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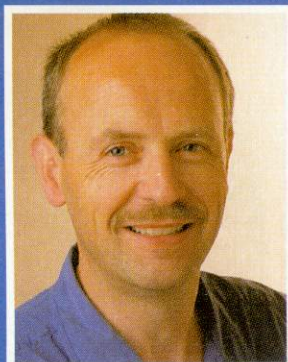
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In the August Good Woodworking

At Good Woodworking we aim to offer the best advice, the best projects, the latest techniques, and the most authoritative tests and reviews. All our testing is independent, and based on years of experience. We welcome your comments.

Good Woodworking, 30 Monmouth St, Bath BA1 2BW ☎ 01225 442244



Why are there such huge price differences between many power tools on sale at DIY sheds, and ones often costing far more at specialist tool shops? They do the same job, after all. The answer, of course, lies in build quality, life expectancy and after-sales service. In our planer test this month one tool costs about £30. Several others will set you back more than £200. Most manufacturers are rather cagey about the life span of a DIY-rated tool. It's hours usually, rather than days. But for a woodworker who only needs to use a power tool occasionally, a DIY tool will often be quite adequate. Professional, or industrial power tools use better quality components and tend to be built to a standard rather than down to a price. They are designed to be used in full-time workshops, or on site, without seizing up after a few hours use. No matter what your budget, there has never been more choice available in power tools, whether they are DIY or professional.

Phil Davy

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ON SALE
TUESDAY 18th JULY**

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A classic design with so many uses, you'll wonder why you never made one before

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We test the latest products

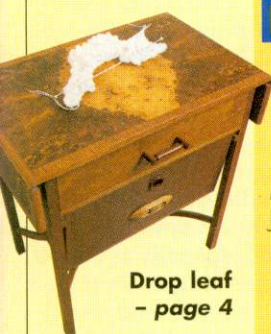
- Black & Decker KC 1440SK Trimsaw ● Accuset A150LS Staple Gun
- Makita BO5021 Sander ● Skil 2590 Smartset Cordless Drill
- Microplane R2 Hand Tools

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Power Planers

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They're essential kit for the jobbing carpenter on site but how useful are power planers in the workshop and will they ever replace the hand plane? Andy King investigates.



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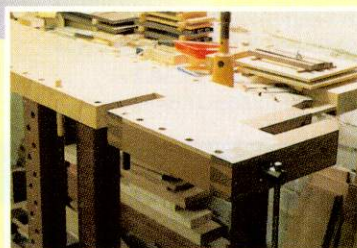
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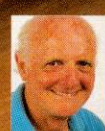


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Good view
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A quarter-matched veneer top forms a focal point for Graham Laird's fine drop leaf table. The optional bottom hopper drawer extends its usefulness

chose brown oak, a lovely rich brown timber from oak trees attacked by the beefsteak fungus. This timber is actually in the early stages of rot but once it has dried the fungus dies and the rotting process stops. Brown oak is a little softer than ordinary oak, but not soft enough to weaken the job, though I had to be careful to avoid break-out when cleaning up end grain; otherwise there was no problem.

I bought some brown oak burr veneer from Capital Veneers (% 0181 525 0300) with some sap wood in the corner. The contrast makes a striking note of interest. The flap stay support lock, hopper finger hole insert and drawer handle are all details where a different timber seems appropriate, especially as they will be subject to more wear than other parts. Jarrah's hardness and springiness make it ideal for small mechanisms and for resisting wear.

Making the Carcase

Having prepared all the timber, the first task is to construct the main carcase, consisting of the

Univ

Thelma sits in an easy chair to do her needlework and needs somewhere convenient to keep her bits and pieces. The drawer in this table holds her threads, needles and stuff and the larger drawer (the hopper) is somewhere handy to shove her work when the door bell rings. The hopper could equally well be a fabric bag, perhaps with vertical roll pleats

and a solid bottom.

If you're not into needlework this small piece could be many other things, with some small modifications; a fireside companion, a small hall table, a bedside table, a tea trolley with a drawer. Or even a drinks trolley, with bottles in the (stronger) hopper and bottle opener, drink mats, swizzle sticks and umbrellas in the drawer.

Looking for Dark Timber

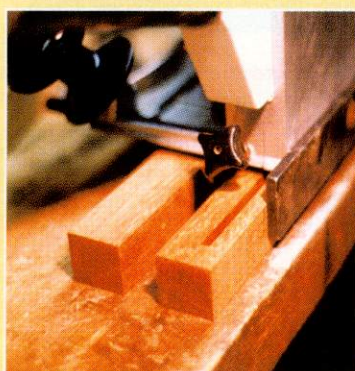
I try to stick to European hardwoods, but Thelma wanted a dark wood and we do rather lack these. There's walnut of course, but good quality stuff is expensive and not always easy to get. I dislike stain because it destroys much of the natural beauty of the wood, and anyway it's mucky stuff and gets under your finger nails. Eventually we

legs, front and side rails and the upper and lower drawer rails. This requires accurate work because if the drawer is to work well the drawer space must be square in all dimensions. There is one slight exception to this: if the drawer space is a little wider at the back it helps to avoid friction and makes the drawer run a little easier. However we are talking small numbers; ideally about

Constructing the carcase



1 Cut the back and side rails to length. I cut them by hand then shot the ends square with a hand plane on a shooting board



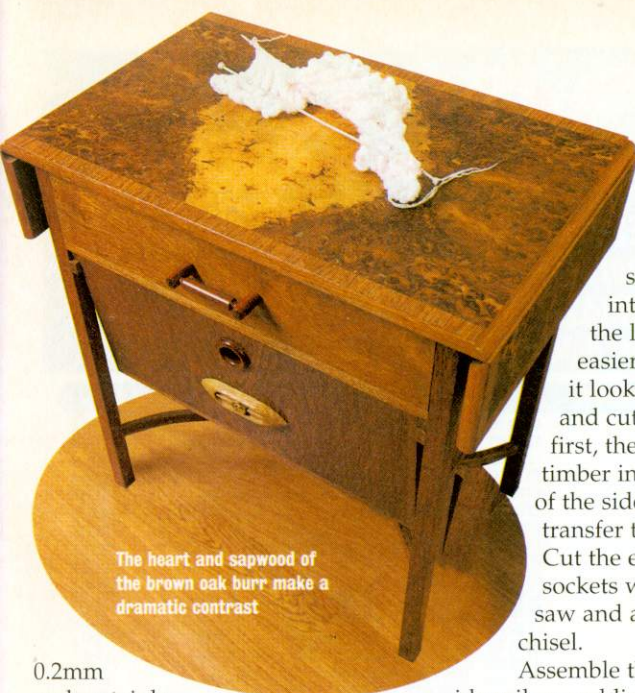
2 Biscuit the legs to the rails with inner faces flush. Mortice and tenon joints may prove too bulky for such fine legs



3 Make the two side leg assemblies first. Cramp up and check that the legs are parallel and out of wind



4 I use a combination square as shown to act as a guide for the biscuit jointer when cutting biscuits to joint the runners in place



The heart and sapwood of the brown oak burr make a dramatic contrast

0.2mm and certainly no more than 0.5mm.

1 The inside face of the side rails should be flush with the inside face of the legs to provide a smooth surface for the edge of the drawer to ride against. My preference for jointing these is biscuits. Used carefully they are accurate, strong and quick. Alternatives are loose tongues or

joint has one wide dovetail into the side rail and a smaller one into the top of the leg, but is far easier to cut than it looks. Lay out and cut the tails first, then lay the timber in place on top of the side and transfer the markings. Cut the ensuing sockets with a fine saw and a small bevel chisel.

Assemble the leg and side rail assemblies and the top drawer rail and hold them together with a clamp across the front. Shoot one end of the back rail and the lower drawer rail and use the cramped up assembly to mark these two pieces to length with a marking knife. It is very important that both pieces are the correct length so that the drawer space is square. Shoot them to length and

stretchers. There will always be a small and unpredictable amount of spring-back and the dainty legs may be pulled around as the wood moves. Laminating is the answer. Even laminations move, but usually only if water based adhesives are used. I use a water free adhesive, West System Epoxy (from Axminster, ☎ 01297 33656). This is very runny and will flash into the wood and starve the joint unless you thicken it. Axminster supply colloidal silica for this purpose.

4 Tight laminations with fine glue lines require accurate male and female forms with the gap between them the same as the combined thickness of the laminae. The inside curve of the stretcher is an arc of 295mm radius. I used five 2.8mm laminae, making a 14mm thick stretcher.

Cut the two parts of the form from a piece of MDF, preferably using a router cutter with the same diameter as the stretcher thickness. It's best not to cut all the way through the MDF; leave about 0.5mm to be cut through

versal table

mortice and tenon joints. I'm not too sure about the latter on this job since the legs are only 20mm square and there isn't much room. Glue up the legs and side rails with two biscuits in each joint and clean off the inside surface, absolutely clean and flat.

2 Next dovetail the top drawer rail to the leg and side rail assemblies. This scary looking

cut biscuit joints to join them to the leg and side rail assemblies.

Assemble the carcass dry and hold it together with a band clamp. Place it upside down on a piece of MDF and mark the position of the legs with a pencil. These marks will be used later to fit the stretchers to the legs.

3 Steam bending is not a good idea for the fine curved

with a knife and clean up the edges with a spokeshave.

Thickness the laminae accurately so that they add up to the thickness you want. I stuck mine to a piece of MDF with low-tack two-sided tape and put them through the thicknesser.

5 Wax the form thoroughly to prevent glue sticking to it, then assemble the glued laminae

inside the form, for which it helps to have another pair of hands available. Wear gloves; epoxy adhesive is difficult to remove and some people become sensitive to it, developing dermatitis.

The glue must be thoroughly cured before releasing the cramps. I prefer to leave it overnight and preferably longer, especially in cold weather.

PROJECT GUIDE

Difficulty: INTERMEDIATE
Time: 50 HOURS
Type: FURNITURE

MATERIALS YOU WILL NEED

HARDWOOD

I used about 1 cu ft of brown oak for its colouring. Use any hardwood to match a preferred veneer

VENEER

Look for veneer with a pronounced figure and buy enough to quarter match the top on a 20mm MDF ground. Use a plainer figure for veneering the reverse face and the sides of the 6mm MDF hopper

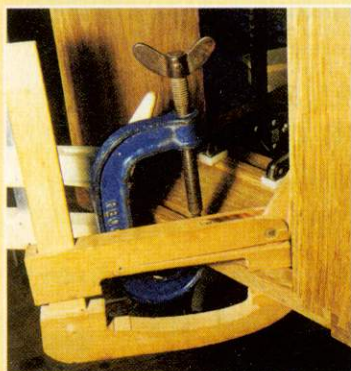
TOOLS YOU WILL NEED

ROUTER

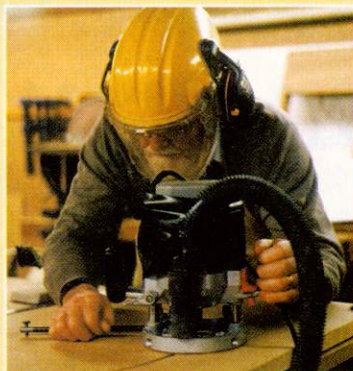
Used with a matching set of cutters for the rule joint

BANDSAW

Needed to cut the fine laminations



5 Cramping the runners and kickers in place. Notice the dovetail joint securing the top front rail to the leg and side rail



6 Make the two part former for laminating the curved stretchers by trammel-routing a slot in MDF to the required radius



7 This slot should be the same width as that of the finished stretcher. Rout most of the way through the MDF then cut off with a knife



8 Cut and plane the laminae to exact thickness then glue up with a water-free adhesive. Wear rubber gloves for this!

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6 Clean up the stretchers and plane the flats where the two curves meet. The thinnest part should be the same thickness as the stretchers. Glue them together, keeping them on a flat surface while the glue sets.

Position the stretcher assembly over the pencil marks made earlier to locate the position of the legs and cut the ends to meet the legs neatly. The joint between the

stretchers and the legs is important. There is not much room to make a really strong joint and yet it is can be subject to considerable stress. I used threaded steel dowel and epoxy, the strongest joint I know.

7 Once these dowel joints are cut you are ready to glue up the carcass. There are ten joints to be glued in this assembly so it is worth spending some time in preparation and making quite sure that there will be no nasty surprises just as the glue is going off. A complete dry assembly is essential. You can make life a little easier by gluing the biscuits into one side of the joints and letting them dry prior to the final

assembly. Glue up with the carcass upside down on a flat surface and check that it stays flat when the cramps are tight.

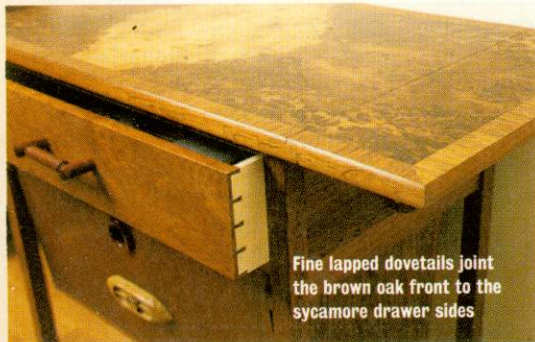
8 Fit the runners and kickers for the drawer exactly parallel to the kickers above them. Glue the kickers in first then cut a piece of waste to be a snug fit at the front of the opening and use this as a spacer while positioning the runners.



Making the Top

9 The top is 20mm MDF with solid brown oak lipping all round and veneered. I use 5mm lipping so that there is enough wood for me to work a radius on the edges. The exceptions are the edges where the rule joints will be formed. These need to be much thicker and should be at least 20mm. Glue these on first and then run the side lippings over them, so as to minimise the amount of end grain showing. You could use plain veneer which is easy to lay, or give it the full treatment as I did with quartered burr veneer, with plain cross-banding. This adds a lot of

tremendously to the visual impact of the finished piece.



10 Assemble the veneer dry using veneer tape. Don't be tempted to use any other tape. Pressure sensitive tapes is

Alternatives for laying veneer

1 Hammer veneering using Scotch glue is the traditional method and perfectly satisfactory if you have had experience. Don't try it on a complicated job like this if you haven't done it before.

2 Cauls and curved battens are very good for this job, as the pieces are small. Make sure the veneer does not slip after laying, as you want the mitred corners of the cross-banding to meet on the outside corners of the flaps.

3 Veneer presses are heavy bits of engineering. If you know someone who has one, you may be able to persuade them to press the veneer for you.

4 A trade veneering service will take your groundwork and assembled veneer and do the rest for you. You can find them in the Yellow Pages. They do a very good job, but it does rather spoil the fun.

Which glue?

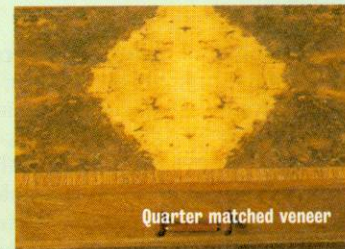
Choice of glue is up to you. All have their advantages and disadvantages. I use urea formaldehyde (Cascamite is fine) but, whatever you do, don't use contact adhesive. This is totally

unforgiving and leaves a thick glue line. It helps to add stain to the glue. White Cascamite showing in pinholes in burr veneer doesn't look good. Do a test first to make sure that the stain doesn't interfere with the drying properties of the glue.

Veneer repairs

Burr veneer usually has defects that need repair. There may be bark inclusions or small knots which fall out or perhaps small splits. I prefer to repair these after laying the veneer, because I can then tell which of the smallest holes can be ignored.

Cut out a small piece of waste veneer with a gouge chisel or a knife and place it over the hole. Mark carefully round it with a scalpel and then use a router with a very small cutter



(mine is 1.5mm) and rout out to the scalpel mark. Make sure that you use a TCT cutter: Cascamite will ruin a high-speed steel cutter. Glue the piece in place with urea formaldehyde and set the glue immediately with the tip of a hot smoothing iron or soldering iron. Clean off with a sharp scraper. The repair should be virtually undetectable in the finished job.

very difficult to remove after being subject to the pressure of the veneering process, and ordinary gummed brown tape is too thick and will leave an impression.

Assemble the veneer for the

whole top, as it will appear when the flaps are up, then cut it at the points where the rule joints will be. The objective is for the pattern of the veneer to be continuous across the rule joint when it is closed. Think very

Laminating and fitting the stretchers



9 The two halves of the former should be well waxed to prevent the laminae sticking as they are cramped up



10 Ensure that the laminae do not slip out of alignment as the former is tightened up with sash cramps. Set aside to fully dry



11 Clean up the finished stretchers then lay each on to a full sized plan to enable you to transfer joint markings and angles



12 I used threaded steel rod and epoxy glue to dowel the stretchers into the legs. This joint must be strong

carefully about the positioning of the veneer on the three parts. Clearly, you will have to trim a little of the burr veneer off when you are cutting the joint, but you want to keep this to the minimum.

Before laying the veneer, mark the inside ends of the thick lippings for the rule joints on the side lippings so that you know how much room you have to play with when you cut the joint.

The Rule Joint

The rule joint is a very satisfactory way of attaching a flap to a table top.

When the flap is down the joint shows an attractive quadrant, and when it is raised the cove rests on the quadrant beneath it so that the weight of dishes, elbows and so forth is taken largely by the cove and not by hinges and screws.

11 To make the rule joint you will need a pair of matching router cutters and four odd-sided brass table hinges. John Boddy (01423 322370) supply excellent brass hinges. Use steel if you want to be a cheap-skate but I think it will spoil the job. Cut a trial joint in some waste.

The geometry of rule joints is not as simple as it seems. It helps to consider a theoretical joint first, and see how this needs to be modified to make it work.

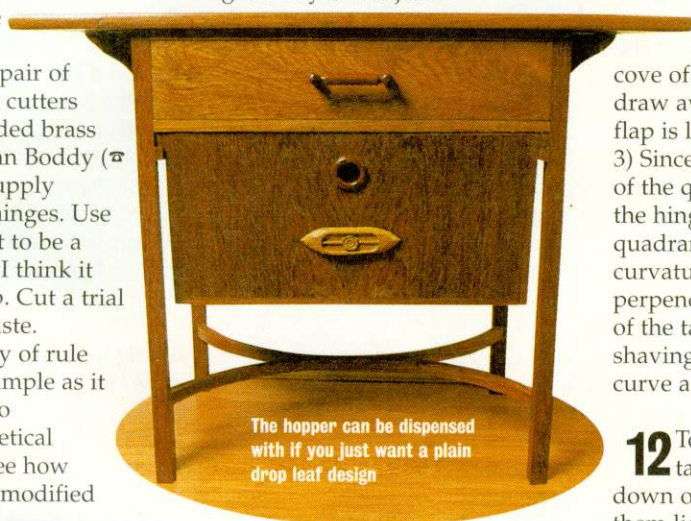
In the theoretical joint the centre of the hinge pin is level with the underside of the table top and at the centre of curvature of both the table top and the flap. When the flap is down the knuckle of the flap is level with the lower surface of the top. The problem with this is that as the flap is lowered the cove will rub against the quadrant and scratch the finish. Crumbs and other bits of debris caught between

quadrant and cove make matters worse. Further, since the knuckle is level with the lower surface of the table top its corner can get caught below the quadrant.

These problems can be overcome by making the following alterations to the geometry of the joint:

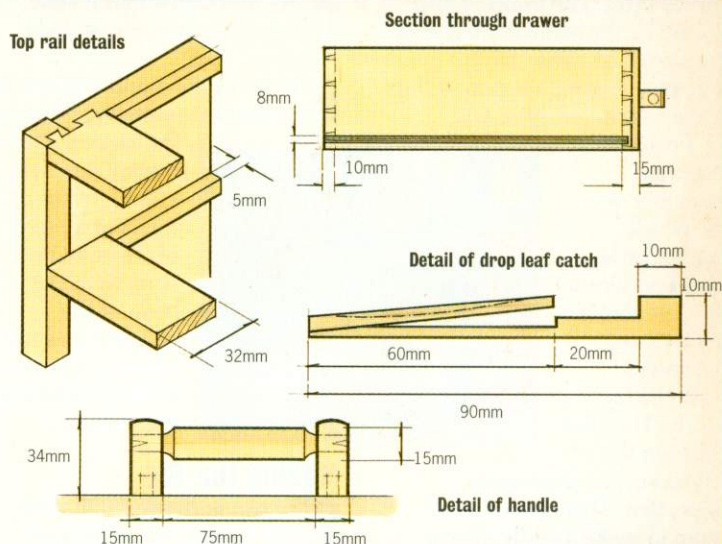


The central burr veneer is bordered by edge banding. Note how the veneer design runs across the entire table top and flaps



The hopper can be dispensed with if you just want a plain drop leaf design

Drawer catches and handle details



- 1) Recess the hinge into the underside of the table top and flap. When the flap is down the knuckle will be slightly above the bottom face of the top and will not get caught beneath it.
- 2) Move the hinge slightly towards the flap so that the centre of curvature of the quadrant is 0.75mm in from the edge of the quadrant. This allows the cove of the flap to gradually draw away from the cove as the flap is lowered.
- 3) Since the centre of curvature of the quadrant is at the centre of the hinge pin the surface of the quadrant below the centre of curvature will be a straight line perpendicular to the underside of the table top. Remove a few shavings here to continue the curve as shown in the drawing.

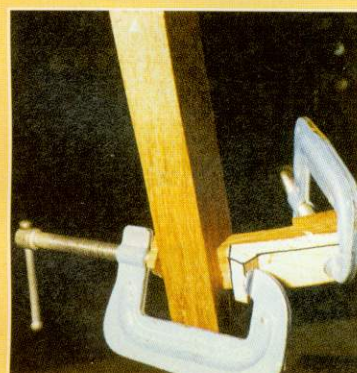
12 To fit the hinges, lay the table top and flaps face down on the bench and cramp them lightly together. Lay the

TIP Good quality brass hinges are supplied with a machined surface and a little bit of work spent polishing them and the brass screw heads adds a real touch of class even if they are concealed below the top. I used 250, 320 and 400 grit papers and finished with metal polish.

hinges on the surface and mark the side of each only. Uncramp and use a cutting gauge to 0.75mm plus the radius of the cutter you used for the quadrant to mark the position of the end of each hinge. Cramp the pieces together again and mark the other end of each hinge. Scratch a mark on the concealed side of each hinge so that it stays in the same position, in case they vary slightly in size.

Hold the hinges in position with cramps and test the movement of the flap. If it is

Veneering the top and making the rule joint



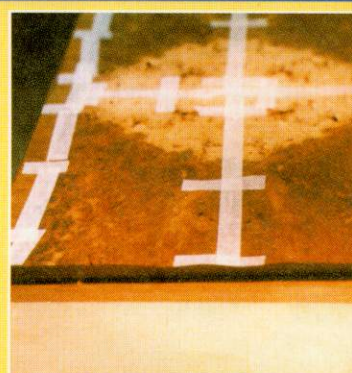
13 Curved sections like these offer no purchase for cramps so you will need to cramp on shaped blocks to provide this



14 Assemble the completed leg and stretcher assembly upside down on a perfectly flat surface



15 The table top and drop flaps are lipped on all edges then cramped together and the veneer fitted across the total surface



16 Use proper veneer tape to hold together the sections of veneer as you quarter match four pieces for the top face

working properly, screw the hinges in position using steel screws. Make slight adjustments to their position by packing one side of the holes with slivers of wood. Remove the hinges while the table top and flaps are being polished and finally replace them with brass screws.

The Hopper

13 The hopper is constructed of 6mm MDF joined at the corners by thin loose tongues into 12x12mm sections. Veneer the 6mm MDF for the four sides on both sides and cut these to shape. Rout slots in the edges and bottoms of each for loose tongues. Rout matching slots in two adjacent sides of the

Flap Stays and Catches



It is satisfying if the flap stays meet a stop when you move them into position. It is even more satisfying if they click into position. While not strictly necessary the flap stay catch adds a certain 'soupçon de je ne sais quoi' to the finished job and anyway I like making little mechanisms.

Bandsaw the flap stays to shape and hinge them to the

sides of the carcase. Spring catches need to be both springy and wear resistant so not just any old wood will do. One of the best is jarrah. It is as hard as nails, works well, looks good and is as springy as they come.

Make the catch in two parts: the body and the spring. Glue the spring to the body and then pare it away to the dotted line shown in the drawing. Keep testing the springiness of the spring until you are satisfied with it. Rout out a recess in the

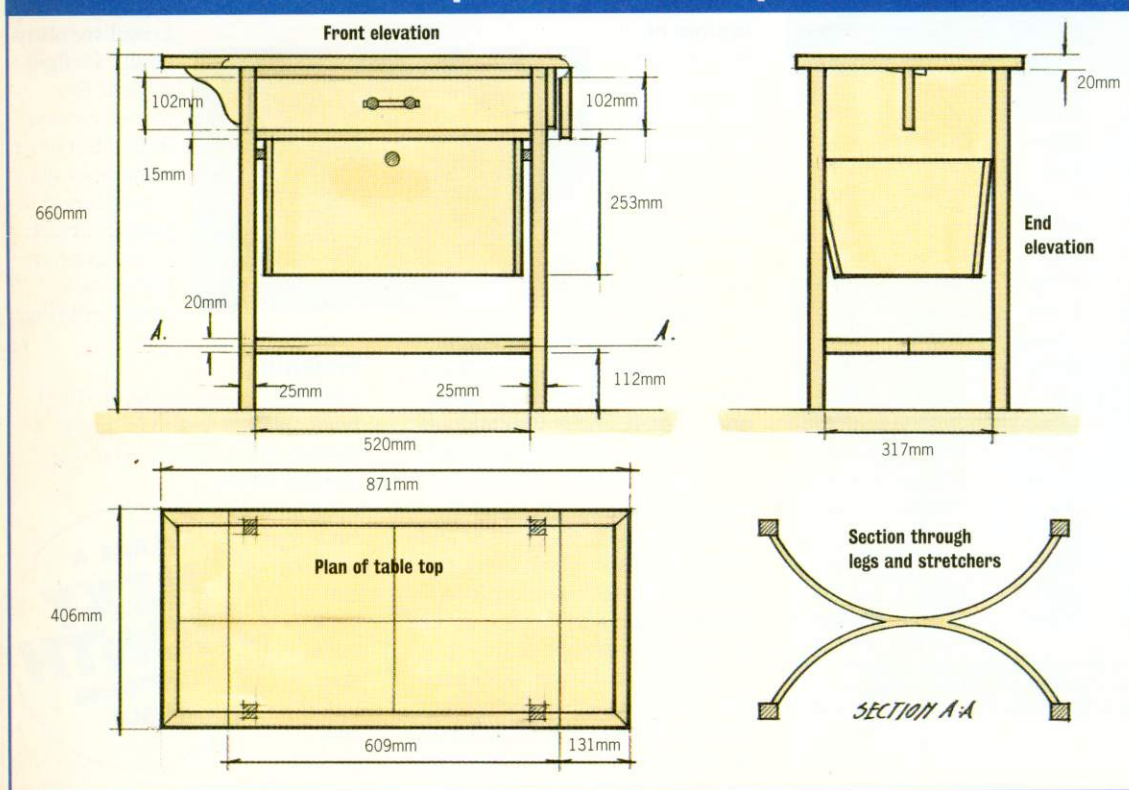


hopper corner pieces but stop them short of the ends so that they won't show. Rout slots in the top surface of the hopper bottom supports.

Glue loose tongues into the hopper corner pieces and bottom supports to simplify the final glue up. Glue the bottom supports to the front, back and

sides and when dry clean the ends of the supports flush. Assemble the hopper dry and check there is enough room for the hopper and its runners and slides to fit between the legs. Bore the finger hole in the front.

Elevations and plans for the drop leaf table



14 Glue the four sides together, remembering that its squareness is as important as for a drawer. Glue lipping around the top of the sides and when dry pare back to the surfaces of the sides and bevel the top of the corner pieces where they show at the top of the hopper.

Glue the hopper slides in place. Leave them 1mm proud of the top of the hopper to prevent its front and back rubbing against the underside of the top and to allow room for trimming back the slides when fitting.

Even if neatly done the finger hole bored through the veneered front looks a little unsightly so I turned a finger hole insert out of jarrah and glued it in place.

The Drawer

15 Drawer making is a big subject so I will stick to the basics. First, examine the drawer space carefully and remove any traces of glue squeeze-out.



17 I trim my veneer edges with a router using a straight edge jig designed for a particular router base and cutter diameter



18 The completed rule joint is tested with the hinges fitted but not screwed in place. Hold them with cramps



19 This is my homemade jig for drilling at an acute angle into the side rails and on into the top to secure it in place



20 All the veneered MDF hopper parts are loose tongued into the corner supports. You'll need a fine cutter for the slots

Plane the ends of the drawer front until it just fits in the opening. It should be a tight fit but not so tight that it has to be forced. Prepare the drawer sides and similarly fit them into the drawer space. Use the drawer front as a template to mark the width of the drawer back and cut it to width. Make the depth of the drawer back the same as the sides. Rout grooves for the bottom in the front, back and sides but cut all the way through in the drawer back.

16 Join the drawer sides to the drawer front with lap

dovetails and to the drawer back with through dovetails, but allow the sides to project about 0.5mm from the joint. This extra will be removed when the drawer is fitted to the carcase. Reduce the top of the drawer by 1mm to prevent it rubbing on the underside of the table top as it moves in and out.

Glue the front, back and sides of the drawer together and insert the drawer bottom into its grooves in the sides and front of the drawer. Hold it in place with two small brass screws from the under side of the drawer into the back

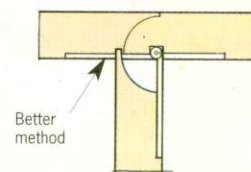
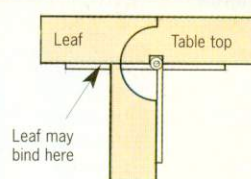
17 Take your time fitting the drawer. Start by planing down the sides within a shaving of being flush with the front and back. Try fitting the drawer – it shouldn't go in at this stage, but observe carefully how it matches the opening. Continue to

take off fine shavings until the back of the drawer can just be entered into the hole. Now take shavings from the sides and the bottom of the drawer as you ease the fit. Push the drawer in and out several times and the shiny patches on the bearing surfaces will show you where to plane. Be patient, the difference between a good fit and a loose one is small, and if you take off too much, you can't put it back.

When satisfied with the fit, wipe a candle on the bearing surfaces to help the drawer slide better. If you've got it right, the drawer will slide smoothly in without play, and tighten up just a little at the end of its travel.

Leave the drawer sides and the inside surface of the cabinet around the opening unpolished. If you have achieved a good fit,

The rule joint



Setting the centre of the hinge pin level with the underside (top) may cause the knuckle of the drop leaf to bind on the table edge. Set it higher by inseting the hinge (bottom)

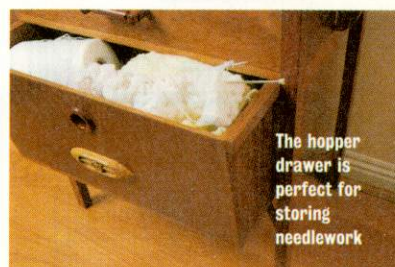
polish will only spoil it and is likely to wear off before long. Theoretically you shouldn't polish the inside faces of the drawer sides either, since this will create an imbalance. I think it is rather a fine point. At any rate, you don't normally see polish on the inside of good quality drawers.

Drawer Handle

I decided to make a drawer handle

rather than buy one. Bore the holes in the posts before turning them so that any break-out caused by the boring is removed.

I used two tiny ebony wedges to hold the turned tenons in position, but remember that these should be perpendicular to the grain of the posts to avoid splitting.



Finishing

This little piece is intended to be used and not just to be put in a corner and admired, so it needs a durable finish. I

used an acid catalysed lacquer, cut back with steel wool and waxed.

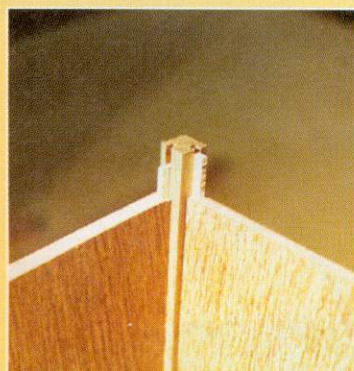
**MAKE A
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TABLE**

Cutting list for the drop leaf table

Part	Qty	Material	Length	Width	Thkns
A Legs	4	Brown oak	640mm	25mm	25mm
B Back rail	1	Brown oak	520mm	172mm	20mm
C Side rails	2	Brown oak	317mm	172mm	20mm
D Upper & lower drawer rails	2	Brown oak	520mm	64mm	15mm
F Stretcher laminae	10	Brown oak	660mm	20mm	3mm
G Runners and kickers	4	Brown oak	310mm	15mm	10mm
H Hopper runners & slides	4	Brown oak	342mm	20mm	12mm
I Hopper corners	4	Brown oak	255mm	12mm	12mm
J Hopper bottom supports (f&b)	2	Brown oak	466mm	12mm	12mm
K Hopper bot supports (sides)	2	Brown oak	261mm	12mm	12mm
Table top side lippings	2	Brown oak	951mm	20mm	5mm
Table top end lippings	2	Brown oak	406mm	20mm	5mm
Rule joint lippings	2	Brown oak	406mm	20mm	5mm
Drawer front	1	Brown oak	520mm	102mm	15mm
Drawer back	1	Sycamore	520mm	102mm	10mm
Drawer sides	2	Sycamore	350mm	102mm	10mm
Drawer bottom	1	Cedar	512mm	345mm	8mm
Top (inc flaps)	1	MDF	871mm	396mm	20mm
Hopper front and back	2	MDF	260mm	470mm	6mm
Hopper sides	2	MDF	260mm	340mm	6mm
Hopper bottom	1	MDF	490mm	250mm	6mm
Hopper edge lippings		Brown oak	3.5m	7mm	5mm
Flap stays	2	Brown oak	130mm	130mm	20mm

Cutting lists always give the full length of a piece including the joint but not wastage. Allow at least 25mm extra for length and 5mm on the width and thickness of sawn stock. You will also need four matching veneer leaves for the table top, plus sufficient for the balancer on the reverse and the hopper. Finally a small quantity of jarrah for the handles and latches

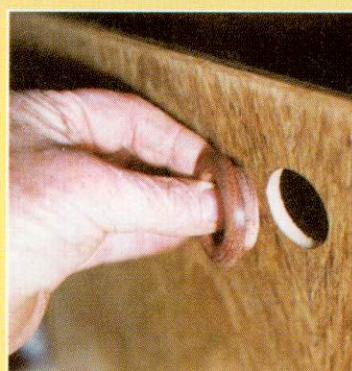
Drawer and hopper



21 Sides are jointed so as to be flush on their outer faces with the corner supports. Exposed edges will be lipped



22 Use strips of batten under the cramps to even out the pressure across the whole edge being lipped



23 A turned insert in jarrah neatens up the cut edge of the finger hole in the front face of the hopper



24 Take your time fitting the drawer to achieve a good fit and a smooth action as it is pulled out or pushed in



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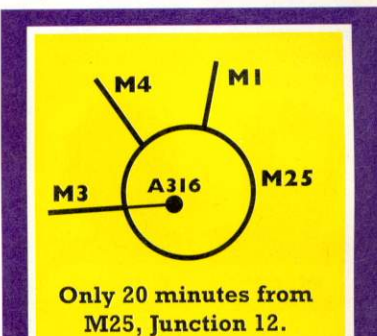
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Letters

Something to get off your chest about the world of woodworking? Don't keep it to yourself, write to us and share it with woodworkers everywhere

Bargain purchase

I've been after a non-slip router mat for some time but always thought them to be extravagant and stuck to clamps. However a few months ago I was browsing the market tool stall when I noticed non-slip dashboard mats for cars at only 70p. They were only 10x10in and made of a light rubbery material in only one colour – brown! The thing is, it works a treat on small items like door plaques.

It gets better. Whilst wandering around Focus/Do-it-all I bumped into their promotion for non-slip mats. "It will grab anything" the blurb explained. Closer inspection revealed it was the same as the dashboard stuff, but 5ft long by 18in and in a choice of three colours – and all for three quid! I've tested it to the extreme and it works brilliantly. Ain't technology wonderful.

Incidentally, Roy Sutton was spot on. As a retired teacher who reached desperation levels, I can verify that 'concepts' are in and 'skills' out. It's known as arse about front in the profession.

Graham Franklin

Late nights

I am a consultant surgeon, and like so many of my surgical colleagues I have a great interest (and ability) in woodworking. Apart from the standard 'textbooks' on the subject we get a lot of help from patients. It is a great form of relaxation, and to sit down with a woodworking journal rather than a surgical one is bliss.

In the last year (I normally never go to bed before 2am), I have completed a suite of furniture, two dinghies, three rocking horses, an inlaid table, and restored several pieces.

Eric Cowan, Co Down

A long weight

I had to raise a smile when I read David Savage's article in GW 96. There was a photograph of a 56lb weight in use as a 'hold down' with a caption pointing out its usefulness. Then, in a totally unrelated article, Ian Wilkie singled out the 56lb weight in his 'tip'.

Why did all this amuse me? Well, I own such a piece of equipment which, over the years, has been put to a

Old Wive's Tale No 45 Considered by Jeff Gorman

You don't need much set on a dovetail saw

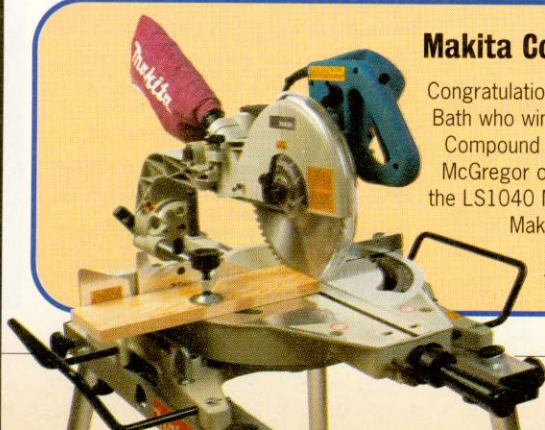
To correct the direction of the kerf of a normally-set saw, the worker will rotate his/her wrist so that the side of the saw's plate bears against one side or other of the top of the kerf. The leverage will exert a sideways force on the teeth, thus modifying the progress of the kerf. In the extreme case of a saw with zero set, you will certainly get a nice smooth finish to the flanks of your pins and tails, but since the plate is more or less gripped by the wood, there will be no space for this action to occur. Once launched in a certain direction, it cannot help but continue on the same path.

variety of uses, and so I can vouch for its versatility. However, before you all rush out and equip yourself with this very affordable state of the art technology, beware, a word of warning. When this item came into my possession some 30 years ago, it only weighed 56lb. Now, it weighs nearly twice that much. Indeed, sometimes it appears to be fixed to the floor.

E.G. Moody, Essex

Makita Competition

Congratulations to Norman Swain of Bath who wins a LS1013 Sliding Compound Mitre saw and F. McGregor of Aberdeen who wins the LS1040 Mitre saw from our Makita competition in the April issue. Well done to you both. Enjoy!



Perfect Timing

I've just returned from holiday and was ready to start my next project which was to be a seat for the garden. I opened up my copy of Good Woodworking waiting on the doormat, and there was a picture of Pete Martin's tree seat (above) just asking to be built. It wasn't my original plan but the tree is there and the spirit is willing. Perfect timing.

Chip Clements, Kent

Soft hammers

Recently I observed a young chippy hanging an entrance door. As he was sinking the hinges, I noticed that he was wielding a rather large claw hammer and seemed intent upon also inflicting damage to his plastic handled chisel with his rather heavy

blows.

As an apprentice it was drummed into me never to use a hammer on chisel handles and this incident reminded me of a useful trick we used. If we had to work away from the workshop, it meant lugging a heavy bag of tools, and mallets, being rather bulky objects, weren't very welcome. To reduce weight we carried the obligatory hammer, together with a rubber crutch tip which fitted over the hammer head. This could then be used on chisels or for bumping frameworks together without causing damage. Even plastic handles deserve respect.

Ray Willis, Ascot

Desperate Paul

This is a desperate impassioned plea to readers. Along with GW regular, Dave Roberts, I was recently demonstrating at the Spring Yandles Show, which I

★ Letter of the month ★

Every month our star letter will win a **Bosch PSR 7.2VES cordless drill/driver**. This great tool is worth almost £100.00 and features torque control, variable speed and reverse, and a 9mm keyless chuck. It comes with a one hour charger and carry case. For details of the **Bosch** range of power tools and stockists ☎ **01895 834466**



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Fan of JCBs

It's an odd feeling, but without actually meeting him I feel that I have become quite well acquainted with Bob the Builder. Many boys, young and old, have a fanatical interest in diggers but my son James, who is seven, is drawn to them like magnets. If we go for a family day out, he runs straight past the main attraction and makes a beeline for the digger working on the site of the new toilet block!

With this in mind, I decided to manufacture the rear digger arm of a JCB that he can play with in his bedroom. This would fit in with the overall theme of the room, which was to be a building site! The bed was to be the front bucket of a digger elevated in front of a wall mural depicting the front view of the rest of the digger. To add extra effect, road and warning signs were to be painted on the walls, which depicted mounds of earth, roads and trees.

With this rather bizarre collection of thoughts in mind, I set forth into the workshop (ex single garage) to investigate what materials I had to manufacture the

digger arm. The materials were lovingly rescued from the skips, which were used by the builders of our house. These were generally scruffy cheap timber but fitted the bill quite well.

Over a three-month period I manufactured the

arms, bucket and seat using a variety of humans for their ideas and as ergonomic dummies to get to the finished product.

On a more technical note, the oak pivot pins were sub-contracted to Dunmore Snr's workshop in Stone

(excellent mail order service!) and the rest of it was manufactured 'in house' to my own design. The overall design equation was quite simple and is broadly as follows: Combination of; Weight, strength and aesthetics = 7 year old boy strength

To provide the required rigidity and strength the arms are torsion boxes made of thin ply. The bucket has ply sides with ply slats to give the curvature. The control mechanism is by levers, which give full control of the bucket to a span of ten feet. The seat is manufactured from kitchen worktop routed to prevent chafed body bits.

When at full stretch there is quite some weight, so bungee cord was used to off load this from the first arm to the seat. This, in turn, was secured to the bedroom wall, which has not moved yet but if I see the adjoining bathroom get any bigger I will know to conduct a re-design!

The rest of the bedroom progressed to plan thanks to the artwork of my wife Karen and our friends, Leonie and Chris. The bucket bed was a

big hit and all credit to Chris for the idea. The arm has now been in operation for two months and James says it is easy to operate it and he enjoys it. I am pleased with this, as the mechanics were my major concern. The only signs of wear are in the bedroom carpet which has now had young (and some considerably older!) boys trying to dig for gold, treasure and all kinds of other things.

Unfortunately I am having pressure applied to me to move onto my next project which is likely to be oak furniture for the living room. Though challenging, it will not quite have the same attraction! If anyone would like any information on the details please feel free to e-mail me on richard@dunmore21.freemove.co.uk

Due to my workload in my real job, I am afraid I will not be able to take any orders!

**Richard Dunmore,
Preston**



enjoyed immensely. Lots of people left their addresses with me to contact them when I set up courses in chairmaking later in the year, and several expressed an interest in

buying a chair. Shortly afterwards, I did a demonstration for Avon Woodturners which was a really nice night with an outstandingly friendly bunch of people.

However, while I was there I lost the list of addresses I'd made at Yandles. Consequently, I would be exceedingly grateful if anyone for whom this rings a bell and who is

expecting a phone call from me, to get in touch with me on ☎ 01373 465392, and I extend my apologies for being so daft.

Paul Hayden, Frome

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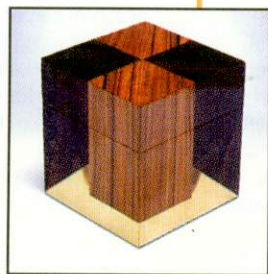
Let's go surfing

There's no end of useful information to be found on the net for the woodworker, if only you knew where to look. We help separate the screws from the sawdust

Sites to visit

1 (<http://www.wood-veneers.com/g14/j-prism.jpg>)

In the Customer Galleries of B&B Rare Woods I found this intriguing veneered box among a selection of delightful boxes by John Russell. It is veneered in macassar ebony, holly and Honduran rosewood. The shading that increases the illusion would have been produced by dipping the veneer edge in hot sand.



2 www.angelfire.com/ga/stevesuzy

If you are totally into your woodworking, of course you'll want to customise your PC to reflect your hobby. Visit the Golfing Cabinetmaker's site and you'll find a series of desktop themes with a woodworking flavour to download. Well, it takes all sorts.

3 www.TobiasKaye.co.uk

If turning is your bag, point your mouse towards Tobias's site. Closed for reconstruction as we went to press it will be up and running soon

Navigation Tips

In GW 96 I gave an incomplete address for the very interesting American Forestry Products Lab handbook. Not only was an 'F' replaced by a 'G' but the final section of <http://www.fpl.fs.fed.us/documnts/GPLGTR/fplgtr113/fplgtr113.htm> was missing. This

offers the opportunity not only to apologise but also to show how you might be able to deal with bad addresses, including those changed by webmasters.

To circumvent messages saying that a page is unobtainable, try going back to the part that precedes the first forward slash. This would have taken you to www.fpl.fs.fed.us, which is where, in fact, I

originally started. Practice this tip on the wood-veneers address (left) and you will find amongst other woodworking examples, some more fine examples of veneered boxes, some marquetry and well-presented technical information about veneers,

Web watching

Have you found any interesting or useful woodworking websites that you think other readers would enjoy? If so, email the addresses to goodwood@futurenet.co.uk and we'll feature them for everyone's benefit.



A veneer slicing machine at work as seen at www.fpl.fs.fed.us

including a photostory showing how veneers are produced.

To effectively use the sample pictures at <http://www.woodgallery.com/vnrpatterns.html>, you will need to be sure that the colour balance and resolution of your monitor is correctly configured. A free download of the application 'Check Screen' is available from the Computer Suppliers Federation site at: www.csf.org.uk.

At <http://www.woodmosaic.com/bestview.html> you can check your monitor on the real thing. Likewise <http://www.woodveneers.com/samples.htm> offers a nice clear display of samples, though your phone bill might suffer if you download outside the cheaper periods.

A discussion about veneering inevitably requires knowledge of the terminology. For a presentation entitled *Wood Veneer; Its manufacture, Installation, and How it Should Be Specified* by Arne Thomsson, go to: http://www.move-it.com/information/wood_veneer/wood_ve

[n_toc.html](http://www.n_toc.html) where you will find an extensive set of links dealing with equipment, grain patterns, etc, but also an induction into the mystery of 'book-matching', 'butt match', 'slip match' and so on. There are some more terms to blind your colleagues with science at: <http://www.woodgallery.com/vnrpatterns.html> where there is also a gallery of woods.

For inspiration for lighting sources go to Studio Q at: www.studioqlamps.com



Gleanings from the Net

Harvested by Jeff Gorman

Clogged Machine Mortice Bits

Alan Belkin: Try holding a piece of soap to the tip of the bit every few minutes. This lubricates the bit and stops the horrible squealing noise.

Biscuits bloated. Now what?

Peter Burke: Once the bag is opened, I toss them in an old coffee can with a lid. Add a few of the little desiccant packets that come in pill bottles (my local pharmacy is only too happy to give them to me by the

gross) and no more swelling.

Mike K: Place the biscuits in a microwave, one layer only, for 15/20 seconds on High. If they are still tight give five seconds more at a time until the biscuits fit.

Lesson for Today?

Chuck Vance: I was smoothing what will be the top for a kitchen bookshelf/drawer unit for my brother. Unfortunately, there was one little low rough spot that I must have missed in surfacing, and with the plane set that fine, it would have taken me forever to get down to it. So I got the bright idea of taking a scraper to concentrate on the one area. So, I figured I'd just grab the Stanley

scraper, 'cause I can cover more ground with that one. I couldn't remember what I had used it for last, but figured I'd just loosen the thumbscrew all the way and I should be OK. Big mistake! I must have been scraping glue or something, because that thing ripped a gouge only slightly smaller than the Grand Canyon. So now I had to start all over again after being 99.9% done with smoothing that thing. This time around I'm using the toothing plane to get everything level. Then it's easy enough to come in with the smoother and finish up. The lessons for today? Always, always, always take a test cut on some scrap before introducing a tool to a nearly completed board.

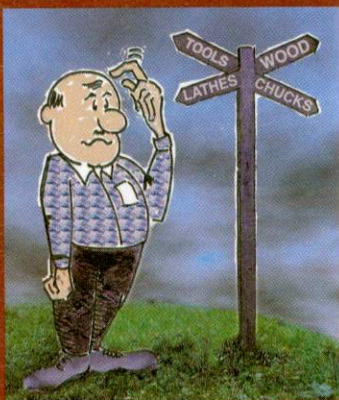
You never know where that thing might have been. And never, never, never get impatient with the smoothing process at that stage. It'll be quicker in the long run to just stay with it rather than trying to hurry things up and run the risk of screwing up.

Music in the Workshop?

Chuck Spann: I usually listen to talk radio. The problem is, I can't turn on a tool until a commercial because I don't want to miss anything interesting.

Mark Lane: No music in my shop. The shop is, for me, a place of peace and quiet. I like to be able to think between making cuts.

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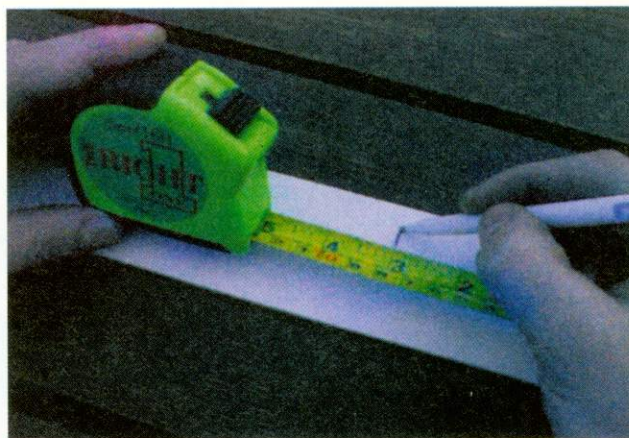
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On Test



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Our policy at *Good Woodworking* is to rigorously test all products sent to us and not to reprint press releases

Black & Decker KC1440SK Cordless Trimsaw

WHEN I WAS A LAD, the ultimate power tool for the woodworker was a metal-cased mains drills, by either Wolf or Black and Decker. Then a bright spark came up with the idea of adapting the drill for a variety of add-ons, including sanders and jigsaws. B & D progressed to become one of the leading players in the budget power tool market.

Their latest leap forward is with the new range of battery powered Firestorm products. Gone are the standard black or blue cases, replaced by a vivid orange livery.

This 14.4V saw is powered by B & D's new 1.5Ah Firestorm battery. Only one is supplied, along with a one hour fast charger. The battery clips into the end of the saw.

When you pick up the saw initially it feels slightly out of balance. The motor projects to the left, making the saw tilt this way. This isn't a flaw, rather the nature of the

beast, as all circular saws have the motor

on the left or right, giving similar problems. B & D have addressed this by fitting a handle to the top of the motor housing, for guiding the saw when used two-handed. This is better than most saws,

which have either a knob on the front or a moulded handle that can obscure the line when cutting freehand. B & D's

neat idea is a viewing window directly above the blade. This enables the sawblade to be positioned accurately at the start, or to follow a line during the cut. The window can be flipped up and cleaned, which may need to be done frequently as the saw has no dust extraction facility. Although whether to use an extractor or not is down to the user, in the health and safety-conscious 21st century, the lack of one is a definite oversight.

The saw has a pressed steel base with plunge and angle settings easily accessible. Depth is set

with a locking lever, with a graduated scale. The tilting scale is at the front of the saw and has 5° increments and 22½° mark, plus a locking knob.

An adjustable orange plastic insert on

the front edge of the base (in line with the blade) shows 0° and 45° settings. It's used as an extra guiding reference. You can fit a fence, although one isn't supplied. This omission is common with many manufacturers and should definitely be rectified.

The sprung blade guard is plastic, which works fine. Taking into account the type of work the saw will be expected to do, a thin metal one would be more robust. The main body is an ABS-type plastic, with cushioned grip on the handle. The power switch is designed for both left and right hand operation. There's a lock-off lever on the handle that needs to be depressed before the trigger will engage.

Cutting capacities are 41mm at 90° and 30mm at 45° using the 136mm 16 tooth TCT blade supplied. Blade change

Inserting the hex key into a hole flips open the sight window for cleaning

is achieved with a combination of a hex wrench (stored on the base), and a thin-bladed screwdriver inserted through the blade. There is no spindle lock.

The new colour scheme certainly gives this saw a striking appearance, but looks aren't always everything. So have Black

and Decker come up with the goods? Put through its paces on 40mm deep softwood, it put in a good

performance for a 14.4V saw. I managed to cut through just under five metres of this on a single charge. And the sighting window is more than just a gimmick. It helps you keep a straight line cutting freehand.

Personally, I think these trimsaws are best used alongside a mains saw, rather than as a replacement for one. A trimsaw is perfect for shopfitting work with sheet materials. It's ideal for the on-site chippy working in power-free areas, who needs to rip the occasional board or two during the course of the day. But it's a pity the blade couldn't quite make the all-important 45mm cutting depth for ripping external doors to size...



Cross-cutting freehand is easy with the viewing window



Inserting the hex key into a hole flips open the sight window for cleaning



GW VERDICT

PERFORMANCE	●●●●○
VALUE FOR MONEY	●●●●○
RRP inc VAT	£119.99
BLACK & DECKER	01753 511234

Accuset A150LS Staple Gun

AIR-POWERED FIXING tools for woodworking are very American, with the exception of the mass furniture production market. But watch Norm Abrams on Sky TV's 'The New Yankee Workshop' and you begin to appreciate what a great idea they are. In the UK they're underrated, with the good old knocking stick and nail punch reigning supreme. Personally, I'm all for the easy life, and the Accuset staple gun certainly takes away the strain of repetitive fixing.

To most people a staple gun may seem rather limited, suitable for the upholstery trade and little more, but, with the Accuset A150LS designed to fire staples from 13mm to 37mm long, it's a tool with far more scope.

The gun has an adjustable depth of drive, operated with a thumbwheel below the trigger. Perfect for driving smaller staples just enough to nip up fabric, or to punch longer staples home ready for filling,

when woodworking.

The gun operates between 4.8 and 8.3 bar (so you'll need a compressor with this capability, such as Accuset's own 1.5hp model tested in GW85). The higher pressure is used for longer fixings. This makes it perfect for small carcass assembly, fitting backs into frames or cupboards, fixing face mouldings and drawer assembly. The crown of the staple is only 6.4mm across, so the indent left by the gun is minimal, with little finishing required. The holding power of a staple over a pin is far superior. I fixed 6mm

MDF to pine, as you would the back of a cupboard, and then tried to knock it apart. They took a bit of a beating before I could get them to separate.

Operating the gun is simple, with a hose pushed on to the end via a standard airhose fitting. Before the gun will fire, the

nose must be pushed firmly against the work to prevent



Loading the magazine with staples



Adjusting staple depth



accidental misfire.

A soft rubber buffer on the tip prevents marring of delicate materials. The grip is rubberised to soften the recoil as the staple is fired, but the action is so good that this is minimal. Obviously driving into harder materials, or using longer staples, means greater compression and recoil.

Fixings are easily reloaded, a plastic button at the rear releasing the magazine to enable staples to be fitted. These are simply dropped into the inverted gun, and the magazine pushed back. It holds 110 fixings per load, and a yellow indicator on the magazine shows when it's nearing

reload status.

I'm a great believer in air fixing guns. Not only do they make production work quicker and easier, but the fine gauge fixings and single blow driving allow close edge fixing without fear of splitting the work. More than this, the presence of a compressor in the workshop opens up the potential for spray finishes and more. If you're looking to expand your capabilities, this Accuset stapler really is the business.

GW VERDICT

PERFORMANCE	●●●●●
VALUE FOR MONEY	●●●●○
RRP inc VAT	£184.99
SENCO	☎ 0800 626821

Makita B05021 Random Orbit Sander

IT'S HARD TO WAX lyrical about a sander. After all, a sander is a sander the world over, but this little gem is certainly worthy of a few words. Makita's B05021 is a random orbit machine, powered by a 260W motor. It has a variable speed thumbwheel mounted on top of the casing, enabling orbits between 4000 and 12,000 per minute to be set. Slower speeds are used for applying wax or polishing, with the higher settings for sanding.

A thick rubber sanding pad (123mm diameter) uses the hook and loop system for securing abrasives. Eight holes through the pad extract dust, using either the dustbag and adaptor provided,

which fit beneath the handle, or connecting to an extractor.

This 1.4kg sander can be used in one of three ways; single-handed by gripping the rear handle; two-handed with the removable front

handle; or as a palm sander by gripping the top of the motor casing. All three methods are equally comfortable.



The trigger is housed in the rear handle and has a lock-on button, positioned for right-handed use. The button has to be pushed in a fair way before it will lock the trigger on, which is a little awkward.

As for performance, this sander is hard to fault. It's

whisper-quiet and virtually vibration-free, and equally at home when used for general surface preparation or for fine finishing. My only gripe is with the 2.5m of cable, which is a bit on the short side for this sort of tool. Anyone looking for a good quality small sander with extended capabilities need look no further, however.

GW VERDICT

PERFORMANCE	●●●●●
VALUE FOR MONEY	●●●●○
RRP inc VAT	£141.00
MAKITA	☎ 01908 211678

NEED A NEW POWER TOOL? WANT TO UPGRADE YOUR SAW? ANDY KING GIVES NEW PRODUCTS A WORKOUT TO HELP YOU DECIDE

TRYING TO KEEP my dog happy with a never-ending supply of boomerangs to chase is monotonous. Initial shaping on the bandsaw is fine, but the laborious task of shaping the wings with spokeshaves, rasps, files, and final sanding is slow going and tedious.

The American Microplane shaping system has been around for a while now, and is indeed proving useful in many more industries than just woodworking. You'll even find it cropping up in the kitchen. Similar in some respects to the venerable Surform, Microplane stainless steel blades are available in a wide variety of profiles, with just as many uses. Unlike rasps and files, the dozens of razor-sharp teeth punched into



each blade shave the timber rather than scrape it, allowing timber to be removed very quickly and cleanly. The open design ensures they don't clog up in use.

The range includes triangular, square, flat and curved shapes to fit individual handles, as well as blades to fit hacksaw frames and Surforms. There are several rotary shapers in a number of diameters for pillar drills.

We tested the original system as long ago as GW 48. Now there's a new series of R2 Microplanes available, offering smoother and finer cutting than the earlier 3000 series.

The offset handle shown here uses an extruded aluminium profile to hold individual profiles. A single grub screw makes profile-changing quick and easy.

Its cranked shape is easy to use in tight areas, and the sculpted handle is comfortable whatever the angle. Blades are 125mm long and 25mm wide.

Although original Microplane blades certainly remove stock very quickly, making them ideal for roughing of stock for carving or shaping, they're too aggressive for finer work. The R2 types are better for this, and need little work to get a really smooth finish. As with files, using them at differing angles can result in ridges being left in the work. You need to experiment with the angle of attack to obtain the best finish. Shaping the upper part of the wings on my plywood boomerangs proved quick and easy, but shaping the internal curve was trickier. Nevertheless, the R2s zipped through it with no problem, requiring just a rub over with abrasive paper to finish off the shape.

The drum shapers are just as useful, removing

stock quickly and efficiently, but you'll need the drum sanders also made by the UK Microplane distributors, Carroll Tools, to bring the work to a smooth finish.

I'm becoming a fan of these little tools. They certainly make life easier for initial shaping, even if the original blades do tear a little, especially if you're unused to them. Woodcarvers, or anyone involved in a lot of curved work, will find them excellent, and they are an absolute must for dog-owning boomerang makers...

GW VERDICT

PERFORMANCE	●●●●○
VALUE FOR MONEY	●●●●○
RRP inc VAT	£35 (handle & three blades)
CARROLL	☎ 0208 781 1268



Skil 2590 Smartset Cordless Drill

TALK to most tradesmen about circular saws and they'll nearly always refer to them as Skilsaws. Such is the mark the original American saw of this name made in the woodworking trade. At the other end of the spectrum, the DIYer also sees Skil as a good quality brand.

The Skil Smartset is a 14.4V drill set, complete with screws, magnetic bit holder and six bits, drillbits, pencil, and a two metre surveyors-type ruler.

A compact drill at only 220mm long, its T grip design gives a good balance. The handle is a bit large for my miniscule mitts, although the rubberised grip makes it a more pleasing experience than some.

The single-gearred, variable



speed drill runs from 0 to 700rpm, with forward and reverse modes easily changed with the push button above the trigger. There's a five-position torque collar behind the chuck.

Capacities are 25mm in wood or 10mm in steel, and it will drive screws up to 6mm shank diameter. There's plenty of torque for bigger holes, so I drilled a number of 20mm diameter ones with a spade bit. This was rather laborious because of the fairly low speed. Using an auger-type bit

was faster and cleaner, as the screw pulled it into the wood.

This is more of a screwdriver and occasional drill than a dedicated drill/driver, for which a second faster gear would be needed. The battery charger is a small transformer-type, three pin plug with a battery holder attached. A green LED on the battery holder indicates charging, although it does show when full capacity has been reached.

The NiCd battery takes between three and five hours to charge, which is the drill's major failing. Even the cheapest drills on the market seem to be supplied with one hour batteries and chargers nowadays, so to have to wait this long between charges seems outdated. Even with a spare battery on the boil, a major drilling session could still leave

you twiddling your thumbs. That apart, the Smartset is good value.

GW VERDICT

PERFORMANCE	●●●●○
VALUE FOR MONEY	●●●●○
RRP inc VAT	£49.99
SKIL	☎ 01895 834466



You may find the Skil's handle a bit on the large side

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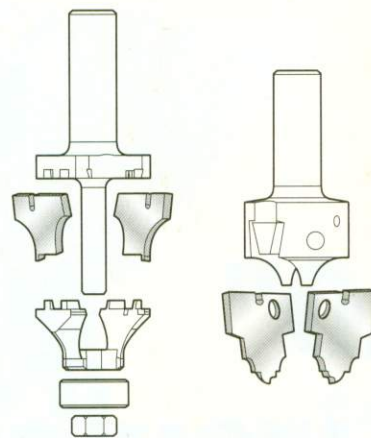


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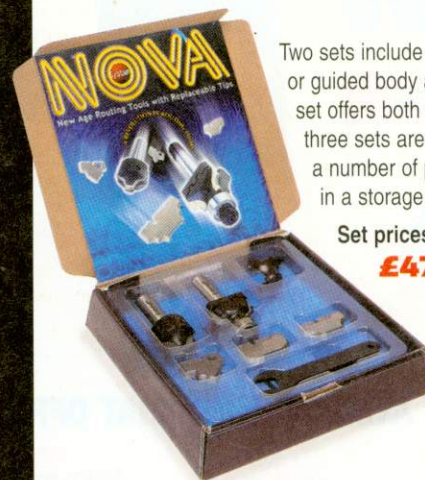
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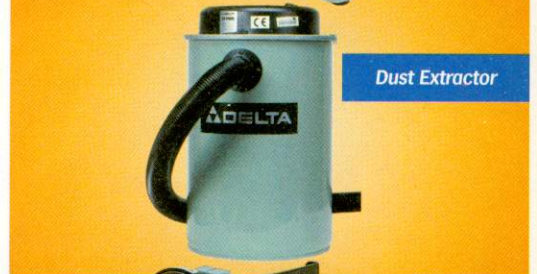
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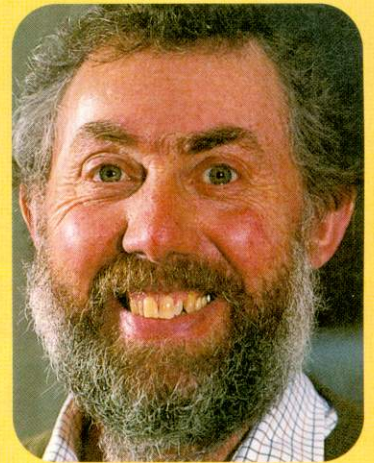
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David Wilkinson at work on the bobbin sander. Machines were carefully chosen by Roger when the workshops were first set up for suitability and ease of use. Everyone is encouraged to use the safer machines though only Roger uses the more dangerous ones

WORKSHOP ANGLES

AN OPEN DOOR TO WORKSHOPS AND THEIR OWNERS

NO.98 CARE WORKSHOPS



Roger Simpkins set up the workshop for CARE in 1998 and is a very sympathetic supervisor. He is very popular with his team and promotes a positive atmosphere



The basic design of the Adirondack chair is very suitable for hand tool construction and the result is always popular

Imagine someone giving you £15,000 to buy tools and machinery to equip a large workshop. Then add a job that stretches all your abilities while doing something that could really make a difference in people's lives. This is what happened to Roger

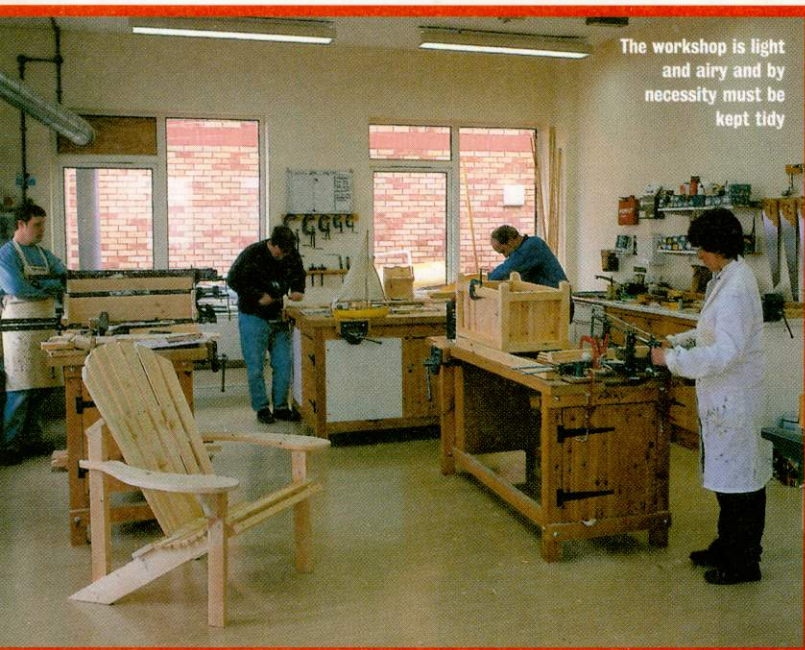
Simpkins when he accepted work with CARE, a registered charity and community for adults with learning disabilities in Rowde, Wiltshire.

Originally a joiner with his own business for 25 years, Roger also taught woodwork at adult education classes. "But then back problems pushed me to look at teaching full-time" he says. Initially he helped train the unemployed with the Skills Training Agency, an opportunity he relished. "Unfortunately funds ran

out and I returned to self-employment until this job at CARE came along".

Visiting CARE is an uplifting experience, and the first thing that strikes you is the cheerful ambience amongst staff and residents. Everyone works together in the large airy workshops which are the heart of the community. People can choose where they work and the emphasis is very much on fulfilling individual potential. In fact everything about CARE is geared toward creating an environment where people feel confident and free to express themselves. At Rowde (there are seven other Cottage and Rural Enterprises communities throughout the UK) the workshops include horticulture, catering, textiles, laundry/craft and Roger's popular woodworking section.

"This workshop originally housed the horticultural section" says Roger, "but it's

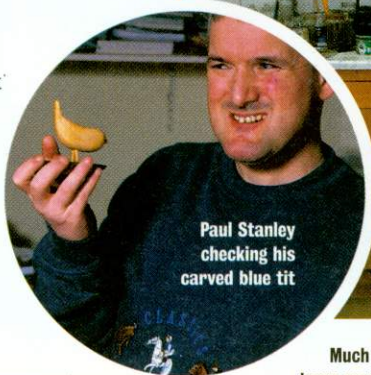
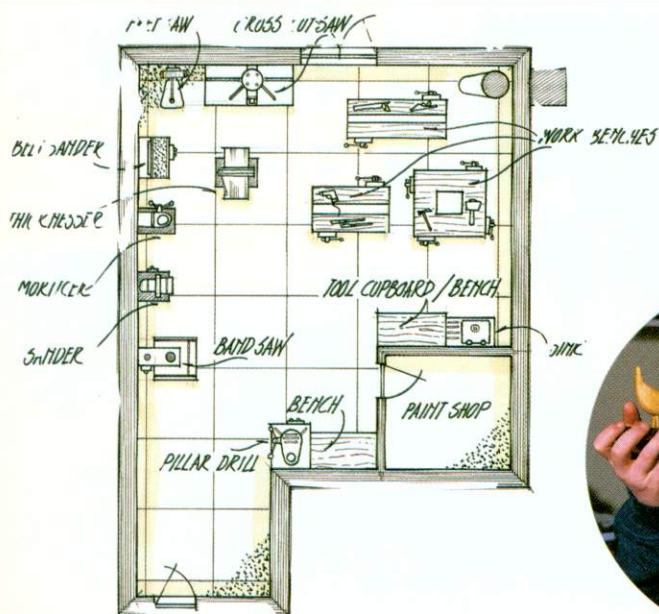


The workshop is light and airy and by necessity must be kept tidy



Martin Derby made this range of bird tables. They would be sold in either the shop or the mail order catalogue

CARE workshop at Rowde



Paul Stanley checking his carved blue tit

Much of the workshop furniture, such as these cupboards, was made by team members under Roger's supervision

This work cabinet was made by Matthew McInerney and is typical of the work made at Rowde. Though much work is product orientated, the main goal is to develop skills, confidence and independence



perfect for woodwork." The room is spacious, with high ceilings, and there are enough windows to give plenty of natural light. Pine cupboards lining the walls give a neat and ordered appearance.

"A lot of time and thought was necessary when sourcing and buying tools" Roger admits. "The people that work with me have various needs and challenges to cope with. Apart from learning difficulties, many suffer from some loss of hearing and poor eyesight – all of which must be taken into consideration." Eventually Roger decided to start with handtools, teach the basic

skills, and then progress from there.

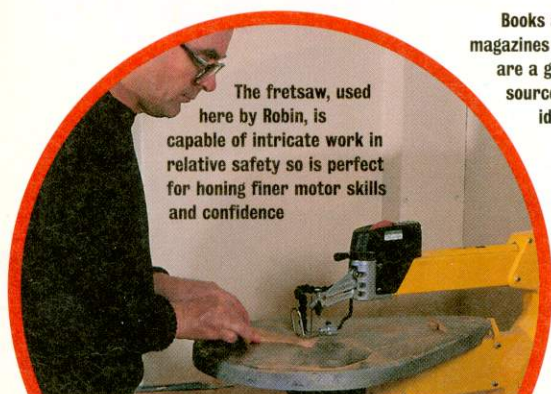
Today the workshop has a fine array of handtools neatly hung on the walls, and power tools tucked away in their appropriate places. The gleaming machinery around the room includes a Delta sander, DeWalt radial arm saw, a fretsaw, Sedgwick morticer, Delta bobbin sander and pillar drill, Minimax bandsaw, and a Kity planer thicknesser – a good basis for any workshop! With so much potentially dangerous machinery, a lot of supervision must be necessary? "One of the problems with a learning disability" explains Roger "is that memory retention can be poor, and safety rules need constant emphasising. It is important that everyone is taught how to use machines properly and safely." Most of the team are encouraged to use the machines, under supervision, with the exception of the radial arm and table saws,

Trucking on

Always open to new ideas, the team at Rowde are willing to have a go at anything. Projects have included decking out a boat and, more recently, building a flatback for this 1952 Trojan lorry. "A friend asked for my help to build the cab for his lorry" says Roger. "Now the team have had a chance to help me finish it!"



Alastair Kennedy assembling a garden planter



The fretsaw, used here by Robin, is capable of intricate work in relative safety so is perfect for honing finer motor skills and confidence

Books and magazines for are a good source of ideas



A wide range of ages are accommodated at Rowde, from 18 to 57



Close supervision is necessary with many machines

Tools for the workshop were carefully chosen to allow for a wide range of abilities. Hand tools such as this mitre saw are generally safe for unsupervised use

and planer. Roger alone uses these.

Roger has up to ten people working with him. Ages vary from 18 to 57 and it is heartening to see women involved. "Everyone is encouraged to work on a project of their choice and there are plenty of books and magazines around to give them ideas" says Roger. Many choose to make garden furniture – tables, chairs, benches, planters and obelisk frames. Creativity is encouraged and a 'let's have a go' philosophy is an important part of the workshop's agenda.

Toys are popular, and Paul is happy to show us the Ark he is making. Nicola, another enthusiastic toymaker, points out the automaton with clowns that she has helped design and make, together with the puzzle that is her current project. Softwoods are the most-used timbers, mainly for ease

of use but also to avoid problems with dust that could affect those with breathing problems. Projects range from the simple to the more sophisticated and workmanship is of a high standard.

The CARE set-up at Rowde is impressive and certainly seems to be achieving its goals. There are eight such communities around Britain, all with workshops providing high quality goods. Some have cafes open to the public and shops that sell CARE items. A mail order catalogue is available. For further information contact ☎ 01380 725455.

Pictures by David Askham, Words by Jan Evans



Garden furniture is popular. Robin Richmond made these obelisks and planter

Draper COMPETITION

£1200 WORTH OF DRAPER EXPERT TOOLS TO BE WON

Win one of three sets of Draper Expert power tools. Three lucky winners will, between them, take home two Draper routers, a planer, circular saw, jigsaw and sander, worth a total of £1200

No matter what your level of skills, Expert help will always be at hand if you are one of this month's lucky winners of Draper Expert Tools in our competition. And what prizes we have for you to win

Our first prize winner will receive the 1900W R1900V router, along with a JS600V jigsaw and a S150V palm sander. Second prize winner gets a CS184 circular saw and P882 planer, and, finally, our runner

up in third place gets a R850V 850W router. The brand new Draper Expert range of tools are all manufactured in Europe and are designed with the professional in mind. With

over eighty years experience in power tools, the Draper name is already well established in the UK.

Both routers feature soft start motors with variable speed control, the larger model able

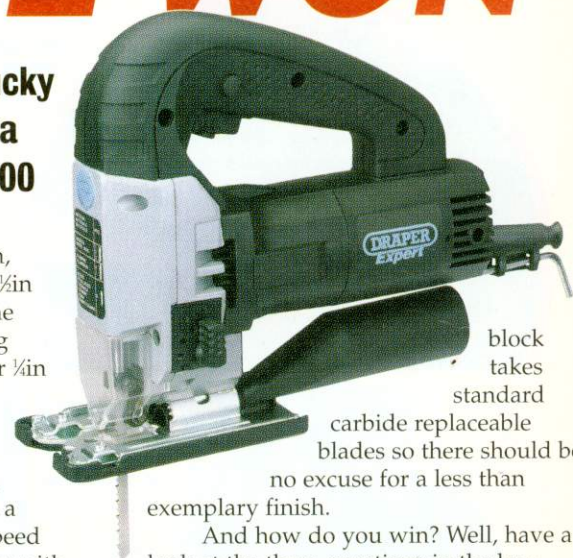


to take 1/8in, 6mm, 8mm, 12mm and 1/4in shank bits with the smaller one taking either 6mm or 1/8in bits.

The jigsaw has pendulum action and a variable speed 600W motor with a 100mm cutting capacity in wood. The 1200W

circular saw comes with a 184mm diameter TCT blade

which will cut up to 65mm in timber. It is also supplied with a parallel ripping fence for repetitive work. The S150V variable speed palm sander has an extension base pad making it perfect for sanding in between louvre blades or in tight spots. Finally, the P882 planer has impressive rebating capabilities (see how it performed in our tests on page 43), plus variable chamfer settings using the tilting fence facility. The



block takes standard carbide replaceable blades so there should be no excuse for a less than exemplary finish.

And how do you win? Well, have a look at the three questions in the box below. You can phone a friend, ask the audience or just hope for the best. But no conferring and the judge's decision is final.



How to enter and win

All you need to do to enter our simple competition is answer the three questions listed below. List your answers alongside the question numbers on the back of a postcard or a sealed envelope (please do not add any other correspondence). Add your name and address and telephone number and send it to the **Draper Competition, Good**

Woodworking, 30 Monmouth Street, Bath BA1 2BW to reach us no later than **Friday August 4th**. Only one entry per reader please.

- ❶ The Expert range are made in Europe. What is the name of the name of the European currency currently failing to be the success it was hoped for?
 - ❶ The Lira
 - ❷ The Euro
 - ❸ The good old shilling

- ❷ Which style or fashion was associated with crepes and drapes?
 - ❶ Teddy boys
 - ❷ Fluffy rabbit boys
 - ❸ Badger boys

- ❸ The Draper Expert saw comes with a TCT blade. What does TCT stand for?
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Woodworking Hints & Tips

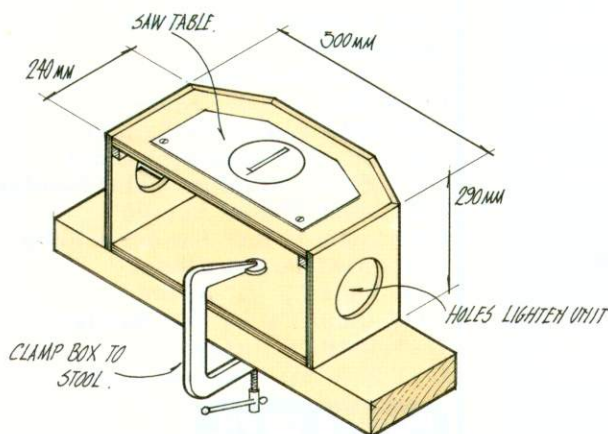


Phil Davy rifles through your latest hints and tips to help everyone improve their woodworking

Dusty mitres

This is how I set up my small mitre saw for a good working height and dust collecting method. My saw sits on a ply box which in my case G-cramps to a saw stool giving me a saw height of 900mm. Carrier bags can be cramped under the saw base and then carried up and cramped to the saw body, covering the blade, with a clothes peg or spring clip.

H. Watson, Co. Durham

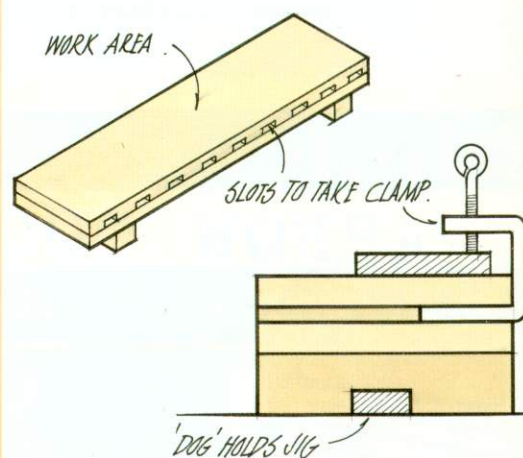


Mini cramping jig

My hobby entails shaping and carving smallish items, for which I have devised this bench top jig.

Two pieces of softwood approx 24x6x1in are glued together. Prior to gluing, one piece has a series of slots cut which match the long arm of some fret cramps I have. Two feet are fitted. These are made from 2x2in and the jig then sits on the bench between dogs. For use in a standard vice or a Workmate, fit a 2x2in piece lengthwise.

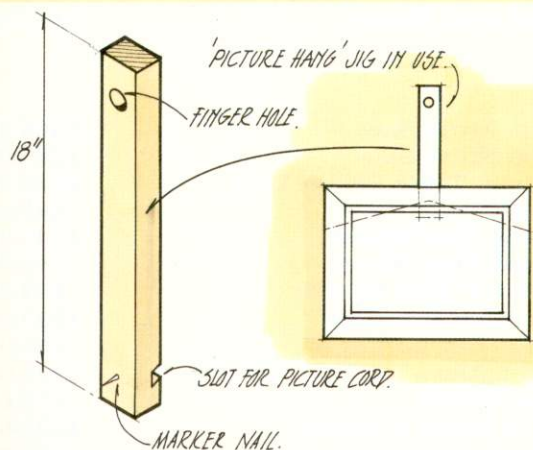
The jig is also useful for gluing small items together as the cramps can be left in place after a dry run.



Picture hook

A little hint for the artists amongst us. I do a little painting and frame my own pictures, naturally, but I have a bit of difficulty hanging them in the places on the wall picked by my wife. I overcome this by using this little simple wooden device so that she can direct from a distance and I can then mark the wall accurately for the suspension nail.

Ray Dyson, Sheffield



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Jointing with dogs

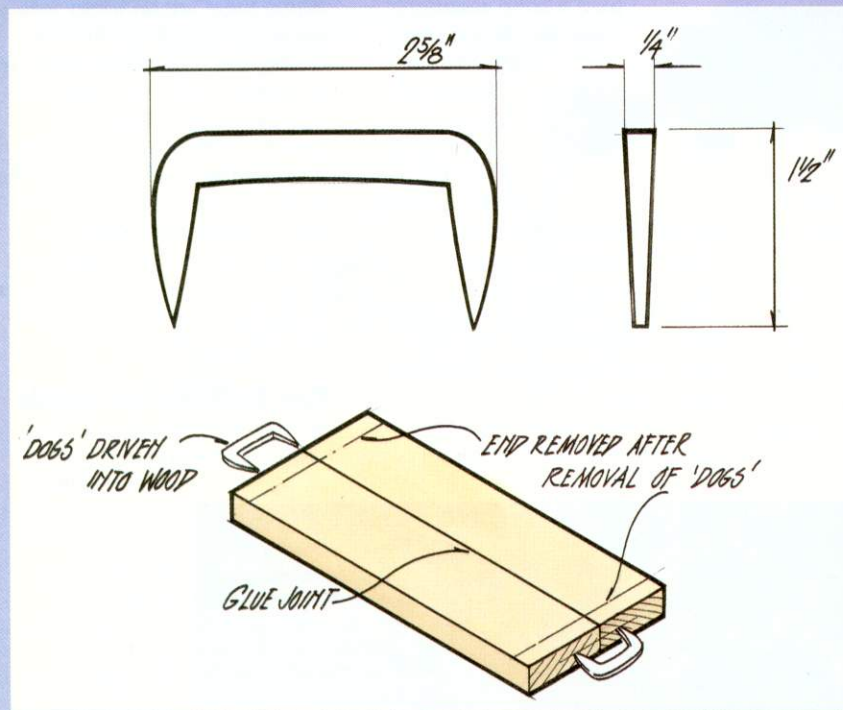
When I served my apprenticeship we often used this simple and effective means of joining two pieces of wood together whilst the joint glue sets.

What was generally known as a 'dog' is driven into the ends of the wood. This in effect forms a cramping action until the

joined glue sets. The dogs are then removed and the ends of the wood sawn off thus removing the marks left by the dog's teeth.

The dogs can be made relatively cheaply by any blacksmith and should prove an additional inexpensive type of clamp that can be carried in a tool box.

P. Ridley, Hereford



Flatter, sharper, quicker

Japanese water stones used for sharpening tools work by the action of a slurry of the abrasive between the stone and the tool, rather than contact with the stone itself. If the stone is flattened the first time it is used each day with

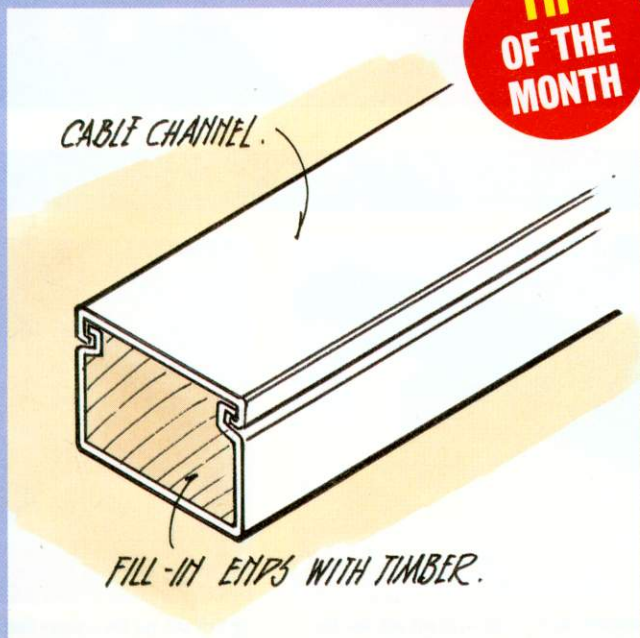
a wet, hard, flat stone – I use a Tormek Stone Grader – a slurry is quickly produced and the stone is flattened every time. Don't wash the stones until the end of the day. Not only is sharpening time reduced, but also, since the stones keep flatter, tool edges are straighter.

Michael Watson, Weymouth

Cable tip

This is what I do with leftovers of cable channel, the type with a snap on lid, which is available in different sizes. I cut the channel to length (to fit in my tool box or whatever) and fill in the ends with timber with a couple of veneer pins to hold the timber in place. The top slides off, allowing access to anything stored inside. Cost? – nothing. Effective? – very.

Peter Gibson, Spain



WIN VERITAS TOOLS

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Stop for a moment.

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

Perhaps you've picked up hints from other woodworkers or just worked them out yourself? However large or small they are, other readers are bound to benefit from your tips so send them in to us at *Good Woodworking*, along with simple sketches or photographs if necessary. It's well worth the effort, as each month we will award the winner with an item of Veritas equipment, while each of the runners-up will receive a £20 voucher from Veritas for their products.

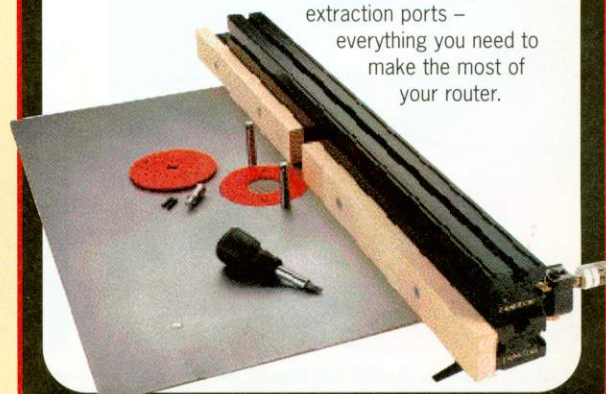
The Veritas catalogue, which we'll be sending to the winner and all the runners-up, is jam-packed with great ideas (just like this tips page) that have been turned into clever woodworking tools. If you would like a Veritas brochure and details of your nearest stockist just ring ☎ 01926 493389.

Don't forget to send your tips to Hints and Tips, Good Woodworking, 30 Monmouth Street, Bath BA1 2BW with any relevant sketches and photographs.

TIP OF THE YEAR

In addition to Tip of the Month we will now be awarding a **Tip of the Year** prize to the best tip published on these pages during the year. The winner, each year, will receive a complete **Veritas Routing System** reviewed in GW 55 and worth more than £400) from **Brimarc Associates**. The kit contains the Veritas routing table, complete with stand, micro-adjustable fence, hold-downs, guards, stops, and extraction ports –

everything you need to make the most of your router.



Making more of



Following on from this, I'll show how to incorporate the tool into a simple design for a pillar drill – but working horizontally – then a lathe assembly and finally, a router table. All the

items can be made easily with just a few small pieces of

wood and ply offcuts, thus keeping the cost of each accessory to an absolute minimum, with most materials being available from the junk box or salvaged from other bits and pieces.

The mini-drill used here is the Ferm FCT300 Combtool

from Screwfix Direct (☎ 0500 414141 for their catalogue.

Careful Construction

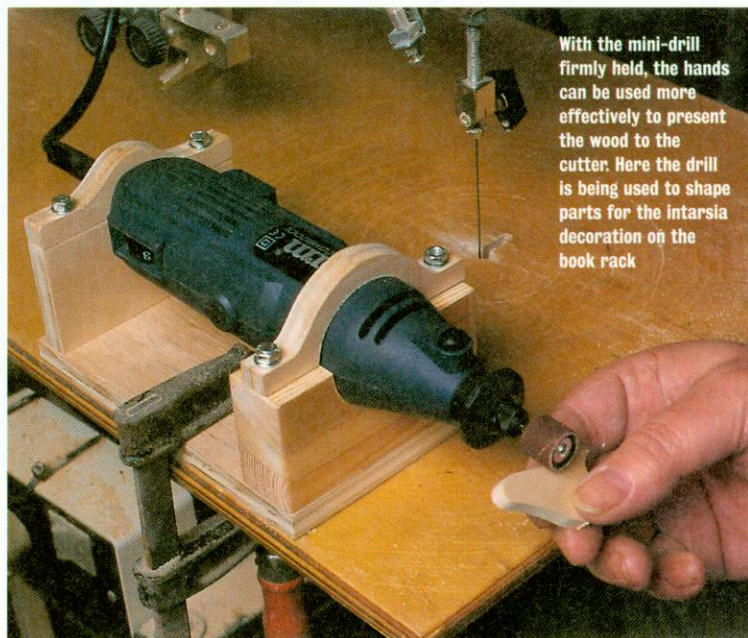
While there are no tricky jobs involved in making the drill cradle, it is essential to take care in making and fitting the parts together as accurately as possible. This is not especially vital for the cradle as such if that is all you need, but the cradle will be used in subsequent accessories such as a lathe and router table and it is here that a good degree of initial accuracy will pay dividends.

How to Make the Cradle

1 Begin by marking out the pieces of wood and ply. A cutting pattern stuck down onto each piece will greatly aid accuracy in cutting. All the parts in the example shown were simply cut out on a scrollsaw following the lines of the cutting pattern. If you are using a mini-drill type other than the one from shown here, you may need to adapt the curvature of the supports and clamps to suit. The dimensions given are for the Screwfix Multi-

the mini-drill is given a set of accessories with which to widen the scope of the basic kit which is the normal starting point for the new owner.

In this first part the mini-drill is provided with a support cradle in which it can be firmly clamped, leaving both hands free to carry out small sanding operations and the like. By way of example, the mini-drill and its cradle are then used in making an intarsia decoration for a book rack.



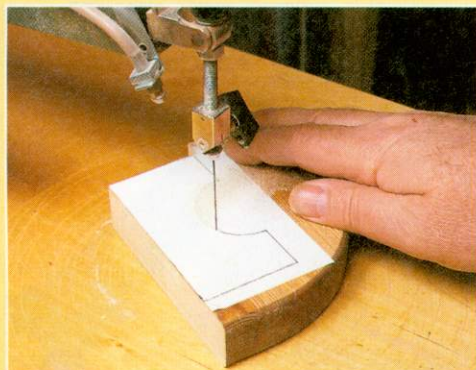
With the mini-drill firmly held, the hands can be used more effectively to present the wood to the cutter. Here the drill is being used to shape parts for the intarsia decoration on the book rack

Increase the versatility of your mini-drill with a simple hands-free cradle. John Everett shows you how to build one

There is no denying the usefulness of the mini-drill, especially if you specialise in small scale woodworking. There are a number of models on the market from manufacturers such as Minicraft, Dremel, and Black and Decker, and, used handheld, they will drill, sand, shape and cut a wide range of materials with ease.

But it doesn't stop there; mount your drill in one of a variety of homemade jigs and it becomes even more accurate, and thus more useful, in use. This is the first of a small series of progressive projects in which

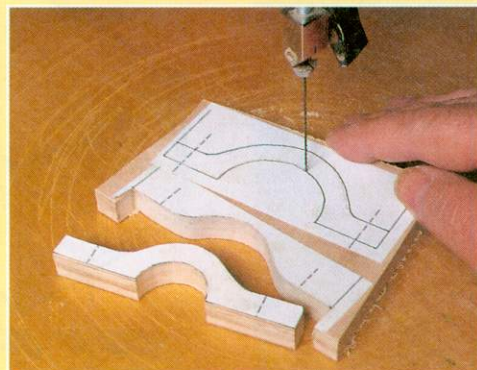
How to make the drill cradle



1 Cut out the two base parts that support the drill body. You will need to take careful account of your drill's shape so that it will be held firmly in place without moving



2 With the baseboard and drill supports cut out, use the actual mini-drill to check for correct alignment of the front and rear supports before fixing them in place



3 Now cut out the cramps that secure the drill. These are from a quality plywood as timber might snap under pressure because of the short grain on the curves

mini drills

tool and look to be similar to the Dremel machine, but check first before cutting.

2 Once the various parts have been cut out, set the supports in place on the baseboard and check carefully for fit with your mini-drill. At this stage you can

mark a pencil line for realigning the supports after drilling and countersinking the fixing holes in the baseboard. Drill the fixing holes in the baseboard for the drill supports and while you are at it, mark out and drill the two 6mm clearance holes marked on the drawing. These are needed

for later additions to the drill cradle and are easier to drill at this stage. If you only want the drill cradle, by all means omit them.

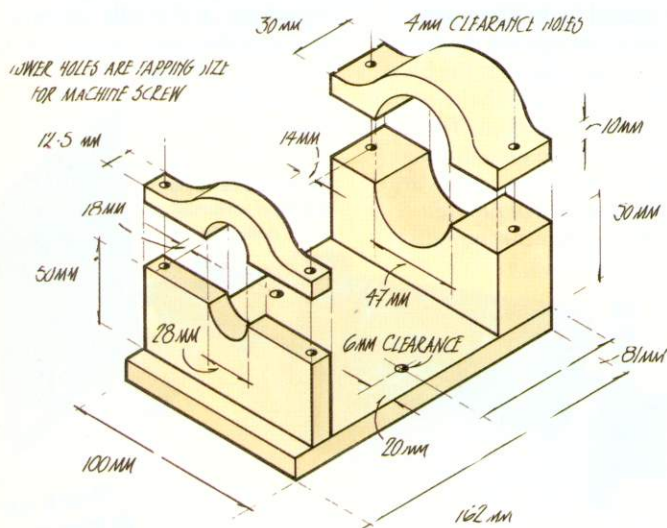
When you glue and screw the

Cutting list

Part	Qty	Mats	Length	Width	Thkns
A Baseboard	1	Plywood	162mm	100mm	12mm
B Rear support	1	Plywood	100mm	50mm	12mm
C Front support	1	Pine	100mm	50mm	30mm
D Rear clamp	1	Plywood	100mm	25mm	12mm
E Front clamp	1	Plywood	100mm	35mm	12mm

You'll also need 4No 50x4mm machine screws plus washers and nuts and 4No 25xNo6 woodscrews

Details of the drill cradle



on what is available.

Note

that the length of the book rack shown here is fairly short. There is no

reason why you cannot extend this by simply lengthening the base panel and back support rail to whatever dimensions you need to accommodate your books or videos, etc.

Use your new drill cradle to help make this book rack with intarsia-style ends

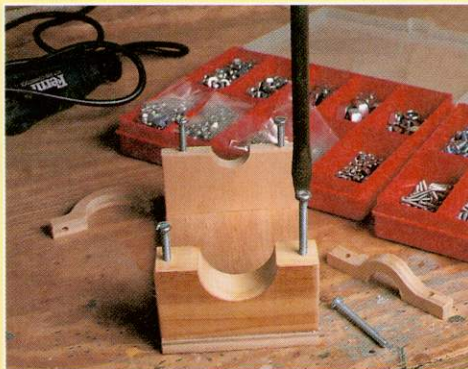
THE ADDED INTARSIA decoration to each end panel of this book rack in the form of a flower and leaves, is ideally suited to shaping with the mini-drill in its cradle. The rack itself is a pretty straightforward item to make and the example shown here was made from oak salvaged from an old wardrobe panel. The old stain was removed with an orbital sander, leaving some well-seasoned and attractively figured 9mm thick oak. Other thicknesses of timber could equally well be used, depending

Making the Book Rack

1 Make up a set of cutting patterns – remember you will need to alter the dimensions of the back support rail and joints if you use other than 9mm material – and stick the patterns in place on the wood so as to make best use of the available timber.
2 A scrollsaw is the easiest way to cut out all the parts for the book rack as well as the intarsia decorations. If you don't have one, a jigsaw will cope well enough with the main parts of the rack and a coping saw will handle



4 Locate the clamps precisely in place on their respective cradles and use a pillar drill to drill the holes for the cramping bolts through the clamps and into the cradles



5 Set the machine bolts into the lower holes with a little adhesive to retain them. Ensure you have left sufficient length to clear the tops of the clamping pieces when fitted



6 When the glue has hardened, cut off the heads of the bolts with a hacksaw or the mini-drill itself fitted with a small cut-off blade. Fit a pair of nuts and washers

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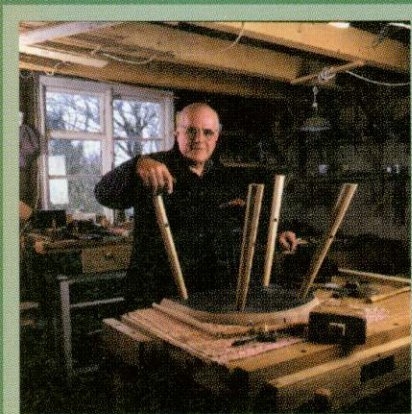


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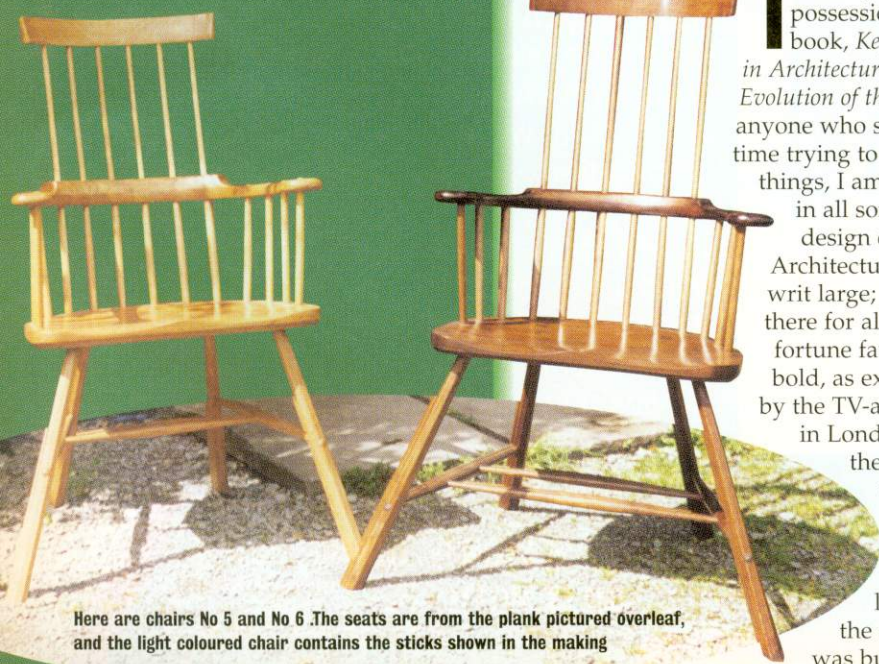
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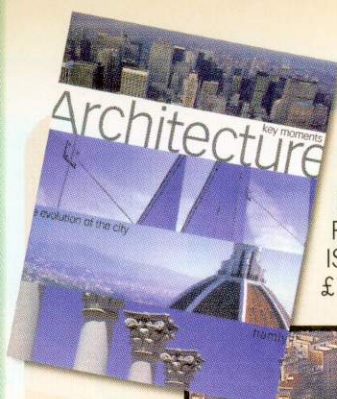
THE JOHN BROWN COLUMN



From the Art Deco splendour of the Chrysler Building to a Welsh stick chair is not such an outlandish step. John muses on the nature of design, and explains in more detail how he makes the sticks for his chairs



Here are chairs No 5 and No 6. The seats are from the plank pictured overleaf, and the light coloured chair contains the sticks shown in the making



Design moves

Key Moments in Architecture: the evolution of the city

Published by Hamlyn

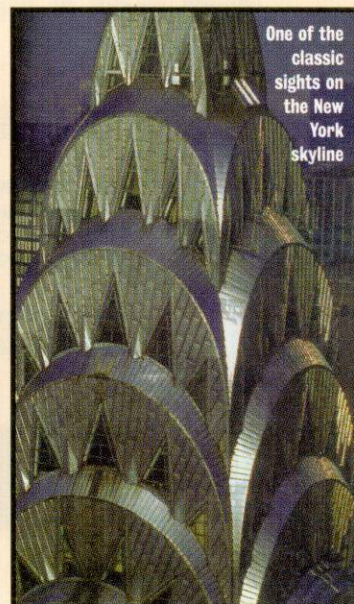
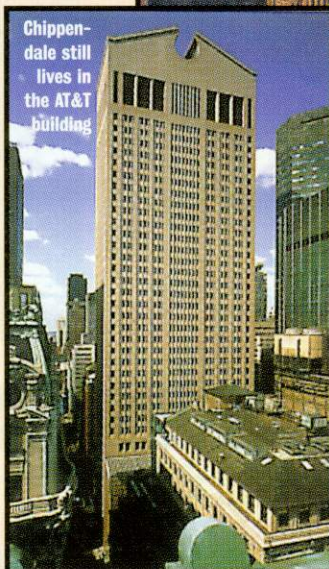
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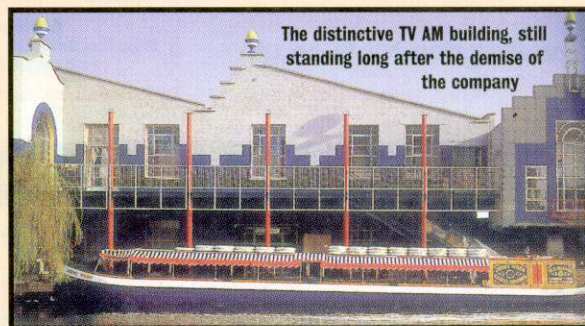
The weird and wonderful vision of Antoni Gaudi still draws the crowds to Barcelona



Chippendale still lives in the AT&T building



One of the classic sights on the New York skyline



The distinctive TV AM building, still standing long after the demise of the company

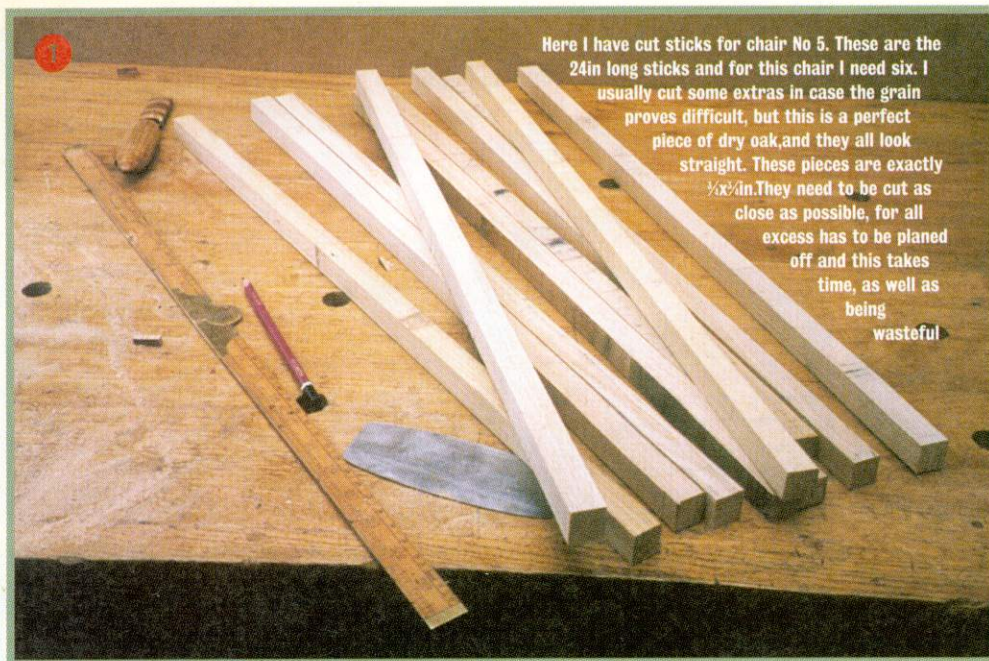
STICKS AND

I recently came into possession of a book, *Key Moments in Architecture: The Evolution of the City*. As is anyone who spends their time trying to make nice things, I am interested in all sorts of design endeavours. Architecture is design writ large; a mistake is there for all to see. But fortune favours the bold, as exemplified by the TV-am studios in London with their blue and white egg cups. The building still stands long after the company it was built for

disappeared. What an act of courage on the part of Terry Farrell. Humour in architecture – why not.

More startling in its day, but familiar in all the pictures of Manhattan, is the Chrysler Building, telling the world the age of the motor car is here with its references to hub caps in the crowning spire. Then there's the Chippendale split pediment capping the AT & T building. These were the unsubtle statements of modern commercialism, but they have become familiar to us, and I am impressed with the man who first 'doodled' the idea, and had the self-belief to see it through.

It is doubtful if any of these great 'designers' could actually have built their buildings. Fleets of highly skilled detailers and engineers did the calculations, and big building companies, with their equipment and expertise, carried out the work to specifications provided with the plans. But I keep coming back to the man who doodled with spires and hubcaps, perhaps during a boring meeting or on his table napkin, this



Here I have cut sticks for chair No 5. These are the 24in long sticks and for this chair I need six. I usually cut some extras in case the grain proves difficult, but this is a perfect piece of dry oak, and they all look straight. These pieces are exactly $\frac{1}{2} \times \frac{1}{2}$ in. They need to be cut as close as possible, for all excess has to be planed off and this takes time, as well as being wasteful

artist with a picture in his mind. What was just another boring skyscraper full of offices, instead, becomes the Chrysler Building.

How on earth did Gaudi put on paper the wonderful myriad of shapes and colours of the many spires of his Sagrada Familia Cathedral in Barcelona? It must have been quite detailed, for poor Antoni Gaudi was run over by a tram in 1926, and work is still in progress on this wonderful building.

These are some of the designs that thrill and mystify me. There are many, many others, but I am limited in my space and language, and I am trying to make a point! These designs are just a set of plans, and the

construction company is the craftsman. When I built boats I was purely a craftsman. The naval architect had drawn the plans, produced tables of offsets which allowed me to accurately draw out these plans, full size mind you, on the loft floor. From this 'lofting' I could make patterns for the various stations (cross sections), make a mould for the iron keel and send it to the foundry, or I could measure the timber I needed for the keel, sternpost, stem and apron, frames, beams, etc. If a problem occurred I could contact the designer and, more often than not, have an immediate answer on the telephone.



The first job is to plane off the four corners to make a reasonable equal sided octagon

The Meaning of Design

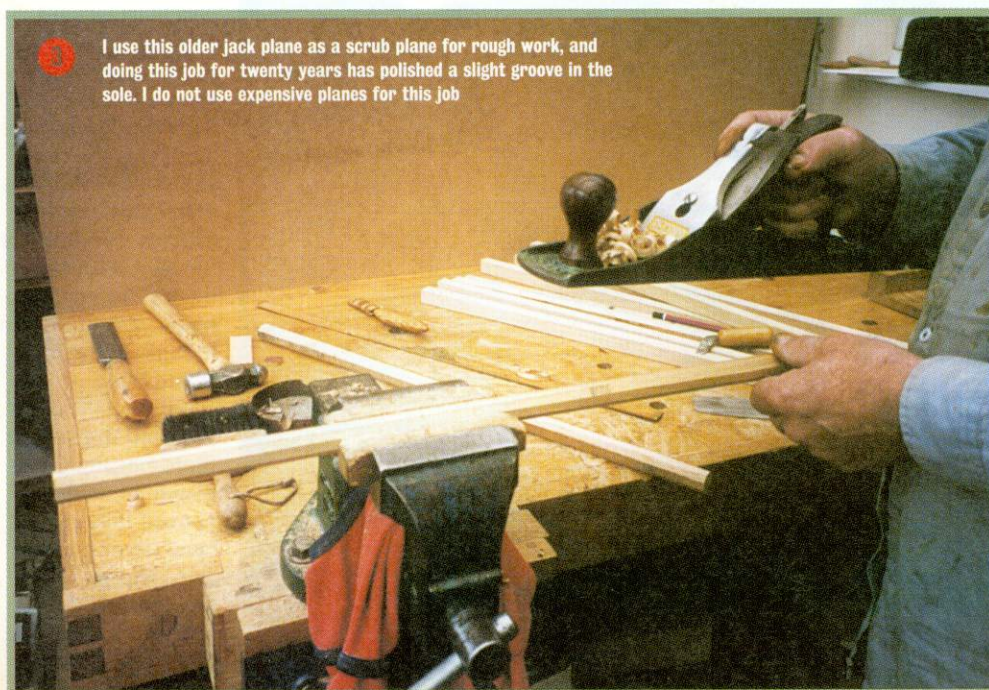
So what is design? The Oxford Concise is not all that helpful. It's a purpose by design, as in whether by accident or design. In my terms, as with many other designer/craftsmen, the part of the designer is left out. Other designer/craftsmen do drawings, but I do not, it's a skill I don't possess. I call my designs a 'think', and I think my next piece, then make it.

However, design covers much more than just appearance. We all want to make beautiful things – but they must work! A fine looking chair is useless if it isn't comfortable. An unattractive finish cannot be salvaged if the chair, or any piece of furniture, doesn't fulfill its purpose. Then again, the construction must be strong enough to last with reasonable use. So, worthy furniture must be strong enough, be fit for its purpose and be beautiful. Ah! if only!

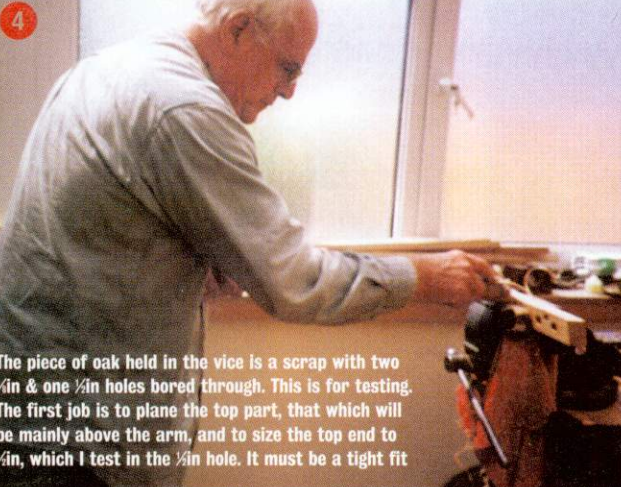
Back to the Chairs

In my work making chairs, my taste has changed since I made the first ones. Changes are sometimes forced on me because I made a mistake, or to suit the dimensions of the timber I have available. Now this could be called an 'accident', but I'll have none of it. I prefer to call it serendipity (the faculty of making happy and unexpected discoveries by accident – Oxford Dictionary) I will give an example. I made a chair from very small diameter oak trunks, destined for firewood which I rescued. The idea was to illustrate what could be done with the many hundreds of acres of coppice oak grown up as a result of first world war clear felling. I asked for the

AND STONES



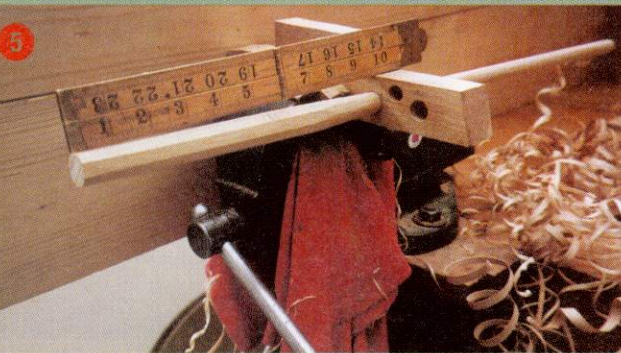
I use this older jack plane as a scrub plane for rough work, and doing this job for twenty years has polished a slight groove in the sole. I do not use expensive planes for this job



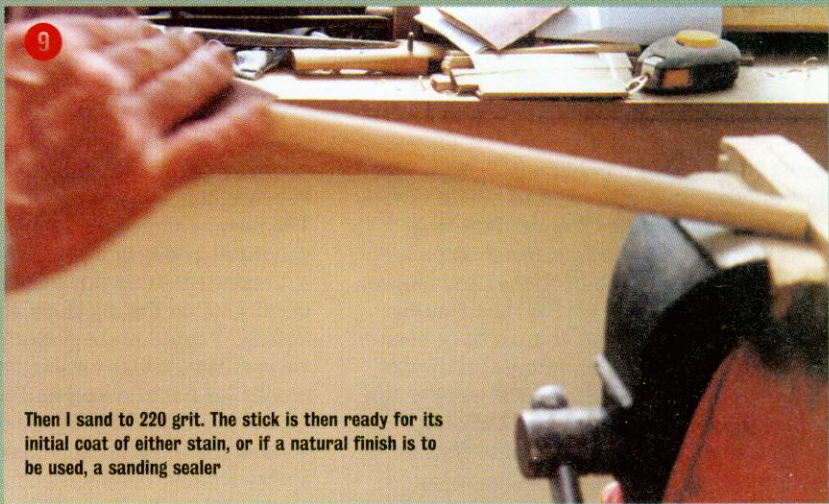
4 The piece of oak held in the vice is a scrap with two $\frac{1}{4}$ in & one $\frac{1}{4}$ in holes bored through. This is for testing. The first job is to plane the top part, that which will be mainly above the arm, and to size the top end to $\frac{1}{4}$ in, which I test in the $\frac{1}{4}$ in hole. It must be a tight fit



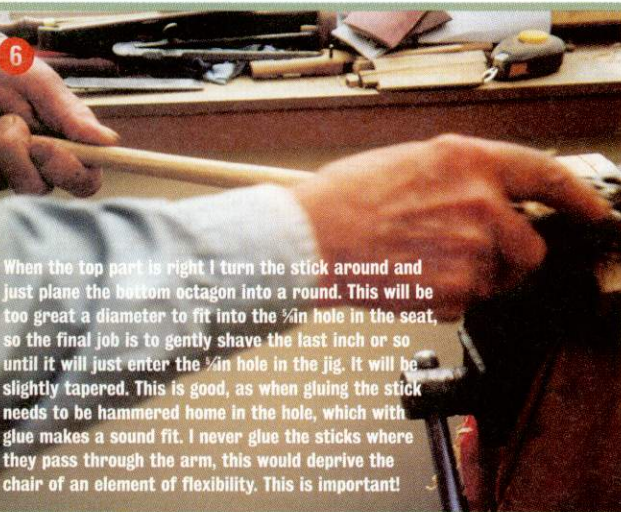
8 Next I use a dumb scrape to smooth in any 'flats' that remain. It does not do to take them all out, it is unnecessary



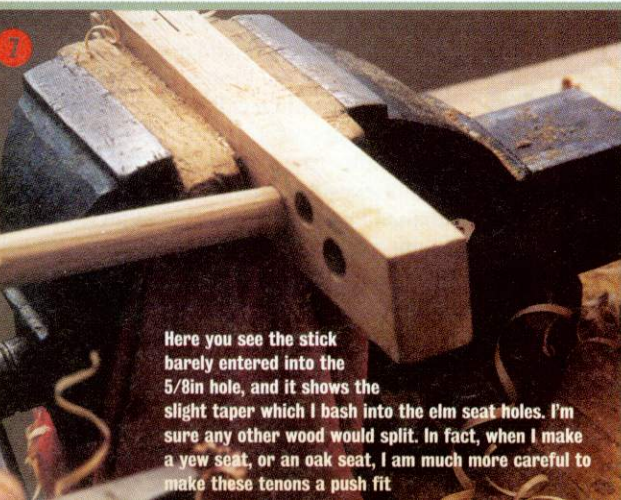
5 When the $\frac{1}{4}$ in top is right, I push the stick through one of the $\frac{1}{4}$ in holes, for it represents the hole bored through the arm doubler. I allow 1in for the tenon, plus $\frac{8}{16}$ in which represents the space between the top of the seat and the underside of the arm, so I need the stick to go through until it is $\frac{9}{16}$ in from the base of the stick to the jig. If it won't go in far enough, then I withdraw it a few inches and take off a shaving, turning the stick continually



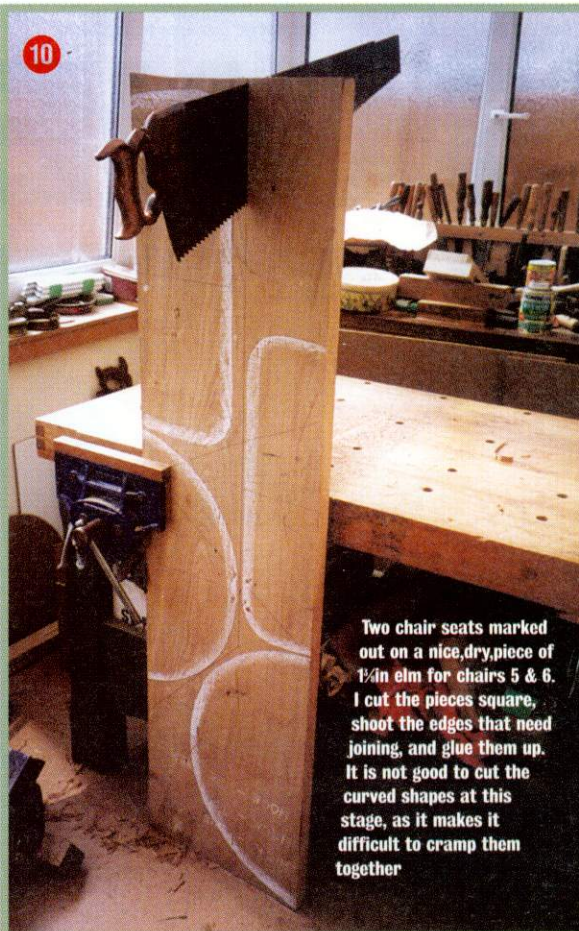
9 Then I sand to 220 grit. The stick is then ready for its initial coat of either stain, or if a natural finish is to be used, a sanding sealer



6 When the top part is right I turn the stick around and just plane the bottom octagon into a round. This will be too great a diameter to fit into the $\frac{1}{4}$ in hole in the seat, so the final job is to gently shave the last inch or so until it will just enter the $\frac{1}{4}$ in hole in the jig. It will be slightly tapered. This is good, as when gluing the stick needs to be hammered home in the hole, which with glue makes a sound fit. I never glue the sticks where they pass through the arm, this would deprive the chair of an element of flexibility. This is important!



7 Here you see the stick barely entered into the $\frac{5}{8}$ in hole, and it shows the slight taper which I bash into the elm seat holes. I'm sure any other wood would split. In fact, when I make a yew seat, or an oak seat, I am much more careful to make these tenons a push fit



10 Two chair seats marked out on a nice, dry, piece of $\frac{1}{4}$ in elm for chairs 5 & 6. I cut the pieces square, shoot the edges that need joining, and glue them up. It is not good to cut the curved shapes at this stage, as it makes it difficult to cramp them together

logs to be cut through and through at $\frac{1}{4}$ in thick but for some reason it was cut at $\frac{1}{2}$ in. This was a mistake and if I were making to a drawing and the specification said $\frac{1}{4}$ in oak, then it would have to have been returned. Anyway, It was free, and I was the boss, so I stacked it to dry. There was hardly enough thickness for the legs; with 1in at the top through tenon, it left only $\frac{1}{4}$ in to taper to the foot. When I had completed the chair it looked fine, much more elegant. Other people immediately noticed this, and I have never gone back. Design or accident?

I treat the making of chair sticks as a routine job, and

seldom mention how I make them. When I have taught in America, where they are used to making sticks out of cleft splits, I have great difficulty in getting them to understand the simplicity of the way I do it. Some of the clefts take ages on a shaving horse and require plenty of skill with the drawknife. From a length of sawn timber $\frac{1}{2}$ in square it takes about six minutes to make a stick ready for sealing or staining. From cut-to-length square I can make a full set of, say, six at 27in and eight at 12in and apply sealer in three hours. I usually allow half a day (four hours).

It is important that the grain runs the complete length of the sticks. Straight grain oak is sometimes difficult to find, but not a lot is required so I can afford to pay that little bit extra. Ash is easier to find, and in this context is just as strong, but staining it to match the brown of oak and elm is more difficult, and it is easier to rub through with sandpaper or even, when waxing, with fine wire wool. I have never used beech, but this is a common wood for sticks, legs and stretchers.

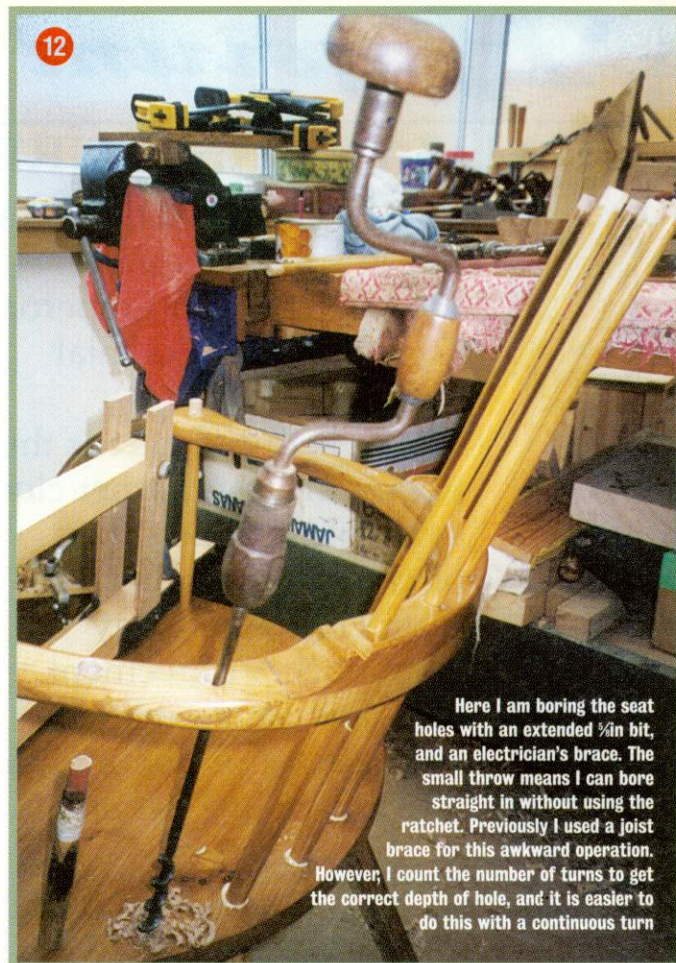
The Difference is in The Detail

The design of the two chairs shown overleaf only alters from the previous pair an iota, but each of these tiny changes is an exploration. For instance, in the dark oak chair, the arm is more slender, $\frac{1}{4}$ in in depth and width with the greater radius along the bottom. It is also

shorter, so that there is only room for three sticks each side. To me these chairs are totally different in character, but most people would have to look hard for differences beyond the obvious. Over the years the sum total of all the miniscule changes have produced different chairs, yet they are all made by the same craftsman.

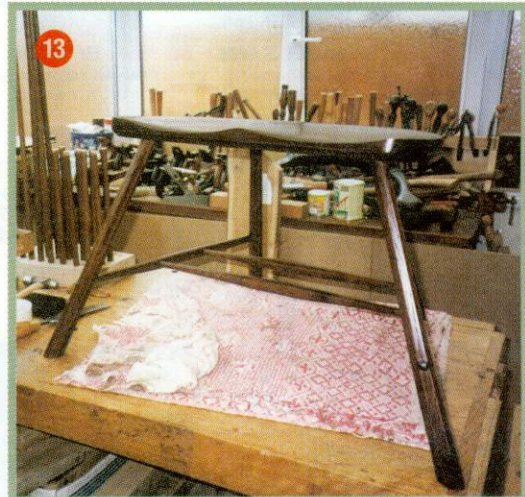
I have recently joined up with an assistant. I can hardly call him an apprentice as I seem to be working more slowly. Chris has managed to understand my philosophy, and is able to distinguish the important things from the unimportant points on a good chair, what can be left and what must be put right.

So now I can perhaps build some of my thinks. I might not have the imagination, or the courage, to deviate too far from the certain path, but a lemon can be broken up and represents only a few hours work and about £50 of materials. We'll see.



Here I am boring the seat holes with an extended $\frac{1}{2}$ in bit, and an electrician's brace. The small throw means I can bore straight in without using the ratchet. Previously I used a joist brace for this awkward operation. However, I count the number of turns to get the correct depth of hole, and it is easier to do this with a continuous turn

Gluing up. I have made this adjustable jig to support the arm whilst I am boring the holes. The front sticks are just temporarily in position, but not hammered down. The back sticks are glued, and later I will pick off the excess which will not stick to the waxed surface



Here you see a complete set of sticks, stained polished but not yet waxed. My next job is to wax everything, then scrape clean all the ends which will be glued. The arm can be seen on the bench behind

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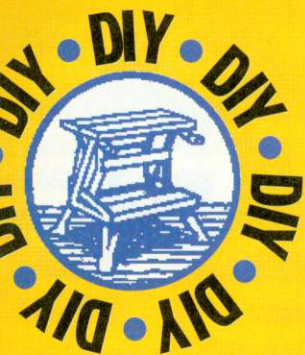
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HOME WORKS

Good Woodworking's essential guide to home maintenance and improvement

Metered access

Are your electric meters an untidy mess just inside the front door for all to see. Fear not – Andy King shows you how to hide them with a neat cupboard



Before: an ugly mess of cables and meters just inside the front door. Mmmm.... lovely

Unless you live in a relatively new house, the chances are you will have a hideous group of electric meters in the most conspicuous place you can imagine, usually just inside the front door. It doesn't take much effort to box these in with an attractive lightweight wall cabinet with a pair of doors for access.

For most situations, the main cabinet carcass need be little more than a 45x20mm front frame with two MDF sides and a bottom rebated into the rear edges. This is made up in the workshop then fitted around support battens

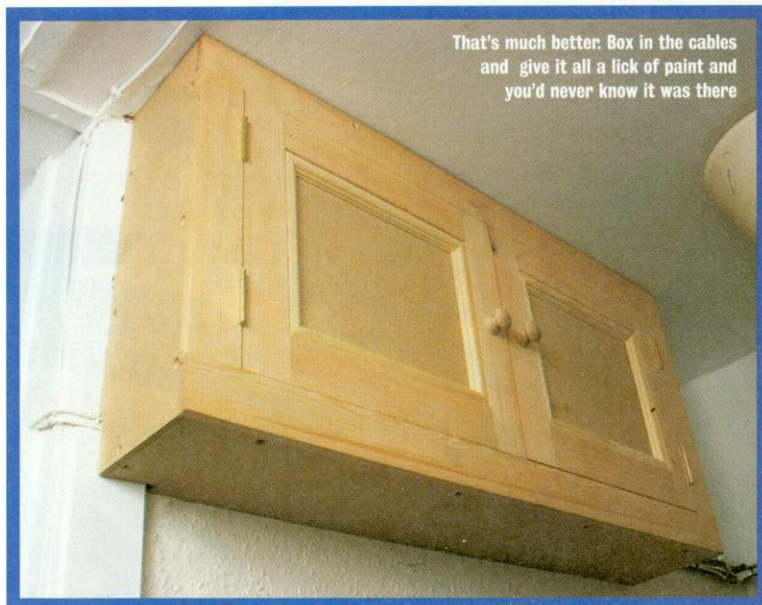
fixed to the wall and ceiling, scribing the side boards to a neat fit against any imperfect walls. Assuming that your cabinet will be painted, the doors have MDF panels held in grooves,

with thin decorative face mouldings mitred around the inside faces to give the impression of a sunken panel. A long run of meters may require extra doors.

Measuring Up

Determine the size of your cabinet, allowing about a 50mm access clearance to the sides and in front of the board that your meters are mounted on if

possible. Do not cut this board; the electricity board may need to install different equipment here from time to time. Make sure that the carcass rails don't obscure any fuses that may need changing, or the meter dial, and that any flaps or doors on consumer units can be opened. Also, as meters are generally above head height, make sure there is clearance underneath, both for your head and for any



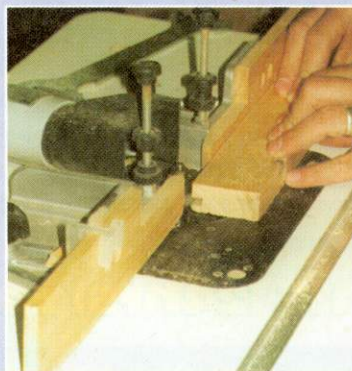
Ten steps to a perfect meter cabinet



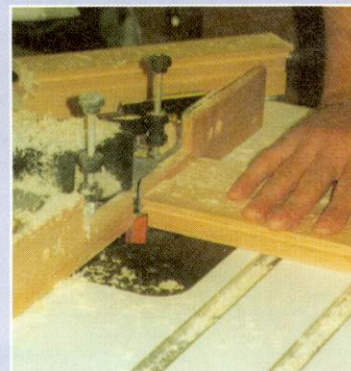
1 The carcass frame can be biscuitied together rather than morticed and tenoned. Use 2x1 PAR pine



2 Run rebates in the rear edges of the assembled frame to take the 6mm MDF sides and bottom



3 Use a 6mm slotting cutter to work grooves for the panels into all door frame components. A router table is best for this



4 Now rout small stub tenons on rail ends to fit the grooves snugly. Make sure the rails are presented squarely

TIP

There is no reason why your cabinet could not be made of hardwoods but don't make it too heavy. remember, you will have to lift it above your head and hold it there to fit it!

doors that may open into the adjacent space. Finally, check that any nearby light fittings will not foul the doors on your carcass, especially if these are batten fittings as mine were rather than a ceiling rose and cable.

Making the Cabinet

1 Cut the front frame members to length and joint the corners with either biscuits or simple halving joints, glued and screwed from the back face. Run the stiles full length with the rails butted to them (in the case of biscuit joints), or let the lap of the joint run behind the face of the stiles (for a halving joint). Check the diagonals for square, and ensure that the frame is not twisted.

2 Set the router to cut a 6x10mm rebate into the rear side and bottom edges of the framework to let in the 6mm side and bottom panels of the box. There's no top panel used here as the carcass butts straight to the ceiling.

3 Use either a 6mm slotting bit or 6mm straight bit to run the grooves 6mm in from the back face of the door rails and stiles,

to a depth of 7mm. The easiest way to do this is in the router table, although it can be done with a hand held router using a straight bit if taken carefully. Two fences, one either side of the timber, make this an easier task. The slotting cutter is more accurate and is a handy addition to your router cutters.

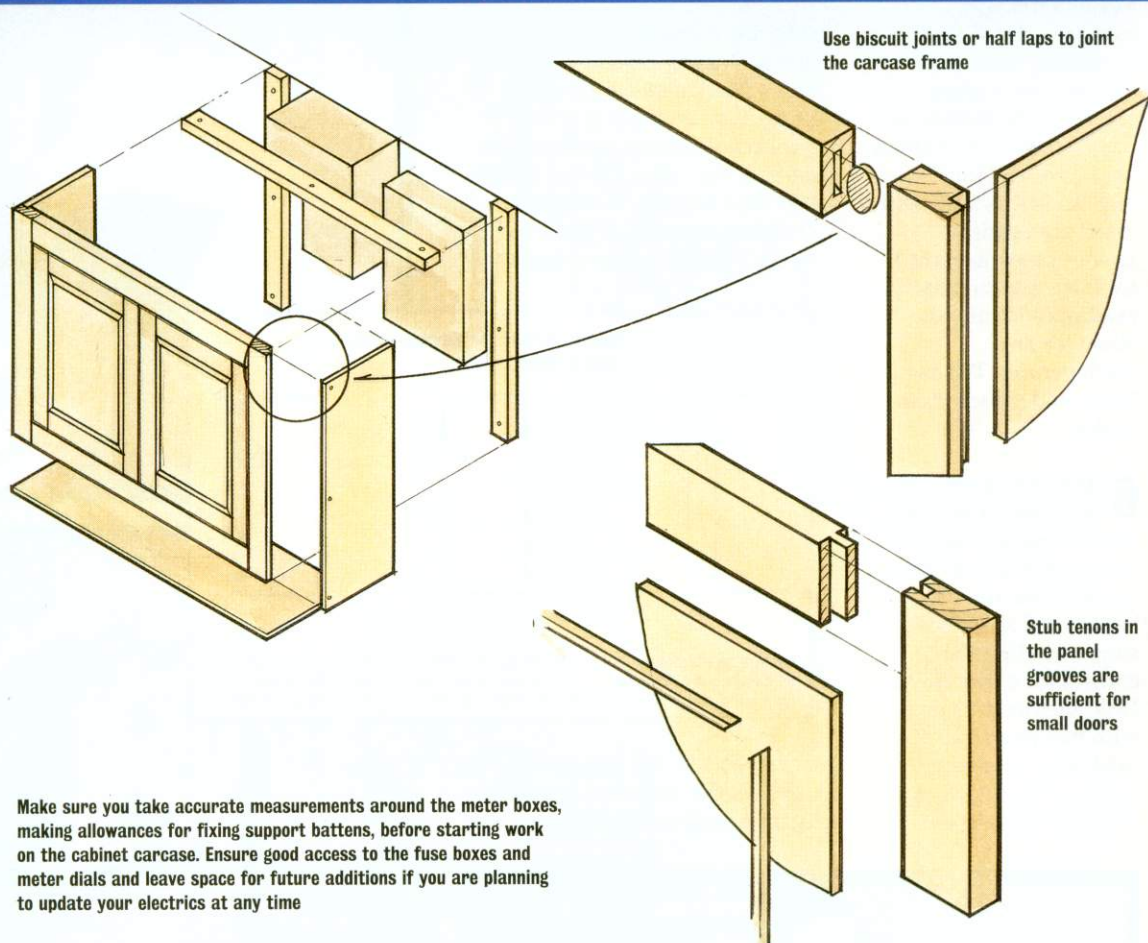
4 Cut corresponding stub tenons in the rail ends to fit the grooves. Ensure these are a

good fit as the door relies only on glue for strength. Set the fence on the router table to cut the tenons on the rail ends with a straight bit, using the groove in the rails as a guide to set the correct height for the cheeks. The tenons can be cut just as easily with a tenon saw if you don't have a router table, using a mortice gauge to mark the cheek thicknesses to match the grooves.

5 Dry assemble the doors, then measure and cut the panels. Allow 2-3mm all round for expansion. Glue and cramp the doors on a flat surface with the panels in position, and check each door for wind and square.

The beads are machined on the router table using either a multi profile bit or combining various moulding bits to achieve a pattern which suits. Alternatively, shop bought

Construction details for a meter cabinet



Use biscuit joints or half laps to joint the carcass frame

Stub tenons in the panel grooves are sufficient for small doors

Make sure you take accurate measurements around the meter boxes, making allowances for fixing support battens, before starting work on the cabinet carcass. Ensure good access to the fuse boxes and meter dials and leave space for future additions if you are planning to update your electrics at any time



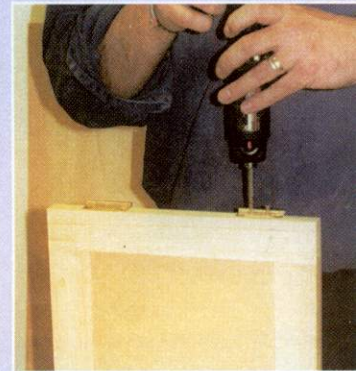
5 Assemble the doors on to the MDF panels and check for square and twist before setting aside for the glue to dry



6 Rout small plant-on mouldings to go round the panels. These are available from DIY stores in a variety of profiles if you prefer



7 Mitre the mouldings around the panels. Mark each section to its exact place as there may be minute differences in length



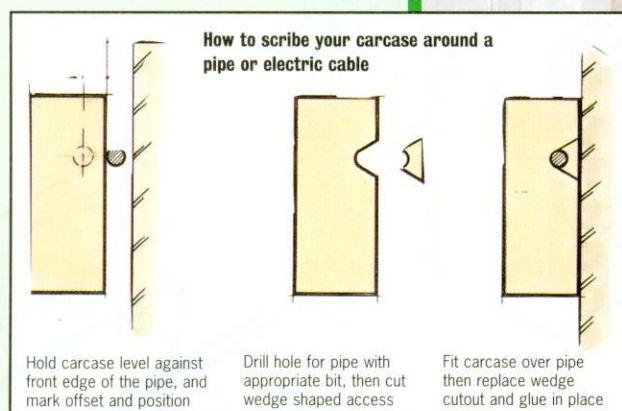
8 Flush mounted hinges will be sufficient. These are generally fitted with their outer edge aligned on the inner frame edge

profiles are available. Work the beads on finish sized strips or on to a wider board, cutting each off after moulding. The latter method offers more control of the timber as the profile is cut. A small mitre box and fine toothed saw is sufficient to cut the beads (a Japanese saw is perfect for this), marking each bead individually to allow for any discrepancies. Pin the beads and punch them under.

6 Hang the doors using 2in quick fit hinges. Screw a piece of scrap timber centrally to the inside of the top or bottom rail as a door stop, rounding the corners for a neat finish. Hold the doors closed with two brass ball catches or magnetic catches. Finally, fit a pair of knobs or handles.

Fitting the cupboard

Offer the completed box up to the wall and ceiling (with or without doors fitted, depending on how heavy it is), attempting to hold it level in both planes, and mark any parts of the sides, top and bottom that need scribing to fit uneven wall or ceiling surfaces. If you're lucky, a pencil's width will be enough to



accommodate any adjustments, but more wobbly walls may require you to cut a small scribing block to the

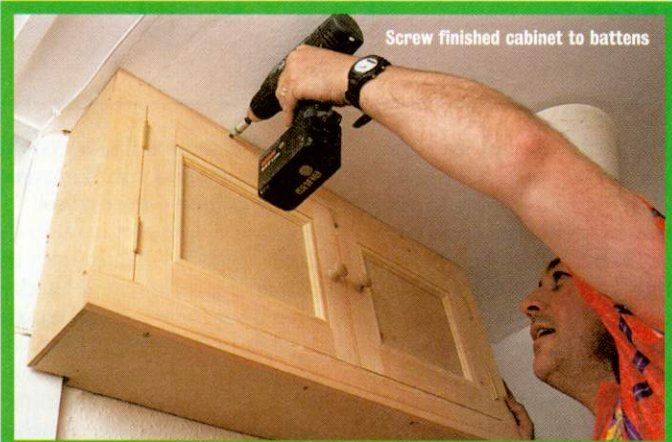
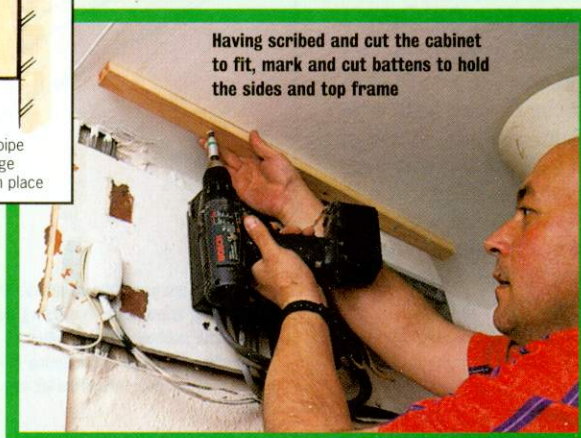
maximum offset to enable you to scribe a constant width. If your walls and ceilings are very uneven, aim to scribe the sides and the underside of the carcass to the best fit at the expense of the top edges, where they meet the ceiling, as any gaps here can always be covered with a small moulding if they are visible from eye height. Saw the sides and bottom with jigsaw or coping saw.

With the carcass scribed to fit, offer it up again and mark out a line on the ceiling to position an internal fixing batten to carry the front of the box. Ensure you have a good firm fixing as this supports the weight of the box. If possible, screw through into the ceiling joists. A stud detector is ideal for finding these (see test in GW 95). Alternatively, if the joists run in the opposite direction, use cavity fixings. Mark and fix two battens to the wall to take the sides of the cupboard, and a third to take the back edge of the bottom panel. (You will of course have left sufficient fixing space for

Hold the carcass in place and check for level and vertical then scribe the shape of the walls, ceiling and any protruding pipes architraves, etc



Having scribed and cut the cabinet to fit, mark and cut battens to hold the sides and top frame



TIP

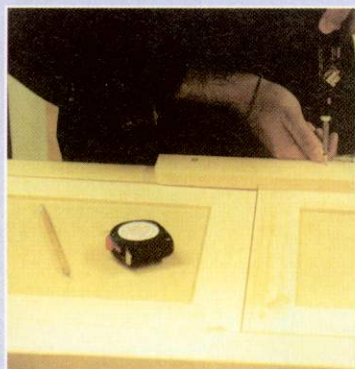
When sawing the scribed profiles, tilt the blade a little to undercut the board very slightly towards the inner faces. This will enable the profile to fit more accurately to a bulging wall surface and will also enable you to make a fine adjustment more easily with a bit of sandpaper or a file for a perfect fit

this when making the carcass!) Fix the carcass sides and bottom to the battens with 25x3.5mm screws. Screw the front in position through the frame into the ceiling batten using 50x3.5mm screws.

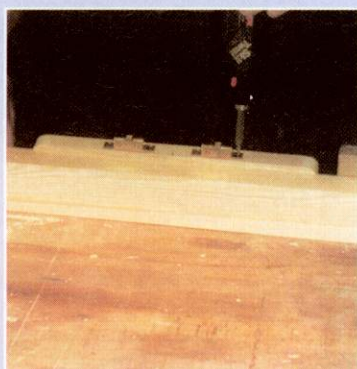
Finally, check the doors still line up and close correctly and adjust if necessary. Fill any visible screw holes or scribing gaps you may have overlooked and prepare for painting. It pays to paint the cabinet to be as unobtrusive as possible, blending it in with the wall and ceiling.

**MAKE A
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Fitting the stops and catches



9 Screw a length of batten centrally behind the bottom frame to act as a door stop. Round over the corners for a neat look



10 A pair of brass ball or magnetic catches will secure the cabinet doors and you'll need a pair of knobs

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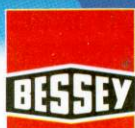
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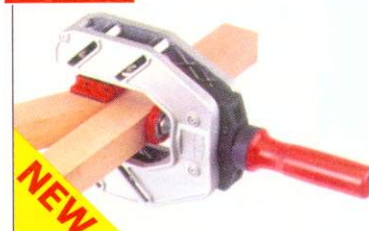
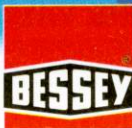


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-G25Z	120mm Depth 250mm Span	23.99
-G30Z	140mm Depth 300mm Span	29.99
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-G100Z	120mm Depth 1000mm Span	55.99

EKT 55 EDGING CLAMP

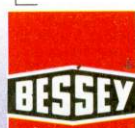


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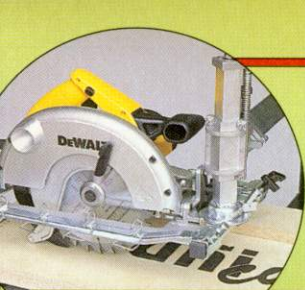
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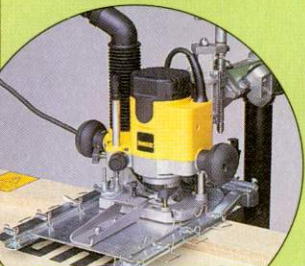
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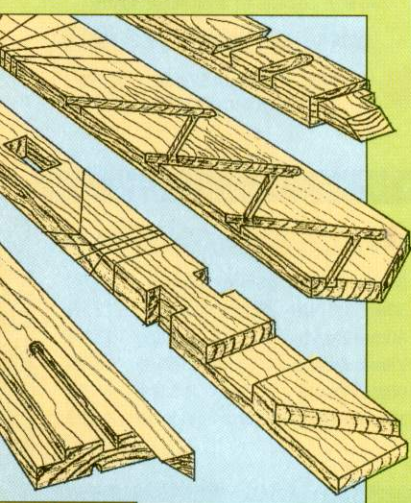
Rip and crosscut work to the precise dimensions and angles you require.



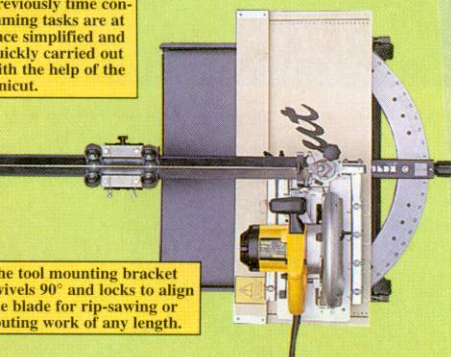
Machine rebates, tenons, housings etc. anywhere in a work face or edge.



Cut metals, pre-score or groove stone, ceramics etc. with speed and accuracy.



COMPLISH MORE: previously time consuming tasks are at once simplified and quickly carried out with the help of the Unicut.

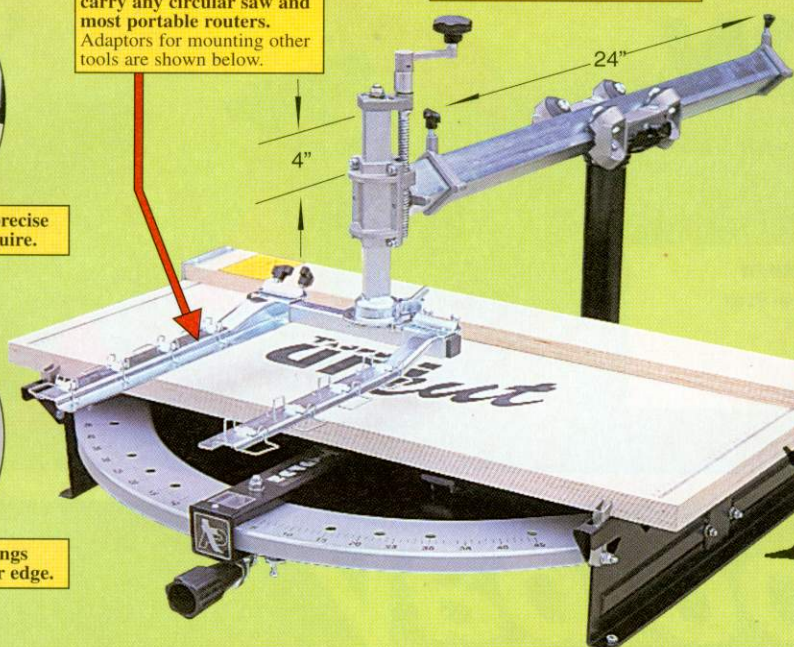


Tool mounting bracket swivels 90° and locks to align the blade for rip-sawing or routing work of any length.

Radial arm adjustment: 45° - 0° - 45° (0, 15, 22 1/2, 30 & 45° pre-sets)
 Cutting stroke: 0 - 24" (620mm) with adjustable travel stops
 Vertical adjustment of toolholder over table: 0 - 4" (100mm)
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 Table size: 32" x 12" (810 x 305mm) with dual scale graduations
 Table thickness: 3/4" (19mm), adjusts across table width
 Weight (machine): 40lbs (18kg); optional floorstand: 24lbs (11kg)

This adjustable tool mounting bracket is designed to carry any circular saw and most portable routers. Adaptors for mounting other tools are shown below.

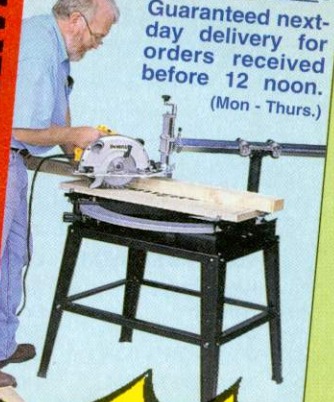
Arm has 0 - 24" cutting stroke and 0 - 4" vertical adjustment.



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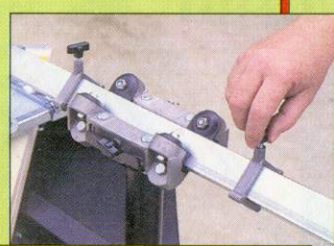
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Performance planers



Andy King finds 17 reasons to buy rough sawn timber when he tests a range of power planers



With a planer fitted into a thickening cradle, you can prepare timber up to about 80x80mm fairly accurately. There is no power feed though, so you will have to push and pull timber through manually. Always use a push stick on short stock

My old school woodwork teacher would often say 'Now boys, if you're planing or sawing, you should take a boxer's stance'. Luckily, Frank Bruno wasn't boxing at the time, otherwise we'd have all been flat on our backs...

It was sound advice, though. Planing is best done with a solid stance. Legs should be slightly apart for good balance, transferring your weight from the back one to front as the plane is pushed across the wood. Pressure should also move from

the toe of the plane to its heel as the cut is made.

Although most power planers can be used single-handed for fast, rough sizing, to straighten timber similar rules apply. There should be greater emphasis on keeping pressure on the right part of the machine as the cut is made, to prevent the cutters from gouging out the start and finish of the cut.

DIY or Professional?

We've tested both DIY-rated and industrial planers. Many

woodworkers use a planer simply for shooting the edge of a door or truing up a board. Unless you are a site chippy or shopfitter, a DIY tool should be fine. Light enough to be used in one hand, most will take cuts up to 1.5mm at a time.

Weight and motor rating is important for the type of work you'll be doing. A lightweight model is handy for vertical work, but higher-powered planers are better taking bigger cuts for initial stock sizing.

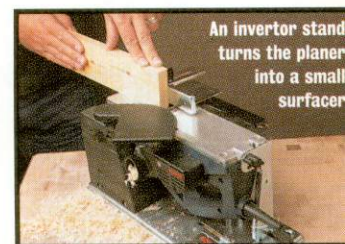
Motors, Blades and Blocks

DIY planers are equipped with motors from around 500W upwards. Professional, or industrial, machines are heavier and have bigger motors (typically 700 to 800W). These will cut deeper rebates, up to about 25mm.

The cutterblock is the heart of the planer. Twin blades are clamped in a cylindrical block, and this rotates via a belt drive. Cutterblock speeds vary from 12,000rpm to 18,000rpm. Generally, the larger the block diameter the slower the speed.

All the planers tested are

fitted with 82mm disposable blades, so you can easily prepare 75mm wide timber. Replacement blades cost about £8 a pair. These are mostly solid tungsten carbide, and reversible. The exception is the Makita 1923BD, which has resharpenable HSS or laminated blades.



Power Planer Safety

The power planer is potentially one of the most dangerous power tools. Keep both hands on the handles and you can't go far wrong. You can operate most planers with one hand, but make sure you keep the other one well out of the way. Eye and ear protection is essential.

Make sure work is cramped down, or held in a vice or Workmate. Allow blades to stop before you place the tool down.

What to look for in a power planer

- Want to take deep cuts? A DIY-rated planer will only cut about 1.5mm at one pass. For cuts of up to 3mm in one go you'll need a professional machine, or make do with multiple passes.
- What about rebates? You can cut these as deep as 25mm with some heavy duty planers. Check whether a side fence and depth stop is included, though.
- You can buy an inverter stand for some planers, turning them into surfacers. An ideal way of preparing small dimension timber.
- It's possible to use some planers as small-scale thicknessers. **Bosch, Metabo** and **DeWalt** make thicknesser stands to fit their professional planers, but these are not cheap.
- Only six planers tested had a dustbag provided. These tend to fill rapidly, but are better than having chippings fly across the workshop. A portable extractor is the best way of containing the waste.

Black & Decker KW715

BLACK & DECKER'S KW715 is the lightest of the lot. It's powered by a 550W motor, the cutterblock revolving at 15,000 rpm. Maximum width of cut is 82mm, with a depth of 1.6mm at one pass.

You set the depth by rotating the front knob. An indicator shows depth of cut plus a P symbol. This is for parking the tool when not in use, preventing the cutters from grounding on the bench or work surface.

Twin V grooves in the front aluminium sole plate enable you to make quick chamfers. This is 5mm thick, while the rear one is thin pressed steel. Overall length is 280mm.

Rebates can be formed to a depth of 8mm, although you'll need a fence, which is an optional extra. A hex key for changing the cutters is stored at the back of the housing.

An outlet to the right side ejects chips, plus there's an adaptor for hooking up to an extractor. Not surprisingly, no dustbag is supplied.

The D handle has a textured grip and is quite comfortable.

I found the KW715 a bit harder to push than the others on test. The finish produced by



the cutters wasn't as good as most of the others.

The Black & Decker KW715 is made in Britain.

GW VERDICT

- ⊕ Two year warranty
- ⊖ Not the best finish on timber

VALUE FOR MONEY ●●●●○

OVERALL ●●●○○

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Skil 1512



thick aluminium with two chamfer grooves, while the rear one is a thin steel plate. A hinged parking shoe is fitted at the rear. Interestingly, the cutterblock is made from individual plates laminated together vertically. A hex key is used for changing blades, and this is stored on the side of the body.

SKIL'S 1512 DIY-rated planer is compact and lightweight, measuring 260mm and weighing 2.3kg. It's built in Holland and has a 520W motor. The mains cable is a paltry 2.3m.

Unlike the other planers tested, Skil provide an upper front handle. This is separate from the depth-setting knob, and more comfortable to grip than the other planers. It gives a good balanced feel when planing two-handed.

The trigger is better for right handers than left. Maximum cutting depth is 1.2mm with a 10mm rebating facility. A plastic depth stop is included for this, but no fence. A sprung plastic guard covers the edge of the block when surface planing.

The front sole plate is 5mm

GW VERDICT

- ⊕ Comfortable front grip. Parking shoe
- ⊖ Short cable

VALUE FOR MONEY ●●●●○

OVERALL ●●●○○

RRP inc. VAT £39.99

SKIL ☎ 01895 834466

Power Devil PDW 5016

WE FIRST TESTED the Power Devil in GW 93, and found there was a flaw with the sole plate. This resulted in the planer being unable to straighten timber properly. Although the same model, the one sent for this test fortunately did not suffer from the same problem.

Powered by a 600W motor, the block rotates at 16,000rpm. The cut wasn't as good as that from most of the other machines. Maximum depth of cut is 2mm, adjusted with the front knob. Index marks on the casing are in .25mm increments.

This is the only planer with no rebating facility. Its front sole plate is 5mm thick aluminium with a groove for chamfering, while the rear is thin chromed steel.

I found the handle pretty comfortable. The power switch is better for right-handed use, the safety lock-off button depressed before the trigger can be pulled.

Chips are ejected to the right of the tool. The dustbag could easily double as a wind

sock, it's so big! Even so, the small chip ejector port means the bag clogs easily. Also supplied is a spare drive belt.

Assuming the planer originally tested was a rogue machine, the Far Eastern Power Devil is a good choice for the occasional DIY user. Don't expect a top quality tool at this price, though.

Best Value DIY

GW VERDICT

- ⊕ Large dustbag
- ⊖ Short cable and no rebating possible

VALUE FOR MONEY ●●●●○

OVERALL ●●●○○

RRP inc. VAT £29.99

POWER DEVIL ☎ 01788 547547



Bosch PHO 16-82

BOSCH'S PHO 16-82 planer is made in Switzerland and is DIY-rated. It includes a simple feature which some of the bigger professional models would do well to copy, namely a small parking shoe. This prevents the cutters from grounding if the planer is put down with the cutterblock still spinning. It pivots away from the rear sole as you make the cut.

This is a light duty planer, ideal for single-handed use, although when working like this, you should take extra care when starting and finishing cuts. The Bosch has excellent balance and gives a good finish. Its depth adjuster is easy to read.

Measuring 250mm overall, the front sole plate is 2mm thick aluminium, with a single chamfer groove. At the rear it's from thin steel.

The cutterblock is made up of thin plates sandwiched together.

You can rebate up to 8mm deep, but no

fence is supplied.

A dustbag is supplied and can be fitted to either side of the planer. However, the rather small chip ports mean the bag nozzle blocks before it has a chance to fill. A neat lever directs the chips to left or right, a simple but effective feature for planing in restricted areas.

GW VERDICT

- Can deflect chips either side. Park shoe
- Short cable, bulky dustbag

VALUE FOR MONEY ●●●●○

OVERALL ●●●●○

RRP inc. VAT £54.99

BOSCH ☎ 01895 834466



Hitachi P20SA2

HITACHI'S P20SA2 industrial planer is an impressive performer, and is made in Japan. The 310mm long solid aluminium sole plates (8mm thick) give a good indication of stability and durability. The front one has a single



shape, and with no dustbag or extractor adaptor supplied, the removal of waste can be a bit of a problem.

Under the D handle is the standard safety trigger/lock-off button combination, suited more for right-handers.

chamfer groove.

A meaty 720W motor powers the aluminium block at 14,000rpm. A basic fence and depth stop are standard, for rebating to an impressive depth of 25mm. A plastic guard covers the exposed edge of the cutterblock. You rotate the front knob for setting cutting depth (maximum 3mm). There's no indication of maximum or zero cut, though, which can make adjustments confusing.

The chip ejector is an odd

Solid sole plates, good balance and a comfortable handle make this Hitachi an excellent machine.

GW VERDICT

- Best rebating capacity
- No dustbag. Confusing depth knob

VALUE FOR MONEY ●●●●○

OVERALL ●●●●○

RRP inc. VAT £276.13

HITACHI ☎ 01908 660663

Ryobi L-180

RYOBI'S L-180 PLANER is a 500W, medium duty machine. It's compact, measuring 285mm overall. Weighing just 2.6kg, it's ideal for one-handed work. It will take a maximum cut of 1mm per pass, adjusted with the front knob. Depth graduations on the knob are easy to read, but not terribly accurate.

Rebating to a depth of 13mm is possible, and a basic fence is supplied for this job. Both sole plates are aluminium (6mm and 7mm thick), the front one with chamfer groove.

As with similar planers with smaller motors, the cutterblock runs at a higher speed than the big machines. In this case, it's 17,000rpm. Blades are fairly

easy to change with the box spanner provided.

There's a chip outlet on the right, and an adaptor is supplied for hooking up to an extractor. No dustbag is included.

The Japanese-built Ryobi has a good, comfortable grip and is very well made. The finish on 50mm pine was superb.

Recommended



GW VERDICT

- Excellent finish to timber
- Limited depth of cut. No dustbag

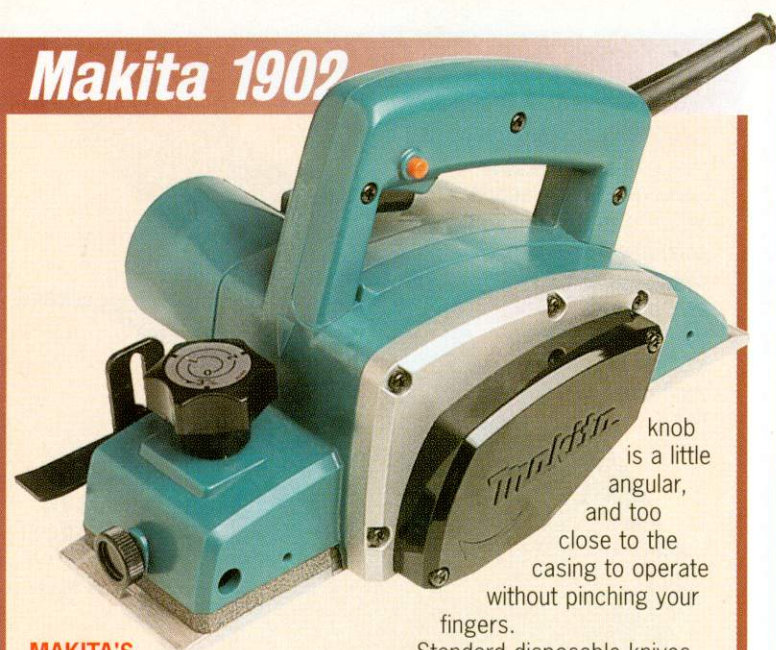
VALUE FOR MONEY ●●●●○

OVERALL ●●●●○

RRP inc. VAT £186.83

RYOBI ☎ 01452 724777

Makita 1902



MAKITA'S 1902

PLANER is a medium-duty power tool. It has 7mm (front) and 9mm (rear) thick aluminium sole plates, making this a sturdy tool despite its small capacities. The front sole has a chamfer V groove underneath.

Rebates up to 9mm can be formed, but a fence or depth stop isn't supplied for the purpose. Maximum depth of cut is 1mm per pass, set with the star-shaped front knob. Actual cutting depth is indicated on the knob, but there's no stop to prevent the planer from taking deeper cuts beyond its limit of 1mm. This could put excessive load on the 550W motor.

The planer has good balance

knob is a little angular, and too close to the casing to operate without pinching your fingers.

Standard disposable knives are fitted in the aluminium cutterblock. These are locked with a bolt-down plate. A box spanner is supplied for changing these, plus a setting jig.

No dustbag is supplied, although there is a large diameter port fitted to connect up to an extractor. One of the quietest planers tested, the Japanese Makita would be ideal for fine stock removal.

GW VERDICT

- ⊕ Quiet motor
- ⊖ Limited depth of cut

VALUE FOR MONEY ●●●●○

OVERALL ●●●●○

RRP inc. VAT £132.78

MAKITA ☎ 01908 211678

Draper Expert P882

THE SLEEK, WEDGE-SHAPED

Draper Expert P882 planer is from their new range of power tools. Overall length is 290mm, and it has sturdy aluminium sole plates (6mm and 11mm), the front one including a single chamfer groove.

Fitted with a sizeable 750W motor, this European-made planer operates at 13,000rpm. Rebates as deep as 24mm can be made using the fence and depth stop provided. A guard shields the cutterblock end and flips up as you cut the rebate.

Unlike most planer fences, the one fitted to the Draper can be tilted for making bevel cuts. This is a nifty addition. Maximum depth of cut in one pass is 3mm, adjusted with the front knob. This has to be rotated a few times to reach maximum depth, which can make setting awkward.

Not surprisingly, this Draper tool favours right handed woodworkers. Although its angle is

similar to that on other planers, the handle design and rear position make this tool pretty comfortable to hold. An adaptor for an extractor is supplied, but no dustbag.

The cable is a bit short at 2.8m, but despite this the professional Draper Expert P882 is an excellent performer.

GW VERDICT

- ⊕ Powerful motor. Tilting fence
- ⊖ No dustbag

VALUE FOR MONEY ●●●●○

OVERALL ●●●●○

RRP inc. VAT £198.58

DRAPER ☎ 02380 266355



Metabo Ho 0882

METABO'S Ho 0882 planer is an industrially-rated power tool. It's made in Germany, and build quality is excellent. The aluminium cutterblock runs at 12,000rpm, powered by an 800W motor. Although this makes it the slowest on test, it doesn't detract from the performance. The finish on timber was among the best.

Both sole plates are aluminium, the front one with a chamfer groove. The rear one (7mm thick) includes a sprung parking shoe, a very useful feature. Overall length is 300mm. You can cut rebates up to 23mm deep, and a fence and depth stop are supplied for this. Metabo have

designed one of the best depth adjusters. It's positive and simple to use.

An extractor adaptor is provided, but no dustbag. You can direct chippings

to either left or right by flipping over a plastic paddle lever.

The handle is slightly different from the other planers as it sits horizontally. This makes the Metabo ideal for planing low

down, but I found it a little uncomfortable working at a bench when a fairly high stance is required. Optional extras include a dustbag, thicknesser and inverter stand.



GW VERDICT

- ⊕ Deep rebates. Waste ejected either side
- ⊖ No dustbag

VALUE FOR MONEY ●●●●○

OVERALL ●●●●○

RRP inc. VAT £276.13

METABO ☎ 02380 732000

Hitachi P20SD

HITACHI'S MAMMOTH P20SD planer is similar in style to the old metal-bodied Wolf machines. It's the biggest on test in size, weight and power. An 1100W motor drives the cutterblock at 16,000 rpm. Weight is 5.3kg, making it more suitable for bench or horizontal work. Overall length is 400mm, falling between jack and fore bench planes in terms of size. This Japanese machine would be perfect for shooting doors on site.

Build quality is superb. The motor assembly sits above the hefty aluminium sole plates. These have flanges to offer even more rigidity, and there's a single chamfer groove under the front plate (9mm thick).

The cast aluminium fence is fabulous. It's everything a planer fence ought to be, with two guide rods. Faces are milled for precision 90° planing. Rebates of up to 20mm can be cut using the fence and depth stop. Maximum depth of cut is 3mm per pass, adjusted via the front knob. This has no limit stop, so initial settings can be a bit hit or miss.

An extractor adaptor is provided, but no dustbag. There's a decent cable fitted, measuring four metres. A fitted plastic case is standard.

Both the Hitachi P20SD planer and its fence ooze with

Recommended



class, although it may be too heavy for some jobs. A parking shoe would make this beast perfect.

GW VERDICT

- ⊕ Superb fence. Extra long sole plates
- ⊖ Too heavy for some jobs

VALUE FOR MONEY ●●●●○

OVERALL ●●●●●

RRP inc. VAT £351.33

HITACHI ☎ 01908 660663

DeWalt DW677

THE SMALLEST PLANER in DeWalt's range, the Italian-made DW677 is equipped with a 600W motor. Depth of cut is 1.6mm, and cutterblock speed is 15,000rpm. Rebating is limited to a disappointing 11mm, and a sturdy fence is provided for this. The rubberised depth adjuster is easy to use, and has a good grip. Although it works well, it's not so easy to read when actually planing.

The front sole plate unusually has three chamfer grooves. At the rear of the machine is a park shoe. You change the blades with a spanner, although there's no storage for this. Included are a side fence and dust adaptor, but no dustbag.

Although limited in capacity, DeWalt's

DW677 planer is a sturdy, well-made machine. It balances well, and cable length is an impressive four metres.

GW VERDICT

- ⊕ Excellent build. Long, heavy cable
- ⊖ Limited cutting capacities

VALUE FOR MONEY ●●●●○

OVERALL ●●●●○

RRP inc. VAT £269.08

DeWALT ☎ 01753 567055



Skil 1525

Best Value Professional



FROM SKIL'S

professional range, their 1525 planer is powered by a gutsy 750W motor. This enables the aluminium cutterblock to rotate at 13,000rpm. Cutters are changed with a spanner stored on the casing.

The hefty front aluminium sole plate is wedge-shaped, and slides upwards as the depth knob is operated. This knob is one of the clearest to read. Maximum cut per pass is 2.5mm. A small park shoe on the rear sole (10mm thick) prevents surface damage if you should place the tool down before the cutters have stopped. Overall length is 290mm.

You can form rebates to a

credible 24mm depth, and fence and depth stop are included.

Cable length is pretty good at 3.9 metres, but there's no dustbag included.

The Dutch-built 1525 is a good solid machine with plenty of power. It performed well under load, leaving a good finish. Although slightly front-heavy, it still has a good feel, with comfortable handles. It's much easier to use two-handed.

GW VERDICT

- ⊕ Impressive rebating. Good cable length
- ⊖ No dustbag included

VALUE FOR MONEY ●●●●●

OVERALL ●●●●○

RRP inc. VAT £101.00

SKIL ☎ 01895 834466

Bosch GHO 31-82

BOSCH'S PROFESSIONAL GHO 31-82 planer is one of the more powerful tools on test. The 750W motor gives a cutterblock speed of 13,000rpm. Thick aluminium sole plates (the rear one is 10mm) contribute to a good, stable performance. The front sole plate works like a pair of folding wedges, sliding upwards to set the depth. This is adjusted with the front knob, which is very user-friendly. Maximum depth of cut is 3.1mm.

Rebating can be carried out to a depth of 24mm with the fence and depth stop provided. I managed to get an excellent clean finish when planing 50mm wide pine.

Chips can be ejected to

either left or right, a lever used for changing direction. A dustbag is supplied, and you can fit an extractor hose direct to the outlet. A four metre cable is fitted, which is ideal for this type of tool.

The Swiss Bosch is a powerful, no-nonsense planer with comfortable grips, although a little front heavy if used single-handed. It comes complete with a plastic kit box.



GW VERDICT

- ⊕ Impressive rebating. Long cable
- ⊖ Slightly front-heavy

VALUE FOR MONEY ●●●●○
OVERALL ●●●●○

RRP inc. VAT £193.88

BOSCH ☎ 01895 834466

Atlas Copco PR3-82

ATLAS COPCO'S PR3-82 professional planer is arguably safer to use than most. It's fitted with a steel cutterblock guard. This operates in a similar way to the blade guard on a circular saw, retracting as the planer is introduced to the work. A lever at the side of the casing enables you to operate the guard manually. The guard also acts as a parking shoe if the planer is placed down with the block still spinning. The aluminium block revolves at 13,000rpm, powered by an 800W motor. A spanner for blade changing is stored on the body.

Rebates up to 22mm can be made using the fence and depth stop included. A sprung metal guard covers the edge of the cutterblock in normal use. You can make cuts of 3mm in a single pass, adjusted with the front knob or by turning the wheel at its base. This wheel indicates depth of cut.

Both sole plates are aluminium, measuring 280mm overall. The front one has a single chamfer

groove. The grip is comfortable, if slightly bulky.

A dustbag is provided, along with an extractor adaptor. Unlike some others on test, the bag actually works. It coped easily with chippings from pine, no matter what the depth of cut. I found the finish produced by this machine first class.

The German-built Atlas Copco has a useful cable length of 3.9m. A strong metal kit box is standard.

**Best
on
Test**

GW VERDICT

- ⊕ Retractable cutter guard. Big motor
- ⊖ Guard takes some getting used to

VALUE FOR MONEY ●●●●○
OVERALL ●●●●○

RRP inc. VAT £272.60

ATLAS COPCO ☎ 01442 261201



Stayer 982



feature
for
uniform
angles.

Rebates up to 15mm can be made using the fence and depth stop supplied.

THE ITALIAN-BUILT Stayer 982 planer is powered by a 580W motor and runs at 16,600rpm. It's quite angular, with a squarish D handle and fluted depth knob at the front. Maximum cut per pass is 2.4mm.

Overall length is 290mm and the 10mm thick aluminium sole plates ensure the planer stays true. These are a little rough, with no polished or ground finish. I found they made the tool drag slightly when planing wider timber.

Unlike the other planers on test, the Stayer has no chamfer groove. Instead, the fence tilts to 45° for bevel settings. A neat

An extractor adaptor is supplied to fit the chip outlet, but no dustbag is included. The lock-off button and trigger combination is designed for right handed use. At 2.3m the cable is a little on the short side.

Stayer have produced a good workhorse planer with reasonable cutting capacities for the motor size.

GW VERDICT

- ⊕ Tilting fence included
- ⊖ Sole unpolished. No chamfer groove

VALUE FOR MONEY ●●●●○
OVERALL ●●●●○

RRP inc. VAT £168.26

STAYER ☎ 01483 454502

Makita 1923BD

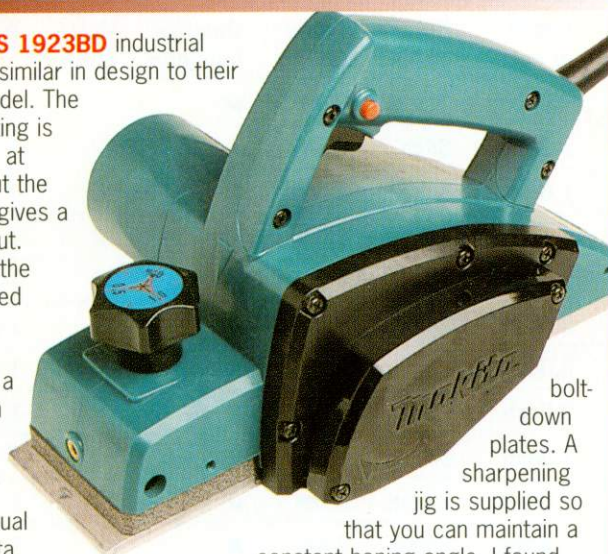
MAKITA'S 1923BD industrial planer is similar in design to their 1902 model. The motor rating is the same at 550W, but the 1923BD gives a heavier cut. Although the star-shaped adjuster knob indicates a maximum cut of 3mm, both the user manual and Makita catalogue state 1mm. If you turn it far enough, the knob will adjust to a 3mm depth. However, you may overload the motor on heavier cuts if you're not careful.

A fence and depth stop are supplied for rebating work, to a maximum of 23mm.

Chips are ejected from the extractor port into a cavernous dustbag. I found this had a tendency to block too easily when planing pine.

Solid aluminium sole plates (7mm and 9mm thick) ensure rock solid performance. There's a single chamfer groove up front. Overall length is 290mm.

The Makita is fitted with resharpenable blades, clamped to the aluminium cutterblock with



bolt-down plates. A sharpening jig is supplied so that you can maintain a constant honing angle. I found the finish from these cutters was glass-like.

The D handle houses the trigger and lock-off button. Guiding the machine with both hands, or setting depth of cut, I found the adjuster knob too close to the casing. It can foul your fingers as the knob is turned. Used with one hand, this Japanese Makita planer was nice to use, though.

GW VERDICT

- ⊕ Huge dustbag. Resharpenable blades
- ⊖ Confusing depth adjuster

VALUE FOR MONEY ●●●●○

OVERALL ●●●●○

RRP inc. VAT £276.13

MAKITA ☎ 01908 211678

Ryobi L-282

Recommend

THICK SOLE PLATES are a good indication of a rock solid performer, and the Japanese Ryobi L-282 doesn't fail in this respect. Both plates are aluminium (7mm and 9mm thick), the front one with a chamfer groove. Overall length is 290mm, and although weighing 3.6kg, it's still compact. Good balance makes this planer easy to operate.

Depth is set with the front knob to a maximum of 3mm, but there is no stop to prevent over winding. This can also make it difficult when setting to zero.

A basic fence is provided for rebating, plus a depth stop. This has a plastic roller to follow the contours of the surface. You can rebate down to 22mm, respectable enough for most purposes. A metal sprung guard covers the exposed edge of the cutterblock.

The dustbag coped well, no

matter what the cutting depth. There's plenty of power from the 710W motor, and the speed of 14,000rpm gave a superb finish, which I found the best of the bunch. Sadly, the cable isn't long enough at 2.4m. This is a pity, as the Ryobi is an excellent industrial planer.

GW VERDICT

- ⊕ Superb finish to timber. Fence roller
- ⊖ Rather short cable

VALUE FOR MONEY ●●●●○

OVERALL ●●●●○

RRP inc. VAT £269.01

RYOBI ☎ 01452 724777

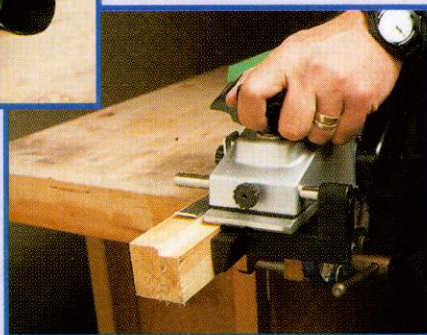


Rebates, chamfers, and extraction

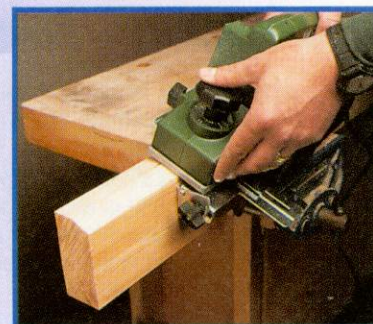


You can cut rebates with most of the planers tested. To do this you really need a side fence (above), but they are not always included. The fence is generally locked in place with a thumbscrew, and guides the machine accurately along the timber.

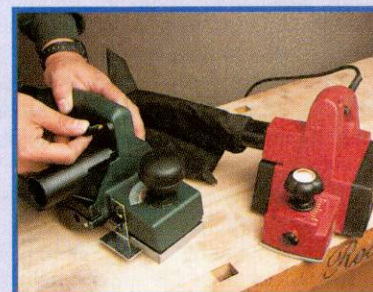
It's handy to have a depth stop when rebating (below). This screws on to the side of the front casing. DIY planers are more limited in rebate depth than their bigger, industrial brothers.



Most planers have a V groove in the front sole plate. This enables you to plane 45° chamfers quickly (right). Stayer and Draper both provide fences that can be tilted and locked to specific angles.



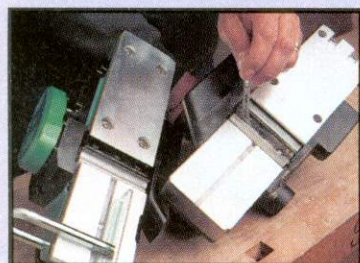
Chips are ejected through a side port. These can be connected to a dust extractor, either directly or with an adaptor supplied (right). A few planers are provided with a dustbag.



What you need to know about power planers

Make	RRP inc VAT	Typical price	Weight kg	Motor input	Speed rpm	Depth of cut	Rebate depth	Cable length	Dustbag included	Noise db(A)	Warranty
Atlas Copco PR3-82	£272.60	£197	3.6	800W	13,000	3.0mm	22mm	3.9m	✓	92	1 year
B&D KW715	£49.99	£49	2.1	550W	15,000	1.6mm	8mm	3.1m	✗	92	2 years
Bosch PHO 16-82	£54.00	£54	2.5	550W	18,000	1.6mm	8mm	2.3m	✓	95	1 year
Bosch GH0 31-82	£193.88	£180	3.2	750W	13,000	3.1mm	24mm	4.0m	✓	92	1 year
DeWalt DW677	£269.08	£159	2.9	600W	15,000	1.5mm	11mm	4.0m	✗	92	1 year
Draper Expert P882	£198.58	£117	3.4	750W	13,000	3.0mm	24mm	2.8m	✗	93	x year
Hitachi P20SA2	£276.13	£160	3.6	720W	14,000	3.0mm	25mm	2.5m	✗	92	1 year
Hitachi P20SD	£351.33	£216	5.3	1100W	16,000	3.0mm	20mm	4.0m	✗	98	1 year
Makita 1902	£132.78	£85	3.0	550W	16,000	1.0mm	9mm	2.5m	✗	90	1 year
Makita 1923BD	£276.13	£180	3.3	550W	15,000	1.0mm	23mm	2.5m	✓	93	1 year
Metabo Ho 0882	£276.13	£169	3.7	800W	12,000	2.6mm	23mm	2.4m	✗	95	1 year
Power Devil	£29.99	£29	2.8	600W	16,000	2.0mm	none	1.9m	✓	96	1 year
Ryobi L-180	£186.83	£100	2.6	500W	17,000	1.0mm	13mm	2.3m	✗	94	1 year
Ryobi L-282	£269.01	£117	3.6	710W	14,000	3.0mm	22mm	2.4m	✓	96	1 year
Skil 1512	£39.99	£39	2.3	520W	15,000	1.2mm	10mm	2.6m	✗	90	2 years
Skil 1525	£101.00	£100	3.2	750W	13,000	2.5mm	24mm	3.9	✗	92	2 years
Stayer 982	£168.26	£	3.4	580W	16,600	2.4mm	15mm	2.3m	✗	95	1 year

Cutters and guards



The blades are locked into the cutterblock with a hex key, box or open-ended spanner (left). A groove in each blade makes setting very easy, with no adjustment necessary



Some depth adjusters are easier to read and operate than others (left).

The Atlas Copco has a superb retractable cutter guard (right)



FINAL VERDICT ● Power planers

If you don't have a dust extractor for your power tools, it makes sense to buy a planer with a dustbag. These are rather thin on the ground, though. Of the professional machines, only the **Atlas Copco**, **Bosch GH0 31-82**, **Makita 1923BD** and **Ryobi L-282** have one as standard. The **Makita** bag is almost the size of a small tent! At the DIY end, just **Power Devil** and the **Bosch PHO 16-82** include one.

I found those planers with thicker aluminium soles seemed to offer greatest rigidity and stability.

First impressions indicated that slower speeds on the bigger motor professional models would be detrimental to the surface finish. Block diameter on these tend to be bigger, though. Like bigger router bits, slower speeds are needed, producing a very good finish.

Depth of cut adjusters vary enormously. Easiest are the simple single-turn types such as **Stayer**, **Power Devil**, **B & D**, **Skil**, **Bosch** and **Atlas Copco**. Those on the **Makita**, **Ryobi**, **Hitachi** and **Draper Expert** planers are more awkward.

Apart from the **Power Devil**, all the planers have a rebating facility. Not all come with fence or depth stop, though. This is an oversight.

Again, fences provided differ widely. The **Stayer** and **Draper** models can be tilted for specific bevels. The big **Hitachi** fence is by

far the sturdiest.

The DIY **Power Devil** and **B & D** tools are reasonable performers, with the **Power Devil** exceptional value. Both the small **Bosch** and **Skil** planers are comfortable and work well enough.

Both **Makitas** are again quality tools, but front adjuster knobs aren't the most user-friendly. The finish from the resharpenable cutters was better than that from many of the disposable carbide types. For sheer build quality, the big **Hitachi** is hard to beat. Its size is a major bonus, but it could be just too bulky and heavy for many woodworkers.

In terms of both performance and ease of use, both the **Ryobi L-180** and **L-282** are excellent. The finish produced by the **L-282** was glass-like. The **Skil 1525** is Best Value professional planer, with **Power Devil** as Best Value DIY model.

Atlas Copco's PR3-82 put in a sterling performance and is easy to use. Its blade guard is brilliant, and gets our vote for Best on Test.

Next month ● Circular saws

A favourite in the workshop and on site, the portable circular saw can be a real workhorse. Next month we test medium-sized saws and tell you which are the ones to choose.

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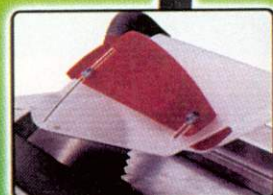
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No 5: Dovetail oints

Joint account



The dovetail is often regarded as the king of joints. Edward Hopkins explains how it justifies this title and discusses its strengths and uses

If one joint alone typifies fine woodworking it is the dovetail. And if one use of the dovetail stands proud above all others, it is in drawer construction. With it, the slender sides of a large drawer can be so securely joined to the front (and back) that, over-laden as it might

be, when you pull the handle, the entire drawer follows.

The cleverness of the dovetail is apparent at a glance. Wedge shaped pins on one component and tails on the other can be pushed together from one direction but (unlike the finger joint discussed last month)

cannot be pulled apart from any other. The long grain strength of both components is mainly intact and there is a large long grain gluing area so that an already impressive joint can be locked solid.

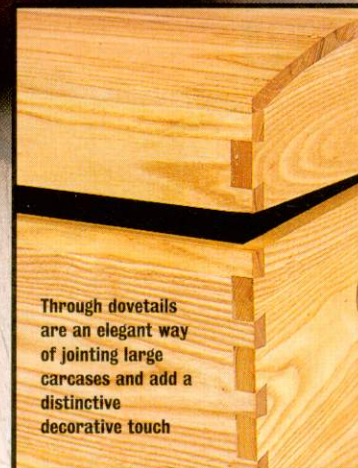
Not content with the simple excellence of the

through dovetail, the cabinetmaker has refined it so that the end grain does not appear through one component (the lapped dovetail used on drawer fronts) or does not appear through either component (the secret mitre dovetail used on high quality carcasing).

Exposed Joinery

The cleverness of the maker is also on show. Dovetails are only effective when cut accurately and this can be a time-consuming and fiddly affair, not to say an embarrassing one, if your best efforts are riddled with gaps. However accomplished (or not) the hand work of a professional, even one moderate-sized job may warrant the purchase of a router accessory with which dovetails can be perfectly cut in minutes.

Not content with the brilliance of the simple dovetail jig whose equally spaced pins and tails proclaim that they are machine-made, the cabinetmaker employs more complicated (and expensive) devices whose finished joints are indistinguishable from hand-cut dovetails. In defence of such pretence, the final article is a joint of such elegance and structural integrity that, however it is produced, it is a delight.



Through dovetails are an elegant way of joining large carcasses and add a distinctive decorative touch

Other Uses

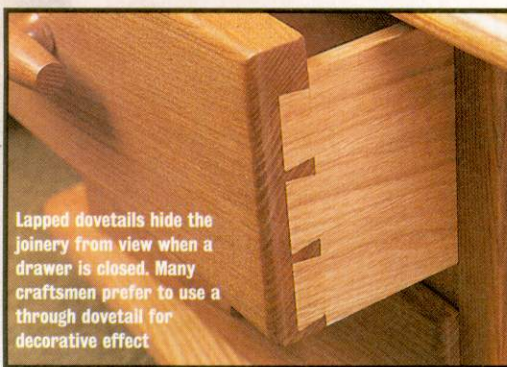
Invisible but essential... the carcass of a cupboard or a chest of drawers may well demand the joining of its sides to either a floor or top rails. In both cases, the lapped dovetail is useful in resisting the outward splay of the carcass. Without it, the frame might literally fall apart.

Similarly, the top rail of a table or desk may be dovetailed into the top of a leg (see Graham Laird's table on page 4)

Essentially visible... so attractive is a set of well-spaced dovetails that little other decoration might be needed on small boxes. While joints are always the weak point of a structure, these will be as strong as is possible.

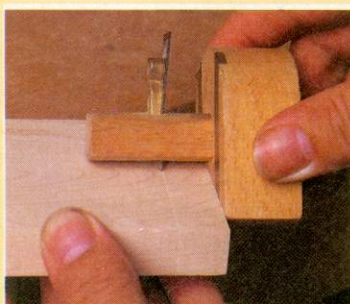
Through Dovetails by Hand

Despite its image as a demanding and complex joint, the through dovetail is not particularly difficult to cut. Error is more likely to creep in because of poor preparation. Make sure that the boards to be joined are straight-grained, of even

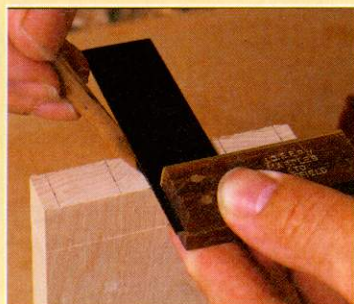


Lapped dovetails hide the joinery from view when a drawer is closed. Many craftsmen prefer to use a through dovetail for decorative effect

How to cut the perfect dovetail by hand



1 Mark the shoulder lines at each board end slightly oversize. Some will decry the use of a cutting gauge as it leaves a deep mark



2 Having decided on spacing, position the tails on the end grain with a square. Top quality work often dictates very fine pins



3 Mark the rake of the tails using a bevel or a template. Best angles are 1:6 for softwood, 1:8 for hardwoods and fine work



4 If you use a sliding bevel, mark your angle on a piece of board so that you can check it from time to time

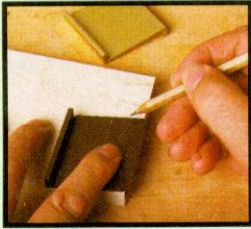
thickness, are not cupped and are cut square at the end. Hone a small chisel, fit a new blade to a coping saw and bring out your dovetail saw – which remains sharp for years because this is all you should be using it for. Whittle a surgical point on a hard lead pencil or use the knife itself for marking out.

It is a moot point whether you should use a cutting gauge or a square and pencil to mark the shoulder line at either end of your boards. Either way, mark the line fractionally wider than the thickness of the other component (to allow for cleaning up) right around both ends. Decide on the number of dovetails, their proportions and spacing, then mark out the tails with an appropriately set bevel or a dovetail template.

Hold the work piece at an angle in the vice so that you can saw vertically down to the gauge

Rakes and templates

If the angle of the individual dovetail is too steep, short grain weakens both the tail and pin. Too shallow and the wedging effect is diminished. A rake of 1:6 is suitable for softwoods and coarse work; 1:8 for hardwoods and fine work. A useful purchase for this, or a careful project in itself, is



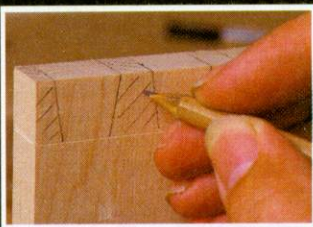
to make small templates so that the rake can be marked off accurately. Solder small brass bar to sheet (available from model shops), cutting and filing the edges down to size.

line on the waste wood side of the line. Tilt the work-piece the other way for the other sides of the tails. Then, with the gauge line held horizontal, remove most of the waste with a coping saw. Remove the work-piece from the vice and, working down onto a waste block, pare back to the gauge line,

Hold this tail section precisely over the end of the mating component, and trace the tails (with knife or pencil) onto it. Immediately mark which parts are pins and which waste. Don't worry if you find some irregularity creeping into the cutting, any deviations from the line when cutting the tails will be reproduced on to the pins. The angles may be askew but the joint will still fit together perfectly. Saw vertically down the sides of the pins, remove waste as before with a coping saw and pare to the line.

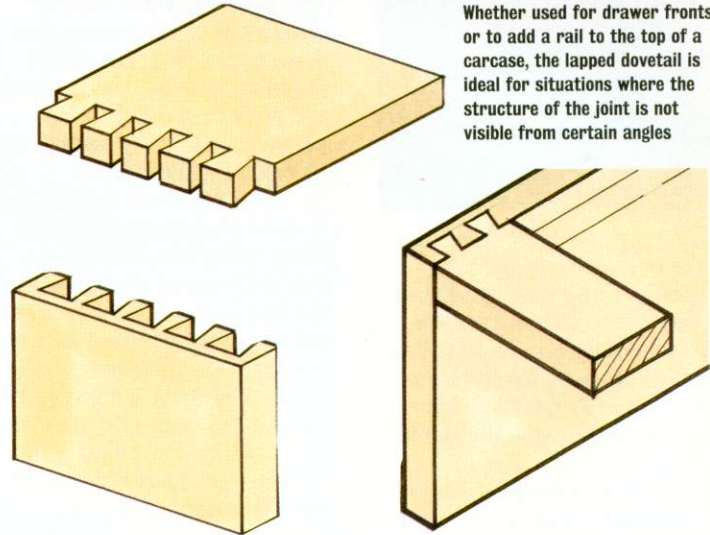
Test fit the two parts together and, more than in any other joint, use your eyes! See that the corners of the joints are clean and that the gauged shoulder line is, if anything, slightly undercut. The purist will assemble this joint only once in

TIP When marking out, hatch waste wood with pencil lines on all faces to avoid a common and infuriating mistake – that of chopping away the wrong bits!



Lapped dovetails

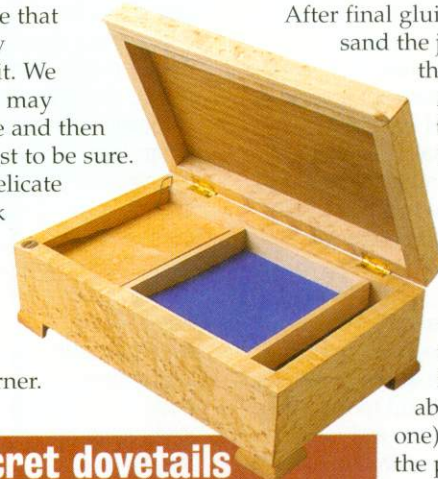
Whether used for drawer fronts or to add a rail to the top of a carcase, the lapped dovetail is ideal for situations where the structure of the joint is not visible from certain angles



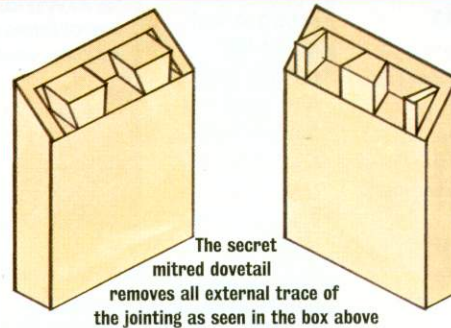
the knowledge that each assembly slackens the fit. We lesser mortals may knock it home and then apart again just to be sure. Even so, be delicate with the block and hammer. Cramping is less satisfactory as it tends to distort the corner.

After final gluing, plane or sand the joint flush with the boards.

A first step towards mechanisation might be to use a band saw to cut down the tails and then to tilt the table (or fit a false table above the fixed one) to cut down the pins.



Secret dovetails

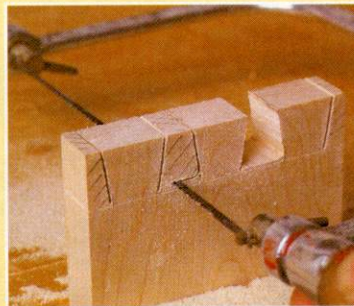


Lap Dovetails

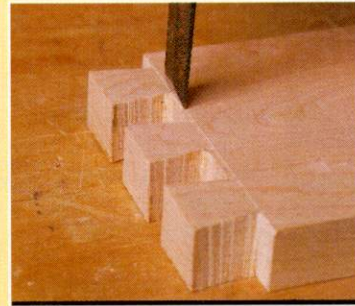
The marking out and cutting of the tail component on lapped dovetails is the same as for the through dovetail. The front face of the second component is left unmarked but the back face and



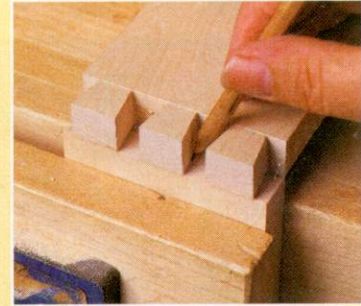
5 Use a fine dovetail or Japanese saw to cut the cheeks. You'll get better results by tipping the board so that cuts are vertical



6 Remove most of the waste with a coping saw but take care not to overcut the rear edge. Saw the end shoulders to the line



7 Pare the waste back to the line with a sharp bevel chisel. If you used a cutting gauge its fine indent will locate the chisel



8 Mark the pins from the tails and cut these in exactly the same manner. Do make sure that the two boards are perfectly square



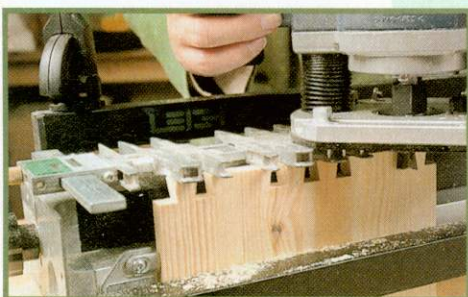
Shaving the mitre on a secret mitred dovetail

edges are gauged as before. The positions of the tails are transcribed onto this board, and become the waste between the pins. Generally, you would allow perhaps one-third the thickness of the timber as the lap, which will be determined at the setting out stage.

The sides of the pins cannot be sawn right down because the lap restricts the saw, although angled saw cuts can be made to some effect. Neither, of course, can a coping saw operate. Instead, the alternate vertical stamping and horizontal paring action of a chisel is used to remove the waste. It is well worth using a router freehand to remove much of this waste. Use a slender straight cutter, set down to the line of the lap and steer it carefully up to the gauged shoulder line. With a dovetail cutter, especially if it is of the same rake as the dovetails, you can cut right up to the pins, leaving only the curved inner corners to be chiselled by hand.

Secret Mitre Dovetails

If you want the plain elegance of the butt mitre but cannot tolerate its inherent weakness, the answer might be to inject a hidden row of dovetails. The secret mitre dovetail is a complex joint demanding good preparation and a practiced hand. The pins and tails are executed in a similar way to the lapped dovetail except that both (not just the pins) require careful chiselling. The long mitre is left in square section and finally taken down carefully with a shoulder plane.



Two interlinked sets of fingers on the Leigh jig allow through dovetails of great complexity

Machined dovetails

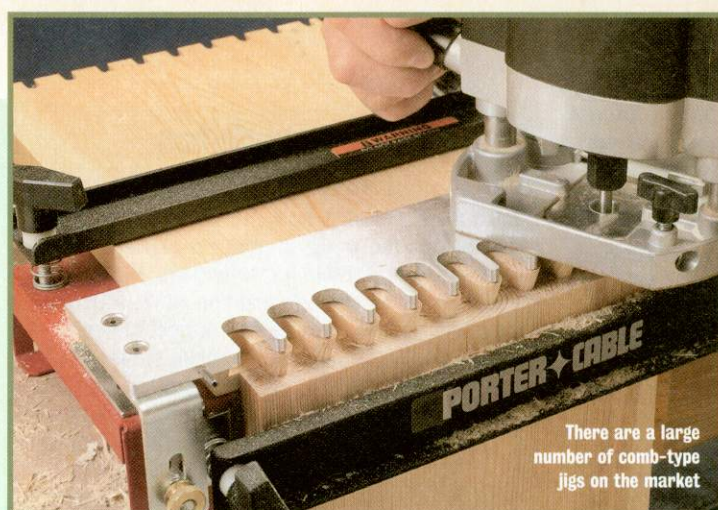
The overall quality of hand-cut dovetails is unsurpassable, but they do take time. Entertain a dozen drawers and your patience and profit margin may wear equally thin. Industry was the first to look for another way.

The machine-cut dovetail used in mass produced furniture is easily recognised, as pins and tails are of equal dimension and the rake is severe. Dismantling the joint shows rounded backs to pins and sockets where rotating cutters have been automatically guided. The same principles were taken into the small workshop market when the possibilities of the router were recognised.

Fixed comb jigs

The simplest, cheapest and commonest dovetail jig holds the corner that is to be jointed inside out so that one piece is cramped vertically in the device and the other, butting up to it, is cramped horizontally, though slightly to one side. A large comb is bolted over the timber then a router, fitted with a dovetail cutter and a guide bush (protruding on the underside of the sole) is drawn in and out of the comb's teeth. After one foolproof pass, the timber is released and fits perfectly together.

The pins and tails are equally dimensioned and only lapped dovetails can be produced. The round backs of the pins and sockets are unseen in the finished joint but do mean that the drawer sides cannot be as thin as you might wish. And you are committed to lap dovetails on the back of the drawer and the correspondingly large section timber. The fixed spacing of the dovetails means that, if a regular pattern of dovetails is desired, the height of the drawer can only be one of several sizes – if you design the



There are a large number of comb-type jigs on the market

drawer independently of the jig, you may find part of a rounded pin visible on the edge.

Useful for no nonsense utilitarian furniture, or for contemporary pieces where the weight of design is taken by other elements, the fixed comb jig is nevertheless something of a blunt instrument. Before long, manufacturers took another look.

Movable finger jigs

The Leigh jig allows variable spacing of dovetails. It comes

with its own guide bushes and cutters, with which the router traces around not a fixed comb but a number of adjustable metal fingers, straight on one side and raked on the other. The cutting configuration of a lap dovetail is similar to that of the fixed comb jig. The

cutting of a through-dovetail involves routing the pins (with a straight cutter) and the tails (with a dovetail cutter) in two separate operations, each performed with the work-piece clamped vertically.

The Leigh jig is a well-made device, useful for medium scale work. It cannot, however, space the dovetails

closer than about one inch and is therefore not useful for small work such as decorative boxes. Other templates fit the basic jig for cutting finger joints and mortice and tenons.

The Woodrat

The Woodrat, a holding and guiding device for router and work-piece, is a simple notion wrapped in good ideas. Templates and guide bushes are not used but, in dovetailing, one component does directly form the pattern for the other – eliminating much marking out and arithmetic. While following markings is still done by eye (as with hand work), the cutting action of the router is made simple, true and swift. Dovetails – through, lapped, secret, graded – can all be cut with ease (a little cleaning of rounded corners being all the hand work required).

The spacing and sizing of the pins and tails is entirely the choice of the maker. Any pattern of cutter can be fitted, although Woodrat's own HSS dovetail cutters are designed for deeper finer dovetails, which more closely imitate the hand cut sort. Dovetailing is just one of dozens of applications for this versatile tool.



The Leigh dovetailing jig set to cut the pins

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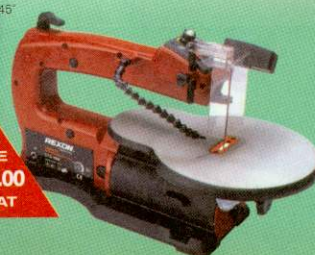


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Perhaps the most important tool in your workshop will be your bench. Here's how our students go about making theirs when they join us



The bench top consists of a wider front made up from two boards and a narrow back board, both bolted to a heavy underframe. A tool well between them is created with drop in panels

A BENCH FOR

This month it seems that workbenches are all that are being built around me. In fact more workbenches are being made in my workshop than pieces of furniture. That's probably due to the arrival of two new students, James and Neil. In response to many requests from readers who have seen workbenches made I'll tell you how we go

the early 80's, I on and made friends

with a nearby cabinetmaker who used to, and in fact still does, run courses in cabinetmaking. Some weeks later a friend of his rang me in anguish one evening saying that this chap was going through a nervous breakdown and would I like to take on a couple of his students. My immediate answer was 'No', but after a little thought, and consideration of my bank balance, I rang him back and said I would give it a go.

Two guys arrived complete with workbenches. These chaps had finished six

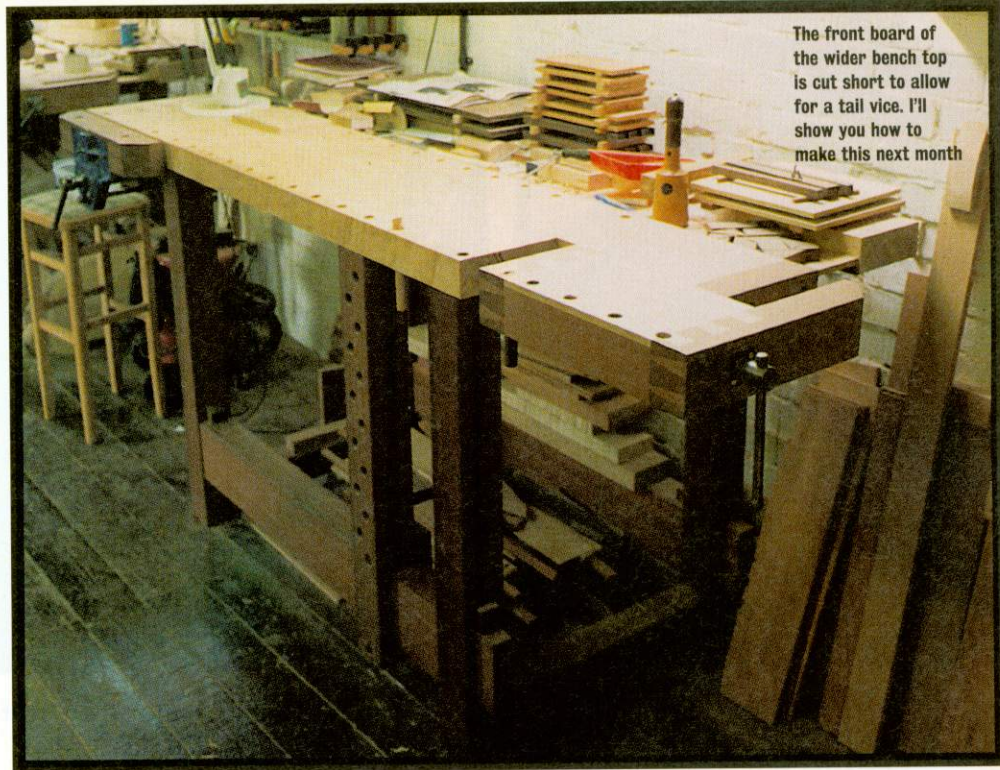
The legs are planed to give as large a section as possible from 4x4in material



months of their course with this tutor and in that time more or less all they had made was an oil stone box and a workbench. They were however, very beautifully made workbenches. We've cut that inappropriate amount of time down to something approaching six weeks without any undue compromise in quality, but I'm sure our friend would blather on about our use of biscuits. I have incidentally carried on taking students since that date, and much to my surprise enjoyed and very much benefited from the experience.

Heavy is Best

This bench is very similar to the benches that came with my two first students. It is a simple structure – very heavy and absolutely stable, with a tail vice at one end and a conventional metal vice at the other. The purpose of a bench is as an absolutely flat, rigid, solid work surface. It's a gigantic holding jig that holds the workpiece for you, enabling you to set yourself in balance so that you can cut the joint or plane the piece of wood or do whatever other operation you require. It is possible to make fine furniture using the kitchen work surface and a



The front board of the wider bench top is cut short to allow for a tail vice. I'll show you how to make this next month

TOP QUALITY WORK

Workmate but frankly not very likely.

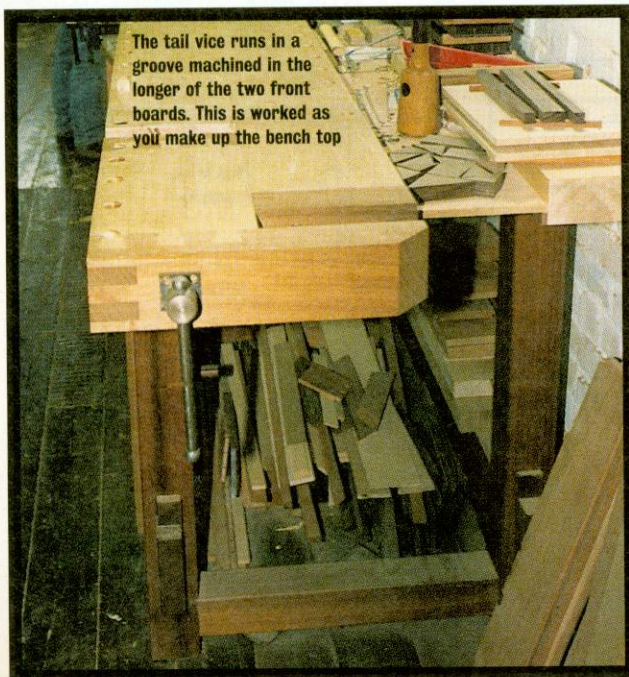
The undercarriage is made of 4in iroko because it's one of the few hardwoods we can find in 4in kiln-dried form. One or two large boards usually supply all the timber one student will require with very little waste. Students often are silly about wasting wood when they arrive, hoarding little bits and bobs about their person that should have gone in the stove weeks ago. It takes a few months to teach them that wood does grow on trees and its OK to waste a bit

if the really good figure is in the middle.

Although iroko is quite expensive it usually comes with two straight edges sawn and can be ordered in appropriate widths and lengths to make cutting out efficient and economical. I don't use it for anything other than bench frames as, although it machines and handles quite well, it has an unpleasant peppery dust that irritates all sorts of bodily orifices, so just wear a dust mask.

The two end frames are made into as large a section approaching 4x4 as you can

get; what exactly that comes out at depends on your timber. During the first stage of the operation, plane your cross rails to the same thickness as the legs. This is done to aid marking out and joinery. At this point we give students a choice, they can either go the difficult way and do nice mortice and tenon joints or they can bang three biscuits in each joint and walk away from the task inside a morning. When my first two students

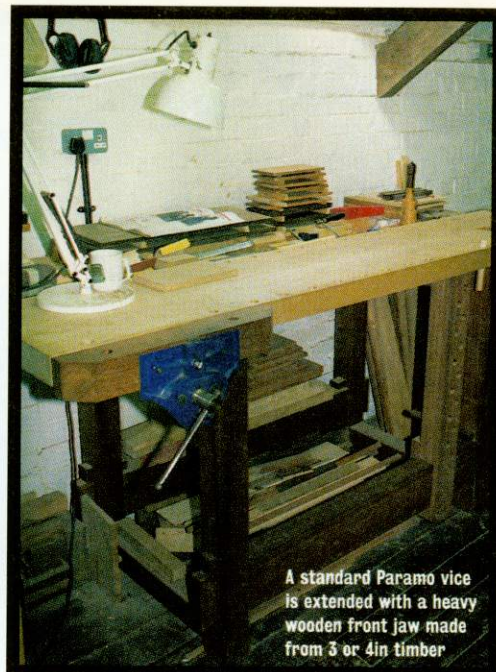
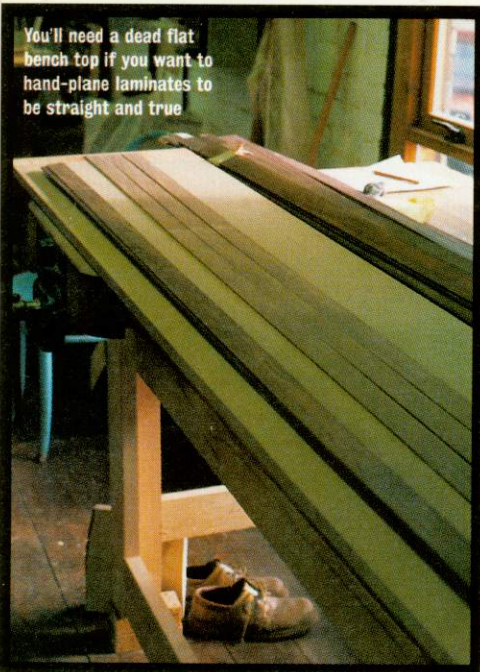


The tail vice runs in a groove machined in the longer of the two front boards. This is worked as you make up the bench top



You can see here the massive dovetail wedged tenons that lock the front and back rails into the leg assemblies

You'll need a dead flat bench top if you want to hand-plane laminates to be straight and true



A standard Paramo vice is extended with a heavy wooden front jaw made from 3 or 4in timber

arrived they had through-wedged tenons with a fancy bevel leading down to the polished end of the tenon. This joint was very decorative but also very foolish as it involved each student in immeasurable fiddling about. Multiplied by eight it involved weeks of immeasurable fiddling about. Needless to say, whilst there was one bench in the shop with this very attractive detail, everyone wanted one. Now that I've managed to expel it, nobody bothers about it and they just go on and make furniture, which is what they are here to do in the first place.

Your rails are now jointed to the legs, although before assembly you will reduce the thickness of the side rails. We run a mighty chamfer down all four corners of each of the legs and then reduce the thickness of the rails to meet that chamfer.

Knock-down Joinery

The front and back rail joints are a little more difficult. Because this bench is 'knock-down', these are through-wedged mortices and tenons. Each joint is one massive tenon, with a nice big wedge that sits above the joint and, as it is driven in, exerts pressure on the lower part of what becomes a large dovetail, and locks the whole joint up. I'm sure I could reduce the mass of these components but I think I would risk the stability of the structure. One of the benefits of this huge bench is that when you nudge it, it doesn't even vibrate, it just sits there rock solid – or it should do if you make it right.

The key to this joint, and every other joint, is marking it out correctly in the first place. Use a mortice gauge and mark the tenon and the mortice using the same setting. A well set-up mortice gauge has short round pins that don't actually penetrate very deep into the timber but leaving a nice clean mark. You can cut the mortice in a number of ways; our small morticer manages to chop out these great big holes relatively cleanly and accurately.

The chisel is all important; it's just a matter of setting this slightly behind the auger.

Now to the big tenon. The aim is to get a sliding fit that is not loose. Marking out is critical again, so cut the shoulders of the tenon with a router guided against the fence or do it across the table saw. Saw the cheeks shy of the line then plane to a fit using a big shoulder plane. The colour of the iroko will change from rather yellow brown to a very pleasant dark brown within a few weeks of exposure to daylight. We use a Danish oil on a well prepared surface papered to 240grit.

A Good Solid Bench Top

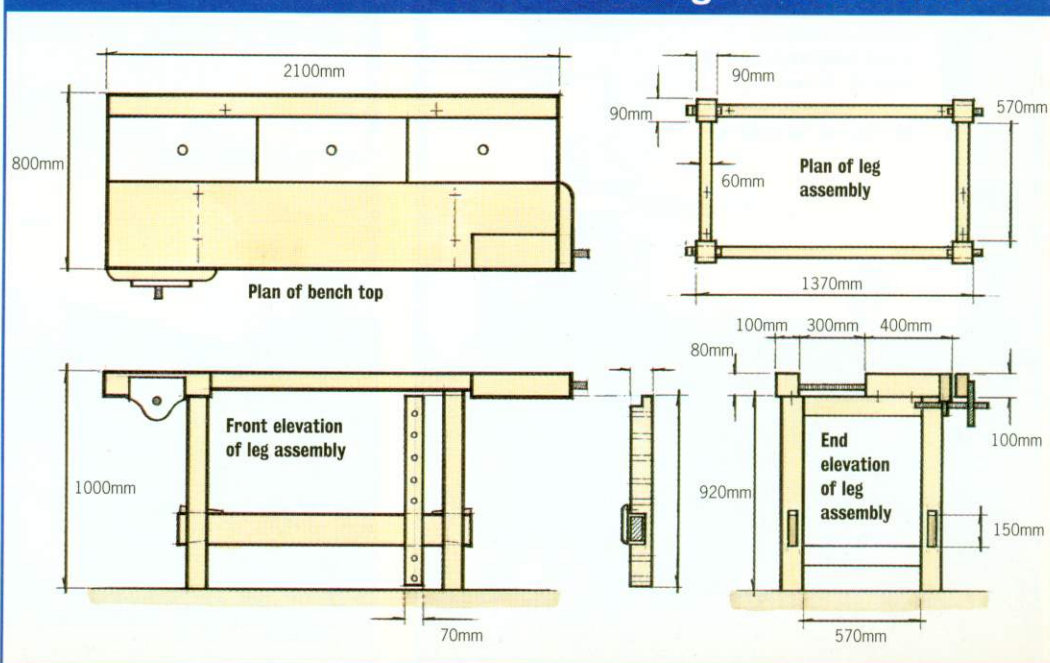
Making the top is your next challenge. This is usually made these days from 3in kiln dried maple. Again we are able to get this in reasonable widths somewhere between 6 to 8in wide, and generally two boards make the

bench top and a further board makes up the back rail behind the tool well. I like a tool well because it's a useful place to keep the inevitable clutter away from the area where you are working. Also, if you have a very wide bench without one you will invariably have arm ache when it comes to flattening it. Generally benches are flattened, say twice a year, in the spring and autumn, and given a light cleaning up after each major job. The purpose of the bench top is to be absolutely flat, especially immediately in front of the tail vice. Imagine trying to hand plane a thin 2mm laminate on a wobbly bench top. Every time you run your plane over the job this laminate will accommodate itself to the wobbly surface of the bench top and transfer that wobble to the surface you are attempting to plane. Accurate workmanship can only be achieved with a dead flat bench top.

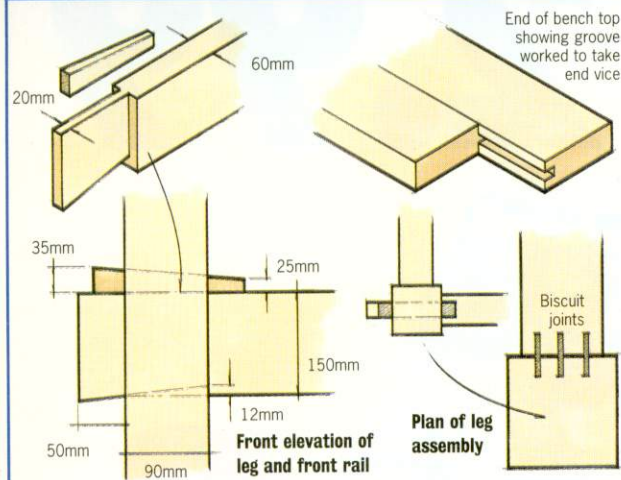
Now joint up the two boards to make the bench top. Cut one of them a deal shorter than the other. It doesn't really matter how long the top is. Most of ours are about 7ft but the front board is shorter by the length of your tail vice. Again, how much shorter doesn't really matter – design your vice to suit the timber available. One of the main things is that the wider board could do with being the longer one as well. The stability of your tail vice will be enhanced by this. Have a look at the way the tail vice is designed (I'll show this next month) and rout a 12x12mm groove in the exposed edge of the back board to accept a stub tenon sliding in it.

Jointing the two boards is a tricky bit of planing. We usually set up our jointer – which isn't a big machine, only about 3ft long – to give a very fine, clean cut. The fence is set to an accurate right angle and each of the two mating surfaces are passed over the jointer until we have a clean square edge (you can chase your tail if you attempt to do this all by hand). If you are using a relatively short jointer with a relatively long board,

Plans and elevations for David Savage's work benches



Joining the leg frames



what almost invariable happens is that the two ends of the joint will touch first and you'll be left with a gap in the centre of something like 0.5mm. Now, that is exactly what you want, because the ends of your joints should be under compression when the cramps go on. Because these boards are relatively thick we tend to take two or three stopped plane shavings out of the centre of the joint to accomplish this.

I usually recommend two plywood splines are put in, each about 10mm in from the top and bottom surfaces. This is usually a routed groove and spline, planed to be a nice comfortable fit. Make these stopped grooves, by the way, they shouldn't be seen when the ends of your bench are trimmed to length.

Do a dry fit with everything, checking always with cramps in place. You shouldn't be able to see any gap in the joint anywhere. If you can, sit down and think about it before you start wafting a plane around.

Once the bench tops have been cleaned up, it's time to fit them to the underframe assembly. First check that this isn't in wind by boning it up with a pair of winding sticks. Site across these then check the two areas on the underside of the bench top that will be in contact with the top of your frame. If necessary plane across these to bring them flat and true and parallel with one another. Don't just bolt it down and hope for the best.

You should now have two very solid and

rigid surfaces, which are completed by planing them dead flat and true, using a straight edge and a bench light and working over the whole thing in all directions. Approach flat by going for a slight hollow then make a series of parallel straight cuts down the full length of your bench.

Finally drop in three MDF boards for the tool well. We don't mess around with ends, and we have three pieces because it's useful to be able to take one out to apply a clamp in the middle of your bench.

The end vice (we use standard Paramo mechanisms) can be fitted by mounting it on a decent sized block and burying the back jaw in a great routed slot which keeps it totally encased in timber. The front jaw is also covered by a

Website news

Last month I told you about the new and exciting changes on our website. For those who logged on and failed to see any changes I can only apologise. I've said before that, like gardening, a website is something you must do little and often, but right now my real garden has actually taken precedence and I have been determined over the past few weeks to get my vegetables planted rather than my links page sorted out. Sorry folks but I'll put some time in on it very soon.

wooden block. If this is of a decent size, perhaps 4x4, you can extend the length of the jaw by 3 or 4in.

Next month I'll tell you how to make a tail vice. By then we might have got round to making a stick or two of furniture.

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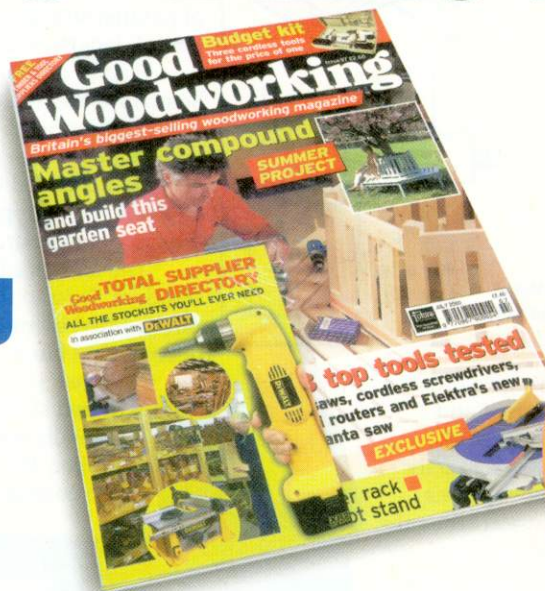
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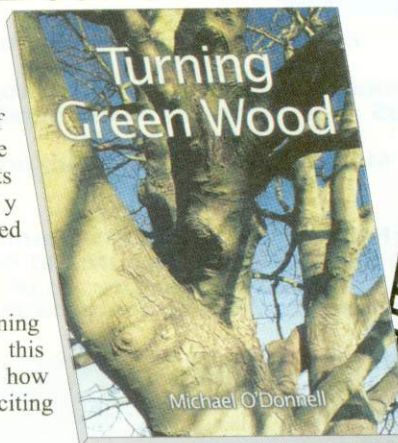
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Mike Ninham's half-glazed oak display cabinet will brighten up a corner of any room with a few choice ornaments

After 25 years working with the same company, a friend of mine was given her own choice of long service gift, and she decided on a piece of furniture which would have to be in oak to match her existing decor. It also had to be wall hung as there was no room for a large piece. She eventually decided on a corner display cabinet and I was asked to make it.

Corner display

With just a rough sketch to work off, I kept altering the sizes until the proportions looked right – a case of making it up as you go along – and luckily everything turned out OK. There is no glass front to the cabinet but the two side frames are glazed with thin 2mm picture glass, held in place from inside with just a clear silicone bead. The back panels are beaded and loose tongued together for a traditional appearance.

I had a couple of 150x35mm oak planks left from a previous project which were nice and dry, having been stored in a spare room, so they were all ready to go. Any timber would do to match your needs.

square to the sides and 135mm long. Walls are seldom square so it is worth allowing a little clearance on the rear corner angle for this.

Thickness enough boards to 32mm for the top and bottom, and joint these as necessary with a couple of biscuits in each joint for reinforcement and to help align them. Glue and clamp up and leave to dry on a flat surface while you get on with the backboards. Plane and sand smooth when ready.

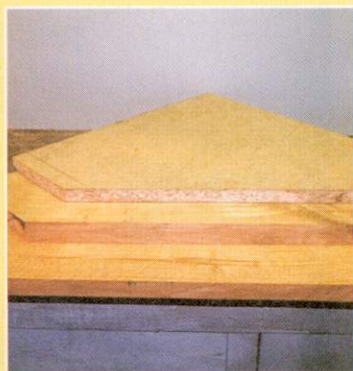
2 The back panels are 13mm thick so you could use 32mm stock again and resaw this into two thicknesses to save wastage. I had 150x32mm boards, which none of my saws could manage, so a visit to my local joinery was needed to remedy this on their large bandsaw

How to Make the Cabinet

1 Start by cutting a template for the bottom and top of the cabinet from chipboard or hardboard to get an idea of your finished size. Mine measures 440x440mm with the two front edges



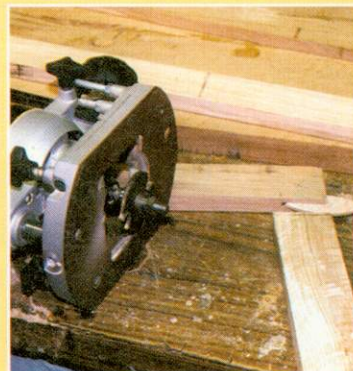
Building the main carcass



1 A chipboard template will prove useful for cutting the top and bottom and the two inner shelves to size



2 The back panels have a traditional 'butt and bead effect' created by moulding a bead on one edge only of each of the boards

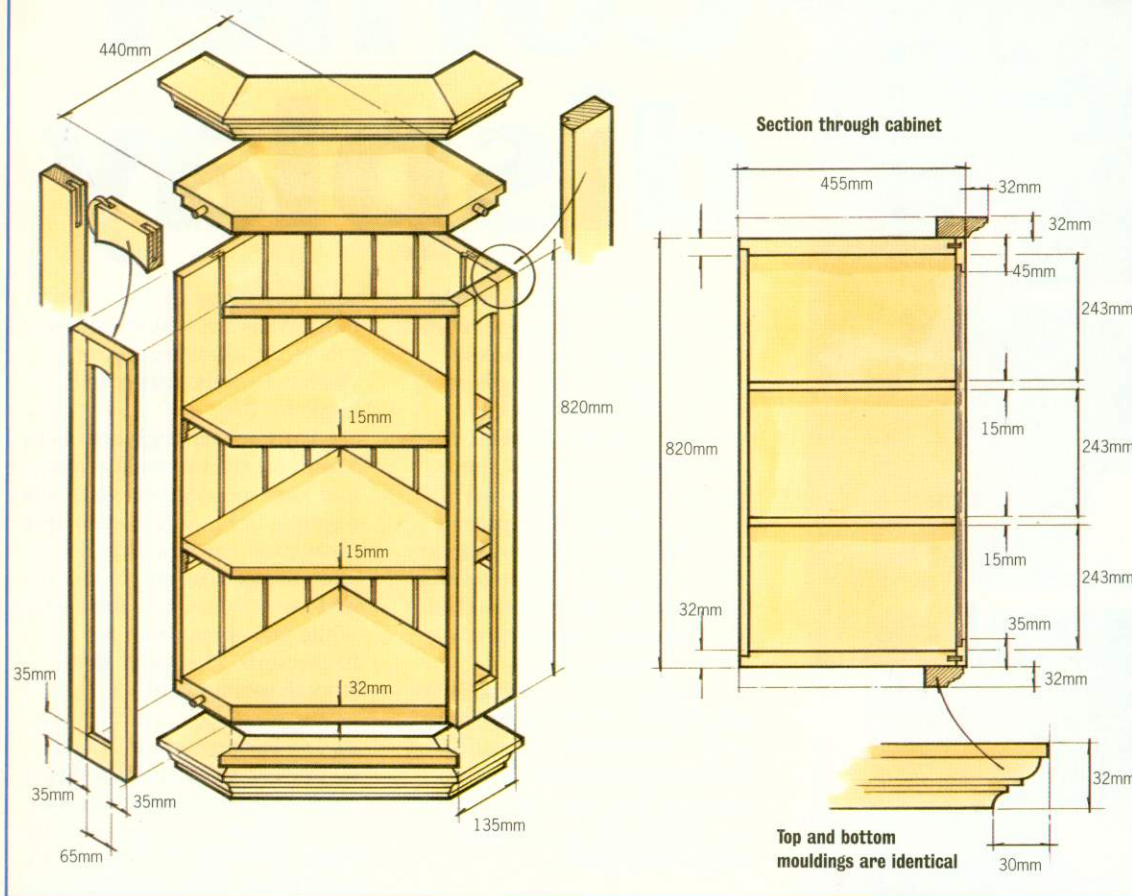


3 Frame joints are biscuited rather than morticed and tenoned. Cut the joints with a slotting cutter mounted in the router



4 A wider top rail is used and the arched top cut from this after the frames have been glued and biscuited together

Construction details for the corner cabinet



PROJECT GUIDE

Difficulty: INTERMEDIATE
Time: 30 HOURS
Type: FURNITURE

MATERIALS YOU WILL NEED

■ TIMBER

Unless you have resaw facilities, you will need about ½ cu ft of 1½in oak and 2 cu ft of 1in oak. With a deep bandsaw about 2 cu ft of 1½in material will do

■ GLAZING

2mm picture glass cut to shape by a glazier

TOOLS YOU WILL NEED

■ ROUTER

Plus straight, radius and ovolo cutters for the mouldings, a bead cutter for the back panels, a rebate cutter if you have one for the glazing rebates and a 4mm slotter

with its tungsten tipped thin blade for minimum waste and auto-feed!

The back boards are joined with loose tongues to allow for any shrinkage. Each board will need a groove cut on each edge (except the end ones which only have one). I used a biscuit joint cutter mounted in a router in my table with the board firmly held down and the fence fitted. Aim for a nice sliding fit for the 4mm ply tongues which are cut in 15mm wide strips.

I don't have an edge bead cutter, so I improvised with a V groove cutter 5mm in from the edge, rounding over the edge to form the bead with a plane and abrasives. Ensure the best face is to the inside on each board.

Rebate the rear edges of the top and bottom boards to

TIP

A biscuit slot cutter for your router will enable you to cut narrow grooves in the edges of timber easier and more accurately than with a straight cutter with the router balanced on the timber edge

13x20mm to accept the beaded boards and fix these in place with two screws each. Glue and screw the centre boards where they meet at the rear corner.

3 The side frames are also from 13mm stock, with 35mm stiles and bottom rail and 60mm wide top rails to allow for cutting out

the top curves. Components are biscuit jointed together with a single biscuit in each corner. Ensure these are placed so that the slot will not break through the internal edges where they will be visible. Glue up and clamp, checking for twist and square. When dry, mark the round arched tops and carefully cut these to shape with a fretsaw, then sand the cut edges smooth and clean, before sanding the frames flush inside and out.

Cut a 5x5mm rebate for the

Fitting the front frames and mouldings



5 Take care shaping the arches, especially at the ends. Of course you could shape these before gluing up if you wish



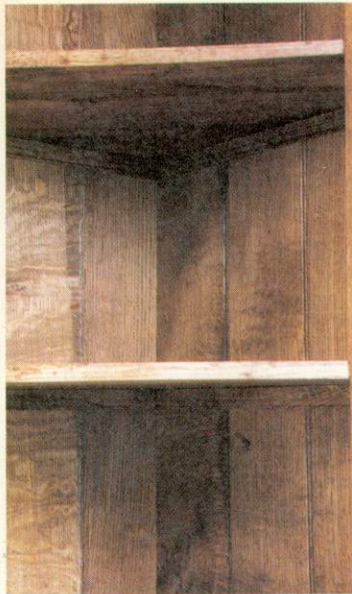
6 Access will be poor later so fit the glass into the frames before fitting these. A thin bead of clear silicone mastic holds it



7 You'll need plenty of cramps to assemble the frames on to the carcass. Dowels locate the top and bottom in place



8 Bring the front edges of the carcass top and bottom flush with the frames by gluing infill strips between the frames



The beaded back panels are loose tongued together, and the shelves float loose on support battens screwed from behind

outside. This also solves the awkward problem of beading the curved edge of the arches.

4 Butt the finished frames on to the face of the carcass, using a single dowel at top and bottom to locate them and reinforce the joints. Glue the front edges of the back panels to the frames as well. You'll need lots of clamps.

Bring the exposed central edges of the top and bottom carcass parts between the two frames flush with the front faces of the frames by gluing a 10x32mm lath in place, mitring the ends to fit neatly between the frame edges.

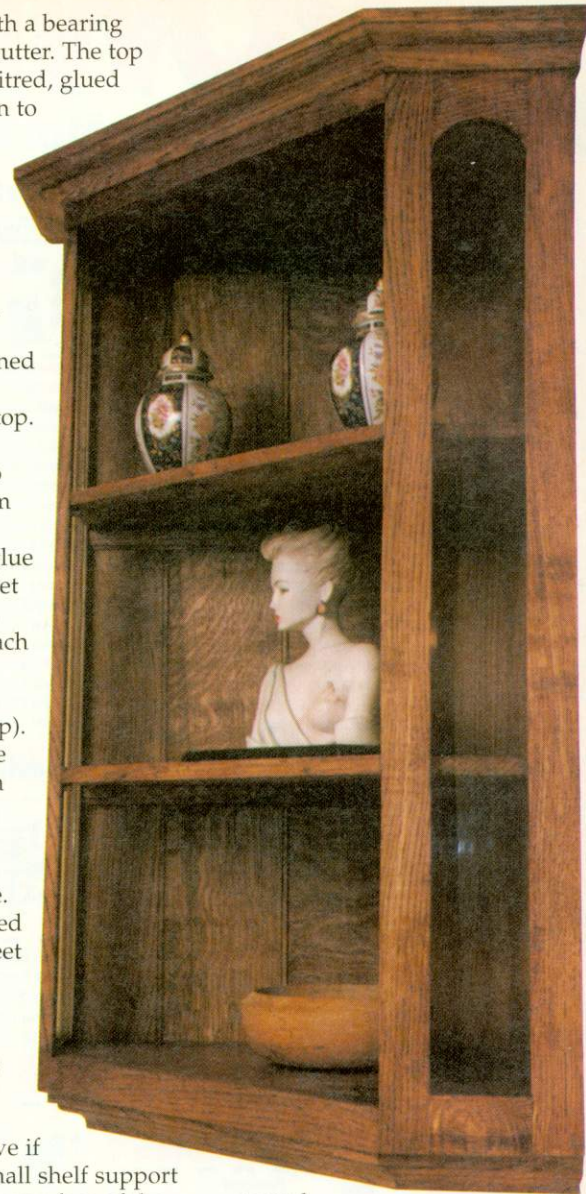
5 I usually build up mouldings separately from thinner stock but I had some 65x32mm stock handy so I cut them from the solid. I made a couple of passes on the table saw to remove the bulk of the waste, then made the first cut with a radius cutter, the middle section with a straight cutter, and

finished off with a bearing guided ovolo cutter. The top moulding is mitred, glued and screwed on to the top of the carcass with an appropriate overhang. The bottom is only glued in place, with the mouldings turned and fixed in reverse to the top.

6 Cut the two shelves from 13mm boards, and butt and glue them to size. Let the assemblies dry then cut each to fit (the template from earlier will help). The bearers are from 10x22mm stock with an ogee mould worked along the lower edge. These are mitred where they meet in the rear corner and screwed in place from the rear, allowing the shelves to 'float' and move if needed. Fix small shelf support brackets to the rear face of the front frames to support the front edges.

7 After a good scrape and sand all round the oak was darkened down with a water stain to match the existing furniture, then oiled and clear

waxed. Take care not to get stain or oil on the glass; you may need to mask this off.



Cutting list for the corner cabinet

Part	Qty	Material	Length	Width	Thkns
A Top & bottom	2	Oak	440mm	440mm	32mm
B Backing boards	8	Oak	820mm	135mm	15mm
C Front frame stiles	5	Oak	820mm	45mm	15mm
D Front frame tops	4	Oak	65mm	60mm	13mm
E Front frame bottoms	2	Oak	65mm	35mm	13mm
F Top and bottom slips	2	Oak	420mm	32mm	13mm
G Mouldings	1	Oak	1600mm	65mm	32mm
H Shelves	2	Oak	440mm	440mm	13mm
I Shelf bearers	4	Oak	440mm	22mm	10mm

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

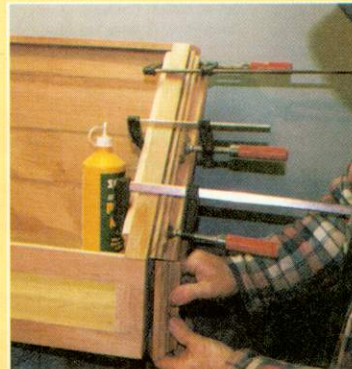
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9 Make the mouldings by routing from the solid or by building up several thinner moulded sections



10 A mitre saw will be needed for a neat joint on the mouldings. Cut the front piece to length first then cut the sides to fit



11 Glue and cramp the bottom mouldings in place, set back slightly from the leading edge of the carcass



12 The top mouldings overhang the carcass by the same amount for a balanced look. Screw these in place

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Woodworking Answers

This month our experts are called upon to dispense advice on repairing roll top desks, using dado heads on table saws and sharpening moulding planes

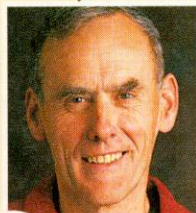
Ask the Good Woodworking expert team



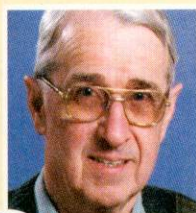
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PLUS: Our other specialists in every woodworking field from timber to finishing are available to answer your queries as required

Tambours



I have to renew the canvas on a roll top desk. Locally I have only found hessian which is a very much looser weave than the original. Would this be suitable or what else should I use? What is the best glue?

W. Platt, Blackpool

Generally tambours (roll tops) are attached to either a leathercloth or to a fine linen canvas, so I would imagine that the hessian you have found would not be suitable as it is too coarse with too open a weave. Try your local Yellow Pages for a canvas suppliers, or failing that a local artists suppliers should be able to give you an address. The glue used to attach the slats to the canvas should be semi-flexible so as to allow flexing without the bond giving way, and I would suggest a PVA will prove satisfactory but you could also use a contact adhesive.

Pete Martin

Dado no no



In the *New Yankee Workshop*, Norm Abraham uses an adjustable dado head cutter mounted in a table saw. I purchased a Freud dado set consisting of two blades and a set of five chippers, but found that my table saw's arbor only accepts a single blade. I now gather that only US tables can take this cutter. Do you know of a table available in the UK that can have a dado set installed?

One other thing that I have heard of but never seen is a 'wobbler' blade which I understand can be used instead of a proper dado head cutter.

Andrew Hawkins, via Email

There has recently been a lot of discussion on internet forum groups on the subject of dado cutters and safety, with many Americans unable to comprehend the UK safety

A showcase joint



I would like to make showcases and am trying to find a jig or piece of equipment to cut the mitres where they join in the corners to hold the glass.

Dennis Savage, Huddersfield

Showcase joints are some of the fiddliest types of joints I have ever come across and, not surprisingly, have largely been superseded by metal frames or by simply gluing the glass panels together. They do sometimes feature on high quality 'tours de force' work by top cabinet makers. It is a joint that I'd love to try once but am reluctant to start on for fear of proving myself not up to it!

To my knowledge there are two types of showcase joint; one that relies on mitred components only, and a more complex version that utilises both a dovetail and a mortice and tenon to hold the three components together.

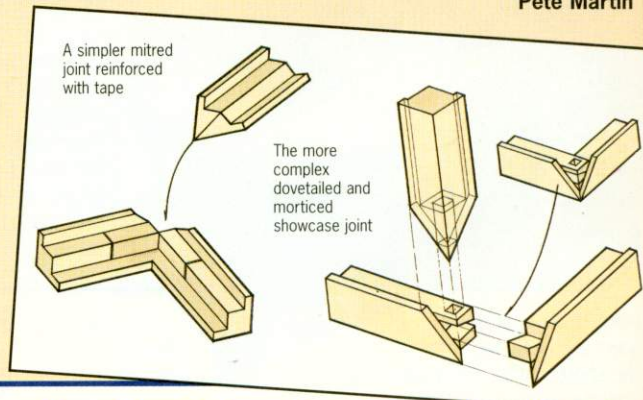
Both are made from stock prepared to the section shown in the enclosed drawings. With the simpler method, the two horizontal sections are first mitred together then the third vertical section is mitred between these. There is no mechanical strength in this joint whatsoever, relying on the (poor) endgrain glue joints and strips of glued canvas over the finished

joint to hold everything together.

The second version of this joint has more structural integrity but is constructed in the same order. The two horizontal members are first dovetailed together as shown. Once assembled, a mortice is then cut through the centre of the joint to take a tenon formed in the third section.

I would expect a mitre saw to be able to handle the simpler joint with few problems, accuracy being essential, but the mitres on the second version will most likely need to be cut and trimmed by hand (certainly the dovetail and tenon will need to be). With a little thought, it would be possible to cut the mitred portions with the aid of a radial arm saw, the blade being set at a 90° mitre and raised sufficiently to trim only the outer portion of each section. Face edge and side marks are essential on this to ensure that you cut the three components correctly.

Pete Martin



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Delving into Detail

Fielded Panels for Doors and Chests (3)

by Jeff Gorman

While the most striking feature of a panelled door might be the treatment to reduce the panel thickness to the width of the grooved stiles and rails, the entire door can be enhanced by suitable relief given to the inside edges of the stiles and rails.

Of the three examples I've shown, the 'A' and 'B' frames need use the common haunched mortice and tenon as drawn in last month's issue. The more elaborate doubly-fielded panel will probably look best with an ovolo moulding. For this I've shown an exploded view of a joint suitable for handwork in hardwoods. Some workers might prefer a 'scribed joint' either cut by hand, or more reliably scribed with an expensive set of router cutters.

Chamfer Practicalities

The tightness or flatness of the 'stopped chamfer' terminals will have a marked effect on frame

surface of the workpiece. As you scoop the chamfer, a close lookout for adverse grain direction will be advisable. If you have one, a drawknife can also do the job. For a more sweeping curve use a round-faced spokeshave. Work the straight sections with a flat-faced spokeshave.

It would be unwise to make the chamfer angle the usual 45° because this would leave a weak 'feather' edge as shown. I've also drawn a cross section with the angle at 60°. Note the very narrow flat that gives a stronger edge and avoids the disaster that can arise from one spokeshave stroke too many.

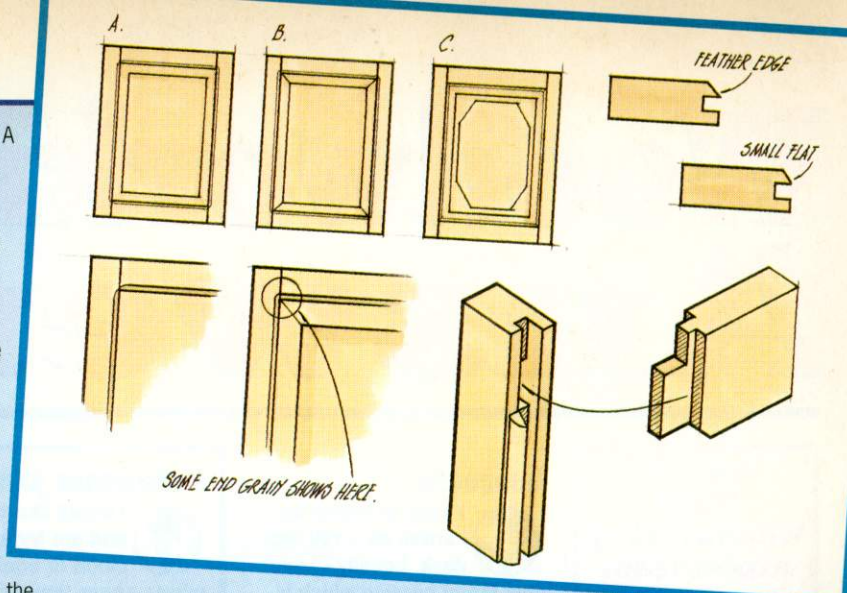
Don't try to mark the chamfers with a common marking gauge. If you want to know why, just try it on a piece of scrap. Also, avoid glass-papering the chamfer surfaces since this is likely to round over the arrises.

By the time you have practiced the chamfering on some scrap and the job itself, you

In this 'Sculptured Chest' in English oak and burr elm by Waywood, not only are the edges of the stiles and rails shaped, but their faces are also curved



'A's appearance. A tightly-curved termination can be worked freehand with the chisel bevel facing the



should be able to use a chisel to tackle the small chamfers that decorate the deeper-than-usual fielding suitable for this kind of panel decoration.

Router Practicalities

The quickest way to form an ovolo moulding (say) is to run the bearing of a suitably adjusted roundover cutter round the inside of a cramped-up frame. If the moulding's surfaces are to accurately align at the corners, the faces of the rails and stiles must be flush before you do start routing. This implies that you'll be required to virtually clean up the job before it is glued - not a terribly good idea in my view, but we are really dealing with a technique more suited for batch produced work produced on carefully set machines.

Morticing Practicalities

At first sight, the setting out might cause some head scratching. If you

think of this as a common haunched mortice and tenon joint with the upper ends of the a groove wall pared back to the line of the ovolo, you should be able to visualise it fairly easily. This gives you a 'long and short shoulder' mortice and tenon joint. Note that I've shown just a rather stubby haunch to reduce any twisting tendency in the joint. When in doubt, make a practice joint.

It would be prudent to strike the moulding before establishing the precise location of the forward shoulder on the rails. To form the ovolo, use a well-tuned shoulder plane to first create a shallow rebate. Chamfer the arris at 45°, and by forming a series of flats create the curve. Finish with some delicate work with fine glasspaper supported on a flat cork-surfaced block. Whatever you do, don't use a specially formed block as some books recommend. This is just asking for the arrises to be rounded and ruined.

laws. British table saws are designed with the shorter arbor these days specifically to prevent stacked blades such as these being used. Whilst technically not illegal in themselves, their use does require the removal of the riving knife and the crown guard that is usually attached to it, and it is this action that is frowned upon by the Health and Safety Executive. Even if you could attach a wobble blade (a special blade and asymmetric washer assembly that allows the blade to be 'bent' on the arbor and produce a wider kerf than normal), it would still not comply with the regulations. There is no denying that these blade assemblies are useful, allowing housings, grooves and even tenons to be cut with ease on the saw, and many older industrial saws had longer arbors to allow their

use, but they are inherently unsafe, thus the legislation. Surprisingly, American legislation on the subject seems lax, which is why you see them so regularly on US TV and in many US woodworking magazines.

If you still wish to use a wobble blade, I would not advise them for anything other than crosscutting procedures, and certainly not for ripping or cutting rebates. The riving knife is not essential for this but you will need to devise a way of securely guarding the blade at all times. Also, do not take too deep a cut in one pass or you risk the possibility of throw-back. Incidentally, I am informed that Freud dado blades are primarily for cutting cross-grain housings on radial arm saws, which will still accept them.

Pete Martin

Sharpening planes



I have acquired several wooden moulding planes which are not in very good nick. I have soaked the bodies in linseed oil, and removed most of the rust from the flat areas of the blades with fine abrasive paper, but how do I sharpen edges? Also one is a smoothing plane with the blade mounted 'on the skew'. What is its purpose?

A. H. Read, Stoke-on-Trent

According to my sources, soaking planes in linseed oil is not very good. Some people say that they can remain permanently sticky and, for years afterwards, might even exude oil. However it is a long-standing practice well established in workshop lore. I have given my beech planes and other unvarnished

workshop gadgets the occasional rub with 'boiled' linseed oil. Nowadays, boiled oil isn't actually boiled at all, but has 'driers' added. I rue the day when I accidentally used raw oil on my bench top and contaminated workpieces for days afterwards.

Depending on their complexity and degree of previous wear, sharpening moulding plane blades can be a very tricky business. For one thing, the wood of older planes will have shrunk across its width, making the profile no longer correspond with the outline of the cutting edge. Since most moulding planes are not subject to a great amount of edge wear, one practice was to sharpen by simply to rubbing the back of the iron on the oilstone, thus not interfering with its profile. If the iron is pitted, and/or badly worn, this could become a long

and thankless job. It could be made easier if you use something like Spraymount to temporarily stick some coarse aluminium oxide paper to a plate glass sheet and use this instead of the oilstone. Finish on a series of increasingly finer grade papers.

A more drastic approach is to set the iron so that the lowest part of the profile just projects beyond the sole. Cover the sole fore and aft of the mouth with masking tape. Using suitable oilstone (or diamond) slips running along the masking tape, abrade the edge until its shape exactly matches the sole's profile. This is not as easy as it sounds. From time to time the forward section of the masking tape will need to be removed if you are to be able to accurately compare the edge with the sole. When finished you will have a correctly profiled edge

that, because it has no clearance angle, will not cut. Remove the iron and use your flat, round and triangular slips to sharpen the edge at the correct 30°, working until the 'wrong' bevel just disappears. I can think of another way, but this involves making an angled jig, making a template, softening the iron, filing and then re-hardening and re-tempering and sharpening.

Enquiries to the Internet OldTools group have brought one report of a manufactured coffin-shaped plane with a skewed edge. The owner thinks it might be a one-off, but most respondents (who include some avid collectors), say they have never seen one. If your plane is not coffin shaped, but resembles the other moulding planes, you could have a skew-mouthed rebate plane in which the mouth goes right across the sole. In this case the effect of the skew is to drive the plane against the side of the rebate, thus helping to prevent the sideways drift that can so easily happen when rebating.

If you do have a smoothing plane, it could be

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When you just can't find a supplier of that essential fitting, tool or material, the answer is to contact **Good Woodworking's Supply Service**. Often enough we can solve your problem, but we will publish your question because other readers often come up with further ideas. Send your supply problems to Supply Service, **Good Woodworking**, 30 Monmouth Street, Bath BA1 2BW.

① Where can I buy good quality music box movements at about the £100 mark?

F. Gregory, Wiltshire

Hobby's of London (☎ 0208 761 4244) sell movements ranging from £5.95 up to 50 note cylinder movements at £175 plus. Their catalogue costs £2.85 from W. Hobby Ltd, Knight's Hill Square, London, SE27 0HH.

② Where can I obtain plastic transfers (decals) with children's motifs for decorating toys?

V. Alfrey, Surrey

Again, Hobby's have a small range (☎ 0208 761 4244).

that it was to help reduce problems when dealing with gnarly grain. With a skewed iron you get more of a slicing action that acts as a lead-in to the wilder grain, enabling an easier cut. The skew could be helpful in reducing the shock to the plane when its blade first meets the leading edge of

the workpiece. This can cause the plane to jump, land, jump again and so on, like a stone skimming the surface of a pond, causing the effect known as 'skitter', but which some people mistakenly confuse with chatter (the actual vibration of the iron).

Jeff Gorman

Chest examination



I am studying Design & Technology towards GCSE examinations. Next year I must design and produce a project of my choice. I have decided on a tool chest and hoped you could assist me with my research work by supplying me with:

- a) Variety of joints to construct a box
- b) Different types of wood

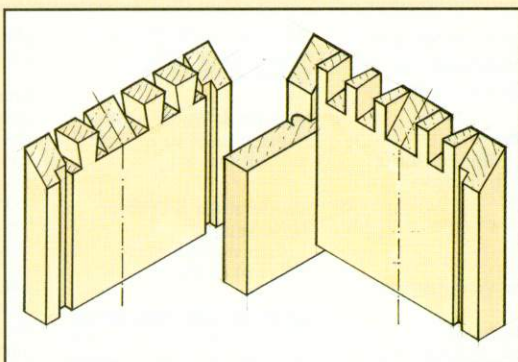
Meilir Glyn Williams, Conwy

There are, of course, a variety of traditional toolbox types, so your first stage in investigating and designing your school project should really be a full study of what you actually need. This should start with an assessment of the tools you presently want to accommodate and those you intend to acquire as you get older. The next question should concern its actual use, including portability. When you have got this far, a clearer idea of your design should emerge.

However, since my brief is to give an answer that will help thousands of others, I've anticipated that you might decide to make a fairly conventional toolchest with a hinged lid deep enough to take your handsaws and

other items.

Through dovetails will be the inevitable joint for a strong box. For this job the parts are glued up to make a box and the top is then formed by sawing it into two. I've drawn one that will enable you to demonstrate your skills by showing a mitre where the box is sawn apart. The mitres at the top and bottom edges allow a groove for the top and bottom, yet avoid certain problems that arise if a common dovetail is used. Only the bottom is shown, but the top can be made the same



way. Note the 'quirk and bead' formed on the bottom panel's sides (but not necessarily on the ends) adjacent to the tongue. This disguises the panel shrinkage that will inevitably occur, unless

you decide to use a good quality birch plywood instead.

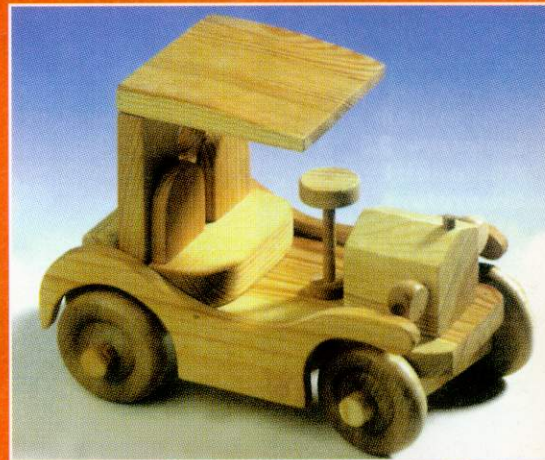
Almost any good quality wood will suffice. Many were made from pine, but I've seen them in mahogany and oak.

If you can find a copy, I drew elevations of a traditional chest in Issue 76:60.

Jeff Gorman

COURSE of the MONTH

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Opitec supply a wide range of woodwork and craft tools and materials to educational establishments, as well as to private individuals. Their catalogue (£3, includes following edition free) offers a range of toy projects in kit form, such as kites, boats, games and children's furniture. Components are made in Opitec's Bavarian factory.

Malcolm Wilkie began running one day courses featuring these projects for home educators and families, some four years ago. The venue can be a home, a hired room or village hall, depending on numbers participating. Courses may run anywhere in the country, and Malcolm can often schedule dates at fairly short notice. Typically there would be about 12 children and adults taking part. Aimed initially at home educators and various support groups, anyone buying the Opitec catalogue can apply to take part. Children as well as adults are welcome, and the courses as such can be quite sociable events. As well as woodwork kits, simple electronics and various craft projects can be built.

If you're keen to get children involved in practical craft and woodwork skills early on, Opitec may be a useful way to introduce them.

Course notes

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WOODWORKING WORLD

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August has several top woodworking attractions. There's the Celebration of Craftsmanship exhibition in Cheltenham and Sculptree 2000 at Westonbirt Arboretum, both more than deserving of a visit. Plus our roundup of demos and courses around the country



If you have an event, course, club or a new product that you would like featured on these pages, send details, with a photo if possible, to Jan Evans, Woodworking World, Good Woodworking, 30 Monmouth St, Bath, BA1 2BW at least two months before the publication date

DIARY



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Mick Hanbury - Turning household accessories

August 6
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☎ 01787 237291

IAN WILKIE WOODTURNING CLINICS

July 22
Turning Pens
Tewkesbury Saw Company, Glos. ☎ 01684 293092
Plus woodturning tuition by the hour, one day a month.
Toolite Ltd, Mitcheldean, Gloucestershire.
Details ☎ 01594 544521

TURNERS RETREAT, NOTTINGHAMSHIRE

August 12
John Shepherd
Turners Retreat, Woodturning Centre, Brunel Industrial Estate, Harworth, DN11 8QA
☎ 01302 744344

WEEKEND COURSES ON GREENWOOD CRAFTS WITH THE NATIONAL FOREST, LEICESTERSHIRE

Two day courses until October, including basket weaving with willow, hurdle making and building and turning on your own pole lathe. Numbers are limited so book early.
Details call Peter Wood ☎ 01332 864529, email: pwood590@netscape online.co.uk

THE GREAT EASTERN WOODWORKING & POWER TOOL SHOW

July 15 - 16,
Major manufacturers, many bargains and demonstrations. Free parking. Refreshments available. Admission £3 or £2.50 in advance. 9.30am to 5.00pm. Indoor arena. East of England Showground,

Peterborough.
☎ 01733 314742 for info and ticket sales



DEMOS AT KEENLEYSIDE

August 19
Bob Chapman - Turning
Details from Keenleyside, 19 Station Street, Bedlington Station, Northumberland,
☎ 01670 823133

FREE DEMOS AT JOHN BODDY'S

July 22 and 23
Brian Heedham - Woodcarving
July 29
Harry Middleton - Woodturning
August 30
Jim Kitson - Finishing
July 15 - 16
Harry Middleton - Turning
August 5 and 6
Tim Hope - Woodturning
August 12 and 13
Jim Kitson - Finishing
August 19
Woodturning - Marsden Howitt
August 20
Woodcarving - Peter Wright
August 26 and 27
Woodcarving Peter Berry
Riverside Sawmills, Boroughbridge, N. Yorks YO5

Club News

All woodworking clubs or organisations who would like information of their specific events published on these pages should send details to: **Club News, Good Woodworking, 30 Monmouth Street, Bath, BA1 2BW** at least two months prior to publication date

Avon and Bristol branch of AWGB

Meets on 3rd Thursday of month, 7.30pm, Huntsman Inn, Downend, Bristol. All welcome.
Details Julie Heryet ☎ 0117 968 3440

Berkshire, Hampshire and Surrey Fellowship of Woodworkers

Meets at Mytchett Centre, Mytchett, Surrey, 7.30pm.
Details ☎ 01252 542901

Cheshire & North Wales Woodturners

Meets in Sychdyn, near Mold. Contact John Coppack ☎ 01244 811048

Coombe Abbey Woodturners

Meets every six weeks on Saturdays. New members welcome. Details Derek Rogers ☎ 01203 457596

Derbyshire Dales Woodcraft Club

Contact Peter Saunders 01335 370155

East Surrey Woodturners

Meets 17.30pm, last Thursday of month, Edgecombe Community Centre, Selsdon
☎ 0181 657 1895

Fenland Woodturners

Meets at Spalding Common Community Centre, 7pm, last Wednesday in the month.
Trevor Blackburn ☎ 01775 767917

Gloucestershire Association

of Woodturners

Meets 2nd Wed of month, 7.45pm, Churchdown Community Centre, Gloucester. Details Chris Eagles ☎ 01242 672334

Grampian Woodturners' Club

Meets monthly at St Devenick's Church Hall, Beildside, near Aberdeen. Contact Alastair McKenzie ☎ 01224 861420

Gwynedd Woodturning Association

Meets in Bangor. Contact Albert Harrison ☎ 01407 765447.

Harworth Woodturning Club

Meets 7pm, Tuesdays, twice monthly at Turners Retreat Woodturning Centre, Brunel

Industrial Estate, Doncaster. Regular guest demos.
Details ☎ 01977 736928

High Peak Woodturners

Meets in Hazel Grove. Alan Fell ☎ 0161 449 9227

Huddersfield & District Woodturners

Contact Wendy Bamber ☎ 01484 662001.

Jorvik Woodturning Group

Meets in Thorganby, near York. Tim Evans ☎ 01904 784020

Kennet Valley Woodturners

Meet at Padworth Village Hall at 7.30pm on the second Tuesday in each month. Contact Bryan Clarke ☎ 01635 46340, bryan.clarke@btinternet.com

Kent Woodworkers Club

Meets bi-monthly at Apple Craft Centre, Macknade, Faversham on Saturdays. Visiting speakers

planned. Annual subscription £10.00. ☎ 01732 773145

Lancashire and Cheshire Woodcarvers

Meets at St Andrews United Reform Church Hall, Rochdale on 3rd Saturday of every month, 12 noon to 3pm. Newcomers welcome. Richard Colbran ☎ 01282 426449

Lincolnshire Association of Woodturners

Meets 7.30pm on 3rd Tues of month at Cranwell Village Hall, Cranwell, Lincs. Details ☎ 01529 414322

Merseyside Woodturners

Meets in Huyton. Contact Steve Jackson 0151 7335917

Northern Federation of Woodturning Groups

Helps to arrange insurance, shows and foreign exchanges for turning groups. For more details contact Roger Bealey

9LJ = 01423 322370

GREAT YORKSHIRE SHOW July 11 - 13

Launch of New Woodland Area giving a comprehensive insight into woodland management from nurseries through to sawmill.. Forestry and Timber Utilisation sections include woodturning and woodcarving competitions. Tickets £12 for adults, £9 over 60's £6 children.

Details contact Show office
= 01423 541000

SNAINTON WOODTURNING CENTRE DEMONSTRATIONS

July 22 and 23

Demonstration of woodturning by Tony Wilson. 10am to 4pm

Details Snainton Woodturning centre, Barkers Lane, Snainton, Scarborough,
= 01723 859545



AXMINSTER POWER TOOL DEMONSTRATIONS

July 20 and 21

Routing Course - John Perkins

August 3 and 4

Miniature turning - Ian Wilkie

August 14 to 16

Ian Edwards - Carving

August 17 and 18

John Perkins - Routing

Chard Street, Axminster,

Devon. Details = 01297 33656

ROBERT CHAPMAN SCHOOL OF WOODTURNING

One to five day courses. All abilities and ages. Max two

on = 01937 583711

North Lincolnshire Woodturner's Association

New members welcome.

Details = 01652 658249

Pendle Woodturners

Meets in Nelson. Contact Derek

Bailey = 01282 696215

Red Rose Woodturning Club

Meets in Preston, Lancashire. For

details contact N Livesey

= 01772 733980

Scarborough & District Woodturners

Meets in Snainton. Contact Terry

Taylor = 01723 859500

Shropshire Association of Woodturners

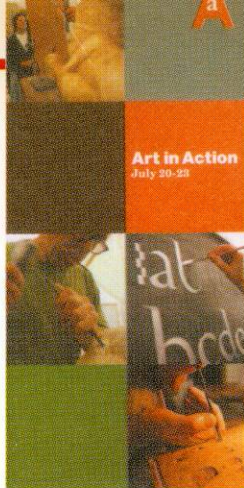
Meets at Cock Inn, Hanwood, nr Shrewsbury on 3rd Thursday of month, 7pm. Visitors welcome for a modest fee, off-set against membership. Contact Geoff Cook
= 01952 252747

ART IN ACTION 2000

20 to 23 July

Yes, it's that time of year again, when an anticipated 28,000 people descend on Waterperry Gardens, near Wheatley, south of Oxford for the annual Art in Action bonanza of fine arts and crafts. 15 marquees will house crafts as diverse as lovespoon making, Eastern arts, Glass, Ceramics and all manner of woodworking, all in a traditional English atmosphere. Fine furniture will be displayed by the Edward Barnsley workshops, Matthew Burt, Rycotewood College, Waywood and carver Anthony Webb, along with turners such as Jules Tattershall and master guitar maker, Paul Fisher. And, as we always point out, there's a great array of food and drink to consume. Who could resist?

Details Art in Action, 96 Seddlescombe Road, London SW6 1RB, = 0207 381 3192



students per course.

93 Park Way, Coxheath,
Maidstone, Kent ME17 4EX
= 01622 747325

STANTON GUILDHOUSE TRUST SUMMER SCHOOL

Based in the Cotswolds, the Stanton Guildhouse Trust offers courses in woodwork, turning arts and crafts. Its summer schools run September 4 to 10 and features carving in wood and stone with Dick Onians.

Details from Chris Eagles
= 01242 672334

WOODBURY WOODTURNER'S SHOW

This year's show will be held on
Saturday 12 August from 11am to 4pm at Woodbury Village Hall,

Near Exeter. Demonstrations, Club Shop, Power Tools, Competition and sale of timber. Teas and coffees available.
Admission 50p

SCULPTREE 2000

August 21 to 28

Yet again a team of 12 top British woodcarvers will be creating large scale sculptures at Westonbirt Arboretum, near Tetbury, Gloucester, using chainsaws and gauges to transform storm damaged trees into works of art. Plus the Festival of Wood from August 26 to 28 with demonstrations and displays of woodturning from the Gloucester Turner's Association, furniture and much more.

Details = 01308 456321

SHARPENING EVENINGS WITH TOBIAS KAYE

Dedicated hands-on sharpening evenings for people who want sharper turning tools. Bring your own tools and grinders.

The Workshop, 11 Lower Dean, Buckfastleigh, Devon, TQ11 0LS. For details of dates phone Tobias on = 01364 642837



Staffordshire and South Cheshire Woodturners Assoc

For more details on meetings and events, phone = 01538 266468

Sunderland Woodturning Association

Meets 6.30pm on 1st Monday of month at The Old Columbia School, Washington, Newcastle upon Tyne. New members welcome. Details = 0191 5841356 or 0191 5347948

Thameside Woodturners Assoc

Meets second Thursday of month at the Fold, Langdon Road, Billericay, Essex. Details Wally Hammond = 01268 734881

Trafford and Districts Woodcraft Club

Meets 7.15 pm on the first Monday of each month at Room 19, Green Lane High School, Timperley. Details Ron Reaney on = 0161 941 1930

Trent Valley Woodturners

Meets 2nd Wednesday of each month at 7pm, Kegworth Community Centre, Leicester.
= 0115 985 5434

Wessex Woodturners

Meets at Yandles, Martock, Somerset on last Friday in month, 7.30pm. Details Dave Smith
= 01278 450568

West Manchester Woodturners

Meets in Atherton. Contact Brian Broad 01942 512393

West Northants Woodturners

Three years old, 65 members strong club meets twice a month. New members welcome. Details contact Ernie Potter = 01604 810434

West Riding Woodturning Group

Roger Bealey = 01937 583711

Wigan Woodcrafts

Meets twice monthly. Details from J. Jackson = 01942 862741

RETAILER of the MONTH

Graham's Machinery (Sales)



Email: sales@grahams-machinery.co.uk

Website: www.grahams-machinery.co.uk

DEVA HOUSE
KNUTSFORD WAY
SEALAND IND ESTATE
CHESTER
CH1 4NX

Tel: 01244 376764

Fax: 01244 377177



Started by Jim Graham some 25 years ago as an engineering supplier, Graham's Machinery (Sales) became more heavily involved in selling woodworking equipment in the mid 1990s. They are repair agents for most makes of power tool.

The huge range includes power tools from Dewalt, Metabo, Bosch, Hitachi, Makita, Fein, Mafell, Rapesco, Wera and Trend. Machinery from Elektra Beckum, Record Power, Scheppach, Rexon, Charnwood, Triton and Eumenia is stocked. Hand tools include brands such as Record, Stanley, Draper, and American Tool Co.

Mail order is free (in the UK) for most products. A second store is located in Leeds (= 0113 273 3666). It's worth making a note of Graham's Machinery Power Tool and Woodworking Show. This is held on September 15th and 16th.

Shopping list

Hand tools	☒
Power tools.....	☒
Machinery	☒
Timber.....	☒
Repairs.....	☒
Mail order	☒
In store demonstrations	☒
Wheelchair access.....	☒

OPENING TIMES

MONDAY to FRIDAY 8.30am to 5.30pm

SATURDAY 8.30am to 12.30pm



Down tools & out...

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BUYING

VHFs

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Crabber 17

Sturdy, GRP, gaff-rigged dayboat on test p.64

SAILING

Manoeuvring under sail short-handed



St-Tropez off peak
Charter on the Côte d'Azur from £365 per head!

IMPROVING

How to upgrade your anchor windlass



JULY 2024

LOOKING FOR A BOAT?

Check out our massive listings section & buying guide. Starts p.109

Hunter Channel 31

Tested: A sporty new 31-footer with stylish accommodation. PLUS used Horizon 26

...on the water with Sailing Today
ON SALE NOW!



Your Guide to Better WOODTURNING

Turning pens and pencils



Turning pens can be an absorbing

and rewarding hobby. Ian Wilkie examines what you need and how to get started. Then Dave Roberts shows you how to turn simple natural edged bowls

Turning pens has become a very popular hobby with many woodturners. A huge selection of colourful and interesting blanks is available together with a wide range of twist pen and pencil inserts, rollerball and fountain pen inserts in different sizes and diameters.

It is not necessary to have a large lathe and the equipment needed is quite modest. A pen can be produced relatively quickly and makes an attractive and personal gift. I recently visited Turners Retreat in Harworth in Nottinghamshire and was impressed with their large range of pen products, many imported from the US, where pen-

making is obviously very popular.

It is a good number of years since I wrote about pen making in this magazine and, with new turners joining the ranks all the time, I thought I would try out three pen mandrels, together with examples of some of the colourful blanks I bought back from Turners Retreat.

Making a 7mm pen

To make a pen you first purchase a pen kit which has all the mechanical parts required. Basically the principle is that a brass tube is glued into a wooden, or a synthetic,

blank which is then turned on a mandrel to the desired diameter. What does 7mm relate to? It is the diameter of the hole which needs to be drilled in the blank to take the brass tube. This type and size of pen is a good starting point and there are plenty of kits to

A series of pens turned in Dymondwood



choose from varying in quality and price. The insert I have used is in the middle price range and is described by Turners Retreat as 'Premium grade' and costs £2.45. Spare tubes are 35p each and it is always wise to have a few in case of disasters!

Turners Retreat provide a full sheet of free instructions for each type of pen they sell. Be aware that each brand of pen insert is slightly different and it is essential to check the diameter and length of the brass tube in the kit you have purchased before cutting and drilling the blank.

One of the attractions of pen turning is that you can use proprietary pen

Step by step guide to turning a pen



1 The first thing you'll need to make a pen is a kit of parts, which are available from most turning suppliers in a variety of styles



2 The Proxxon bandsaw is ideal for cutting pen blanks but requires a homemade fence. The timber is a slice of burr elm

Which tool?

I designed this miniature 12.5mm oval skew for pen and lace bobbin making. It is available from Craft Supplies and costs £14.45. All the turning can be done with this one small tool. Both Hamlet and Crown also make good sets consisting of three pen making tools.



blanks in a wide choice of exotic woods with interesting grain patterns and this is a very good opportunity to try out some really beautiful woods in an inexpensive way. Dymondwood blanks are also very popular and come in lots of exciting colours. This product is made from natural 1.5mm, maple or beech, hardwood veneers which have been impregnated with resin and permanently coloured with dyes. The veneers are then bonded

under high temperatures and pressure to form a multi-layer wood product which can be turned, machined and polished. You can also, of course, cut your own blanks as I have done in this article. The sample pen is made in burr elm.

Turning the Pen

1 Cut an accurate blank 127x14x14mm or purchase a proprietary pen blank which may well be up to 19mm square. Draw a line at the half-way point along the

Where to buy blanks and kit

Many firms offer mail order pen blanks in exotic woods, burrs and Dymondwood together with pen and pencil inserts and everything to do with pen making:



APTC: ☎ 01297 33656
Craft Supplies:
☎ 0800 146417
Turners Retreat:
☎ 01302 744344



Pen mandrels

A pen mandrel is designed to give good support to the brass tubed blanks during turning and the bushes give a guide to the final diameter needed. The mandrel is supported at the tailstock end with a revolving centre. Most mandrels have a 1 or 2MT shank which can be held in the headstock; some however have plain shanks and need to be held in a drill chuck. The MT shank should rotate accurately if the lathe is in good condition. If a plain-shanked mandrel is used a good drill chuck is required otherwise errors may creep in. Moreover the use of a drill chuck reduces the distance between centres considerably and this may be a problem when using a miniature lathe. Pen mandrels are manufactured and sold by a number of turning suppliers and usually cost around £12 to £15 and I have tested three models:

Craft Supplies De-Luxe Mandrel £13.95

This mandrel consists of a 1 or 2MT carrier which holds a central 6.2mm rod. The end of the rod does not have a screw locking device instead it has a conical slide-on end which secures the blanks by means of pressure from the



tailstock revolving centre. This is a quicker device to use than one relying on a locking screw and is ideal if you want to produce lots of pens quickly. The metal is chemically blacked to inhibit rust. With this mandrel two blanks are turned at a time. The product is well made, works efficiently, and is excellent value for money. Craft Supplies also sell a cheaper, plain ended mandrel, to use in a drill chuck, with a good selection of bushes of various diameters which would meet every possible need for the pen-maker.

Planet Universal Mandrel £15.21

The 1 or 2MT carrier on this pen mandrel has a central hole and locking screw so that the 6.2mm diameter mandrel rod can be lengthened or extended as required to turn one or two blanks at a time. I

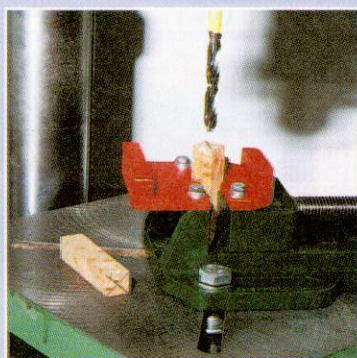


particularly like this mandrel because I find it easier to turn one blank at a time and I can do this in my Selbix mini lathe which has a hollow headstock. Record lathe users will appreciate that their headstock is not hollow and therefore if they wish to turn the blanks singly they will need to shorten the rod. A selection of guide bushes are included together with an Allen key. This is a good looking mandrel which is very well made in quality steel and again, very reasonably priced. Ring ☎ 01686 626260 for your nearest Planet stockist.

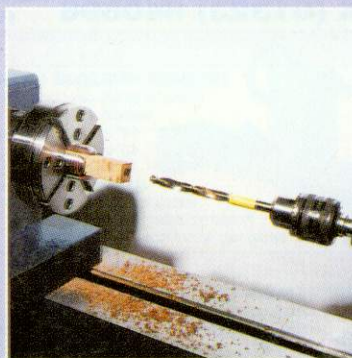
(Cont on page 79)



3 I have found correction fluid ideal for marking blanks. These elm blanks are about to be cut in half



4 Drilling the blanks through in a bench drill. You must take care to centre the bit and ensure the blank is vertical...



5 ...unlike drilling with the lathe, where the hole is automatically aligned correctly through the centre of the timber



6 The brass tubes about to be glued into the drilled blanks. I find Araldite the most suitable adhesive for this

HEGNER QUALITY & PERFORMANCE IN YOUR HANDS FOR UNDER £200!

World patents protect the critical design factors that make Hegner fretsaws truly unique. No other machine can consequently match the cutting precision, smoothness of operation and working economy that you automatically enjoy when you own a Hegner saw. – **That is why over 10,000 Hegner saws are now used in U.K. schools alone**, and why a comparative review in "Good Woodworking" Magazine (TOOLS ON TEST DEC. 96) advised:

"... HEGNER stands head and shoulders above its competitors. Worth every penny if you want a professional machine that will always be a joy to use."

TACKLES PROJECTS NO OTHER MACHINE CAN

With a Hegner fretsaw you can cut interlocking components that match to perfection for inlays, puzzle blocks and incised or raised lettering. Dovetails, mitres, scribed joints, compound angles as well as curved and straight cuts are equally simple to execute.

More than this, you can work with timber and plastics up to 2" thick (or 2 1/2" on the larger machines); aluminium, copper, brass and precious metals (!) up to 1/2" thickness, and even 3/4" steel plate or bar.

FIRST CHOICE FOR BUSINESS and HOME USE

Whether you are a professional or part-time woodworker, you want and need to be able to produce consistently accurate results. A Hegner saw provides you with this capability. Additionally, the absence of noise or vibration in the free-running machine allows you to give your full concentration to the work in hand.

Twin pivot arm geometry does away with the arcing cut characteristics unavoidable with single pivot designs. The benefit is a truly vertical blade stroke that makes the sharpest, on-the-spot turns feasible together with the cleanest finish. In fact, in many materials such as sign-makers' plastics, composites and hardwoods, the Hegner sawing action produces a polished-finish straight from the blade.

OPERATING ECONOMY and EXTENDED BLADE LIFE

Pure cutting capabilities and current consumption costs of less than 1 1/2p per hour are only a part of the Hegner owner's rewards. Patented 'fulcrum edge' blade clamps eliminate arm induced flexing stresses at these critical points and contribute to hugely extended blade life over other designs.

From this standpoint alone, a Hegner fretsaw repays its moderate additional purchase cost very early in its working life. (Check also our 'Premium Quality' replacement blade costs against all others!)

FASTEST BLADE CLAMPING FOR 'PIERCED' WORK

The fretsaw is unique amongst precision tools in being able to make closed internal cuts. The upper end of the blade is released and introduced through a pre-drilled hole in the workpiece. It then has to be realigned, re-clamped and reattached to the arm. Normally this takes a minute or so and some skill in holding the various components. By contrast, Hegner have a patented, Q.A. blade clamp option which reduces the total time taken to just a few seconds and automatically positions the blade correctly.

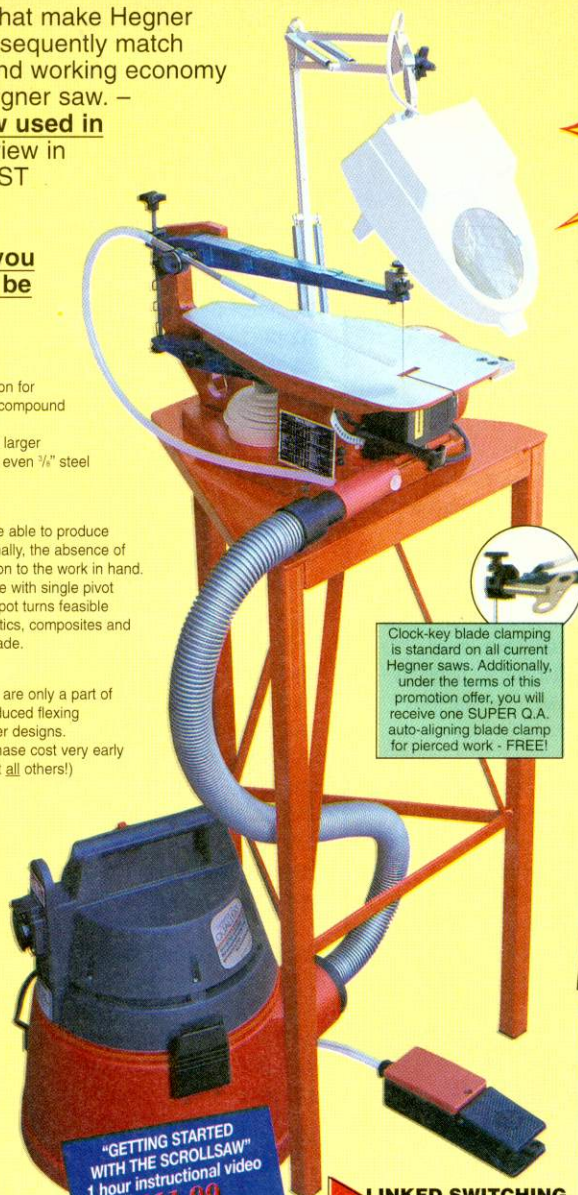
UNIQUELY EXCEEDING TOUGHEST 'DUST' REGS.

Hegner are the only range of fretsaws to have complied with and exceeded the most stringent dust emissions regulations in Europe. Every Hegner saw features a unique device that, when connected to an appropriate extraction source reduces particle and airborne dust emissions to below .28 milligrams per cubic metre of air!

(If not connected to an extractor, the over-table pipe converts to a powerful blower to keep the cutting line clear.)

WIDEST RANGE OF OPTIONS and ACCESSORIES

Every Hegner fretsaw is built to the same unique standards ensuring that the most exacting and rewarding tasks can be undertaken with total confidence. Some accessories however (such as the footswitch, floorstand, lamp, etc.) may add to your pleasure or working convenience. Variable speed is another option that many users find worthwhile. As well as its usefulness for metal sawing, its state-of-the-art sensor feed-back circuitry delivers stutter-free, silky smooth performance with maximum torque even at the lowest speed settings – equivalent to delicate hand fret-sawing. Our free 'FRETSAW INFORMATION PACK' explains more about all of these features.



Clock-key blade clamping is standard on all current Hegner saws. Additionally, under the terms of this promotion offer, you will receive one SUPER Q.A. auto-aligning blade clamp for pierced work - FREE!

"GETTING STARTED WITH THE SCROLLSAW"
1 hour instructional video
£11.99
Learn how to use the scrollsaw safely and enjoyably for cutting wood, metal or plastics

LINKED SWITCHING

Whether you use the hand or footswitch to activate the saw, the extractor can be simply plugged into the main control circuit to operate simultaneously through a single switching action.

INSTANT TENSIONING

Larger Hegner saws (such as the HM2S shown here) are fitted with a cam lever for instant tensioning or release of the blade. This enables a blade assembly to be completely removed from the saw for interchanging etc. in one or two seconds.

HEGNER HMI SAW

INC. FREE Q.A. BLADE CLAMP

***£199.65!**

INCLUDING VAT

(DELIVERY & ACCESSORIES EXTRA - SEE BELOW)

GUARANTEE OF QUALITY

Every Hegner saw is guaranteed against manufacturing fault or defect for a full 5 YEARS from its date of delivery to you.

UNCONDITIONAL APPROVAL

Use the Hegner machine of your choice for 30 days. If you are dissatisfied with it for any reason, we will arrange collection and refund your payment in full.

NEXT DAY DELIVERY

Orders received before noon (Monday-Thursday) will be delivered to you the following day. Should your order be delayed for any reason outside our control, the delivery charge will be refunded.

CALL IN and SEE US

See, try-out and discuss the entire range of Hegner saws or other machines at our Hailsham showroom. Please ring to arrange a mutually convenient time so that a member of our technical staff can give you personal attention.

*LIMITED PROMOTIONAL OFFERS

The HMI saw offered here for £199.65 with Q.A. Blade clamp normally costs £268.15. Other machine prices have been similarly reduced for this limited promotional offer. Prices are valid only for 28 days from the coverdate of this magazine. Hegner U.K. also reserve the right to change specifications, prices etc. without prior notice.

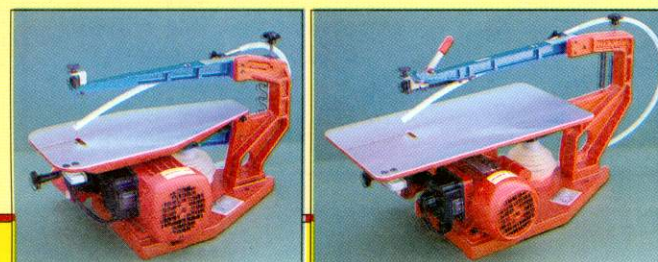
BASIC MACHINES	INC. VAT
MULTICUT 1 (HMI shown left)	199.65
Factory fitted VARIABLE SPEED, add	100.00
MULTICUT 2S (HM2S shown right)	336.00
Factory fitted VARIABLE SPEED, add	100.00

Ask for free 'FRETSAW INFORMATION PACK' for full technical spec. and details of our larger fretsaws, 'fine-line' projects etc.

PRINCIPAL ACCESSORIES	INC. VAT
Dust extractor	198.50
Work Hold-down/Blade Guard	39.95
Floorstand (Min. space/comfortable height)	94.00
Footswitch (Both hands free at all times)	47.00
175% Magnifier/Worklight	53.35
Arm Adaptor (For mounting light on machine frame rather than bench)	10.28
Cutting Coolant System (With 4 litre tank and footpump. Esp. for metals and plastics)	57.36

REPLACEMENT BLADES ETC.

Hegner blades are the best quality and least expensive. Each machine is delivered with a basic selection of 38 blades. We stock more than 40 types for specific jobs. Ask for free 'FRETSAW INFORMATION PACK' for full details.



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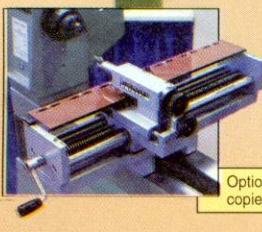
CONTACT US TODAY



HDB200E
£898!
PLUS VAT

HEGNER HDB200E LATHE:

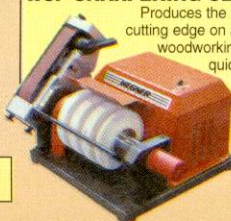
Industrial quality electronic (ABB) variable speed drive;
16" ø swing over bed;
40" between centres;
36" bowl capacity; cam operated cross-slide and tailstock; hollow live tail centre; thread protector, all standard. Every accessory & tool rest style available.



Optional copier

WSP SHARPENING CENTRE

Produces the ultimate cutting edge on all hand woodworking tools, quickly and safely.



FULL DETAILS ON ANY MACHINE SENT BY RETURN

BELT & DISC SANDERS

Especially for CDT education use and 'clean' workshops, Hegner sanders offer the very best in relation to guarding, dust extraction and working versatility. The belt platen for example pivots and locks at any angle for bevel sanding whilst the dust hood hinges back to accommodate workpieces of any length.



MK4 TABLE WORKSHOP Compact and portable but suitable for the most precise wood machining. Ideal for modellers etc. Provides 2 speed sawing for wood and non-ferrous metals, moulding, sanding and drilling. Options: Lathe, sliding saw table, mortiser, flexible shaft, dust extraction.

blank at 63.5mm and mark each side of the line in some way so that the grain can be matched up again. Cut the blank in half and mark the centre point on the cut face; gently centre pop.

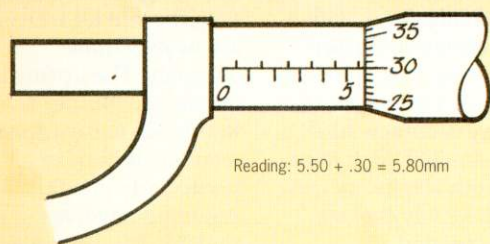
2 Drill a 7mm diameter hole to a depth equalling the length of the brass tube insert in the pen kit + 2mm. To drill the hole, hold the blank vertically in a machine vice bolted on to the bench drill table. Many small bench drills have a limited stroke length of 50mm which makes drilling a 55mm depth hole a problem! The alternative method is to hold the blank in the small jaws in a combination chuck and fit a 7mm twist drill in a drill chuck held in the tailstock. Do not go right through the end of the blank because there is a risk that the wood

will split as the drill breaks through. I favour the use of a HSS bullet twist bit to give a good clean hole.

Cut off the waste wood to give a blank length which equals the length of the brass tube insert + 2mm. You should now have two blanks each with a hole right through.

3 Clean the outer surfaces of the brass tubes with Webrax or fine abrasive and then glue the tubes into the blanks making sure that the adhesive is applied evenly in the hole to give a firm hold. I prefer to use an epoxy two-part adhesive such as Araldite Rapid because it is gap-filling, odourless and reasonably economical. I use a piece of 3mm thin bamboo skewer to apply the glue to the inside surface of the hole. Other pen

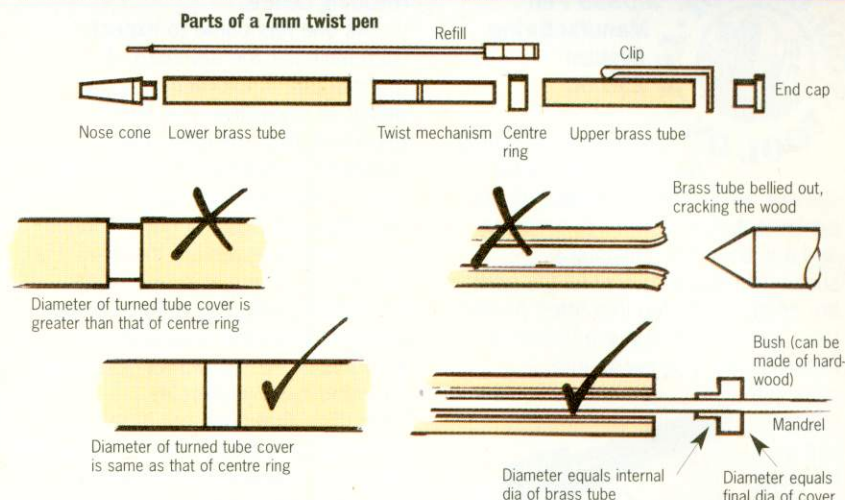
How to read a micrometer



Reading: $5.50 + .30 = 5.80\text{mm}$

The calibration on the thimble is divided into 50 divisions, each one measuring 0.01mm, and a number is printed against every fifth division. The barrel is marked in whole millimetres below the line and half millimetres above the line. To take a reading, add the number of divisions uncovered on the barrel (and possibly half millimetres) and add this to the figure indicated on the thimble, remembering that each division on the thimble equals 0.01mm

Pen parts and turning tips



(Left) Turning tube covers to match the diameter of the centre ring

(Right) You may be tempted to turn the barrels between two cone centres rather than spend money on a mandrel. If you do there is the risk of bellling out the end of the brass tube which will invariably result in the wood cracking

Suitable lathes for pen making

There are a variety of miniature lathes suitable for turning pens, amongst them the Selbix Mini (used in the example), Axminster's Carbatec MkII, the Rexon WL618A, Tyme's Little Gem and the Record RPML300

makers use thick Superglue and an activator but I find the smell is unpleasant and the product does not have a very long shelf life. Avoid the glue getting into the tube and remove any excess before it sets.

I have found that a short length of 6mm dowel temporarily pushed into the tube before glue is applied keeps the inside clean. You will not be able to use the dowel again but it does work well.

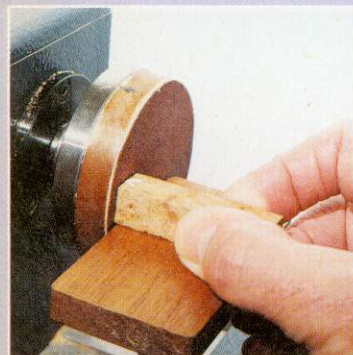
4 When the adhesive has set square off the ends of the blanks using a small disc sander or a home-made sander to use on the lathe as illustrated. Alternatively use a proprietary pen mill. Remove any excess glue from the inside of the tubes with a 6mm fine rasp or again use a pen mill which is designed for this task.

Craft Supplies make a pen mill at £16.95 which is designed to square-off the end of the blank after the brass

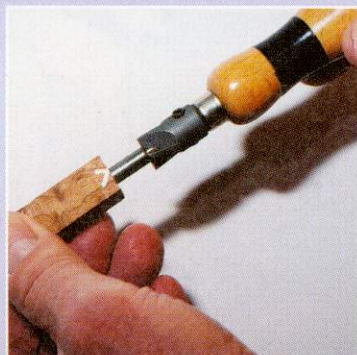
tubes have been glued in position. The tool will also remove any burr on the end of the brass tube and clean out any excess glue that may have got inside. The mill has a wooden handle and is rotated by hand. The Multistar PMS includes a similar device which screws into the MT carrier so that the same operations can be carried out in the lathe by rotating the spindle by hand, or, with a variable speed lathe, used with a very slow lathe speed.

It is important to make sure that excess glue is cleaned off the surface of these mills before it has a chance to build up. A cheaper option is to make a small DIY sander on a face

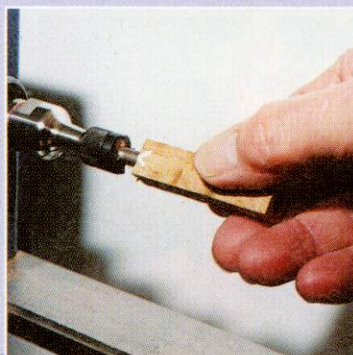
Turning the barrel



7 True up ends on a disc sander. Here the abrasive is glued to a block on a faceplate. A stem on the table is held in the toolpost



8 Cleaning up the inside of the brass tube and truing off the end with the Craft Supplies Penmill. This is done off the lathe



9 Cleaning up the inside of the brass tube and truing off the end with the Multistar PMS. This operation is done on the lathe



10 Turning the covers using a miniature skew. Fingers of the left hand support the work with the thumb on top of the blade



**Multistar Marlin
MD999 Pen
Manufacturing
System
£35.00**

THIS IS described by Multistar as a starter system which aims to provide all the equipment you need for pen-making and it is based on Multistar's successful Marlin range. All the parts are neatly contained in a fitted plastic box. The kit consists of a standard mandrel with a screw-on end, a selection of spacers and a trimming/tube cleaning tool. Also included is an assembly tooling kit for putting the pen together in the lathe. The mandrel is designed so that 2 pen barrels can be turned at a time and



the end of the rod is supported with a revolving centre.

As one has come to expect from Multistar the standard of manufacture is excellent and the design is innovative. It is more expensive than the other two mandrels tested but as you do not need to buy separate tools for trimming and cleaning out the tubes or a press to assemble the pens it is well priced. There is an excellent instruction booklet included with this product. If you like a versatile kit then this is the system for you. If on the other hand you prefer something that does not have so many bits and pieces then either of the other two mandrels tested will be more than satisfactory.

One barrel or two?

There are a number of reasons why I like to turn one barrel at a time. Firstly the toolrest is too short for turning two blanks at a time and therefore it needs to be moved and repositioned which interrupts the smooth flow of the work. Secondly, the shorter the distance between centres taken up by the mandrel the less chance there is of vibration or chatter and

thirdly it is not easy to turn an absolutely accurate cylinder by eye. By using the Planet mandrel I am able to concentrate on turning one barrel at a time and, for me, this is a great advantage. In the example shown in this article I have turned the two barrels together and used the Planet mandrel.

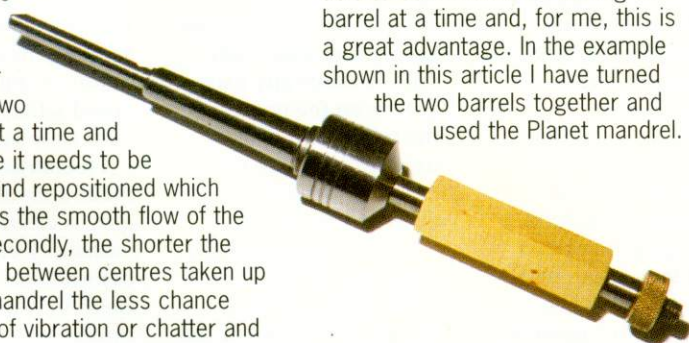


plate as shown in the photos to square-off the ends and to purchase a 6mm round rasp to clean out the tubes.

Transfer the markings you made from the sides of the blanks to the end faces, down to the tube, to assist matching up the grain later.

5 Take a pen mandrel and three bushes which match the diameter of the centre ring in the pen kit. Place the mandrel in the headstock MT. Slide on the first bush followed by one blank, slide on the second bush and then the second blank. Finally slide on the third bush and screw on the locking nut. Bring up the tailstock fitted with a revolving centre to support the outboard end of the mandrel.

Set the lathe speed to 2000 rpm, position the toolrest and with a small 12.5mm skew commence to turn the two blanks to the round. Do not hurry the turning and continually check with a micrometer or Vernier callipers as you approach the correct diameter, to achieve accuracy. Also use a straight edge to see that both blanks are truly parallel. Only the one tool is needed throughout the turning and if the skew is kept sharp with regular honing on a ceramic tile, a DMT or an oilstone, it will give an excellent

finish and hardly any sanding will be needed.

A common error, and one which I have been guilty of myself, is to be reluctant to turn the barrel down to the correct diameter to match the centre ring as shown overleaf. Failure to do this will result in an ugly pen barrel. If the worst happens and you go too far and expose the brass tube it is not the end of the world and it is always wise to have a few spare brass tubes and pen blanks as a back-up!

6 Burnish with 400 grit abrasive or even finer. One of the advantages of a small variable speed lathe such as the Selbix Mini or Carbatec is that turning can be carried out at 3000 rpm and the speed reduced for sanding, burnishing and polishing.

Apply the polish of your choice. I used friction polish followed by stick, carnauba wax.

Assemble the pen following the instructions with the pen kit which are usually quite adequate. The instruction sheets from Turner's Retreat do merit a special mention as they are particularly good. Assembly involves pressing the components into the brass tubes to give a good tight fit. You can adapt a machine vice, as shown in this article, which is a relatively cheap way of making a

Checking for size and finishing



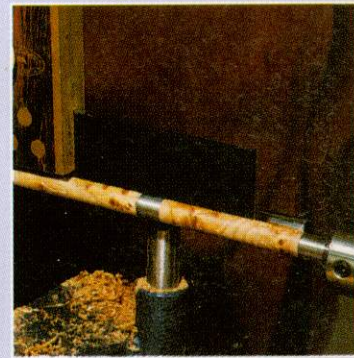
11 A quality micrometer such as this by Moore & Wright is expensive but Linear (02084 002020) make one for under £12



12 Using a micrometer to measure the barrels. The lathe must be stationary when measuring

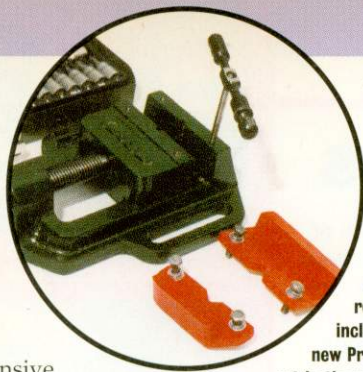


13 Digital callipers can be used to measure the diameter of the finished barrels and they are so easy to read!



16 A straight edge laid across the work will help you to see if your two barrels are parallel to each other

pen press or you can purchase a pen press designed for the purpose which is a more expensive option. It is also possible to use a woodworking vice if the jaws open wide enough but do fit wooden or plastic jaws to prevent damage to the pen parts. The Multistar PMS system has jigs which



Threading the holes for the home-made jaws (coloured red). I could not resist including my new Proxxon socket set in the picture

enable the assembling operation to be carried out in the lathe using tailstock pressure to press the various pieces into the tubes. Using a mallet to bang the parts together is courting disaster!

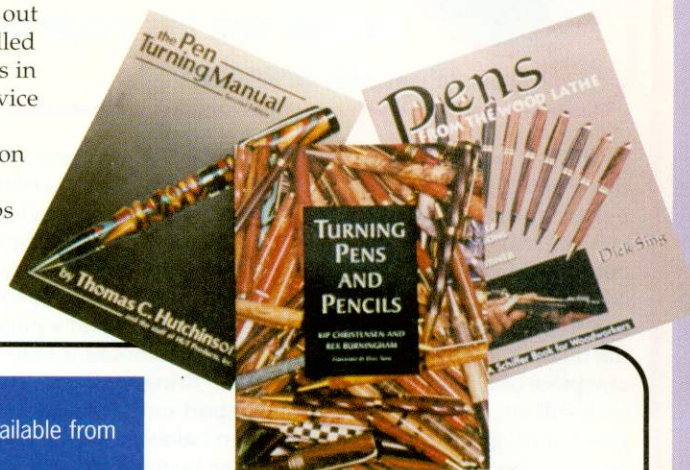
Machine Vice Press

On a recent visit to the Record factory I saw an economy range of machine vices being produced and I purchased one from my local toolshop for £10. I made two upper jaws out of an offcut of ply, drilled and tapped 8mm holes in the top surface of the vice jaws, and secured the wooden jaws in position using 8mm bolts. The cast iron drills and taps easily, and inexpensive metric taps are readily

available in most tool shops. Each jaw has a centre V so the vice can also be used to hold the blanks vertically when drilling.

The innovative woodworker can come

up with all manner of jaws for special jobs. The vice can still be used as a straight forward machine vice because the home-made jaws can be simply unbolted and removed when not needed.



Books about pen making

Turning Pens and Pencils

by Kip Christensen & Rex Burningham
(£14.95, GMC Publications)

This new title is attractively presented and described as the most comprehensive book yet on pens. Of the three books reviewed here this is certainly the case. The book covers tools, accessories, wood and synthetic materials and also the history of pens. It is very well illustrated with lots of excellent, close-up colour photographs and you should find all you need to know in this book. Turning Pens and Pencils will inspire newcomers to pen making and give lots of new ideas to others who already make pens. It is the most expensive book of the three but I have no hesitation in recommending it.

The Pen Turning Manual

by Tom Hutchinson (£12.95, available from Turners Retreat)

Tom owns HUT Products (makers of wood finishes and major suppliers of pen making supplies in the USA, some of which are sold by Turners Retreat), and to a degree this book promotes his products. However, there is useful information on burrs and acrylic materials for pen making as well as detailed tables of all the pen kits you are ever likely to come across, of interest if you wish to turn fountain pens and rollerball pens as well as twist pens and pencils. This book is more suited to those with experience of pen turning, who maybe produce batches for craft fairs. A metal turning lathe is adapted for batch production but there is little guidance on hand turning.

Pens from the Wood Lathe

by Dick Sing
(Craft Supplies £10.95).

Available since 1996, this book is suitable for beginners with lots of clear, step by step colour photographs and informative captions. I have learnt many things from this book and consider it an excellent teaching manual written by an enthusiast. It may not have as many pages as *Turning Pens and Pencils* but the information and illustrations are more than adequate if you just want to learn to turn pens and find a walk-through approach easier to follow. Dick Sing does inspire the reader to have a go!

Turning Pens and Pencils

WORDS	●●●●●
PHOTOS	●●●●●
DRAWINGS	●●●●●
OVERALL VALUE	●●●●●

The Pen Turning Manual

WORDS	●●●●●
PHOTOS	●●●●●
DRAWINGS	●●●●●
OVERALL VALUE	●●●●●

Pens From The Wood lathe

WORDS	●●●●●
PHOTOS	●●●●●
DRAWINGS	●●●●●
OVERALL VALUE	●●●●●



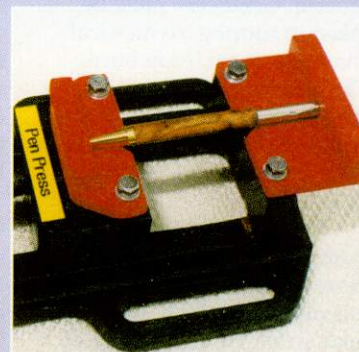
17 Hone the skew regularly on a ceramic file – no oil or water needed! Available from Chesterman (☎ 01785 503345)



18 I apply Mylands friction polish with a paper towel held underneath the work to protect the lathe from drips



19 Finish off with a final waxing with a Liberon carnauba stick before assembling your pen



20 Pressing the twist mechanism into the barrel with home-made jaws especially designed for a small machine vice



Natural edge turnings

Dave Roberts takes the mystery out of natural edge turnings with this simple bowl from ash branchwood

NATURAL edge turnings are rarely practical or functional but are always pleasing to the eye and make a good talking point. The finest work will of course be as dependant on the quality of the raw material as the turner's skill, but almost any piece of timber with its bark still attached will make a good starting point for the beginner.

Select your wood carefully. The grain can run horizontal or vertical, and can be turned wet or dry, but look for timber with a tight grain to hold it together, and no knots that may suddenly fly out. Pieces that are not mishapen will turn easier. I have many favourite timbers: burr elm, burr oak, yew, ash, maple... Remember that each piece is a one off so a lot of love and care will produce a piece to be proud of.

A Simple Bowl

The wood I have chosen here is ash measuring 110mm dia by 220mm long, with the grain running horizontal and the bark left on all the way around. Great care must be taken in turning asymmetrical shapes or natural top burrs. The ghosting effect as the timber turns can be misleading and it is all too easy to rattle your fingers if they come too close to the uneven edge.

There are two ways to mount the blank. One is to mount it onto a screwchuck or faceplate, for which you will need a flat. Hold the piece of wood in a vice, find the centre, and saw either side of the

faceplate/screwchuck and chisel a flat. The other way is to use a combination chuck – mine is a 'Multistar Duplex' with a 1in expanding mandrel. Simply drill a 1in hole to a depth of 45mm on a pillar drill, then mount it onto the lathe. Bring up the tailstock for support until the blank has been balanced, at which point it can be removed.

The tools I used are 1/2in and 3/4in bowl gouges, a 1in scraper and a parting tool to form the foot for the combination chuck.

1 With the speed set to about 400rpm, start turning the outside of the bowl from the centre out, and carry on until you have reached the desired shape. Watch those fingers and take care until you have got used to the way the wood spins. Use a parting tool to form a dovetailed base for the combination chuck.

2 Remove the bowl and mount into the combination chuck. Bring the tool rest in front, and rotate the work by hand to make sure it's clear. Turn from the centre out, working your way to the edge of the bowl and cutting about 15mm deep each time. Carry on working down, trying to keep the cuts even. Once you have reached the bottom you may need to use a scraper to

clean up. A close inspection of the bark might reveal it is loose in places, especially as you are aiming for a wall thickness of only 4mm thick. A few drops of superglue may be needed with a piece of masking tape to hold it while it sets.

3 An even wall thickness all the way through is advantageous not only for the looks but so that the timber dries evenly, without distorting or splitting, many turners shine a strong light through the timber to highlight any changes more easily. Make sure your gouge is sharp for the final cut. Take it straight off the

grinder and cut down the sides slowly. A new burr on your scraper will work wonders on the bottom.

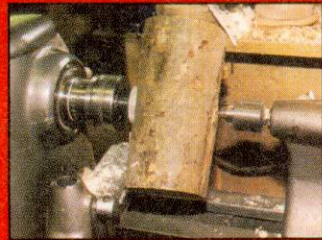
4 Sanding a bowl of this shape can be difficult. It is easy to sand the bottom inside and out with the lathe rotating but do not attempt this on the sides. It is best to stop the lathe and sand by hand or power sand with an electric drill.

Sand through 120, 180, and 240 grits.

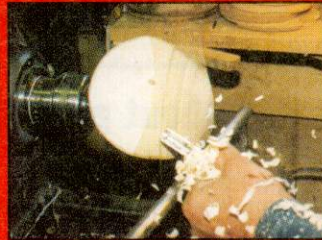
5 The final finish is up to you. Danish oil is OK, or a coating of sanding sealer. When dry, rub with 0000 wire wool with the grain. Don't be tempted to use the wire wool until the sealer is dry because it will leave black deposits in the grain. Let a wet-turned bowl dry slowly in a cool even environment if you want it to remain round and the bark to stay intact.



I mounted the blank on a 1in expanding mandrel for my Multistar Duplex chuck



Use the tailstock for extra support while you balance the blank



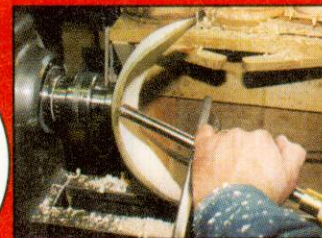
Beware of ghosting with unevenly shaped objects; this can be dangerous



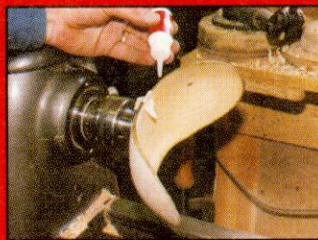
Turn the exterior to shape and form a dovetail foot for your combination chuck



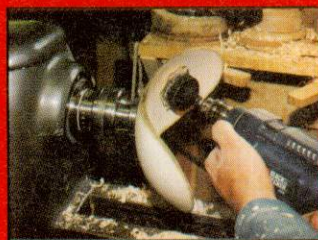
Turn the inner surfaces from the centre outwards to the rim



Take care as you make the final shaping at the rim not to dislodge the bark



Use superglue to glue back any bits of bark which break off as you turn



Do not sand the bowl sides with the lathe turning. Use a power sanding disc

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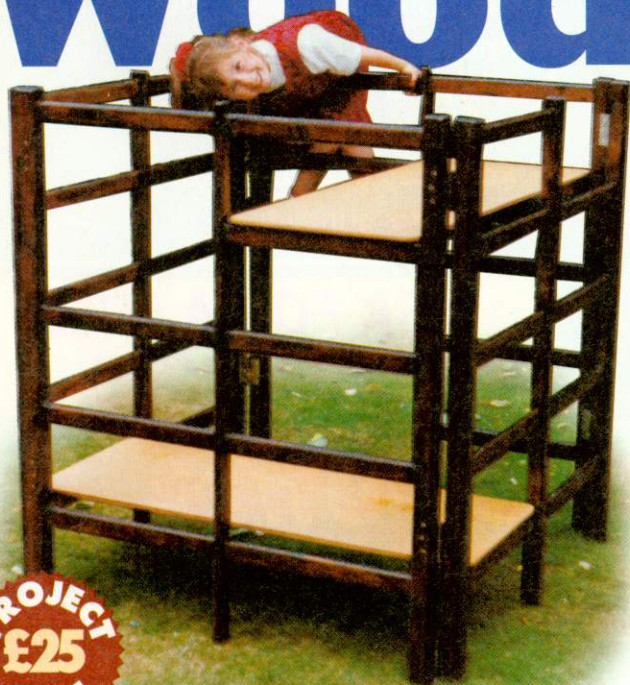
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Climbing Frame

Jack Marsh's simple climbing frame is quick to build and will give small children hours of fun

This small climbing frame is designed to encourage the development of self confidence and physical skills, and at the same time provide play potential for children between 2 and 6 years. It would be an asset to any play group. Being readily demountable

and portable, it can easily be packed away when not in use.

It consists of four equal sized frames – overall sizes are not critical – hinged together, first as two pairs using heavy duty butt hinges. Each pair is then joined to the other using rising butts or

loose pin hinges so that they may be quickly joined or dismantled.

Two plywood platforms extend the play scope. These fit across the structure in either direction and at any level and are quickly secured by a turn button at each end. A further refinement is a simple fabric cover to drop over the erect structure thus converting it into a

Wendy house. Provision for this should be made at the planning stage by omitting strategic rails to create door and window access. The cover will of course need corresponding apertures.

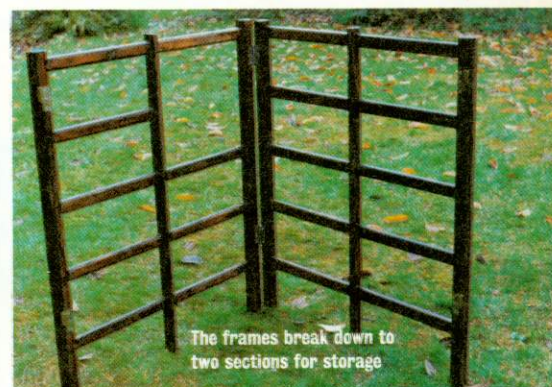
Each frame consists of three vertical supports and five horizontal rails, some of which extend right across the frame, others only halfway. The outer

pair of verticals are ex 2x2in and the middle upright from 2x1in, all horizontal rails are from 2x1in. I used PAR softwood throughout, taking care over selection so that knots don't create weaknesses. Rails are well rounded over on all edges and pass through the middle upright, fixed with a single countersunk screw. They are morticed into the corner posts to a depth of about 1½in and secured with waterproof glue. Let the half rails project about ½in through the centre support initially – they can be flushed off at a later stage.

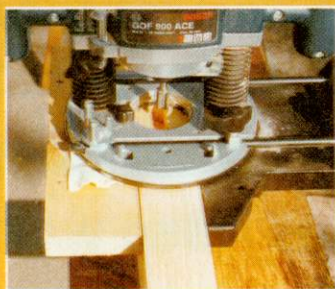
Making the Frame

1 To ensure rails end up level, cramp the uprights together for marking out, then separate and square round. Do the same with the rails to ensure they are also of uniform length. For accurate jointing the radius of the rounding over bit (for the rails) should exactly match the straight cutter used for the mortices. Most of us will settle for the closest match we have in our own cutter collection, any slight discrepancy being removed later.

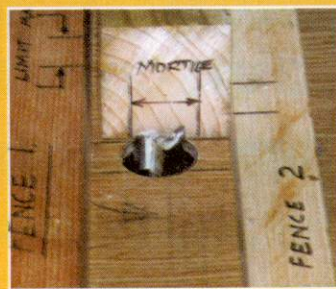
2 Cut the mortices with the router hand



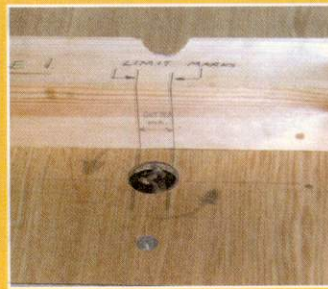
The frames break down to two sections for storage



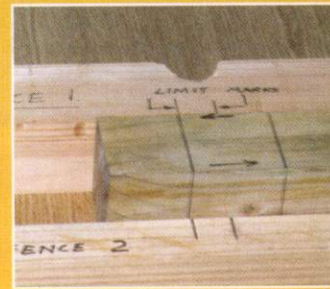
1 Rout the mortices in the uprights with a cutter to match the rail thickness. Two fences will guide the router accurately



2 Alternatively, use a router table. If your cutter does not match the rail, set up a second fence as shown to suit

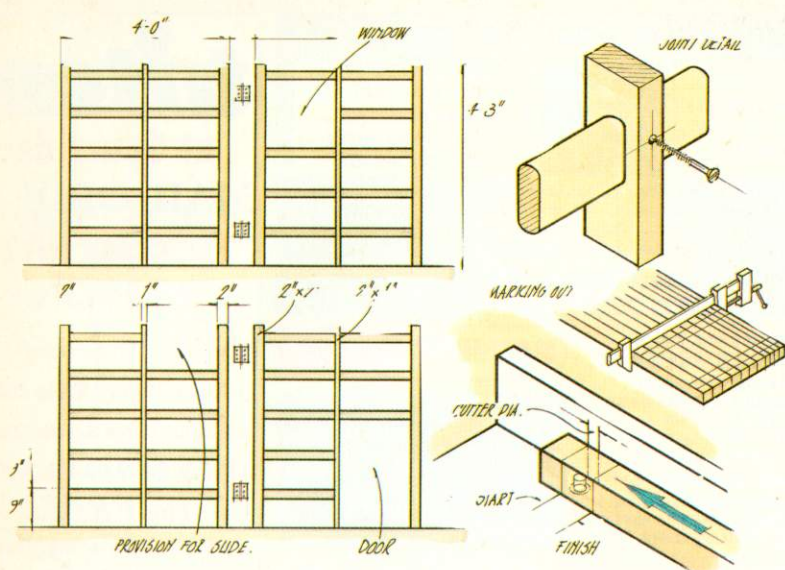


3 You'll need to drop the timber on to the cutter to cut the mortices, so mark its diameter on the fence



4 Construction lines on your work pieces will line up with these marks and show you how far to rout in either direction

How to make the climbing frame



held or fitted to a table. When hand holding it is best to have the work piece sandwiched between two fences so that the cutter is forced to keep on the waste side of the cut. A second fence is an expensive option but an efficient substitute can be made by fixing a length of straight batten to the sole plate with double sided adhesive tape.

If the cutter diameter matches the mortice width the workpiece will be sandwiched snugly between the two fences, but if it is smaller you must incorporate a space between fence and workpiece equal to the difference. Set up the fences so that the finished mortice is

centred on the timber. When working the through mortices on the thinner middle legs, cut in from both sides to avoid break out.

3 Round over rail edges with an appropriate cutter. If the section doesn't match the mortices, either amend these with gouge and file or slightly alter the rail profile with plane and abrasives.

4 Working on one frame at a time, thread a set of rails through a centre support and glue the rail ends into the blind mortices in the 2x2in legs. Tighten with sash cramps and check diagonals for squareness. Carefully

centre the middle upright before positioning countersunk screws right through both members. These screws should be as long as possible without emerging from the back. The half rails will at this stage project through the middle support and will then be flushed off.

5 If you intend making the Wendy house option then consider where you wish the door and window openings to locate, relative to each other, as this will dictate which pair of frames will be permanently fixed together. Fix these with 4in steel butts, then use similar sized rising butts or loose pin hinges to fix the pairs of frames to

Wendy house

A fabric cover to slip over the erected frame instantly converts the structure into a Wendy house. I made mine from old curtains, with four vertical wall panels attached to a top one. Cut each panel 45mm bigger all round than the frame it will cover to allow for generous turnings and an easy fit. Make the cut outs for the door and window and finish these raw edges before sewing all the panels together. Reinforce the corners of the top panel with triangular pieces to take the extra wear at the points immediately over the corner posts. To stop the window gaping sew a tape from top to bottom across the middle of the window aperture.



each other. Check that you have a truly square plan once all are assembled to ensure that the platforms will fit in either direction.

6 Platforms are an optional extra. They provide a stable platform some distance from the floor for the more timid climber and can act as bunk beds in the Wendy house, and generally extend the scope for imaginative play. They are made from 1/2in ply reinforced by a 2x1in stiffening spine, fixed by screwing through the ply. The

underframe should be a nice fit between the opposite sides of the frame, to which they secure by means of turnbuttons. The plywood length should generously overlap the rungs of the frame while the width should pass comfortably inside the vertical supports. Round off all plywood edges, paying particular attention to the corners.

I applied a water-proof Sadolin finish to the frames and clear varnish to the platforms because I had this to hand – any waterproof finish would do.

Cutting list

Part	Qty	Mats	Length	Width	Thkns
A Corner uprights	8	Pine	1220mm	45mm	45mm
B Centre uprights	4	Pine	1220mm	45mm	20mm
C Cross rails	20	Pine	1016mm	45mm	20mm



5 Round over the rails using a radius cutter with the same radius as that used for cutting the mortices



6 Rounded rails should fit snugly into their mortices. Make sure you use waterproof glue in your construction



7 Rising butt or removable pin hinges will allow you to disassemble the frame easily for storage



8 Drop in platforms have turnbuckles on the ends to secure them in place. Safety is paramount with climbing frames

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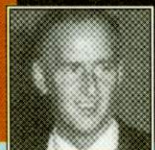
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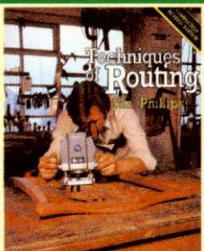
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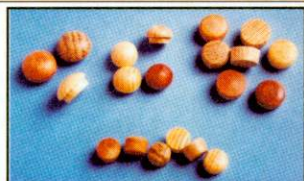


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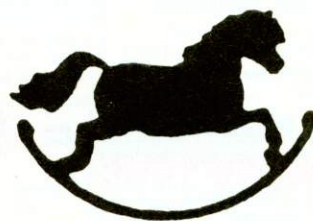
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☎ 01935 823585

Makita 235mm circular saw, model SR2300, £65, buyer collects. C. Newbury, Wiltshire
☎ 01225 775241 (after 6pm)

Elu router/saw guide track. 2x1.5m + connector, £45. Push pull saw wanted - Elektra, Elu or Emco max. E. Keeble, Selby
☎ 01757 268128

Elu 131 type 2 router, 1/2in + 1/4in collets, and attachments. Good condition, £90. Shaun Higgins, Middx
☎ 01895 470547

POWERTOOLS OVER £100

Elu radial arm saw, RAS 1251, little used as new with stand and router bracket, £250 ono. Mr M. Wright, East Sussex
☎ 01424 719965

Elu MOF 177E variable speed router with case, bushes, cutters and bearing

fence, £220. Mark Littlefair, North Yorkshire
☎ 01845 526427

MACHINERY UNDER £100

Walker Turner planer jointer 6in x 36in bed, with waste extraction stand 1hp, single phase, £100 ono. Alan Robertson, Wiltshire
☎ 01793 752235

Startrite tilt arbor bench saw c/w sliding carriage 450 also brand new scroll saw, Delta, still boxed £80. R. Keeble, Essex
☎ 01268 558814

MACHINERY OVER £100

Shopsmith (model 500 retro-fitted to 510) see GW 96. Some years old but still working well. Several extras including some of own design. £900 ono. John Brooks, Leeds
☎ 0113 2686018

APTC metal lathe model 918. 500mm B/C brand new complete tooling T/S, TCT tools, live centre, speed reducer, quick change, tool posts, never used, move forces sale £800. buyer collects or pays carriage. John Pye, Herts
☎ 01727 833101

Record 'O' bowl lathe - 36in centres, upgraded with solid chrome bars. Can deliver Essex and Kent, £250 ono. Jack Willis, Essex
☎ 01375 641417

Mesix TBC1 copy lathe £600, Kity 613 bandsaw £400, Trend routerlathe £75. T. Plank, Wilts
☎ 01264 850562

Kity 1637 planer thicknesser 10in x 8in new condition and never used.

Extras including Cobalt blades current Axminster total list price £911, bargain at £490. Mr D. Beveridge, Edinburgh
☎ 0131 312 7952

Kity 439 planer thicknesser c/w stand and wheel base, one year old, £350. Freud JS102 biscuit joiner, one year old, £75. Trend DJ300 dovetail jig, unused, £70. Michael Conniff, London
☎ 0207 359 1830

Sedgwick MB planer thicknesser, 12 x 8, 3 phase, 3hp, nice clean condition with 3 sets of knives. Andrew Osborne, London
☎ 0207 609 6556/ 07623 197482

Lurem 210B Universal woodworking machine, 250mm tilting saw, 210mm surfacer, 210 x 165mm thicknesser, spindle moulder, mortising table & chuck, £825. Richard Bean, Devon
☎ 01404 871212

Record CLO 24 green lathe with a swivel head on it. 12 months old, £200 ono. Tim Weaver, Powys
☎ 01686 650541

Record DXTSO dust/chip collector, 140 litre unused, full guarantee, £135. S. Dodgson, West Sussex
☎ 01903 233373

Shopsmith 4in jointer, boxed never used, £300. Cross cut sliding table plus auxiliary table £80, 10in carbide tipped combination blade, never used, £30. F. Halpin, Merseyside,
☎ 01704 578238

Coronet Major woodworking machine on bench comprising lathe, sawbench, planer, thicknesser etc. £350 ovno. Jack Turner, Glos.
☎ 01684 296084

Graduate lathes. One 30in

bed, one shortbed. Both with new variable speed controllers, lights, faceplates, lots of chucks and other accessories, £1500 each. Transport assistance possible. Mike Goodridge, Somerset
☎ 01278 732085

Coronet IMP bandsaw with two spare blades, £100. Mr M. Wing, Southampton
☎ 023 80550460

Elu 1750 Radial arm saw, with guides + blades, very little use, £400 ono. Keith Lovegrove, Essex
☎ 01277 841395

Axminster M950 wood lathe with variable speed, extra banjo, 3 face plates etc., condition is as new (move forces sale) - £425. A. Watkiss, Devon
☎ 01822 834068

Kity Woodster combined saw-planer, excellent condition £200. Kity extension table unused £78 - offers. R. Balmer, Surrey
☎ 01483 767102

Inca multipurpose woodworker, saw, mortiser, moulder sander, 7in saw blade, some extras unused, sensible offers please. Mr Beard, Exeter
☎ 01392 491143

Shopsmith MKV model 500 multifunction as tested June 'Good Woodworking' lathe, disc sander, drill press saw, horizontal boring plus add on bandsaw, many spares, chisels, universal bowl chuck, 9ft bench (splits in two) full factory manuals, £1,600. Steve Thornley, Rotherham
☎ 01709 877152

Record DML 24x lathe and legstand/RP3000 x chuck/3 sets extra jaws & chisels. Cost new £370 - mint condition hence £250 ono. R. Crook, Essex
☎ 01268 735782

Woodrat, very little use, £150. Complete set router bits straight and dovetailed £50. Leroy Somer Grindstone dry/wet wheel £25. 4in planer unit for Coronet Major (Maroon) £75. Buyer collects or will send on payment for carriage. B.L. Nicholls, Devon
☎ 01626 873966

Nu-tool lathe 37in between centres, 12in dia, combination chuck, nine turning chisels £275 ono. Mr S. Cooper, Cheshire
☎ 01260 290211 Mobile 0796764 2874

Electra Beckum MC260 10in x 6in planer/thicknesser complete with 4 sets of new planer knives £400. G. Bettany, Suffolk
☎ 01449 771492

TIMBER

Airdried 10 years:- mainly oak, 1in and 1 1/2in boards cut to approx 5 feet long. Most are 10in - 15in wide, some wider still, about 100 in total. B. Elson, Essex
☎ 01702 512185

Assorted hardwood turning blanks, all sizes, native & imported woods from £1.00 each. Mark Littlefair, North Yorkshire
☎ 01845 526427

Oak - large sections, part and fully air-dried plus offcuts of kilned boards to clear. M. McColl, Herefordshire
☎ 07974 954525

MISCELLANEOUS

Good Woodworking, complete set, issues 1 - 96, best offer, over £100, buyer collects. Mr R. Stephens, Essex
☎ 01787 462070

Woodworker bound volumes 1955 - 1963 inclusive plus 20

Tools and machines for sale & wanted

copies of Practical Householder 1955 - 57 and approx 12 Practical Woodworking and DIY magazines 1960's - £100 the lot. Mr G. Lord, Lancs
☎ 01282 703392

Good Woodworking issues 1 - 90 some in binders, £50, buyer to collect. Brian Carruthers, Leics
☎ 01509 414035

WANTED

Rexon Dado insert for BTS-10A table saw, also one set Dado Blades. Any information on how to obtain them would be greatly appreciated. Thank you. Mr R. Gray, E. Sussex
☎ 01273 708256

Coronet Major Combi machine. Reasonable price paid for good example. Mr S. Field, Cambridge
☎ 01480 830726

Instruction manual or photocopy for Lurem C210B. Mr J. Thurlby, Notts
☎ 01636 673610

November 99 issue of Good Woodworking. John Marshall, Notts
☎ 01909 486275

Biscuit jointer and bandsaw wanted by woodworking enthusiast. Terry Swain, Dorset
☎ 01305 854750

Planer thicknesser required by charity which helps fix up and recycle furniture for those in need. B. Knight, Corby Furniture Turnaround Project
☎ 01536 402181

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END GRAIN

A MAJOR MISTAKE by Rev. Piers Hawddon

A few lengths of yew and an ash sideboard are all it takes for the Rev Piers Hawddon to nearly lose his camel

I have just made a terrible mistake and have paid a heavy price. Years ago, I was offered some freshly felled yew, just one short fat trunk of it, but perfectly knot free and straight grained – which in yew is almost a contradiction in terms. I parted with more money than I'd have wished, but that wasn't my mistake.

I slipped a new blade on the band-saw and planked the bole immediately, knowing that otherwise it would split radially as it dried. It was asking a lot of my bandsaw – a large and rather tired model which has the habit of shedding its band with very little warning and a bang like gunshot. That day it was feeling well-mannered and such an ambitious piece of preparation was not my mistake either.

Short stickers held the boards apart through the initial drying and then, some time later, I planed the yew smooth, disclosing better than ever its wonderful close-grained orange heartwood and white sapwood. The boards were so short that no obvious use presented itself, but for a long time now I have worked on the assumption that things fall together of their own accord, and if this wood had come my way presumably it was for a reason.

I wasn't wrong there either. I often adopt the same approach to projects themselves. Rather than

knowing in detail what I am going to do throughout the whole job, I simply look at it stage by stage. If materials and structures present themselves as an obvious solution to one stage, I will blast on regardless of the fact that the future stages are hidden in mist.

This is theoretically a risky way of working but over the years it has not let me down. On the contrary, the outcome has often been near-miraculous. I have lost count of the times that I have rootled through my store looking for something, anything, that would do the job, and have come across the perfect odd-shaped metal bracket or a precisely sized piece of wood. Sometimes the materials suggest an alternative solution to the problem, one that I had not considered, and one that turns out to be far better than my first ideas. Long ago I gave up the notion that the workshop was wholly under my control.

One Board Short of a Full Top

And so it happened again. I launched into making a sideboard without knowing how to make the top. I made a frame with drawers from an old board of ash, and then had to cover it. I stared at the frame from this angle and that. I stalked my woodpile knowing full well I had nothing long enough. I dragged out some horrible bent baulks of wood that would take all day to saw up and plane and I gazed at them in disbelief.

Then the penny dropped. My minimum distance front to back was 22in. The yew measured 22½in. Was there going to be enough to place the boards side by side to form a top? I laid them out and tried to guess how much defect wood I'd have to saw away and how much I would lose on re-planing. One side of my brain rested in the certain knowledge that this job was why I'd bought the yew so long ago. The other side was drumming its fingers, saying you could really come a cropper here.

I donned a brand new paper dust mask, hooked up the extractor and set about sawing and planing, finally crosscutting all the boards to the same length. Turning from one machine to another, I was grateful yet again to have such manpower at the touch of a switch. Perhaps the planer knives were not quite as sharp as they could be but they still shaved. Perhaps I should replace one of the faulty motors on the extractor but it still sucked. After half an hour of intense head-down concentration, I laid the boards together, side by side.

I was one piece short. I was stunned. It

never normally goes wrong like this. I looked at the reject pieces and they really were rejects. One was almost good enough but was thinner and badly scarred by the bandsawing. I reviewed the situation, throwing my recent certainty up in the air, analysing alternatives, trying to turn restrictions into opportunities, trying to be completely open-minded. It must have been some sort of final test because I refused that one board over and again until it finally cleared its throat, stood up on its back legs and practically shouted at me. It was not a reject at all, it just needed some hand sanding, a bit of individual attention.

At the end of that day, the yew top was in place, looking a little technicoloured in comparison to the ash but I didn't deem that to be a mistake. Yew mellows down to a soft toffee colour in time, about the same time, I hoped, that the ash would mellow up. The job was done. It was a success. Proof again that intuition is to be followed, that faith works.

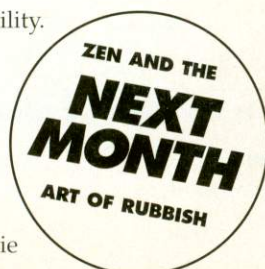
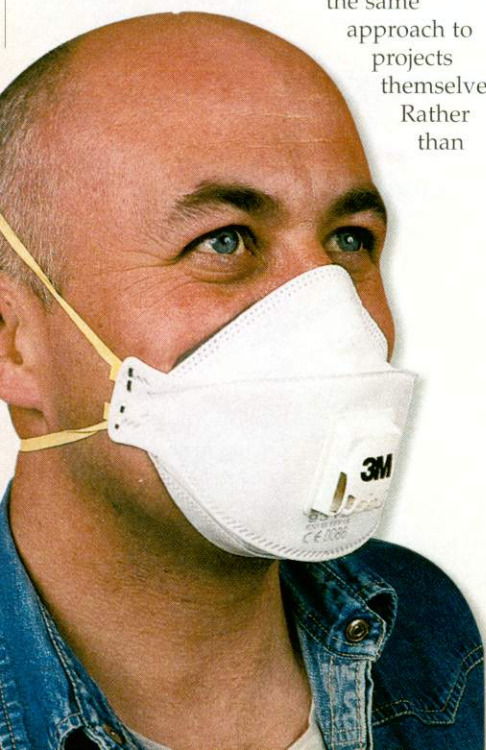
The Mother and father of all Colds

So where was the terrible mistake? It was later that evening and it was for most of the next week. I had been dutiful in wearing a mask but the mask had not been good enough. The stone of a berry of yew is poisonous enough to kill a horse and the timber carries some of that poison. I first felt it

in the top of my windpipe – a pain and a constriction (though not a difficulty with breathing). It spread to the back of my throat and encompassed my sinuses – painful chest, sore throat, headache, sneezing and mucus production as if it was coming into fashion – like the mother and father of a cold.

I took refuge in red sage tea (I'm not sure it was the correct herbal remedy but I had it and it felt right) and in the knowledge that the body has an incredible capacity for healing itself. Time was likely to be the best medicine. With my recuperation came an element, if not of humiliation, of humility. Things do fall together well, far better than I could ever plan but my constant vigilance is necessary. Islam sums it up nicely. 'Trust in Allah and tie up your camel'.

“I was stunned. It never normally goes wrong like that”



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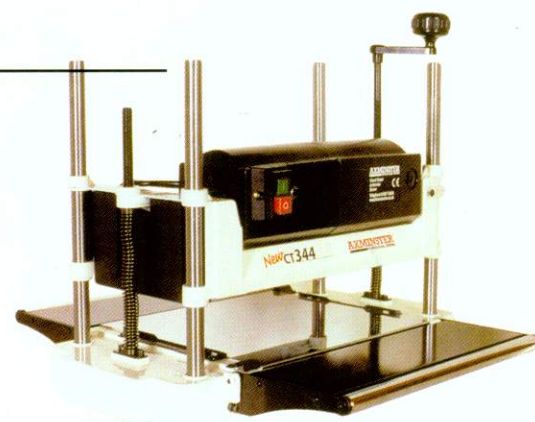
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