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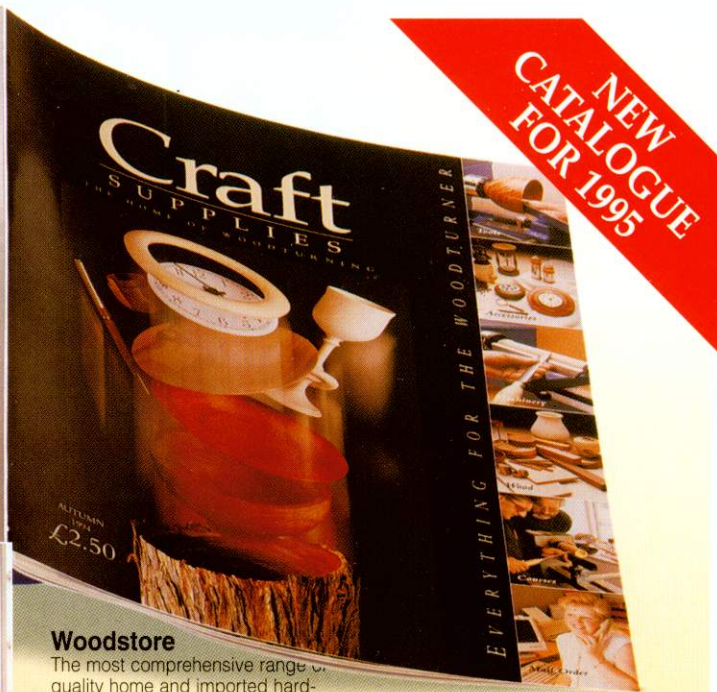
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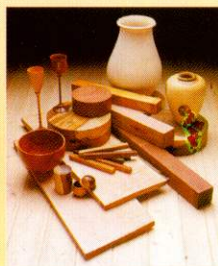
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A **CONSTANT** theme of my woodworking career has been a battle to keep my tools rust-free. I'm sure you can understand the frustration. The solution, of course, is not to attack the rust but to fight the damp.

I never seem to stay long enough in any one workshop to rid it of moisture. The last one had rising damp and dripping tap. While a washer solved one problem, water poured in through the walls. I share my current workshop with Tina, my partner, who rushes chairs for a living. The trouble is the rushes must be wet to work. But as my woodwork is for pleasure and her rushing earns us beer vouchers I can hardly complain.

However I will now be studying Tim O'Rourke's special report on Fighting Damp this month (p.14). Not only does Tim explain how to keep moisture out of your workshop, he also tests a pair of dehumidifiers to see what they can do and which is best. Now that might be the solution for me. **Nick Gibbs**

Contents

Good Woodworking, 30 Monmouth Street, Bath, Avon BA1 2BW. ☎ 01225 442244

PROJECTS YOU CAN MAKE

4 Make a folding chair

Conquer fears about chairmaking and learn how to make a flexible ash chair

39 Spaghetti holder

Build an original octagonal pasta storage

40 Fly tying clamp

A wooden clamp for tying fishing flies

42 Chalk board

For the kitchen or a toy for the children

54 Bend a towel rail

Learn how to bend wood while building a laminated towel rail, original and functional

74 Turn a trefoil bowl

Turn a biscuit bowl with a trefoil rim by following Tobias' step-by-step instructions



Learn how to make a laminated towel rail p.54

TECHNIQUES

36 Purely fettling

Learn how to trim rough edges

70 Cutting a mortice

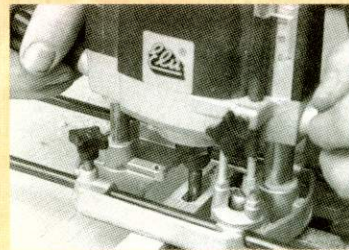
Learn the various methods you can use and simple alternatives

74 Turning steadily

Kick vibration with a better lathe stand

90 Finishing Jargon

Crocodiling, blushing: the language of finishing



Learn how to cut a mortice and simple alternatives p.70

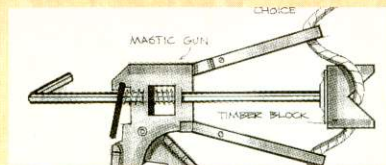
YOUR QUESTIONS AND TIPS

30 Hints and Tips

Share a tip and you could win a prize

61 Woodwork Answers

Which finish to use, how to treat warped wood, build a Wendy house and more



Make a folding chair 4

Exclusive project with step-by-step instructions

Fighting damp 14

We find the best dehumidifier and tell you how to keep your workshop dry

Weekend Wood 39

Make a spaghetti jar 39

Turn a fly tying vice 40

Make a chalk board 42

How to turn a trefoil 74

Sharpening 83

Which honing guide to buy? We tell you 83

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Subscriptions page 65

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Back issues page 28

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TESTING

26 On Test

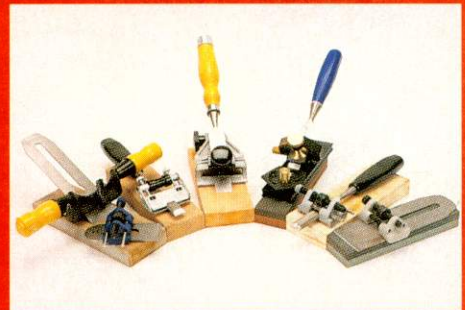
This month we test an Arbortech sander, CK saw, FM radio cable, and Wolfcraft clamp

49 Book reviews

Get into *Designing and Making Wooden Toys*, or learn about the *Care and Repair of Furniture*

14 Dehumidifiers

Do you need to control humidity in your workshop?

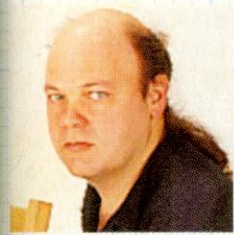


83 Honing guides

Technical Editor Phil Davy and Ian Wilke test six honing guides

Pete Martin takes the fear out of chairmaking by showing you how to make a simple folding chair with step-by-step instructions

Flexible folding chair in ash



Pete Martin is a full-time furniture-maker, who previously worked as a photographer. He took many of the pictures to illustrate the chair

Of the many different kinds of furniture, the chair is perhaps the most difficult piece to design and make. This is hardly surprising when we consider what it has to do. Small section timbers must be shaped and jointed to form a delicate structure that is capable of supporting the weight and wriggling of a grown man, at the same time providing a comfortable seating position and some degree of beauty.

Even an experienced woodworker experiences apprehension when considering such a project, so what chance does a newcomer stand? I got a chance to find out, when my wife asked for a folding chair that could be used in the house and garden.

At first I thought it beyond my capabilities, but a little reasoning persuaded me that essentially the job was no more difficult than any other, the problem was fear of the unknown. Having dispensed with my worries, I sat down and thought the project through, my confidence growing.

Structure and Design

Essentially a chair consists of a variable number of legs, a seat, a backrest, and sometimes armrests. Its use will, to a large extent, dictate the size and layout of the various parts.

A dining chair calls for an upright sitting position, with the height of the seat determined by the height of,

and the clearance under, the table at which it will be used. In contrast, an easy chair is, more than likely, lower and far less formal and upright.

If the chair is to be used exclusively by one person, then greater comfort can be assured by adapting the various dimensions to that of the individual, especially the seat height and the position of the back support.

A glance through several furniture-making books and the application of a tape measure to the chairs in our house helped me determine the basic measurements of my chair. As it was likely

PROJECT GUIDE

DIFFICULTY: Intermediate
TIME: 20 hours
TYPE: Furniture

that it would be used often at a table, I decided on a seat height of about 17in. A little experimenting produced a seat depth of 13in and a width of no less than 15in.

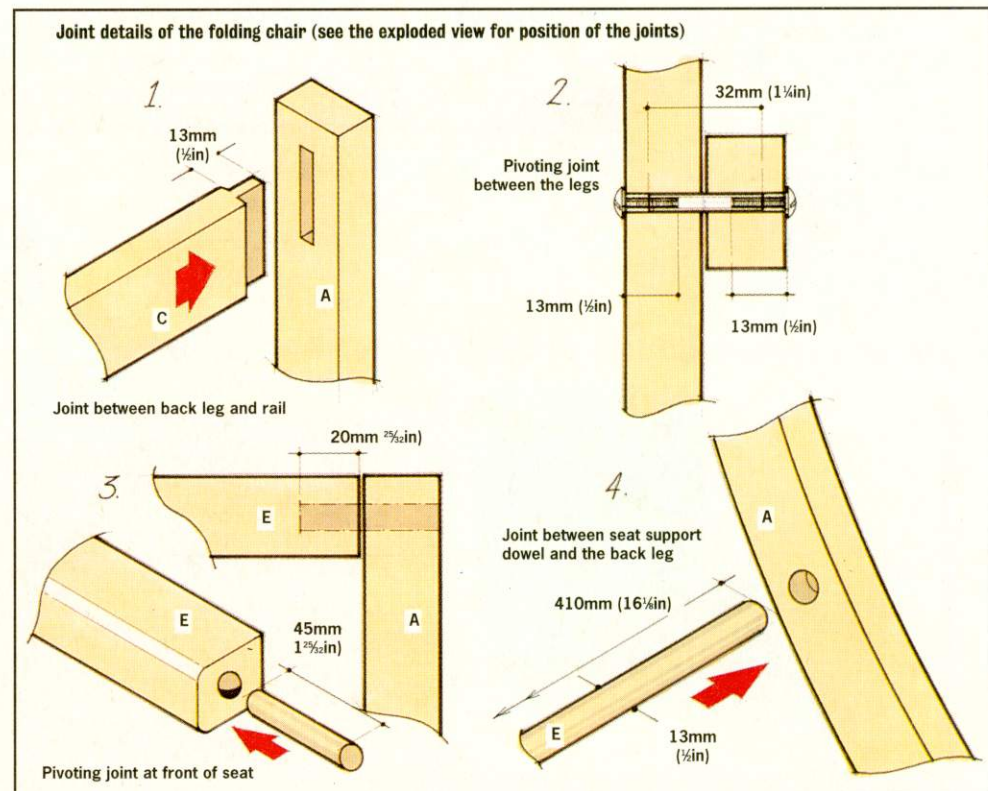
The back rest dimensions were a little more difficult to ascertain, but a mock-up laid against a wall felt comfortable with support for the lower back about 9in

above the seat. Similarly a backward slope of several degrees from the horizontal provided a better sitting position. Although drawings can be invaluable, there's nothing to beat a mock-up, no matter how crude it is, to determine the final shape and size of your chair.

It's Important to Plan

Having decided on the basic dimensions, they were transferred to a full-size drawing on a sheet of board. I often work without the use of rods and drawings, but in this case a constant reference point to check each piece

- TOOLS NEEDED**
- ROUTER
 - JIGSAW/BANDSAW
 - BASIC HAND-TOOLS
 - Handsaw, screwdriver, hammer, chisel
 - PLANER
 - DRILL





It is important that there is plenty of wood for strength behind the notch on the seat sides for the seat dowel



The seat is held at the front with a loose dowel. This must be able to pivot for the seat to fold up and down



The second pivot point is at the joint between the front and back legs. I found a special fitting for this job

against is essential, as the shaped legs make it difficult to align the joints.

The chair had to fold, so suitable pivot and support points were needed. Once the style of these were determined, you can also plot them into the equation. After sorting out the mechanics, you can refine the design into an aesthetic whole.

Look for a piece of wood with a grain structure that follows the shape of the leg. Some woods are better suited for the project than others. I decided on ash, which is a highly resilient and strong timber, but I could also have used maple,

beech or perhaps even oak. In this case the robustness of the wood echoes the simplicity of the design.

Getting Going

1 Work up a full-size drawing of the curved leg sections and other relevant parts. Having decided on the shape, fix a board to the bench and use a pivoted



strip of timber as a compass to form a series of smooth curves and straight lines. Mark out the centre positions of the chair's pivot points and all joint shoulder lines.

2 Make a set of templates, by laying a piece of thin MDF or plywood over the

timber, arranging the grain direction for the most strength, especially through the curves. Keep short grain to an minimum. Rough cut the shapes and fix the template to each piece with double-sided tape or with pins placed at points that will later be hidden. Shape the legs with a bearing-guided straight cutter fixed in a router table. Take care when routing the end-grain to ensure the cutter does not grab the timber.

5 Place each leg exactly onto the full-size drawing and transfer the rail positions. Square these round the timbers. Cut the mortises with a router and side fence. The ends can be left round or squared off with a chisel.

6 Trim the stretcher rails and backrests to length and cut the tenons on each end. If you decided to leave the mortise ends round, you will need to round off the tenons with a rasp or file to fit. Round over the rails with the router.

7 Transfer the centre pivot points and the seat support dowel positions from the drawing and drill them. With any shaped work keep the timber in the square for as long as possible, but at this point the longer inner leg sections can be rounded on the router with a rounding

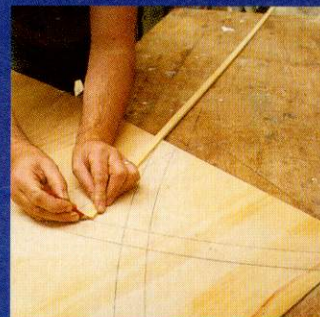
drawing and retracing the lines with the compass and a rule. Cut out the shapes as carefully as you can with a bandsaw or jigsaw and sand the edges smooth.

Check each one against the master drawing and adjust as necessary. Take your time and remember that any faults in the templates will be transferred to the finished work and may necessitate a lot of cleaning up later.

3 Plane up a piece of timber wide enough to cut the legs out of. There is no need to plane the edges as these will be discarded anyway as the curved sections are cut. Plane and thickness the leg stretchers and seat.

4 Trace the outline of each leg template onto the

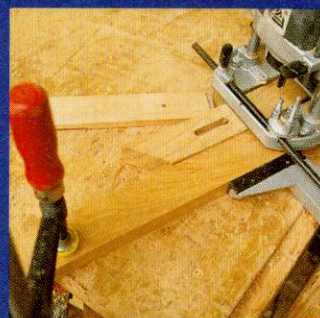
TIP To rout a straight mortice on the curved lower sections of the legs, clamp the workpiece to the bench and fix a straight piece of timber alongside to guide the router fence. Ensure that the two pieces are similarly aligned at the correct angle for each pair. It may be easier to do this on top of the drawing.



1 Lay out a full-size drawing of your chair. A timber strip nailed to the bench makes a compass for the curves



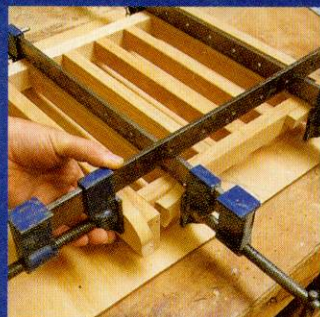
2 Take care when cutting templates. A jigsaw with a fine blade may be more accurate than the bandsaw



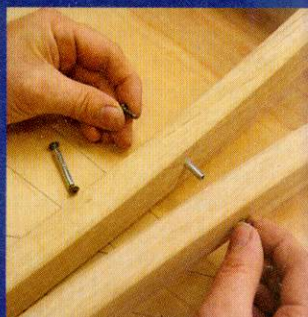
6 Use a false fence to cut a straight mortice on curved work. Ensure everything is firmly cramped down



7 Chair joints are small compared with the stresses they are put under so make sure they fit snugly

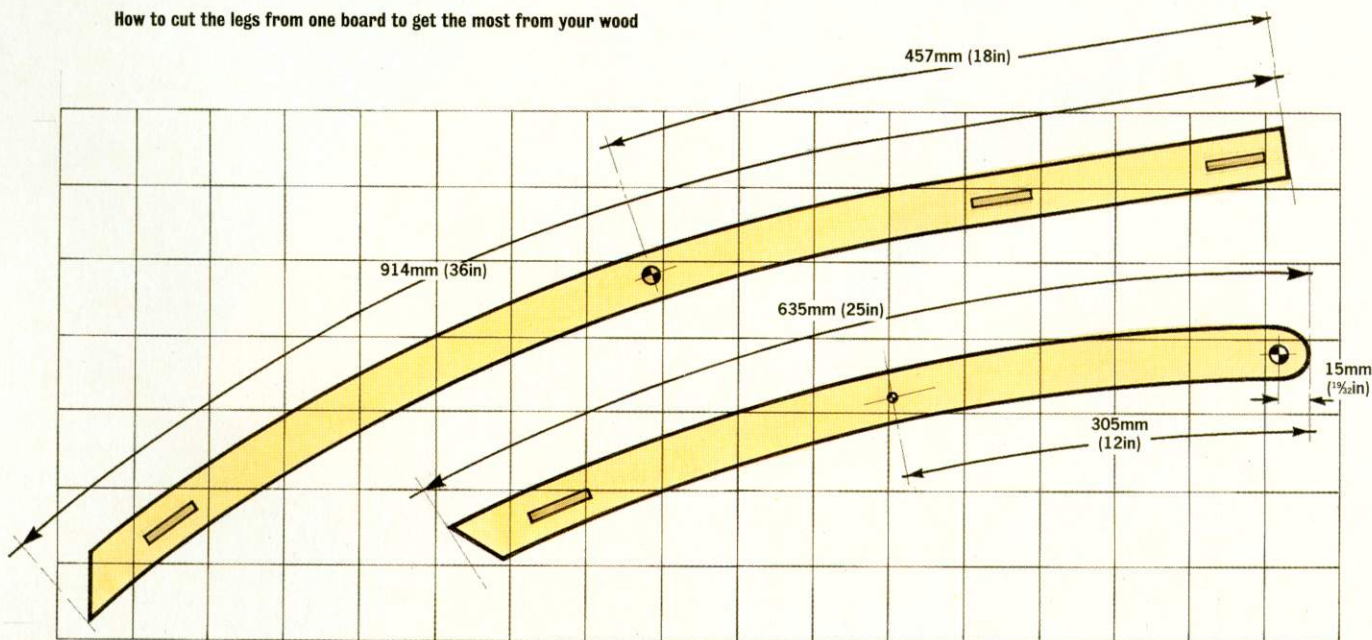


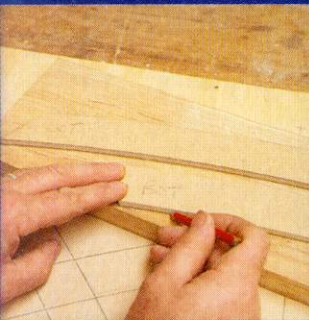
11 Have plenty of cramps ready, complete with softening blocks, when gluing up the seat



12 Sleeved bolts are great for the pivots but a bolt with a trapped nut, or a cup and screw, would do

How to cut the legs from one board to get the most from your wood

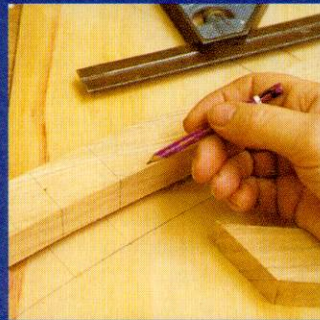




3 Shuffle the templates around on the timber to get the best figure and strength with the least wastage



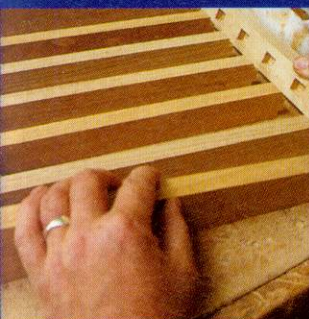
4 A table router makes short work of shaping the legs. Hand-tool workers need spokeshaves and elbow grease



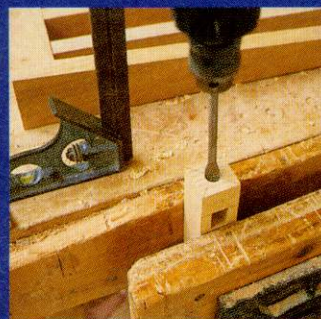
5 Lay the legs of the chair onto the drawings and mark the joints across onto the timber



From the side you can see the sweeping curves of the legs and the tapered sides of the seats. As a result the chair has a flowing feel to it



8 These seats slat are not as comfortable as I wanted. Try a wider section with a bit of give in them



9 Drilling the dowel holes accurately by hand is not easy, so use a vertical sight line to help



10 Leave a couple of inches behind the seat hook to ensure that the short grain is not too fragile



The chair comprises three frames. The back legs are joined by three rails or stretchers and fits inside the front leg frame. The front legs are joined at the bottom by a single rail and then joined at the top to the seat frame



13 Make sure the dowels are a tight glued fit in the front rail. Wax on the pivot end cures any squeak



14 The outer legs are glued around the chair so make sure you put the centre pivot sleeves in place first

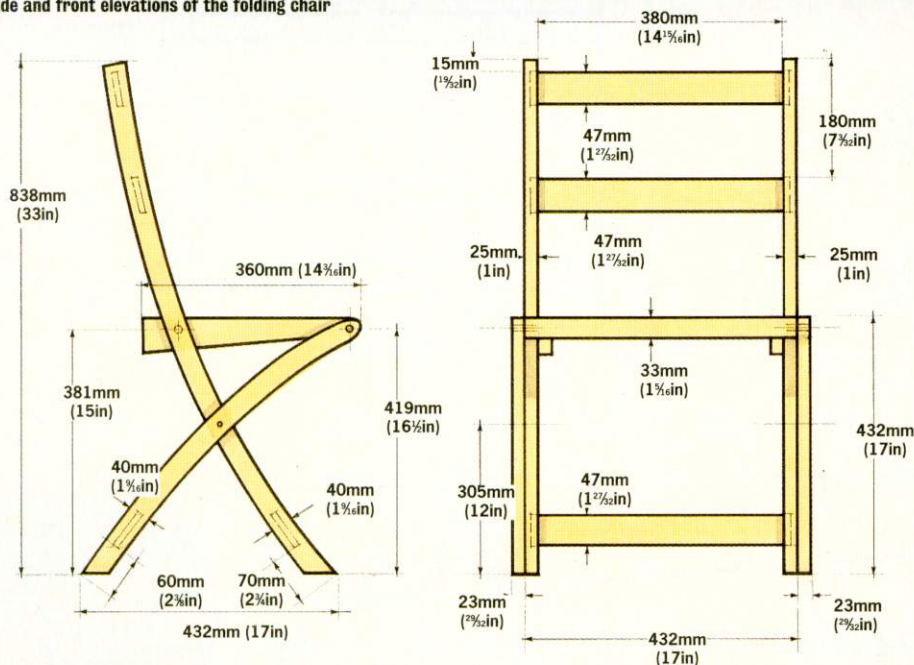


15 Stand the completed chair upright and screw the pivot bolts into place with a little Araldite to lock them

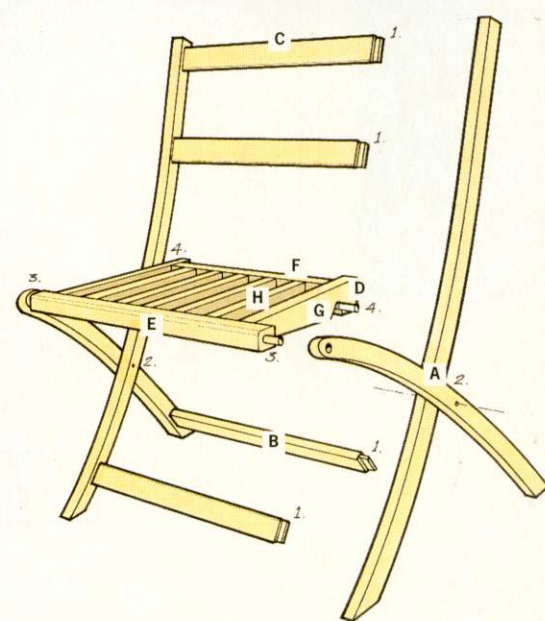


The seat has five slats, tenoned into the front and back rails. In retrospect the seat would probably be more comfortable with wider slats and perhaps less space between the slats

Side and front elevations of the folding chair



Exploded view of the the chair's components



cutter and the frame cleaned up and glued.

8 Cut the seat sides and rails to size and mark and cut the mortises and stub tenons for the seat slats. My slats were a little too narrow for comfort over any length of time. It might be better to cut wider ones with a thinner section to incorporate a little

give into the seat. Refer back to the full-size drawing and plot the centre and angle of the retaining slots in the seat sides. Drill the centres with a spade bit,

clamping a piece of waste timber underneath to prevent the bit breaking through, and cut the slots with a jigsaw. Ensure that the seat support dowel locates easily in the slots.

9 Determine the centre and drill a hole in each end of the front seat rail and glue in a short length of dowel to act

as the front pivot. Rout, or plane and sand, a comfortable curve on the top edge of the rail, to match the curve on the corresponding leg sections. Glue up the complete seat assembly.

10 Repeat the same jointing and shaping procedure for the outer legs.

11 The final assembly is a bit of a handful, so do a dry run if you want. Push the pivot sleeves into their holes on the outside of the inner leg assembly. Hook the seat over the rear dowel support and press one of the outer legs onto both the sleeve and the front seat rail dowel. Lay the seat on its side and glue and insert the back leg stretcher in place.

Repeat with the other outer leg and place a cramp over the rear stretcher. Stand the chair upright, taking care not to displace the seat hooks from the back support dowel or the whole thing will collapse at just the wrong moment. Screw the retaining

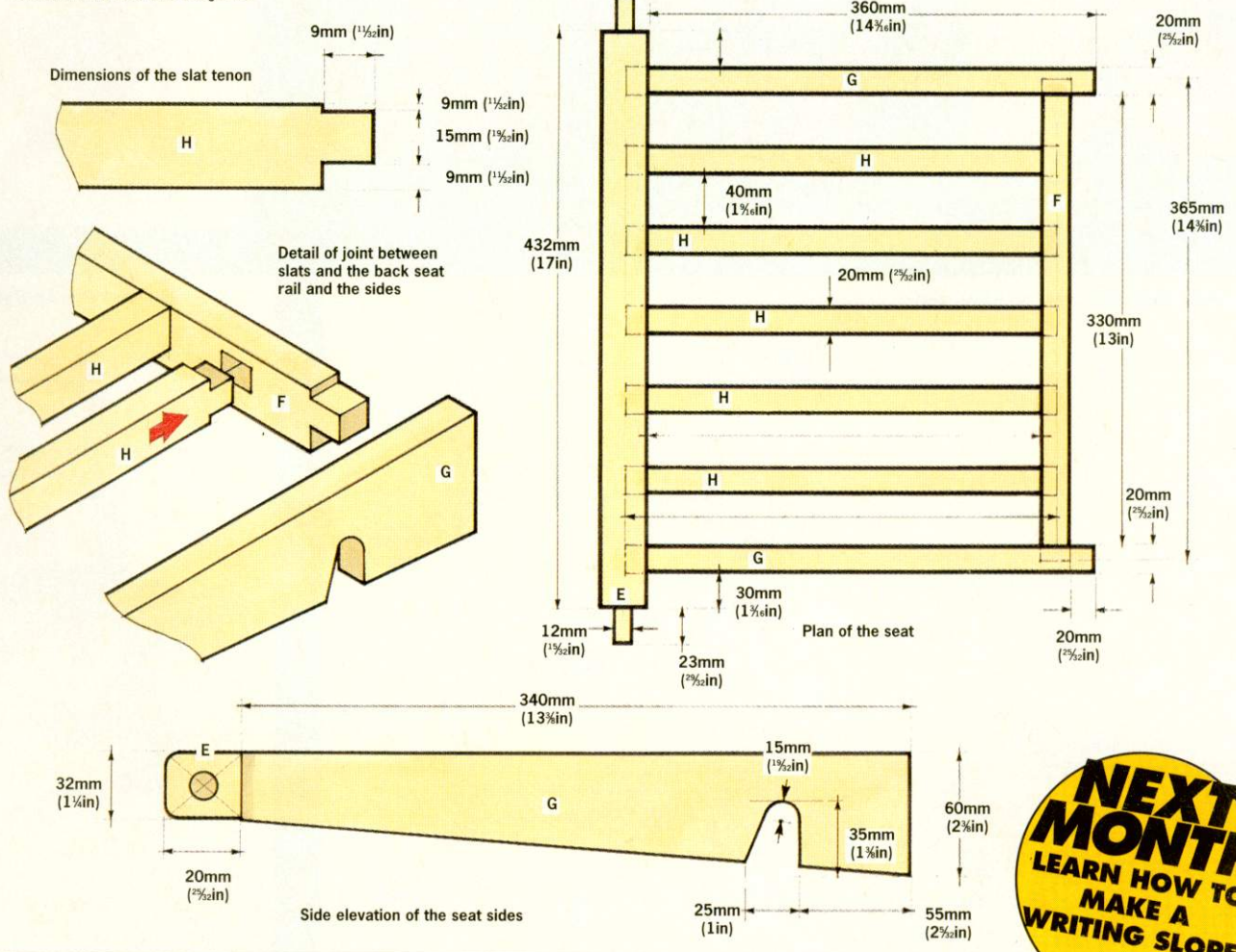
Folding Chair Cutting List

	MATERIAL	QTY	LENGTH	WIDTH	THKNS
A	Legs cut from Ash	2	965mm 38in	150mm 5 ⁷ / ₁₆ in	24mm 1 ¹ / ₂ in
B	Outer leg stretcher	1	452mm 17 ³ / ₁₆ in	47mm 1 ⁷ / ₁₆ in	20mm 1 ¹ / ₂ in
C	Inner leg stretcher	3	410mm 16 ¹ / ₁₆ in	47mm 1 ⁷ / ₁₆ in	20mm 1 ¹ / ₂ in
D	Seat support dowel	1	410mm 16 ¹ / ₁₆ in		15mm dia ⁹ / ₁₆ in
E	Front seat rail	1	432mm 17in	33mm 1 ³ / ₁₆ in	33mm 1 ³ / ₁₆ in
F	Back seat rail	1	365mm 14 ³ / ₁₆ in	33mm 1 ³ / ₁₆ in	20mm 1 ¹ / ₂ in
G	Seat side	2	360mm 14 ¹ / ₁₆ in	60mm 2 ³ / ₁₆ in	20mm 1 ¹ / ₂ in
H	Seat slat	5	330mm 13in	20mm 1 ¹ / ₂ in	25mm 1in

Cutting lists always give the full length of a piece including the joint, but not wastage. Allow at least 25mm (1in) extra for length and 5mm (3/16in) on the width and thickness of sawn stock for cutting to length and for planing and thickening.

bolts into place in the sleeves. When dry, trim and sand flush the front dowels. If necessary, a touch of Araldite on the threads will ensure that the pivot bolts don't work loose with time. Finally an application or two of Danish oil will seal everything nicely before tentatively trying out the chair for size.

Details of the seat and the joints



TIP Cut each leg section as close as possible to the finished shape with a jig or bandsaw so that the router cutter has only to trim the smallest amount of timber. The cut will be both easier and need less cleaning later. It will also put less wear on your router and cutter.

MATERIALS NEEDED

- TIMBER**
Half a cube of 1in American ash (about £15)
- SLEEVES AND BOLTS**
For the pivots: from Winzer Würth ☎ 0483 277722

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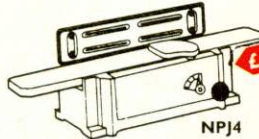
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Woodwatch

Claire McCullough reviews the splendidly successful Good Woodworking Show



New show makes its mark

ALEXANDRA Palace opened its impressive doors to our inaugural Good Woodworking Show at the end of November and the visitors streamed through in their thousands. And as a symbolic gesture we gave the first 1000 a free birch sapling each.

The show must now be a permanent date in the diaries of many woodworkers. More than 10,500 visited the first show. The entertaining and informative range of features were an instant success, beyond our wildest hopes. We can now build on this platform to produce an annual show that brings the magazine alive every November.

That's not to say mistakes were not made. Visitors and exhibitors commented on a few problems which we will rectify by the next show from 23-26th November 1995. We've also noted all manner of comments regarding the magazine, and are sure Good Woodworking will be all the better for meeting so many of our readers in person.

For the magazine team it was great to meet so many readers, and to put faces to some of the regular correspondents to our letters and tips pages. We were amazed by the commitment of some readers. Viv and Gerts Webster, for instance, had travelled all the way from Gibraltar especially for the show.

The trade exhibitors were pleased to find so many visitors who'd never been to a woodworking show before. New people mean new markets mean

new sales. It is certainly exciting to see so many new faces, and to hear people say how different the show was to other ones.

Few standholders were as stunned by sales as Ken Edge of Hard to Find Tools

whose stand faced Nick Gibbs who was making shove halfpenny boards. Ken had brought a few spring clamps along, only to find Nick was using similar cramps for his routing demonstration. Visitors were soon flocking from one stand to the other, and Ken had to hurry home on Thursday night for a new supply. Even those ran out by Sunday. At the next show (23-26th Nov. 95) Nick hopes to be making breadboards. Exhibitors are recommended to ask what tools he'll be using then!

Exhibitors also commented that the visitors seemed to be younger than they expected. Hopefully those people will have visited the careers section of the show which offered advice to anyone wanting to make a living from woodwork.

Among the improvements we plan to make with the next show is a shuttle bus from the car parks. The drop-off point will continue, but we may add an area of craft stalls, selling gifts for Christmas. Watch out for details of the show in Good Woodworking every month.

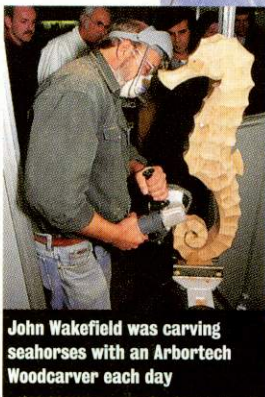
● The winner of the Triton Workcentre in the prize draw at the show was G. Williams of Dorset. Congratulations.



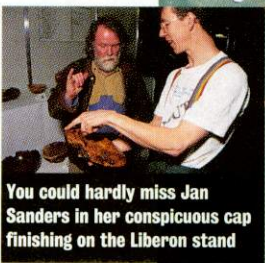
Having a go yourself was a theme of the show, as visitors found with Jeremy Broun



Away from his stand Tobias Kaye judged the Burr Challenge, with Stephen Cooper's help



John Wakefield was carving seahorses with an Arbortech Woodcarver each day



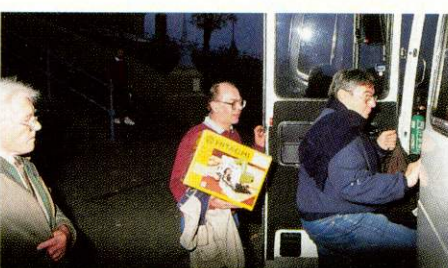
You could hardly miss Jan Sanders in her conspicuous cap finishing on the Liberon stand



Tobias Kaye was showing many of the techniques he has written about



It was a great relief to find queues at the turnstiles each morning, with Sunday being the busiest day



At the end of the day woodworkers left laden with tools, though many took advantage of the drop-off point helpers

QUESTIONS AND ANSWERS

Surgeries solve many questions

THE MOST obvious sign of Good Woodworking coming to life was the block of surgeries at the show. Many of the regular contributors were there to answer questions, solve problems and demonstrate techniques.

Tobias Kaye drew a crowd for each of his regular demonstrations, with a similar posse of woodworkers asking him questions during the intervals. One visitor was heard to apologise to his friend that he'd missed their rendezvous. "Sorry I was away for so long," said Andrew Riddington from west London, "I was watching Tobias Kaye and couldn't tear myself away."

Fortunate members of the Good Woodworking team bought some of the items Tobias had turned over the four days of the show. Others had to make do with one of the editor's hastily built shove halfpenny boards.

Mark Corke wasn't giving anything away, bar advice on sharpening tools. Responding to public demand, Mark focused on chisels and plane irons, though he gave ▶

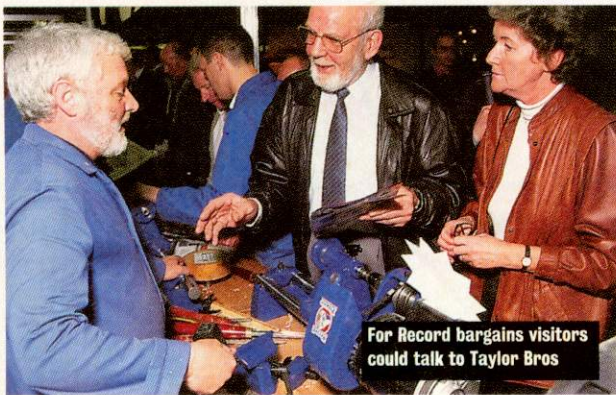


Anyone wanting restoration tips could talk to Steve Hill



Technical Editor Phil Davy showed visitors which tools are best

WOODWORKING INDUSTRY



For Record bargains visitors could talk to Taylor Bros

New visitors boost show business

TRADE exhibitors at the show were excited to find a whole new mix of visitors. Used to seeing familiar faces at similar shows many of the standholders were able to introduce their products and services to new customers.

Sales were helped by the free Drop-Off Point. Visitors could leave purchases at the guarded office and return to the show unladen. Later the Drop-Off Point Lads would even deliver the goods to your car, again free of charge.

The show was brimming with famous names from the

woodworking industry. Elu, Scheppach and Record were all prominent, and many visitors will have been surprised to find Festo, the emerging players in the power-tool market.

Paul Barker of Festo was impressed. "We were very pleased. There was a good mix of new faces and the old tribe of woodworkers who go to all the shows. The organisers couldn't have been more helpful. Nothing was too much trouble, from helping with standbuilding to bringing us cups of coffee."

The show had everything you



A stream of visitors asked Philippa Barstow about polishing



Ian Wilkie regularly attracted a crowd to his turning displays occasional demonstrations of how to sharpen a saw, using rusty old tenon saws kindly 'donated' by our Technical Editor Phil Davy.

In the booth next door Steve Hill was working on a variety of antiques, showing the best ways to repair and restore old furniture. His skills were complemented by Philippa Barstow and Alan Waterhouse answering queries on finishing and particularly french polishing. The only problem for Philippa and Alan was that the gangway between them and the Poolewood demonstration was too narrow. The interest in both stands caused a log jam of visitors. We will ensure that situation does not happen again next year.

Other star woodworkers displaying their skills to a clamouring crowd were Ian Wilkie, turning whatever you want as long as it was small. Visitors unsure what to make next could talk to Edward Hopkins about planning a project while Pete Martin was showing how to make the Christmas projects he made in November (GW 25:54). Everybody was fascinated by the bench he made a couple of months ago (GW 26:64).



Mark Corke kindly sharpened all of our tools at his surgery



Planning a project can be tricky so Edward Hopkins gave a hand

ROUTING WORKSHOP

Editor routs his way

NICK GIBBS, our Editor, spent most of the Good Woodworking Show attempting to make a shove halfpenny board in less than six minutes using a router.

Much to his surprise, and thanks to some improvements in his production techniques, Nick squeezed one board out in four minutes 56 seconds to smash the record. Many of the 45 boards Nick made were given to visitors, while others were auctioned for Children in Need.

"Speed routing is not something I recommend to anyone else," said Nick. "However one of the aims of my display was to show that the router can be a safe and simple machine to use as long as you follow a careful procedure." Between record attempts we encouraged visitors to have a go. A number of younger woodworkers made themselves boards, closely supervised by Nick Gibbs.

"I was surprised how easy they found the router to use," said Nick. "I gently held their hands on the handles to start, but many of them needed no guiding. They were more relaxed than some of the adults. They quickly found the locking lever and switch, and instinctively picked up the idea of never taking their hands from the handles till the router is off."

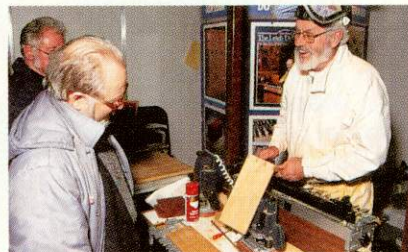


need for woodworking, from timber to finishes. Many well-known retailers, like Taylors, APTC, Isaac Lord, Powertek, Craft Supplies and Sarjents were

offering discount prices. Specialist suppliers were offering clock parts, router cutters, books and even a veneer press. What more could you want?



Axminster Power Tool Centre were displaying their extensive range of machines



Ramon Weston would tell you the simple wonders of the Leigh Dovetailing Jig and cut you a sample joint



The Scheppach team were eager to show the benefits of their distinctive machinery

PROJECTS AND PRIZES



A popular feature at the show was the area devoted to projects from the magazine. Visitors appreciated being able to touch and study the pieces

PROJECTS ARE A HIT

MANY VISITORS were enthused to be able to touch many of the projects that have already featured in the pages of Good Woodworking. The sound of last month's xylophone being tinkled regularly wafted across the hall.

Younger visitors played with the battling skittles game, while ambitious woodworkers opened doors and pulled at drawers to find out more. The only problem

was that we didn't bring some of the back issues, and visitors were not able to buy the relevant edition of Good



On the project stand you could discover what a brilliant game battling skittles is to play

to record



Kabier Burns was one of the younger woodworkers to make a shove halfpenny board



On the Sunday Nick Gibbs made the quickest shove halfpenny board in just under five minutes

PRIZE DRAW

Reliability wins

ONE OF THE first visitors to pass through the doors of Alexandra Palace did so laden with old tools for Africa. A steady stream followed each day, but Tools for Self Reliance were as pleased by the number of volunteers offering to help reconditioning.

Tools for Self Reliance (TFSR) recently celebrated the 500,000th tool to be refurbished for developing countries in Africa and South America. To mark that achievement Tormek gave the charity five SuperGrind systems worth more than £2000. Tormek donated a further SuperGrind to the winner of a prize drawer on the TFSR stand. To qualify you only needed to bring along a tool for reconditioning.

The tools visitors brought filled seven or eight ammunition boxes. "We received lots of woodworking tools obviously,"



Nick Gibbs picks the winner

said Tim Young of TFSR. "People also wanted to join the 70 local groups of volunteers for reconditioning."

The first fortunate name out of the Tormek box for the draw was Graham Mist of Hants who brought some hammers, screwdrivers and a pair of pliers early on Saturday. By now he will have received his Tormek 1204 grinding system. "It's a great idea to be able to bring along your old tools," said Graham. "I hope to arrange my own local collection soon at church."

DIARY

CRAFTS AT THE MILL

21st-22nd January
Country Designs crafts for sale. National Trust property and gift shop. Quarry Bank Mill, Styal, Wilmslow, Cheshire.
Open 10-4.30, admission to be decided, ☎ 0161 928 9146.

CRAFTS IN ACTION

28th-29th January
Country Designs crafts for sale and demonstrations. Dunham Massey Hall, Altrincham, Cheshire.
Open 10-4.40, admission free, ☎ 0161 928 9146.

TOYFAIR 1995

28th-30th January
The British Toymakers Guild are celebrating their 40th anniversary this year. The Fair will be full of toys, gifts and miniatures made by craftspeople who are members of the Guild. Chelsea Old Town Hall, King's Road, London.
Open 28th 10-6, 29th 11-5.30, 30th 10-4.30, admission children free, adults £2.50, senior citizens £1.50, family ticket £4, (two adults and accompanying children), ☎ 01225 442440.

CONTEMPORARY FURNITURE

2nd February-2nd April
The exhibition profiles the excellence of design and quality of craftsmanship of contemporary furniture. It features a mixture of chairs, benches, tables and smaller objects. Crafts Council, 44a Pentonville Road, Islington, London.
Open Tues-Sat 1-6, sun 2-6, closed Mon, admission free, ☎ 0171 278 7700.

FREE DEMONSTRATIONS

4th-5th February
Woodturning with Reg Sherwin
11th February
Robert Sorby Tools
12th February
Woodturning with John Shepherd
18th February
Woodcarving with Peter Berry
19th February
Pyrography with Mo Reardon
25th February
Portable Power Tools with Leeds College of Art and Design

26th February
Woodturning with Harry Middleton
Fine Wood and Tool Store
Schoolroom, Riverside Sawmills, Boroughbridge, North Yorkshire.
Open 10-3, ☎ 01423 322370.

CRAFT FAIR

11th-12th February
Hagley Crafts, Cocks Moor Woods Leisure Centre, Alcester Road, South, Kings Heath, Birmingham.
Open 9.30-5, admission 80p, under 14s free, ☎ 01562 777014.

BRITISH AND INTERNATIONAL FAIR

25th-26th February
A wide selection of crafts, gifts and textiles from the UK and overseas on offer. Hagley Crafts, Warwick Arts Centre, University of Warwick, Gibett Hill Road, Coventry.
Open 9.30-5, admission £1.50, concessions 80p, ☎ 0156 777014.

CRAFTS IN ACTION

19th February
Crafts for sale and demonstrations. Licensed lunches and light refreshments. Dunham Massey Hall, Altrincham, Cheshire.
Open 10-4.30, admission free, ☎ 0161 928 9146.

INSPIRED CHOICE

24th February-1st April
"Colourful, dramatic, intriguing... these words go some way towards describing this inspiring exhibition. A surprising combination of materials" Contemporary Applied Arts, 43 Earlham Street, Covent Garden, London.
Open Mon-Sat 10-6, Thurs 10-7, admission free, ☎ 0171 836 6993.

GOOD WOODWORKING SHOW

23rd-26th November
The sequel to the successful first show opens at Alexandra Palace bringing the magazine alive. Watch out for our regular contributors, for the projects from the magazine and for the hands on demonstrations.
Open Thur-Sat 10-6, Sun 10-5, ☎ 01225 442244.

COMPETITION

Veritas tools must be won



SOME visitors may have noticed Pete Martin's workshop cupboard and toolbox at the show. Perhaps they reminded you of storage ideas of your own. If so you can still enter our Veritas Storage Tips Contest, with prizes worth £600.

All you have to do is send in your tips on how to store tools and materials in the workshop,

with drawings and photos if possible. You might suggest a design of cupboard or special container. The best storage tip will win £300 worth of Veritas tools. Second prize is £200 and third prize £100. All the tips we publish will receive 10 per cent discount on all orders placed for Veritas tools. Entries must be in by 28th February 1995.

Woodworking. We will not make that mistake again next time. If you still want a back issue you can contact our hotline for orders on ☎ 01225 822510.

The entries for our boxmaking and turning competitions were equally popular. The prizes of Elu and Sorby equipment drew an excellent range of pieces, which the judges had a hard time marking on the Saturday of the show. At the next show we will attempt to judge the competitions before the show opens so you can study the winners on all the four days.

By the time you open this issue the winners will have been



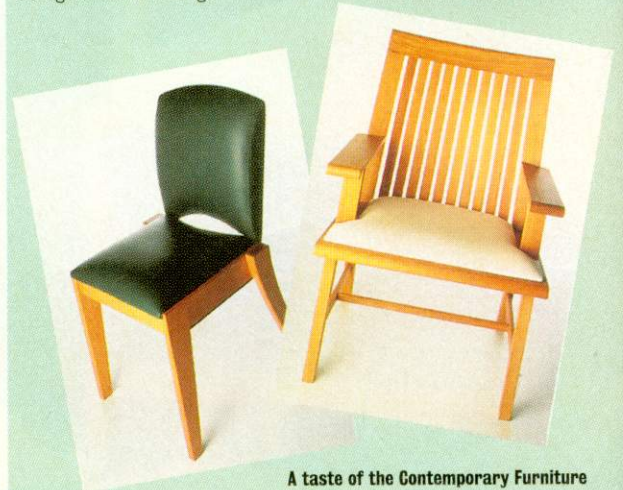
Many readers submitted entries into the boxmaking and turning competitions

contacted, so you needn't be reading with National Lottery expectation. In the Burr Challenge the best overall piece, which won its maker a turned burr by Tobias Kaye (worth £220), was a clock by Paul Gregory in brown oak. Paul's

piece also wins him £250 worth of Sorby tools.

We introduced the Elu Boxmaking Contest in September (GW 23:43), giving you plenty of time to copy Pete Martin's box or make one to your own design. The Best Copy was produced by Kenneth Bateman, and won him an Elu MOF96E router.

Kenneth's other entry was pipped into second place for original designs by Terry Otter's mitred yew box which won him the Triton Workcentre. Third prize of an Elu MBR100 biscuit jointer went to Brian McCall. Well done. Thanks to all the entrants.



A taste of the Contemporary Furniture exhibition, simple but stylish chairs

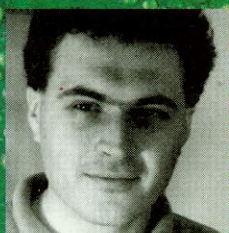
Although all details were correct when we went to press, it is always advisable to make a quick telephone call before you set off for an exhibition, to check that dates and opening times have not changed



Fighting

DAMP

Create the right conditions in your workshop by controlling the temperature and humidity. Tim O'Rourke explains how to keep the heat in and mop up excess moisture with a dehumidifier



Over the last few years I have been trying to create the right environment in my workshop. The effort has been worthwhile as I have now got a workshop which is warm when I work in it, the tools don't rust, and my wood is dry, stable and ready to use. More importantly it hasn't cost a fortune and it's economical to maintain.

Cost is one of the critical issues here. If it wasn't, the simplest answer would be to leave the heating on at 20° all the time. At this temperature the humidity would generally remain lower than 55 per cent except on the dampest of days.

My workshop has about 30sq m of floor space and is made mostly of stone and blockwork. It has a lot of windows and suffered from various damp problems. The insulation was poor and heat was quickly lost on a cold day. Most of my timber is bought when freshly converted and I store it under cover outside for several years. It was important to me that I could use the workshop to condition the timber for a few weeks before use.

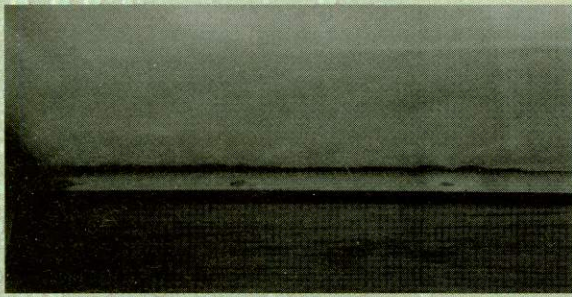
The first part of my plan involved improving heat insulation so it would be cheaper to heat when I was working and, more importantly, the temperature wouldn't plummet when I turned the heater off. The second part of my plan involved keeping the moisture level down by installing a dehumidifier, reducing airflow and removing sources of moisture.

Reduce Workshop Heating Costs

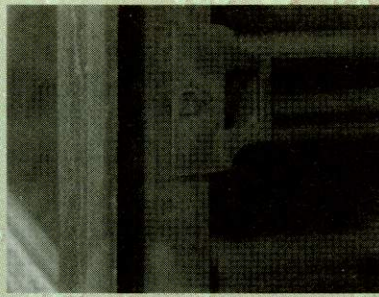
Whatever source you use to heat your workshop, the best economies can be made by reducing heat loss and only using the heating when you are in the workshop. I have two second-hand electric heaters, one has a timer and thermostat and comes on when I am in the workshop. The other has a thermostat and comes on at any time if the temperature drops below 5°. This prevents pipes from freezing and it allows the dehumidifier to work reasonably efficiently. In practice, because of the insulation I have fitted, the temperature only drops close to this temperature in sustained periods of cold weather.

How to Save Heat

Heat is lost through the windows, doors, ceiling, walls and floors. The most economical method of double glazing your windows is to use clear plastic. Purpose made plastic is available for DIY double glazing, but on the windows that I don't look out of I have used semi-clear polythene sheet which is cheap and still allows light to pass. It is important that the plastic is drawn tight so a pocket of air is trapped between the glass and the plastic. I found it easiest to use 20x10mm



Polythene sheet can be used as cheap double glazing. The sheet must be drawn tight, but it does not have to be clear



Make sure your workshop door fits the frame closely, and use draught excluders



A damp-proof membrane prevents damp from penetrating the building, but does mean you have to dig a deep trench along the wall

wooden beads to hold the plastic in place. If you do this carefully it improves the insulation of the windows and makes them free from drafts.

Doors not only allow cold air in, but allow moisture to come in with it. Make sure your workshop doors hang properly and meet the frame closely. Use draught excluders. The brush type ones are particularly useful for the crack underneath the door. Use a candle to show you where draughts are blowing.

It is essential that you have insulation in the ceiling. I have put in 150mm of glass fibre insulation in my ceiling, which is an unpleasant but effective job to carry out. If you don't already have a ceiling it would be worthwhile fitting a false ceiling with sheet material so you can hold up a layer of insulation.

I have fitted an inner studwork wall using 100x50mm timber, plasterboard and glass fibre insulation. This makes a difference, particularly on walls that face North and East where some of the coldest winter weather comes from. Even in a wooden shed, I recommend fitting an inner wall from plywood and filling the gap with 25mm or 50mm polystyrene sheet.

Cold floors not only lose heat but they are the one part of the workshop that you cannot avoid touching! An expensive option is to cover solid floors with 25mm polystyrene and a layer of flooring chipboard. The biggest disadvantage with this is that you need to get back to the solid floor when you fit a piece of equipment. Suspended floors don't lose as much heat and they certainly don't feel as cold.

In my workshop I have got a half suspended and half solid floor. I have arranged the workshop so most of the storage is on the solid floor and most of my time is spent on the suspended floor. I have also got some second-hand carpet tiles which provide a reasonable level of heat insulation.

Getting the Workshop Dry

The greatest contribution towards getting the workshop dry is investing in a dehumidifier. However, there is little point in taking the moisture out of the

air in your workshop if there is an equal flow of moisture going back in.

Moisture comes from a variety of sources, the most likely to afflict a small workshop are draughts and rainwater. On a damp day more moisture is drawn into the workshop through a gap in the door than a dehumidifier can extract.

Damp in the fabric of the building can be a major problem because it will let in limitless moisture but can be expensive or difficult to remedy. I have had to dig a deep trench along one wall of my workshop and replace a damp-proof membrane. This is time consuming but I had little choice since heavy rainfall was depositing about 10litres of water on the floor. Any damp patches on the walls or floor can be remedied by clearing, checking or replacing damp-proof courses.

A surprising amount of water comes from within some workshops. Dripping taps are particularly bad because water from a wet sink evaporates at about the same rate that a dehumidifier can extract from the air. If you use a wetstone grinder you need to empty the trough after use, or at the very least cover it in a plastic bag. Get rid of house plants from the workshop; the more you water them the more the dehumidifier will dry them out and the more you will need to water them all over again!

If you are trying to establish a sealed atmosphere in your workshop,

you need to avoid using the door too much particularly on damp days. If you are doing something that involves going in and out many times, like bringing in a new stock of timber, it is best to do this on a dry day.

What is the Right Environment

A great deal has been written about tools, timber and woodworking skills, but controlling the temperature and humidity of your workshop is just as important because it affects the way we work, the rust on your tools and the stability of timber. Tools and timber can be safely kept at any temperature as long as the humidity is being controlled. To work safely and comfortably, woodworkers should have a temperature of between 17° and 20° in their workshops.

A comfortable humidity level to work in is between 40 per cent and 70

Relative humidity in the workshop

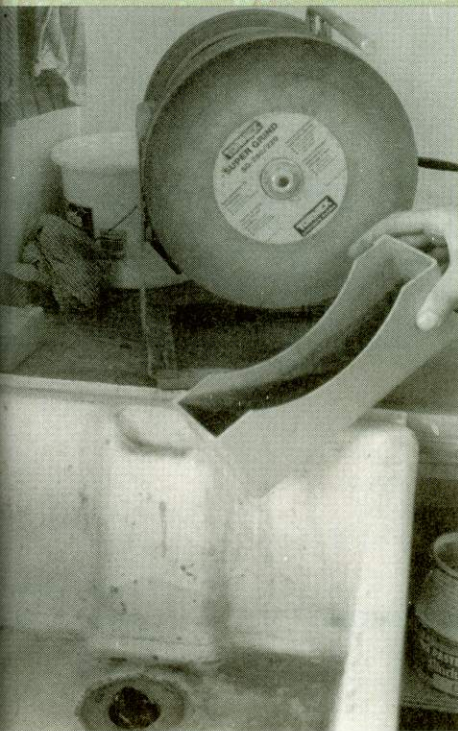
The most common and most useful measure of humidity for woodworkers is relative humidity. Relative humidity is a measure of the amount of water that air at a given temperature can hold. If the air in a room cannot hold any more water, it is described as being saturated (100 per cent relative humidity). Under these conditions, any further water in the room would not evaporate.

Warm air can hold more water than cold air; in fact air at +30°C can hold 20 times more water than the same air at -40°C.

There are two ways of reducing relative humidity. Firstly, you can extract the moisture from the air using a dehumidifier. Alternatively you can heat up the air in the room but this is, of course, more expensive. Heating up the air in the room allows the air to absorb more

moisture. Unfortunately, the opposite is also true and there are two ways that you can increase the relative humidity. If your workshop has a relative humidity of 50 per cent and you allow a basin full of water to evaporate into it, the relative humidity will go up.

The other cause of rising humidity is a drop in temperature. Cool air can hold less water than warm air and so if your workshop had a relative humidity of 50 per cent whilst you are working in it at 18°, and you subsequently left the workshop, turned off the heater and let the workshop cool down, you would certainly see the relative humidity go up. The other problem in this situation is that the air cannot hold all of the water that it held when it was warm and it will condense onto the nearest available cold surface.



Always empty the trough in your wetstone grinder (left) or cover it with plastic, otherwise it will be a constant source of moisture for the workshop



House plants must be banned from the workshop or they will add moisture to the air

per cent relative humidity. If the level falls below 40 per cent, the membranes in your nose and throat start to feel dry (and this is exacerbated by any dust in the air). If the humidity rises about 70 per cent you will start to feel

uncomfortable since your perspiration will have more difficulty evaporating and you will start to feel too hot.

Excess moisture will cause tools to rust. The metal in tools takes longer to heat up than the air in the workshop. If you only heat your workshop for the time you spend in it, the tools will still be quite cool when you leave. Unfortunately, as you leave and turn off the heater, the air cannot hold as much moisture and it condenses onto all the cold surfaces, including the tools. The ideal conditions for tools are either when the temperature is constant or the relative humidity is stable.

Best Timber Storing Conditions

The moisture content (mc) of timber is quoted as a percentage. This refers to the weight of the water within the wood as a percentage of the weight of the wood if it was completely dry.

$$mc = \frac{\text{Total weight} - \text{Dry weight}}{\text{Dry weight}} \times 100$$

If a piece of timber has moisture content of 20 per cent and weighs 12kgs it will consist of 10kgs of dry wood and 2kgs of water.

When timber is felled the moisture content might be as high as 150 per cent in the case of some softwoods. This moisture content needs to be brought down considerably before the wood will be stable to use. If the timber is to be used outdoors, 18 per cent would be reasonable, but if it is to be used in a warm centrally-heated house it would need to be between 8 per cent and 10 per cent moisture content.

This moisture loss happens in two distinct phases. In the first phase the free water from the cells evaporates; the weight and moisture content drop

dramatically but the cells don't change shape and so we see little shrinkage. In the second stage the cell walls give up their water and the cells shrink in diameter. The shrinkage across the grain is often considerable but the cells don't get much shorter so the shrinkage along the grain is minimal.

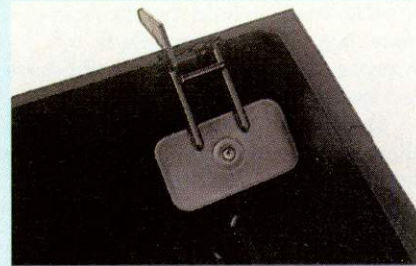
The ideal condition for storing timber in the workshop is when the relative humidity in the workshop allows the timber to stabilise at the right moisture content. If you know what humidity level your piece of woodwork will spend its life in, the ideal condition for your workshop is to keep it for several weeks at the same humidity level so that wood reaches an equilibrium. This table gives a rough indication of the moisture content of timber as it stabilises in different humidity levels.

Air conditioned and heated offices can be as low as 40 per cent relative humidity and in these conditions wooden furniture would contain as little as 8 per cent moisture content. Clearly if you are able to reduce the timber to 8 per cent m.c. before you start making a piece of furniture, the finished piece will not shrink or expand. Most centrally heated homes are in the 45 per cent to 55 per cent humidity range, depending on how well sealed the house is and how high the heating is turned up. Older and damper houses can be as high as 60 per cent, whilst some unheated churches can be higher, at anything between 65 per cent and 70 per cent relative humidity.

Few woodworkers use timber straight from a timber merchant without first leaving it to settle in its new surroundings. Unfortunately there is little point in doing this if you leave the timber to settle in a damp workshop when the finished piece is eventually going to come inside to a dry house.

Some leading woodworkers prefer air dried to kiln dried timber. Kiln drying is much quicker and it can bring down the moisture content as low as you want it; air drying takes longer (the rule of thumb is to allow one year for every inch of thickness). However some woodworkers would argue that the

Dehumidifiers which is best?



The AQP Dryhome has a shut-off switch on the water collector (above) and a filter to stop dust reaching the cold coil inside. The AQP collected more than 16litres of water in one week. Simple switches include a built-in humidistat and a failsafe for frost



Tim O'Rourke found two dehumidifiers which he thought would be suitable for his workshop. Over a period of three weeks he ran three tests to see how they performed.

Test One: The 24 hour trial

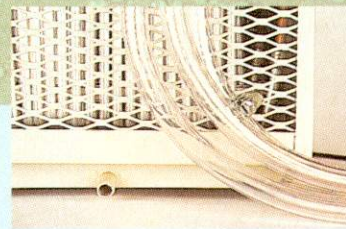
I gave each machine two periods of 24 hours to see what it would do to the relative humidity in my workshop. The temperature was kept steady, and the machines worked on alternate days.

Day One: EBAC CD30 collected 1360ml of water in 24 hours.

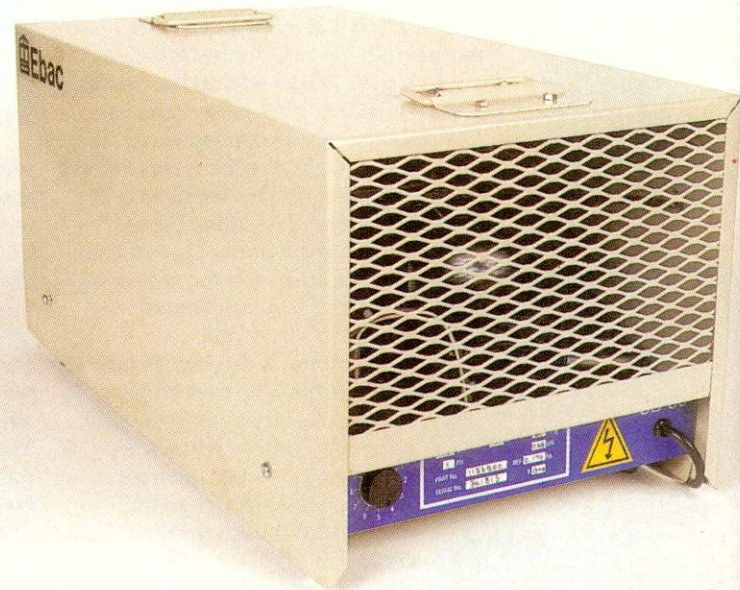
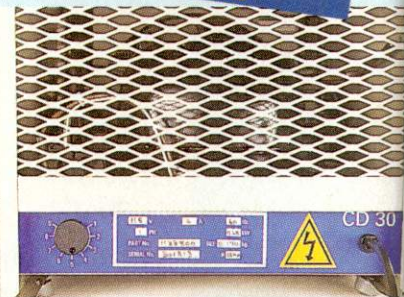
(min temp 11.7°, max temp 13.8°, min rh 51.5 per cent, max rh 55 per cent).

Day Two: AQP Dryhome collected 2120ml of water in 24 hours.

(min temp 11.0°, max temp 11.7°, min rh 55 per cent, max rh 55.5 per cent)



The Ebac CD30 has most of the features of the Dryhome. Also worth noting is the easy connection for a permanent drain (above). This you can feed into a sink or duct outside so that you don't have to empty the collector all the time. Once the collector fills it turns off the machine



Day Three: EBAC CD30 collected 1420ml of water in 24 hours. (min temp 11.0°, max temp 15.0°, min rh 53.5 per cent, max rh 55.5 per cent)

Day Four: AQP Dryhome collected 2550ml of water in 24 hours. (min temp 14°, max temp 15°, min rh 52.5 per cent, max rh 53.5 per cent)

Both machines were on constantly for their 24-hour period because I set the humidistats at a low relative humidity. Although the conditions varied slightly, all four days were similar and the thermostat on my heater prevented the temperature from dropping below 11°. The AQP Dryhome extracted 1.68 times more than the EBAC CD30.

Test Two: Simultaneous testing

I ran both machines together to see how they performed in identical conditions. The

machines were situated together at the same height. Both dehumidifiers were set to work together for one week.

With the two machines working back-to-back, a fair comparison of the machines' performance can be made. The AQP Dryhome extracted 1.83 times more water than the EBAC CD30.

Test Three: The effects of heat

I measured the inlet and outlet air temperature to monitor the heating effect of both machines. The inlet air temperature and the outlet air temperature were measured several times in the centre of the air flow.

The difference between the two temperatures was averaged for each machine. The AQP Dryhome average increase in temperature was 3.7°, and the EBAC CD30 average increase in

temperature was 4.5°. Both raised the air temperature significantly.

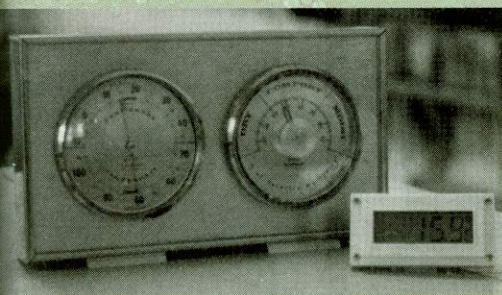
The EBAC CD30 raised the temperature more than the AQP Dryhome and this rise helps to reduce the relative humidity and improve the efficient running of the machine.

FINAL VERDICT Dehumidifiers

The two machines are similar in many respects but the AQP Dryhome extracted more water. This would be a useful asset in a damp workshop or if you needed to condition a quantity of air-dry timber. I made the decision to buy the AQP Dryhome.

NEXT MONTH ON TEST Workmates

Find out which Workmate to buy or if yours is best next month



It doesn't matter what type of measuring instruments you use for temperature and humidity, as long as they are accurate. Compact electronic units with min/max for both temperature and humidity are available for about £17.50 from electronics suppliers

You can work out what moisture content you are likely to be able to achieve in your timber by the relative humidity of your workshop.

RH (%)	MC (%)
70	14
65	13
60	12
55	11
50	10
45	9
40	8

slow seasoning helps to relieve the stresses in timber. The one big disadvantage of air drying is that it cannot bring the moisture content below 18 per cent even in the summer; you must follow air drying by a period of acclimatisation in a drier atmosphere.

Dehumidifiers at Work

Dehumidifiers consist of a fan to circulate the air and a compressor which compresses a refrigerant to provide a cold surface and a warm surface (similar to a domestic fridge).

Damp air is sucked into the machine and on contacting the cold surface it loses its moisture as condensation. The air is then passed over the warm surface (heat exchanger) where the dry air is heated slightly before being passed back into the room. Underneath the cold surface is the collecting tray where the droplets of condensation collect.

In Britain, where temperatures can be quite low, the condensing moisture is often going to build up as ice. Some machines are fitted with a 'hot gas defrost' which enables the ice to be melted into the drip tray at regular intervals. If a machine does not have this facility, you have to raise the temperature of the room until the condensation comes out as water (the cold coil operates approximately 15° lower than the ambient room temperature). This, of course, defeats the object in terms of energy saving and effectively rules out all machines without a defrost facility.

You need to buy a machine with a built-in humidistat so you can determine the humidity level for your workshop. For workshop use you are better off getting a machine with some sort of dust filter, otherwise the dust is going to get into the airflow. Most of the dust will reappear in the water collector but some will go where it won't do the machine much good. Buy a machine that has a permanent drain facility



Part of the test of dehumidifiers was to measure the amount of water collected by each of the machines. In the first test I ran each of the dehumidifiers for 24 hours, on alternate days. They were then run alongside each other for a week. At first I found that the humidity in my workshop did not change much, but after three weeks the rh went down dramatically. I collected 50 litres in the first month

refrigerant used in dehumidifiers could be a hazard to the environment. Most companies are moving towards an environmentally refrigerant (R134a) and by 1997 all dehumidifiers must incorporate this.

After the winter dehumidifiers come onto the second-hand market. The life expectancy of a dehumidifier is about

the same as a refrigerator, so if you get the chance to buy second-hand it could save you money. which bypasses the water collector. All the machines I looked at had an automatic cut-out to turn the machine off when the collector is full so at least your floor won't flood. It is still important that the machine is free to operate all the time unless you want the humidity to creep up again whilst it waits for you to empty the collector. The permanent drain only needs a plastic hosepipe into a sink or a hole in the floor of a shed.

One final word of caution. The sales brochures make a big deal of the maximum water extraction rate. These figures are truly impressive but remember that they are probably quoting for a room heated to about 30° at 80 per cent relative humidity. What you need to ask is how much water they extract at, for example, 10° at 55 per cent relative humidity. This is the amount you can expect to see in your water collector!

Buying a Dehumidifier

There are several dehumidifiers available on the market but few that will adequately control the relative humidity in a cool workshop. If you decide to invest in a dehumidifier, don't buy the cheapest because you might find that it will have little effect on the humidity in your workshop. The

that can be saved. Until I had carried out these improvements, keeping the tools free from rust, the timber stable and making sure it was warm enough to work, was costing an average of £2.50 per week. The cost was obviously higher in the winter and in the really cold spells I used to give up and let the workshop get very cold to save money.

The Savings You Can Make

The most surprising aspect of controlling my workshop's environment is the amount of money

The positioning of the dehumidifier in a workshop is not absolutely critical although you will need to allow free air space in front and behind the fan so the air can circulate. I would recommend having the dehumidifier midway up the height of the workshop where the air will be slightly warmer than at ground level because the machine will operate more efficiently.

TIP

that can be saved. Until I had carried out these improvements, keeping the tools free from rust, the timber stable and making sure it was warm enough to work, was costing an average of £2.50 per week. The cost was obviously higher in the winter and in the really cold spells I used to give up and let the workshop get very cold to save money.

The dehumidifier is very cheap to run (about two pence an hour) and it seems to be averaging one and a half hours a day to keep the workshop stable, at 50 per cent relative humidity. The heaters rarely come on. In total it seems to be averaging about 50 pence a week. The outlay of the dehumidifier should be paid off within three years and I am enjoying the benefits in the meantime. I certainly consider that the

Stabilising MC

Having stabilised the relative humidity in his workshop, Tim brought in two small pieces of wood (one softwood, the other hardwood) from outside. He weighed them at regular intervals to see how quickly the moisture content stabilised.

Hours	Weight of softwood (g)	Weight of hardwood (g)
0	331	231
2	328	234
14	315	223
27	305	212
50	293	194
72	279	181
76	277	178
96	265	165
116	261	159
120	257	155
143	253	151
147	252	150
160	250	148
184	247	145
215	242	143
242	240	141
266	237	139
305	235	137
363	232	134
402	231	134

Comparative Test of Dehumidifiers

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Product	Dryhome	CD30
Height/Width/Depth	578mm/358mm/380mm	300mm/304mm/550mm
Weight	25Kgs	23Kg
Electrical supply/Power	240V/300W	240V/350W
Max water extraction	8.1litres/day	10litres/day
Humidistat control	Yes	Yes
Integral water container	Yes (8litres)	No
Direct drain connection	Yes	Yes
Hot gas defrost	Yes	Yes
Air filter	Yes	No
Minimum operating temp	0°	2°
Operating current	1.3A	1.5A
Guarantee	Two years (parts and labour)	One year (parts and labour)
Spares available	From small specialists	Parts supplied or repairs carried out
Manufacturers rec. price	£308 (plus VAT)	£300 (plus VAT)

My dust extractor unfortunately removes warm dry air because it is now sited outside the workshop, with ducts under the floor

Electronic kitchen scales (below) are ideal for weighing your timber samples



the workshop. It was noisy and it took up valuable space but at least it returned the warm, dry and dust-free air back into the workshop. I have since moved it to an adjacent shed with the ducting running under the workshop floor. This has saved space, and it's much quieter, but I am now sucking cold damp air into the workshop and returning warm, dry air to the shed. The solution will involve wrapping a big plastic bag around the dust extractor and running more ducting to bring the warm air in again!

How to Test the mc of Timber

The moisture content of timber is quoted as a percentage. This refers to the weight of the water within the wood as a percentage of the weight of the wood if it was completely dry.

$$mc = \frac{\text{Total Weight} - \text{Dry Weight}}{\text{Dry Weight}} \times 100$$

To test the moisture content of a piece of wood without using a moisture meter (GW 27:80), cut a small piece off the end of a plank. Weigh it using

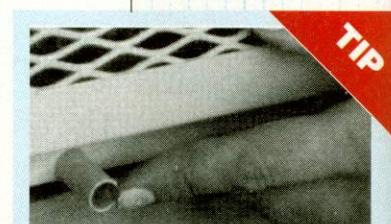
accurate scales. Then heat up the wood in an oven until it is not losing any more weight. Keep the temperature low and make sure you don't set fire to it. Don't use a microwave which heats the wood from the inside. This will cause a build-up of steam with possibly explosive results! Use the dry weight in the equation and work out the mc. When I had stabilised the relative humidity of my workshop at 55 per cent I brought in two small pieces of wood from outside. I weighed them at regular intervals to see how quickly the mc stabilised at the lower level.

After just a fortnight, the weight of the samples was stabilising. I then dried them completely in the oven. The softwood weighed in at 206 grams and the hardwood at 119 grams. So:

$$\text{Softwood} = \frac{231 - 206}{206} \times 100 = 12.1\%$$

$$\text{Hardwood} = \frac{134 - 119}{119} \times 100 = 12.6\%$$

At the time of weighing the samples, their mc had dropped to 12 per cent, which is close to the result expected in humidity of 55 per cent. Using the same equation with the original air dry weights shows the mc at the start was 21.3 per cent for the softwood and 24.3 per cent for the hardwood.



TIP
If you do not want to be emptying the dehumidifier collector the permanent drain only needs a plastic hosepipe into a sink or a hole in the floor of a shed.

Results from Back to Back Test

Both dehumidifiers were set to work for one week in Tim's second test. With the two machines working back-to-back a fair comparison of their performance could be made. The AQP Dryhome extracted 1.83 times more water than the Ebac CD30.

		AQP	Ebac
Day One	(12-16°, 53-54.5% rh)	2400ml	1340ml
Day Two	(13-14°, 53-54%, rh)	2350ml	1230ml
Day Three	(13-14°, 54% rh)	2560ml	1400ml
Day Four	(13-15°, 51-54% rh)	2020ml	1110ml
Day Five	(10-16°, 54-55%, rh)	2780ml	1445ml
Day Six	(12-16°, 55-56%rh)	2540ml	1390ml
Day Seven	(12-15°, 54-55% rh)	2020ml	1170ml
Totals		16670ml	9085ml



dehumidifier was as good an investment as my bandsaw.

When I first started testing the dehumidifiers, I was disappointed by the lack of progress the relative humidity was making. There will be an enormous quantity of water in the fabric of the building which you will have to extract before the humidity will eventually come down. After one week of continuous dehumidifying, the rh had only come down from 72 per cent to 67 per cent. One week later and the level was down to 63 per cent and then suddenly in the third week it came down to 53 per cent. In the first month I had extracted about 50 litres of water from the workshop. With the workshop very steady at 50 per cent rh, I now only extract about 1litre/week.

I am using the workshop to condition the timber that I am using. I have found that it pays to bring in the next batch a few boards at a time. The first time I tried this, I brought in 10 cubic feet of spalted beech which within a day had sent the rh up to 61 per cent. This meant that the project I was working on was starting to take on the moisture and so I temporarily stopped until the rh came down a few days later.

Introducing air-dried timber a few boards at a time, doesn't stretch the dehumidifier beyond its limits and you will notice little change.

One problem that I hadn't foreseen and haven't yet solved is the use of my dust extraction equipment. Until two years ago, my 1500 cubic meters/hour dust extractor was in



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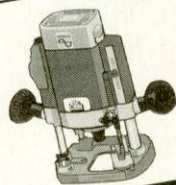
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BENCH

Talk



Nick Gibbs travels to Australia to find new products and a new approach

I adore Australia. Clive James summed it up for me the other day when he said that while there are Australians who think they are better than other Australians, there are none that think they are worse. The woodwork's pretty good too.

In October I spent three weeks in the land of the sun and the surf doing a bit of business and plenty of leisure. It was a fruitful trip, starting in Melbourne with a visit to the Timber and Working with Wood Show.

The Australian woodworking scene is vibrant and full of energy, reflected by the enthusiasm of visitors to the show and by the wide range of products. There is a pioneering spirit, and tons of wood. The show even had an auction of long exotic planks and wild burrs. Across the way was a log-cutting race, with two pairs of amateur sawyers toiling their way through a 24in diameter log, encouraged and heckled by the accompanying throng.

Wandering around the exhibition centre, all panelled and floored in wood, the average Pom is met by the familiar names of Record, Schepach, Sorby, Stanley and many more. In amongst the famous brands are smaller ventures. Like children at an adult party, they command the interest for novelty's sake, but are not always able to compete with the taller and broader.

That being said, Howard Products were doing startling business with their Orange Oil range of finishes. I bought bottles of their Feed-N-Wax and Orange Oil Polish, which are both made in the USA. The oil is a bit thinner than linseed, and you use a pump action to spray it onto the work as a preparation for wax. David Foster, who distributes the Howard range in Australia told me that he had been focusing on antique restorers, but is now finding a



Business is booming for Howard Products Orange oil range of finishes

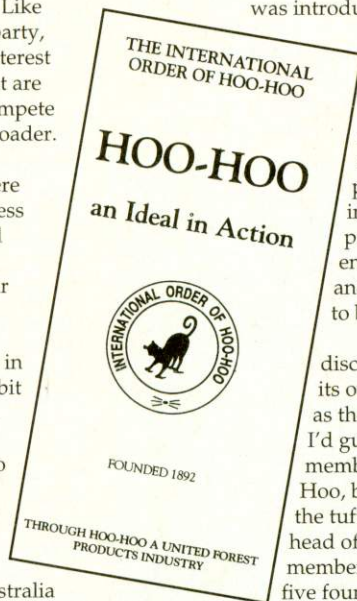
fabulous demand amongst woodworkers. Do contact him to find out more (☎ 010 61 67 66 9933).

Finding Order in the Hoo-Hoo

Shows are hard work for exhibitors and visitors alike, and regular coffee breaks are essential. During one such interval I was introduced to the

International Order of Hoo-Hoo. Hardly the epitome of respectability, you might think, but the organisation aims to produce the united industry for forest products by encouraging friendship and a fraternal approach to business.

I have yet to discover if Britain boasts its own Hoo-Hoo club, but as there are 270 worldwide I'd guess I'll soon be a member. The term Hoo-Hoo, by the way, refers to the tuft of hair on the bald head of one of the founding members back in 1892. The five founders, stranded in Arkansas returning from a forestry meeting, were shocked to learn



they did not know each other well. They decided misunderstandings were less likely to happen between friends and so conceived the organisation.

More Room for Growth

A recurring theme of Australian life is the have-a-go culture, so it was hardly surprising to find an area of the show devoted to woodworking for children; the ultimate creche. There seems to be a trend worldwide encouraging younger woodworkers, perhaps because school woodwork is in global decline.

For myself I had a great time trying out the Jerry Glaser sharpening jig which Tobias Kaye tested for us in December (GW 26:84) on the Woodfast



The Australian approach to woodworking shows: lots of products and lots of timber

stand. It is a superb aid for turners. I was also shown, by another exhibitor, some extraordinary hi-tech turning tools but was sworn to say no more. He said the tools are better than anything in Britain, but an Australian's never going to say they are worse!

Discovering the Mate Culture

A typically Australian habit is to suffix Mate to the name of their products. A classic example is Timbermate, which claims to be 100 per cent Australian Made, and is designed to act as a grainfiller, edgefiller and wood putty. Its plastic container sports the ubiquitous triangular 'Australian Made' sticker you find everywhere Down Under of a stylised gold kangaroo.

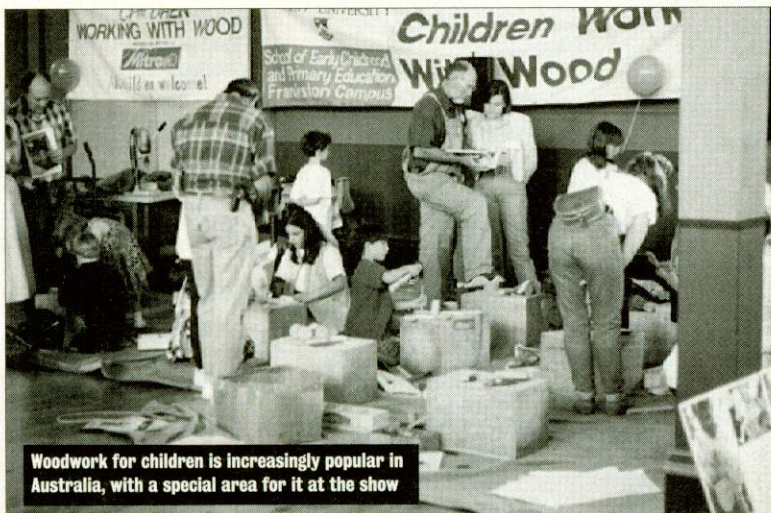
Australia, like much of Europe, is on an environment-friendly rush. It is hardly surprising to discover that Timbermate is water based. Its makers also claim that it does not shrink nor sink, and can take any finish. I was amazed to see that it has an unlimited shelf life. If the contents do harden before use the instructions tell you to simply place the can in hot water.

Over the years I've chucked any number of tins of filler due to premature rigor mortis. I'm sure you have too. If Timbermate can live up to its claims I will be a loyal subscriber to the product. Of course, I rarely need filler for my own work, but my sister's brother knows somebody who does. I have not seen it demonstrated in Britain, but it is available from Metolux (☎ 0924 461341).

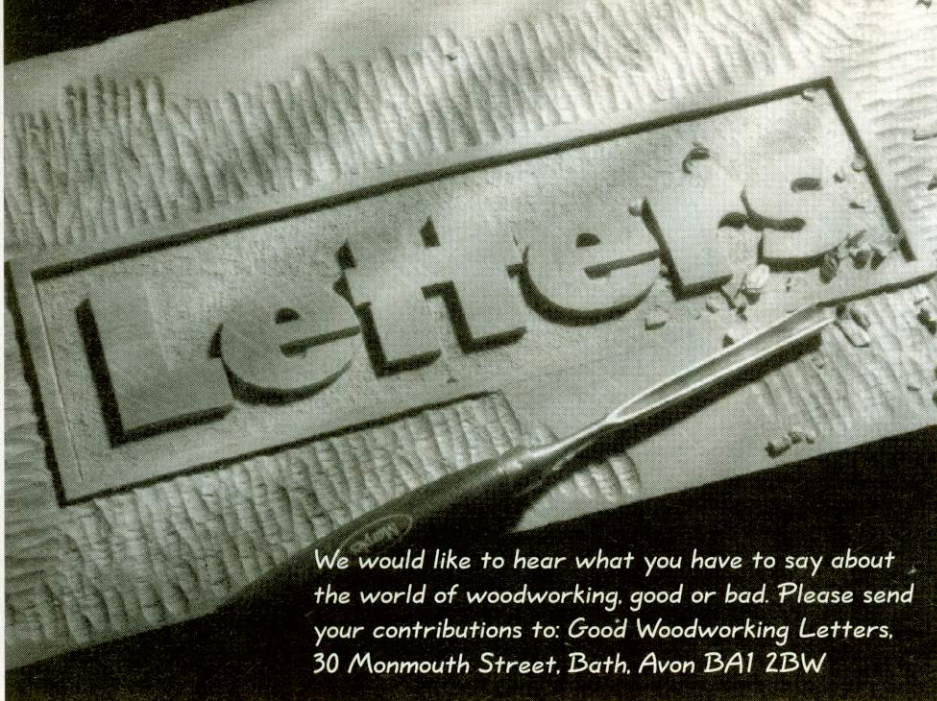
One of the most intriguing products



If Timbermate filler does what it says it will, I'll be a faithful user



Woodwork for children is increasingly popular in Australia, with a special area for it at the show



We would like to hear what you have to say about the world of woodworking, good or bad. Please send your contributions to: Good Woodworking Letters, 30 Monmouth Street, Bath, Avon BA1 2BW

Wolf bench saga

We write concerning the letter from Peter Goosey (GW 26:21). The Wolf ES1 drillstand was designed specifically for the EG range of drills manufactured from 1940 to 1969, when both drills and stands were discontinued. We cannot recommend the stand is used with other models. Mr Goosey's

machine appears to be a Kango 2388 Impact drill, bought since March 1988. There is no secure method this can be fitted to an ES1 stand. The correct drillstand for the 2388 is a model 0139 but as both this and the drill have now been discontinued examples may be difficult to find. Additionally if drillstands are used in an industrial environment it is a legal requirement that

chuck guards are fitted. We can only recommend that the correct accessories are used for any power-tool.

David Smith, Kango

I endorse you comments and would add that drills are more dangerous than perhaps many people imagine. Mr Goosey need look no further (GW 26:21). His Wolf bench stand is complete and was on

sale in the late 1940s to fit a Wolf 3in heavy duty drill NW30/E (single speed). In those days drills were machined out of aluminium castings and the drill had a heavy brass plate riveted to the body where the chain grappled it. I bought my Wolf drill in Bath in 1948 for £13 and the ES1 stand later in the year. Both have been in regular use up until last Christmas when my wife bought me a APTC Ch16. The drill is still working but the internal wiring from switch to motor coil has been sleeved and the chuck is very worn.

Edward Williams, Hants

Thanks for the information. All too often you eventually have to catch up with the latest technology!

NG

via dovetails. I prepared two second sets of wings and wheels that were slightly too large. I gave Simon the first set of spares and told him it was his wet weather equipment. When he found that they didn't fit I gave him a chisel and explained what needed to be done. He went over the top and ruined them, so I handed him the second pair. I've never seen anyone work more precisely, shaving off, trying it out with a result at the end of the day. We're both now working on a model car.

Allen Rindell, London

Do please send us pictures of the finished model car.

NG

Mahogany doubts

In his article on a workbench (GW 26:65) Pete Martin says that he was suspicious of using mahogany but used it anyway as he had been assured that it was being replanted. As woodworkers and consumers we should consider the following: most of us hate waste and can't bear to throw offcuts away. As many as 30 other trees can be felled and discarded to extract one mahogany tree.

Fifty per cent of world trade in mahogany is to the UK where much of it ends up as banisters and toilet seats. Logically if our small country uses half of the mahogany produced then there are alternatives. The rest of the world can't be wrong.

Most importantly it is not enough to say that it is OK to use mahogany because trees are replanted. Unique communities of plants, animals and humans that have taken thousands or millions of years to develop are being destroyed forever. Think about it next time you go upstairs to contemplate in the smallest room.

Mike Burroughs, Cornwall

We have generally avoided using mahogany for projects in Good Woodworking. It is a real dilemma, but interesting to try sometimes just to find out what response you get to the question of sustainability. The reply Pete was given is typical. The trouble is that it is also typical of similar enquiries made about other wood. Unless you go out of your way to buy certified timber (of which there is very little here) you just never know.

NG

Overall view

I bought a Kity 613 bandsaw. In doing so I relied heavily on the test report published in your magazine which voted the Kity the best bandsaw tested (GW 12:78). As I was setting the machine up, I opened the doors for only the second time since

Balcotan 100: Polyurethane Wood Adhesive

After reading John Brown's column (GW 24:34) I would like to let him know that there is still a polyurethane wood adhesive in the UK, Balcotan 100. The glue is imported from Switzerland and distributed in the UK by us, Melco Bonding Supplies. It has been available for four years. My partner and I are boatbuilders and have been using Balcotan 100 for 18 years.

It is a one-component polyurethane-based wood adhesive. It's light in weight and 1Kg gives one litre of glue, which does not need thickening. It only needs to be applied to one side of the joint, its foaming action doing the work of ensuring that both sides are wetted.

Balcotan 100 is the only foaming polyurethane adhesive developed specifically as a wood adhesive. The foaming action is retarded by a unique ingredient, thus creating much less pressure in the joint whilst going off and totally curing using the moisture in the timber and air without need for any additional spraying or misting of any sort.

It comes in two formats: regular allows 1-1½ hours assembly time. Work can be removed from clamps or jigs after about three to six hours and cures fully in 24. Rapid allows up to 10 minutes assembly time. Work can be removed from the clamps or jig after 20-60 minutes and cures fully in one to two hours.

It is moisture curing. The moisture content in the timber being glued (even very dry timber) and in the ambient atmosphere is sufficient to ensure full curing. There is no need to moisten the timber artificially as is necessary with other polyurethane-based substances retailed as glues.

Balcotan works well with greasy and resinous timbers such as pitch, pine, teak and iroko. It successfully bonds timber with

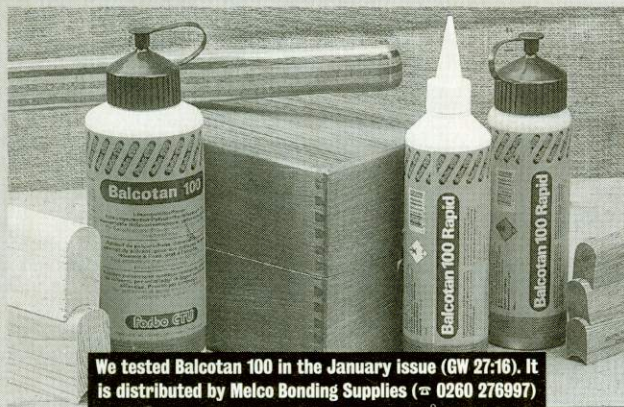
moisture content up to 205 per cent and even at such low temperatures as plus 5°C. Balcotan's expanding quality as it cures will fill gaps and crevices such as the bottom of splines, tongues, tenons and laminations, ensuring water or moisture cannot creep into the joint. Balcotan is not a resin and alone is not structural. For making structural components the glue line should be as fine as possible for maximum strength of joint.

Once cured, excess Balcotan is easily cleaned off. Because the glue is not crystalline like resin glues, cutting blades and tools used for cleaning off do not suffer. It does not stain any timber, nor is there any reaction to subsequent treatments such as covering with cloth and epoxy resins or varnishing. Balcotan successfully bonds all timber, synthetic resin sheets (such as Formica) when glued in a press or equivalent, plywood, wood fibre boards, cork, expanded polystyrene sheets and cement based boards. It is especially effective for resinous woods and since it

has a long open time and is not brittle when set, is excellent for spar making. Balcotan is suitable for all general wooden boatbuilding applications, structural laminating, spar making, all types of interior and exterior joinery. When cold moulding with veneers of 2.5mm plus satisfactory results are obtained when stapled at 45mm centres.

To sum up Balcotan is versatile and easy to use, effective in damp cold conditions, economical, easy to clean up and finish, has a long shelf life, while the container is sealed and gives off virtually no vapours into the workspace. It is free of solvents and to date there have not been any cases of skin sensitisation.

Ian Wilcox, Cheshire



We tested Balcotan 100 in the January issue (GW 27:16). It is distributed by Melco Bonding Supplies (☎ 0260 276997)

buying the machine to find that the top hinge had broken away from the door. When I looked more closely I noticed that the hinge had merely been fixed in place by two flimsy pop rivets.

If you are going to do test reports which will be relied upon by your readers then the least you can do is draw attention to the shoddy aspects of a machine as well as the positive aspects.

Alan Major, Herefordshire

We had no problems with the hinges on our test model. We do mention shoddy features or bad engineering in our tests, but tend to focus on the glaringly inconvenient or the glaringly dangerous aspects. *Phil Davy*

For beginners

I came across *Good Woodworking* by obtaining issue three from a local old peoples' club fair. I found it to be the only one that deals with items for beginner upwards. In other words it's the best.

D. Littler, Cheshire

I am glad we are helping more people to become woodworkers. Our aim is to demystify woodwork, and I've been pleased to hear from those who have been woodworking for many years that they find there is plenty in the magazine for the more advanced woodworker as well as the beginner. *NG*

Coffin economy

With reference to your letter on coffins from D. Marsden (GW 21:22) I used to make coffins, but due to ill health I no longer do. However I still have a number

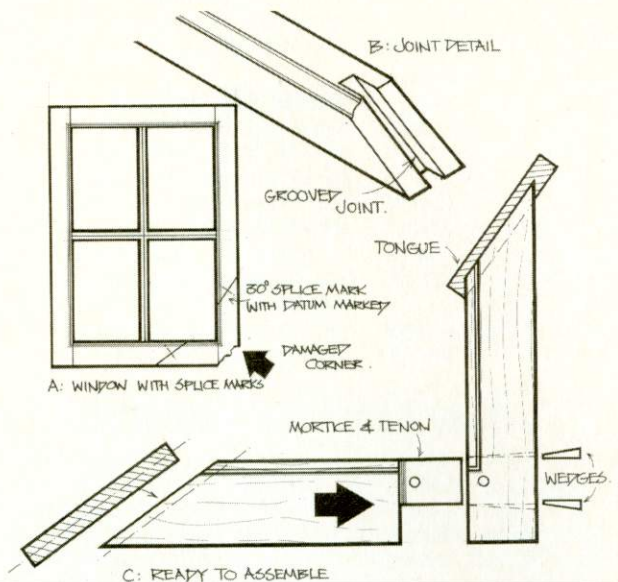
Splicing a window

Although there is not much splicing done these days there are times when it is easier to repair than to replace. With common one pane windows, replacement is easy but with barred windows repairs may be the cheaper option. The details show my method of splicing a new corner to a damaged window. I prefer to remove the glass on the corner pane if possible so that there is no danger from broken glass. Any paint on the faces of the window should be sanded smooth to give a good surface to work to.

Mark out and saw the splice cuts on the window (30° seems about right) and plane up accurately. The replacement pieces can be remoulded before cutting or after, it's a matter of choice, but they must be left long enough to handle safely if to be moulded by machine.

Starting with the stile first cut the new piece and fit accurately to the existing, testing with a straight edge to obtain perfect alignment. Mark a datum line across the joint so that the joint can be reassembled accurately. The replacement bits should be a trifle oversize to allow for final finishing. Cut a central groove in both faces of the joint, about 9-12mm would do, depending on the thickness of the window and about 9m deep. The tongue should be cross-grain with the grain running in line with the stile to give a good finish when the ends are cleaned of. Carefully fit tongue and assemble to the datum mark. G-cramp firmly together and drill and screw. Carefully mark across from the existing bottom rail, the mortice position on the new stile piece. Unscrew the joint and repeat the procedure on the bottom rail, carefully marking the shoulder length off the line of existing stile. Mortice and tenon the two pieces and fit up. Bore the mortice for a small pin say 3/16in Imperial and counterbore (drawbore) the tenon a little to draw the joint up.

Glue all the joints and assemble. Fit the two splices to the datum marks, G-cramp and rescrew, leaving the cramps on until dry. Finally pin the tenon. It may be possible to give the joint a



How to splice a new corner to a rotten sash window joint

gentle squeeze with a sash cramp but care must be taken not to disturb the splice when cramping or pining. Finally tap in the wedges and allow to dry. When dry, clean off and trim ends. Provided water resistant glue is used, this should be a long lasting repair. I cannot remember ever seeing any details of this type of repair anywhere, so perhaps other readers may be interested. With best wishes for the success of the magazine.

Douglas Curtis, Wilts

Thanks for your comments. This looks like an excellent repair as the bottom joints often go. Watch out all for our articles on casement and sash windows this summer. *NG*

of oak veneered chipboard coffin sets that I would be willing to sell if any of your readers want one. They are available in 6ft or 6ft 6in lengths and are fairly straight forward to make.

With the cost of funerals on average about £1,200, making your own coffin can save a lot of

money. When made up an undertaker would charge about £600 for one of these. You can have a set for £50 postage packing and instructions included. **D. Hodgson, Bucks** Coffins must be about the most expensive bit of woodwork around. I was amazed to hear

recently that you can now buy biodegradable cardboard coffins. Perhaps that is the way forward for cheaper burials. *NG*

Clock correction

In my clockmaking article (GW 25:19) I talked about Harrison clocks. They may be seen at the Royal Greenwich Observatory, not the National Maritime Museum as I suggested.

Bill Watts, Glos

There has been a special exhibition at the Maritime Museum about the Titanic recently so hopefully if anyone made the trip especially they will have had an interesting visit. *NG*

Humidity problems

Having bought myself a hygrometer for my workshop I am alarmed to find that my relative humidity is between 75 and 80 per cent, despite a centrally heated workshop (dimensions 6x3m). Does anyone have any experience of using a dehumidifier in this kind of situation? Are they effective? What sort do I need?

Rik Middleton, Coventry

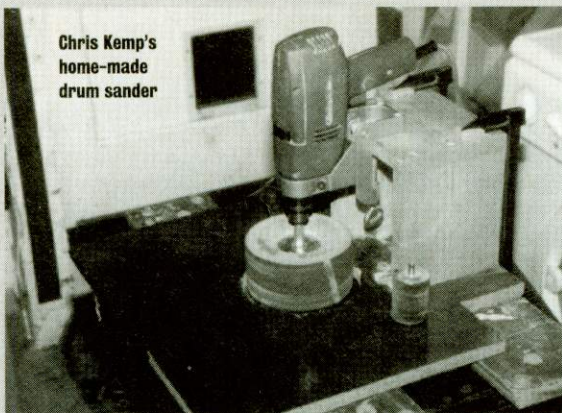
I'd just like to mention that we have not planted this letter here just because we have a feature this month about fighting damp in the workshop. There is also a

test of two dehumidifiers. Call it coincidence if you like. *NG* When I asked a local joiner what in his many years as a tradesman he thought were the toughest problems about producing joinery in solid wood he commented quickly: "The dreaded problem of movement due to humidity rise and fall".

In my own experience I have noticed how dried solid wood of all types seems to move out of shape extremely quickly between sawn sizing, planing and final shaping. It is as though unless you have a workshop or special store for timber with an ideal environment you have a race against time to complete the project you are making.

The problem does not seem to stop there either, for once inside a home the new environment can play tricks to misalign all that care that went into the project's intended form and finish.

With this cloud of doom hanging over my future projects I was interested to read in a woodworking magazine an article which mentioned wood which has been steamed to stabilise it. Sadly the details of how this is done were not mentioned or how you could have treated the wood. Can you help as I am sure most



Chris Kemp's home-made drum sander

Drum sander

I have developed an idea for a budget drum (or bobbin) sander. It involves the use of a foam sanding drum, and a proprietary electric drill clamp with the drum fitted to the chuck. The drill body is clamped to a wooden tower mounted in a flat base. A hole is cut into the box to recess the drum. The jig enables a smooth and regular surface to be worked around curved edges at right angles to the job face. This avoids the problems experienced when trying to use the drum with drill,

face hand. The jig once constructed can be used for 3/8in or 1/2in chucks just at the turn of the clamp collar. Smaller diameter drums can be constructed using a holesaw to build up a ply core. Covered with thin foam and a sleeve of abrasive paper held with masking tape the drum can then be mounted on a wheel arbour. Obviously this type of work could be achieved using a spindle moulder or a pillar drill. But as I have none of these, this jig serves as a good substitute. Fine results can be achieved with practice and care. The proprietary clamp (Wolfcraft I think) and sanding drum (B&D) cost about £15 altogether. The measurements for the board and tower need both be specific with the exception of the tower which for both my drums is 175mm high.

Chris Kemp, Staffs

If you are nervous about making a drum sander (as I would be) you might prefer to try a Carroll sander which works on a similar principle (☎ 081 715 6522). They have a special mechanism for changing the abrasive. Also check out our test of Kirjes pneumatic drum sanders (p.26). *NG*

woodworkers would be interested to know about it?

David Broyd, Oxfordshire

I presume you are talking about the use of steam in industrial kilns. Some timber is seasoned by sinking in water. I don't think we can help with the use of steam for stabilising (unless we have mentioned the idea and now forgotten). However our articles on moisture meters last month (GW 27:80) and dehumidifiers and fighting damp (p.14) this month might help. We

also ran an article about seasoning timber back in June 1993 (GW 8:52).

NG

Cover gift praise

The letter from Ian Styles of APTC (GE 26:21) shows a great lack of foresight, surprising in one connected with such a large and well advertised company.

Rather than criticise your free gift I would have thought that such an astute gentleman would have leapt at the chance of helping such a well-read

publication as yours, whilst gaining massive free publicity for the quality of their large range of offering at no charge something for distribution as a free gift on the cover of Good Woodworking.

Your wee screwdriver was just fine. I am sure it will be used in many homes across the land without any thought for quality or lack of it. You can be sure that it won't just have been removed from the cover and consigned to the bin.

Ron Fernie

Thanks for your comments of

support. Actually Ian and Axminster did supply us with their catalogue for the December issue, so he cannot be criticised for missing an opportunity. NG

Woodturning club

In reply to D. Taylor's letter (GW 25:22) I am pleased to tell him that there is a flourishing club in Kent. The Kent Woodworkers Club was formed in April 1992. Meetings are held alternate months between 7 and 10pm at various venues in Kent. There is

usually a talk or demonstration with refreshments and videos. The subjects range from dust control, to finishing products to antique restoration. Any woodworker who is interested in joining contact me on ☎ 01304 611317. For any woodworker living in Surrey, Berkshire and Hampshire I can put you in touch with their secretary.

John Whale, Secretary, Kent

I'm not sure who is the secretary but I had coffee the other day with Peter Guyett, the Chairman

How I designed and made a cabinet for compact discs by Alan Stanley

After many years concentrating on my career in the police I returned to my hobby, woodwork as therapy for stress involved in the job. People started bringing me their woodwork problems and projects and I found myself making items for people on cost only basis. Once retired I decided to go self employed and I am now trading as Bespoke Woodcraft. The philosophy behind my business is real wood, hand finished and above all to avoid the plastic spray-on look so prevalent in modern re-production work. I try to create items that will last for generations. My design philosophy is to follow classic proportions, modified to fit modern houses and needs. All my designs are from my own head, I do not use plans except if I recognised a good idea. Some of the things I've made in the last three years are coffee tables, spice racks and book cases.

Just before Christmas a friend asked me to make him a cabinet to house his CD collection. Specifications caused a little head scratching. The cabinet is to hold about 500 CDs, all to be visible when the cabinet is opened. It is to be 32in wide by 34in high and 14in deep and to be able to stand against a wall or free standing. Made in solid mahogany, to match existing furniture, it is to be as kiddy-proof as possible, both for finish and to prevent access as they have two pre-school children. I use exposed dovetails where

possible. We estimated that 500 CDs in their cases weigh in at about 120 pounds so the cabinet had to be capable of taking this weight. The numbers and the space they need meant they would have to be double decked in depth to get them in.

Various drawings followed until the design used was finalised. I would make a cabinet with twin doors, thick enough to be shelved and hold half the CDs. The back half of the cabinet would be a simple shelved unit. At this point I didn't know for sure it would work, never having anything quite like it before.

Construction details

- 1 The base had to take the weight of the CDs, plus wood, plus the probability of someone leaning one it. It had to support the doors when opened. I decided to dovetail the corners and extend it out on all sides, front and back and not finish the back flush.
- 2 Create the curves of the plinth cutouts first in scrap ply and then cut out roughly on the bandsaw. Finish them using a table-mounted router and flush trimming bit. A moulding being put on by router before gluing up.
- 3 Dovetail the door carcasses, which hold nearly half the CDs, at the corners and rebate each shelf into the sides making a strong construction.
- 4 The door fronts are made as conventional raised panel doors. Once glued up and finished these are biscuit jointed onto the door carcasses making what was already a strong unit now even stronger. The biscuit joints are cut on the router table using a Trend biscuit cutter.
- 5 The rear half of the carcass is similarly dovetailed at the corners and the shelves rebated into the sides. This structure is further strengthened by screwing the plywood back into place.
- 6 Butt joint the top with biscuit from two planks and as the front half is unsupported

when assembled the timber is left extra thick for strength. To date it has remained very stable. Obviously this could have been made from veneered ply with solid edges.

7 Screw the top to the rear carcass from inside allowing for movement. Screw the rear onto the base from the underneath.

8 Make each door 3mm smaller top and bottom to allow clearance and attach to the main carcass with heavy duty piano hinges. A simple bolt and lock took care of the children's access.

9 Stain was by Bichromate of Potash. Followed by a few coats of crafflack melamine cut back with 0000 wirewool between coats; French polish being considered not as toddler proof. Wax the unit using 0000 wirewool for the initial applications.

The whole unit was made from salvaged mahogany, being the desk tops from an old school, bought second-hand in two large pieces.

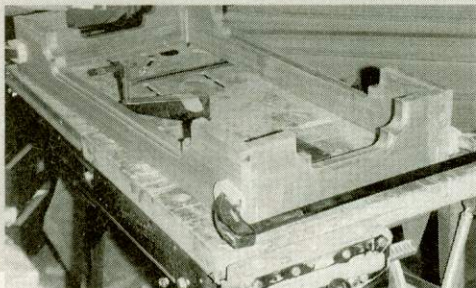
The unit went together without any problems other than the careful cutting out needed to avoid the cleats, screws, and embedded pen nibs etc... in the desk tops, also to be avoided were various carvings. I shall wonder for ever who JT was and whether he ever got together with HS in 1966.

The same design of deep doors could be used for video or tape storage with either adjustable shelves or altering the spacing.

With a little adaptation the unit could be made out of ply or blockboard.

Alan Stanley, Notts

Thanks for sending in the details. We like to see what readers are making. NG



of the Berkshire, Hampshire and Surrey Fellowship of Woodworkers. He was telling me that they have a few special talks coming up soon, starting with Peter Benson on carving on 27th January. On 8th February Nick Halsam will be speaking about abrasives and Ronnie Rustin will be giving a talk about finishing on 23rd March. Each talk is in Frimley, Surrey. For more details contact Peter on ☎ 0252 542901. We are planning a section in the magazine for club news and dates, so do contact us if you want publicity for your association or fellowship. NG

Do the right thing

The editor in his Bench Talk column has eloquently expressed the environmental concerns that are shared by many people who use timber on a daily basis. The timber issue is very big and complex. Even if you want to do the right thing where do you start?

The Forest Stewardship Council (FSC) has set out to simplify the problem. Taking on board the views of all the significant Environmental NGOs, ourselves included, they have established a set of criteria for judging well managed forests throughout the world. Looking at

issues such as clear felling, biodiversity, the rights of indigenous people, the uses of chemicals and wider ecological concerns, the criteria cover all of the major issues over the sustainability of the timber industry.

The Soil Association is now one of a range of independent certifiers who are currently being accredited to certify to these FSC standards. Through our Woodmark scheme we identify timber that can be guaranteed to come from well managed forests. Everyone recognises that the average user does not have the information to establish the provenance of wood themselves, certification to FSC standards overcomes this.

In future if you want to do the right thing all you have to do is to demand certified woods to FSC standards.

Dorothy Jackson, Woodmark
We will continue to follow the progress of the FSC. NG

Pine all round

Many's the time I have walked through the dazzling aisles of John Boddy's imagining what I would do with the myriad of exotic woods on offer. Sadly like a good many readers, PAR will have to suffice (limited cash and no planer thicknesser). A

suggestion then for a future feature or possible pullout. The A to Z of pine, its strengths, weaknesses, limitations, stains, finishes, projects etc...

Chris Moor, Leeds

I had a discussion only the other day about the use of pine by woodworkers. I use it quite extensively, and like you Chris, I suspect I am common of most readers and woodworkers. We will certainly be looking at the possibility of a special report. NG

Camera plan thanks

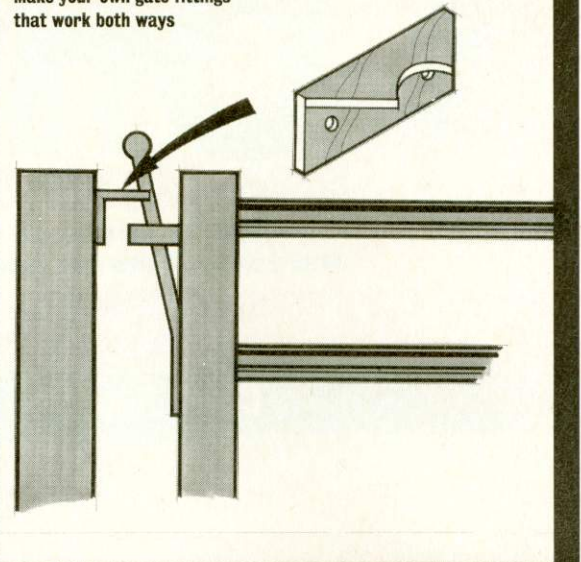
I would like to thank all the people who suggested sources of plans for a wooden camera. The response has been far greater than I expected and I am now able to go ahead with the project. I am ordering a copy of the book from Oldtime Cameras and I have obtained some suitable rack and a couple of pinions to fit. I already had some old mahogany salvaged from a chest of drawers so I intend to spend the winter evenings working on the project.

I would like to thank also the staff of GW for their help in passing on the information.

Alan Stewart, London

Thanks for your comments. I'm glad to hear you are salvaging mahogany. NG

Make your own gate fittings that work both ways



Farm gate catch

This catch is for the farm type gate (GW 23:28). It will allow the gate to be opened in either direction and extends the width of the opening. It was for that the reason I wanted it, as so often the car may be parked up close to the gate and it can still be opened to walk through. The catch was made out of a piece of angle iron.

J. Tovee, Norfolk

Thanks for sending in this suggestion for an improvement on the gates and gate fittings that Ray Cooch wrote about back in the September issue of Good Woodworking. NG

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Guide dogs and wheelchairs are welcome at the Exhibition, but we regret, however, that pushchairs and pets are not permitted.

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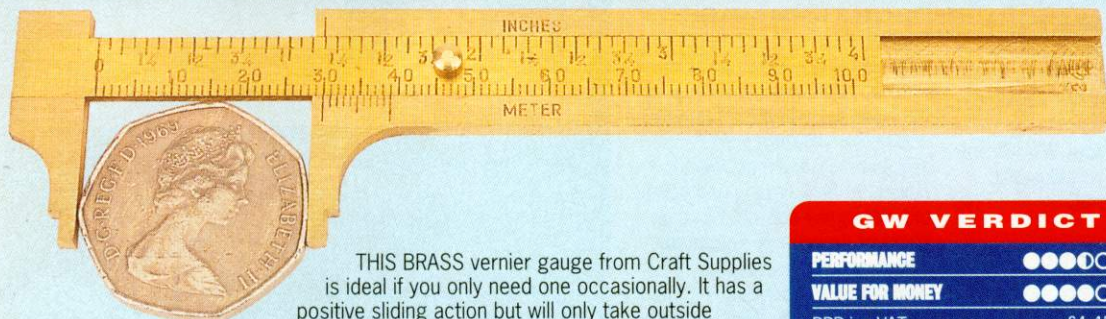


On test

Phil Davy opens all our parcels of new products, and tests them for performance and value for money

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

Craft Supplies Vernier Gauge



THIS BRASS vernier gauge from Craft Supplies is ideal if you only need one occasionally. It has a positive sliding action but will only take outside measurements. It has a maximum capacity of 101mm (4in) and has both metric and Imperial graduations. Metric is easier to read than the Imperial. I would use a file on some of the edges, but at this price cannot complain.

GW VERDICT

PERFORMANCE	●●●●○
VALUE FOR MONEY	●●●●○
RRP inc VAT	£4.45
CRAFT SUPPLIES	☎ 01298 871636

Oregon Stone

GW VERDICT

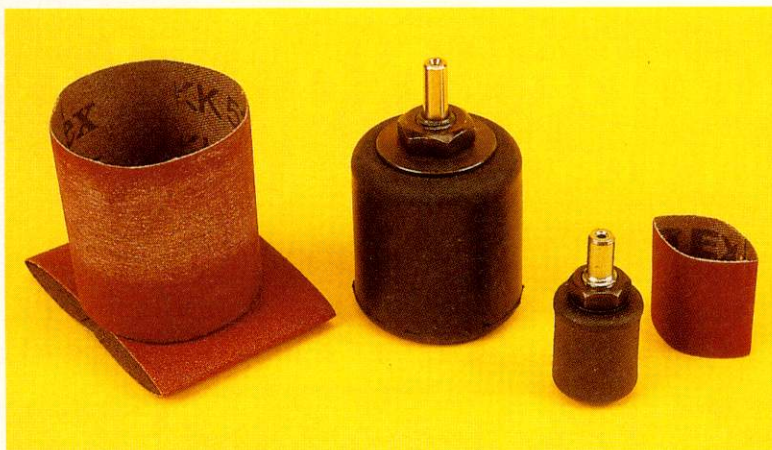
PERFORMANCE	●●●●○
VALUE FOR MONEY	●●●●○
RRP inc VAT	£30.25
HTF TOOLS	☎ 01785 50342

COMBINATION sharpening stones are common enough. The Oregon Stone is unusual as it combines a medium (180 grit) silicon carbide surface with an extra fine (320 grit) aluminium oxide stone. These grades are similar to a combination India oilstone. The stone I tested measures 228x74mm (9x2⁷/₁₆in), and is 27mm (1¹/₁₆in) thick. Larger than most oilstones, it is particularly useful for plane irons. Unlike an oilstone, the Oregon stone can be used with water or oil as a lubricant. I found the stone cut fairly quickly.

With any sharpening stone you should check it is flat when buying. My sample was slightly bowed. The Oregon stone comes in a cedar box that smells delicious.



Kirjes Drum Sanders



PNEUMATIC SANDING drums have been used in industry for many years. Now Swedish company Kirjes have produced a range that can be used in a power drill or drill press. The nifty thing about these is you use a bicycle pump to inflate them. Each one consists of a steel reel and shaft. A rubber sleeve fits over the reel and is permanently clamped at the bottom with an Allen screw and washer. A second washer is tightened in place with a nut. Finger pressure is adequate or you can use a spanner.

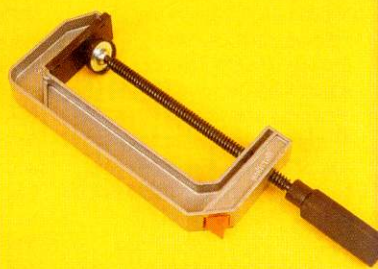
You place an abrasive sleeve over the drum and attach the pump to the hollow shaft. A single stroke is more than enough to fully inflate. A plastic inner sleeve acts as the valve. To deflate you just slacken off the nut. Sanding sleeves are available in 50, 80, 120, 150, 320 and 400 grit. I tried both sizes of drum. The larger is 43mm (1⁷/₁₆in) diameter and its sleeve is 51mm (2in) deep. The smaller is 20mm diameter with a sleeve depth of 28mm (1¹/₁₆in). Recommended speed is 2500rpm.

I found the Kirjes drums excellent for contour sanding, not quite so good for straight edges. The inflated rubber "tyre" provides some give, allowing you to control sanding pressure. Unlike the Carroll sanders you will have to buy abrasive sheets to the Kirjes drums. And yes, if you do get a puncture you simply turn the rubber sleeve inside out and glue on a patch. Honest!

GW VERDICT

PERFORMANCE	●●●●○
VALUE FOR MONEY	●●●●○
RRP inc VAT	small £19.95, large £24.95
YORKE ST PROJECTS	☎ 01437 763628

Wolfcraft Cramp



MOST G-CRAMPS are made of cast iron and consequently are pretty heavy. For most cramping jobs weight is an advantage. With a heavy cramp you can really increase the pressure if you need to. Sometimes, though, you need a reasonable cramping capacity without the weight if the job you are gluing up is delicate. This is often the case when building musical instruments or restoring antique furniture.

Several lightweight cramps offer an alternative to the G-cramp. Wolfcraft have added a new cramp, the 3427, to their range that is lighter and quicker to adjust than many. It is made of cast alloy and is about half the weight of a comparable cast iron G-cramp. Maximum cramping capacity is 167mm (6⁵/₁₆in), and the throat is 50mm (1³/₁₆in). An Acme-threaded steel screw is fitted. Plastic caps are fitted to the swivel shoe and jaw. You do not need packing when cramping.

The Wolfcraft has a plastic triangular-section handle that is comfortable to grip. I wonder how it will survive years of abuse in the workshop, though. Dropping the cramp several times on a concrete floor did burr the end of the handle a bit, but otherwise the cramp stood up pretty well.

Perhaps the best thing about this cramp is the quick release. By pressing a button you can slide the thread up or down for approximate positioning. Cramping pressure is not as great as a conventional G-cramp. There is a smaller version with 106mm (4¹/₁₆in) capacity, costing £12.80 inc VAT.

GW VERDICT

PERFORMANCE	●●●●○
VALUE FOR MONEY	●●●●○
RRP inc VAT	£14.80
WOLFCRAFT	☎ 01787 880776

Arbortech Sanding Kit

ONE OF the products to be launched at the recent Good Woodworking Show was the Arbortech Sanding Kit. Having just returned from Australia, where the kit is made, I'd already had a sneak preview but had not given it a trial. The kit, which includes a Velcro-covered plastic pad, four abrasive discs and adaptors, is designed to complement Arbortech's other power carving attachments for the angle grinder.

Almost every other type of abrasive disc is fitted to the angle grinder with a central nut. This gets in the way of sanding. Because the disc is attached with Velcro on the Arbortech system there is no nut to get in the way. This is a major advantage, especially if you are attempting to smooth curved surfaces. For flat areas use a random orbit sander, but these areas are fairly rare once you've attacked your work with a power carving disc like the Arbortech Woodcarver.

By working your way down the grades of abrasive you can use the kit for stock removal and shaping (with the coarsest grit) to finishing with the finest. You ought to be able to remove most of the swirl marks, but that does depend on the wood you are working. I found that harder woods clean up better than the softer. Being able to work with the disc almost flat means that you can easily achieve a smooth even finish.

An advantage of the Velcro backing is that you can change discs quickly. You don't even have to line up the extraction holes as on orbital and random orbit sanders. As a result though, sanding with an angle grinder is dusty work and I recommend you wear a respirator, preferably, or a mask at the very least.

I have a

couple of minor gripes. I'd love to see a softer backing disc. I know that there are production problems with a soft backing disc, and the Arbortech one is softer than most, but I found that you can wear away the edge of the sanding disc too easily. You have to be careful to keep the disc pretty flat on the work. If you catch the edge you can tear the abrasive.

Once I'd realised this can happen I changed my approach successfully. This doesn't matter much on large work, but I'm still going to need my drum sander for getting into tighter

corners. My only other niggle is a plea for the discs to be marked more clearly with the grits. Some take a bit of identifying. Otherwise it is a good accessory for anyone with an angle grinder, and a welcome addition to the Arbortech range.

Nick Gibbs

GW VERDICT

PERFORMANCE	●●●●○
VALUE FOR MONEY	●●●●○
RRP inc VAT	£20.00
BRIMARC	☎ 01926 493389

FM Radio Cable Reel



IS A CABLE reel with built-in stereo FM radio no more than a gimmick for woodworkers? The thinking behind it is that many tradesmen take a radio with them on site. One extra piece of kit that could get stolen. Your cable reel is less likely to be a target. The stereo radio comes on as soon as the cable is plugged in.

The waveband however is limited. If there was medium and long wave too I'm sure this German product would be more attractive. As it is you have 50 metres of heavy cable that will handle 3120W. The frame is steel and three 13A sockets are fitted. Worth buying if you need a radio, but an expensive luxury if you do not.

GW VERDICT

PERFORMANCE	●●●●○
VALUE FOR MONEY	●●●●○
RRP inc VAT	£45.95
APTC	☎ 01297 33656

CK Quicksilver Professional Saw

I HAVE to admit that saws are pretty boring tools to test. There is rarely anything radical to report. Unless a saw has a detachable handle or brightly-coloured blade you can talk about the way it cuts, but hopefully they all do that. Saws are either hardpoint or resharpenable, with handles of plastic or wood.

The CK Quicksilver is no exception, just a plain, no nonsense disposable saw. The sort of tool that performs well enough but is nothing outstanding. A saw that you can confidently take with you on site and is not a disaster if it gets damaged or lost.

With a blade length of 508mm (20in), the Quicksilver is just a bit too long for most plastic

toolboxes. Its hardpoint teeth are 8ppi (7tpi). This makes it suitable as a general purpose saw for cutting a range of materials. It's a good size for cross-cutting and coarse enough for some ripping. A criticism is the last tooth beneath the handle. Stamping out the teeth has left half a tooth that you could catch your hand on.

The ABS plastic handle is lightly textured. It is secured to the blade with three substantial Pozi bolts. Like most disposable saws the handle incorporates 90° and 45° angles. Useful if you have forgotten your square, but not as reliable.

I tried the Quicksilver cross-cutting and ripping pine and oak. On MDF and

melamine-faced chipboard it cut rapidly. If you do not have a circular saw or jigsaw a hardpoint is ideal for sheet materials. If you own a quality, resharpenable cross-cut saw you probably are loath to use it for chipboard or MDF. The Quicksilver is ideal for such jobs and means you do not need to run a saw file over your pride and joy quite so often.

GW VERDICT

PERFORMANCE	●●●●○
VALUE FOR MONEY	●●●●○
RRP inc VAT	£9.90
CK TOOLS	☎ 01758 701070

CK Quicksilver
HARDPOINT

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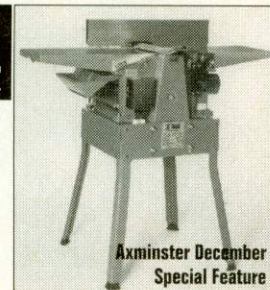
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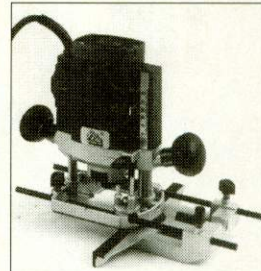
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Woodworking Hints & Tips

Hinge cramping



For many years I found the accurate fitting of hinges on chest lids fiddly and difficult. It was a matter of propping up the lid and keeping it level whilst cutting and fitting the hinges. Now I use a pair of sash cramps. Move the

cramp heads to one end of the bar (which in my case is 1in oak). Clamp across each end of the chest, positioning the cramps so that they can rest on battens or the floor to adjust for height. With the lid at the correct height you can fix the hinges. You can steady the lid with a pair of G-cramps. I use only one screw for each hinge leaf to start. You fit

the other screws once you are satisfied with the positioning. I wonder why I did not think of the idea years ago.

James Kendall, Birmingham
Great idea. I suppose you could adapt this for boxes as well, as it's notoriously difficult to fit lids accurately.

NG

floor which is beautiful to work on, being warm and slightly springy. Chipboard is less forgiving, and, as I too have found, can get slippery with dust and shavings. NG

Plastic cleaner



WHEN SANDING, belts and discs get clogged up with debris. Use soft plastic to

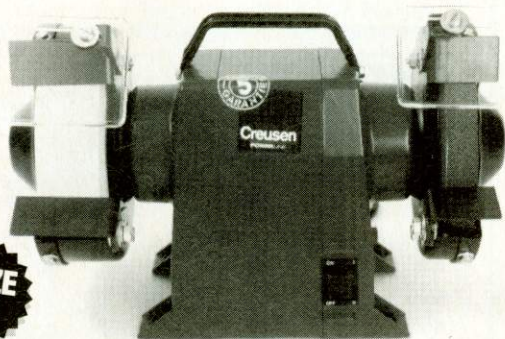
clean away the dust. Try washing up liquid bottles or plastic water pipes as these work well to rejuvenate the abrasive.

F. Faima, Bucks

Ten more tips

- After trying many ways to seal a glue bottle I now use a short length of rubber tube (car petrol pipe). The end is sealed with a small brass screw. As the pipe gets gunged up with glue you cut off more and more tube.
- Make your own bench holdfast with a small F-cramp, and a few holes in your workbench.
- Fill the holes produced by missing pine knots with a small piece of dowel.
- If you have problems with woodfillers, try Polyfilla with a fine amount of earth pigment (20:1 Van Dyke Brown) mixed in.
- Keep a cleaning brush hanging handily to clean your bench frequently. Even a chip off a small knot can make a nasty dent in softwoods.
- Never ever forget the saying, measure twice and cut once.
- Staining end-grain needs a lot of care. I find staining pieces

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PRIZE TIP

When we tested bench grinders (GW 2:63) we found that the Creusen DS7150 was the Best on Test (ring ☎ 0297 33656 for more information on Creusen). Now one of these grinders, which normally cost £72, could be yours.

All you have to do is send us your tips or ideas for better, easier woodwork. You might have a simple method for holding work, storing timber, finishing, sharpening, routing, or restoration. You might just have an idea or two that make your workshop more efficient, cutting wasted time searching for your tools and materials.

It's worth sending us your tips. Not only does the winner receive the award-winning £72 Creusen grinder, but also a special Good Woodworking genuine Swiss Army Penknife. If any tip of yours is published we will send you £10. So hurry your tips (with photos and sketches if necessary) to Good Woodworking, 30 Monmouth Street, Bath BA1 2BW. You could ring us with your tip on ☎ 01225 442244 or fax it to ☎ 01225 462986. Good luck. It's worth a go.

NG

Stopping slip



THE FLOOR of my workshop, which is constructed of flooring grade chipboard, finished with several coats of Ronseal polyurethane, suddenly became



Use a flour sieve to sprinkle sand over the varnished floor

slippery last summer. The trouble seemed to arise from the buffing action of many feet on the sawdust and shavings that are inevitable, however frequently you sweep or vacuum the floor.

I cured the problem quickly and easily by putting a non-slip surface of sand on the chipboard. I could have bought non-slip floor paint but did not want a thick red or grey surface on the workshop floor.

- Start by clearing all small items off the floor. Do not move stationary machines as you will not be standing there.
- Scrub the floor with a sanding block and coarse abrasive paper. I used 60 grit white aluminium oxide paper on a 3M

handblock. Sweep and vacuum up the dust.

Apply a generous layer of floor varnish to a section at a time, and sprinkle sand evenly over each section. Better still, have an assistant sprinkle as you varnish. The trick is to use fine sand and apply it with a flour sieve, which can also be used to sift the sand to remove any grit. Of course you must work towards the door!

Leave the varnish to dry. I have used a quick-drying water-based varnish, but still left it overnight. Sweep the floor to remove excess sand. However you are likely to sweep as much as you leave.

Apply another coat of varnish over the sand and allow to dry. This coat will not go far because of the rough surface. Finish with a further coat of varnish. Be prepared to use a lot of varnish. I used the best part of three litres for about 10sq m of floor. This bears little relation to the standard coverage stated on the tin.

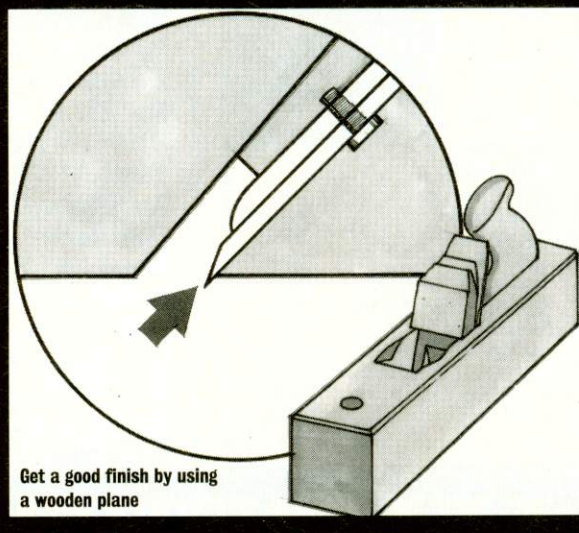
Ron Fox, W. Sussex

Fortunately I have a bare wood

Scraping plane

WHEN PLANING mahogany and timber with interlocking grain, use a wooden plane with the blade turned over. This takes fine shavings and leaves a good finish.

W. Jackson, Essex



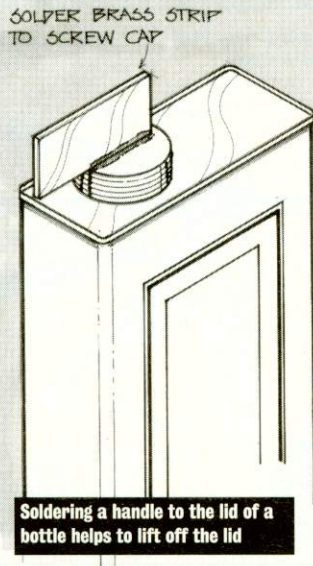
Get a good finish by using a wooden plane

Drill lifter



IF YOU HAVE used a drill press that has a second table but no geared rise and fall mechanism you will understand that the moment you undo the locking lever the table comes crashing to earth. It's horribly easy to trap your fingers. You need great physical effort to raise the table. My solution has been to make a 15in-long lever to fit under the table, pivoting on a batten. I have also added a mushroom head to the off button, which is level with my head. That way I do not need to take my hands off the work. The chuck key is on a long chain of elastic bands, about 8in long. I have also made a tray for tools, similar to the one Pete Martin made in the December issue of Good Woodworking (GW 24:76). Mine is bolted to the back fence and has a gap in its sides so that you can clean out the tray easily. The tray can also be swung into a position that you can use it as an extension support for the drill table.

Soldering a handle to the lid of a bottle was necessary when trying to open a tin of Danish oil recently. The same works for linseed oil. With time it

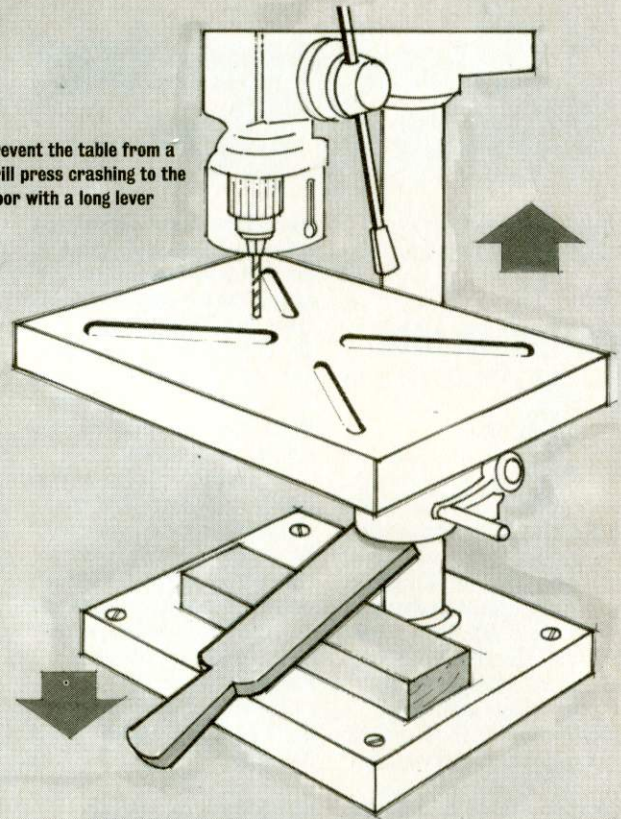


Soldering a handle to the lid of a bottle helps to lift off the lid

almost seems as if there is a reduction in the volume of oil which reduces the air pressure and sucks the top on tight. If you tack this with grips or in a vice the screw cap is distorted (or in engineering terms, knackered) whereas with the soldered bar the cap can

be transferred to the next new tin. I'd just like to add another tip which I once tried to patent. About 25 years ago I found a couple of pieces of sealed cell rubber. It was originally used for a head rest in a Spitfire. Being sealed cell the rubber did not absorb sweat in the cockpit. By cutting a hole in the centre (smaller than a bottle) we found that the lower face of the rubber formed a hollow. We pushed the rubber ring over a bottle and when brought into contact with a smooth surface the air was expelled from below the hollow. The bottle was attached to the surface. The whisky bottle was so strongly held that we could pick up the glass table top, carrying a number of books. To release the bottle you only need to raise one edge of the rubber with your little finger. It might be useful in the workshop for bottles that are easily

Prevent the table from a drill press crashing to the floor with a long lever



knocked over. The only problem is finding sealed cell rubber. I have travelled with an open bottle of milk on the front wing of a Land Rover without loss or even spillage.

Charles Smith, Staffs

If only I had a pillar drill with auxiliary table. My drillstand doesn't reach such dizzy heights. It does me fine though. If anyone knows where to buy sealed cell rubber please contact us. Thanks. NG



NG

upright on newspaper helps for soaking up any surplus stain.

8 When sorting timber for a project, never ignore small faults thinking they will sand out later. Sometimes they will, sometimes they won't.

9 Wear a magnetic armband on your hammering arm to hold pins or nails.

10 Read Good Woodworking carefully. You will find really useful tips articles about projects you may not want to make.

Derek Wilkinson, Leeds

What more can I say? I love the idea of wearing a magnetic armband to hold nails. NG

Masking tape



AT LAST I've found the solution to the problem of condensation forming in your glasses or goggles when you are wearing a dust mask. Go to your local DIY store and buy a roll of sticky-back foam, which is sold as a draught excluder. These come in various thicknesses. I

recommend the thickest. Measure the inside of your dust mask with a piece of string. Cut off the appropriate amount of foam and stick it to the inside edge of the mask. Allow a few minutes for the adhesive to cure, and there you go.

John Marshall, Notts

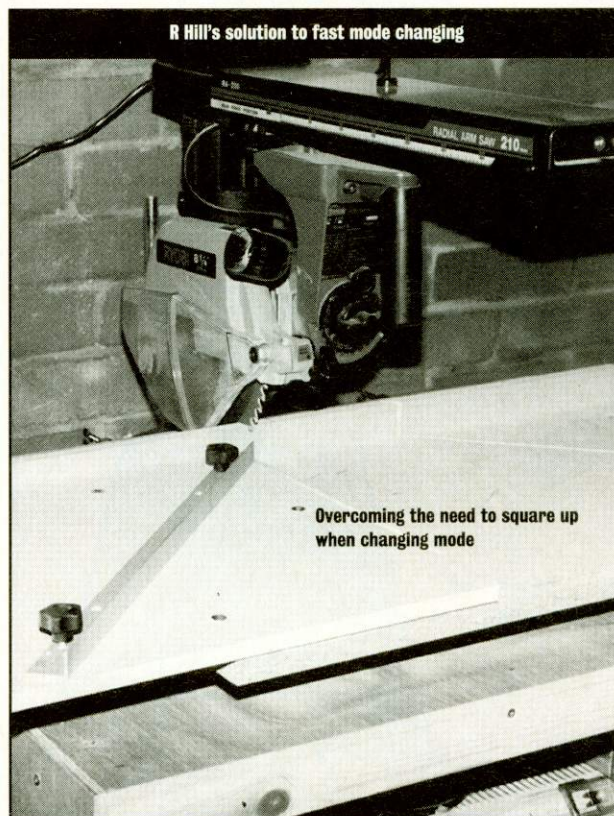
Since converting to a combination visor and earmuffs I've found fewer problems with dust masks, but thanks for the solution, especially as things get worse in the winter. NG

More misting

WITH reference to your recent article on visors and goggles I have found a new way to stop misting. Rub tobacco onto the inside of your goggles or glasses. It completely stops the fogging. Baccy from a tin is best. It really works.

Mark Corke, Frome

Oh yeah!! I'm not sure if we should pay Mark the normal £10. Should we or shouldn't we? Please write in and vote. NG



Radial solution



WITHOUT DOUBT the radial arm saw is one of the most versatile tools in the workshop. One disadvantage though, is that you need to square it up whenever you change the mode. I have overcome this to a degree by making a mitre board. This can be used to the left or right of the blade and will cut angles of 45°, 30° or 60° with accuracy. It can easily be adapted for any other angle you require. The mitre board is made from a square of 12mm MDF, a short length of aluminium angle iron and a few screwed knobs and threaded inserts which are available from Trend and APTC. The accuracy of your mitres depends on the care you take in ensuring the board is square and the fixings are positioned correctly.

R. Hill, Gateshead

Other craftsmen who use radial arm saws have mentioned this before, so as not to move the saw. My father also has a similar

Woodworking Hints & Tips

saw to yours, so I'll try to persuade him to try out your tip. NG

Cutting on site

 FOLLOWING up on your article in Good Woodworking about the budget bench in MDF (GW 24:60), I have made a sawing platform which makes cutting sheet materials on site easier. Start by making yourself a couple of sawhorses: mine are 30in high. Then make the frame. This gives you a firm platform for cutting materials.

The problem with using a portable circular saw for cutting sheet materials is that you have to account for the difference between the blade and the edge of the base when working against a batten. I have solved this by making a special offset batten. Screw together two pieces of MDF, one of which has a guaranteed straight edge. The

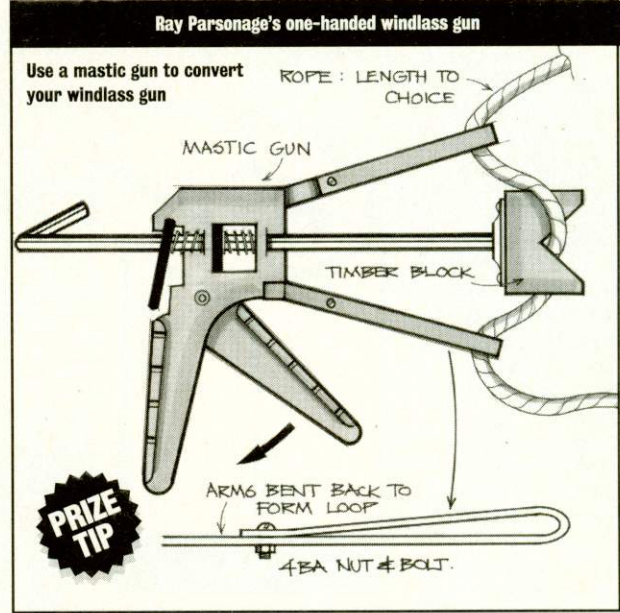
lower of the pieces needs to be wide enough to reach across to the sawblade. Then run the saw against the top edge, cutting the lower piece. Now you have a guide exactly the right distance from the cut. When you cut with a circular saw, have the blade adjusted, so it projects 1/8in below the bottom of the work.

W. Morgan, Tyne and Wear
Having spent some time as a site carpenter I can understand the problems of cutting with a circular saw. I used to have the distance between the blade and the base edge indelibly printed on my mind, but I still made regular mistakes. The combination of platform and guide would really speed up the operation. NG

Windlass gun



THE TROUBLE with a Spanish windlass is that you always seem to need two hands on the cord,



so I have come up with a single-handed version that uses a mastic gun, as sold in most DIY stores. First saw off the retaining ring for the mastic cartridge. This is held by two arms. Cut the arms near the ring. Then bend the arms back and flatten the end so that each arm can be made into a loop with a 4BA screw and nut. Drill the pressure disc of the gun to take three 1/8in No.6 woodscrews. Make a V block from 1 1/2x1 1/2x1in hardwood and screw it to the disc. In use,

pass the cramping cord through both loops and through the V block and tie the ends of the cord as tight as is possible. Then use the trigger to push the V block forward and tighten the

cord until you have achieved the required tension.

Ray Parsonage, Cheshire
The mastic gun is an underrated tool. You can buy excellent little F-cramps based on the same principle. In my mind anything that makes cramping easier deserves a prize. Well done. You are our Star Tip this month. NG

Strong cramps



Wooden sash cramps tend to bend if any pressure is put on them so I got some 2x1in steel box offcuts from my local blacksmith, drilled holes 2in along and got him to weld pieces on each end to tidy them up. Paint to match cramp heads. These are really strong and you can bolt two or more together to accommodate any job, garden seats etc...

Also try long plastic golf tee pegs for the end of you glue containers. **Chris Norton**

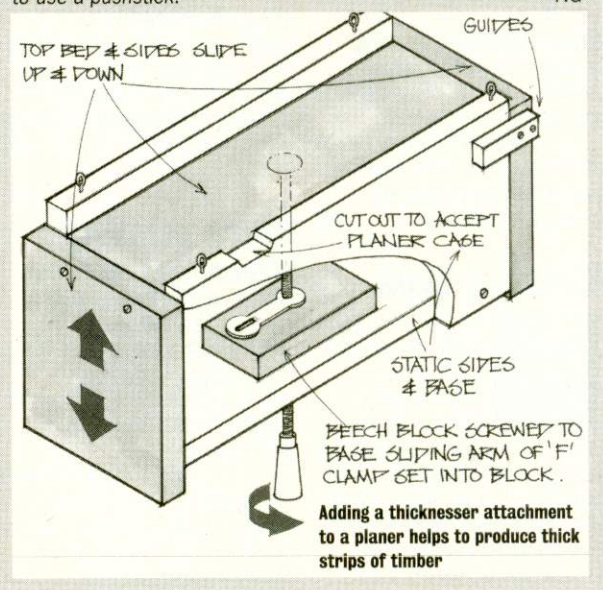
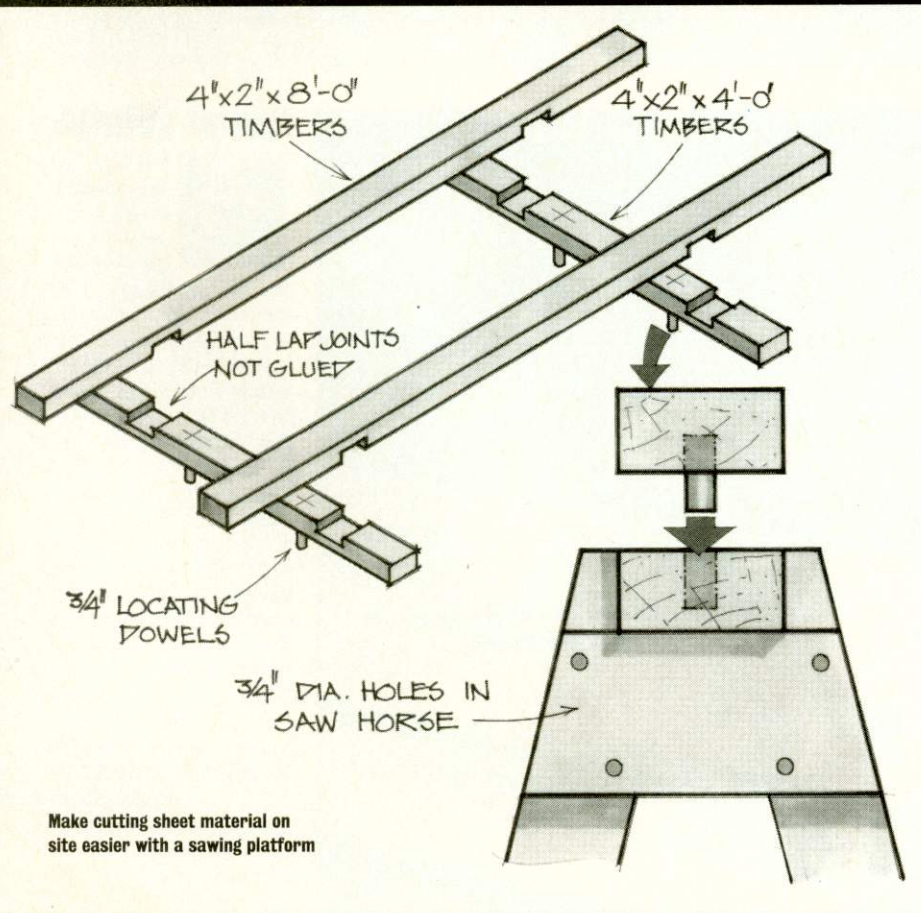
Under a planer



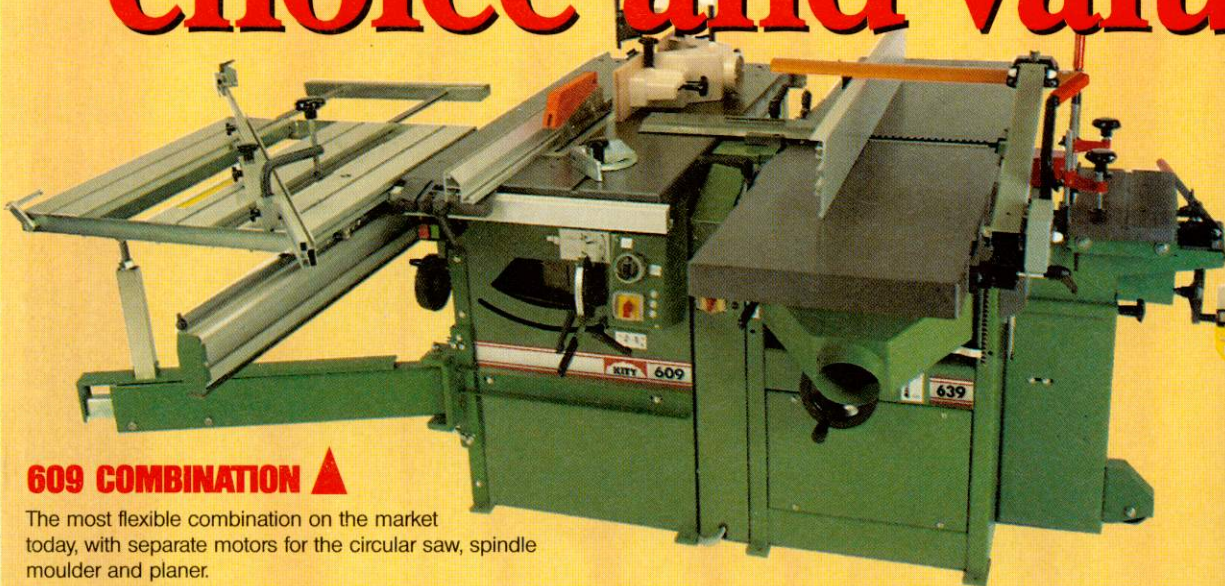
I have made a thickening attachment for my B&D 713 planer. I use it mainly for producing 1.5mm thick strips of beech for making dolls' houses, but it works best with timber about 38mm thick. The sliding surfaces must be kept snug so that it keeps itself square and the table is flat. The rise and fall is achieved with a 10in F-cramp, removing the long flat steel arm and only using the moving head and threaded handle. The top bed and sides moved up and down, held by the guides. The planer is held down with wire ties that fit through four 10mm eye bolts on the top of the side walls. When in use I hold the thickener in a small vice, with a batten that is screwed to the base.

David Berridge, Cleveland
I am always a little nervous about home-made machines. They can be very dangerous. The important thing with a thickener is to feed the wood against the direction of rotation. There is a chance the wood will kick back. Proper thicknessers have anti-kickback fingers to stop this. However you can buy attachments for planers, similar to David's, that have no anti-kickback fingers. Some have cam systems to stop kickback. Remember to use a pushstick. NG

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Learning from the Pros

Find out how furniture-maker Declan O'Donoghue designed and made a curved collector's cabinet



The brief for this collector's cabinet was to make a display case of an asymmetric piece of ceramic sculpture. The cabinet needed to hang on the wall (though it was made to stand if necessary), below a light that illuminates an oil painting.

Declan's client sent a basic sketch of how he visualised the cabinet. He also chose the padauk, for its rich colour to contrast the overall white of the ceramic piece. The sculpture has arches with minute detail in gold and black. It was these details that inspired Declan to laminate layers of ebony and satinwood within the padauk. Fortunately he had small veneers in stock for a previous project some years ago.

The result is fine gold and black lines to echo the details of the sculpture. The raised ebony plugs, which hide the shelf-holding screws, also reflect the details.

As the floor plan of the sculpture is asymmetric, Declan decided to make more of the arch by effectively cutting it in a twist

shape. This adds to the visual interest whilst increasing the light entering the cabinet. The grooves around the arch increase the light. Notice that one groove is longer than the other. This adds to the flow of the arch, giving the piece a greater sense of movement.

Making the Cabinet

The case was made by Nuala McGoey, who is working for Declan and his partner Ian Heseltine on a one-year work placement from The Furniture College at Letterfrack in Co. Galway (GW 10:39). Declan was just off to Letterfrack, from his Wiltshire workshop, to teach when the cabinet was being finished.

Nuala (pronounced Nula), started making the base by cutting the veneers. You can do this well

enough on a bandsaw if the blade is properly set up. Notice though that the satinwood veneers are not the same thickness. The inner satinwood strip is about 0.6mm thick (like the rest of the veneers) while the outer is nearer 1mm.

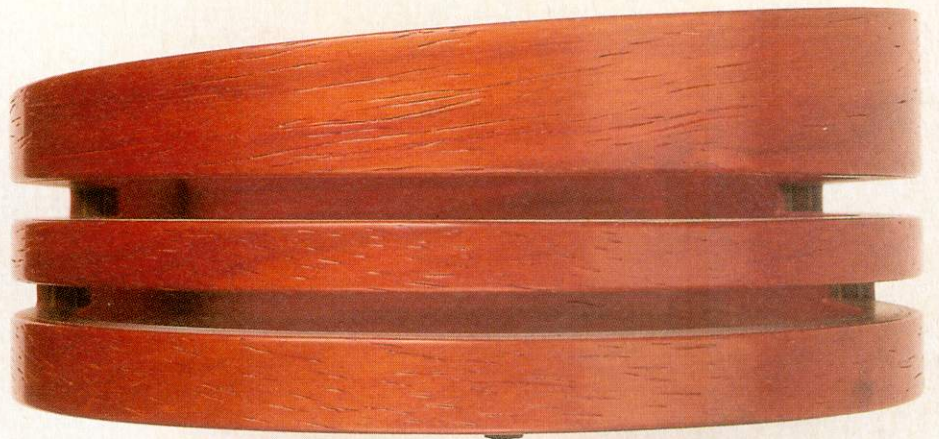
Once the veneers were cut, Nuala made up and cut the curved former. For a structure like this, you only need to make the inner former as the veneers can be held in place for the glue to dry with a band clamp.

When the glue was set (you can use PVA or Cascamite) Nuala cut the two grooves. You could do this by hand, but the quickest and probably the most accurate way is to use a router table. Nuala used a slotting cutter fitted on an arbour in the router, with the bearing on the arbour running against the

TIP

To make self-adhesive leather pads yourself stick double-sided tape to the back of a piece of leather. Declan used black leather, but you can use any colour to suit your work. Make yourself a hollow punch, to whatever diameter you require, and punch out the pads. Then remove the backing paper and fit to your project.

To take an asymmetric sculpture, Declan O'Donoghue designed this display cabinet as if in twist. The cut-outs around the top let in light from above. One groove is longer than the other to add movement. The base of the cabinet, in solid padauk, is curved to match the asymmetry of the sculpture. Declan made the leather pads on the feet (above right) himself with double-sided tape. All you do is stick double-sided tape to the back of a piece of leather. Then you punch out the shape you want. You can do this by sharpening up a piece of pipe to an edge. Remove the backing paper and away you go. The beauty of this is that you can use any colour of leather you want and any size of pad



The book-matching of the burr walnut on the cabinet back panel is the sign of true craftsmanship. The mark conjures up all sorts of ideas and shapes. The twist is actually easier to produce than you might imagine. Nuala McGoey, who made the cabinet for Declan, simply drew a line from one end to the other and cut the twist with a handsaw. The outer line of satinwood veneer (right) is thicker than the inner. A nice touch that adds that little touch of class



curve of the cabinet. If you have two slotting cutters you could fit them both to the arbour, separated by a spacer, to cut both sides of the groove at once. Nuala then chiselled out the waste. She used the former to hold the laminated curve for this cleaning up.

Twisting in the Workshop

The twist looks hellish to cut. Nuala couldn't remember how she'd done it when we asked. No wonder it looks tricky if she was so puzzled. Actually it's pretty easy, done by marking out the twist with a long, straight piece of card then cutting with a handsaw.

That done Nuala made the back panel, which is burr walnut and padauk veneers on thin MDF. The walnut has been book-matched to produce a reflected pattern. By positioning the pattern carefully the heart of the image is just about two-thirds high, which is visually satisfying for the viewer. Like the back panel the padauk shelf is butt jointed within the case, with the shelf held by four screws. The

ebony plugs were turned and the case drilled. But before the piece was assembled Nuala masked all the joints and lacquered the parts having sanded the parts and removed the arrises.

So often you can distinguish furniture made by professionals by the quality of finish. Using spray equipment and cellulose lacquers speeds up finishing and makes for an even coat. The other trick is to do as much finishing as possible prior to assembling the piece. That way the professional furniture-maker, whose time is precious, does not need to fiddle around in tricky corners cleaning up.

Finally Nuala removed the masking tape and assembled the case. Across the back is glued a hanging strip, the lower edge of which is bevelled. This fits on a similar, bevelled piece, drilled ready for fitting to the wall. The plugs are fitted to the sides and little self-adhesive leather pads stuck to the back and the feet. The pads are a simple idea, made by Declan, that add a touch of class.



The cabinet was not designed for this famous person, and we apologise for its use to Declan and Nuala, but it gave us the chance to ask who the sculpture is of. If you think you know write to us at Good Woodworking. The first correct answer wins a suitable prize



Declan O'Donoghue

PRO PROJECT FILE

ITEM

Collector's Cabinet
DESIGNER

Declan O'Donoghue,
SF Furniture
(Copyright Reserved, 1994)
MAKER

Nuala McGoey,
SF Furniture
MATERIALS

Padauk, satinwood,
ebony and
burr walnut

SIZE

398x178x88mm
(15½x7x3½in)

CONTACT

SF Furniture, Acton
Turville, Badminton,
Avon GL9 1HH,
☎ 0454 218535

purely PLANES

The first thing to do with a new plane is to round over any sharp edges. You don't want to be worrying about catching an arris on flesh

Fettling a new plane

Fettling, a good old word for trimming rough edges, is used here to run-in a brash new plane or give a well cared look to a battered old one

Sharp edges are vulnerable to denting and can raise blisters on hands. Dented edges raise burrs that make score marks in the wood. Armed with a fine half-round file, look over all the edges of the casting, and where sharp or dented, slightly round them off, especially near the knob, where the edge of your hand might rest.

The blade and the cap iron are stamped out from large sheets, leaving rough 'sheared' edges. A file will smooth the cap iron sides and the top edge (only), but a grinder followed by an oilstone slip, a diamond hone or aluminium oxide abrasive paper will be needed for the edges of the blade.

Without enlarging the actual opening, slightly ease the arrises of

the cap iron opening where the adjustment lever bears. A sharp edge can wear the lever over a long period of time and increase the degree of backlash. Incidentally, let me air a bee in the woodworking bonnet. Why can't the makers mass produce a plane with less

backlash? We can all do without this time-wasting nuisance.

The Lever Cap

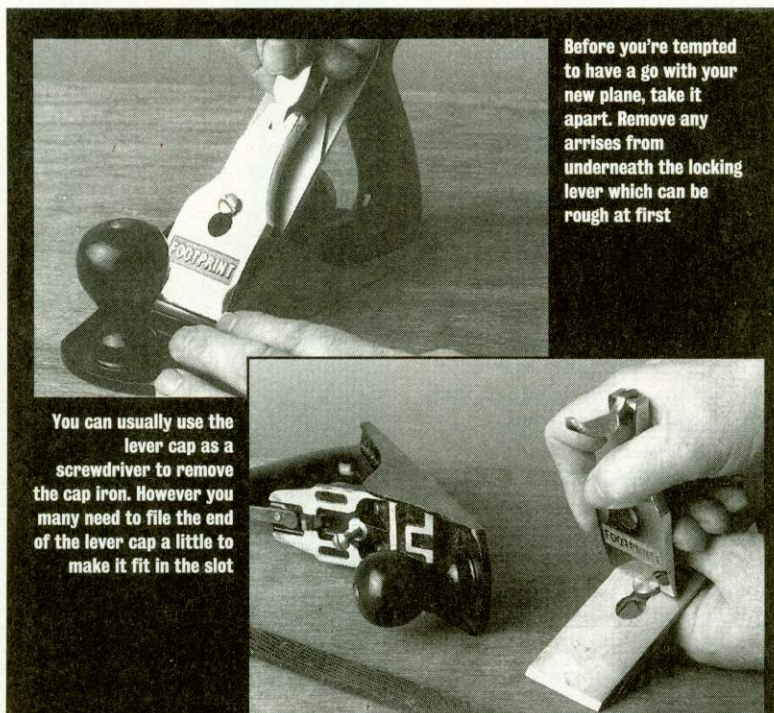
Usually, the lever cap can double as a screwdriver for the cap iron screw. If you have the Record SP4 (a Value for Money tool (GW

4:41)), the end of the lever cap will probably need to have the final $\frac{1}{16}$ or so of the front edge filed to let it fit the screw slot.

Comfort in Handling

Some planes have a handle and knob made of stained beech, coated with a thick glossy coating, no doubt to imitate the rosewood used in bygone years. You might think about removing the coating, smoothing the wood and finishing with several coats of linseed oil. Eventually, the handling will burnish to a natural "hand polish" which is much nicer to handle, especially if your hands are inclined to perspire.

The short grain of the handles



Before you're tempted to have a go with your new plane, take it apart. Remove any arrises from underneath the locking lever which can be rough at first

You can usually use the lever cap as a screwdriver to remove the cap iron. However you may need to file the end of the lever cap a little to make it fit in the slot

Jargon Busting

Planer ripple

Machine planers consist of rapidly rotating knives making glancing cuts across the surface of the wood. These show as a series of transverse shallow waves. Blunt knives compress the wood as well. When the wood is wetted, these can bounce back and show as humps

Backlash

Also known as lost motion. A dead zone in the adjustment system

Arris

A sharp edge formed where two flat or curved surfaces meet

Sole

The part of a plane that glides over the wood

Frog

The movable unit on which a metal plane blade sits. One story revolves around metal planes having a frog in their throats – Dyer gerrit?

Shaving aperture

The gap between the front lip of the mouth and the cutter

Mouth

The entire aperture in the sole

Feeler gauge

A fan-like assembly of strips of steel marked with their thickness, starting at 1- $\frac{1}{2}$ thou. Motor accessory shops sell them

Cap Iron

The unit which is clamped to the cutting iron. It deflects the shaving and stops it jamming into the works

Set

The amount by which the cutter projects beyond the sole

Thou

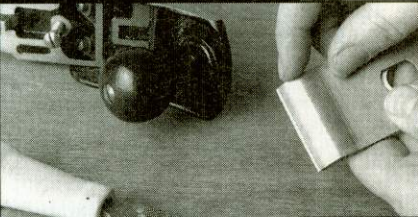
A thousandth of an inch. A millimetre is about 40 thou

Backlash

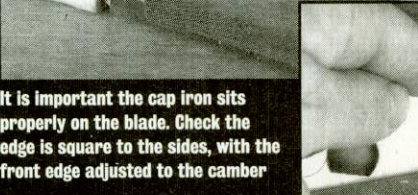
Slack in the depth adjustment system. On modern planes you often have to turn the adjuster knob a couple of turns before the blade starts to move

Fettling plus...

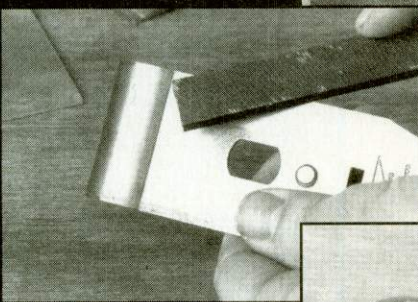
With a little effort you can make your new plane perform much better by careful filing



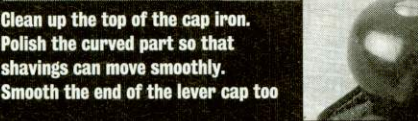
It is worth grinding the front edge of the mouth at a slight angle towards the front knob so that shavings are less likely to jam



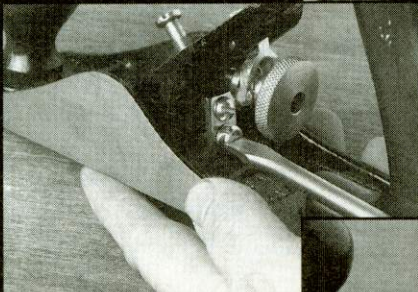
It is important the cap iron sits properly on the blade. Check the edge is square to the sides, with the front edge adjusted to the camber



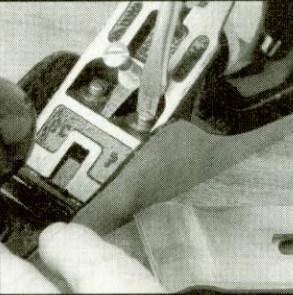
File the underside of the cap iron so shavings cannot be forced between the cap iron and the blade. Match the profile to the blade camber



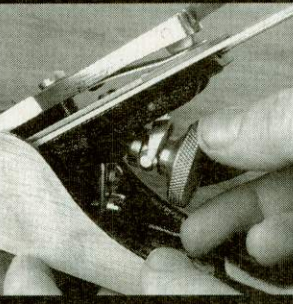
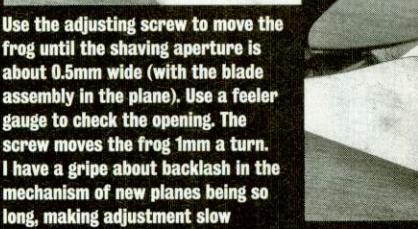
Clean up the top of the cap iron. Polish the curved part so that shavings can move smoothly. Smooth the end of the lever cap too



Use the adjusting screw to move the frog until the shaving aperture is about 0.5mm wide (with the blade assembly in the plane). Use a feeler gauge to check the opening. The screw moves the frog 1mm a turn. I have a gripe about backlash in the mechanism of new planes being so long, making adjustment slow



You will need to loosen the fastening screws to be able to move the frog to adjust the shaving aperture. Loosen the lateral locking screw



hinder the lateral movement, so relax its holding screw just enough to allow it to swivel sideways, but not backwards and forwards. The adjusting screw moves the frog about 1mm (0.04 in) per turn. Checking with a feeler gauge, adjust the frog until the shaving aperture is about 0.5mm (20thou).

Remove the blade assembly. Gently tighten the adjusting screws. Reassemble and check that the shaving aperture is of equal width at each end. If adjustment is needed, fully loosen one screw, and just relax the other so that it can act as a pivot when you slightly slew the frog by twisting a screwdriver blade between the side of the frog and the plane.

Reassemble and check again. Battle on until it is right. Fully tighten both screws, working from side to side a fraction of a turn at a time to ensure that the frog evenly beds down.

This apparently simple job might be less than plain sailing, since certain defects might stop the frog moving forward enough. I have found that the slots in the frog of an old plane can be too short, so lengthen them with a round file. The washers under the holding screws can clash with the casting. If necessary, file part of the profile of the washers to prevent this. The thread of the frog adjusting screw can "bottom" thus preventing it from pushing the frog further forward. The remedy is to put a washer between the adjuster plate and the frog.

Adjusting the Plane

Sharpen the blade, adjust the cap iron to about 0.5mm (20thou) from the edge. There can be a trade-off between the shaving aperture and cap iron setting. A fine shaving aperture should take precedence. Find the closest setting for the cap iron that will not lead to jamming shavings in the mouth.

Sight down the plane, looking for the back edge of the mouth. Adjust until this begins to be obscured by the cutter.

Use the lateral adjusting lever to level the blade. Wind back the blade until it just disappears and then move it forward again until it just appears. Now you see a reason for complaining about time wasting caused by excessive backlash. Because the force of the wood tends to push the blade backwards, always make the final adjustment a forward one so that the feed lever bears positively against the iron.

is notorious for breaking easily. Recent breaks, or those that have not been clumsily repaired, can be re-glued. Examine the faces of the split; use tweezers to pick off any loose bits that might hinder a close fit, and re-glue. Alternatively you could shape a new handle from birch or similar close-grained plywood. Drilling down the handle will need a long drill.

Trimming the Front Lip

The front lip of the mouth of most Stancords has the vertical face machined at right angles to the sole. If this angle is inclined towards the knob, the shaving is less likely to jam. Don't overdo it – cast iron cannot hold acute edges. Tissue-thin shavings can easily catch on a rough spot, so to ease their passage it helps to stone a fine finish. While doing this, be careful to keep the lip dead straight and at a right angle to the side.

The upper parts of the cap iron

can acquire a tatty look after a while. Use a rotary wire brush to produce a nice satin finish to the area between the end of the curved section and the top. Use eye protection when wire brushing.

Check the fit of the cap iron against the blade. The edge should be square to the sides. The front edge profile can be adjusted to match the slight camber given to the cutting edge. File the meeting face so that its contact with the iron is so intimate that shavings cannot

be forced between the two. To ease the passage of the shaving and also give a smoother adjustment when setting the cut, polish the front edge of the cap iron at least as far as the end of the curved section. See that the underside of the lower end of the lever cap is also smooth.

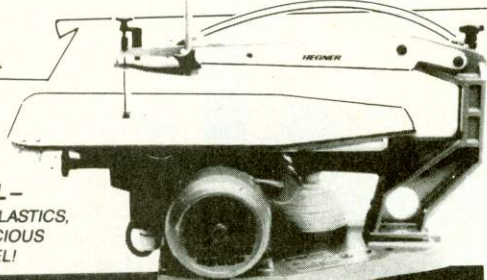
Re-set the Frog

Relax the fastening screws just enough to allow the frog to move forwards and backwards. The forked adjuster plate (if fitted) can

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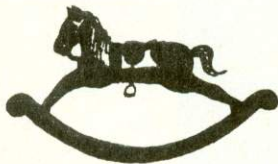
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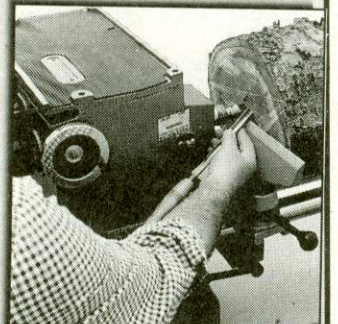
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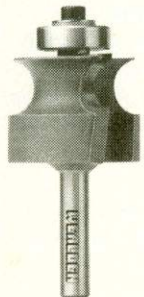


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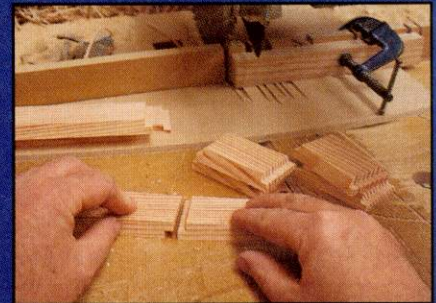


SPAGHETTI HOLDER

Pete Martin explains how to make an octagonal storage holder for spaghetti



Set your sliding bevel to 22.5° to check the bevels on the staves (sides). You may find it easier to have the staves a little wider than you need before planing



The lid parts and the base parts are rebated so that the lid sits over the base. The rebates on the lid are both on the inside, but are alternate for the base

to 22.5°. Cut the sides to the widest width then place the bevel checking regularly with the sliding bevel.

2 Once that is done cut off the shorter lengths for the lid. Rebate both ends of the lid parts for the top and to fit over the tongue on the base of the container. Rebate the sides of the body, but note that the rebate is on the outside at the top and on the inside at the bottom to take the base piece. Check the rebates on the lid and base pieces marry up correctly. Assemble the sides and cut out MDF or wooden pieces for the top and the base. Chamfer the edges on the top piece and then glue them both in place and finish with oil or wax.

Storing spaghetti can be a real problem as the plastic packets always break. The last thing you want is short spaghetti. It just doesn't twist round the fork as well!

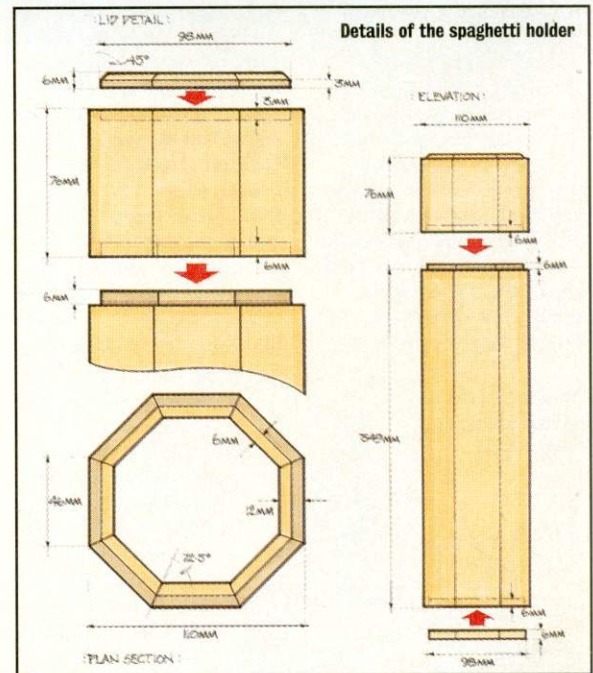
How to Make the Container

1 I have a penchant for making octagonal projects, so this seemed to be an ideal opportunity to return to the technique. I have in the past used a sawbench with tilting blade to produce the bevelled

edges, but decided this time to go with a plane. Start by setting up a sliding bevel set



The easiest way to assemble the octagon is to use elastic bands as makeshift cramps



PROJECT
£20
COST

WEEKEND WOODWORK



FLY TYING CLAMP

John Marshall explains how to make a wooden clamp, made mostly on the lathe, for tying fishing flies. This is an advanced project and needs thread cutting devices



Making this fly tying clamp was fun. Like most of my work I tend to make it up as I go. Trial and error – or Research and Development as it is now called – played a large part, as the waste bin will vouch. The wood came from a skip in the leafy suburbs of Harrogate, when I found a stack of flowering cherry logs two years ago. This is a fair choice for a delicate project anyway because cherry is relatively close-grained.

The clamp is based around the principle of the ball and socket joint, using wooden threads for pressure. The clamp comprises four major parts. The table vice is fixed to your work surface with a short threaded handle.

The body is tapped itself, so that you can adjust the height of the tying clamp with a long threaded rod. On the

end of that rod is a socket to which is joined the tying clamp. The clamp works with a pincer, which is tightened with a thread.

Making the Table Vice

1 Start by making the table vice (A) from a 4½x4½x1in block. Mark the centre and draw a 4in diameter circle. It is important to mark the blank top and bottom, with the grain running across the face, otherwise the thread will not cut sweetly. Mark the vertical and horizontal centre lines, and mark further parallel lines 1in to the left and 1½in to the right. Take the left line up the face and across the top and bottom edges. The right goes from the horizontal line, down and across the bottom edge.

Mark the centres on the two marks that go across the bottom edge and the one mark that goes across the top edge.

2 I have used a ½in diameter threading system (GW 13:26). Drill from the bottom, noting that only one hole has to be drilled all the way through and the other just beyond half way. Make sure your drill bit is sharp and the piece is square to the bit. Unless you have a long bit you will have to

drill from both ends, and then tap the thread from the bottom.

3 If you want to turn the table vice (A) round you will need to do so on a faceplate. First turn down a 3in diameter false faceplate and mark a 3in diameter circle on the face of the blank. Cut out the 4in diameter circle from the blank and superglue the best face of the blank to the 3in diameter false faceplate. Turn the table vice blank to 4in diameter, sand the edge and remove from the lathe. Then cut out the waste area and sand off all the saw marks.

Making the Handle

4 Turn down between centres the table vice securing handle (B) from a piece

6x1½x1½in. First shape the handle, noting that it is best not to have any of the handles the same shape or you'll forget which is which. Leave about 1in of rod unthreaded, so allow for that when turning. Once the handle is shaped turn the remainder to ½in diameter and then sand to finish. Remove it from the lathe, cut off the waste and cut the thread.

5 To the end of the securing handle is fitted a swivel washer (C). Use an offcut 1½x1½x½in, and sand one face to a finish. Then turn down between centres a 2x1x1in hardwood, working a spigot on one end for your chuck. Fix the spigot on the chuck, true up and bring down to ½in diameter, keeping the face flat. Centre and superglue the

CUTTING LIST FOR THE FLY TYING CLAMP

	MATERIAL	LENGTH	WIDTH	THKNS	
A	Table vice (1)	Cherry	4½in	4½in	1in
B	Vice securing handle (1)	Cherry	6in	1½in	1½in
C	Swivel washer (1)	Cherry	1½in	1½in	½in
D	Swivel washer ball (1)	Cherry	2in	½in	½in
E	Height adjuster (1)	Cherry	13in	1½in	1½in
F	Socket joint (1)	Cherry	2½in	1in	1in
G	Barrel and ball (1)	Cherry	4in	4in	1in
H	Fly jaws (1)	Cherry	9in	½in	½in
J	Jaw locking handle (1)	Cherry	3in	1in	1in
K	Locking ball (1)	Cherry	2½in	1½in	1½in

These dimensions refer to the turning blank you need for each part

finished face of the swivel washer part (C) on the end of the spigot. Turn the washer down to 1in diameter, ½in thick, leaving a ½in rim to the widest part of the washer. Then angle down to a ½in long spigot, ½in diameter, then sand to a finish.

6 Now fix a Jacobs chuck in the tailstock and with a ½in bit drill a ½in deep hole, then gently open out the inside of the washer using a hollowing tool. Avoid doing too much hollowing because you will find that some extra freehand chiselling will be required to allow the ball to rotate freely. This can be done with a small carving gouge once the piece has been cut in two. Remove from the lathe and cut in half with a junior hacksaw.

Fit the Jacobs chuck in the headstock and into this put an offcut measuring 2x½x½in for the ball (D) to fit into the swivel washer. Do ensure that the offcut is well inside the chuck. Turn down a ball to fit snugly, but not too tightly, inside the two halves of the swivel washer (C), ending up with a stem of ½in diameter, ½in long. Smear the cut edges of the swivel washer with glue, place the ball inside and clamp with an elastic band.

7 Turn the height adjuster (E) from a 13x1½x1½in blank. Turn the section to be threaded down to ½in dia.

about 8in long. At the very end turn a spigot ½in dia. ½in long. Sand to a finish, remove from the lathe, cut off the waste and cut the thread.

8 Now start work on the socket joint (F) at the end of the height adjuster. Take a blank 2½x1x1in and rough down between centres, putting a spigot on one end for chucking. Once secured in the chuck true up to a ½in diameter. Install the Jacobs chuck in the tailstock and drill a ½in hole, 1½in deep. Enlarge the front to ½in with a small skew. Turn down the front section to a ½in sphere with a ½in spigot at the front. Now gently hollow out, again don't

When using elastic bands as cramps there is a danger that you can crush the work by choosing the wrong band. Instead of this, scrounge some of the thickest bands from the postman or postwoman, cut them and superglue the rubber to a suitable length. That way you can find the perfect pressure.

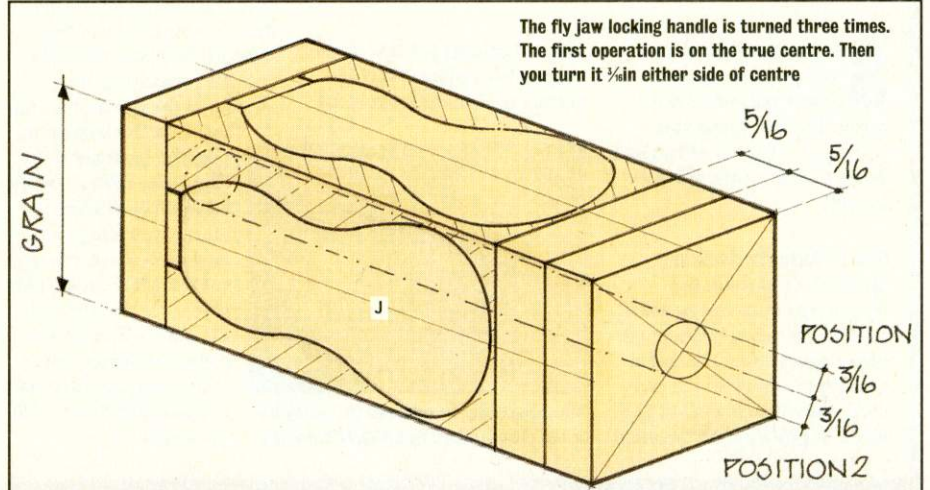
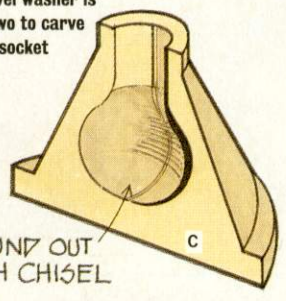
TIP

do too much because you can freehand chisel once the piece is cut in half. Finally turn down the back section to ½in diameter, remove from the chuck and cut in two.

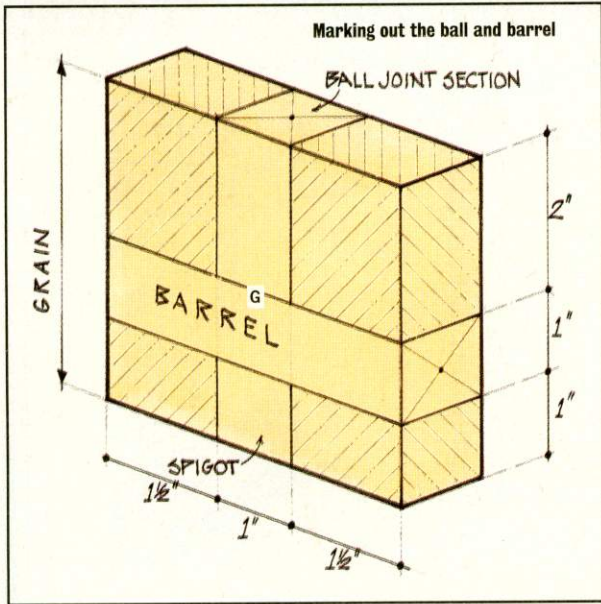
The Barrel and Ball Joint

9 The turning of the piece (G) that combines the ball and

The swivel washer is cut in two to carve out the socket



The fly jaw locking handle is turned three times. The first operation is on the true centre. Then you turn it 1/16 in either side of centre



barrel is tricky. This part is turned twice, each through time through a separate axis. You would imagine that the grain runs along the barrel. You'd be wrong. To tap the barrel it is best to have the grain running across the main axis. Equally the grain must be running along the ball, otherwise it could snap off instantly. You could of course simplify the turning by inserting a separate ball into the barrel.

10 For a combined barrel and ball select a piece 4x4x1in, marking the face side and edge. The grain must run in the direction of the ball. Mark 1in in from the face edge and then 1in beyond that. Square these marks. Write 'barrel' between these lines, across the grain. Centre mark both edges. From the edge measure 1/2in inwards and another 1in beyond that. Square these two marks and centre mark the edges. Shade the waste. Mark the 1in piece spigot and the 2in piece ball joint. Cut off the waste.

11 Now boys and girls we enter the danger zone. Be warned. You could end up needing hospital treatment. Place the blank between centres with the spigot section near the tailstock. Turn down to fit your spigot chuck, mount in the spigot chuck and turn the ball section to 3/8in diameter, leaving 3/16in of square stock next to the barrel. You should be turning with the grain.

12 Mark the turned section into two 3/8in pieces and turn down the end section to 3/8in diameter. Turn down the stem section to 3/8in diameter,

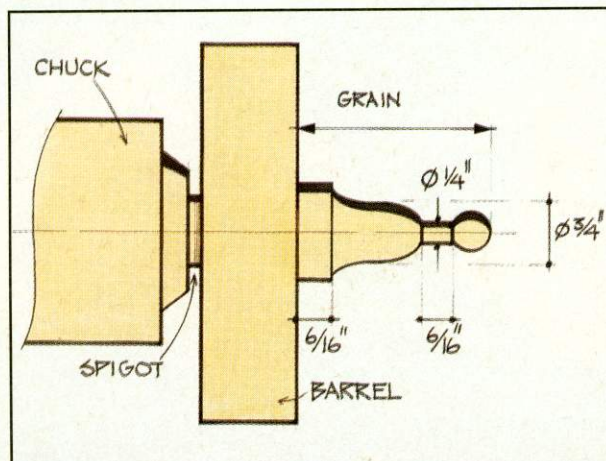
then shape the ball, testing frequently with the two halves of the socket section.

13 Now is the time to carve the sockets, but don't leave the walls too thin. Better to turn the ball smaller. The two halves of the socket must grip the ball, but still have about 1/8in gap between them. Turn the barrel down into the ball stem and sand.

14 Fit the barrel between centres and turn down to 3/8in diameter, ensuring that you don't forget to true up the ends. Remove from the lathe and secure the barrel section in a 90° drilling jig under your pillar drill, ensuring it is dead centre, and drill with a 3/8in bit. You could drill out the barrel on your lathe. When drilling short grain you need a slow speed and gentle pressure. Drill from both ends. Cut off the spigot and breathe a sigh of relief.

Making the Fly Jaws

15 The jaws (H) that hold the fly are turned between centres. Turn down a



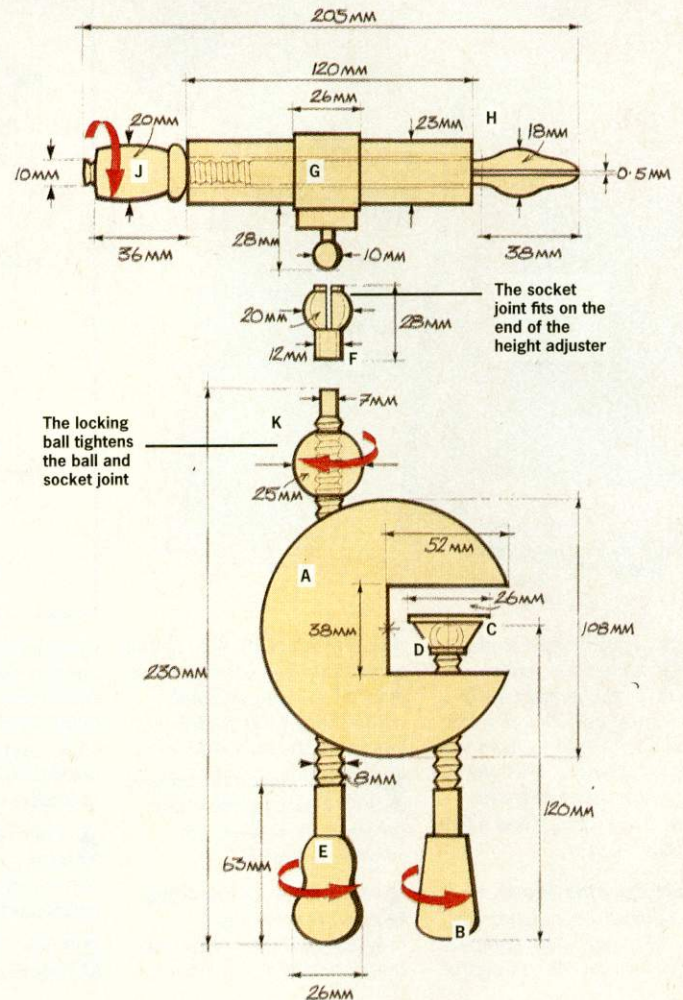
9x9x3/8in blank to 3/8in diameter. Mark 1/8in waste at either end, then 1/2in for the jaw head, which will be a jam fit in the barrel, so a gradual shape is needed. Turn down the stem to 3/8in diameter and sand. Remove from the lathe, cut off the waste, clean up and cut a thread on the end 2/32in. Put the jaw section in a V block and cut down from the nose by 2/32in.

16 Turn a locking handle (J) for the fly jaws from a 3x1x1in blank, with the grain running across, not along, the piece. This helps the tapping. To make life interesting I turned the handle off-centre so that it is elliptical in section. Centre both ends and mark in 3/8in at the drive end for waste. Square that line. At the tailstock end mark in 3/8in, then 3/8in beyond that, mark another line. Cut across the line 3/8in from the tailstock, marking which way it fits on the blank.

On one of the diagonals of this piece mark 3/8in each way from the centre for the offset. Mark the diagonals on the end of the blank, which is now 3/8in shorter. This is to find the centre for drilling.

Glue the end piece back

Details of the fly tying clamp



on and turn down to 3/8in diameter. Shape the handle. Then adjust the tailstock to the first off-centre position and shape. Then move the handle to the second position, returning to dead centre for final finishing.

Turning the Locking Ball

17 Turn the ball (K) to lock the ball and socket joint from a 2x1x1/2in blank, with the grain running across. Hold in a chuck to form the sphere then hollow out to halfway to go over the ends of the socket. Drill for tapping.

18 Now drill the end of the table vice securing handle (B) to take the spigot of the ball section. You may need to make a drilling jig for this. Take a 2x1x1in blank and drill through the centre with a 1/2in bit. Tap in the thread and screw in the table vice securing handle so that the end to be drilled is just below the surface to prevent splitting. Fix at 90° under the pillar drill and drill down 3/8in with a 3/8in bit.

19 Clean up all the components and apply your finish. Mine was a soft wax. For gluing up, thread the table vice securing handle into the table vice, and put a smear of glue on the spigot of the swivel washer. Push this into the threaded rod, leaving about 1/8in gap between the end of the rod and the washer.

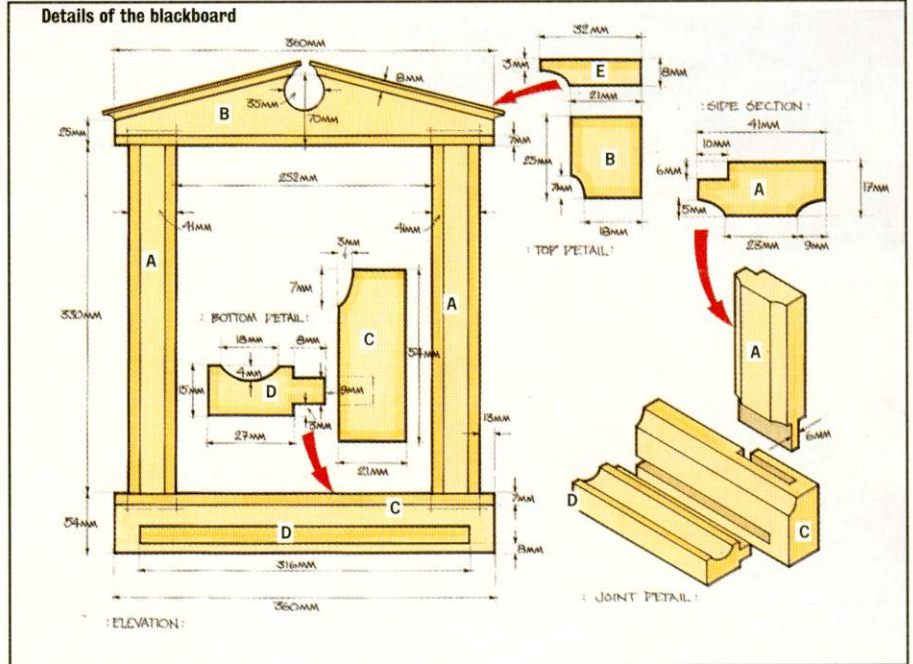
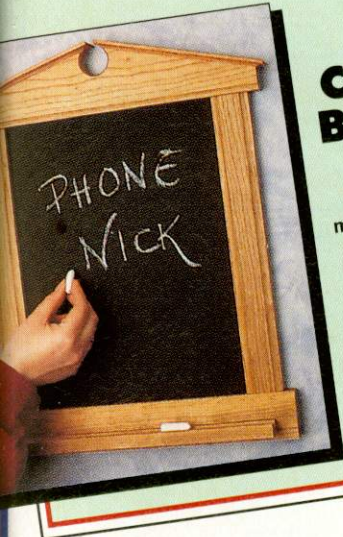
20 Next thread in the height adjuster and then the locking ball, with the end that has the thread cut back is facing upwards. Cut a piece of card about 1/8in thick. Take a thickish elastic band and cut a piece to fit around the neck of the socket and superglue together. Put the socket joint over the ball and insert the card through the two halves of the socket. Roll the elastic onto the neck and put a smear of glue on the spigot on the top of the height adjuster. Push the socket onto the spigot and leave overnight. Put the fly jaw section through the barrel, add the locking handle and the job is done. Now what could be simpler?

WEEKEND WOODWORK

PROJECT
£5
COST

CHALK BOARD

Pete Martin explains how to make a blackboard for the kitchen for the children to use with chalks



Message boards in the kitchen are really useful (as they are in the workshop). I know a fair number of woodworkers who depend on them. This one is a bit fancier than most with a break front cornice and a few moulded edges.

Making the Chalk Board

1The mouldings make this project look more complex than it really is. It's no more

than a frame, with the top rail angled and mouldings added. Start by marking out and cutting the mortices and tenons on the rails and stiles.

2 Drill the hole at the apex of the top rail and then cut the angles and place the edges smooth.

3 Use a router or moulding plane to work the mouldings on the stiles, rails, the chalk tray and the two

cornice pieces that are simply glued to the top rail. Chamfer the front inside edge of the break front hole by hand or with a router. You could also rebate the back of the rails and stiles for the board.

4 Assemble the frame and leave to dry, cleaning up any excess glue, of course, before going to bed!

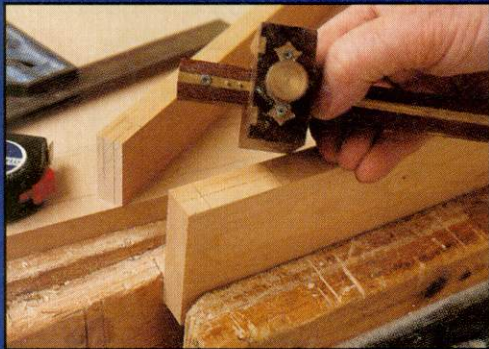
5 If you did not rebate the back first do so once the

glue has set. You may want to chop out the waste from the corners. Thin MDF is ideal for the blackboard, painted with

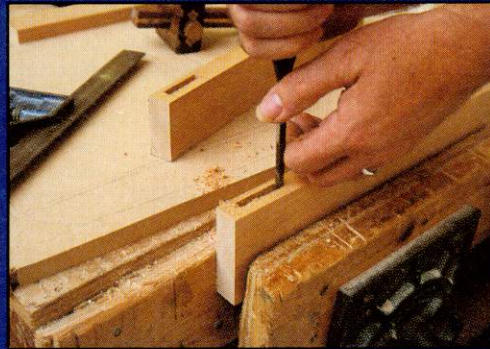
blackboard paint. Finally glue on the cornice and fit the chalk tray into its stopped housing in the bottom rail.

CUTTING LIST FOR THE BLACKBOARD

	MATERIAL	LENGTH	WIDTH	THKNS	
A	Uprights (2)	Cherry	350mm	41mm	17mm
B	Top rail (1)	Cherry	360mm	70mm	21mm
C	Bottom rail (1)	Cherry	360mm	54mm	21mm
D	Chalk tray (1)	Cherry	316mm	35mm	15mm
E	Cornice (2)	Cherry	188mm	32mm	8mm
F	Blackboard (1)	MDF	348mm	266mm	6mm



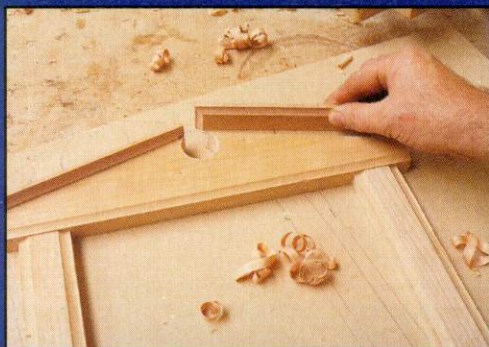
Start by marking the mortices on the top and bottom rails and the tenons on the stiles (uprights)



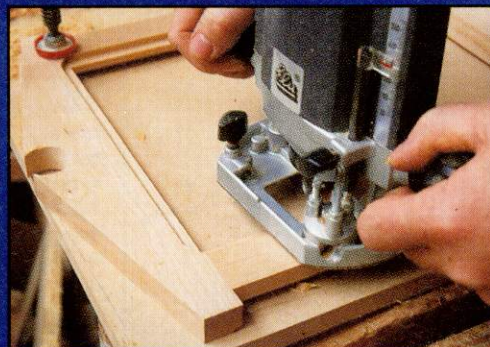
Cut out the mortices with a registered chisel if you have one, or use a router or drill to remove the bulk of the waste



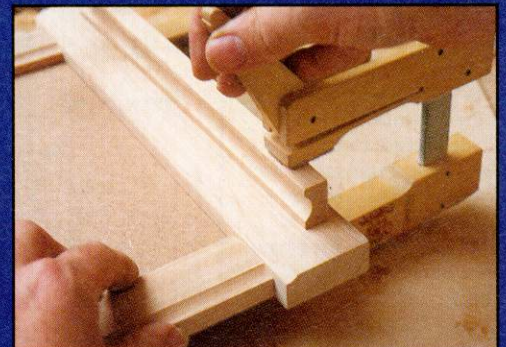
Dry assemble the frame and mark out the position of the break in the top. Drill the hole, then cut the angles back



Plane the top edges of the top, having cut them on the angle, then glue the moulded cornice to the top edge



Rout out the rebate for the chalk board in the back using a guided cutter if you do this after assembling the frame



Finally glue on the chalk tray. The trick with a framed project is to do as much of the moulding as possible before assembly

PETER CHILD

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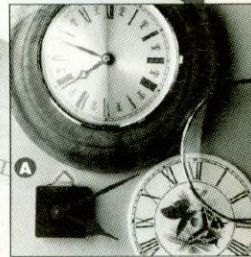
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
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
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
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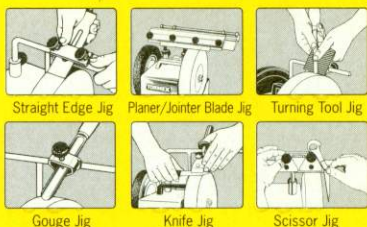
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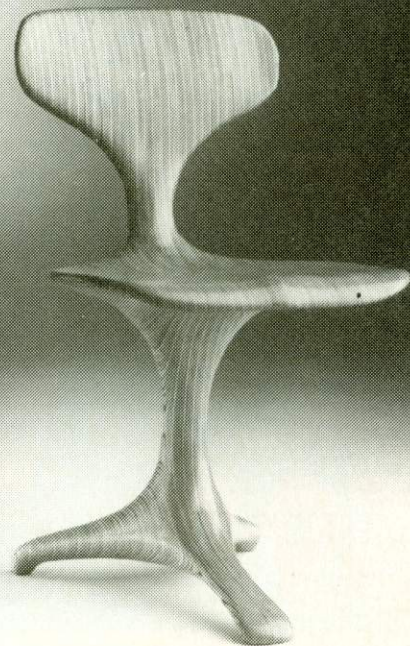
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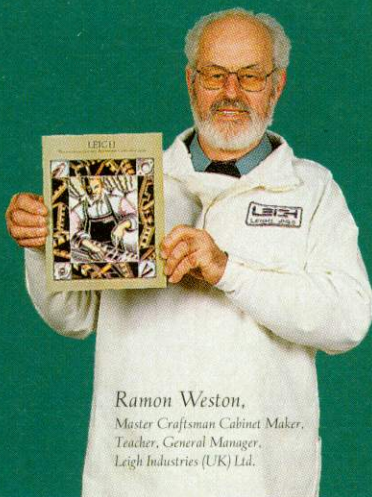
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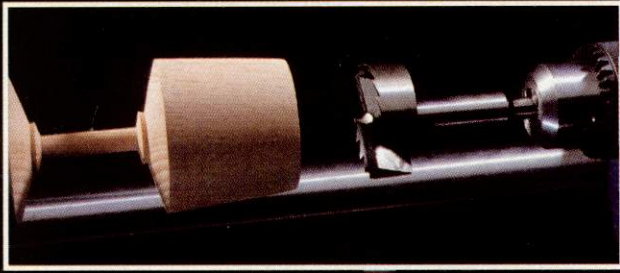
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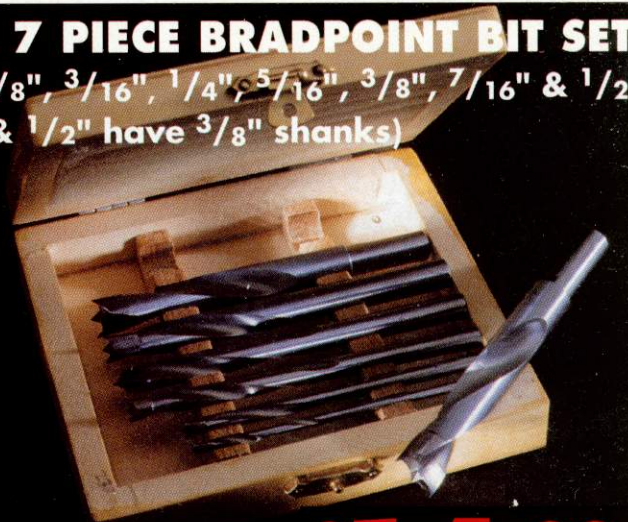


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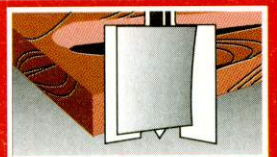


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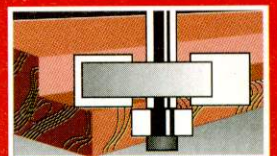
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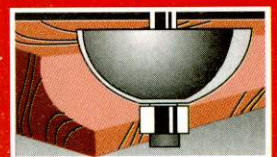
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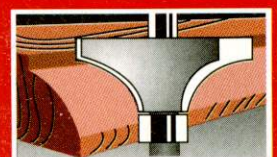
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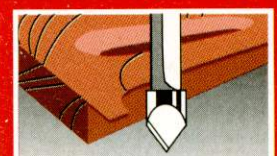
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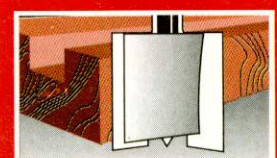
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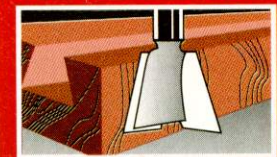
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Boatbuilding

BY HOWARD I CHAPELLE
 Publisher: Norton
 ISBN 0 393 03554 9
 Price: £34 (hardback)

COMMON sense and knowledge are present throughout this American publication, but there is rather scant information on the more modern facets of boat construction. However this in no way detracts from what has become an authoritative book on traditional boatbuilding methods.

The author discusses in great detail, with the help of clear, annotated sketches, all aspects of traditional boat construction. He leaves no stone unturned in his detailed writing.

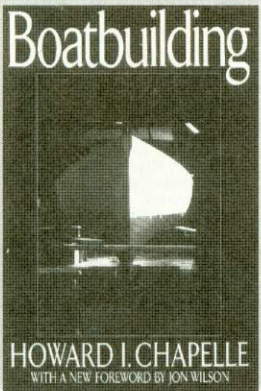
As a reference book it has much to commend it, but it is not a book for light bedtime reading. Some of the text is technical and needs to be read when you have time to digest it.

If you are a keen amateur or a

professional about to embark on a major project then this book must form part of your library. It is comforting to know that when you get stuck you can turn to a book where the author has come up against the same problems that you are facing and has found a way around it. For this aspect a budding builder could recoup the cost in the time saved by following this book's sound advice.

First written and published in 1941, *Boatbuilding* has been continuously in publication ever since. That, if nothing else, shows the enduring popularity of this splendid book.

Reviewer: Mark Corke
 Furniture-maker



Boatbuilding	
WORDS	●●●●●
PICTURES	N/A
DRAWINGS	●●●●○
OVERALL VALUE	●●●●○

The Stanley Book of Woodwork

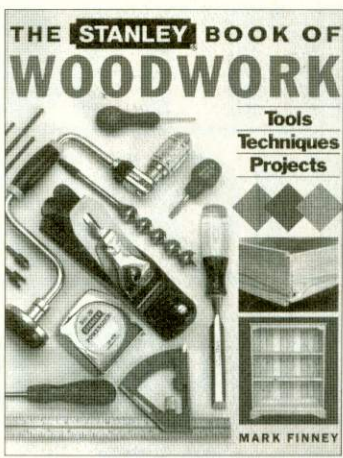
BY MARK FINNEY
 Publisher: Batsford
 ISBN 0 7134 7480 7
 Price: £14.99 (softback)

LIKE most other woodworking books, it starts with a section on tools, then deals with the basic techniques, and finishes off with a few projects. What makes it a bit different is that the book sticks totally with what Stanley are best known for: hand-tools.

In a time when almost everybody relies on a large armoury of power-tools, it is refreshing to find a book that ignores them and teaches traditional techniques that don't need a plug.

Any beginner will find the descriptions and uses of each tool clear and concise. Likewise the section on planing, marking out and jointing is well illustrated and succinct. The projects, a workbench and several pieces of furniture, do seem a little complicated for anybody new to woodworking. However they are useful and well designed ideas that will stretch the brain cells.

As an introduction to woodworking, it is a neat little book. A quick peek inside should give enough ideas for a basic kit to accompany it, but definitely not for the advanced market.



The Stanley Book of Woodwork	
WORDS	●●●●○
PHOTOS	●●●●○
DRAWINGS	●●●●○
OVERALL VALUE	●●●●○

Reviewer: Pete Martin
 Furniture-maker

Designing and Making Wooden Toys

BY TERRY KELLY
 Publisher: GMC
 ISBN 0 946819 43 2
 Price: £14.95 (softback)

THERE are 24 wooden toy projects in this book, complete with detailed plans and plenty of good black and white photographs. The first section briefly covers materials, dolls and methods.

The projects are predominantly constructed from birch and ply and you can make them with basic hand-tools. Each project has a clear list of materials and tools needed. The well presented plans are arranged on a grid, so you can scale them up or

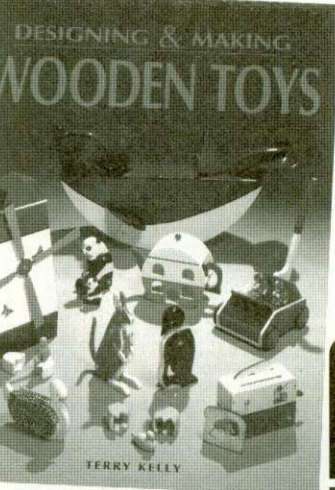
photocopy and enlarge them. The designs are robust but may be a little clumsy. There is a lot of coverage on making the toys in this book but I would have liked to have seen more attention paid to the design element.

No mention is made of the particular age group these toys have been designed for but I would suggest that they are most suitable for the under fives. Plenty of attention has been paid to ensure that all screws are countersunk, and that each toy is rounded off and sanded smoothly to avoid sharp edges.

My main criticism with the instructions is that there are a long list of lettered parts, where A joins B and is glued to C and so on. Exploded diagrams showing how the parts fitted together would have been a better solution. As the step-by-step instructions are not numbered they are difficult to follow, especially if you lose your place. References and the figures they refer to, annoyingly tend to be on different pages.

Terry Kelly hopes his book will encourage woodworkers to design and make their own creations, but I would like to have seen more attention paid to the design element.

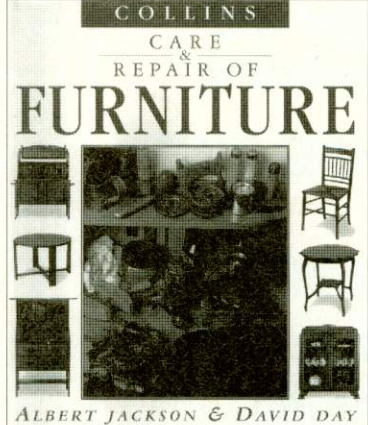
Reviewer: Ian Wilkie
 Woodworking tutor



Designing and Making Wooden Toys	
WORDS	●●●○
PHOTOS	●●●○
DRAWINGS	●●●○
OVERALL VALUE	●●●○

Care and Repair of Furniture

BY ALBERT JACKSON AND DAVID DAY
 Publisher: Collins
 ISBN 0 00 412730 7
 Price: £16.99 (hardback)



AIMED at a readership ranging from dedicated Do-It-Yourselfers to competent amateur woodworkers, the book does not pretend to enter the more esoteric realms of the professional restorer.

It deals with the acquisition of old furniture, and moves on to finishes, which includes painted and stencilling work. Problems with chairs, upholstery, metal furniture, tables, veneering, and cabinets and chests are all dealt with. Finally there are small sections on cabinet hardware and eradicating woodworm.

The subject matter and illustrations have

no doubt been tailored to fit the 162 pages with the cost accountant looking over the production editor's shoulder. Consequently there is rather a shortage of supplementary information. So there is no list of suppliers for the special materials needed for gilding, upholstery, or veneering. Nor do they mention that any plastic foam for upholstery must be fire resistant.

Fuller descriptions of the various adhesives with brand names would have been helpful. It would assist many of us too if more details on matters like the techniques of long-hole boring, off-centre turning, and sharpening were supplied. Using cabinet scrapers, cutting dovetail joints, and making twist legs would also have been useful techniques to explore.

It is still a book containing a wealth of excellent information and well worth buying. The photographs, some 40 to 50 in colour, are of a very high standard, and the enormous number of first class drawings, are all clear and beautifully executed.

Reviewer: Vic Taylor
 Furniture restorer

Care and Repair of Furniture	
WORDS	●●●○
PHOTOS	●●●○
DRAWINGS	●●●○
OVERALL VALUE	●●●○

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The present owner of Wythop Mill, John Sealby decided to transform the mill into a museum in response to the wealth of public interest. The water wheel, one of the mill's main attractions, has been in motion for more than 700 years



Wythop Mill is situated in Embleton, between Cockermouth and Keswick in the Lake District. The nearest lake is Bassenthwaite

workshop angles

Set in a small hamlet in the atmospheric Lake District a water wheel which powered machinery in the 13th century is still turning at Wythop Mill.

The owner John Sealby bought the mill in 1976. Sparked on by the interest shown by people

"dropping by", he transformed it into a working museum in 1979.

"We began by retimbering the water wheel, which is made of pitch pine and cast iron," he said. "It turns all day from morning to night." The wheel is a major

feature in the guided tour which covers a variety of traditional skills. "I show visitors the mill 'race' or dam which collects the water from the 'deck' or the stream and the water wheel," said John. "Power from the wheel is still used to power lathes and other

large pieces of machinery, like the travelling circular saw which we keep in the sawbench shed."

The tour takes you through the different floor levels of the mill, starting with the blacksmith section, to the wheelwright's workshop and on to the kiln room on the ground floor where old country craftsman's hand-tools and milling tools are on display.

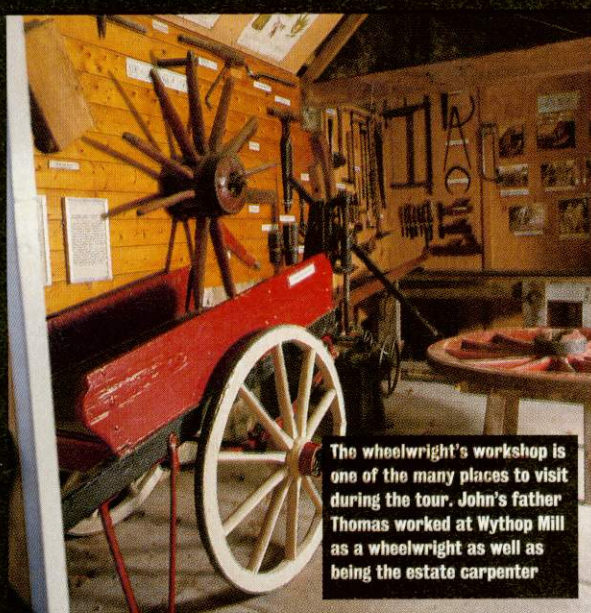
"A lot of the tools are more than 200-years-old. I am always looking for out of the ordinary tools. I go anywhere and everywhere, to farm and antique sales, looking for tools," explains John. "I have people who follow tool auctions for me."

The workshop has a rich collection of old belt-driven machines and many historic hand-tools. Some are donated by well wishers or have been bought by John.

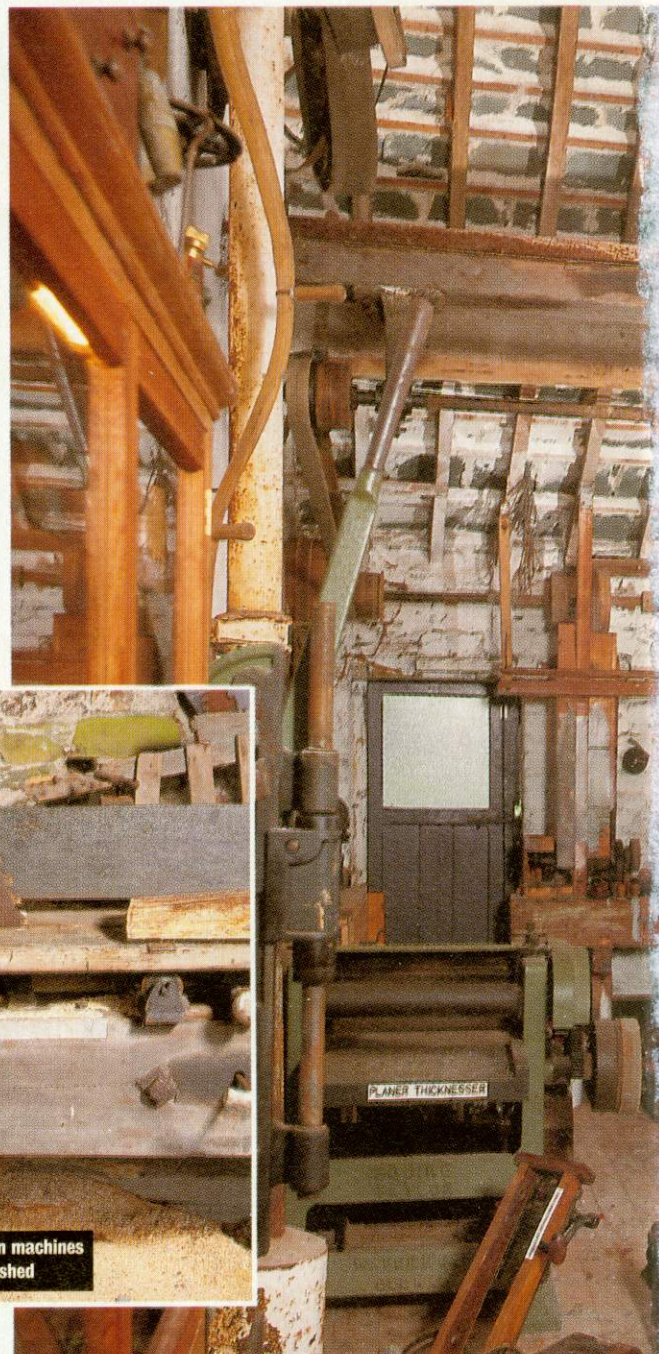
Some of the tools originate at the mill, from the time the place was a corn mill in 1735. Before that the mill began life in 1327 as a fulling mill, when the water wheel operated machines to make cloth from wool.

He explains the hows and whys of the machinery to a wide variety of people. Wythop Mill, which lies between the towns of Cockermouth and Keswick, has seen more than 7000 visitors this year, from groups of school children to people from the Far East and Australia. "A visit lasts about 40 minutes depending on the size of the group and the interest shown. It usually takes about half an hour," said John. "This year was the best ever, because our advertising was good and we're better known now."

A joiner by trade, John is a member of the Tools and Trades History Society (TATHS) where tool experts and enthusiasts exchange information and ideas. He



The wheelwright's workshop is one of the many places to visit during the tour. John's father Thomas worked at Wythop Mill as a wheelwright as well as being the estate carpenter



The mill is a superb place for tool enthusiasts. One of the many old belt-driven machines at the mill is the travelling circular saw which is housed in the sawbench shed

has hosted visits for members from all over the country at his Wythop Mill, whose name was first recorded in 1285. "It means glen of the willow wood because the mill used to be part of a medieval forest back in the middle ages, but there are no willow trees now," explains John.

His father, Thomas James Sealby spent his lifetime working as an estate carpenter, joiner and wheelwright, joining the mill in 1913. John also learned his woodworking craft at the mill under the guidance of his father.

"He was a wheelwright but he took

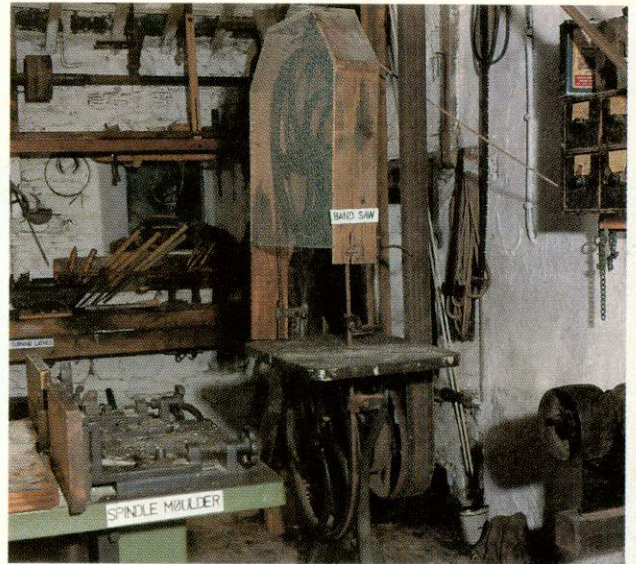
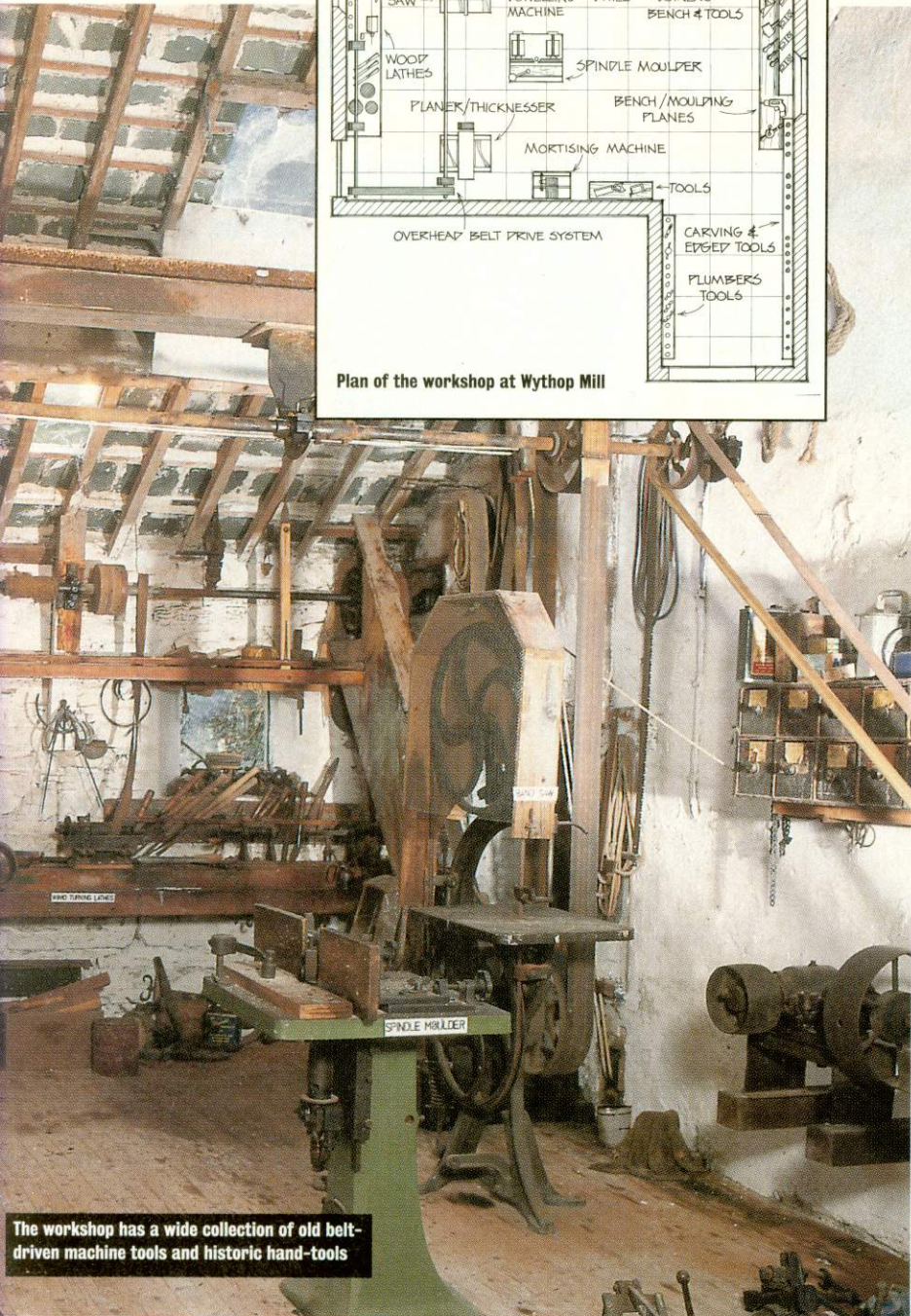
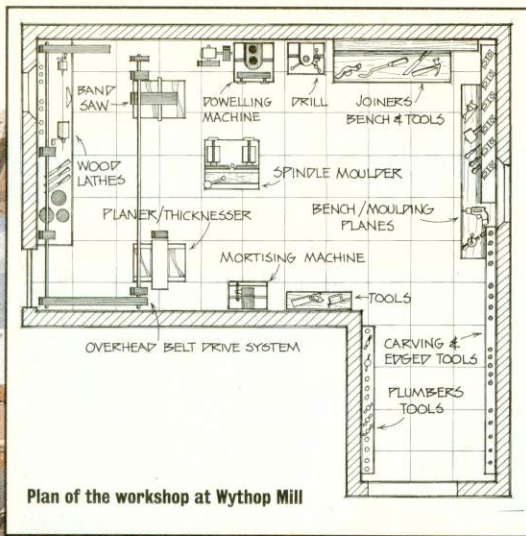
on anything associated with timber," said John, who decided to buy the mill as his whole family had lived there since the beginning of this century.

The museum includes a coffee shop and restaurant where home-made meals are served. The catering business is kept in the family and is run by John's wife Patricia and their two daughters.

The museum is open all year to the public except for January. From November to January the museum opens on Friday Saturday and Sundays only. For more information contact John Sealby ☎ 017687 76394.



Power from the water wheel is still used to power a lathe in turning demonstrations. Old chisels and turning tools that have been passed down through the centuries are still in relatively good condition



Some of the tools and machines have been donated by enthusiasts. A spindle moulder and bandsaw are part of the tools on display at the mill that have been used more than 200-years-ago



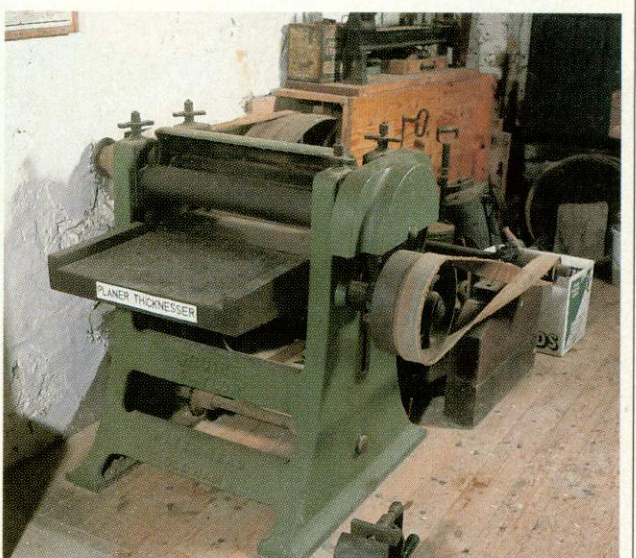
The unique angular boring machine was used for boring large diameter holes in heavy timber. It is portable and adjustable to any angle with rack and pinion action. It guarantees accurate holes at precise angles. They no longer exist



Not all the tools originate at the mill. John buys old tools from antique and farm sales. Part of the tool compilation is a treadle lathe and collection of planes



Trained as a joiner, John has a genuine interest in tools. He is a member of the Tools and Trades History Society (TATHS) where expert knowledge changes hands



You have to watch your clothing on the belt of the planer thicknesser. They didn't have belt guards in those days! This woodworking machine in cast iron was made by Squire Taylor and originates from Lancashire

Bending a yew towel rail



Introduce curves into your woodwork by making a laminated towel rail, following Edward Hopkins' step-by-step instructions



Towel rails are a necessity in the bathroom for keeping damp towels off the floor, so why not make them as attractive as possible? Adding curves to the rail gives it a touch of originality while still keeping the functional aspect in mind.

Three Curving Methods

It is something of an irony that trees grow in sweeping curves. However the woodworker, even if he is to reproduce these natural lines in a piece of furniture, first saws all the usable timber into straight square baulks. Having annihilated its graceful shape, he spends the rest of his time working the wood trying to get it back.

Most of his machinery and tools dictate straight lines and they can produce rectilinear work efficiently at a rate of knots. Once he has decided to introduce curved components in a project however, he has to prepare himself for a lot of work, a lot of waste or both.

There are three main ways to produce a curved component: cutting from the solid, steam-bending, or laminating. Each method has pros and con.

Cut from the Solid...

Where a curved component is essentially a flat board with shallowly curved sides, cutting from the solid is the obvious solution. It is often the simplest and best approach for components such as the back legs and

PROJECT GUIDE

DIFFICULTY: Intermediate
TIME: 25 hours
TYPE: Furniture

backs of dining chairs. They can be marked out on a board and cut out using a bandsaw or jigsaw. There is bound to be extra waste involved but if several similar components are required, they can be marked out 'stacked' together to minimise this. Where just two components are needed, they might be arranged top to toe. Allow a margin between each for the sawcut.

If the component is heavily curved, cutting from the solid is likely to create an area of short grain which is very much weaker than the normally desirable long grain. Look at the antique tilt-top tables to see how many feet have dropped off at the short grain ankle.

It sounds like wishful thinking but it really is possible to find boards of timber cut from curved tree trunks with the right grain direction so that your curved component has long grain throughout its length.

Possible, I said, not easy. Go looking for them and you might never be seen again. Rather, if you've got the feeling that a bit of curved work is over the horizon, buy them when you find them.

...Steam-Bending

Bending with steam has no short grain problems but it has other limitations. Only a

few woods are suitable although these have been used to outstanding effect. The back hoop of old stick-back, or 'Windsor' chairs is often one piece of yew. Curly hat stands and American rocking chairs are of bent beech. Ash steams beautifully.

It's almost magic that the stiff straight stick of timber comes out of the steam chamber decidedly pliable. It still isn't totally compliant and it cools rapidly so it must be wrapped round a mould and cramped into place quickly. Once this system is established, steam bending is efficient, involving little waste. But for one-off work it is probably not worth setting up.

...or Laminating

By laminating you glue several thin layers of timber together in a curved mould. It is quite practical for a one-off job, like this towel rail, and has no short grain problem. The dried laminate is likely to be stronger than the steam bent equivalent because the wood is not put under such duress and has no inclination to split or to straighten. Any timber can be used as long as it is cut thinly enough to bend. The glue lines might be apparent on the finished piece but straight-grained timber will, at first glance, have merged back into the solid.

The timber, being cut originally as straight pieces, can be cleaned up prior to shaping, a virtue it shares with steam bending. This removes the need for all the spokeshave and sanding work, which cutting from the solid involves. This does not hide the fact that the preparation of many thin strips of

timber for laminating is wasteful and takes time.

The furniture industry uses 'construction veneers' for laminating. These are much thicker than decorative veneers used for inlay and are commonly of plainer woods like beech and oak. Being only 1mm or 2mm

of the curve you are to laminate, you will be able to use thicker strips and may well be able to prepare them yourself. Indeed, it can be an ideal opportunity to use up some offcuts which are not fit for much else.

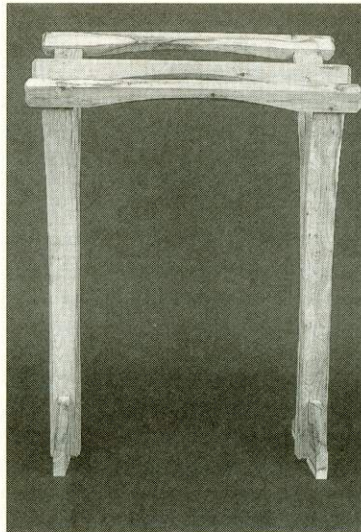
The strips need to end up smooth and regular if you are to stand a chance of getting the glue lines to disappear. Planing or sanding them by hand is not going to be an enjoyable operation so you will need to use some machinery.

One side of the block to be cut into strips can be surfaced on a planer. Normally you would saw a component from this and then thickness it. But although some planer thicknessers will cope with thin strips, down to 3mm, others, especially their bigger brothers, are just as likely to chew the wood up and spit it (noisily) out. It is better not to rely on thicknessing.

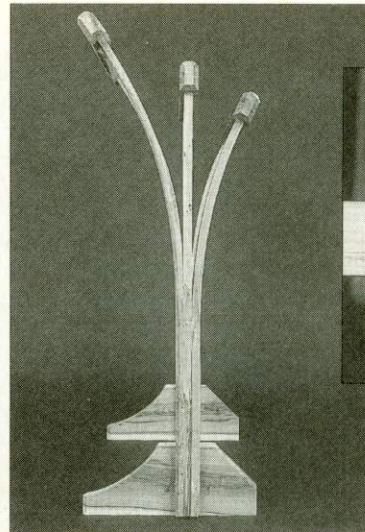
To that end the cut of a fine-toothed blade on a tablesaw produces a cut clean enough to need no further preparation. The cut of a bandsaw is not clean enough. If a bandsaw is all you have, finish the strips with a belt sander but do try not to round them over or, again, glue lines will show.

How to Laminate

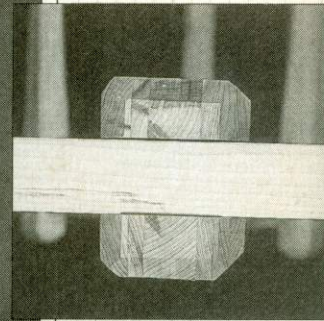
The towel rail has a central pair of straight supports and two pairs of curved



The towel rail is simple and elegant, with no lower rails to get in the way of towels



From the side you can see how the uprights splay out from one point



The foot joins the bottom of the uprights with a bride joint. The chamfers raise the uprights off the floor for a lighter effect

Trimmer mitres



For trimming mitres on the ends of each rail, nothing surpasses a mitre trimmer, a sliding guillotine blade and locking mitre fences. Professionals swear by them.

thick, they are very pliable and can be sandwiched with adhesive and cramped in presses to form contoured chair parts or curved cabinet components. But the timber will only respond to a curve in two dimensions, for example a cylinder. A three-dimensional curve, for example a dome is not possible, although slight distortions can be achieved.

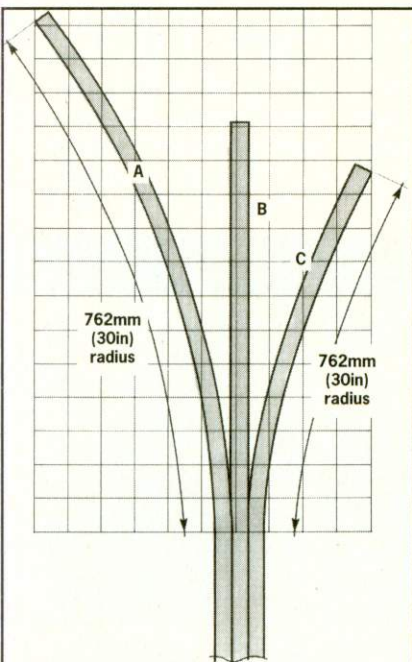
You will be able to buy construction veneers from a veneer merchant but beware of the high prices.

Preparation of Strips

Depending on the tightness



The towel rail was made by Richard Green, a professional furniture-maker



You need to plot out the curve of the uprights before you can make the formers for laminating

MATERIALS YOU WILL NEED

- **TIMBER**
Yew
Softwood
- **UREA FORMALDEHYDE**

TOOLS YOU WILL NEED

- **CLAMPS**
- **BANDSAW**
- **TRAMMEL BAR**
or stout string
- **SPOKESHAVE**
- **PLANE**
- **SAW**

laminated uprights, each of which comprises three strips of yew, something more than 3mm (1/8in) thick.

Although two strips might hold a curve, it's expecting rather a lot, so consider three to be a minimum. Technically, the more, and therefore thinner, strips you have, the stronger and more stable the laminate. However remember that for every one of these cut on the tablesaw, an equivalent amount of timber disappears as sawdust.

Rather than working to a drawing, I processed the most appealing pieces of yew to discover how much usable timber I had. The strips were

cut extra wide to allow for planing to size after gluing. Knowing that the middle strips were to be all but invisible, any pieces with defects were relegated there.

A mould is essential and the heavier it is, the better. It must be at least as wide as the laminates because the edges need to be especially well cramped. I used 75x175mm (3x7in) sawn softwood, available from larger builder's yards, which was ideal for this job. Mark the shape of the component accurately because the laminate will hold its shape pretty faithfully. Note that strictly speaking, you need to remove a strip of wood equal

in width to your laminate sandwich, that is by making two bandsaw cuts, not one. This is obvious on components with thick sandwiches or tight curves where the inner mould will have a tighter radius than the outer mould.

There comes a point on larger flatter work, however, where just one cut can be made because the shape of the inner and outer moulds is so similar and any discrepancy can be absorbed by heavy-handed cramping.

The towel rail was, thankfully of the second easier type. Just one slow accurate cut was made to separate the moulds. Note that although the front and the back pairs of laminates are of different sizes, they are of the same shape and only one mould is necessary.

The Gluing Up Stage

It is worth using urea formaldehyde adhesive (Cascamite type) for laminating because it is waterproof and rigid. I was surprised that this is not stocked by the superstores but it is easily available at builders' merchant.

As with all gluing up, go through a dry run first, arranging

WARNING A thin strip of wood caught between table, sawblade and fence can turn instantaneously into an arrow and shoot off the table with equal disregard for human flesh. Equally some thicknessers will break up thin material. If you want to thickness the laminates down to about 2mm or 3mm you will need to put a false wooden table in your thicknesser, with a stop at each end to ensure the table does not slide.

cramps and tightening them fully to check that the laminates will behave themselves.

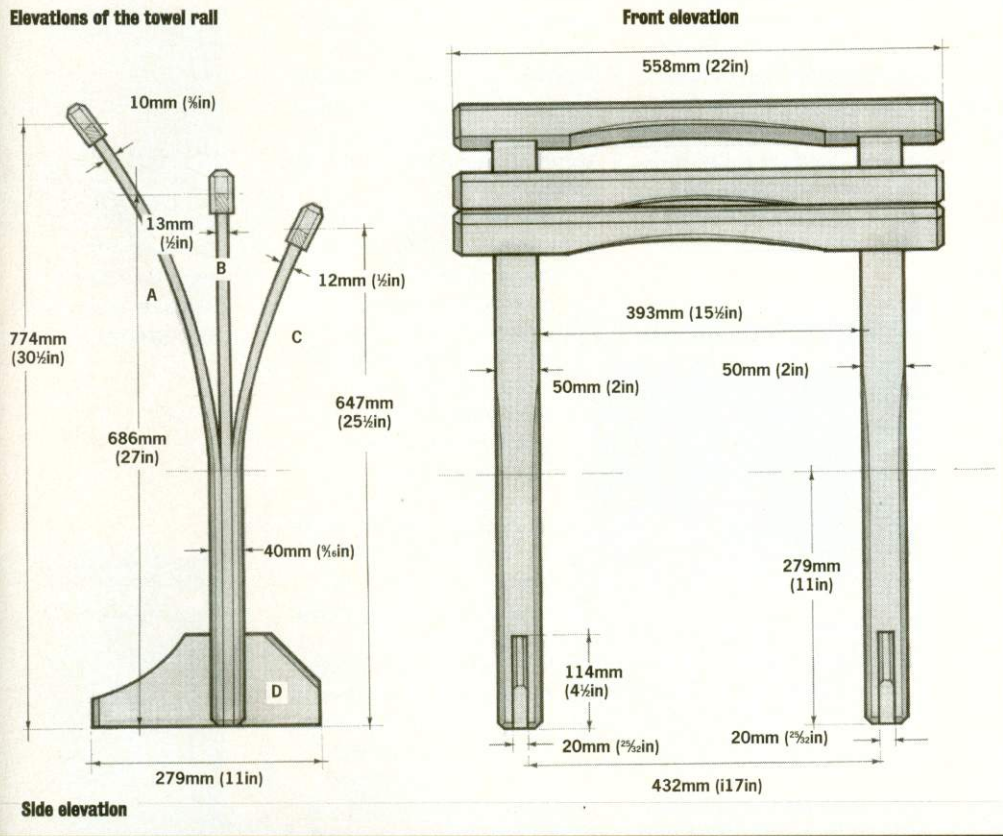
It will now become apparent why the laminates have to be cut oversize. As each is pasted with glue, the sandwich laid roughly in the open mould and the cramps wound in to begin the bending, they will slip and slide sideways. If too much glue has been applied it gets extremely messy.

Tighten all cramps bit by bit, and keep pressing the laminates back in place. A little later they will settle down and now you can tighten the mould as strongly as the cramps will allow. Use as many cramps as you can sensibly fit over the mould and distribute them evenly.

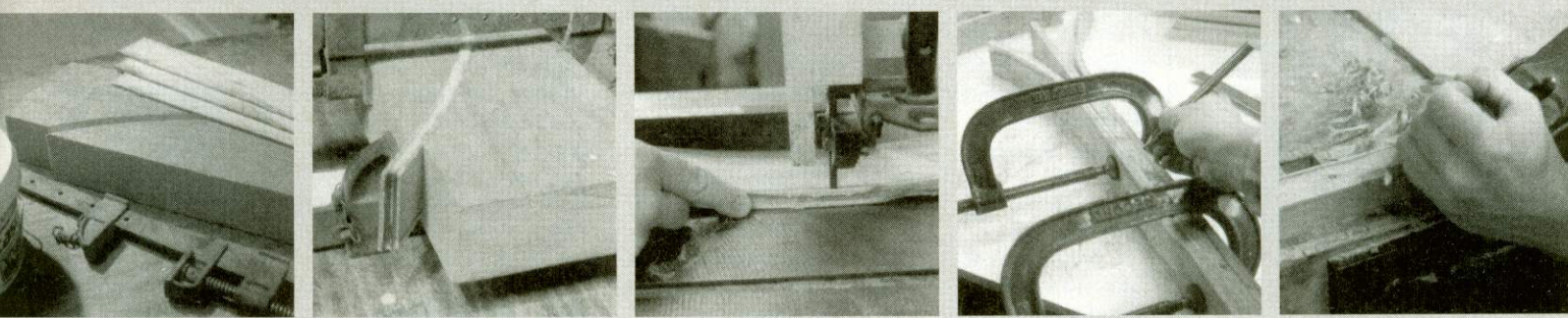
Setting up the gluing of the first laminate will take some time, but successive parts will be straightforward. Needing to prepare four identical components, I simply glued up another one each day, first thing. It would be possible to glue up two of these components nestled together but if any more were attempted, the middle ones might lose the shape.

When the laminate is dry it should fall easily from the

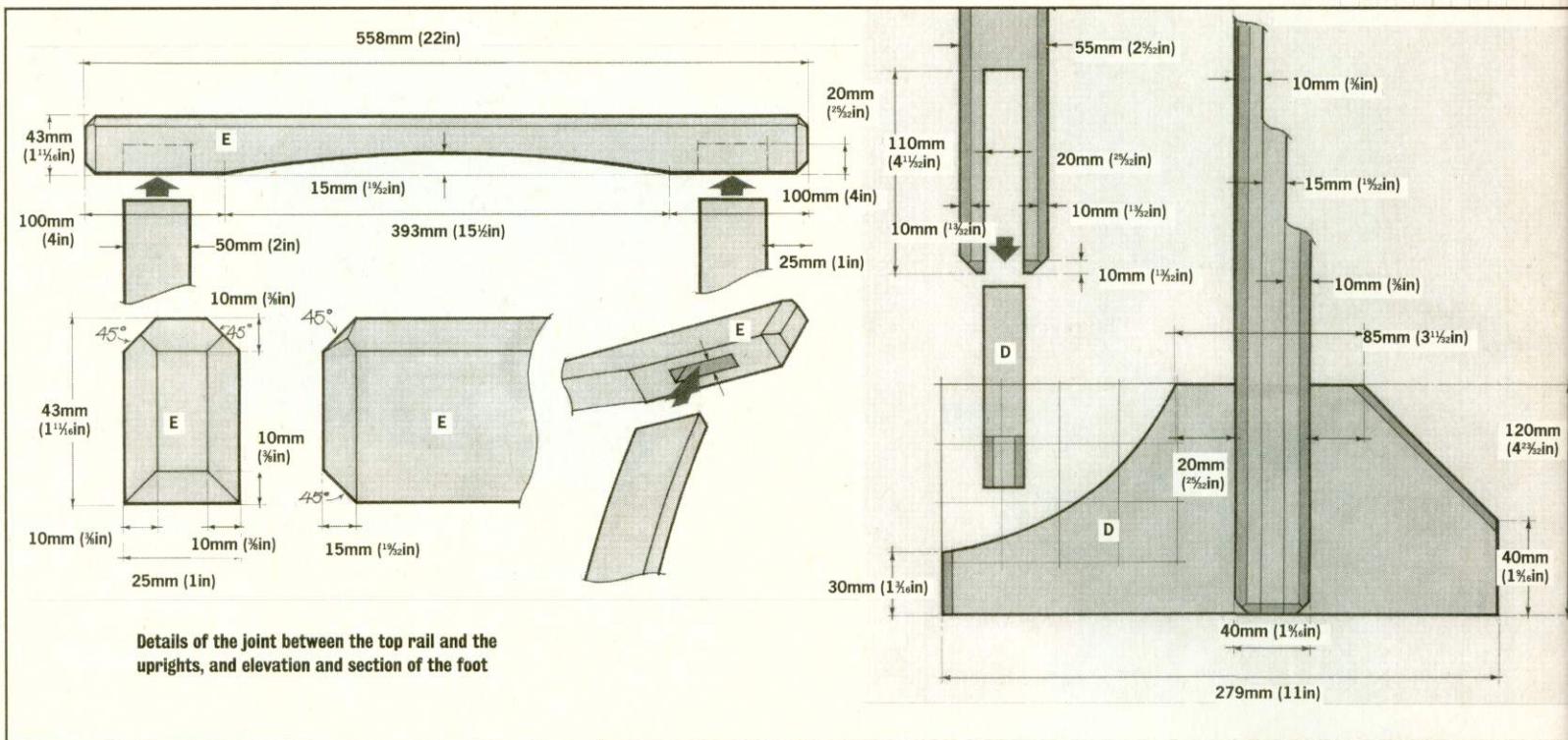
Elevations of the towel rail



How to make the laminated towel rail



- 1 Start by cutting the formers from softwood. Before you do any gluing make sure you are fully prepared
- 2 If you use too much glue the laminations will wander around. Cramp up the formers gradually
- 3 Once the glue has set take the pieces from the former and clean up the edges with a bandsaw
- 4 Dry assemble the uprights using a few G-cramps so that you can mark the point at which they splay
- 5 Cut out the rails for the towels and chamfer the edges with a plane or on a router table if you have one



opened mould. If any glue has stuck, tap it firmly sideways with a hammer. Clean all dried glue from the mould or it will imprint the next sandwich.

Step-by-Step Towel Rail

1 Prepare the timber. The central uprights (B), the rails (E) and the feet (D) are prepared from the solid. Produce enough laminates to make the front (C) and back (A) pairs of curved uprights.

2 Make a mould by bandsawing a baulk of softwood. Be as accurate as you can in the marking out (use a trammel bar or a length of stout string as a compass to mark the ark) and in the cutting. Spokeshave away any hiccups.

3 Glue one set of laminates and cramp them in the mould. Remove them when the glue is dry and repeat the same process for the other three components.

4 Plane one edge of each laminate flat and square to its faces. Using this edge as a guide, bandsaw the other edge parallel but keeping it still oversized. Saw each upright to length. Sand or scrape as necessary to produce a good finish.

Each group of three uprights can now be glued together at their lower flat surfaces. Again, the glue will tend to squidge the components out of line so try to keep some control.

5 Plane one side of the dry assembly flat and the other

at its finished dimension parallel to it. Surprisingly (well, it surprised me) this was performed beautifully on the planer and under the thicknesser, feeding the triple upright stem first.

6 The feet are bridled onto the stem of the uprights. The foot is recessed first and the stem fitted to it.

7 Mortise the rails. Make these joints snug because the structural integrity of the piece relies on them.

8 Dry assemble the whole unit and check that everything is square and parallel. On a piece like this you don't have to get overly upset if it isn't spot on.

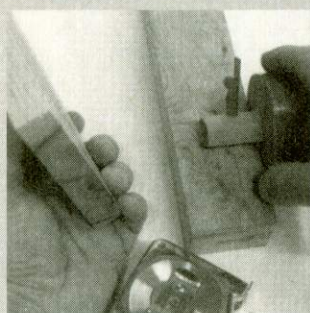
9 Disassemble the unit and apply the shallow curve

Towel Rail Cutting List

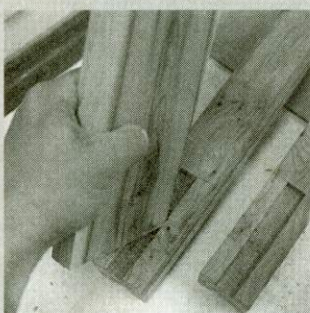
	MATERIAL	QTY	LENGTH	WIDTH	THKNS	
A	Rear upright	Yew	6	774mm 30½in	50mm 2in	3mm ¼in
B	Central upright	Yew	2	686mm 27in	50mm 2in	13mm ½in
C	Front upright	Yew	6	647mm 25½in	50mm 2in	3mm ¼in
D	Foot	Yew	2	279mm 11in	120mm 4¾in	20mm ¾in
E	Rail	Yew	3	560mm 22¼in	43mm 1¾in	28mm 1¼in

Cutting lists give the full length of a piece including the joint, but not wastage. Allow 25mm (1in) extra for length and 5mm (¾in) on the width and thickness of sawn stock

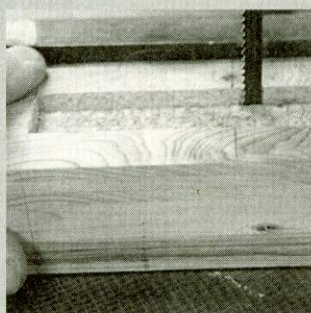
under the rails and various bits of chamfering as you see fit. Give all the components one last final sanding and reassemble the piece, this time with glue.



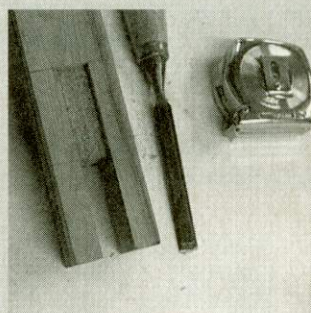
6 Mark out the bridle joint at the bottom of the uprights once they have been glued up



7 Chisel out a housing in the bottom of the uprights and check its fit for the feet. The joint needs to be tightish



8 Remove the waste from half the length of the bridle joint using a bandsaw, jigsaw or handsaw



9 Note that when you groove the foot to fit, the groove needs to account for the housing at the top of the joint





APT C

APT C BS350 Bandsaw

The APTC BS350 two-speed Bandsaw is fitted with a powerful 1 HP induction motor. Well constructed of heavy gauge steel plate with very solid cast iron ground table, this bandsaw has an outstanding rip fence assembly that is quick to set and use.

The optional mitre/crosscut fence features 90 and 45 degree angle stops that can be accurately set and are ready to use time and time again.

This is an all-round, excellent value for money machine for home or light trade use. The BS350 is supplied with the original genuine American dark grey Cool Blocks™, APTC Swedish Steel Bandsaw Blade, quality ball race bearings and an outstanding rip fence, all as standard equipment.

£399.95 inc VAT Carriage U.K. Mainland - £15.95

BS350MF mitre fence £19.95. BS350FS floor stand £39.95
BS350CCJ circle cutting jig £14.95. All prices include VAT.

Technical Specification

Blade speeds	300/1000m/min	Number of wheels	2
Table size	400x400mm	Blade length	96"
Table tilt	0-45°	Blade width min	3/16"
Cutting depth	150mm	Blade width max	3/4"
Cutting width	350mm	Motor power	1 HP
Diameter of wheel	370mm	Weight	80 kgs



APT C BTS10 Table Saw

An excellent light duty bench saw for the small workshop. Manufactured to a very high quality with an excellent mitre fence, rip fence and blade guard. The saw has as standard a 2" dust collection outlet.

£159.95

inc VAT

Carriage U.K. Mainland - £9.95

Supplied complete with 10" TCT rip saw blade and mitre fence.

Technical Specification

Diameter of blade	10" 250mm	Bore size	5/8" 16mm
Max depth of cut @ 90°	3"	Tilt	45°
Table size	26" x 16"	Blade supplied	30T TCT Combination Blade
Motor power	240v1.5 hp	Weight	14 kgs

Choose Axminster

APT C APW1000DE Dust Extractor

A mobile and compact unit with a powerful 1 HP motor giving a 1000M³/hour flow rate. A very popular unit for a single machine in the small workshop.

Supplied as standard with 2.5M 4" quality flexible hose (longer lengths of which are available upon request).

£159.95 inc VAT

Carriage U.K.

Mainland - £9.95

Optional Accessories:

APHDBAG
Waste Sacks (10) £9.50
QFMS
Quick Fit Metal Strap
£5.60

Technical Specification

Hose diameter	4"
Approx bag collection capacity	2.5 cu.ft
Airflow	1000M ³ /Hr
Approx overall dimensions	600x360x1400
Weight	35 kgs
Motor	1hp, 240v



APTC CT150 Jointer - Surfacer

Manufactured of cast iron, on a very substantial steel cabinet stand (all included in the price) with an excellent fence and all fully guarded to comply with current legislation, fits into any workshop whether the user be DIY, industrial or an exceptionally keen enthusiast. The three knife cutter block gives an outstanding quality of cut. It has good length tables without being too bulky, accurate without becoming too fiddly and offers value for money.



£299.95 inc VAT

Carriage U.K.

Mainland - £9.95

Spare HSS 6 Blades per 3
£19.95 inc VAT

Technical Specification

Width	150mm
Rebate facility	12.7mm
Length of table	1180mm
Type	HSS Resharp
No of knives	3
Max depth of cut	2.0mm
Weight/Motor Power	160/1.5 H.P.



APTC CT318 Thicknesser

Portable unit, ideal for site or workshop use. The CT318 will accept a full 12" wide board and with a depth capacity of 6" will cover nearly all site requirements when preparing timber.

£329.95 inc VAT, Carriage U.K. Mainland - £9.95

HSS Knives CT318 (2) £20.00 inc VAT

Technical Specification

Max width 12 ¹ / ₈ "	Feed speed 8mm/min	Type/No of knives HSS/2
Max thickness 6"	Max depth of cut 3mm	Weight/motor power 30kgs/1560watt

er reliability...with confidence

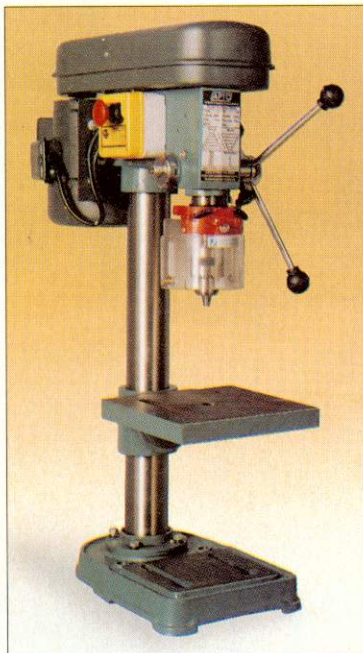
APTC CH10 Bench Drill

An ideal lightweight bench drill with a 1/2" chuck No. 2mt quill assembly, well constructed and fitted with micro-switched belt guards and no volt release switch. The unit, whilst solid, is not too heavy to move around workshops.

£149.95 inc VAT

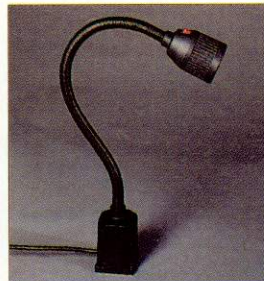
Carriage U.K.

Mainland - £9.95



Technical Specification

Drill speeds	5,370-2400rpm
2mt quill	1/2" chuck
Max drilling capacity	16mm
Throat depth	130mm
Height	740mm
Weight	37 kgs
Motor	1/4hp, 240v



APTC Stayput Low Voltage Work Light and Transformer

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APTC Clearview Low Voltage Work Light and Transformer

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Carriage U.K. Mainland - £3.95

Mounting Bracket £5.99 inc VAT

Mounting Clamp £7.80 inc VAT

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LATHE:**
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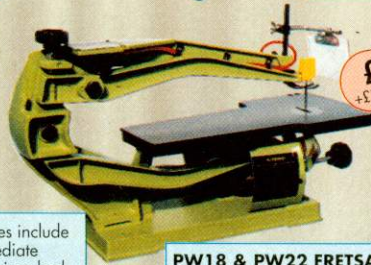


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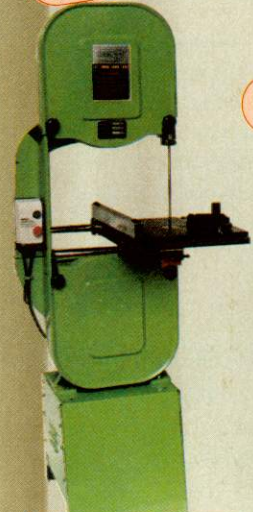
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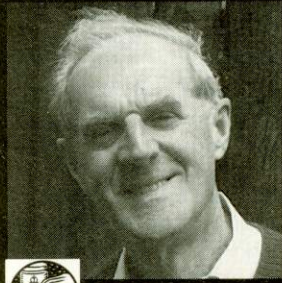
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Woodworking Answers

Plans for a Wendy house and bagatelle game, finishes for turning and MDF, advice on lathes, warped wood and more



AUSTIN HILDITCH
Finishing

Rev counter design

 How do you design a rev counter for 8, 50, and 80 revs? These are the revs needed for a wool skein winder. Each rotation gives one metre. The problem starts when counting to 50 or 80. I had thought of a simple wooden cog and pawl for the lower numbers but 80 is a bit much in wood.


W. Small, Edinburgh

Try using a mileometer from a bicycle. This should give the number of revolutions. Alternatively use a rev counter from a reel to reel tape recorder. You may even be able to use the tape recorder mechanism to wind the wool.

You could make a cog and pawl mechanism to count in combinations of 8 to 40 notches with the cog marked off with a paint dot on each 8th notch and the 40th notch being denoted with a different colour, and of course twice 40 gives you 80, and to get 50 revs another colour on the appropriate notch.

Ken Jackson

MDF finish

 I am making kitchen furniture out of MDF, and if I try to paint or stain varnish it, it will soak either up like a sponge. How can I cure this problem?

R. Bint, Doncaster

As a base for paint MDF is excellent and is only moderately absorptive. Use a primer that is suitable for wood. This also acts as a seal. Follow this with normal undercoat and topcoat.

Staining is more varied. Penetrating dyes are not good but coloured varnishes go on well. You will find it best to put the first extra coat on by rag but you should get satisfactory results with either rag or brush.


The characterless surface of MDF means that the varnish finish is also characterless, none the less you may prefer it to paint. I suggest you try it on a bit of waste.

Whatever you decide to try, it is best to use an oil (solvent)

product, as water-based products roughen the surface.

Austin Hilditch

Preservative colour

 I made a working model windmill (wind operated), with a 37in long sail span painted white, as was the top of the tower. Due to the intricate structure of the sails this took a lot of time having been given several coats of wood preservative, primer, undercoats and topcoat.


I know there are several colours of wood preservative but I do not know whether a white colour is available. I am not aware of coloured wood

dyes (Rustins Colorglaze) but I do not think this would be suitable for exterior use. Any suggestions? O. Dullea, Glos

I do not know of any white wood preservative that leaves a protective surface coating on the wood. Rustin's White Haze Colorglaze is suitable for exterior use but you should note that it does not have the opacity for an ordinary white satin or gloss finishing paint. It is intended for use on wood so that the grain will still be apparent. If you wish to give extra protection without using additional coats of Colorglaze that would obliterate the grain you could apply an exterior acrylic varnish which although milky white whilst liquid,

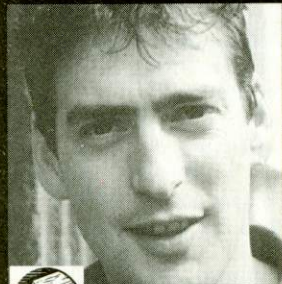
dries to a clear film that would not discolour the paint. R. Clark

Warped wood

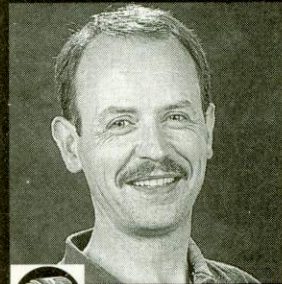
 I moved to an old house which had been partially renovated. About a year ago the original pine doors were stripped of the old paint but this has led to some of the fielded panels warping so badly that wide splits have occurred. Can you suggest a means of curing this or the name of a supplier of wide, thin panels suitable to replace the damaged items? Certain areas of the doors show a damp appearance and feel greasy. I understand



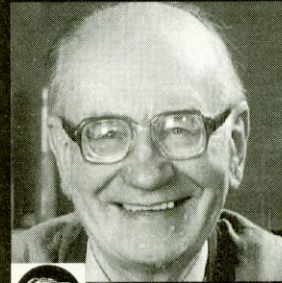
TOBIAS KAYE
Turning



NICK GIBBS
Timber



PHIL DAVY
Workshop



ROY SUTTON
Power-tools

Bathroom door cabinet

I have just made a bathroom cabinet 24x18in. The carcass of MDF went together beautifully, but not the doors. They were made from 1x2in framing with a plywood infill. I overlooked the allowance I had to make for the groove and consequently all eight mortices were 1/4in too long. Then of my eight mortice and tenon joints, three ended up so that the stiles and rails were not in the same plane. When the doors were hung one was in winding and stuck out at one corner by 1/4in. It looked awful. I did lash it up and the finished, looks quite good but what would you do in my place? I also made a small cabinet using 1/2x6in deal. It was

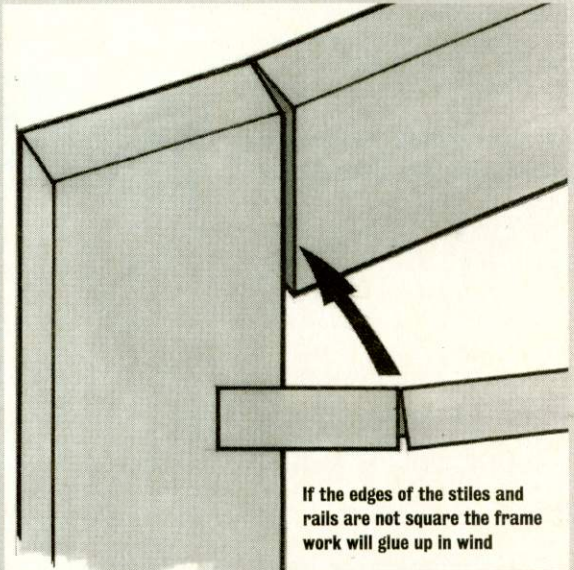
in the hot weather and the wood was terribly bowed. I didn't trust myself to cut it to 1/2x3in, edge joint and plane it flat. What should I have done? If I bore a hole in end-grain for dowelling, almost invariably the bit wanders and the joint is inaccurate. John Hunt, Surrey

So much depends upon the selection and preparation of timber for good work. The problem with your door frames I expect is that the timber was not planed up well enough. Do not assume that pre-planed wood (as bought from a timber yard) is straight or square.

Certainly it helps to joint panels up if you want them to stay flat. It is not the complete solution but it helps. If possible hold the panel in a groove or with turnbuttons. It is important that the panel can expand in a groove across its width but does not bow or cup.

Drilling into end-grain is notoriously difficult. You really need to hold the wood and the drill so that it cannot wander off line. Professionals use what is known as a horizontal borer. The drill is horizontal. The piece of wood is held on a table with a clamp. You then plunge the drill into the wood. You can do this with a drillstand or pillar drill but you will need a fence to which you can clamp the wood. The trouble with drilling into end-grain is that the drillstand is not high enough. What you have to do is turn the base of your drill around so that you can position the drill over the edge of a bench. Then you can clamp the workpiece to the bench and drill into the end-grain.

Nick Gibbs




If the edges of the stiles and rails are not square the frame work will glue up in wind

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


usually have to travel to get the best of anything. Devon is a lovely area and my phone number is ☎ 01364 642837. Brochures are free. **Tobias Kaye**

Fittings search

 Where can I buy good quality solid brass saw handle screws, cabinet fittings, and hinges, not mass produced. **Nigel Pyton, Fairford**

Brass saw handle screws are available from Axminster Power Tool Centre (☎ 01297 33656). Choice of mushroom or csk head at £1.41 each. For hinges try Isaac Lord (☎ 01494 462121) or Martin and Co (☎ 0121 233 2111). **Phil Davy**

Mitre machines

 Is there an automatic electrical mitre machine on the market for the speedy production of picture and tapestry frames? **W. Cocker, Lancashire**

The two main suppliers of mitring machines are Morso and a Spanish firm Orteguil. Both manufacture floor sanding treadle operated mitre guillotines. They are fitted with two knives which operate in such a manner that with small sections two mitres can be cut with one stroke. This greatly speeds production.

At least one of the firms mentioned produce an electrically operated model but people in the picture framing business tell me that although the power-driven machine works perfectly well they get faster production from the foot operated models.

I have a hand-operated Orteguil and as I do not go in for high volume production I find this adequate. The quality of the machine is excellent and it produces perfect mitres. This type of mitring machine power, foot or hand operated, is the only type worth considering by the serious framer. Contact

Plans for a Wendy house

I have some sketches and notes for Mr Daniels (GW 23:63) who wants plans for a Wendy House. The completed house can be dismantled and stored up against a wall in a shed or garage.

① Use heavy duty hardboard, MDF or ply for main construction. Mount batten frames with 1in face to the board.

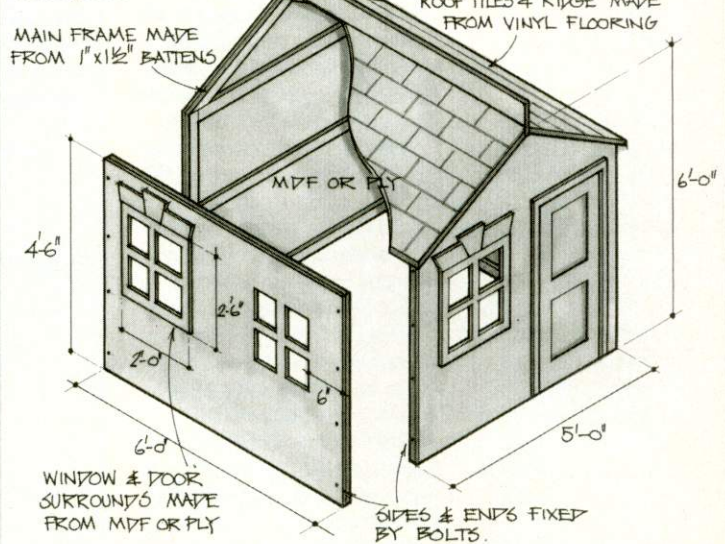
② Fix the roof in place with four bolts placed in holes drilled in frame battens of roof and house ends. Cut ridge tiles from vinyl floor covering in one long piece. Heat and bend, then cut out to shape. Place a length of ply or hardboard in the middle to make rigid. Tack and glue in place on one side of the roof only, to allow roof to fold for storage. Cut two roof sections and hinge them together at the apex. Place batten frames 1½x1in on bottom half of roof section only leaving 3in of board at each end free to form an overhang on the eaves.

③ Drill holes, four in each side batten on the house ends and then drill corresponding holes in the side boards to take ¼in bolts and wingnuts.

④ Window frames are made of 1½x¼in batten, nailed and glued onto house sides, allowing for a small rebate on the inside of windows to accommodate PVC or polycarbonate window panes. The ornamental lintels are made from hardboard or ply and pinned and glued in place. Cut out window openings, then outline and strengthen with the 1½x¼in batten butted together or lap and halving jointed.

⑤ Finish the exterior and interior with emulsion on walls. Undercoat windows and doors and apply two coats of gloss. The door cut out can be strengthened with an overlay of plywood or battens fastened to the piece you have cut out. A further piece of board nailed and glued over the top to make a solid door is then hinged in place. A door handle or knob and a ball catch can be fitted. You can cut the top

Detailed plans for building a Wendy house



panel for the door to give the impression of a panelled door by placing the battens carefully.

When I made one it was more or less a permanent fixture and I fitted a fold-down table and benches (seats) and window boxes with real plants in them and a small garden where the kids grew seeds. When I made mine I took the measurements of the roof width from the roof slope on the end section of the house. I used 1½x1in battens for the frame because I was able to cut my own on the sawbench, but you could use standard 2x1in planed, straight from the supplier. The batten frames can be screwed and glued in place or nailed and glued, 1in side down so that the widest side takes the bolt holes.


Kenneth Jackson, Norfolk

You cannot believe how useful your plans have been. Only the other day a friend rang me to ask if I could make one. **Nick Gibbs**

Orteguil at Method Tools, PO Box 2, Disley, Cheshire SK12 2NN, ☎ 0663 762187.

Roy Sutton

Honey coloured pine

 I am building furniture with Columbian and parana pine. How do you get the golden honey coloured finish like the pine furniture in the shops. **A. Miller, York**

Pine furniture is finished in a number of ways. The simplest is to use a coloured wax polish, like Bri-wax, Black Bison, Cuprinol; all come in several colours. Wax finishes are not highly durable

but are easily renewed. With the honey colour refinishing may mean no more than an occasional polish with an ordinary wax furniture polish.

Much pine furniture is finished with a thin coat of a coloured cellulose sealer, giving a surface with a faint sheen. You can get this finish by giving a thin coat of a coloured varnish. Use a solvent type that can be thinned with white spirit. Using the product straight out of the can may give a thicker, shinier finish than you want. Thin with white spirit. Wiping on with a rag may be better than brushing. Both give a smooth surface. Some

pine is finished so that the grain stands up as it will on older, often washed wood. Get this effect by staining with a water-based stain and then polishing with a natural (uncoloured) wax. Do not sand between staining and polishing. Some pine workshops use tea, which gives the right colour. It is a case of brew to taste. Swab on liberally and fast to get a uniform stain. Wipe off any excess.


Some pine furniture may be finished with a clear lacquer usually giving a glassier finish either gloss or matt according to the lacquer used. The slight yellow or golden shade being the natural colour of the lacquer. If this is the finish you want, use a simple clear polyurethane varnish. The colour changes as the pine ages, the difference will be more noticeable than if you use a colour in the beginning. Apply thinly to get more of a polish than a varnish finish.

Columbian pine is usually evenly coloured but parana pine often has strong brown and red colouring. This will not be hidden

by any of the treatments, although the contrast will be reduced. Mostly both these timbers accept finishes uniformly but there may be some variation especially in the sapwood and of course a good finish depends on good preparation.

Austin Hilditch

Turning finishes

 I have everything necessary to make turned objects. How do I get a really good finish? **R. Wright, Preston**

Sand and polish. Abrasives and polishes are not as much fun to buy as tools and accessories but do not be tempted to use any old abrasive you have in the workshop. J-Flex by Hermes (available from CSM Trade Supplies ☎ 01273 559660 or Peter Childs ☎ 01787 237291) is a cloth-backed, flexible, long lasting abrasive, ideal for the turner. The latest type of J-Flex is RB406, available in 80, 120, 240 and 320 grits (CSM send trial packs with 1m of each of the four grits for £9.88). The

Good Woodworking ANYTHING PLANNED? ANYTHING

Need plans to build a project? Write to Anything Planned, Good Woodworking, 30 Monmouth Street, Bath BA1 2BW.

① Thanks to F. Gibson of Lincoln who has details re Alan Stewart's query on 5x4 Gandolfi style cameras. Send a SAE to GLP, 28 Bradley

Road, Nuffield, Henley-on-Thames RG9 5SG for information. **Nick Gibbs**

② Thanks to Ken Williams of Kent who has copies of plans for toy forts and castles for Mark Purves of Scotland (GW 25:62), taken from the latest *Hobbies Handbook*. **Nick Gibbs**

basic sanding technique is to start with 80 or 120 grit and work through to 320 grit and then to burnish the work with wood shavings. Keep the abrasive moving to avoid burning or unwanted lines.

For safety move the tool rest out of the way when sanding or polishing. Wear a disposable mask (EN 149 FFP 1 or 2) or a turbo type helmet during sanding and use a dust extractor.

Another new product is Webrax non-woven nylon web which has abrasive grains firmly bonded throughout the web. This is available from CSM in 280, 360 and 1500 grits and is ideal for burning and for applying polish. Both J-Flex and Webrax can be washed and reused.

In a small workshop I suggest you avoid polish with a solvent base which have unpleasant fumes and are inflammable. The safest to use are oils such as Rustin's Danish or Liberon's Finishing Oil which are easy to apply and give a pleasant satin finish. Friction polish in sticks produced by Liberon or Record is economical and easy to apply. My third choice would be a liquid friction polish such as Record Speed-an-Eez. It has a solvent base, but it gives an excellent shine finish.

Ian Wilkie

Polishing problems

Before French polishing an aquarium top which I have made of parana pine

faceted ply, I sander sealed it, but there is one patch where the polish will not take, despite having cleaned it off several times and rubbing it with fine wirewool and white sprit and again with cellulose thinners. Each time a bare patch of slightly rough wood is left. How I can remedy this?

P. A. Lister, Surrey

Sand the whole surface back to the wood. Don't be too heavy handed as the top surface of the parana ply is rather thin. Avoid rubbing the wood with bare hands which can transfer grease onto the surface. Varnish the surface with polyurethane varnish diluted 50/50 with white spirit. Leave to dry for 24 hours and then gently denib with 400 grit abrasive. Remove any dust, again avoiding touching the surface with your bare hands, and apply an undiluted coat of varnish. Leave again for 24 hours in a dust-free atmosphere and gently rub over with 0000 steelwool. A final rubbing with wax polish should result in a good finish which will be more water resistant than conventional French polish and is undoubtedly easier to apply.

Ian Wilkie

Softwood grading

There are different types of wood in the grouping of softwood and a grading system is applied, but I have failed to find any publication which gives the facts in detail so that I can ensure that timber I

Brass closed eye search

I am looking for a brass closed eye, part threaded rod to make indoor hanging baskets, length preferably 125mm to 150mm and diameter about 2mm to 3mm.

Sammy Knox, Warwickshire

EYE APPROX. Ø12MM

Ø2-3MM

THREAD 25-40MM

125-150MM

Can you help Sammy Knox in his search for a brass eyelet?

buy is of the right quality. Can you help?

L. R. Grottick, Derby

Consult the British Standards or the grading rules published by timber trades associations in softwood producing nations such as Sweden, Finland, Canada, and the USA. Textbooks do not cover the subject in any great detail.

There are three types of softwood grading, stress to BS 4978, joinery to BS 1186 and commercial appearance grading. Stress grading to BS 4978 is grading softwood for structural use. There are two grades for softwood that has been visually graded: GS (General Structural)

and SS (Special Structural), and four grades for softwood that has been graded by a stress grading machine, MGS, M50, MSS, M75. The grade is stamped on the face of the board. Stress grading is an assessment of the load carrying capacity of the board. It does not take the appearance of the board into account.

Joinery grading to BS 1186 part 1 has four grades based on the timber's appearance: Class 1 for high quality or specialised joinery, Class 2 and Class 3 for general purpose joinery and Class CSH (Clear Softwood and Hardwood) for joinery made from clear softwood and hardwood.

The third type of grading is commercial appearance grading. You will find commercially graded softwood in timberyards. The grading is based on the appearance of each board. Commercially graded softwood is available from Sweden, Finland, Russia, Poland, Canada, the USA and Brazil. The highest grade is Unsorted. This is a mixture of first, second, third and fourths and can be used for joinery and high class work. Fiftths can be used for carcasing, constructional work and flooring and the lowest grade, sixth can be used for general low grade end uses such as packing cases.

More details of commercial grading can be obtained from Swedish Finnish Timber Council, 17 Exchange Street, Retford Notts DN22 6BL; Council of Forest Industries (COFI), Tileman House, Upper Richmond Road, London DSW15 2TR (Canada); Southern Pine Marketing Council,

Regent Arcade House, Argyll Street, London W1A 1AA (America). Russian commercial grading rules have never been published.

Martin Cook

Garden furnish finish

I am making a garden bench using iroko and want to finish it with teak oil. Could I improve the wood's natural resistance by applying a proprietary wood preserver before applying the teak oil. Will I get the same finish from the oil when it is applied on top of the preservative?

Stephen Turner

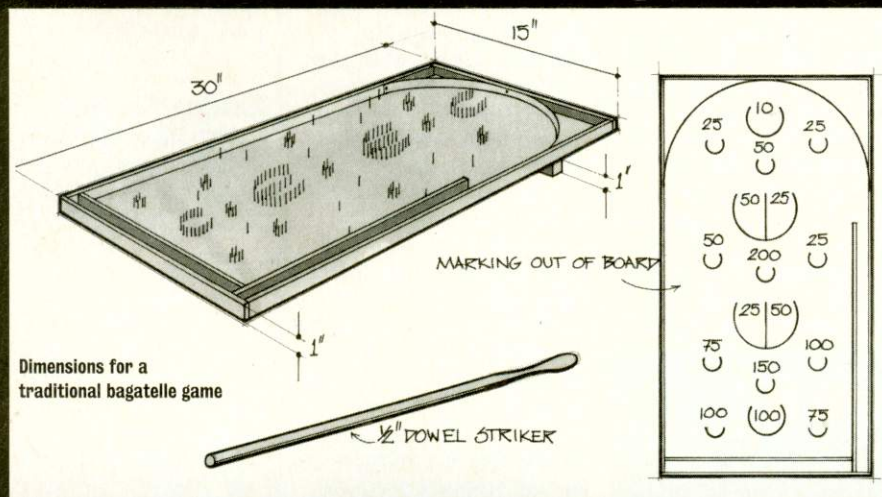
Iroko is one of the most durable of woods. It should last 20-25 years and may, with a little maintenance, give you a seat for twice this time. The preferred treatment is teak oil, mainly to provide protection against the weather and to reduce dirt retention. Treatment needs to be repeated every one to two years.

There is nothing to be gained by treating it with wood preservative now. Perhaps in five to 10 years time when its natural preservative is falling, a double treatment of a clear wood preservative followed by teak oil, may be beneficial.

Use a full wood preservative, such as Cuprinol Wood Preserve Clear. It protects against wet rot and is suitable for outdoor use. Thompsons Water Seal and similar products are water repellent. Reducing water and uptake can help to extend the life of wood in some uses but they do not and are not claimed to prevent decay.

Austin Hilditch

Plans for a bagatelle game



Dimensions for a traditional bagatelle game

Here are details of a pin bagatelle game which W. Taylor of Liverpool may find useful. Use plywood 30x15x $\frac{1}{8}$ in thick. The surround is 1x $\frac{3}{8}$ in with the inside slats $\frac{3}{8}$ in away from the frame. Mark out the pin circles with a compass. Make the largest

two 127mm in diameter and the next about 76mm. With a bent strip of aluminium bent into a semi-circle pin it to the top and side to form the guide. The striker rod is made with $\frac{1}{2}$ in dowel with the end and the neck sanded to shape.

Morris, Southport

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The winning boxes won more than £1100 worth of Elu equipment in total. Kenneth Bateman's copy won him a MOF96E router. He also won an Elu sander for running-up in the original section, behind Terry Otter, who won a Triton Workcentre. Brian McCall, coming third, won an Elu biscuit jointer

The 1994 Good Woodworking Show Elu Boxmaking Contest

The categories

When we introduced the Elu Boxmaking Contest in September 1994 we offered you the chance to copy Pete Martin's version, or make one to your own design. The best copy of Pete's box would win an Elu MOF96E router. Elu were also awarding a Triton Workcentre to the best original box, with an Elu belt sander and biscuit jointer going to second and third.

Though a fair number of readers ordered a kit of parts for Pete's box, the majority of entries were of original design. The makers employed all manner of techniques, so impressing the judges.



Jeremy Broun reviews the winners and some of the other entries in the Elu Boxmaking Contest which were on display at the Good Woodworking Show

One of the greatest challenges in woodworking is to make a box. It brings together all the skills of planning, preparation of material, marking out, joint cutting, gluing up and finishing, not to mention design, the way it looks, the way it works and how it is made. It is all the more difficult when the scale is so small as the slightest imperfections will show.

If I were to design a box from scratch, I would first look at what the box is

intended to hold, and then look at novel ways of how those objects can be contained, accessed and secured. It might involve a departure from the traditional four-sided box with hinged lid, to a more

novel concept, using the wood to perform the mechanical function.

This competition offered two challenges: to design and make an original box, and to make a replica of Pete Martin's shown in the September issue (GW 23:40). In fact Pete came to my aid, along with Phil Davy to judge the entries on the Saturday of the show.

I have taught boxmaking projects to students in top colleges in the UK and Ireland in

recent years and even the most competent of them can come unstuck during gluing up or the final finishing of the piece.

Above all I looked for precision craftsmanship when judging the boxes, wielding an engineer's try square to check for accuracy. The nastiest test is to check trays and lids fit any way round in or on the box. I was also looking for innovation and originality.

The entries for the open competition were diverse and interesting, demonstrating a range of techniques from dovetail, lap and mitre joints to brick and coopered construction. I found the small details often distinguished the winners from the others, though the quality of finish has an instant effect upon one's first impressions.



The boxmaking competition was judged by furniture-maker Jeremy Broun, Editor Nick Gibbs and Technical Editor Phil Davy. They were looking for technique, quality of finish, originality, innovation and function. Many of the entries were only let down by tiny details



The jointing on R. Towell's miniature barrel box is particularly difficult, and some of the glue lines are a little untidy. However it is an interesting idea, with the barrel supported on two log feet. Notice the brass banding around the ends

You can hardly see it in the picture but the dovetails on the tray of Anthony Smith's box slant the 'wrong' way. Instead of splaying out like the tails of doves the tails are actually smaller at the end than at the stem



Joe Murphy's pine box is an adventurous entry, with an unusual jointed pivoting front flap giving access to an interesting inner drawer



Kenneth Bateman not only made the best copy (above) of Pete Martin's box but also won the Elu sander when his tea caddy (right) was awarded second prize for original designs. The copy has been excellently made in cherry, demonstrating the maker's competence. The inset tray cushions perfectly like a piston within its seating and rotates to fit the other way just as well. The tea caddy, veneered in rosewood with sycamore lining and ebony and boxwood edge bandings is superbly made. The hinging lid sits inside the raised sides making the geometry demanding. The addition of exotic flavoured tea bags makes this box even more tasty. Only the noticeable abrasive paper marks on the lid lets this box down. Only that stopped Kenneth Bateman winning both of the sections with his two boxes

winner
.....
COPIED BOX



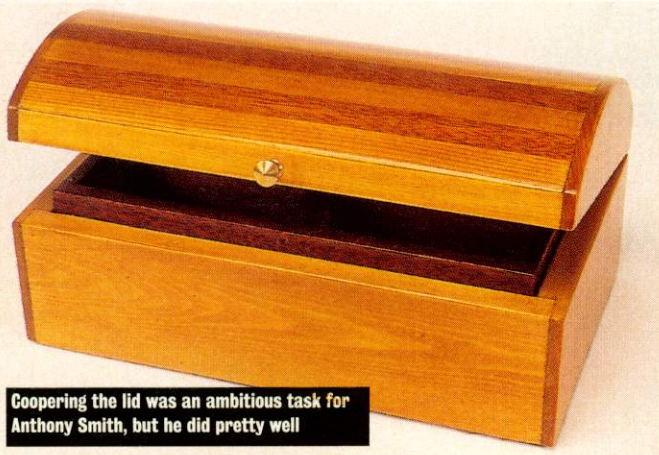
second
.....
ORIGINAL BOX



We could not ignore the little item J. Pajak sent with the box (overleaf) for which he was justly commended

We commended Edward Freeman's copy (below) in teak, but sadly it was let down by a treacle-like finish. Otherwise it was well made. A hexagonal box (right) is never easy to make, but K. Padgham made a superb effort. Sadly the tray could fit a little better in each position





Coopering the lid was an ambitious task for Anthony Smith, but he did pretty well

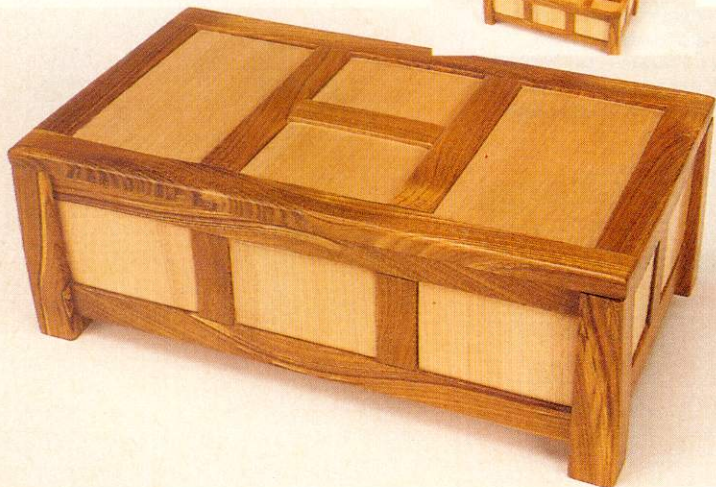


There were not many circular boxes in the competition, but George Brereton's was the most ambitious, combining coopered techniques with turnery. A lot of work has gone into the box, especially as George has used recycled wood. However you can find some marks from the abrasive. That does not detract from it being an intriguing box



David Gilbert's oak and walnut box is eye catching with a good combination of timbers, but it is let down by the hinges. Frank Gregory's brickwork box (right) has a good finish to bring the grain alive. At first glance J.

Pajak's Arts and Crafts style box catches the eye with its tapered panel and frame construction. On close inspection it lacks the crispness of the winners, and has a few open joints, but deserves to be commended for its overall effect



Made of laminated cherry, with walnut bandings and a veneered walnut top Terry Otter's winning entry (above) has clean understated lines and is immaculately made. This small box has a joyous feel. The eye is drawn to the mitred joints which fit perfectly. The hinged lid is also true. This is no mean task on a small box. One minor criticism is that the screwheads do not line up. Brian McCall's tiny box in bird's eye maple and mahogany veneer is also superbly made. Well deserving of third prize. The top is so well made I cannot tell where the veneer joins the solid, and I am not often fooled. A particular feat is the precise location of the lid both ways and the excellent finish. The maple enhance the simple design

Jeremy's tip

When using hinges makes sure the hinges align diagonally or all in the same direction.



WORKSHOP SALE

Selling your old router or looking for a bargain biscuit jointer? This is the place for readers to buy or sell anything to do with woodworking, up to a price of £500. All a space on this page will cost you is the price of a postage stamp. If you are selling an item more than £500 there is a nominal fee of £10

A FREE SERVICE TO READERS

FOR SALE

POWER-TOOLS £25-£100

Moulding cutter head for DeWalt radial arm saw with full set of cutters boxed, £75. Large hand morticer with chisels, £50. L. Dangerfield, Kent, ☎ 0580 752265.

POWER-TOOLS MORE THAN £100

DeWalt 250 mitre/chop saw 240V, as new, £145. Brian Heaney, Warwickshire, ☎ 0203 338138.

Dust collector two inlet hose 240V 2hp motor 8000rpm, little used, £180. A Martinelli, London, ☎ 081 539 8068.

HAND-TOOLS £25-£100

Primus planes, legendary German craftsmanship. Lignum/hornbeam dovetail construction. Jack model 703P and rebate 710P also similarly made Ulmia double stem marking gauge. Super condition and all for £100. David Dawson, Surrey, ☎ 081 647 1718.

Drill set, unused with steel stand 1/2"x64ths, chrome steel (USA), £10. Russell, Devon, ☎ 03646 43123.

Axminster Power Tools mitre cutter attachments: top trim, £8, cut length attachment, £12, both boxed, new, unused. John Hayward, London, ☎ 081 534 5093.

MACHINERY £25-£100

DeWalt bandsaw with extra blades, £85. P. Palmer, Chichester, ☎ 0243 641363.

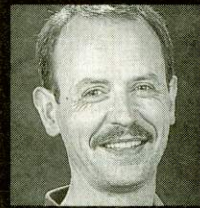
Three speed lathe by J Dennison of Leeds with 13in centre 5in bed. Ideal starter lathe £50. B&D drillstand with vice, £25. B&D circular saw attachment D984 £5. K. Davies, Cheshire, ☎ 061 439 2061.

Stanley USA 45 in original box, offers. Stanley 93, £30. Hitachi cordless hammer drill, 12V, case, charger, needs battery, £40. S. Roberts, Manchester, ☎ 061 789 5147.

Chucks, rest, faceplate for graduate lathe. A. Keating, Manchester, ☎ 061 736 3739.

MACHINERY

MORE THAN £100
Coronet royal (red) three speed lathe 48in between ends with 8in circular saw and morticer attachments, full range of woodturning tools, books (new equipment such as electric grinder,



PHIL'S BARGAIN BUY

Technical Editor Phil Davy picks his bargain of the month and tells you why

It is unusual to see contemporary wooden planes for sale second hand. The Primus planes offered by David Dawson (☎ 081 647 1718) are superb tools and delightful to use. The 12V Hitachi cordless hammer drill from S. Roberts (☎ 061 789 5147) looks good value. Check the price of a new battery first, though.

sharpener, goggles, masks, £500. Brian Kilagannon, Devon, ☎ 0752 791025.

Peter Child Masterchuck for Tyme Avon lathe, complete with wood jawplates, 1 1/2in and 3in jaws all in good condition, £65. Ken Chappell, W. Yorks, ☎ 0274 598616.

Elu DB180 lathe 1.1KW motor, NVR switch, £375 (ONO) 1000mm

between centres, up to 380mm bowls, revolving tailstock holed for boring two standard tool rests and mounts one long screw faceplate, cup chuck, three jaw adj chuck drill, chuck adaptor very good condition. C. Young, Essex, ☎ 081 550 6541.

Kity 308 combi saw and spindle moulder (some cutters unused), 10in TCT sawblade (rise, fall and tilt),

£1200 or near offer. W. Baker, Liverpool, ☎ 051 427 5649.

Myford ML8 lathe on custom stand includes precision chuck, faceplates, O/B attachment £375, Mike Bonathan, Hants, ☎ 0705 461339.

Woodrat as new 10-months-old, with extras to the value of £500, for sale at £320. P. Howell, Crewe, ☎ 0270 663069.

Poolewood 1803 18in bandsaw 2hp plus many blades, may need new switch, £300. Elu MOF31 router 1200W 1/2in and 3/4in collets and a few cutters, £100. D. Simcock, Staffs, ☎ 0889 570432 (after 6pm).

Kity 10x6 planer thicknesser, spare blades. Buyer collects £495 (ONO). L. Brown, Leicester, ☎ 0533 674462.

MISCELLANEOUS

Emir workbench 60x30in, £300, TCT circ. sawblades 250x30, 20 tooth, £30, 9x1 1/2in 40 tooth, £20. New three wing raised panel cutter 30mm bore, £139 new, offer price £80. Anon, Berks, ☎ 0344 28115.

WANTED

Diamond or Hegner fretsaw. L. Dangerfield, Kent, ☎ 0580 752265.

Good basic carpentry books needed for rural African training workshop in the Gambia. Charles Hayward or similar. Tom Parker, Gambia, ☎ 00 220 495409.

Arcoy cutters No.4-9 for multi pitch unit, Arcoy housing attachment. B. Jones, East Sussex, ☎ 01797 260522.

Morticing attachment to fit Elu planer thicknesser, model EPT1901. B. Pryer, Essex, ☎ 0206 44674.

Manual for Powerline bandsaw BBS20 mark 2, will pay photocopying, or does anyone know who took over Powerline? Rod Farnaby, Exeter, ☎ 0392 832551.

Arcoy dovetailer cutter tool attachment, or will buy whole machine and any other attachments for the same. R. Eastlake, Northumberland, ☎ 0670 510596.

Record RPS825 sawbench or similar. T. Mayfield, Derby, ☎ 0332 875651.

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Back to basics

No.28 Morticing by Edward Hopkins

Joints of any description will always be the weak area in a wooden structure, simply because a lot of the timber has been removed and with it, strength. Often, however, it is the joint which is expected to do a

lot of work, holding together, preventing twisting and resisting turning. It is therefore important that joints be cut accurately, especially in finer work using more slender components.

Many joints are easily

accessible to saws of various sorts but the most common, the mortice and tenon, requires the digging of a deep dark hole where a completely different approach is required.

Hand Mortice Machine

It is such a particular job that one tool has been devised for this and no other purpose. Electric morticing machines are now fairly common, replacing their forerunner, the cast iron morticer.

This wonderful hunk of machinery comprises a chisel on the end of a lever. With it you can go open-cast mining in the hardest

of timbers. The carriage arrangement for holding the workpiece is similar to the electric versions. The chisel is arranged to flip round to cut the other end of the mortice (bevel inwards) and the whole procedure can be accurate and efficient.

The one main drawback is major. As the heavy chisels cut downwards, their large bevels tend to compress the waste in the hole they are digging. Thus morticing becomes a two-stage operation, first off cutting the shape, and secondly removing the waste (sometimes entirely by hand). It's rather like

producing a mortice in oak already filled with a tenon of chipboard.

Electric Morticing

The morticing machine is one of the most enjoyable of all woodworking tools to use as it effortlessly cuts square holes with engineering precision.

The business end comprises a flat-bottomed auger spinning inside a square casing sharpened to guillotine standard. The casing (the 'hollow chisel') chomps into the workpiece and the auger breaks up the wastewood, disgorging it through a hole in the upper casing, thus enabling the

What is a good fit?

A standard mortice should be dead square and at right angles to the face of the timber. It is usually cut first and the tenon fitted to it simply because it's much easier to adjust a tenon than a mortice. The two parts of the joint should slot together without much more effort than applied by the side of your fist. Cut the mortice several mil' deeper than the tenon will require. This ensures that tenon will not be restricted.

Produce mortices with only chisels

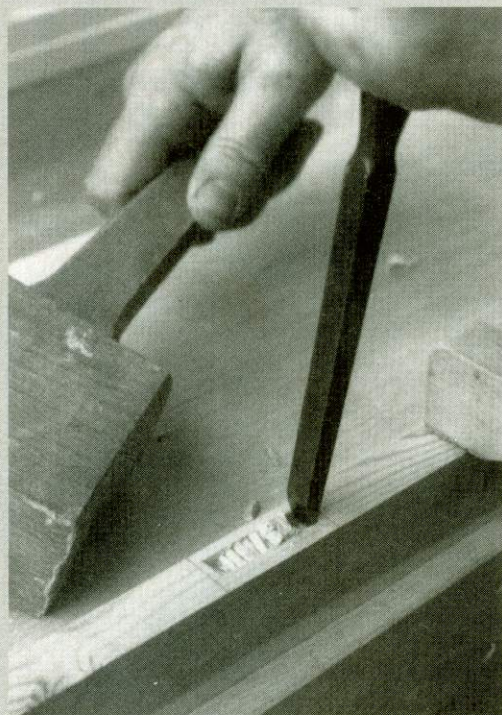
Failing all of this, and if you really like crawling on your hands and knees, you can produce perfect mortices using nothing but a chisel and a mallet.

Mark out the mortice but work well within the

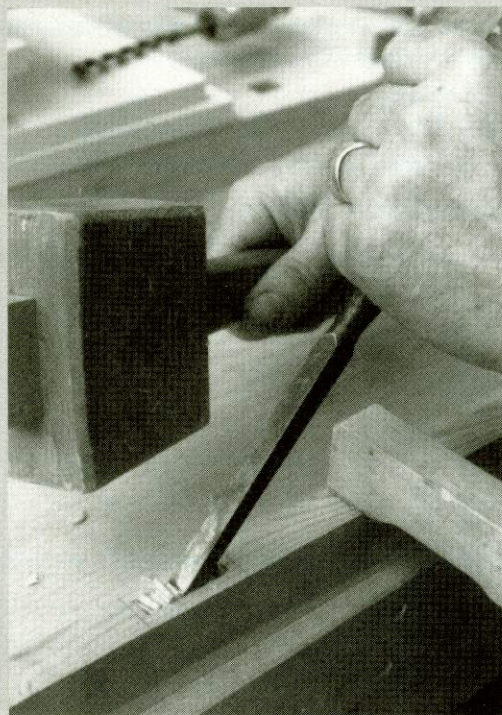
lines until you have reached the correct depth. Wrap a piece of masking tape around your chisel to know when that is.

Only then move back out to the final marked

lines. You will see by then why this is advisable. The edges of your previous hold will have become rounded over and battle-scarred from all the heaving and hoeing.



1 When you start cutting a mortice by hand it is important to stay within your marks. Initially just cut vertically to break the fibres. Mark the depth of mortice on your chisel



2 Now feather the fibres by chopping at an angle. Again do this in a series of cuts the whole length of the mortice. For this operation you can keep the bevel facing upwards



3 Remove the waste with the bevel downwards, and repeat the previous process. You will tend to pivot the chisel like a lever, compressing the fibres at each end

chisel to progress deeper and so on.

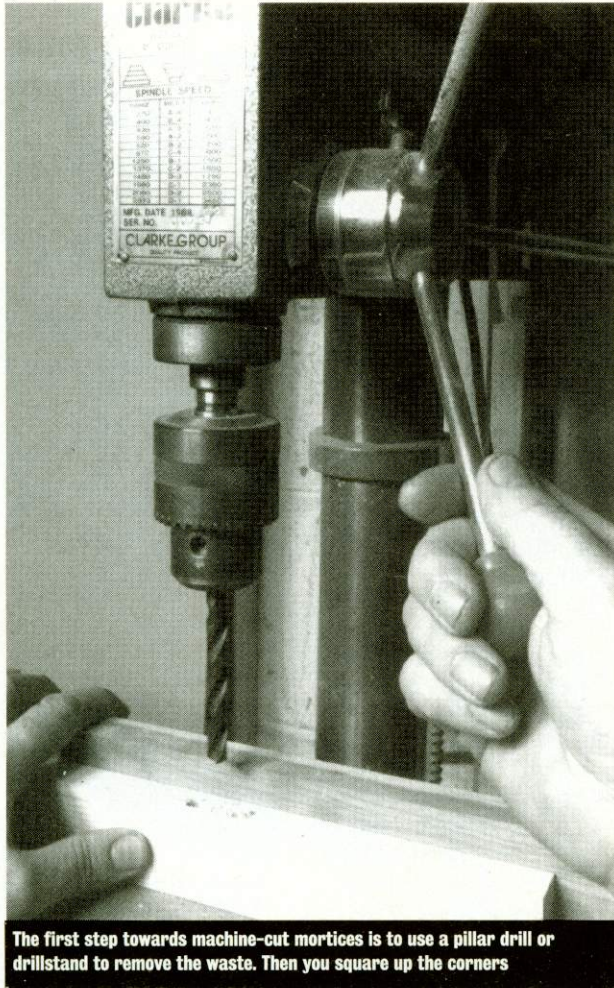
The workpiece is held secure in a sliding carriage operated by handwheels. Thus it can be moved sideways and (less usually) front to back to elongate the mortice. The length of the mortice, as well as its depth, can be regulated by stops which restrict the movement of the workpiece and the chisel.

Once it is set up, the morticing machine can cope with the mass production of identical tenons, each taking merely seconds to execute, without even the need to mark them out. Setting up for one-off work takes very little time and is worth the effort for even one mortice. Changing chisels takes a couple of minutes.

The Combi Machine

Many combination machines have a facility for morticing which consists of a router-type cutter protruding sideways from the main body of the machine. The workpiece is clamped to a table and moved onto the cutter then side to side.

This is not the easiest or most versatile configuration for morticing but it would suit some repetitive work. Indeed it is a method used industrially where, rather than squaring up the end of



The first step towards machine-cut mortices is to use a pillar drill or drillstand to remove the waste. Then you square up the corners



The ultimate in morticing for most woodworkers is the hollow chisel morticer which cuts the joint accurately and quickly. Watch out for future test

the mortice, the tenon is cut with a rounded end to fit it.

The rounded tenon cannot be as strong a joint as the conventional square version but of course if it is machined accurately, it will beat any competitor which is made sloppily by hand.

Drill Press Accuracy

Even without the morticing attachments, a drill press makes a valuable contribution to accurate morticing. The twin problems of removing the waste and ensuring a square-sided mortice are dealt with in one action, and, if blocks and fences are secured on the table, repetitive work is viable.

Having marked out each tenon, fit the thinnest drill bit you have which is capable of reaching the bottom of the mortice and drill right down, tight into the four corners.

Using the widest bit that will fit in the mortice, giant lumps of waste can now be removed. A flat bit does this well but only if

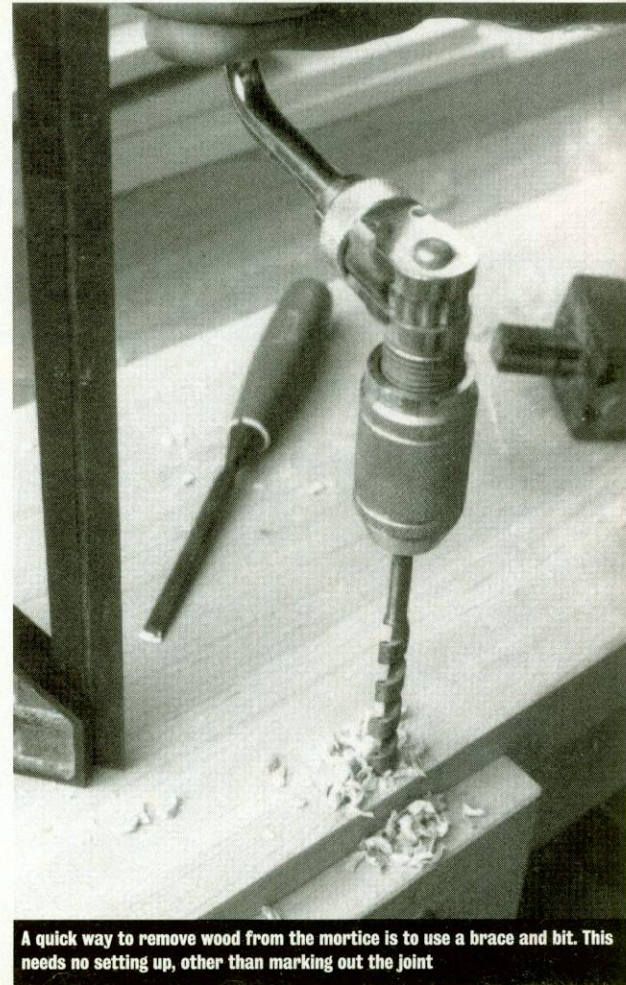
there is sufficient timber beneath the mortice that the tip does not protrude.

Each of these holes should be started on fresh wastewood. If you try to drill the holes too close together, the bit will take the line of least resistance and will skid sideways into its neighbour.

Set a depth stop, even if it's only masking tape wrapped around the bit, so that the mortices are of uniform depth.

Removed the remaining waste by chisel. Use your widest chisel for the sides and, ideally, another exactly the right width for the ends. Keep them both in perfect condition.

Hold the chisels near their cutting edges with the heel of your hand on the workpiece so that you have close control. Strike the handle with a mallet. The ends, where you cut across the grain, take more effort than the sides. Scrape out the loosened waste with the smaller chisel. The drilling, if accurate, will give you a



A quick way to remove wood from the mortice is to use a brace and bit. This needs no setting up, other than marking out the joint

Alternatives

No professional cabinetmaking workshop could exist without a morticer for long. However for the amateur they are, being rather expensive, something of a luxury.

Recognising that the morticer is essentially an elaborate drill press, manufacturers have come up with smaller, simpler models and attachments for existing pillar drills. These alternatives, because they are relatively lightweight, are likely to be less accurate but nonetheless very useful.

clear indication of the squareness of the mortice.

Brace and Bit

While most of this equipment is somewhat specialist, the hand-held electric drill is ubiquitous and helpful with mortices. If you prefer your woodwork unplugged, you will be removing the waste from mortices traditionally with a brace and bit.

Here you cannot depend on machinery for the all-important squareness of the cut. An experienced joiner will rely on his skill, born of practice. Along the way he

will have had to check that he's holding the drill or brace truly perpendicular both sideways and front to back. This can be made easier by sighting against known uprights (door etc...) or squares propped on their side, maybe using mirrors to get a truer view.

These holes are not as true as those cut by the other methods, but you have one more chance to correct them. As you are chiselling away the waste, pay attention to the perpendicularity of the chisel, checking it either by eye or with a small square set against the workpiece.



After using the brace and bit you have to square up the mortice. The holes need waste in between for the bit to bite

BACK TO BASICS
NEXT MONTH
WORKING ORDER

Back to Basics so far

We have already covered many subjects for beginners in our monthly Back to Basics series. If you want a back issue contact our Hotline on 0225 822511.

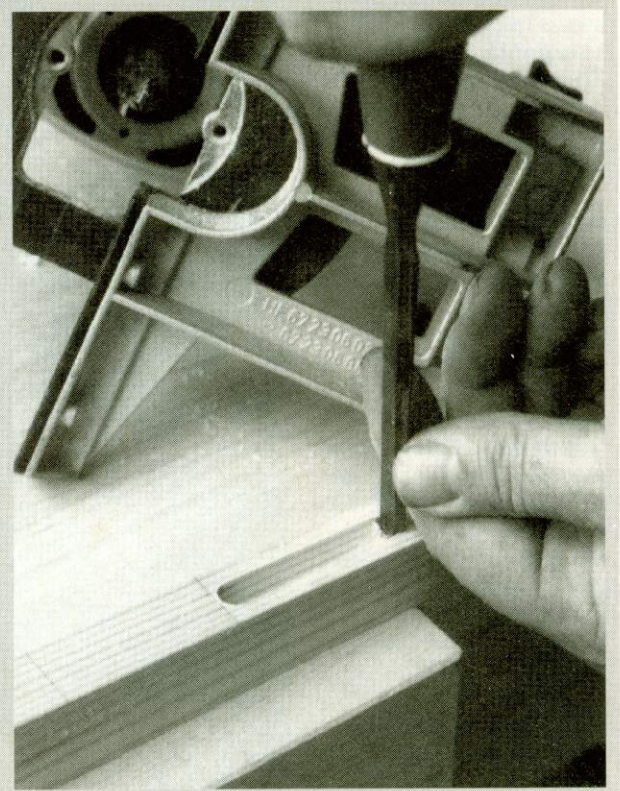
- Timberyards (Nov.92) ● Buying hardwoods (Dec.92)
- Preparing timber (Jan.93) ● Gluing (Feb.93)
- Planing (Mar.93) ● Veneers (April 93) ● Chiselling (May 93) ● Holding wood (June 93) ● Screwing (July 93) ● Nailing (Aug.93) ● Marking out (Sep.93)
- Finishing (Oct.93) ● Estimating (Nov.93) ● Hinging (Dec.93) ● Mortice and tenons (Jan.94) ● Stringing (Feb.94) ● Panelling (Mar.94) ● Drawing (Apr.94)
- Grain (May 94) ● Long joints (June 94) ● Wood stores (July 94) ● Using spokeshaves (August 94)
- Choosing a saw (Sept 94) ● Drawboring (Oct. 94) ● Workshop layout (Nov. 94) ● Planning a project (Dec. 94) ● Picture framing (Jan. 95)

NEXT MONTH – Working order in the workshop

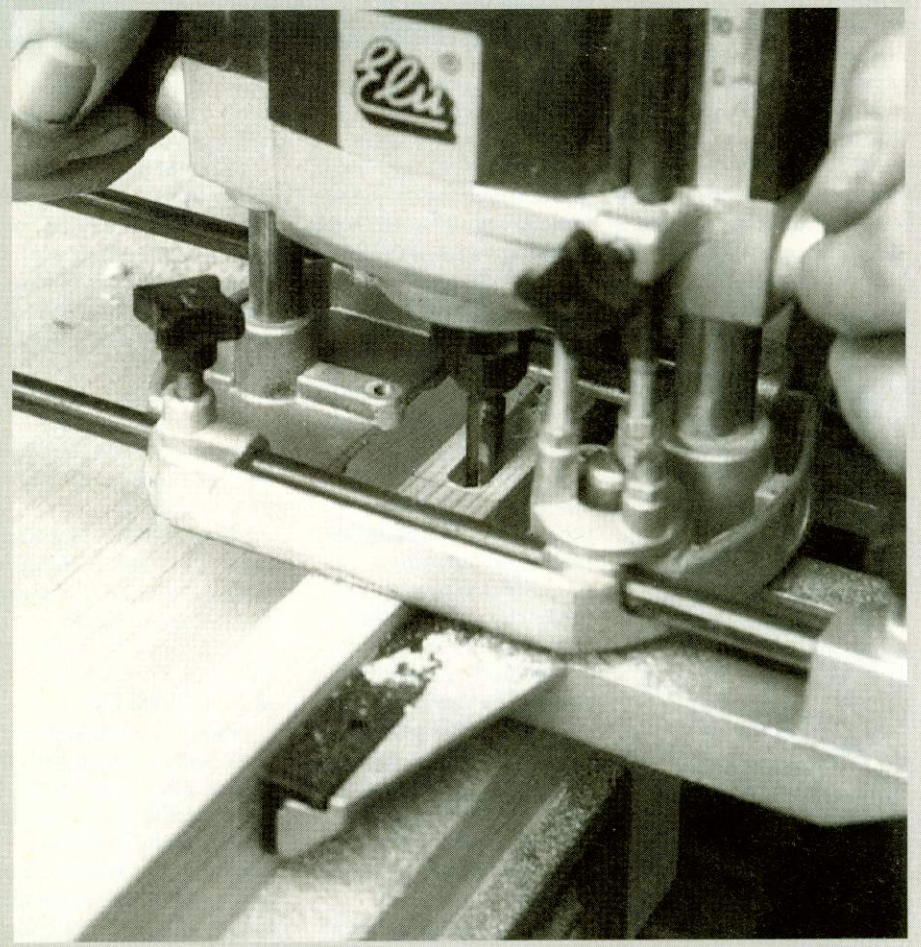
Using the Router

A plunging router gives a fair imitation of a drill press with one or two refinements. The router cutter has a flat bottom (unlike the flatbit or a twistbit) and it has the ability to move sideways. This last virtue should be held in reserve. The bit will cut much better on repeated plungings (however close together, in fact the closer the better) until all that remains on the sides of the mortice is tiny waves of waste. These can be removed with a final sideways movement.

Router cutters do not have the depth of drill bits. Neither will they cope with the very corners. These have to be cleaned by hand with a chisel. Nevertheless, depending on the size of the hole to be dug, they can dig it well. Fences and jigs can be used to facilitate repetitious work.



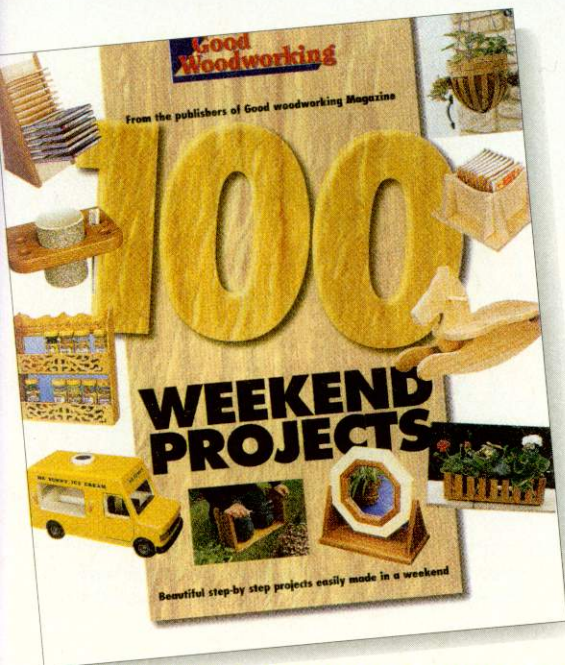
After the mortice has been cut you will of course need to square the ends. Alternatively you could produce tenons with rounded edges to match



The router is perfect for cutting mortices if you do not have any suitable machines. You can set up the fence for repetitive cutting. Mark the beginning and end of the cut on the edge, allowing the offset of the router base. It is very difficult to see where to stop otherwise. With the router compressed down it can be very hard to see what the cutter is up to. One problem is that you need a long cutter for mortices. Cut in stages

GOOD WOODWORKING BOOKS

From the publishers of *Good Woodworking* magazine comes



100 Weekend Projects, an imaginative and original collection of 100 woodworking projects, all easily made in a weekend. There are detailed step-by-step instructions, clear photographs and diagrams, and a diverse choice of practical things to make. There is furniture and items for the home, gifts for a friend, tools and work aids to assist your woodworking and many more besides, making this an irresistible

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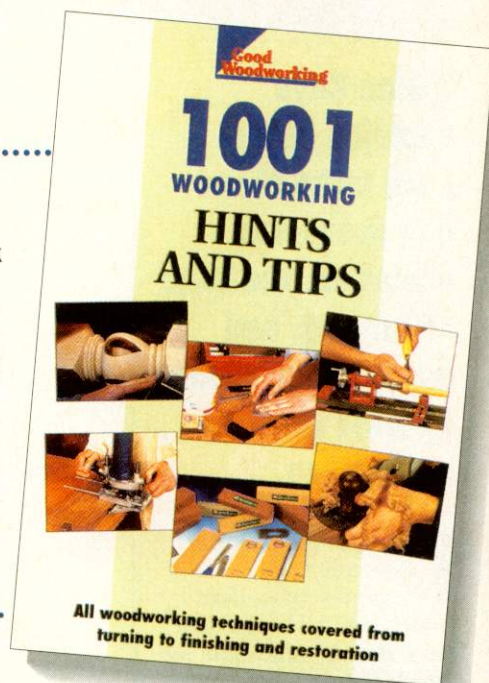
Written by a dozen expert woodworkers, many of them regular contributors to *Good Woodworking* magazine, this book contains a wealth of knowledge and experience in the form of handy hints and tips on the most common woodworking techniques and problems. Every area of woodworking is covered in detail, from selecting and buying timber to sharpening tools and restoring old furniture.

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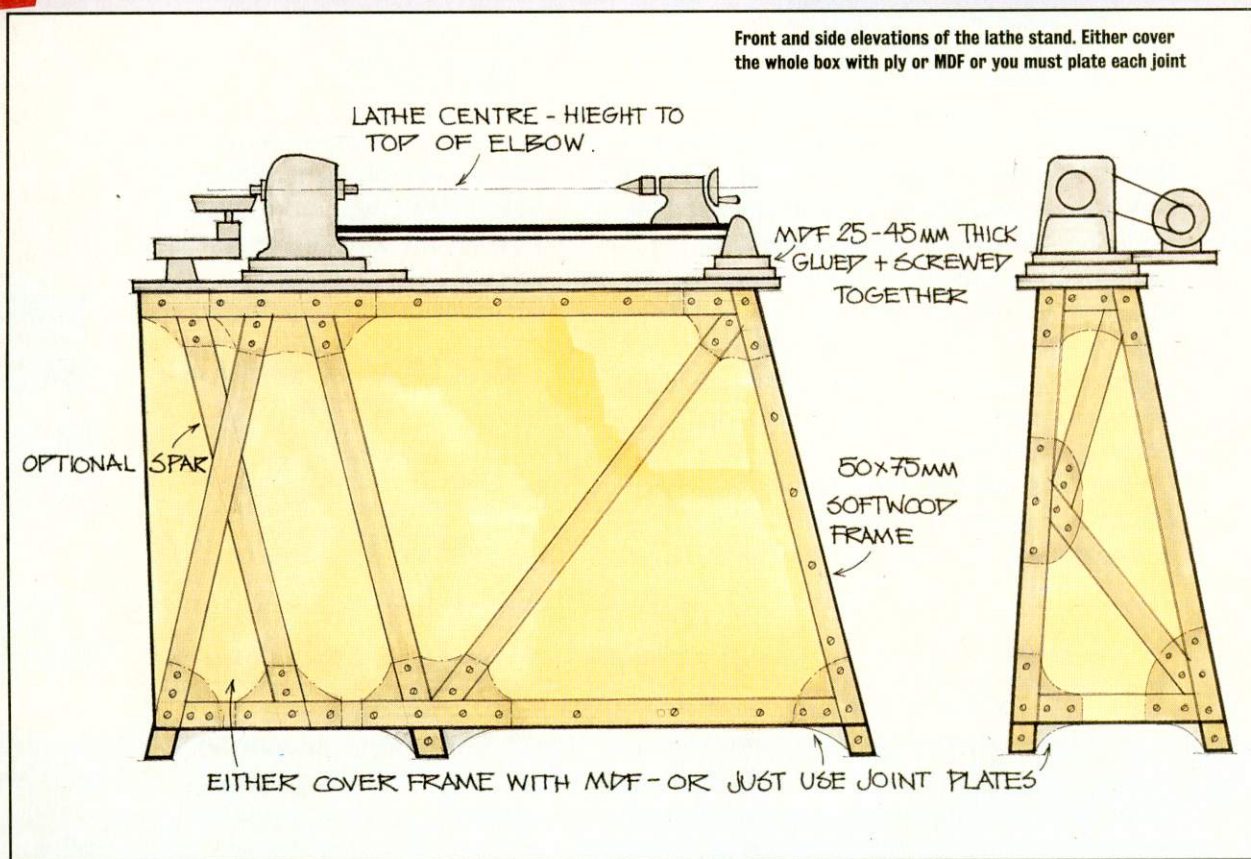
Kick vibration with a better lathe stand

Tobias Kaye explains how a good lathe stand can overcome vibration, the bane of turning, and asks if your stand is doing the best job for you

Divide woodturning lathes into two categories: those that need a bench or stand and those that descend from the main spindle in one continuous casting to the floor. The latter are without doubt the better machine for all but the lightest woodturning. However they usually need more space to house and money to buy.

The affordable lathe, be it little more than a hundred pounds for a Taiwanese import, or nearing a thousand for some sturdy British engineering, is still usually bench mounted.

Nearly all manufacturers offer a stand at a reasonable price and most people, unsure how to make a better one, opt for that. Whatever stand the lathe is mounted on, the time will come when you



too look at it and ask yourself "Is it doing the job properly? How could I make it sturdier and less prone to low or high frequency vibration?"

Vibration Misery

Vibration is the bugbear of woodturning. High frequency vibration causes spiral ridges on the workpiece, jumpy chisels and a poor finish. Low frequency vibration has the lathe swinging about so that it's hard to keep the

gouge on the rest, never mind the wood.

Bolting the bench or stand to the wall is all very well, as it usually absorbs the low frequency vibration, and sometimes the high as well. However it can also loosen the mortar in the wall, especially for brick walls. It also transmits the sound of your work to the other side of the wall and to any room with adjoining walls.

Probably the most effective vibration damper I

have seen is two pedestals of cast concrete. One right up to the headstock, and one right up to the tail end of the bed. You need to bolt the lathe bed through two pieces of $\frac{1}{2}$ in ply as castings bolted directly into concrete can crack under stress. The lathe on this sort of stand is as vibration free as its manufacturer could have hoped for.

Flexible Solutions

However if you are unsure about committing yourself

to this level of permanence, there are ways to replicate the stability of concrete without the immovability.

Concrete and cast iron have one thing in common: a granular structure. It is their very graininess that helps them resist vibration. Vibrations have a frequency that can resonate through sheet materials in a way that the granular qualities of concrete and cast iron will not. Sandbags also have a granular structure. They have

TEST

Turning tool test

Wax Polishing Sticks

From Abernethy Woodturning Supplies Exotic resins seem to be the latest in woodturning polishes. First to appear was Nutshell Oil with larch resin giving it a durable gloss and attractive smell.

Now we have these Abernethy polishing sticks, which are made from a special blend of waxes and exotic resins, including frankincense.

Together these give a deeper lustre as well as greater durability. I have never been a fan of wax sticks finding the finish shallow and unsatisfactory, so it was with scepticism that I first tried the Abernethy mix. The 22in bowl I tried them on was unseasoned. In spite of this the finish went well and has withstood the drying very well. The lustre is not as good as with an oil polish but better than any other wax stick I have used. Application is the same as for other stick waxes. Hold the stick



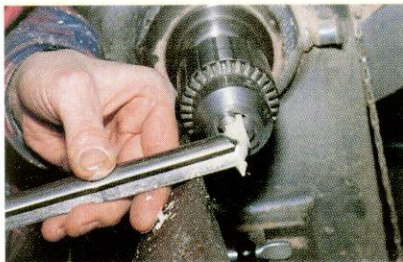
against the rotating wood, then buff hot with a cloth to melt it into the wood. Where an oil polish is inappropriate I shall be using Abernethy wax sticks in future.

GW VERDICT

PERFORMANCE	●●●●●
VALUE FOR MONEY	●●●●●
RRP inc VAT	£1.06 (each)
ABERNETHY	☎ 01738 850576



You can use a shear scraper to level the rim of the trefoil bowl (the project below). Here I am using the Sorby 827 shear scraper. I use my favourite 1/4in Superflute gouge for hollowing the centre



Turn the pegs for the holes in the base of this month's project from offcuts. The wing on my favourite gouge allows for fine work while the size gives me the power to work quickly

lapped or housed joints and right angle corners is designed for other purposes and does not resist swing and shake. A wedged mortice and tenon is useful but even this needs augmenting.

We turn therefore to shipbuilding techniques where funny angles, twisted and pounded by the waves are the stock in trade. Here the wood is brought up butt to flank, screwed together and plated over with ply to work against the twist

weight too, yet sand is neither expensive to buy nor difficult to remove.

Stable Sand Box

A large box of sand is nearly as stable and good at damping as a large lump of concrete. However the construction of the box is important. For this sort of project it is best to forget proper woodworking ideas.

The standard jointed frame construction with

and shake. The shapes that hold up in this life of the sea involve triangulation and cant.

Shipbuilding to Stands

So how do we translate this into a lathe stand? Starting from the top we want a single large board under the lathe itself. From there down, the legs should splay outwards. At the front remember that you want to

stand close to the lathe so keep the slant slight, about one in fifteen should do. At the back and sides however you can splay out at 1:4 or 1:5. These legs do not have to be massive; 2x3in softwood will do.

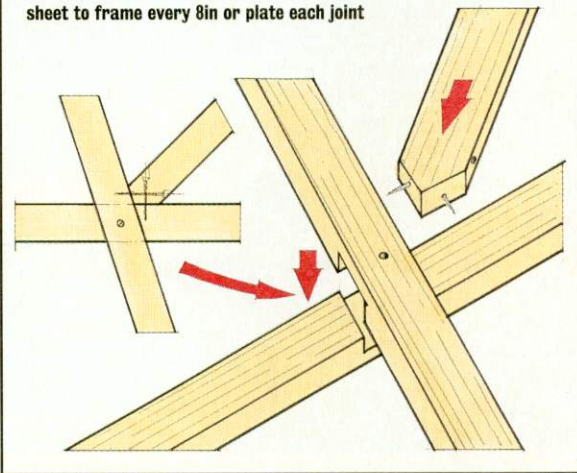
The joints between the top board and legs should be as snug as possible. The compound mitre on the top and bottom of each leg can be marked with a sliding bevel set up on drawn lines so as to meet the board and the floor flush.

Joints between spars at every point should also be sawn to a good flush fit (with the spars halved into the legs), pulled up snug with screws and plated over. The size of the plating

depends on the material chosen. Three-quarter inch far eastern ply is about as

strong as 3/4in birch multi-core ply. Medium Density Fibreboard is also suitable;

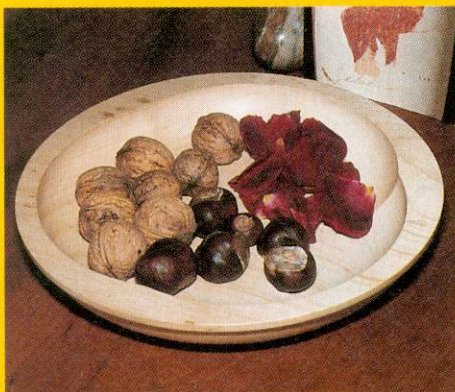
A typical joint detail shows how the spars are halved and screwed with 4in screws (counterbored below the surface). Screw sheet to frame every 8in or plate each joint



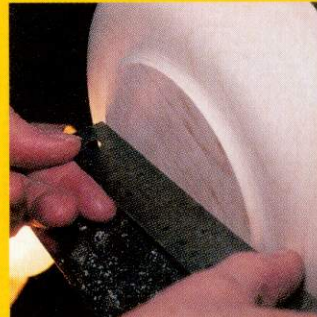
TECHNIQUE TIP

There are several methods of steadying your lathe stand. The permanent way to knock vibration on the head is by bolting your bench or stand to the wall or using two pedestals of cast concrete. To achieve the stability of concrete without the lasting effects, an alternative is to use a large box of sand, concentrating on the design of the box.

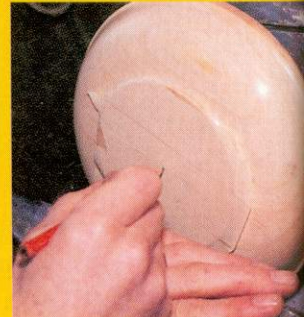
Making the trefoil bowl



Now that your lathe is steady on its new and sturdy bench, try this multi-centre faceplate project to find out if you have rid your lathe of vibrations. In essence it is a biscuit dish with the added attraction of a slightly trefoil rim. Depth control and true flatness are important to make all the surfaces meet cleanly. To show up the subtlety of the geometric shape you are best off using a plain wood like sycamore, which is also easy to turn. This is a project well worth experimenting with. You may prefer only to use two centres. Wilma, my wife, thinks the result of that looks like an apple. If you want details of my courses do ring ☎ 0364 642837.



1 Turn the outside leaving a 4/4in base for an 8in dish. Check for flatness; it must not be dishd



2 Having finished the outside, cover the base with masking tape and mark the centre with a pencil

1/2in thick is probably of similar stress value as the two plys.

A stand made in this fashion is already strong and rigid. If it is plated with complete panels to form a box it becomes very strong and rigid. If it is then filled with sand it is as good a base as you will be able to get anywhere. If you are not filling it with sand, then the thickness of board material you choose should reflect the weight of your

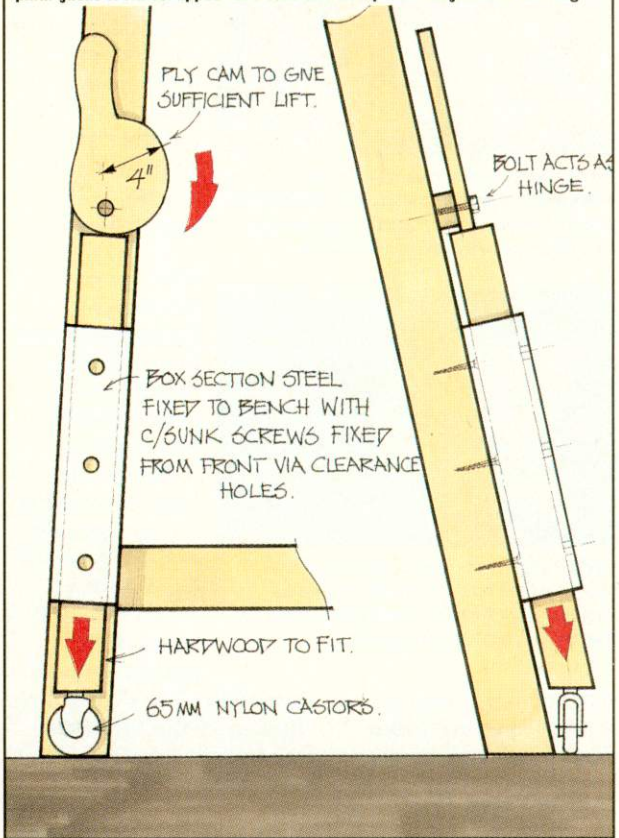
lathe. From 1/2in MDF for a Little Gem, Record DML24 or Carba-Tec, up to 1in MDF for a Coronet No.3, Tyme Avon or Myford and 1 1/2in for a Poolewood, should cover most lathes I have seen.

If you are not going for the full box option then each glued and screwed joint should be plated over by a triangle extending 4in-6in along each side of the joint. This plate should also be glued and screwed with

six screws. Triangulation of the basic frame with stretchers and spars of timber is necessary if you are having an open frame. If it is to be fully boxed in then it is an option if you are considering extra heavy or off-balance work. Boxes made of thick plating like 1in MDF will hardly need spars at all.

Notice how the legs and spars all coincide with the main mounting points of the lathe. I have sometimes

Many workshops rely on moveable benches and machines for workspace. Quick drop wheels are a great help. These wheels will not cope with sand as well as the bench and machine weight. You could also weld the castors onto pillar jacks from scrapped Ford cars and strap bolt the jacks to each leg



Turning video review

Colouring Wood

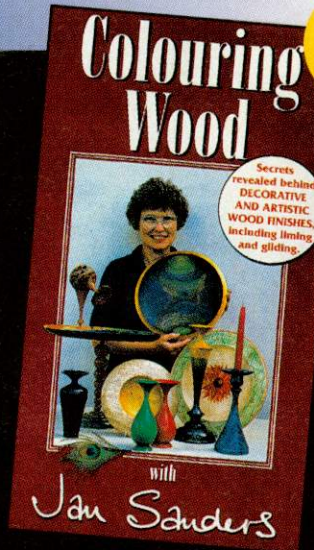
With Jan Sanders

This video is a strange symbiosis. On the one hand you have Jan Sanders with an established and well communicated enthusiasm for colouring wood, on the other hand you have Liberon waxes (sponsors of the video) whose products are lavishly and exclusively used and promoted throughout.

The film begins with Jan telling us how the colours of nature (and the camera drifts from tree to flower to feather) inspire her to do more to wood than just turn it.

Jan then leads us through a series of projects of increasing complexity showing us how she handles the dyes and extolling the advantages of one Liberon product after another. In the main the video does what it claims. You should be well able to produce coloured work by following the methods Jan shows. Only the gilding I felt to be a misleading claim. True gilding is the application of gold leaf and has a very different look to the golden paste that is used here.

Apart from this the video fulfills all its promise, which is a rare thing these days. It is certainly a pleasure to watch, being made with an eye for the beautiful



VIDEO REVIEW

throughout. Jan is a good communicator clearly demonstrating each step of the process. Her enthusiasm is infectious.

GW VERDICT	
PICTURES	●●●●●
WORDS	●●●●●
VALUE	●●●○○
OVERALL	●●●●○
RRP inc VAT	£23.44
LIBERON	☎ 01797 367555

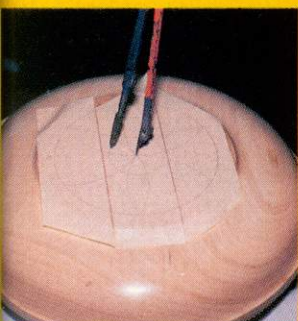
found flex in the top board to be a problem and all the main supports need to be close together. For larger lathes it may even be worth gluing and screwing extra layers of MDF either above or below the bolt down point of the lathe to reduce this flex.

You may think this is excessive but then you may also think that a 27in diameter by 6in thick blank of wet sycamore is excessive for a Poolewood 28-40 on a 1in MDF top

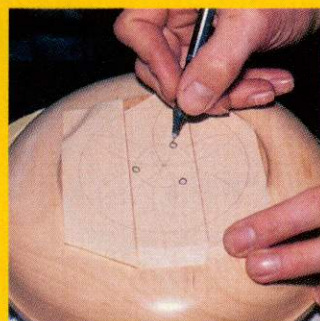
board. It flexes. The Graduate didn't, being cast iron to the floor.

When the stand is plated on all sides and bottom you may either fill before fitting the top board, or cut a round hole two-thirds of the way to the tail mount. A square hole causes weakness that a round hole does not. This could be about 4in diameter. Fill the box with dry sand from a cut corner of a plastic sack. Dry sand flows easily into every

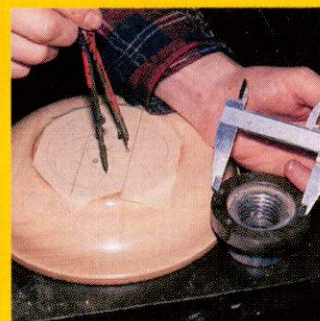
Marking out the multi-centres and turning the trefoil bowl



3 Divide a circle on the base into six and mark another circle within this about 1/4in ø for this 8in bowl



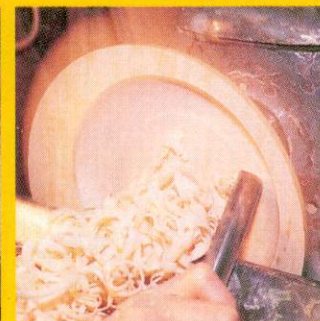
4 Choose three points on the small circle where the pattern crosses as the centres for your multi-centres



5 Draw a circle for where the screws will go by measuring the distance between holes on your faceplate



6 Score a circle on the rim having remounted the bowl to leave the narrow part exactly 1/4in wide



7 Now you can hollow out the first centre (which removes the bulk of the waste) to 1/4in of the screw tips

Tobias Kaye's monthly look at shape and form

Turning by design

No.26 Hans Joachin Weissflog

DESIGN

HANS has shot from being unheard of to international fame in little more than a couple of years. I have watched him work now at two international seminars and handled his amazing little boxes.

In the early 1980s after two years of training Hans set up a workshop at home. Working on a tight budget his lathe and bandsaw were so small and shaky that he quickly gave up the idea of making large pieces. Over the years that he spent developing his skills and his designs, unlike most of us, he kept quiet about what he was making.

Only once his work had reached the present impeccable level did he begin to allow magazines and major exhibitions to show it.

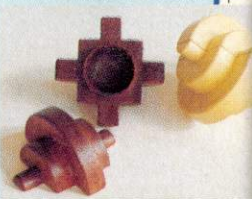
Last year the state of Saxony awarded Hans with their most prestigious award which is given only every other year. The recipient is recognised by the whole country as making an outstanding contribution to the development of the arts and crafts of the nation

The whole world of woodturning has similarly benefited from the wonderful ideas and impeccable craftsmanship of this man. What so impresses me is that the two have stayed together. The art of this work goes hand in hand with the craftsmanship that he brings to it.

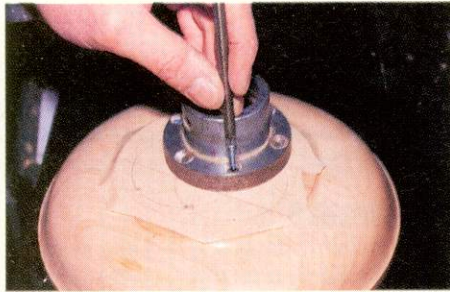
These incredible boxes are made by inserting one sphere inside another. Hans then turns beaded channels in from each side to create the latticework



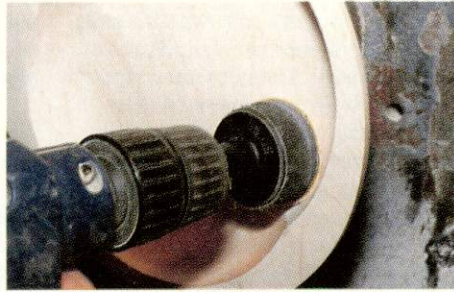
Made from one piece of wood this bowl was channelled from the inside, then held by its rim (and canted over) and channelled from the outside to create the lattice



The padauk box, open, shows the technique while the assembled boxwood version will roll, first to the left then to the right. Hans calls it the Drunken Box



If you have a six-hole faceplate (I use a 3in ϕ one) you may be able to position the holes on the base so you only need to drill six holes in the base. At this stage I am moving the faceplate from the first to second position. Note the screws are No.6, penetrating by 8-8.5mm ($\frac{1}{2}$ in)



For sanding the second and third dishes you will need a Velcro pad sander in a drill (180 grit) or lots of hand-held patience. You can use a foam-filled drum sander to smooth the rim after the first hollow has been made. After using the power sander smooth the edges by hand

corner of the box. Make yourself a little shover like a croupier uses with a flexible shaft and fill every corner right to the top.

If you are working in a shed with a wooden floor you will have to begin by cutting out panels and laying proper concrete

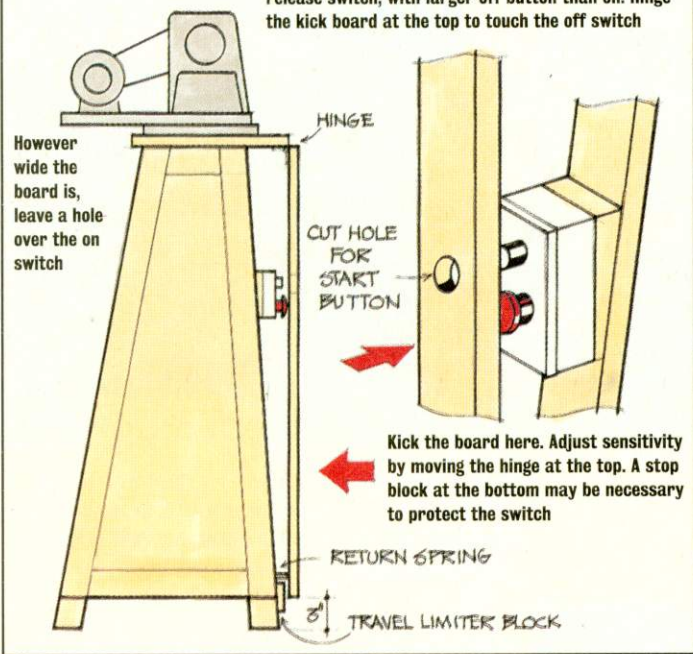
foundations first. Or the feet will go through the floor. The user friendly details of the design, like space to get your toes underneath, a moveable switch and maybe a kick off panel, all have to be planned in from the start. The bottom stretcher

should be high enough that after any plating is fixed under it, a good 4in is left for your foot. The top board should overhang by 2in to 3in for comfort and to give you space to hang a switch under it.

The kick off can be an extension of the NVR

switch. This is really for convenience on swivel head lathes. It can be of use in emergencies but the best safety advice is always to get out of the way if something goes wrong. A piece of board hinged to cover the entire switch becomes a sensitive off panel. A hole through this allows a finger or something similar to be poked through to reach the on switch. If extended right to the floor you will need a stop block to prevent damage to the switch and you might need a return spring on it too.

You can make a kick off switch using a no-volt-release switch, with larger off button than on. Hinge the kick board at the top to touch the off switch

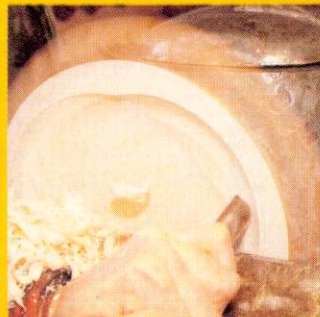


However wide the board is, leave a hole over the on switch

Kick the board here. Adjust sensitivity by moving the hinge at the top. A stop block at the bottom may be necessary to protect the switch



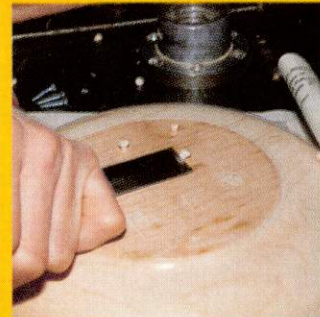
8 Check for flatness across the inside of the hollow, then level the rim with a gouge or a Sorby 827 shear scraper



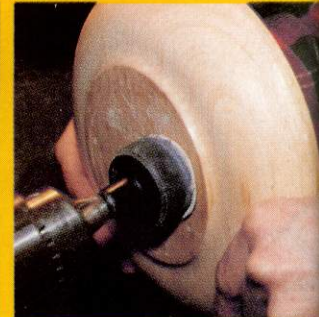
9 Once you have remounted on the second and third centres you'll find you need a steady gouge hand



10 Hand sand any sharp edges left by the power sander just to soften the edges with 400 grit



11 Remove the masking tape, tap wooden pegs into the holes and chisel them flat with a slicing action



12 Finally sand the base of the bowl with a Velcro pad and 240 and 400 grits, held in a chuck in the lathe

THE

John Brown

COLUMN

I have now moved into my new workshop at Blaenpant. The ambience is a delight, it's a pleasure to be in here. The hot water pipes from my Rayburn go through the wall (24in thick!) and up into the roof of the workshop. The two spaces, workshop and living room are at split level due to an embankment. This means that even without the Jotul stove alight there is always a background circulating heat.

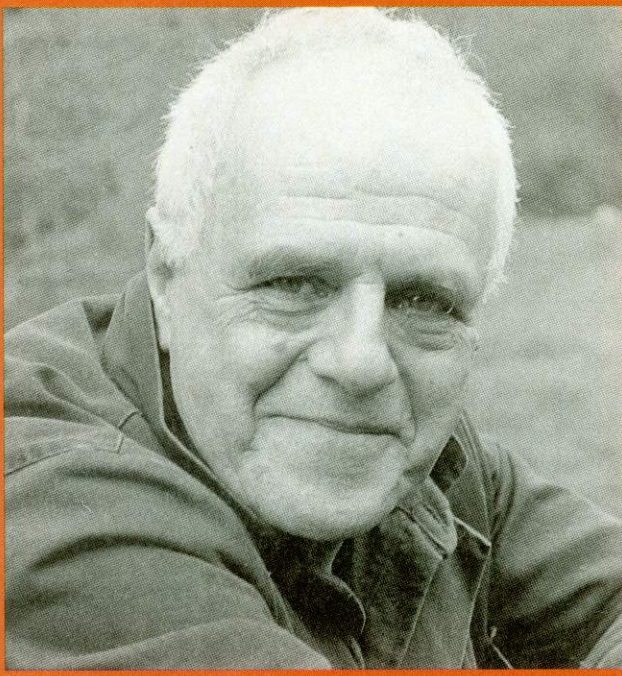
I have started to build my first chair. So far the seat is complete, being 1 1/2in elm and glued from three pieces, two at 7in and one at 6in,

making it 20in wide. The depth of this one is 17 1/2in. It is now four months since I have built a chair, so I'm a bit anxious about the result.

This seems like a time for reassessment, and for no particular reason my mind goes back to the time when I first started building chairs.

Chair Inspiration

I have written in my book, *Welsh Stick Chairs*, how I saw this old chair in the window of an antiques shop in Lampeter. This was an amazing experience for me, a touch mystical,



My first chair; the original Welsh stick chair. The impulse behind making it came from seeing an old one in a Lampeter antiques shop. Seeing this chair, my overwhelming desire to make it and the direction it gave me are recorded in my book *Welsh Stick Chairs*



While waiting for the results of his latest creation, chairmaker John Brown reminisces about his uphill journey to make and sell his craft

like a message or a vision. At that time in my life I had no direction, no route to follow. Many things had combined to make my self esteem very low, and there was something in my life which was unfulfilled.

This chair was printed indelibly on my mind. I had no need to measure it, or even count the number of sticks. I didn't need to know the details, in fact they might have detracted from the whole picture of the chair which was imprinted in stone in my imagination. Making the chair proved a real challenge. I have never put so much pain into anything. All the skills I could muster were stretched to breaking point.

Frankly I didn't think I had a chance. I had a small workshop where I lived, and at that time of struggle finding the way was full of ups and downs. I had no books on chairmaking, and when I did get some they were either on Shaker chairs, and ladderbacks, which didn't interest me, or conventional Wycombe windsor chairs, which again were not what I wanted to make.

Feelings on Woodturning

One thing is certain, the chair I had seen had no



I have christened my new workshop at Blaenpant by making the first seat. It is 20in wide by 17 1/2in deep. I used 1 1/2in elm. The seat is made of three pieces glued together

woodturnings. I have a total antipathy towards woodturning. It seems to me a mindless occupation to stand, holding a chisel up to a piece of revolving wood; the epitome of monotony. Without doubt some of the more artistic turning is clever, but the finished products leave me cold.

When I see competitions for woodturning at shows, it seems to be the woodworking equivalent of the 'Eurovision Song Contest' – 'nil points'. There, I've said it. Now you will understand how I feel about woodturning. So

say they are the same. That's as true as saying a platoon of soldiers are the same, or that all Chinamen look alike.

Years later, when I wrote my book on the subject, describing my work and showing examples of old Welsh chairs, I well remember a conversation I had with Alun Davies, a curator of furniture at St Fagans Folk Museum. What do you call these old Welsh chairs? The word 'windsor' stuck in my gullet. It was thought that stick chairs had been used to describe a type of Flemish chair made in south

usually containing that awful word 'marketing'. The routine seems to be to get an expert from a large company to advise on the various tactics. They give you a scaled down version of large marketing, which is not really appropriate. I can certainly tell you how not to sell your work. I've made some mistakes, and I'm sure there's one or two I'm saving for the future!

I well remember a weekend in spring, about eight or nine years ago. I was not doing well. I had a glut of stock as a result of a local exhibition, a show held in the wrong place at



I went through a period of dashing about like a mad thing in the hope of selling my chairs; a lesson in how not to sell. One of the venues on my list was Queen Annes Gate, the headquarters of the National Trust, for the launch of John Seymour's book *The Forgotten Arts*, in which I am featured. I might make a sale but after deducting expenses, loss of chairmaking time I was back to square one



those Wycombe chair books were of little value to me at this stage. I felt that people must have sat in something pre-Wycombe, and I found in my homeland plenty of beautiful examples that had never seen a lathe.

Discovering the Welsh Stick Chair

The year was 1978, I finished my first chair, and it came out to look like the image I had in my mind. It is interesting that I am sitting in it writing this piece. I got some of the dimensions wrong, and I felt a few things could be improved, but overall, I don't think I've made a better chair since. I have changed a lot of the processes I used then, and I have since branched out into other styles, but I always come back to this one. Yet, if I tried to make an exact copy of this first chair I don't think it would work.

And although I had not formulated this idea at that time, I now realise that working as I do the chances of building two identical chairs are very slim. Each one is an individual with its own strengths and faults, much like the human race. The untutored eye, not used to seeing chairs, would look at a group of my efforts and

Glamorgan, but this was more of a ladderback chair. It was then that I decided to call my chairs Welsh Stick Chairs, and against all advice this was the title I used for my book.

Learning to Sell Goods the Hard Way

So, having made my original chair I made others and began to sell a few. I now came to the most difficult part of a country craftsman's life, how do you sell hand-made goods? Sometimes I see advertisements for courses, or seminars, run by craft organisations, and

the wrong time, and in tandem with a very popular local potter. It ended with all the potter's customers sitting in my chairs, buying her pots. Lessons. Carefully chose your location. Mine was in an upstairs gallery whose owner seemed to have a block on advertising.

Sharing an exhibition can be alright providing you don't make chairs and place them around the walls invitingly waiting to be sat on. "And what are you showing here," asked a lady. "The chair you are sitting on," I replied, and I could have added ... in a wet plastic mac. Since then I have always made sure every seat has a large card with the details and price, with one or two of the special chairs stood on raised plinths.

So I loaded all the chairs I could, freshly polished, and a roll of nice carpet into my van and went to stay with my daughter Katy. Early Saturday morning I am in the queue at Camden Lock. I am duly issued with a pitch. I roll out my carpet and arrange the stock as nicely as I can, with details displayed on a card.

I stood there... and stood there... all day. A few people nodded. I remember a lady smiling, but not one person enquired. For all they knew

Ashley Iles continues

I have a list of old tools from 'The Old Tool Store'. Ashley's son, Ray Iles, has decided to continue the business, and he says "I hope to offer the same impeccable service and dedication that Ashley did". The address is: The Old Tool Store, Red Lion, East Kirkby, Spilsby, Lincolnshire PE23 4BX, ☎ 01709 763406. Visitors will be welcome, and £1 will bring you the current list.

I could have taken shipment of the chairs from Taiwan. I was partly dispirited, but tomorrow would be different.

I arrived early at the Jubilee Market, Covent Garden. I had to undergo the indignity of showing my chairs to the committee at 8 a.m. on a Sunday morning. I was passed and given a stall number. I rolled out my carpet between a stall selling shrink-wrapped boomerangs and a nice man selling Victorian tat in framed cases, pennies and stamps and general gee gaws. So much for artistic selection. It was a lovely

Lowertown, Fishguard. John Cleal, and his wife, Lel, really know how to run a successful gallery. I once heard a definition of genius as an infinite capacity for taking pains. Apart from being a fine painter and craftsman, there is no detail overlooked. John also has an unerring eye for choosing the right items to show.

Workshop Wales has become a Mecca for discriminating purchasers, and clients come back year after year. I had invited him to the disastrous exhibition, and he sent me a note of congratulations. My visit to him was an act of

the owner of the Bristol Guild, Ken Stradling. I asked if I could work in his shop window for a week in Park Street, at the same time having a display of chairs in his showroom. He agreed, and I spent a week, sweating under the shop floodlights, making a chair. We sold several, but it really wasn't my scene. My pleasure was in getting to know Ken and his staff, who made it a memorable time for me.

An Arrangement to Suit your Needs

At the end of the year John Cleal had sold about



Another attempt to sell my chairs was to give the customers a first hand look at how they were made. I talked to Ken Stradling, the owner of the Bristol Guild in Park Street, and asked him if I could work in his shop window. I sweated for a week under the bright shop floodlights. I sold several for my efforts

spring day, quite cold but one of the first fine days of the year. As a consequence the world and his dog were afoot.

I stood there, and stood there, and nobody was interested. They were nice chairs. Thousands of people milled by. The lady on a nearby knitwear stall was doing great business, jingling the money in a handbag worn round her waist, and now and then producing a wad of notes. I couldn't understand what I was doing wrong. By this time I was cold and pissed off, and I suspect I was glowering at the people, with a 'talk to me if you dare' kind of look.

I had about enough cash for a hot potato, and was never more pleased to get out of a place. Fortunately Katy and Jim took me out for a slap up meal, so I was able to temporarily drown my sorrows. I went home to Wales on Monday morning. How on earth do you sell hand-made chairs? Obviously Camden Lock and Convent Garden are not the right places.

How to Sell Goods Successfully

When I got home I went to see a man whom I had known for many years through the family. He runs a great Arts and Crafts gallery in

desperation. What if he turned me down? Well he didn't. He said he'd try it. The idea was to stand one chair in the gallery, and if anyone was interested he'd send them to me.

Getting your Chairs Known

Meanwhile I was off on my travels to Traquair House, the oldest inhabited house in Scotland, where every August they hold a great fair including some fine crafts people. To Queen Annes Gate, the headquarters of the National Trust for the launch of John Seymour's book, *The Forgotten Arts* in which I am featured, and so on. I usually sold something, but taking into account expenses and physical wear and tear, and above all, and by far most important, lost chairmaking time, it was never really profitable.

In between my flitting about like a panicked moth in a lampshade, a steady trickle of folk, sent by John Cleal, came to my workshop and bought chairs. The customers included holiday-makers, people who owned second homes in the area, the great and the mighty from Cardiff and Swansea, and above all doctors, who are by far the largest single group who buy my chairs.

I had other commitments. I had been to see

a dozen chairs by sending customers to my workshop. He would take no money from me by way of commission, but we did a deal for the future. I would place my chairs in the gallery and he would take a commission. This has suited me well, for the commission I pay him is far less than the money I spent in the time when I thought I should be anywhere but at home. I loose no making time, and have no aggravation.

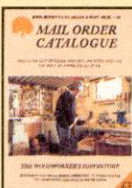
The reason I make chairs is because I like to do it, therefore if I can do more of it I have more pleasure. I sell some chairs by word of mouth recommendation, by repeats or to friends or existing customers. In the last four or five years I have sold every chair I made. There are times when I could have sold more. Sometimes I don't work as hard as I should. I still have no money, I'm always waiting for the next cheque, and I suspect I always will be, but I don't worry. The difference between starvation and plenty is one chair.

There are some conclusions to be drawn from this mini saga, but space does not allow me to put them down now. However I will write more about selling and my experiences next month.



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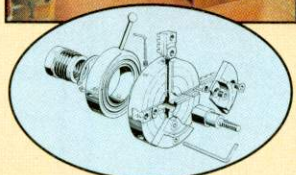


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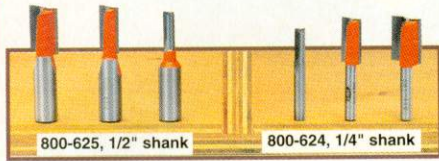
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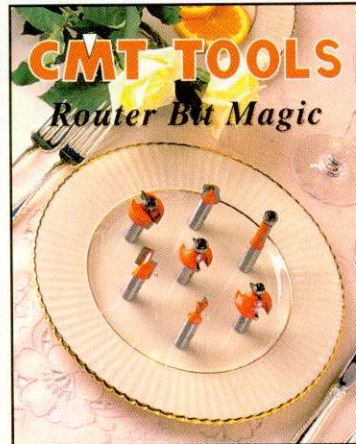
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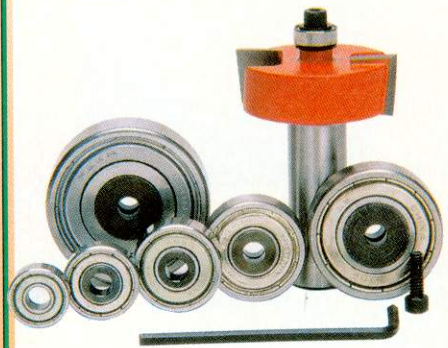
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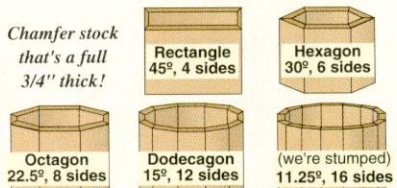
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Did you think you'd left polygons in geometry class? They're back, with CMT's new

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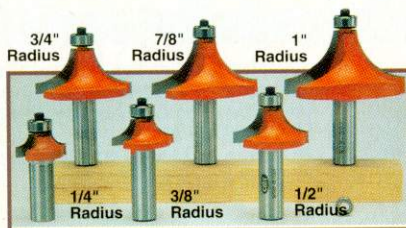


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GW 1/95

The Stanley honing guide is easy to set without using a ruler. It will grip spokeshave blades, unlike most of the others. The Japanese guide provides a good grip

For diamond and Japanese waterstones the American General has a roller that does not wear the surface. It runs behind the sharpening stone on the bench surface

Canadian company Veritas include an angle guide with their honing system. It has a five-position plate for easy blade setting. Up to 15 different honing angles are possible

A pair of jaws on the APTC, Draper and Spear and Jackson guides grip the blade edges. Rollers are narrow and can wear a stone rapidly if you are not careful



THE WORKBENCH TEST

Honing guides

At school I was never allowed to sharpen chisels or plane irons. That was a job for the technician. Woe betide anyone who started dismantling a plane in the workshop. As a result of this approach I had only a vague idea of how to use an oilstone.

And so it was that I opened my first set of chisels one Christmas with trepidation. They were tools I wanted, but I was scared about how I was to sharpen them, until one day I came across an Eclipse honing guide. Life suddenly became easier.

Why Use a Honing Guide?

Many professional woodworkers sneer at using a jig for sharpening a chisel or plane iron. If you cannot get a good edge holding the blade freehand, you would probably be regarded as a mere amateur. A tradesman would not be seen dead using such a device.

However I have a sneaky feeling that a honing guide may be tucked away in many a woodworker's toolbox, only

seeing the light of day when nobody else is around to watch.

It's true that using a honing guide takes more time than sharpening a blade freehand. If you are new to woodwork, though, a honing guide really boosts your confidence. There is nothing more demoralising than

trying to work timber with blunt edge tools. Once you have got used to the technique of using a guide you can then try sharpening without one. The important thing is to maintain the blade at the correct angle to the stone.

Sooner or later a blade will need regrinding to 25°, or

whatever angle suits the tool best. If you are planing up reclaimed timber you can get a nick in the edge of the blade with no trouble.

What if you do not have a grinder? You can restore the grinding angle by using a coarse oilstone, waterstone or diamond stone. This can be incredibly tedious, especially if you have no method of maintaining a constant angle. Using a honing guide takes some of the tedium out of this task, and guarantees a perfectly flat bevel.

Japanese honing guide

Designed for Japanese chisels and plane irons, this guide has the advantage of a 70mm (2¾in) wide roller. This is ideal for waterstones which wear rapidly when a conventional narrow roller is used.

The frame is cast iron, with steel roller bracket riveted on underneath. Side handles are plastic and give you a good grip. There is a single screw for clamping blades.

Setting blade projection is simple with the gauge supplied. Construction is cruder than other honing guides tested. Check that the roller is parallel to the frame, or cutting edges end up out of square. This guide appears to be unavailable, but we will inform you of a supplier when we can.



A Razor Sharp Edge

A honing guide is almost essential when working with some dense woods. Timbers such as ebony and rosewood require a razor sharp cutting edge to make any impression on them. These timbers dull a cutting edge quickly, so resharpening is necessary more often than if you are working on mahogany, for instance.

It can be extremely difficult to maintain the same angle on the stone each time you resharpen

your chisel or plane iron. The more you hone, the more the cutting edge becomes rounded if you are not careful. Ideally a grinder of some sort is needed, but if not then a honing guide will give you the correct angle.

If you work solely in softwoods your edge tools will not dull as quickly as they will on some hardwoods. This is not to say the tools should be any less sharp for softwoods than for hardwoods. With western red cedar, for example, the fibres will be squashed rather than severed by a blade that is not razor sharp.

How a Honing Guide Works

Every guide clamps the chisel or plane iron rigidly. The APTC, Spear and Jackson and Draper guides have a pair of jaws that grip the blade. Twin adjuster screws on the Stanley tighten the clamp. Veritas and General use a screw directly onto the blade.

The distance the blade projects from the guide is critical. This determines the honing angle. The roller is then simply placed on the sharpening stone and away you go.

Testing Honing Guides

Each honing guide was set up with a variety of edge tools. A 25mm registered, 13mm firmer, and 6mm and 18mm bevel edge chisels were used. Plane irons from 35mm to 60mm were also fitted.

One of the most awkward edge tools to sharpen is the spokeshave. Because these blades are so short most honing guides will not clamp



With the Spear and Jackson, Draper and APTC guides you measure blade projection with a rule to ensure the correct honing angle is achieved



A narrow steel roller will wear a hollow in the surface of a stone. Waterstones wear very fast and a roller should be avoided if possible



By using a sharpening stone on edge you will reduce wear when using a roller. The wide roller on the Veritas guide is an advantage

them at the correct angle. Without a honing guide you can cut a slot in a block of wood to grip the blade. You still need to hold the block at a steady angle though. The Stanley and Veritas guides were the only guides tested that allow you to

hone a spokeshave blade at the correct angle.

We used a selection of oilstones, Japanese waterstones and diamond stones, revealing the pros and cons of each guide. A waterstone wears more quickly

than an oilstone. Most guides have a steel roller that runs on the surface of the stone. A waterstone rapidly develops a hollow if you use a guide. The best way to use one of these stones is on its side to use the narrow edge. This is tricky



Contact	Stanley ☎ 0114 2768888	Brimarc ☎ 01926 493389
Origin	Britain	Canada
RRP (inc. VAT)	£9.99	£31.49
Weight	172gm	269gm
Roller width	2x9mm	30mm
Construction	Plated steel frame with cast alloy clamp. Two horizontal thumb adjuster screws for tightening an edge tool in place. Two independent plastic rollers. Plastic flip over gauge for setting blade projection to 25°, 30° and 35°. Measurements stamped on underside of clamp. Maximum blade width 65mm	Cast alloy frame supports brass roller on steel axle Sprung-loaded adjuster sets cam-mounted roller in one of three positions for micro bevel. Brass clamping screw. Extruded aluminium plate has adjustable pentagonal plate and is used for setting a blade at the correct angle. Blade is set to 15°, 20°, 25°, 30° or 35°. Maximum blade width is 62mm

PHIL DAVY
Good Woodworking
Technical Editor

The plastic flip-over gauge can easily be knocked off and lost. Measurements are there if this should happen, though. Narrow chisels are easy to get out of square, and it helps to use a small square to check. Easy to tighten and no ruler or screwdriver needed. Narrow rollers can slip off the edge of a thin stone on edge. Interestingly, this gauge would not clamp a 6mm Stanley 5500 bevel edge chisel

A sophisticated sharpening system. You have a choice of five angles to suit different tools and timbers. In addition there are 10 settings for micro bevels by using the neat side adjuster. The beauty of the Veritas is getting a micro bevel without removing the blade. The self adhesive rubber washer needs to be cut to shape once fitted. Roller is wider than most. A heavy duty guide and you do not need a ruler

IAN WILKIE
Good Woodworking
Technical Editor

A well made and very effective honing guide with an excellent clamping system. It can be tightened easily by hand and is safe because fingers are kept well away from the blade edge. The fold-down angle guide is easy to use and the wide nylon rollers are a distinct advantage. This hone works well. Although more expensive than some it is well worth paying the extra for this tool if you regularly sharpen plane irons and chisels

This is a sophisticated and innovative system which is well made and finished. Its unique micro bevel adjustment, which gives an extra 1° or 2° at the twist of a knob, is a useful facility. The wide brass roller reduces wear on a stone and reduces the tendency for a chisel to rock. It was hard to secure a chisel with finger pressure only. With separate angle guide the Veritas is a fairly large system compared with other guides tested and is very expensive

Davy		
Value for money	●●●●○	●●●●○
Overall	●●●●○	●●●●○
Wilkie		
Value for money	●●●●○	●●●●○
Overall	●●●●○	●●●●○



Jargon Busting

Honing
Another name for sharpening

Oilstone
Made of aluminium oxide or silicon carbide. Oil is needed to float the steel particles away when sharpening a blade. An oilstone must be soaked in oil before use and kept in a box to keep it clean

Japanese waterstone
These come in much finer grits than synthetic oilstones. Designed for honing Japanese chisels and plane irons, which are made of laminated steel. Waterstones are superb for European edge tools, although you do not need one much above 1200 grit. Waterstones cut faster than oilstones and water is used as a lubricant

Diamond stone
A metal plate with regular holes punched out. Its surface is diamond-coated and a range of grades is available. Expensive compared to other sharpening stones. Water or thin oil is used as a lubricant

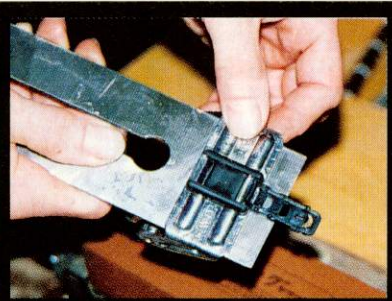
FINAL VERDICT
Honing guides

If you only use an oilstone for sharpening then the APTC, Draper or Spear and Jackson guides work well enough. However you cannot use them with spokeshave blades. The APTC guide is excellent value for money. The Stanley is a good all-rounder and is reasonably priced. If you use waterstones or diamond stones the General is a unique tool that will not wear the surface. It can be inconvenient if you use several stones of different thickness, though.

The Veritas system is sophisticated and its roller is a bit wider than most. The fast micro bevel action is superb and you have a choice of up to 15 angles. It is very expensive but outperformed the other honing guides in the test.

NEXT MONTH ON TEST
Protective clothing

Next month we take a look at woodturner's smocks, aprons, and other protective clothing to keep you clean in the workshop.



The roller of the General guide runs behind the stone on the surface of the bench. This overcomes the problem of wear on the stone

A plastic flip down gauge on the Stanley gives a quick indication of correct blade projection. Measurements are also stamped on the frame

with a wide plane iron, but simple with a chisel.

The wider the roller the better, which is where Veritas scores over APTC, Draper and Spear and Jackson guides. Stanley has twin nylon rollers which won't wear a

waterstone as rapidly as brass or steel. But the rollers can tip off the narrow edge of an upturned stone.

One of the best guides for diamond and waterstones is the General, as its roller runs on the benchtop and not the stone.



Richard Sarjent ☎ 0793 513055

APTC ☎ 01297 33656

Draper ☎ 01703 266355

Neill ☎ 0114 2449911

USA
£14.95
230gm
2x5mm

Taiwan
£4.84
234gm
10mm

Taiwan
£6.79
242gm
10mm

Britain
£10.33
231gm
12mm

Lexan (high impact plastic) body pivots in middle. Two independent plastic rollers run on surface of bench behind sharpening stone. Plastic thumbwheels and spring-loaded steel clamp for blade. Maximum blade width 66mm

Silver finish cast aluminium jaws. Steel roller rotates on adjuster screw. Two blade positions for planes and chisels. Bevelled jaws for gripping blade edges. Maximum blade width is 80mm (upper), 48mm (lower). Minimum blade width is 3mm. Chisel and plane projections stamped on the jaws

Blue enamelled cast aluminium jaws. Bevelled upper and lower jaws for gripping edges of blade. Chisel and plane projections stamped on jaws. Maximum blade width is 79mm (upper), and 48mm (lower). Minimum blade width is 3mm

Grey finish cast aluminium jaws. Steel roller rotates on adjuster screw. Two blade positions for planes and chisels. Bevelled jaws grip blade edges. Maximum blade width is 73mm (upper), 41mm (lower). Minimum blade width is 3mm. Chisel and plane projections stamped on jaws

Unlike other guides the rollers do not touch the stone, making the General ideal for diamond and waterstones. You need a ruler for blade projection (10mm), and on narrow chisels a square is useful. It only uses about 6in of stone length, so a longer stone needs reversing for even wear. Instructions give settings for 30°, but you have to work out other angles yourself. When flattening back of blade the clamping knob gets in the way unless stone is used on edge

There are no bits to fall off and lose with this guide. You need a ruler for setting the blade projection. Bevelled jaw edges do not grip square blade edges too well. The finish chips off quite easily

I was unable to clamp a 1in registered mortice chisel in this guide, or the APTC or Spear and Jackson. Measurements stamped on the side are useful for blade projection. You can use a screwdriver for final tightening of the screw

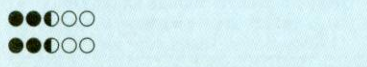
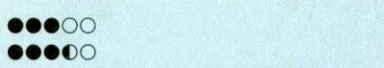
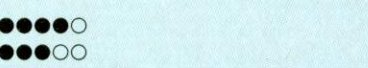
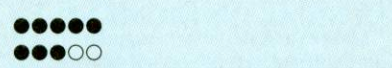
This is the old favourite, previously known as the Eclipse. The roller is a fraction wider than those on the Taiwanese honing guides. The steel rods are finished to prevent rust

The General is ideal for waterstones as it obviates wear on the surface. It held a plane iron firmly but I found it difficult to secure a 19mm bevel edge chisel. It is calibrated to provide a 30° angle, but no other settings are indicated. It is not versatile enough to use with different thickness stones without readjusting the setting each time

This is a well made and solid guide which is easy to use and gives good results with both plane irons and chisels. I feel the roller could be wider which would reduce wear on sharpening stones. It would also correct the tendency for the guide to rock when used with narrow chisels. The APTC is the cheapest guide tested and it is undoubtedly excellent value for money

Almost identical in design to the APTC guide, except that the figures cut on the side are not too clear. Like the APTC guide the locking screw, although knurled, needs to be tightened with a screwdriver unless you have very strong fingers. The Draper works well but is more expensive than the APTC model

The Spear and Jackson guide is of the same design as the APTC and Draper guides, but slightly better finished. There are no other obvious differences and the Spear and Jackson guide gave the same results. It does cost twice as much as the APTC guide, though



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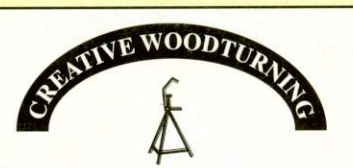
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200	5x3/4	£1.71	£2.05		£7.00
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200	6x5/8	£1.06	£1.27	£1.30	£4.80
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200	7x3/4	£1.29	£1.54		£5.50
200	7x1	£1.28	£1.53		£6.70
200	7x1 1/4	£1.50	£1.80		£10.58
200	7x1 1/2	£1.88	£2.25		
200	8x1 1/2	£1.65	£1.98		£4.10
200	8x5/8	£1.49	£1.78		£5.17
200	8x3/4	£1.58	£1.89	£2.20	£5.60
200	8x7/8				£9.50
200	8x1	£1.60	£1.92	£2.50	£6.69
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200	8x1 1/2	£1.90	£2.28	£2.95	£7.90
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200	8x2 1/4	£3.25	£3.90		£17.50
200	8x2 1/2	£4.29	£4.29	£4.60	£25.00
200	8x3	£5.18	£5.18		
200	10x3/4	£1.95	£2.34	£2.90	£8.62
200	10x1	£2.10	£2.52	£3.20	£9.10
200	10x1 1/4	£2.26	£2.71	£3.65	£10.00
200	10x1 1/2	£2.79	£3.34	£3.95	£11.50
200	10x1 3/4	£3.30	£3.96	£4.60	£12.75
200	10x2	£3.40	£4.08	£5.27	£19.90
200	10x2 1/4	£3.85	£4.62		£25.00
200	10x2 1/2	£3.89	£4.66	£6.26	£17.75
200	10x3	£4.44	£5.32	£7.66	£24.00
200	10x3 1/2	£6.54	£7.84		
200	10x4	£7.00	£8.40		
100	12x1	£1.76	£2.11	£3.20	£6.89
100	12x1 1/4	£1.80	£2.16	£3.38	£7.30
100	12x1 1/2	£2.30	£2.76	£5.90	£8.80
100	12x1 3/4	£2.40	£2.88	£5.95	£12.00
100	12x2	£2.50	£3.00	£6.70	£12.76
100	12x2 1/4	£2.76	£3.31		
100	12x2 1/2	£3.07	£3.66	£7.00	£14.10
100	12x3	£3.20	£3.84		£17.90
100	12x3 1/2	£4.85	£5.60		£21.00
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CORONET	67 1/2"	-	5.10	5.20	5.30	-	-	-	-	-	-	-	-	-
NUTOOL	70"	6.35	5.40	5.55	5.65	-	-	-	-	-	-	-	-	-
INCA, STARTRITE	73"	6.45	5.45	5.60	5.70	-	-	-	-	-	-	-	-	-
DEWALT	82 1/2"	7.00	5.90	6.05	6.15	7.65	7.95	-	-	-	-	-	-	-
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PROJECTS FOR THE WEEKEND

- Original salad bowl
- Pull-along frog

TECHNIQUES

- Finishing MDF
- Back to Basics looks at working order
- Purely planes shows



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TURNING

- Tobias Kaye looks at the many and varied entries to the Burr Challenge Competition that were on display at the Good Woodworking Show



Make your own honing guide

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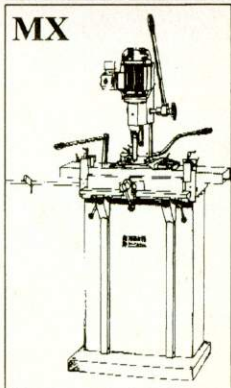
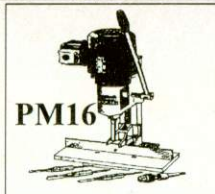
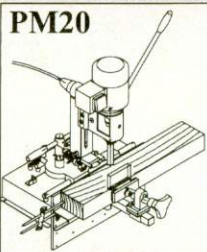
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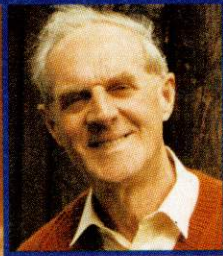
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The winner of the Burr Challenge Competition receives this beautiful burr bowl made by Tobias, plus £250 worth of Sorby tools

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Finishing touches



falling on them (technically more than 80 per cent) in a mirror-like manner.

Surfaces that diffuse rather than reflect light are said to be matt (less than 15 per cent reflected), or flat. Many wood finishes are between gloss and matt, with no standard terms for intermediate stages. Satin is the most common term used, although sheen, which technically refers to reflectional, is sometimes used. Paints may be called eggshell, silk, or semi-gloss. Lustre (or luster in America) which like sheen simply refers to reflection, (high lustre, low lustre) is mostly used for very high gloss, especially when there is a sparkle to the appearance. Lustre can also be used to refer to a polishing material.

Alligatoring, crocodiling, crazing: Formation of a network of cracks in a finish, which resembles crazy paving or alligator

skin. This is usually due to a large difference in the flexibility of top coat and the coat beneath. Not a significant problem with current proprietary finishes. It is sometimes brought about deliberately to resemble an antique finish.

Patina: The sheen that a surface acquires through age or long handling. Used to describe products that mimic this effect.

Orange Peel: A surface that appears rough, like orange peel, with spray finishes. Usually resulting from faulty spray, or thinning, with spray droplets not levelling out.

Sagging, curtaining, runs: Running of wet finish after application to form an uneven film. Usually due to too thick a coat or over thinning. Sometimes the effect may resemble a curtain. Do not confuse with curtain coating which is an industrial process of applying paint or varnish.

Fat edge: A thick line of varnish or paint along an edge.

Levelling, ropiness: Levelling is the flow of a film immediately after application to a smooth finish without visible brush marks. Varnishes and paints that do not level are called roppy.

Bleeding, blooming, blushing: These terms all refer to

discolouration of the finish. Bleeding is the migration of coloured materials from the wood, or from a wood preservative, stain or dye, into the final coat. Bleeding can be due to migration of natural chemicals present in some woods, for example: oak, chestnut, western red cedar, or of resin from softwoods. Wood preservatives like creosote, bleed into oil paints, and are so disfiguring as to make creosoted wood unpaintable, unless a special aluminium-based sealing primer is used. Solvent soluble dyes and stains may bleed into solvent varnishes, or water soluble stains into water-based finishes. Bleeding of a dye or satin into a clear finish may pass unnoticed, and is often of no importance. Bleeding may be seen immediately on application, or it may occur only after some time. Delayed bleeding is common with wood extractives and resins. Extractives are materials present in wood that can be washed out by water. They are not part of the wood substance, and their migration is not damaging to strength or other wood properties, but it can be disfiguring.

Bloom: This is the formation of a white cloudiness in or on the polish or varnish film. Generally, but not always, it is due to moisture, either too humid when drying, or being kept in damp rooms. With most finishes, once blooming has occurred it is permanent, and the item must be refinished. However with some water-based acrylic coatings it disappears when it dries, returning if it gets damp again. Blushing is akin to blooming and refers to the formation of a cloudiness or partial opacity, usually in cellulose films.

A denser white discolouration of French polish and some other finishes occurs in water, especially if hot water is spilt in them. White streaks may appear in French polish if put on before a water-based stain or glue has dried.

Bits: Small bits of skin, undivided pigment, or other materials in a paint that stand out from, and spoil the dried film.

Austin Hilditch is a finishing expert who was the former Technical Director of Cuprinol, manufacturers of wood preservatives. He is now retired.

The English language contains about two million words, about 10 times as many as French or German. Nearly one million are scientific, technical, medical, trade or craft terms. No wonder jargon is rife. To get the best finish and the most from the finishing pages, get to grips with finishing jargon.

Gloss, sheen, lustre: All relate to reflection of light. Glossy surfaces reflect sharply most of the light

Know what you're talking about when you want to finish your piece of woodwork: alligators and crocodiles, blooming, bleeding and blushing, orange peel and curtains!



Good Woodworking

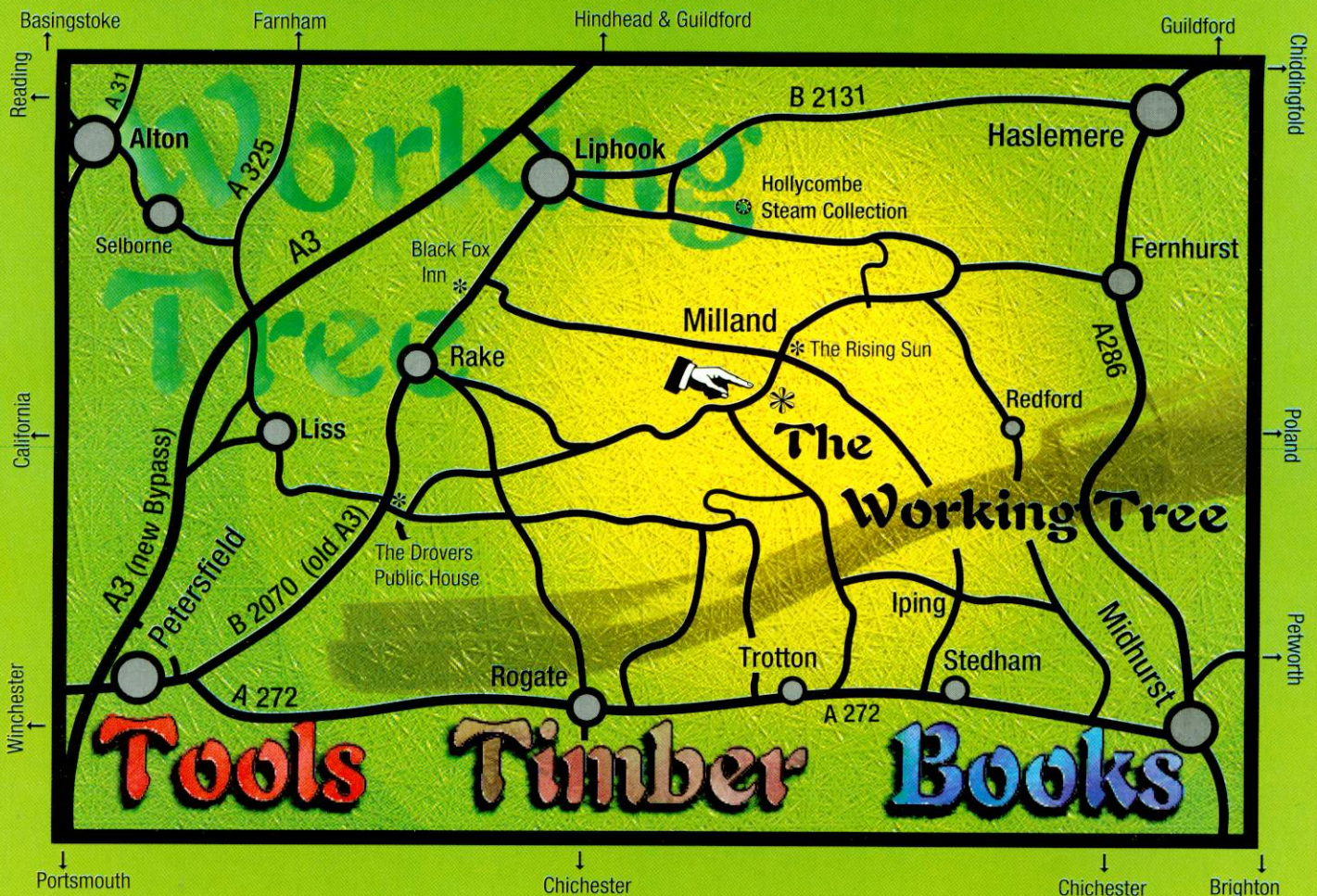
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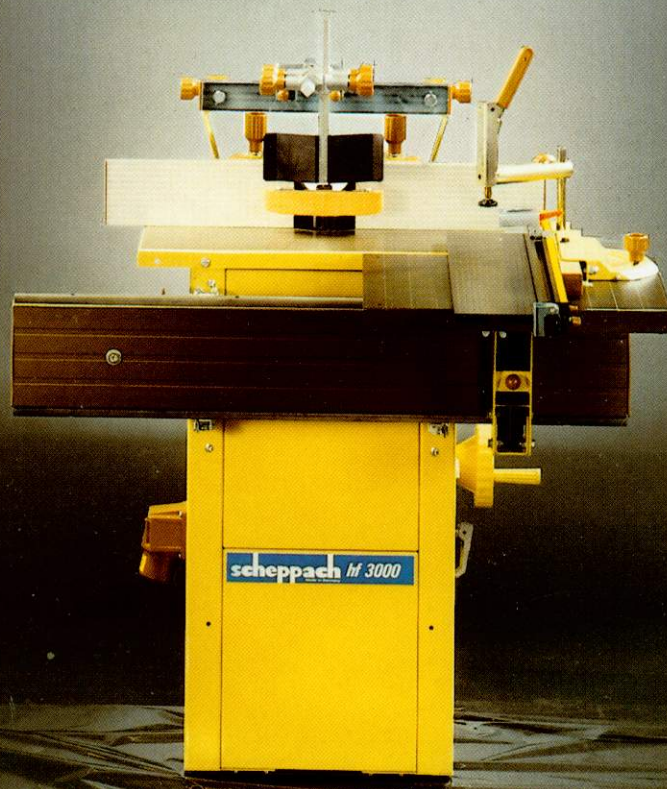


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