction of an occasional table, acquainting

students with the use of the Router Table to produce grooves and tenons and the Trend Routerlathe for turning the legs. Accommodation can be arranged by the course organiser who also provides lunch and refreshments. Other courses also available. **Lecturer:** Paul Wenlock



CRAFT SUPPLIES ACADEMY

Craft
SUPPLIES

The Mill, Millers Lane, Dale, Nr Buxton,
Derbyshire SK17 8SN

Tel: 01298 871636 Contact: Eve Middleton

Course Content: Situated in the heart of the Peak district, this two day course features an introduction to the router, associated safety aspects, features and accessories. The project involves the construction of a dressing-table top drawer with elliptical pivot-hung mirror (see picture top left). It incorporates hand-held operations, tenoning, dovetailing, rebating and moulding techniques. The course also introduces the use of the dovetail jig, the

ellipse jig and table routing. Accommodation is available on site. Other courses are also available and students can take advantage of the book and video library, the crafts gallery and showroom. **Lecturer:** Bob Lambert

COURSE DATES 1998

Two Day Courses

Jan 6 & 7, Feb 3 & 4, March 4 & 5,
April 1 & 2

Course Prices

Two Day **£150**

▼ Using the Trend Mini Ellipse Jig

COURSE DATES IN 1998

One Day Courses

January 17 & 31
February 14

Course Prices

One Day **£60**

APPLE
**CRAFT
CENTRE**

ROY SUTTON'S Routing Courses at the Apple Craft Centre

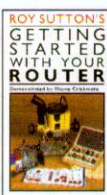
Selling Road, Macknade, Faversham,

Kent ME13 8XF Tel: 01227 373297

Contact: Roy Sutton/John Farrington

Course Content: Set amongst the farmlands and oasthouses of Faversham Kent, this renowned and respected one-day course has returned by popular demand, continuing its traditional format of router use and safety, encouraging confidence in students. A combination of expert lectures, videos, slideshows and practical router use enables the students to produce a bread board using the router table as well as

basic router applications. Personal tuition is available as well as on site turning courses. The showroom is well stocked with machinery, cutters, jigs, timber and all types of woodworking accessories. Gallery, restaurant and farm shop are on site. **Lecturer:** Wayne Crickmore



**FREE
VIDEO**
for all course students

◀ Routing the bread board with a beam trammel



urse

n the UK



EDINBURGH'S
TELFORD COLLEGE

EDINBURGH'S TELFORD COLLEGE

Crewe, Toll, Edinburgh, EH4 2NZ Tel: 0131 332 2491 Ext. 2229
Contact: Stuart Telford/Derek Brown

Course Content:

Edinburgh's Telford College have 3 different one-day courses. 'Basic Routing' describes the versatility and accuracy of the hand-held portable router, covering basic principles, uses, features and safety. The second course takes routing to a more advanced level and

introduces the router table and the various multi-functional jigs. The third course, designed for tradespeople, demonstrates commercial jigs manufactured for trade and industry i.e. the stair jig, hinge jig and kitchen worktop jig.

Lecturers: Stuart Telford & Gregor Allen.

COURSE DATES

Dates to be arranged,
please phone for details

Course Prices

One Day:

Basic £75

Advanced £75

Trade £75



OAKLANDS COLLEGE School of Construction

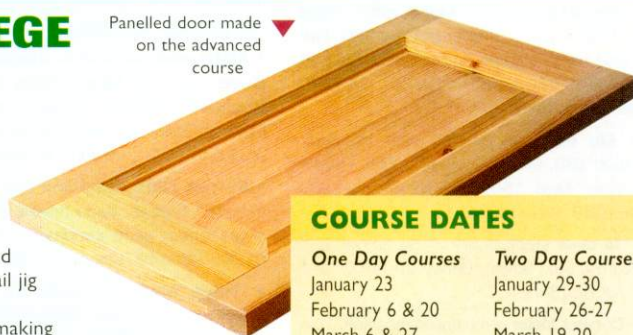
St Peters Road, St Albans AL1 3RX
Tel: 01727 847070 Contact: Jeanne O'Reilly

Course Content: Situated in the town centre of St Albans, close to British Rail station, Oaklands routing course has been running successfully for 6 years and provides a one-day elementary course designed for the beginner and deals with router safety, its uses and cutters available. The project for the one-day course is to produce a bread board. The two-day course, targeted at the professional and the ambitious amateur, takes the art of routing a

stage further giving a broader look at the advantages of table routing, the benefits and precision of the dovetail jig and takes the student through the stages of making a drawer and raised panelled door. All students can expect a full day of lectures, videos and practical router use.

Lecturers:
Ken Moorton
& Bruce Marsh

Panelled door made
on the advanced
course



COURSE DATES

One Day Courses	Two Day Courses
January 23	January 29-30
February 6 & 20	February 26-27
March 6 & 27	March 19-20
April 24	April 30- May 1
May 8	June 11-12
June 5 & 19	July 2-3, 16-17

Course Prices

One Day £67

Two Day £125



TEESSIDE COLLEGE

Douglas Street, Middlesbrough TS24 2JW
Tel: 01642 300100 Contact: Andy Batty/Julie Dodds

Course Content: The Longlands Campus is an exclusive building college who have added one-day and two-day routing courses to their comprehensive list of short courses. The one-day course includes basic routing principles, fitting and setting cutters, care and maintenance with emphasis on safety, techniques and cutter care. The one-day course is repeated on the two-day with the inclusion of table routing and jig/template making. Future courses will include a tradesmans course to incorporate the use of

proprietary jigs and fixtures, and a jig making course. Refreshments available.
Lecturer: Ian Coning

COURSE DATES 1997/8

One Day	Two Day
Jan 9 & 30	Jan 15-16
Feb 13	Feb 5-6, 26-27
March 6 & 20	March 12-13
May 1 & 22	March 26-27
June 12 & 27	April 23-24
July 9 & 24	May 14-15
	June 4-5, 18-19
	July 2-3, 16-17

Course Prices

One Day £54.95

Two Day £109.95



Honing a cutter
using a DMT
whetstone

One-to-one courses with Ian Coning are also available through Eaglescliffe Woodcrafts, tel. 01642 786449 for details.



NEATH COLLEGE

Dwr-y-felin Road, Neath, Wales
Tel: 01639 634271
Contact: Dylan Wyn James, Wyn Pritchard

Course Content:

Continuing their long running success and as part of their endeavour to increase their short courses, the college are including a one-day routing course aimed to meet the demands of public interest. The course deals with router safety and discipline, increasing the confidence of the user with detailed

instruction on the use of jigs and templates. Other courses are also available.

Lecturer: Dylan Wyn James

COURSE DATES

Dates to be arranged,
please phone for details

Course Prices

Two Day TBA



▲ Emphasis on safety and cutter care



YANDLES of Martock

Martock, Somerset Tel: 01935 822207
Contact: Beverley Mansfield,
David Mounstephen

Course Content: Yandles woodworking centre is running two routing courses. The Basic Course is designed for those new to routing and takes students through general router uses and step by step working procedures introducing cutters and their uses as well as cutter care. The Advanced

Course, is for those wishing to benefit from purpose designed routing jigs and template work and experience the advantages of table routing. Turning course also available. Lunch is included in the course price.

Lecturers: John Parslow
& Robbie Farrance

COURSE DATES

Dates to be arranged, please
phone for details

Course Prices

Basic (One day) £60

Advanced (One day) £60

Prices correct at time of going to press, but
are subject to change. Please contact
individual colleges for current prices, dates of
courses and further information.

All courses sponsored by
trend
routing technology

Market Place 01442 266551

FOR SALE

• **200 small** carbide blades. Approx. 2 ins x ½ ins. Will sell in batches or singly for £2 each. Tel. 0117 926 8712 (Bristol).

• **Kity 613** bandsaw, stand, mitre, table extension £375. Draper fretsaw £50. Two Plano press clamps and rail £75. Elu belt sander £70. Tel. 01635 268479 (Newbury, Berks.).

• **Elu belt sander** (3") with inversion stand £80. Circular saw (7") £55. Orbital sander MV8 156/02 £75. Tel. 01203 461059 (Warwickshire).

• **To clear stock** of dry 2" Sycamore 1½" Cherry, Oak, Beech, Chestnut. Tel. 01344 773586 (Berks.).

• **Coronet Major** combination machine, 10in saw, morticer, 4½in planer, 8in sanding disc. Good condition £400 o.n.o. M. Dangerfield. Tel. 01825 890646 (East Sussex).

• **Nu-Tool 37"** centre wood lathe complete with all faceplates, chucks and rests £150 o.n.o. Tel. 01843 293019 (Margate, Kent).

• **Bandsaw**, Electra Beckum, with mitre fence. Cost £425, one year old, hardly used, as new £225 o.n.o. Tel. 0181 482 3778 (N. London).

• **Power tools**, stationary and hand held. Many hand tools, clamps, vices, marking, measuring tools. Reasonable prices, not giveaway. Tel. 01452 538546 (Gloucester).

• **Mid-saw combination** saw, 9" planer thicknesser with moulding blocks and cutters £350 o.n.o. Mr King, The Cottage, Leaveslake Drive, West Pinchbeck, Spalding, Lincs PE11 3QJ.

• **Festo E900** router with two panel guides, table and cutters £325. Record CL5 shortbed lathe on cabinet stand, extras, £275. Tel. 01379 741086 (Diss, Norfolk).

• **Coronet No. 1** woodturning lathe, 48" centres with bowl turning gap kit and additional set of hard chromed bed bars £350. Tel. 01204 848151 (Bolton).

• **Elu 96** FHA router £65. Metabo VS jigsaw 580w £45. APTC dovetail jig 12" £35. Bosch RT60 router table and accessories £95. Bosch orb. sander £10. Tel. 01692 402718 eve. (Nth Walsham, Norfolk).

• **Vol. 1 Woodworker** Oct 1901, Sept 1902, Vol. LV 1951. Both hardback. Cabinetwork by Cassel & Co 1900 app. Vol. 1, 2 & 3 of Carpenter and Joiner 1950, g.c. offers all bound volume. Tel. 01842 811405 (Brandon, Suffolk).

• **Hobbies A1** treadle fretsaw, old style cast iron model on three steel legs. £110. Tel. 01483 575631 (Guildford).

• **Elu chop** flip over saw 240v, three blades, vice, clamp, Crown guard £250 o.n.o. Tel. 01268 571259 (Essex).

• **Table circular** saw bench 10" blade, rise and fall with tilt. Must be good condition. Tel. 01603 720412 (Norfolk).

• **Tyme lathe** 30" centres, usual accessories £250. Multico lathe 36" centres with assorted extras £175. Both excellent condition. Tel. 01243 811678 eves. (West Sussex).

• **Stanley No. 55**, 52 cutters with instructions £100 plus p&p. Also Arcoy dovetailer, four scutters and instructions £45 plus p&p. Tel. 0161 796 8462 (Lancs.).

• **AEG/Lurem** six function universal single phase, cast iron tables, hobby use only. Extensive tooling. Delivery possible. Excellent condition. Best offer secures. Tel. 01274 490577 (Bradford, W. Yorkshire).

• **DeWalt 1501** radial arm saw & stand plus TCT blades, dado heads and mitre accessories, good condition £460. Tel. 01285 885449 (Gloucestershire).

• **Triton Mark III** sawbench, stand, wheels, project book; Triton router table, separate stand; Ryobi portable saw, two 9½" blades, £250. Tel. 01484 519464 (Huddersfield, W. Yorkshire).

• **Mini max** universal machine, saw, spindle moulder, planer thicknesser, slot mortiser, 240V. Offers? Tel. 01234 854674 (Bedford).

• **Draper 10"** TCT saw 2½HP, BTS 250A. Rarely used, too powerful £150. Tel. 01244 881353 (Chester).

• **DeWalt 8101** radial saw, condition as new, leg stand, two TCT blades, £500. Buyer collects. Tel. 01949 850365 (Whatton, Notts.).

• **Bandsaw Startrite 351**, 14" throat, 8" cut, floor standing. Very little use, virtually as new £300. Tel. Peter Bradford, 01392 811555 (Exeter).

• **Sheet metal** punches, circular and rectangular, 8 sizes, 10 punches £20. Tel. 01382 775493 (Dundee, Scotland).

• **User manual** and parts list, photocopy will do, for Lurem 260 combination woodworking machine manufactured in 1974. Tel. 0131 448 2848 (Midlothian).

• **Triton Workcentre 1000** with integral folding legs, router/jigsaw table, full instructions. Little use only, £200. Tel. 01132 864328 (Leeds, Yorkshire).

• **Triton Mk3** Workcentre with stand, extension table stand, router jigsaw table, router mounting plate, excellent condition £250. Tel. 0181 360 5337 (London).

• **Clarke bandsaw** Model CBS45MB plus large metal cutter. Excellent condition £85 o.n.o. Tel. 01442 269174 after 9pm. (Herts.).

• **Mint set** Gilpins auger bits 13 wooden box, Record 073 shoulder plane, Stanley No7 plane. Offers Tel. 01375 841960 after 6pm (Essex).

• **Electric Bandsaw** Brazer, 6" x 1½" Dado Head, Wolf drill stand, ball bearing 1" saw spindle, 6" x ½" TCT grooving saw £15 each item. Tel. 01832 226324 (Peterborough).

• **Timber for sale**, Elm, Elm burrs 3", 4", 5" thick up to 36" x 72" Oak same as

Elm. Walnut, Ash, Beech, Yew 100's of bowl blanks. Tel. 01446 710269 Mobile 0410 410456 (S. Wales).

• **Woodrat, little** used £140 buyer collects. Tel. 01483 233851 ask for Clive (Guildford).

• **Planer knife** hone used with blades in situ £10. Four lightweight mitre cramps £10 for 4, Record 6807 mitre cramp £20. Tel. 01274 598616 (W. Yorks).

• **Oak tree** planked and seasoned since the hurricane approx. 30cu. ft., various thickness planks 2"-3" edged. Offers please Tel. 01297 560288 (Dorset).

• **"Aero Piccola"** vibro fretsaw, superb condition £65. Tel. 01727 872735 (Herts).

• **Myford ML8** Lathe, maker's steel cabinet, rear turning sander, planer, saw, table, new motor, bandsaw, chuck etc. £350. Tel. 0181 660 6905 (Kenley, Surrey).

• **Large parcel** wood veneers mahogany, oak, sycamore etc. suitable marquetry also making and repairing furniture. Can deliver £15. Tel. 0118 9871156 (Reading).

• **Delta sidekick 10"** compound mitre saw 36-210 with spare 10" x 80 TC 8F blade, 2 year guarantee £210. Tel. 01963 250821 (Dorset).

• **Trend Dust Hunter** 3/4 H.P. wall mounted extractor with bag, 240 volts, suitable for planer etc. £75 Tel. 01497 847065 (Herefordshire).

• **Preston spokehave** circa 1925, offers. Stanley 71 router, £25. Stanley 79 side rebate, £20. John Shaw drawknife, offers. Tel. 01568 708630 (Leominster Herefordshire).

• **DeWalt leg stand** for 1251, brand new unused, cost £60 accept £30. Wolf electric screwdriver, new, £40. Tel. 01483 773180 (Woking Surrey).

• **AEG/Lurem 2100** Universal, 6 function, auto change, cast iron tables, recently serviced and in immaculate condition. Extensive tooling, Offers, Tel. 01274 870818 (W. Yorks).

• **Record 148** dowelling jig, extra bush carriers extension rods, boxed with full operating instructions, hardly used, £40. Tel. 01943 607333 (W. Yorks).

• **Record CL5 Lathe** as new, complete with cabinet stand and various tools etc. £300, Record drill stand as new £25. Tel. 01379 741 08??.

• **Workshop clearance**, due to bereavement. Tel. 01427 881165 (Notts).

• **Whitehill cutter** block for spindle machine 5" x 1½" x 1¼"/30mm £50 pair, unused cutters 6" x ¾" x 30mm x 12 T.C. teeth £20. Tel. 01268 545620 (Basildon, Essex).

• **Record 050C** combination plane with 18 blades, unused, offers phone 01264 772148 (Hants).

• **Axminster M900** variable speed woodturning lathe. Multistar chuck 4" faceplate, as new, little use £375. Tel.

01705 498925 (Portsmouth, Hampshire).

• **Elu bandsaw** EBS 3501 variable speed. 12" throat, stand, eight months old, £250. Would consider table saw exchange. Tel. 01942 200996 (Wigan, Lancs).

• **Black & Decker** bandsaw, variable speed £180 g/o. Poolewood planer, good order £290. Tel. 01387 750457 (Dumfries).

• **Draughtsman's** full size table, complete with stand, offers. Tel. 01285 861660 (Glos.).

• **The Woodworker** bound volume Vol. 1 1901 Oct, 1902 Sept and Volume LV 1951 for sale. Offers. Tel. 01842 811405 (Suffolk).

• **Coronet Consort** circular saw-based combo-machine with: 18 + 24" lathe beds, planer-thicknesser, morticer, circular sander, steel cabinet. Hardly used. £500 o.n.o. Tel. 0181 699 6096 (Forest Hill, London).

• **Record No. 3 lathe**, Record bench, 130WL turning combination chuck, 16 turning tools, bench grinder, Rascal mask, long hole boring £950. Tel. 01844 237539 (Bucks).

• **Sedgewick 12"x8"** planer/thicknesser, 3 phase £500. Phase converter, Transwave, ¾ - 5HP £175. Tel. 01264 731256 (Wilts/Berks).

• **Record carpenters** quick release vice No. 525 10" opening, good condition £45. Tel. 01753 645515 (Bucks).

• **Woodturning lathe**, Jubilee Graduate, heavy duty 3ft bed, single phase, motor, plus other accessories £700. Tel. 01252 327793 (Aldershot, Hants).

• **Scheppach TS2000** two blades, used once, as new £450. Tel. 0181 651 2050 (Purley, Surrey).

• **4" planer** for Myford ML8 lathe. Excellent condition, little used. £100 o.v.n.o. Phone 01752 786915 beofre 7pm Monday to Saturday. (Plymouth, Devon).

• **Leigh dovetailer** (24 inch) with cutters, bushes, manual 240 (little used due to lack of spare time). Tel. 01278 786200 (Burnham-on-Sea, Somerset).

• **Record RPM75** morticer, brand new £85.00. Router bracket for Elu RAS (takes Elu router) £30. Tel. 01252 703155 (Elstead, Surrey).

• **Chainsaw**, quiet, powerful, "partner" electric, professional quality, 16" bar, 1400 watts. Excellent condition (one job only) £100. Tel. 01420 22548 (Hants/Surrey).

• **Coronet Major** including lathe. Planer thicknesser saw morticing attachment, 6" belt sander, accessories, excellent condition £400, Coronet bandsaw £100. Tel. 01252 815566 (Hants.).

• **Jumbo Jacobs** style drill chucks ¾" capacity on 2MT arbor £35. 1" capacity on 3MT arbor £40. Brand new. Tel. 01274 598616 (West Yorks.).

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Engineer" design by professional engineer inc. cutters and copy v.s. foot switch £250. Tel. 01274 598616 (West Yorks.).

• **Universal Kity** Bestcombi 5023 five function cutters, excellent condition, £850. Would consider some part exchange lathe bandsaw. 01469 541348 (Grimsby).

• **Konig lathe 39"** centres, 16" swing, 25" outboard, 60 position indexing 5 speeds, heavy cast construction. Good working order, £475 o.n.o. Tel. 01376 515820 (Essex).

• **Draper bandsaw 14"** BS355A 3 wheel 3 speed, 6" sanding disc, unused, £200. Tel. 01784 250679 (Middx.).

• **Radial arm saw.** DeWalt 1251. TCT blades crosscut and rip, v.g.c. £325. Tel. 01705 828500 (Portsmouth).

• **Steamed European beech.** Two planks 102" x 5¼" x 1½" planed both faces. Square sawn edges, £20. Tel. 01705 828500 (Portsmouth).

• **Record No.1 36"** swivel head lathe, craft supplies, Maxi-Grip 2000 chuck. All excellent condition plus many extras, £300. Buyer to collect. Tel. 01420 473242 (Hants.).

• **Startrite 352** bandsaw, good condition, spare blades, offers? Multico morticer, floor standing, traditional sliding tables, £325. Small spindle moulder £175. Tel. 01889 566301 (Staffs.).

• **Coronet No.1** lathe, chucks, 12 tools, £280. Tormek 2000 grinder, three jigs, accessories, £130. Both little used. Tel. 01746 761030 (Bridgnorth, Shropshire).

• **Draper dust extractor,** £230. Electra Beckum bandsaw, £220. 6" x 9" belt and disc sander, £140. Draper 16 speed bench drill, £80. Ryobi router with set of 13 TC cutters ½", all single phase, all one year old, hardly used. Tel. 0181-857

6703 (S.E. London).

• **Multico thicknesser 12" x 6"** single phase, also Startrite dust extractor to suit, excellent condition. Tel. 0171-607 4772 (London).

• **Bandsaw (Evenwood)** blade 104". 13" throat 6" + depth, good condition, floor standing, £280. Tel. 01270 661004 after 6pm (Crewe).

• **Startrite planer** thicknesser 12 x 9 single phase, 3 blade cutter block, soft start, not very old. Offers? Tel. 01782 326348 (Staffs.).

• **Radial arm saw.** Shopsmith 10" 5200 ATH, v.g.c. £250. Fretsaw as new 13" throat, £50 o.n.o. Tel. 01442 873573 (S.W.Herts.).

• **Axminster M1000SC** lathe. 3/4HP, variable speed, rotating headstock, 40" centres, 20" dia. bowl attachment, 2 years old, as new, £500. Tel. 01703 262660 (Hants.).

• **Cushman 4"** 3 jaw chuck, £50. Jacobs 0-½" No.1 MT chuck, £20. Tel. 01875 852438 (East Lothian).

• **Dupli carver,** carves 3D & relief, complete with transformer, £400 o.n.o. Tel. 01202 572039 (Dorset).

• **Multico 5** speed bench drill chuck, capacity 13mm £47.50. DMT 8" Blue Diamond bench stone, £30. Tel. 01925 210753 (Cheshire).

• **DeWalt 125** radial arm saw, excellent condition, including two TCT blades (rip and fine) and operation manuals, £425. Tel. 01608 645775 (Oxon.).

WANTED

• **DeWalt radial arm saw** or good saw bench, 9 inch or 10 inch wide planer thicknesser, spindle moulder, or all in one woodworking machine. Tel. 01981 250404 (Hereford).

• **Startrite K260** Universal user's manual or photocopy, late 1970s early 1980s model. Manufactured by Robland Machines. Good price paid. Tel. 01244 681193 (Ellesmere Port, S. Wirral).

• **Multi-plane required.** Stanley or Record, complete with cutters. Useable condition. Tel. 0181 524 0489 evenings, w/ends. (London).

• **Router table,** bench or floor standing, preferably with top and side fences. Tel. 01603 720412 (Norwich, Norfolk).

• **Elu superjaws** workbench/vice, must be in good condition. Tel. 01204 848151 (Bolton).

• **Wanted for Myford ML8** lathe, mortice chisel holder, adaptor plate, and ¾" chuck. Details 68 Brookwood Road, Southampton SO16 9AN, Hants.

• **"Man" great** knowledge tools, price up deceased kit, reap good money for financially insecure widow plus children. Banbury 01295 278006.

• **Want to buy** that special tool, no cash, but workshop has a few odd Stanley. Call Ivan 01273 401144 eves (E. Sussex).

• **Record CL3 36"** or 48" lathe, must be immaculate. Tel. 01633 441172 (Gwent).

• **Universal machine** for small workshop. All makes considered. Please phone 01505 872874 (Glasgow).

• **240volt** planer/thicknesser, must be v.g.c. Pay up to £300 for good model.

Telephone Darren on 01274 771582 after 5pm (Bradford).

• **Circular sawbench 12"** TCT blade. Tel. 01264 735300 (Andover).

• **Stanley tools** levels, mitre boxes, rules, unusual planes, vices, Also any printed items, catalogues, books. Tel. 01273 401144 evenings (E. Sussex).

• **Sawbench, planer,** spindle, bandsaw, morticer, will collect. Tel. 01992 441685 (Herts).

• **Kity spindle** moulder accessories. No. 2180/2181 split collars. French one-piece 15mm/20mm cutters, dust extractor nozzle for model 627. Tel. 01934 812137 (North Somerset).

• **Set of chairmakers** spoon bits. Tel. 01980 611188 (Wilts).

• **Spare 2¼" Norris** cutting iron or pre-war dovetailed smoothing plane, excellent condition. Tel. 0181 599 5725 evenings (Ilford).

• **DeWalt 1251** power shop. Tel. 01360 860487 (Glasgow).

• **Biscuit Jointer** ELU MBR 100 preferred, would consider others. Tel. 01206 826615 (Essex).

• **Simple woodworking** lathe with 6" faceplate, short bed length acceptable, with or without drive, similar to old, small Coronet. Tel. 01923 823584 (Herts).

• **Sharpening equipment,** planer knife grinder Wadkin or similar, also TCT saw grinder for carbide tipped saws. Pay cash, collect. Tel. 01782 330705 (Stoke-on-Trent, Staffs.).

• **Triton MK3** workcentre c/w stand plus router table. Phone 01248 601671 (Gwynedd, N. Wales).

• **Planer knife grinder,** Wadkin or similar, also carbide saw grinder. Will pay cash/collect. Will Robert Cooksey please phone again. Tel. 01782 330705 (Staffs.).

Routing Market Place

This space is only available to private individuals wishing to buy or sell woodworking machinery and tools. Each insertion costs £5.00 including VAT.

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Address for Sourcing	Craft Range Router Cutters	Professional Router Cutters	Routing Accessories & Jigs	Routing Publications & Videos	Diamond Sharpening Stones	Additional Information
ENGLAND						
General Fixings Ltd., Unit 54, Beeches Ind. Estate, Waverley Rd, Yate, Bristol, AVON BS17 5QR Tel: 01454 310015 Fax: 01454 273164						Probably the best selection of router bits and power tools in the West Country. Elu, Makita, AEG service agents.
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Hasberrys DIY, 14-18 Temple Street, Aylesbury, BUCKINGHAMSHIRE HP20 2RJ Tel: 01296 23604 Fax: 01296 85507						Power tools, hand tools, timber, electrical, hardware, picture framing, mouldings, paints etc. The shop with the wide range of stock.
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Joe Greener's (Woodworking Centre), Valley St North, Darlington, CO. DURHAM DL1 1PZ. Tel: 01325 382038 Fax: 01325 468539						Elu, DeWalt, Bosch dealers. We service and repair most makes of power tool. Hire machines available. Extensive range of spares & accessories. Demonstration days throughout the year.
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Jaycee Tools , 521c Yeading Lane, Northolt, MIDDLESEX UB5 6LN Tel: 0181 841 1099 Fax: 0181 842 4966						Mail order sales, repair service. Large stocks of power tools, hand tools and woodworking machinery. Central London 12 miles, A40 2 miles.
Stockport Power Tools , 411-413 Hemphaw Lane, Stockport, GREATER MANCHESTER SK1 4QA Tel/Fax: 0161 474 0000						Large stocks of power tools and accessories – fully equipped professionally staffed workshop for full after-sales service – local deliveries.
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Toolmaster (Oxford) Ltd. , 148 Oxford Road, Cowley, OXFORD OX4 2EA Tel: 01865 712152 Fax: 01865 747380						Stockists of all major brands of portable and stationary woodworking equipment and accessories.
Abbey Hardware , 15 Abbey Foregate, Shrewsbury, SHROPSHIRE SY2 6AE Tel: 01743 343930/ 358724 Fax: 01743 343930						Stockist of Elu, DeWalt, Bosch, Makita, Black & Decker, Hitachi Spares and repair service. Comp. range of hand tools: Stanley, Marples etc.
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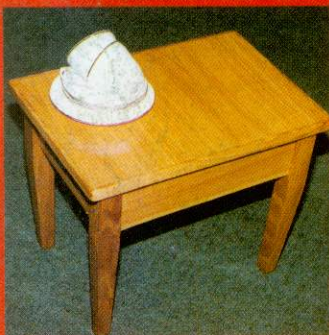
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