Issue 10 February 2016

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Welcome

to the February issue of *Woodworking Crafts*

Variety

Hello Everyone and welcome to the February issue of *Woodworking Crafts*. Winter can seem like a period of slumber and hibernation and, as it passes and spring flowers pop out their cheeky heads, we feel at last that a new year is truly under way.

One of the things that defines this magazine is the breadth of content. There is always a danger of overextending into areas that are best left to others, but I'm an 'information sponge' and many aspects of the craft fascinate me and I want to bring them to a wider audience. Whether it is exploring the rarified world of designer craftsmen, Peter Wood showing you how to make your very own Windsor chair, Bob Adsett rebuilding a vintage sawtable or perhaps a simple magazine rack built indoors without a workshop, there really is something for everyone. My own New Year's resolution has already been to diversify even further, so expect to see even more aspects of the craft of woodworking – happy reading to all!

Anthony Bailey, Editor
Email: anthonyb@thegmcgroup.com

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A traditional but elegant style with graceful legs

This retro form would adapt easily to a nest style

Design Inspiration

Nests of tables can come in various styles. These designs for individual pieces would all adapt to suit a nest arrangement

Right: The top of a nest could have a drawer and the others to be without

Modern, straight and square form that could provide a coffee-table shape as well

A slight change of design would be to add a bead

Below: Long nesting tables allow for 'L'-shaped arrangements

PHOTOGRAPHS BY LOUISE BIGGS

Veneered nest of tables

Louise Biggs explores the various methods of veneering

This nest of tables was made some years ago to complement a client's existing furniture. Designed around the requested size of the large table, they were made from Brazilian mahogany (*Plathymenia reticulata*) timber and veneer. Recently, however, the client decided to refresh them and have the tops veneered. I did this by hand, but as veneering is an extensive subject, I will endeavour to explain the different methods you can use depending on the equipment you have available.

Setting up and preparation

Work out the size of the tables on a workshop rod. The sizes of the tops were established and the veneers prepared for the top and bottom – the counterbalance veneer.

Flame veneers tend to resemble a mountain range and need to be flattened before veneering. They can be soaked with water and clamped between two pieces of board with even pressure or, as I was shown many years ago, a thin solution of wallpaper paste can be spread on both sides of the veneer and placed between sheets of newspaper to flatten as before. The newspaper was changed frequently to prevent the veneer sticking to the paper and aid drying. The paste will hold the veneer flat long enough for you to lay the veneer and makes no difference to staining and polishing.

Both methods of veneering require counterbalance veneers on the bottom and all the veneers were cut using a straightedge and a veneer cutter. Splits were taped with veneer tape or gummed brown tape to prevent the splits increasing. I also taped over the centre section of the flame to prevent splitting as it dries.

The flame veneer was cut for the large top first and then reduced for

What you will need:

- Table saw
- Planer/thicknesser
- Bandsaw
- Squares
- Spokeshaves – flat and round
- Mortiser or mortise chisel
- Router and table with straight cutter
- Profile gauge
- Sash clamps
- Chisels
- Cabinet scraper
- Abrasives
- Straightedge
- Veneer cutter
- Card for templates

For hand veneering

- Glue pot with animal/hide glue
- Veneer hammer
- Gummed brown tape
- Rule and knife

For press veneering

- Bag press – more than one make is available
- Cold press glue for veneering
- Veneer tape


Cutting the counterbalance veneer


Veneering a top with everything in reach


Gluing the back side of the veneer before turning over


Laying the veneer with the veneer hammer


Warming areas as necessary with an iron


Trimming the corners to a template

the next two pieces accordingly. The aim was to have the pattern on the small top the same as the central part of the large top as shown.

Hand veneering

Hand veneering requires the animal/hide glue to be heated in a glue pot, which should be hot but not to the point of boiling. A warm workshop is advisable and everything you need should be within reach i.e. hot iron, hot water and cloth and a veneer hammer – kept hot in the water.

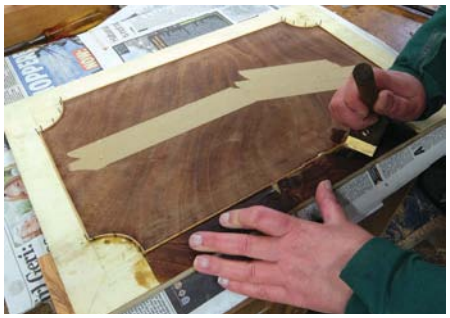

The flame veneers, reducing in size, to keep the pattern central

The flame veneer was cut 10mm larger all round and working quickly the glue was spread on the ground. With the veneer placed over the ground, the back face of the veneer was covered with glue and then turned over into position. There was a certain amount of glue on the veneer face, to which was added a small amount of hot water to make the hammer glide easily over the surface.

To work out the excess glue the heated veneer hammer was worked from the centre to the outer edges and corners. Enough pressure was used to squeeze the glue out without breaking the veneer, with the aid of a zigzag action. When the glue started to solidify a warm iron was used on the surface to re-melt the glue and continue. I ran my fingers over the veneer surface to check for high spots, these indicated glue trapped below the veneer and these needed to be squeezed out, the area was again warmed with the iron and the process repeated until the surface was flat.

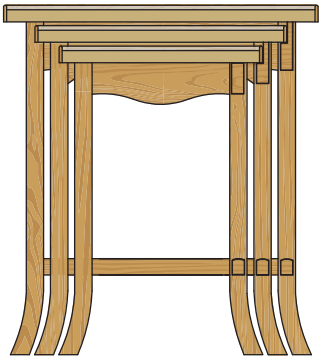
The flame veneer was trimmed back to the required size with a knife and square and the curved corners cut out using a template. White lines were fitted to the corners using square sections of line – these are easier to bend than the flat lines. Four pieces were soaked in hot water and when flexible bent to the shape of the corner, heat from the tip of the iron helped this process but it will form


Square white line being shaped to the corner

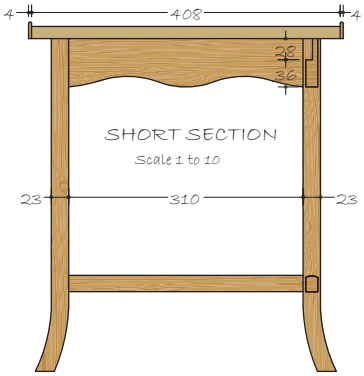

Veneering the cross-banding into place

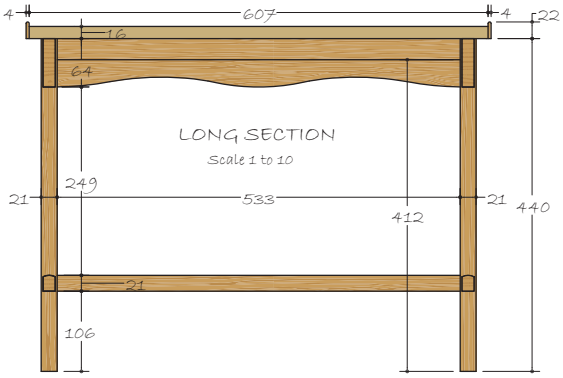
to the shape as it cools and dries. When sufficiently shaped they were glued into position leaving the ends long and held with pins where required. The straight sections of line were mitred into the curved lines and glued in position. The veneer for the cross banding along the straight edges were cut, then glued and hammered into position.

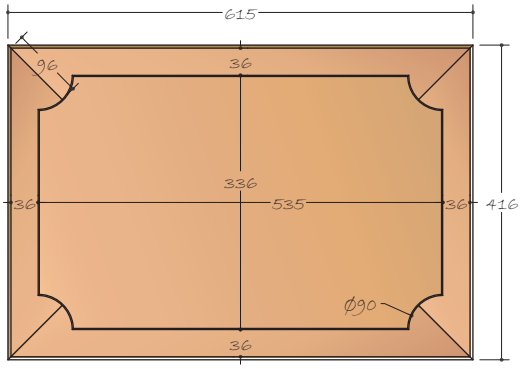
The joints between the flame, white line and cross-banding were taped and as it dries it will aid keeping the joints tight. Moving onto the curved corners ➤



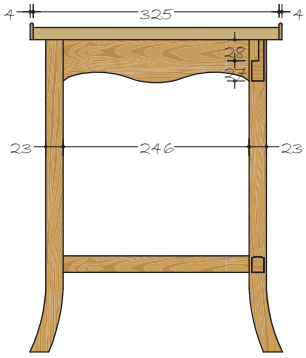
TABLES NESTED TOGETHER

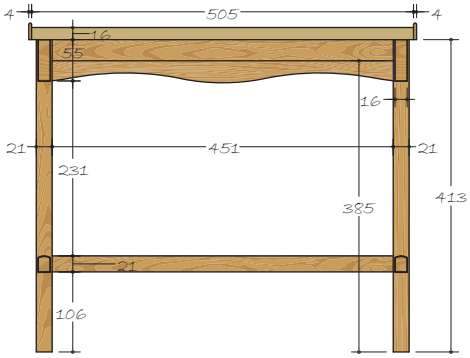


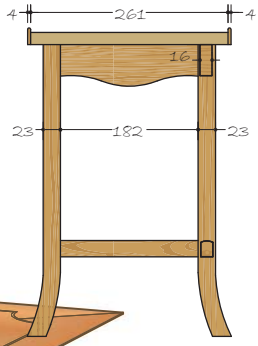


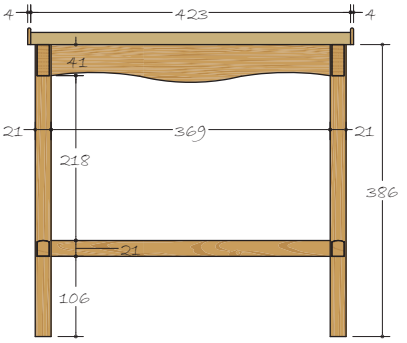


SAMPLE VENEER LAYOUT
Scale 1 to 10









Veneer hammers

These can be simply made from beech and a piece of brass. I made these two hammers about 30 years ago and they have served me well. Alternatively, you can purchase a 100mm wide hammer for £29.94 Inc. VAT

Web: www.originalmarquetry.co.uk

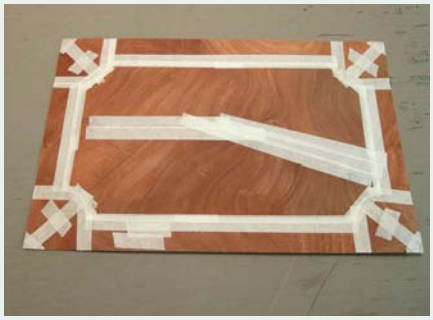
the two pieces of veneer were glued into position and the mitre cut through both pieces of veneer at the same time to create a tight joint. Removing the top waste piece first, I carefully lifted the top corner piece to remove the waste from the lower corner piece. Both pieces were hammered down squeezing out excess glue and the joint taped as before. The counterbalance veneer was laid in the same way as the flame veneer.

Lifting the top corner piece to remove the waste piece below

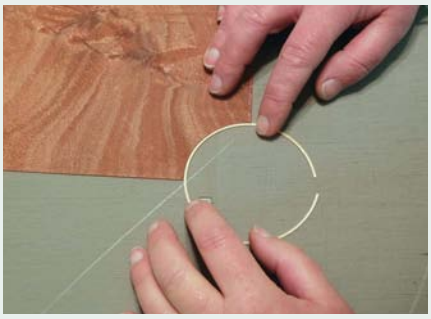
Squeezing the glue out through the joint

Veneering with a vacuum press

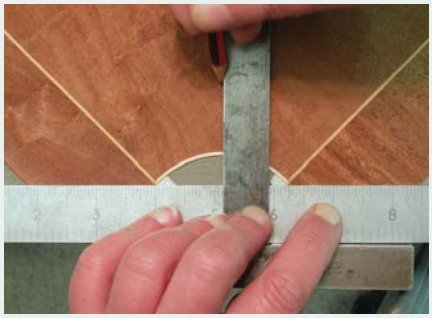
The flame veneer, oversize and pressed into place ready for the edging



The complete built up pattern taped on the face side



Fitting a preformed corner line to the corner



Finding and marking the line of the mitre

The completed pattern from the back

The panel placed in the vacuum bag press

When using a vacuum press there are two ways to go about veneering the tops. The first is to lay the oversize central flame veneer, using a cold press glue specific for veneering – this has a longer working time and minimises bleed-through – then trim back and build up the white line and edging in a similar way to the hand veneering. Use the same glue or if you prefer a contact adhesive. This way allows you to tweak the mitres so that the corner points line up.

Alternatively, you can build the whole pattern and lay the veneers in one action. This way requires accurate marking and cutting and when the top is glued and pressed, the positioning of the veneer must be accurate or the corner points may not line up. The pattern is built up in the same way as with the hand veneering but this time the veneers are taped together on the face side of the veneers instead of being glued.

The central flame was cut to the correct size and a template or object to the required radius was used to cut out the corners. Preformed corners, made from flat lines, were fitted and taped into each corner leaving the ends long again. The remaining straight flat line sections were fitted before cutting the cross-banding along the straight edges. Before you mitre the corner pieces you need to establish the mitre line. The centre point was measured between the points of the curves and with a rule and square a line was marked on the back side of the veneer.

The corner pieces were shaped and taped in position. Mitre joints were cut through both pieces at the same time to form a tight joint as with the hand veneering. On completion the assembled pattern, when viewed from the back, looked as shown in the photo.

For both cases, the bag press was set up on a flat surface and the breather strips placed around the inside of the bag, leaving room for the panel in the centre. The breather strips overlap and pass under the hose connector, to aid the press in extracting the air from the bag. In either case, the cold press veneer glue was spread using a small roller for even coverage, the veneers were laid in position on the ground and taped at two points to prevent movement. The boards were placed within the bag and the vacuum press turned on. Counterbalance as before.

Hand veneered panel – bottom, press veneered panel – top

Vacuum bag press

If you intend to do a large amount of veneering these are an ideal way to obtain the consistent pressure required to lay veneers on boards or indeed shaped formers and can be stored away when not in use. Professional Air Press Kit at £695 Excl. VAT and delivery.
Web: www.airpress.co.uk

Side and back rails graduating in length and width

The leg templates reducing in size

Shaping the curve to the profile gauge

Making the table frames

Timber was prepared to the required dimensions. The shape of the rails for the three frames followed the same curves but graduated in length and width which was reduced from the top straight edge. A bandsaw was used to cut the shaped rails and the shape finalised using flat and round bottomed spokeshaves. The side rails were trued up in pairs, checking the shapes against the templates.

The legs followed the same shape but the height was reduced from the top straight section in each case.

Straight sections were used for the stretchers curving the top edge to match the curve on the front edge of the legs, shaped using flat and round bottomed spokeshaves, a profile gauge was used to get the same curve along each section. I cut mortise and tenons to join the rails and legs. Gluing the end frames first and then the two frames with the back rails using sash cramps. All sections of the frames were finished with cabinet scrapers and abrasives and the tops cleaned up in the same way. A beading was formed, then mitred and fitted around the edges of the tops to create a 4mm upstand allowing for toughened glass tops to fit within. The original nest of tables was stained and French polished to match the existing furniture but alternative finishes can be used. ■

Bead edging ready for the glass tops

The completed nest of tables

Louise Biggs

Having completed her City and Guilds, Louise went on to train for a further four years at the London College of Furniture. She then joined a London firm working for the top antique dealers and interior designers in London, before starting her own business designing and making bespoke furniture and restoring furniture.
Web: www.anthemion-furniture.co.uk

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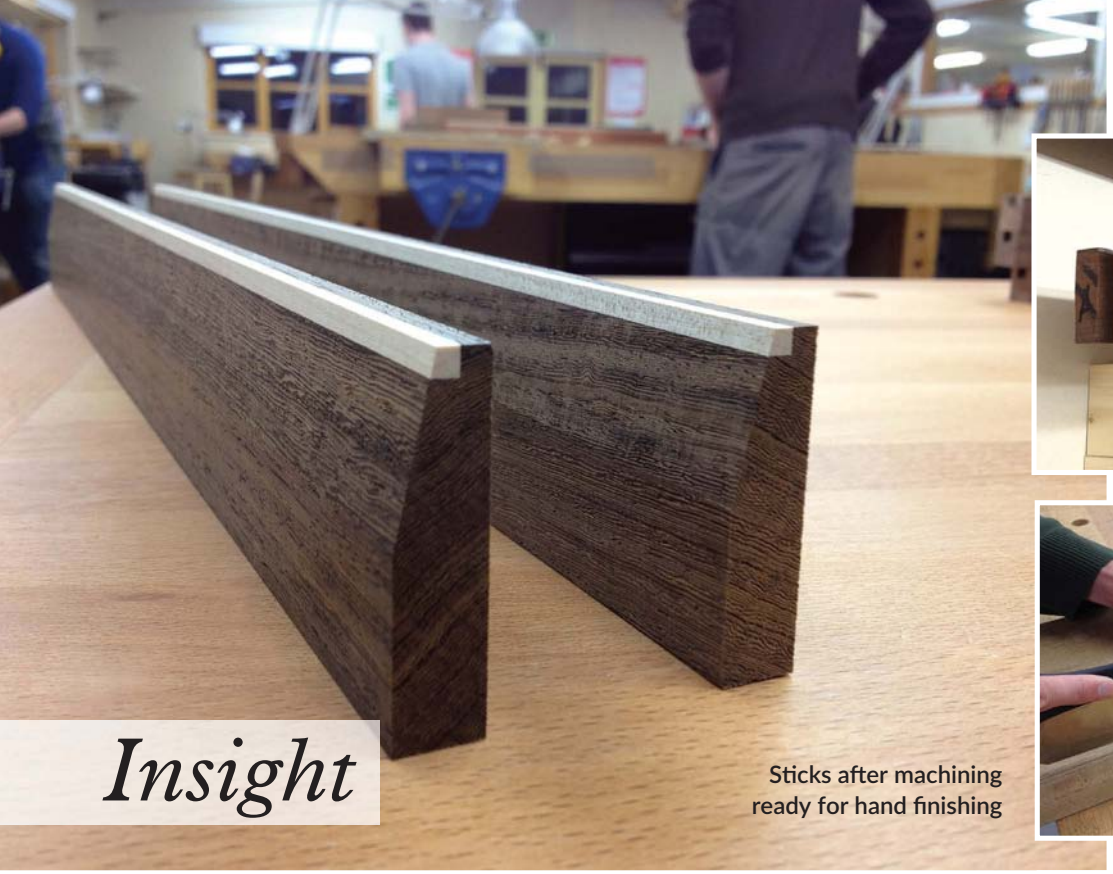
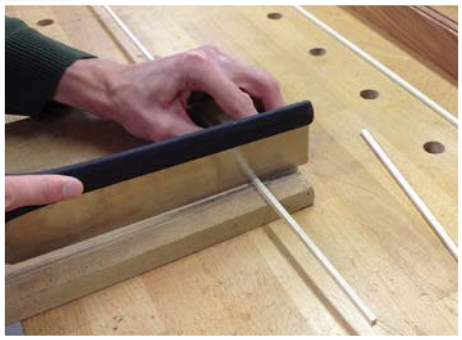


Insight

Sticks after machining ready for hand finishing



Winding sticks

Peter Sefton's students make an essential workshop aid – winding sticks

One thing that always amazes me about woodworking is that although we have CNC and laser technology, sometimes the simplest workshop aids are the best. One of my favourites is the humble pair of winding sticks. They have been around since ancient Egyptian times – when the pyramids were being built, sticks were used for checking constructions for twist – but they are still as useful as ever.

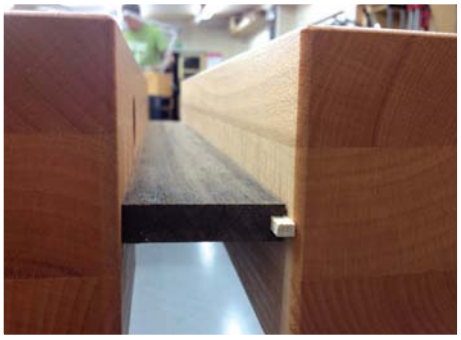
We have been making some winding sticks in the Furniture School using dark wenge (*Millettia laurentii*) and pau rosa (*Dalbergia frutescens*), both inlaid with ripple sycamore (*Acer pseudoplatanus*). This has been primarily a wood machining job and an exercise in timber movement control. We selected some 50mm thick board and decided to slice it up to give us quartersawn stock at 50 x 18mm; these were marked up in pairs and left to settle in the workshop for a couple of weeks, both to release tension and also to ensure dryness.

Later, the students re-machined the timbers, face side and thicknessed them down to 14mm before leaving them to settle once more.

The following week they were face side, face edged and thicknessed to 45.5 x 12mm. We set the spindle moulder and grooved them with a 4mm wide groove that was 4.5mm deep. This gave an accurate size to make inlays to fit. After selecting and machining the sycamore to a friction fit of the grooves, we bandsawed the inlays at 5mm wide; just wider than the groove's depth, ensuring any cramping pressure was pushing the inlay home into the groove.

Titebond was run into the groove before the sycamore was tapped home and cramped in the vice. Parcel tape was also used to protect the vice cheek from glue and any excess was wiped off with a damp rag. Some of the glue squeezed out through the wenge's open pores.

The following day the sticks were re-machined back through the thicknesser to flush down the inlay and remove a 0.5mm skim off the edge of the solid timber, to remove any trace of glue and square the edge. An angled jig was used in the thickness planer to produce a consistent chamfer on the face of the sticks before cutting them off the length with a fine blade on the tablesaw's sliding carriage.



Top: Timber left to settle
Centre: Cutting of inlays to length
Above: Inlays cramping in the vice

Some of the students then used some polished stainless steel dowels to act as pins, keeping the winding sticks accurately together in their pairs for lifelong companionship with their new woodworking owners. After some fine sanding up and a couple of coats of finish, the winding sticks were good to go to work. ■

Peter Sefton

Peter Sefton is a well-known furniture maker who runs courses in fine woodworking, teaching and mentoring students at the Peter Sefton Furniture School. He also owns Wood Workers Workshop and he is a Liveryman of the Worshipful Company of Furniture Makers.
Web: www.peterseftonfurnitureschool.com

NEWS & EVENTS

All the latest events and news from the world of woodworking...

Young maker wins place in 2017 WorldSkills squad

Waters & Acland's talented cabinetmaker Angus Bruce-Gardner, 20, has made the squad for the 2017 WorldSkills tournament in Abu Dhabi.

Bruce-Gardner excelled in the final round of competition at the National Finals in Birmingham where he and his fellow participants had only 19 hours to produce a finished piece of high-quality furniture after only a 10-minute glimpse at the drawings.

"There are four of us in the squad," explained Bruce-Gardner, "but only one of us will go through to [represent the UK] in Abu Dhabi. That will be decided in May 2017."

He acknowledged that it would take a lot of hard work to secure that spot. "I'm doing [timed] practice runs every two weeks in the workshop for the next 18 months. They'll be with my colleagues at W&A, who are being really helpful.

"But I'm also training with former World Champion Gary [Tuddenham, of Parabola workshops]. It's really great having him on board. He won best cabinetmaker in the world in 2007 and he knows how the competition works and what I need to look out for. He also knows the marking schemes very well."

PHOTOGRAPH COURTESY OF ANGUS BRUCE-GARDNER/W&A

W&A's Bruce-Gardner with the elegant cabinet that secured his place in the WorldSkills squad

It's a big commitment for W&A, too, which insisted Bruce-Gardner "had improved as a maker due to his involvement with WorldSkills" and added that it was doing its utmost to help him "win the place on the plane to Abu Dhabi."

The 44th running of the WorldSkills competition will see 50 skills on show and feature some 1,200 competitors from 72 countries. There's an added ambition for Bruce-Gardner, too, as the UK is hoping to achieve a hat-trick.

"There's extra pressure because the UK has won the past two years in cabinetmaking," he revealed, "so obviously we want a third. But I'm really looking forward to it. It'll be a good journey."

If you would like to follow Bruce-Gardner's progress, check out W&A's Facebook page.

Contact: WorldSkills UK Skills Competition
Details: www.findafuture.org

Ten Turners Turning

During this two-day Axminster Tools & Machinery event professional turners will demonstrate their skills and unique styles of woodturning; explain any useful tips, techniques and easier ways of achieving the desired result; and produce their own trademark turned pieces.

Both Friday and Saturday afternoons will see the pro-turners, including Andrew Hall, Andy Rounthwaite, Joe Laird, Mark Sanger, Phil Irons, Richard Findley, Steve Heeley, Tracey Owen and Axminster's own Colwin Way – see left – and Jason Breach, competing against each other and the clock in the rejuvenated Ready Steady Turn competition. There will be a wide range of Jet and Axminster lathes on display, including the Jet 4224B and Axminster's Hobby and Trade ranges.

This event will also provide a good opportunity to see many different lathes in action.

When: 11–12 March, 2016
Where: Axminster Tools & Machinery, Bermuda Trade Park, Nuneaton, CV10 7RA
Web: www.axminster.co.uk

London trees clean up to tune of £6billion

PHOTO COURTESY OF SHUTTERSTOCK

'Urban' trees such as those in Greenwich Park, south London, bring financial benefits to the capital as well as providing invaluable green areas for its residents

The capital's eight million trees are worth some £6.1billion, according to a new report for the iTree urban forest survey.

Thanks to the efforts of 300 volunteers, who analysed and counted the capital's trees, the survey concluded that London's trees store 2,367,000 tonnes per year of carbon, a service worth £146.9 million, and remove 2,241 tonnes per year of pollution, worth £126.1 million.

The survey also found that London's canopy alleviates £2.8 million worth of storm water every year, while all of its urban foliage would cost £6.1 billion to replace. In addition, it estimated that trees contributed £130 million in wider benefits per year.

Environment Minister Rory Stewart said: "Our trees and forests have long been central to British identity. But we are beginning to understand with even more precision just how important they are to our air quality, our health and our happiness. This is a fantastic initiative. And it sits well alongside our drive to plant an additional 11 million trees in this parliament, and to support green spaces across the country."

London Mayor Boris Johnson greeted the news with typical enthusiasm: "London is one of the greenest, leafiest cities on the planet," he commented, "and as this survey proves, our canopy does a 'tree-mendous' job of lowering pollution, alleviating flood water and boosting our environment."

The mayor's office, meanwhile, has signed a partnership with Unilever to deliver 40,000 new trees to the city. Some 20,000 of them will be offered to schools and the other half will form a new urban woodland in Ealing, west London.

PHOTO COURTESY OF MANIFESTCOMMS.CO.UK

NEC show wins over kids

Young people and children gave a big thumbs-up to the 2015 SkillsShow.

Held across three days, the event welcomed a total of 78,324 visitors – 20,597 people, many of them families, attended on the Saturday, a 44% increase on 2014's show.

"Our Saturday opening saw high numbers of families attending together to learn about vocational careers," commented Dr Neil Bentley, chief executive of Find a Future, the show's organiser. "This is a clear indicator of how keen parents and guardians are to be involved in their children's career choices."

Contact: NEC, Birmingham
Web: www.thenec.co.uk

Wolf on prowl for vintage power tools

Wolf Tools is tracking down examples of its oldest-surviving power tools as it marks 115 years in the business.

"Few people may be aware of the heritage of Wolf-branded tools," said its MD Mark Adams. "Over 115 years the Wolf name earned an enviable reputation for quality, reliability and innovation in power tools.

"In 1935, Wolf Electric Tools supplied all the power tools to the British aviation industry and in 1949 it manufactured the first UK DIY power drill.

"With the 'Wolf Oldest Tool Hunt' we hope to unearth some of the brand's oldest surviving power tools and would be pleased to hear from anyone and everyone who can add their Wolf tool story to the company's history."

The firm, which was established in England in 1900 and has gone on to offer innovative, technologically advanced, high-quality tools, hopes to find the five oldest examples of its power tools. In return, the tools' owners will be offered an exchange for a brand-new Wolf Ultimate Cordless Impact Driver, worth £99 – see it at ukhs.tv/Tools/Power-Tools/Wolf-Ultimate-10-8v-Impact-Driver.

If you would like to participate in Wolf's 'New Tools for Old' exchange, please email the details of the model, its approximate age and, if possible, a good-quality photograph, along with your name and contact details, to: toolhunt@wolfdiy.com

Offer ends 5pm on 31 March, 2016.

WOODWORKING IN THE NEWS

Blessed in starring role for Forestry Commission

Actor Brian Blessed has stepped in to help the Forestry Commission ensure England's forests are sustainably managed for the future.

In a new film for the commission, he hopes to raise awareness of England's woodland. "The Forestry Commission does a marvellous job," said Blessed, "and we need to protect our trees and forests for future generations. They are places to explore, to relax and to enjoy the species of plants and wildlife that make our country a joy."

Best known for his booming voice, Blessed has starred in *Flash Gordon* as Prince Vultan; Lord Locksley in *Robin Hood: Prince of Thieves*, and King Richard IV in *Blackadder*.

But he is equally as passionate about trees, animals and nature and is a natural explorer. "Trees are important for our wellbeing and a great place to enjoy stillness and silence," Blessed added. "People sometimes wonder why they are felled and just left there and we hope to help people understand the process in this film."

Set in Blessed's back garden in Surrey and on location in Cannock Chase in the Midlands, the film illustrates the scope of the Commission's work, which includes protecting wildlife with partners such as The Wildlife Trust and the RSPB.

The Commission's Head of Land Management Andrew Powers, who is filmed talking to Blessed about the importance of England's forests and the Commission's role in tackling climate change, said: "Brian was a natural choice for us as he is really passionate about trees.

"He was fantastic to work with and a real professional. He has a natural enthusiasm, but also a lot of knowledge about his natural environment."

Powers added: "There is an increasingly complex set of issues around our forests and we wanted to get that across to our visitors and the wider public in an engaging way."

The Commission hopes the film will also raise awareness of its role as a producer of timber as well as its management of sites for recreational use such as mountain biking, dog walking, rambling and concerts.

PHOTO COURTESY OF CREATIVE CONCERN

Blessed has long demonstrated his passion for the environment and nature

Outtakes of Blessed's appearance in the film are to be released on social media. One clip sees the actor reciting a poem about trees that he wrote when he was eight years old.

"It earned me a nine out of 10 from my teacher," recalls Blessed, "and a copy of *The Eagle* comic."

You can catch Blessed's appearance for the Commission on YouTube.

Contact: Forestry Commission, England
Details: www.forestry.gov.uk/england

NFC gives green light to carbon pilot

The National Forest Company has launched a new carbon scheme to encourage the creation of new woods in its forests.

The pilot Carbon Scheme will run alongside its existing grant projects to encourage more landowners to create woodlands within the 200 square miles of the National Forest. "It will run in a pilot phase over two planting seasons," said Simon West, Head of Forestry for the NFC.

"We will work closely with Forest Carbon Limited, which helped develop the Woodland Carbon Code. Together we hope to inspire many more landowners to create woodlands in The National Forest. This unique forest-wide scheme will provide an attractive offer to businesses interested in buying carbon to encourage the planting of trees."

Woodlands planted within the Carbon Scheme will come under the government-backed Woodland Carbon Code, which is the standard for woodland creation projects in the UK that generate verifiable woodland carbon units. These are measurable amounts of carbon dioxide that are removed from the atmosphere by the growing trees.

Investment in Woodland Carbon Code projects is attractive to companies who are interested in the voluntary capture of carbon against that produced by their business activities, or who wish to make a contribution to the health of the environment alongside other green initiatives.

PHOTO COURTESY OF 2020VISION/BEN HALL

Landowners wishing to learn more about the scheme can contact Simon West, while companies interested in encouraging the planting of woodlands by buying carbon can call Lynne Richards – both are on 01283 551211.

Contact: The National Forest
Web: nationalforest.org

BOOK REVIEWS

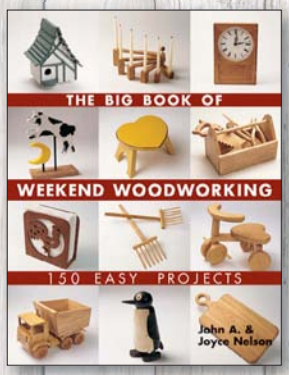
We review three books for you to enjoy

The Big Book of Weekend Woodworking: 150 Easy Projects

by John A and Joyce C Nelson

This book certainly lives up to its title as its 447 pages are filled with fast and easy projects designed to be made in just a few days. Each project is accompanied by photographs of the finished piece as well as detailed drawings of the front, top and side views. Most of the projects also include exploded view drawings. The book begins with a handy guide to following the project instructions, as well as covering basic techniques such as transferring patterns from paper to wood, making joints and finishing.

With 150 projects, you're bound to find something to inspire you to get into the workshop. There are house and garden accessories, such as a cutting board, salad forks, birdhouse, picture frame and candleholder, plus ideas for shelving units, boxes and fretsaw projects. There are also whole chapters on clock designs and folk-art and antique-inspired pieces. The longest chapter is the one for Toys, Games & Puzzles, which contains over 35 charming projects, including a toy train, model cars and trucks, a traditional Swedish sled, a rocking horse and a Noah's Ark complete with the animals two-by-two. *The Big Book of Weekend Woodworking* is an ideal 'dip-in' reference and will be great to have on hand when you have some last-minute gifts to make!



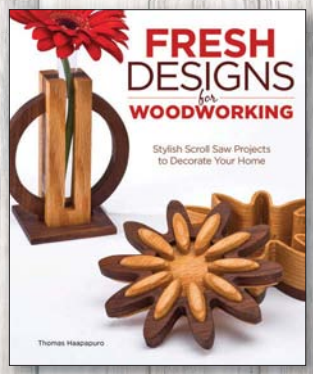
ISBN: 9781579906009
Price: £17.99
Web: www.gmcpubs.com

Fresh Designs for Woodworking: Stylish Scroll Saw Projects to Decorate Your Home

by Thomas Haapapuro

In contrast to *The Big Book of Weekend Woodworking, Fresh Designs for Woodworking* is a small title but is equally packed with inspiration and information. Aimed at woodworkers of all skill levels, it includes 21 designs for home accessories. As well as teaching the essential skills and techniques required for the scroll saw, the author hopes that readers will go on to design their own work, so each project includes an explanation about Haapapuro's inspiration and how he developed the design, plus there is information about the processes, tools and software available to designer-woodworkers.

After a comprehensive Getting Started section, the book progresses from Beginner Projects & Techniques, through Intermediate level to Advanced. Each project is described in detailed step-by-step text and is accompanied by clear photographs and illustrations. The projects themselves share a stylish, contemporary aesthetic, many of them are inspired by patterns in nature, such as the Tree Forms wall art and the Farm Fields picture frame. Other projects include the Radial Squares clock, Geometrix vase and Elliptical Array box.



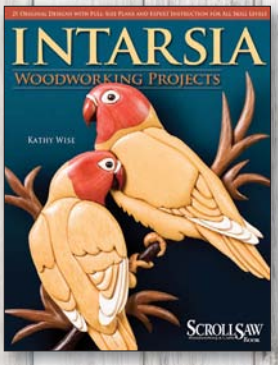
ISBN: 9781565235373
Price: £12.99
Web: www.gmcpubs.com

Intarsia Woodworking Projects

by Kathy Wise

This book from celebrated intarsia artist Kathy Wise contains 21 designs ranging from simple projects for beginners to more advanced pieces for those who have more experience. Several of the designs are inspired by nature, such as a Penguin and Chick, a Fox, a Lion, a Rattlesnake, a Clydesdale and Colt and an Eagle. Other subjects include a Lighthouse, Sailboat and a Barn Scene.

Each project has a full-size, colour-coded pattern to help make the process as easy as possible. If you're new to the technique, there's a useful Getting Started section at the beginning of the book that introduces you to the fundamentals of intarsia, such as how to lay out the pattern, selecting wood, how to use the tools and different finishes. This book is packed with useful tips on how to perfect your intarsia skills.



ISBN: 9781565233393
Price: £11.99
Web: www.gmcpubs.com

PHOTOGRAPHS BY AMBER BAILEY

Wooden ALPHABET MAGNETS

Amber Bailey is definitely 'a lady of letters' as she proves with this gripping little project

Novelty fridge magnets are relatively a thing of the past, but as a child of the 1990s they hold a fond memory for me. Like doodling, there is a natural impulse to rearrange the letters into words. As much as I still love plastic alphabet magnets, they are something of an eyesore, yet made out of wood they suddenly seem to be much more presentable and they can make a rather natty gift. ➤

Health and safety

When cutting with a fretsaw you are required to hold your fingers very close to the blade, so beware of slipping and wear hand protection if necessary. These letters are not suitable for a child under five years of age due to possible choke hazard.

What you will need:

- Wood of personal preference at approximately 4mm thick. Each letter is no more than 30mm squared so it is a good excuse to use up scraps!
- Fretsaw or other saw type
- 1 x full-size paper template
- Carbon paper
- Pillar drill
- Jewellery files
- Abrasive paper
- Le Tonkinois varnish or other finish of personal preference and a brush
- Self-adhesive magnets

Suppliers

Magnetic sheet is available from Hobbycraft and other good craft shops.
www.hobbycraft.co.uk

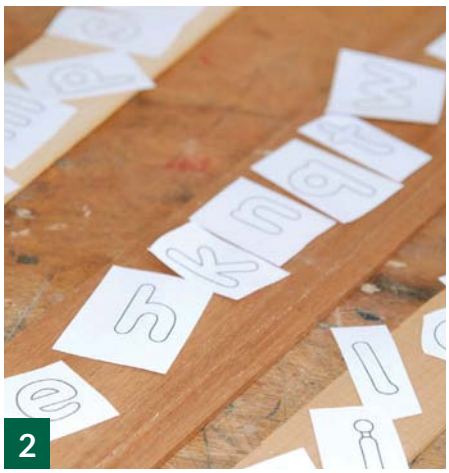
Preparing the materials

1 As each of the magnets are so small the project could easily become very fiddly, so to minimise any problems all the blank wood should be prepared to a similar thickness. Remember that the natural wood will appear very pale, apply water to demonstrate how the wood will actually look after a finish is applied.

Transferring the design

2 By enlarging or reducing the size of the template you can make the letters as big or as small


1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Timber choice

The choice of wood for your magnets is entirely up to personal preference; consider creating a pattern of colour throughout the alphabet just as the plastic originals included a wide variety of colour. For my project I have chosen to alternate between cherry (*Prunus avium*), mahogany (*Khaya ivorensis*) and maple (*Acer campestre*), which should work well in most traditional kitchens.


3


4

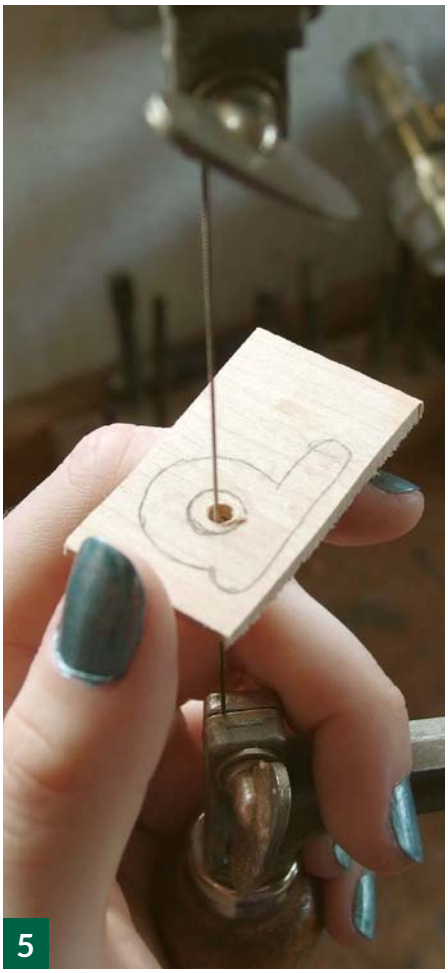
as you wish. To transfer the template to the wood, place a sheet of carbon paper face down onto the wood with your template on top, secure both with tape to stop the sheets from slipping out of alignment. Trace over the design with a ballpoint pen and when you lift the paper away it should reveal a copy of the design.

3 Try to make sure that the grain direction follows the same way on all the letters to keep the magnets looking uniform.

4 It is advisable to leave a little room between all the letters for space, however the project should still only use up a minimum of material.

Drilling access holes

5 The majority of the letters can be cut straightaway but there are a few that will need an access hole drilled to be able to cut away the centre waste material. Try to keep the drill bit as straight as possible and support the piece of wood to prevent it from spinning around.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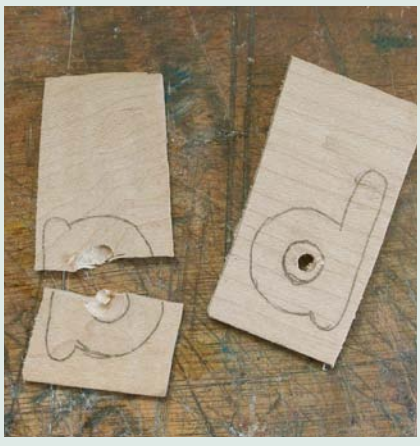
6

Cutting the design

6 Although this is a fretsaw project, I am actually using a jeweller's saw. Fretsaws tend to be slightly larger, which allows for a greater turning width around the blade. With a project so small I felt no need to support the extra weight of a larger saw. You will need to support your cutting on a tabletop marquetry donkey, which is essentially a board of wood with a slit cut into the middle that is screwed onto a strip of wood and held in a vice. For each letter, gradually cut around the design, making sure to support the wood from lifting and breaking. Try to keep your blade as straight as possible to avoid cutting off-centre. ➤

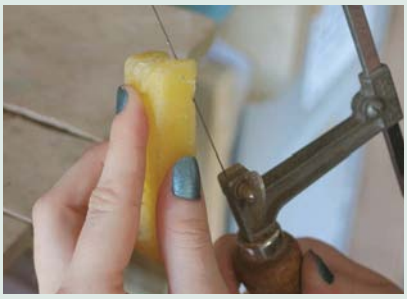
Drilling the centre holes

The centre hole is the same size for all the magnetic letters, but do not be tempted to use a large drill bit to extract the material. The wood follows a natural grain direction and any short grain sections will easily split under the force of the drill. The access holes need only be large enough for a thin fretsaw blade, try to drill them fairly centrally to avoid any mistakes that might take slight nicks out of the designs. Here you can see the damaging result of a large drill bit compared to creating a small hole.



Waxing the blade

Always keep a block of wax handy to lubricate the blade if it starts to stick in the wood.



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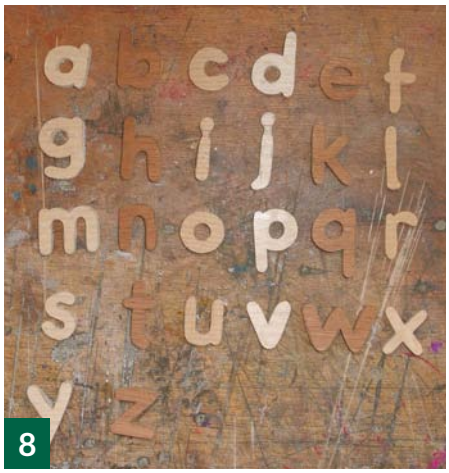


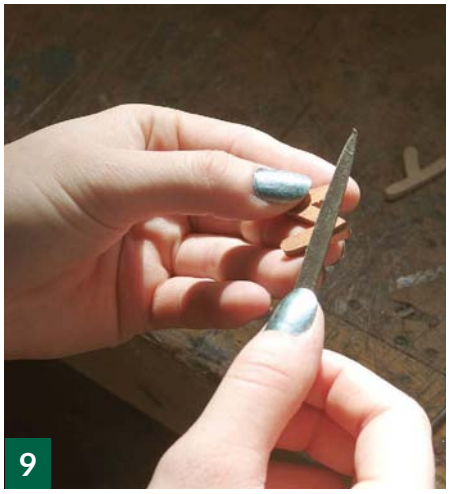
8

7 The best way to clamp your fingers is to position them either side of the blade and just behind it. This should keep them clear of the saw teeth.

8 Once all of the letters have been cut out, you can begin the final stage.

Smoothing and finishing

9 The sawn edges of the letters will have developed a burr as a result of the torn wood fibres. To remove these, use a variety of abrasive papers and jeweller's files for the intricate and hard to reach areas. Jeweller's files come in various shapes and sizes making them ideal for cleaning up areas that abrasive paper cannot. Once all the edges are cleaned up, give the front surface a final smooth over with fine abrasive paper to prepare it for finishing.



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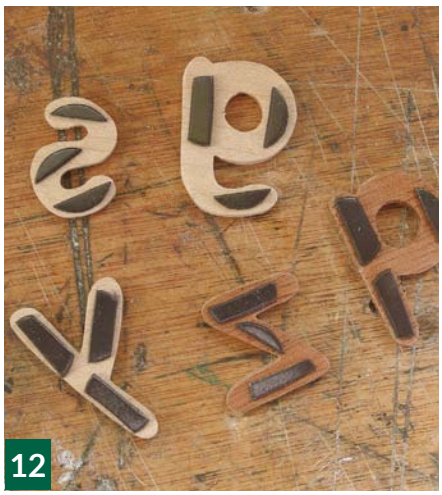
10

10 With a small brush apply a waterproof varnish such as Le Tonkinois. The varnish will need to be built up in a few layers, the first to seal the surface then the others to build up a suitable finish. Choose a brush that can be ruined if necessary, as Le Tonkinois is tough and will not be easily rinsed out unless washed immediately with white spirit. I would also advise that you do not go for the cheapest of brushes, falling bristles is the perfect way to ruin a decent coat of polish. Do not forget to polish the sides and it may also be worth sealing the back of the letters.

Cutting detail

Always cut out any central detail first before removing the exterior waste, as this will give you as much material to work with as possible. It will also be slightly safer for manoeuvring your fingers near to the blade.

11



12

Adding the magnets

11 You can buy self-adhesive magnets that are designed for crafting, they are incredibly soft and pliable and can easily be cut with a pair of scissors. Pre-backed with double-sided tape, these can be instantly stuck in position after strips have been cut for all appropriate areas.

12 Add magnetic segments to support all sections of the designs. Your alphabet is now ready to stick on the fridge! ■

Amber Bailey

Amber is a skilled marquetarian and surface design artist who graduated from Bucks New Uni in 2014. She is now based in Paris at the École Boulle where she will complete her studies in the art of marquetry and Boulle metalwork, continuing with this traditional decorative skill.
Web: www.abmarquetry.com

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Rosewood candlestick

In an extract from *Woodturning: A Craftsman's Guide*, Mark Baker makes an elegant candlestick

PHOTOGRAPH BY ALAN GOODSELL

Candlesticks make a great centrepiece for a table, and are an ideal way to practise cuts and techniques. The example in this project is made from rosewood (*Dalbergia latifolia*), but you can use any close-grained hardwood.

PHOTOGRAPHS BY ARRON SHEDLOCK, UNLESS STATED OTHERWISE

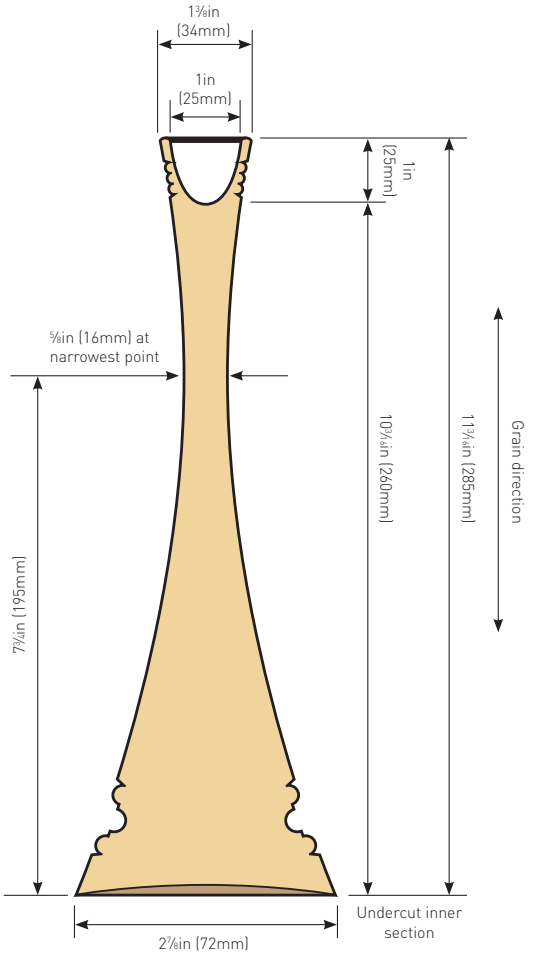
Making the candlestick

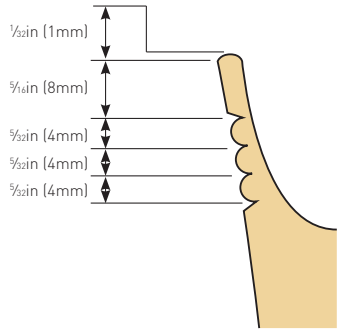
1 You will need a piece of timber 75 x 75 x 300mm long. I have used rosewood. The grain runs along its length and will be fixed between centres – a drive spur in the headstock and a revolving center in the tailstock. Mark the centres on each end of the wood. A centre finder is very useful for this task. Fix the wood between centres on the lathe and adjust the rest so that it is just below the centreline and off to one end, ready for using a spindle roughing gouge. When the rest is in place, spin the wood by hand to make sure it is clear of the rest, then switch on the lathe.

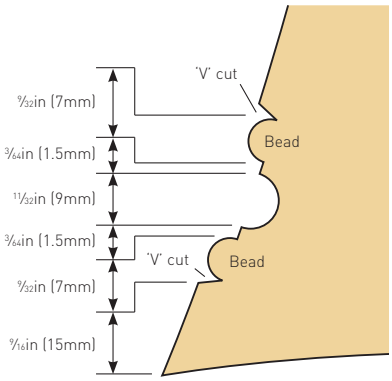
2 Use the spindle roughing gouge to remove the square edges. Remember: have the handle low until you hear the 'tick' of the heel of the bevel touching the work, then raise the handle until you get a very slight cut on the cutting edge and then adjust the handle position to a coarse shaping cut or refined peeling cut as required.

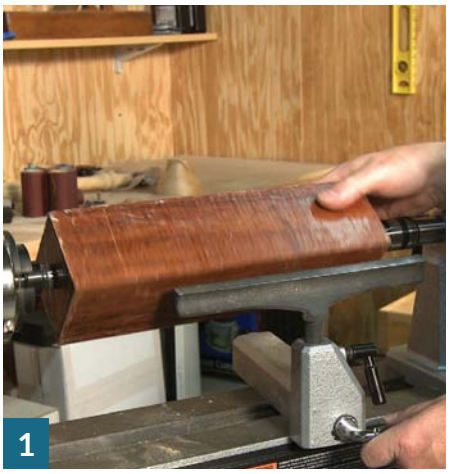
3 Remember: don't cut into the end grain, keep the flute pointing in the direction of the cut, and make the cut on the lower wing. Make multiple light cuts, starting from farther back along the wood each time, keeping the tool in contact with the rest at all times. You will reach a stage in which the wood on one side is tapered and almost round at the far end. At this point switch off the lathe, move the rest to the opposite end, and check that it doesn't foul the work. You are ready to cut this end.

4 Once again, the gouge should point in the direction of the cut. Make successive cuts to work your way back towards the other end – adjusting the rest as necessary to allow best access to the work – blending the two ends to create a cylinder of wood. When you are happy with this cylinder, use the beading and parting tool to cut a tenon or spigot that will fit your chuck jaws on the tailstock end of the wood.





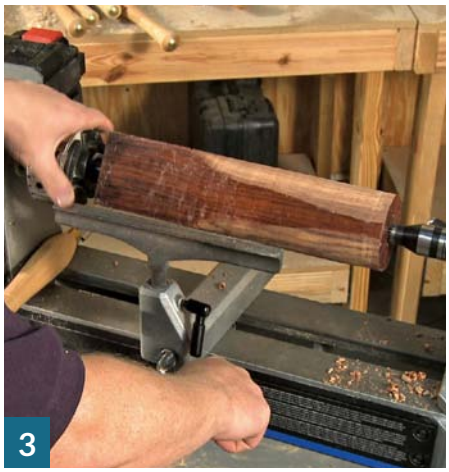


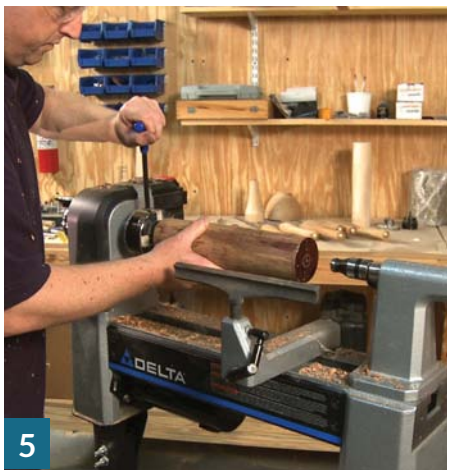


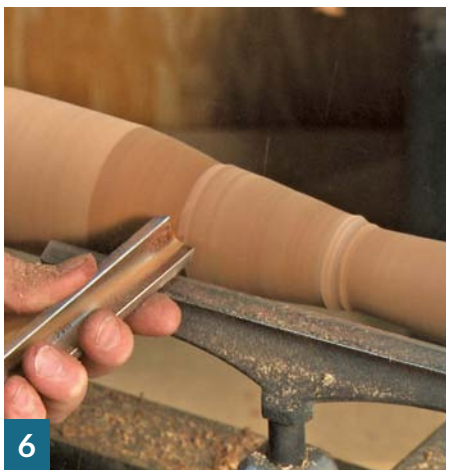
5 Remove the piece from the lathe and secure it in the chuck, making sure you tighten up the jaws properly and that the piece runs centrally. To help with this, bring up the tailstock – this will centralise the piece – and tighten up the chuck fully.

6 Use the spindle roughing gouge to roughly shape the candlestick.

7 The shape is like a long, sweeping cove. Part way through the rough shaping process, measure and mark a position one-third of the way down the cove – this will be the narrowest part of the curve and the transition point as the curve then sweeps the other way toward the base. Remember not to cut uphill, only downhill with the grain – so you need to cut from both sides, working down to the lowest part. Don't make the cylinder too thin at this stage – about 43mm – diameter at the curve transition point is fine. Use either a beading and parting tool or a spindle gouge to partly create the top curve of the candlestick. The shape is more or less half a bead so can be created with either tool. Remember, make light cuts and roll the blade as you cut to make ➤







sure you are cutting on the lower tip of the beading and parting tool, or the lower wing of the gouge.

8 Now for an end-grain hollowing cut, which we haven't shown yet but is very handy to know. Remove the tailstock ready to make the hollowing cuts to accept a candlestick metal cup. Take a spindle gouge, place it on the rest and adjust the height until the gouge is horizontal and aligned to the centre of the work. The flute should point to approximately the 10 o'clock position, and the cut should be made on the lower wing. Push the blade forward to create a hole of the correct depth. Pull the tool out and swing it out at the front section to cut the required opening size. Make small cuts until you reach the drilled depth.

9 Sand the hollow, using a French-curve scraper to refine the shape.

10 Stuff kitchen paper in the cut hole and bring up the tailstock. This will prevent the revolving centre from marking the wood, but allow it to support and centralise the project. Use a spindle roughing gouge to refine the shape further. The critical part now is to get the correct curve and diameters at the top and bottom of the candlestick.

11 Measure and mark the position of the top three beads. Use a skew chisel to create small V-cuts on each of the pencil marks…

12 … then swap to either a parting tool or a spindle gouge to roll the beads. These are small beads so only light cuts are needed. Take your time. Clean up each end of the beads to create a chamfer. For the bottom area, measure and mark the positions of the coves and beads. Use a skew chisel to make V-cuts, as for the top section.

13 Rough-shape the cove using a spindle gouge. Then, using a parting or beading and parting tool, cut the two outer beads. Only cut on the lower tip of the edge.

14 When the beads are cut, use a spindle gouge to deepen and refine the cove. Take care not to catch the lower wing on the opposite side of the cove.

15 Take a parting tool and cut down the side of the beads to create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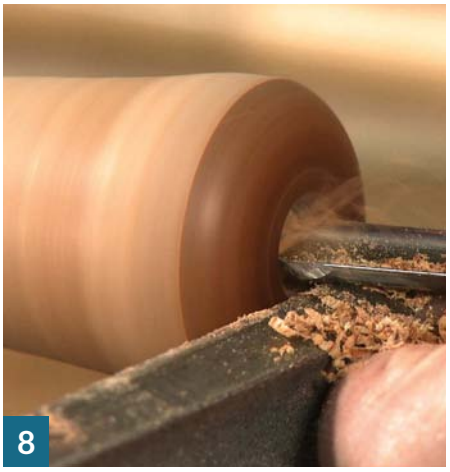
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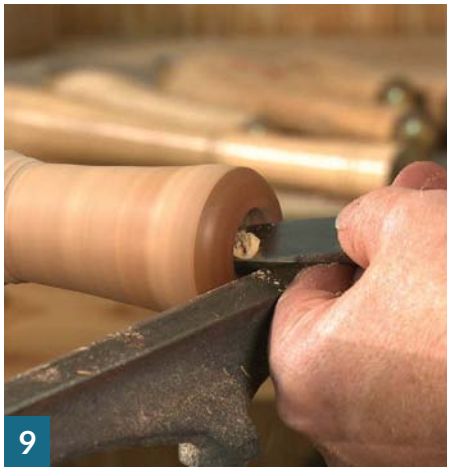
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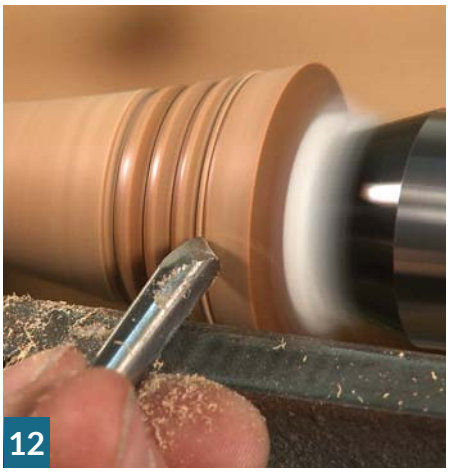
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the fillets. Reshape the inner sides of the beads with a spindle gouge.

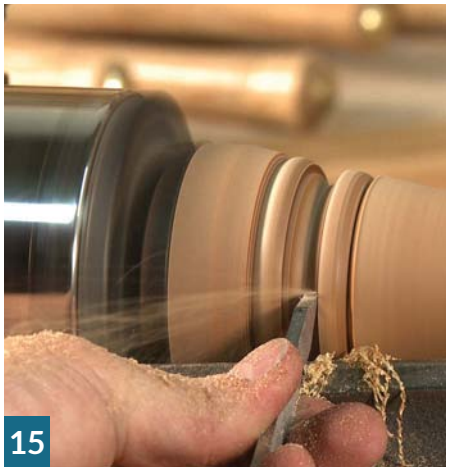
16 Take a look at the beads and coves at each end. Do not be afraid to go back and refine or alter the shapes as necessary. Here, the bead forms at the top seemed a bit too shallow, so I used a skew to deepen the sides a little, making the beads seem fuller and more defined.

17 Then refine the curve between the detailed areas to the final depth and shape required.

18 In readiness for removing the piece later on, take a parting tool and making a parting cut to about 43mm deep at the bottom section. Note there is a section of timber directly in front of the chuck. You should not go too close to the jaws with a tool or you can catch the steel. Use the tool to just create a chamfer on the bottom outer edge. You are now ready to sand the piece. Work through the grits, starting with the coarsest – 120–150 grit is a good place to start – down to about 400 grit. Don't skip any grit grades and keep the abrasive moving at all times. Pay special attention to the detailed areas, and take care not to blur and soften the crisp detail you have already created.

19 When the piece is smooth and free of any visible scratches left by the coarse abrasive, you can apply a finish. I used an oil and carefully applied it with kitchen towels while the work was stationary. But you can use other finishes to suit your personal likes and dislikes. Once the surface is completely coated, switch on the lathe to burnish the surface. Be careful as you draw near to the chuck. If you make contact with it, the cloth or paper is shredded very fast, so imagine what it could do to your skin. Go carefully.

20 After burnishing, switch off the lathe, and when the work is stationary move the rest to the chuck end. With a parting tool cut almost, but not quite, through the stub of wood left at the headstock end, stop the lathe, and then saw through the last bit. When the candlestick is free, use a chisel or knife to clean up the stub, and a drill fitted with a sanding arbor to clean up the base. Finally, oil the bottom and top hollow and your candlestick is finished. ■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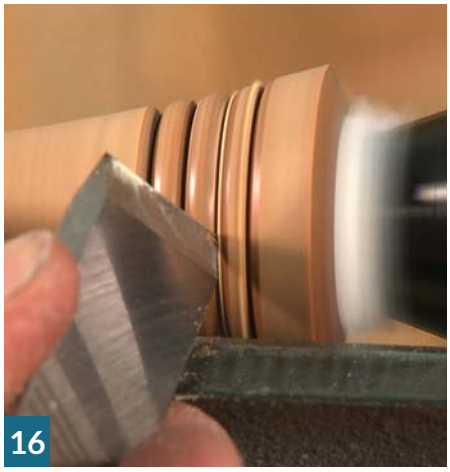
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GREEN WOODWORKING

PHOTOGRAPHS BY PETER WOOD

Making a Windsor chair – part 1

Green woodworking expert **Peter Wood** shows us just what it takes to make a traditional English Windsor chair

In this, and my next article, I'm going to bring together some of the skills I've shared in previous issues of *Woodworking Crafts* and guide you, step-by-step, through the making of a Windsor side chair. It's the first chair created by many students on my courses and it covers all the basic chair making skills. My style of making is to keep measurements to a minimum and make a chair that 'looks good'.

There are some crucial measurements, such as tenon diameters, but feel free to change the number of spindles, leg pattern and where the stretchers hit the leg. I would like to see pictures of the chairs you make. I have up to eight people on a course and it's always nice to see how different each chair turns out. ➤

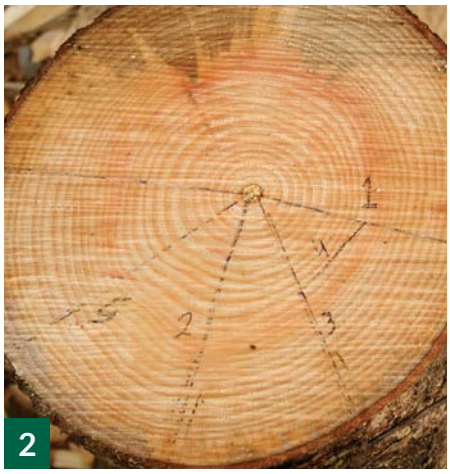
What you will need:

- Axe
- Maul
- Froe
- Side axe
- Drawknife
- Turning chisels
- Spokeshave
- Steam bending equipment
- 2.4m length of fast grown ash (*Fraxinus excelsior*) approximately 140–200mm diameter

1 First select your green wood. I've gone for a fairly straight length of ash that has a bend at the top, but it's straight before and after the bend. This means that I can use the short section for the legs and the long section is perfect for steaming and making the spindles. The parts don't all need to come from the same stem, just make sure the steaming wood is fast grown and knot free.


1

2 Cut the short length to approximately 500mm – this is over length for legs, however it will be trimmed when levelling the chair at the very end of the process. Using the hand axe and maul, cleave out the billets that will be used for the legs and stretchers. Note the sequence of cleaving; each split needs an equal mass on each side to avoid the split 'running off' and wasting wood.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3 Cleave in half – this first split will take the most force with the axe. Each subsequent split will require less and less effort.


3

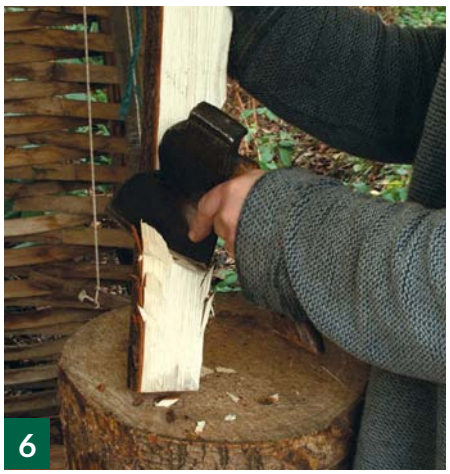
4 Now, quarter the log until you have the sizes that you require. You will want four legs with a maximum diameter of 50mm and three stretchers of 35mm diameter in the end, so make sure each section is big enough.


4

5 A slightly bigger log may have yielded eight legs. This has given us five good size legs and three stretchers – so if a billet has a problem, we have a spare. Note that the grain has a slight curve and a knot at one end.


5

6 Using the side axe, trim each billet to a rough cylinder. Make sure you have a straight back while axing and only work the lower two-thirds of the billet well away from your hand. Turn the billet over to finish.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7 Use the axe to straighten any curves in each piece and you should end up with seven or eight fairly straight and roughly rounded sections.


7

8 Refine the shape of each leg and stretcher using a drawknife, clamping the wood in a shave horse. Work the first three-quarters of the leg then turn it round to finish. the section.


8

9 The legs need to be approximately 50mm diameter and the stretchers 35mm. I've ended up with four good legs and three smaller diameter stretchers – my extra billet had a knot in the middle, so I'll turn it into some rolling pins later!


9

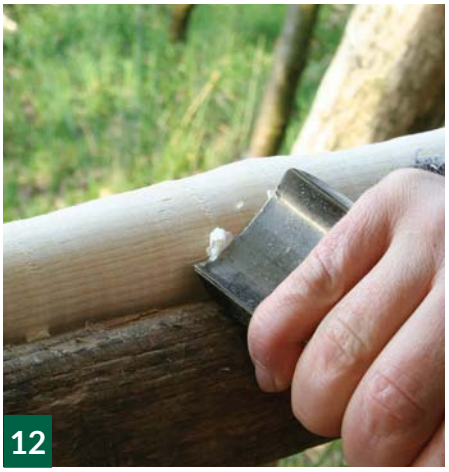
10 Depending on what pattern you decide to turn, you'll need three or four turning chisels. I'll be turning a 'bamboo' style leg, popular in the 19th century. It's an easy style to start with and you'll only need the large gouge, skew and smoothing chisel.


10

11 Centre the work on the lathe; this is crucial as an off-centre blank means more work for you and the danger of an undersized blank. To get consistency of pattern I've marked the toolrest where the top of the leg is and marked 150mm and 300mm down from the top and these will be where I will put the V-grooves. You must mark from the top as we will be trimming the bottom of each leg.


11

12 Use the roughing out gouge to take off all of the flats made by the drawknife. The two largest diameters should be approximately 40mm. The top end should be around 30mm diameter for at least 25mm. I like to have the bottom of the leg smaller than the top and a nice taper at either end, but this is up to you! Most of the shaping can be completed just using the gouge..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13-14 Use the skew chisel to add a V-groove at each high spot. This adds to the bamboo look, but is also a good visual clue to where you want the stretchers to hit. I find it's better to turn the grooves first, then, if you make a mistake, you can still rescue the leg with the flat chisel.


13


14

15 Finally, smooth the leg with the flat chisel and bring it down to your finished size.


15

16 Once you've finished the first leg, carry on with the rest. The lines on the toolrest will make sure the set of legs match and the only really important measurement is the top of the leg, which should be around 28–30mm. This will then shrink to almost 25mm. Now set about turning three more legs. ➤


16

17 Cut the stretchers to approximately 450mm. Reducing the length will stop some stretcher vibration as you turn.

18 Rough out the stretcher using the gouge, leaving a swelling in the middle of approximately 35mm. Don't worry if it's not quite in the centre, there is room for adjustment when we fit the stretchers. The ends need to be approximately 20mm diameter. Note how the pattern is a swelling, then after a short taper, the rest of the stretcher is the same 20mm diameter.

19 At this point you can choose to add some decoration. I like a V-groove for the side stretcher where there will be the mortise and tenon joint.

20 Now you can add a bead on the central stretcher, as I decided to.

21 Finally smooth the stretcher with the flat chisel. If it's vibrating, steady the wood with your fingers and control the chisel with your thumb. Mind you don't push the chisel into your hand though!

22 The next job is making our spindles. It's up to you how many you want, but for this chair I'll finish with six spindles. Choose a clean knot free log 650mm in length. This one is 140mm diameter but you could use a larger or two smaller diameter logs. You can use a froe to split these longer lengths or axe. Refer to my article on cleaving for more information.

23 This log has yielded seven spindles. Don't worry if there is some run off when cleaving as the top end is a small diameter and the spindles are over length. The outer spindles will end up quite a lot shorter.

24 Roughly square each piece with the axe taking off the bark as well. However, don't try to straighten these billets; we're not turning them, so we can follow the grain and curves, retaining the strength of the wood.

Top tip *When you reach the point of smoothing out the drawknife marks , you'll get a better finish if you skew the spokeshave when you cut.*


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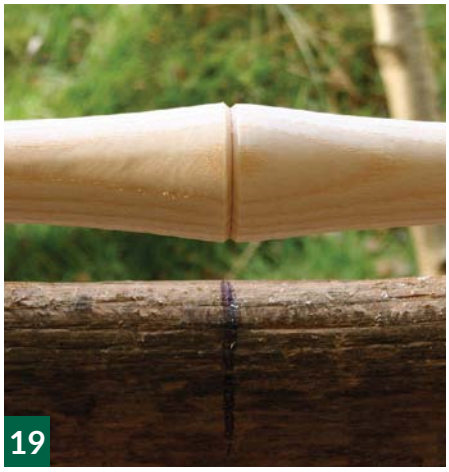
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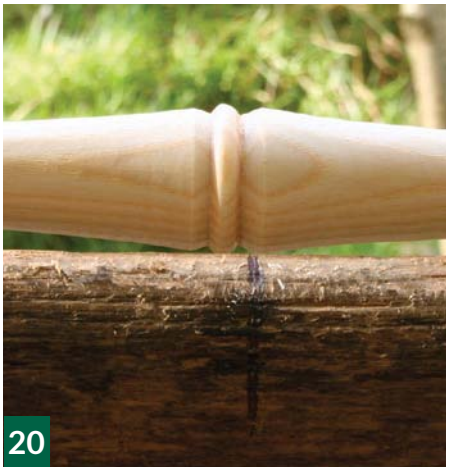
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25 Square the spindle on the shave horse using a drawknife. The maximum diameter of each finished spindle is approximately 20-25mm.

26 Take the corners of the square off to make an octagon shape.

27 Still using the drawknife, taper the bottom section starting approximately 200mm from the end. The finished diameter is 16-18mm.

28 Now turn the spindle around and taper the other end to approximately 12-14mm. Make sure the grain runs top to bottom as the spindle will snap if the grain runs out.

29 You can smooth the drawknife marks out using a spokeshave. I grip the spokeshave with my left hand and guide it with my right feeling the wood with my fingers. You'll get a better finish if you skew the spokeshave when you cut.

30 I described the steam bending process in detail in issue 7, suffice to say you'll need to cleave a blank for bending 1.7m long, 26 x 26mm in section.

31 Steam and bend the blank, good luck!

32 You should now have all the shaped parts ready to make a chair – dry out and stack them in a warm environment. A little rack above the boiler is good for drying or above a radiator. After a month your parts should be dry and ready for my next article where I'll be shaping the classic saddled seat and assembling the chair. ■


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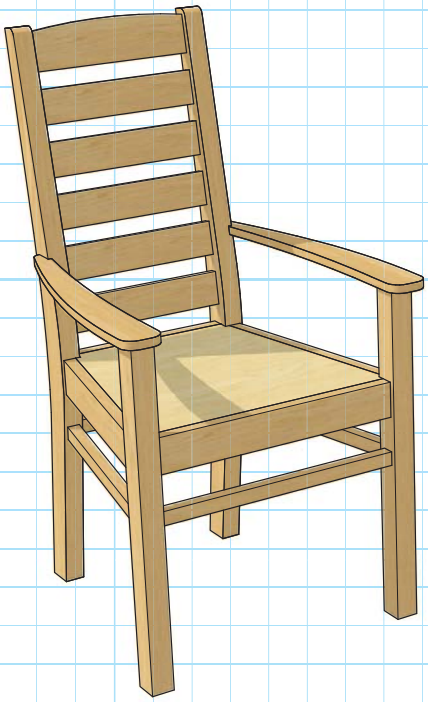
Peter Wood

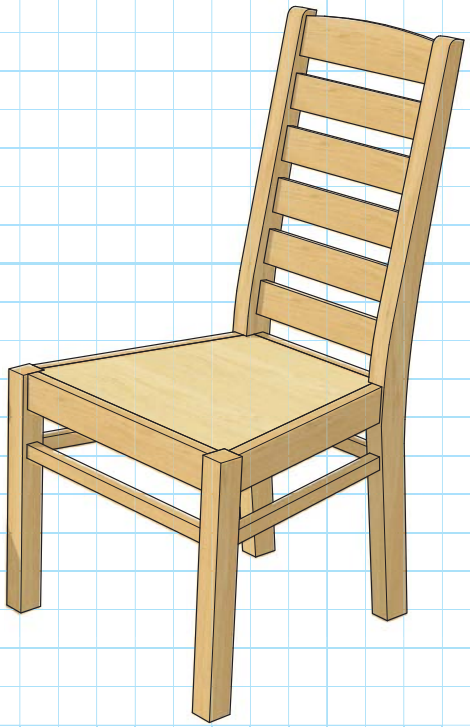
Peter has been a skilled green wood craftsperson making Windsor chairs and other creations for over 25 years. He demonstrates these skills around the country, gives lectures and runs hands-on workshops for all ages. He set up Greenwood Days in the National Forest as a centre to teach a range of traditional and contemporary crafts. He is also the current world champion pole lathe turner!

Web: www.greenwooddays.co.uk

PLANS 4 YOU

Ladderback chair



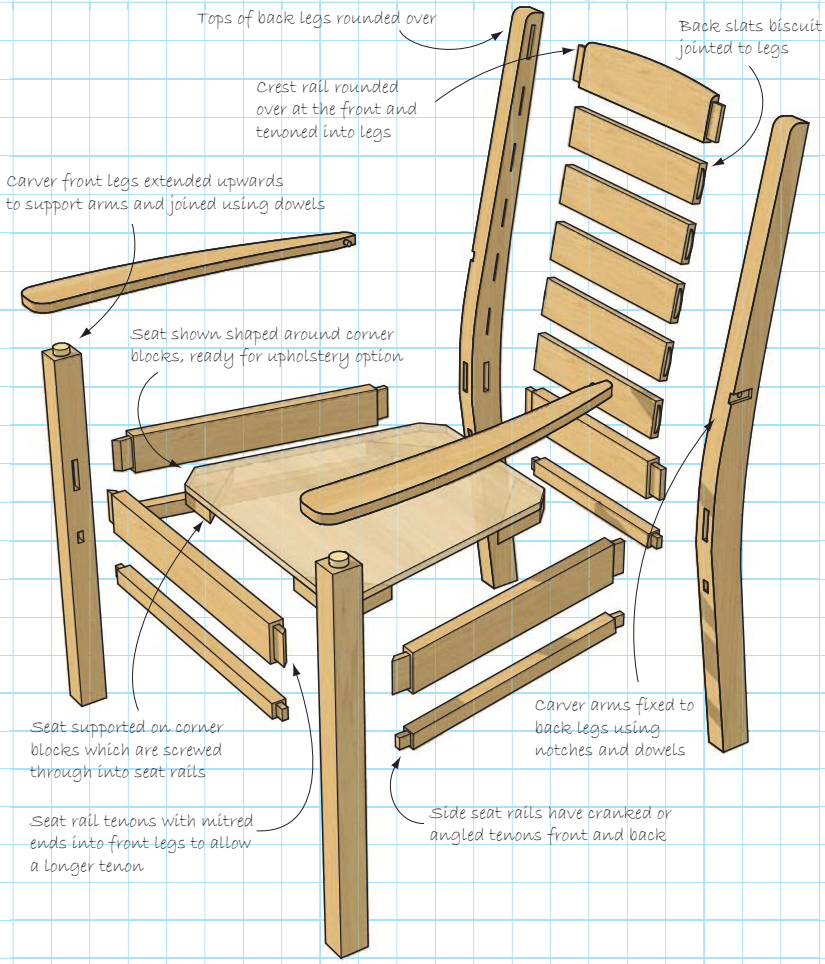


Simon Rodway shows you how to make your very own ladderback chair

Of all the pieces of furniture that are common currency in our households, the chair is the most deceptive when it comes to design and construction. I say this because superficially it looks like a simple object, with relatively little timber involved compared to, for example, a chest of drawers. The fact is that chairs are tricky enough to warrant the building of a prototype, especially if you are going to construct a whole set of dining chairs, for example, as this will familiarise you with the structure. It will also help you to make jigs and templates that you will certainly need for components like the back legs and

CUTTING LIST

Front legs	2 @ 445 x 44 x 40
Back legs	2 @ 1,012 x 135 approx x 35
Front seat rail	1 @ 493 x 64 x 22
Back seat rail	1 @ 342 x 64 x 22
Side seat rails	2 @ 461 approx x 64 x 22
Front stretcher rail	1 @ 477 x 25 x 22
Back stretcher rail	1 @ 332 x 25 x 22
Side stretcher rails	2 @ 457 approx 25 x 22
Crest rail	1 @ 332 x 80 x 14
Slats	5 @ 293 x 60 x 14
Seat braces	4 @ 140 approx x 55 x 22
Carver front legs	2 @ 610 x 44 x 40
Carver arms	2 @ Ex 530 x 110 x 15



the arms of the carver. Making a set of chairs involves a fair amount of batch processing and it is always a good idea to make enough for one additional complete chair. This allows for timber defects and the odd mistake, which we can all make even at the best of times.

Design

When making the template for the back legs, it is important to remember that the face that meets the side seat rail shoulder is dead flat and square to the ground, and the front face below this, the section into which the stretcher rail is tenoned, is also flat, although it is angled relative to the floor.

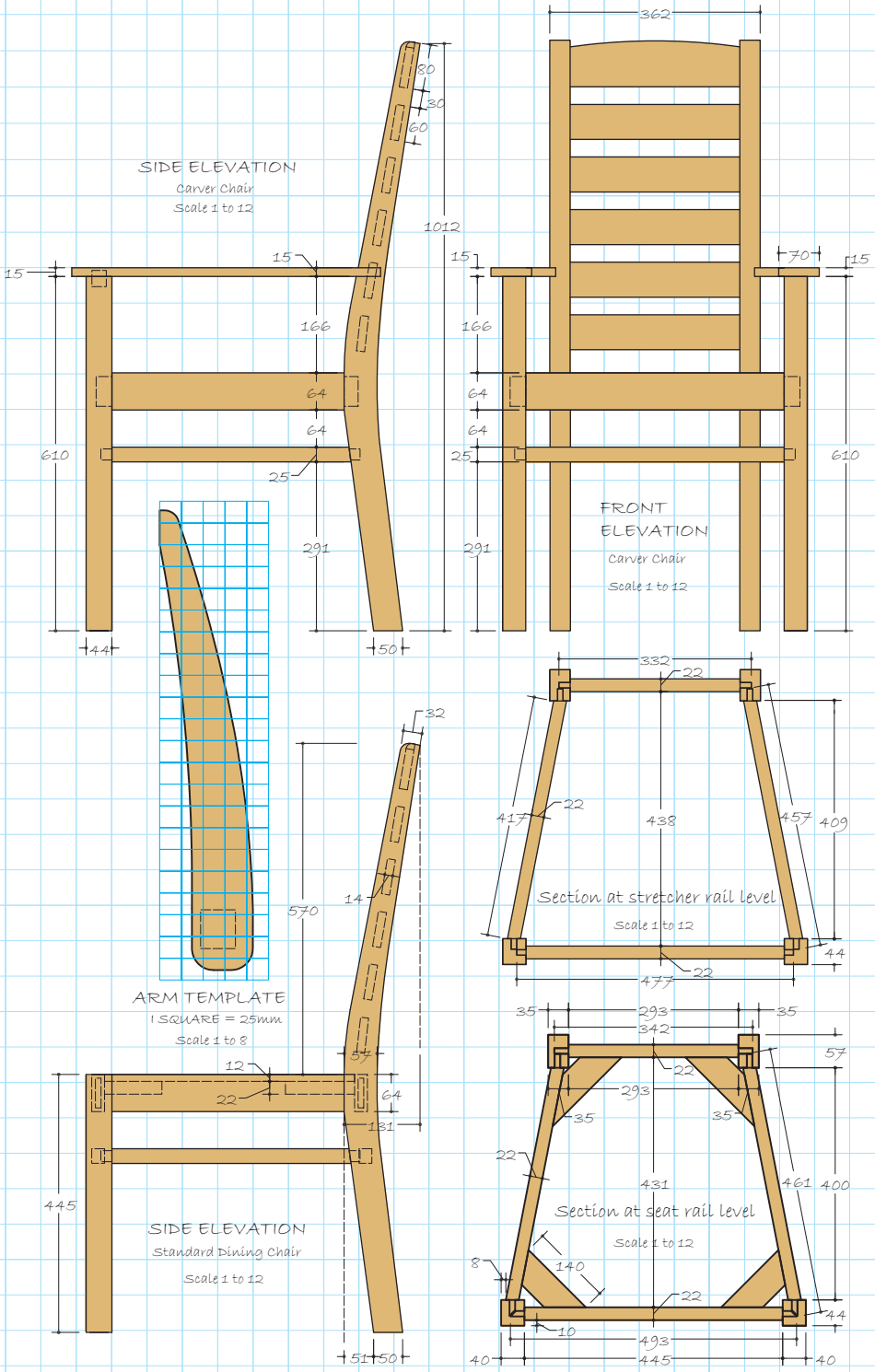
Construction

The construction sequence should begin with a dry assembly of the front and back legs and seat rails using clamps. The seat rails are critical in setting out the geometry of the chair correctly, so need to be accurate; the front and back seat rails are more straightforward, while the side rails have angled tenons, and additionally at the front, are mitred to increase the strength of the joint. The side stretcher rails, which are tricky to size accurately, can then be scribed off the assembled chair while it is still clamped up. The top or crest rail on the back of the chair is tenoned into the legs, but the rest of the slats can be biscuit jointed.

Glue up the legs and side rails first and clamp overnight to allow the joints to set firmly, and then continue with the rest of the chair in one session. Chair joints are subject to great stresses over their lifetime, and although the stretcher rails will help greatly here, decent sized corner blocks in all four corners which are screwed through into the rails front, back and sides, will further strengthen the important seat rail/leg joints.

These corner blocks of course also act as supports for the seat itself, which can be either a plywood base for an upholstered or an exposed timber seat to your design. In the case of the latter you may have to add support between the corner blocks as well. There is sufficient depth in the seat rail to allow for vertical adjustment of the seat if you need to inset it. If you are making a carver version of this chair, you may want to increase the overall width slightly, something which is traditional on carvers. It won't affect the geometry on the sides or the back legs, although as I said earlier, you will need to make a template at the very least of the arms, and a softwood prototype of this would be even better. The back legs are notched out and dowelled to take one end of the carver arm, with a large dowel set into the extended front leg forming the joint at the other end.

The crest rail in particular has a significant roundover, and all the slats, front edges of the legs and exposed parts of the seat rails need a radius applied to add to comfort and give the chair a finished look, which can then be sealed with a polyurethane varnish. ■



Simon Rodway

Simon Rodway also runs LineMine, a website with articles and online courses on drawing software. A new course, 'SketchUp for Woodworkers', is proving really popular. For details and to get discount coupons, see website details below.

Email: sjr@linemine.com
Web: www.linemine.com/courses

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Web: www.workshopheaven.com

KIT & TOOLS

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

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Contact: Trend
Tel: 01923 249 911
Web: www.trend-uk.com

GKS 165 Professional and GKS 55+ GCE Professional hand-held circular saws

The new GKS 165 Professional and GKS 55+ GCE Professional hand-held circular saws from Bosch provide more cutting depth with the same saw blade size. Both saws are fitted with powerful motors that ensure a fast work rate. The GKS 165 Professional has 1,100 watts of power and the GKS 55+ GCE Professional 1,350 watts. The latter is also equipped with Constant Electronic and six-stage speed pre-selection. It therefore maintains a continuous speed even when making deep cuts and is suitable for cutting different materials from wood, to soft metals through to heat-sensitive plastics. All the tools feature an integrated brake function that stops the blade within seconds when the tool is switched off, protecting the user and material.

Contact: Bosch
Tel: 0711 400 40990
Web: www.bosch.com

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Toolite Co, Unit 3/2 The Mews Brook Street, Mitcheldean, Gloucestershire, GL17 0SL **01594 544521**

John Davis Woodturning, The Old Stables, Chilbolton Down Farm, Stockbridge, Hampshire, SO20 6BU **01264 811 070**

Stiles & Bates, Upper Farm, Church Hill, Sutton, Dover, Kent, CT15 5DF **01304 366 360**

David Biven Machinery & Tooling, 53 Grenville Avenue, Lytham St Annes, Lancashire, FY8 2RR **01253 724 862**

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Norfolk Saw Services, Dog Lane, Horsford, Norwich, Norfolk, NR10 3DH **01603 898 695**

Snainton Woodworking Supplies, Barker Lane, Snainton, Scarborough, North Yorkshire, YO13 9BG **01723 859 545**

Toolpost Ltd, Unit 7 Hawksworth, Southmead Industrial Park, Didcot, Oxfordshire, OX11 7HR **01235 511 101**

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Kraftkabin, 248-254 London Road, Stoke on Trent, Staffordshire, ST4 5RH **01782 416 102**

DJ Evans (Bury) Ltd, St Botolphs Lane, Bury St Edmunds, Suffolk, IP33 2AU **01284 754 132**

Elmers Hardware Ipswich, 59-61 Edmonton Road, Kesgrave, Ipswich, Suffolk, IP5 1EQ **01473 623 381**

RS Paskin & Co Ltd, Oldington Trading Estate, Stourport Road, Kidderminster, Worcestershire, DY11 7QP **01562 829 722**

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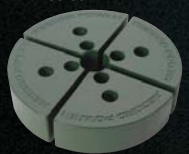
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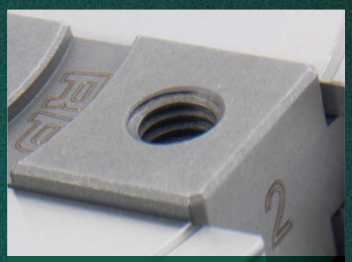

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Rosie Deegan *contemporary craftsman*

Amber Bailey looks at the work of *Impotent Tools* founder, artist Rosie Deegan

PHOTOGRAPH COURTESY OF YASMIN ENSOR

On a visit to New Designers Part 1 last summer, by mere chance I stumbled across the work of Rosie Deegan, not strictly the sort of thing usually featured in *Woodworking Crafts* but there was no denying it was on a subject very close to all our hearts and I couldn't resist the opportunity to talk to her about it.

Challenging gender stereotypes

A recent graduate of Nottingham Trent University on the BA (Hons) Decorative Arts course, Deegan has just begun exhibiting to the world the efforts of her hard-working final year of study.

From the beginnings of a self-directed brief headed up as 'For a Man of Substance', her collection has now been affectionately labelled 'Impotent Tools' – which is both humorous and thought provoking, not to mention rather literal. Intrigued by gender-related stereotypes, Deegan has taken recognisably useful objects frequently linked with the masculine sex and stripped them of their function to create decorative pieces in perhaps a more feminine manner.

Despite high numbers of women now entering the trade, the subject of the feminine and masculine roles within the workshop is still a controversial issue, heavily weighted by a masculine association. I myself am fascinated how being a female craftsman/craftswoman should still be such a novelty. I am regularly subjected to comments on the fact that I choose to wear nail varnish in the workshop or that my bench vice and, in fact, much of my workspace is pink. My tools may be girly but they are still usable, whereas Deegan has chosen to take these objects entirely out of context, making them inoperative.

PHOTOGRAPH COURTESY OF ROSIE DEEGAN

Artist Rosie Deegan pictured at New Designers Part 1

Beautifully useless

The Impotent Tools project began as a response to Benchmark Furniture Company's Cabinet Maker's Toolbox, which celebrated Sir Terence Conran's 80th birthday in 2011. A tool cabinet, still available at a four-figure price, it is filled with some of the tools that are the most sought after and coveted by woodworkers the world over. If you own one of these tools then the chances are it takes pride of place in your workshop and is regularly cleaned

An original marking gauge inset with silver and white opals

Main image: **The intricately detailed brass was the very last piece of the collection to be completed; it includes glass, silver and ebony**

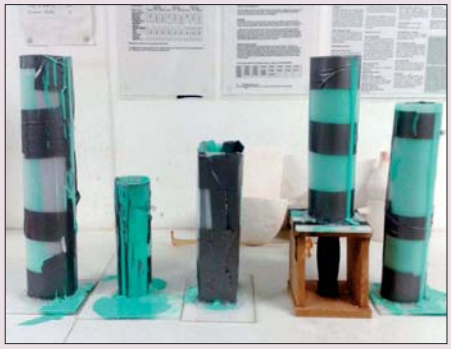
PHOTOGRAPH COURTESY OF YASMIN ENSOR

Chisel and screwdriver made of glass, silver, a white opal and the original handles

Using wax models to make plaster flint moulds

Designing the pattern for the saw in gold card

Models before pouring silicone



Making silicone moulds

and cared for. If you own a whole toolbox full, it's more likely they are for display only – you wouldn't dare risk ruining them. This is the matter that interested Deegan, perfectly functioning tools deemed unusable because of their beauty, legitimised as a gift-set piece for husbands and fathers because of the underlying masculine association.

Deegan has contrived to take this one step further by replacing the materials often found in tool manufacture with the decorative and precious materials that adorn fine furniture and other high value and quality items.

On her website, Deegan ends her artist's statement thus: 'For a Man of Substance consists of a range of non-functional tools, with the intention of subverting function and gender. Made from various materials associated with femininity, fragility and luxury, the collection brings together the unashamed decorativeness that woman can openly enjoy but men cannot. Often men use functionality as an excuse for their appreciation of beautiful objects, whilst women are stereotyped as being masculine for enjoying practical activities. This piece brings together practicality through the use of once functional found objects, and decorativeness in an open, frank and ironic way.'

Breaking glass

Although Deegan regards herself as an artist, there is no denying that she is one of us, a true craftsman. Her work may be making a statement, but to be able to portray this so effectively she has gone to great lengths to gather contextual and historical background on the materials and techniques used and their manipulation. And, as always, her influence all started at home in her father's workshop.

Having already undergone private tuition in silversmithing prior to university, she went in search of other inspiration for materials and designs.

After deciding that woodworking tools would be the focus of her piece, Deegan's first objective was to find the right composition of objects. Inspiration came from rummaging through the contents of her father's workshop and with the successful acquisition of a few pieces she then went on to hunt down more antique tools, easily picked up in local junk and antique shops. With the exception of the carving chisels, her pieces all include elements taken from the original tools which are juxtaposed with the new precious materials.

Each individual tool had to be carefully thought of so that sympathetic materials were chosen. For quite some time Deegan had had the thought in her head of creating a glass hammer, always enjoying the concept that something so powerful could be made so utterly ineffectual. This was her chance and glass has become a running theme for several of her impotent tools. ➤

Glass hammerhead detail

PHOTOGRAPH: YASMIN ENSOR

LEFT: The design on the brass saw also found its way onto a rather lovely brass square

RIGHT: Carving chisels cast from the Marples' brand originals

PHOTOGRAPHS COURTESY OF YASMIN ENSOR

The material may represent fragility and luxury, but the art of lost wax casting has allowed for the creation of exact replicas. The handles of her carving chisels may be in pleasing shades of purple but indented in the glass can be seen the Marples' label of the originals as well as that of the wood grain. I naturally assumed the chisel heads would then be the originals, in keeping with the rest of the collection, but no. Going back to her roots, Deegan chose to cast them out of silver, a subtle alteration but adding to one of the many skills this collection has required for its completion.

Silver isn't the only metal that Deegan has been manipulating; her show-stopping saw involves a large quantity of brass. Originally hoping to use gold, at such a large scale it became apparent that economically it would be much more sensible to opt for the cheaper alternative. If anything, though, I believe that brass is a much more in-keeping material to use; it is a nod to the craftsmen of the past who would patiently spend hours cutting brass for boulle marquetry and in very much the same way that Deegan used for her design. The only difference is that her cutting tools were much more refined. While cutting the brass design, a number of issues arose around not being able to negotiate tricky curves, the solution turned out to be a personal favourite – a Knew Concept saw, with its lightweight body and rotating blade for ease of access.

The intricate design on the saw, however, is not Rosie's own. Coming from a creative background – her father Robert Deegan is a renowned harpsichord maker based in Lancaster and the design was found in his workshop – the design was a tracing taken from the body detail of a Double Manual Harpsichord after Christian Zell, 1728, that Robert himself had taken on a visit to Hamburg. The result is a small but rather lovely homage to her father's work and one that I'm sure might also have rather tickled the German harpsichord maker Zell were he to know that his designs were still being appreciated today in a fresh new manner.

Blissfully fresh projects

For now, Deegan is setting up her own workshop in Nottingham and is already considering how to move this project forward as she pursues her quest to illustrate and challenge the relationship between purpose and function. She intends to continue with the same theme, but looking at larger functional objects under the working title of Impotence is Bliss. Maybe it's time to start decorating the walls with our favourite tools...? ■

DETAILS:

Contact: Rosie Deegan
Web: www.impotenttools.co.uk

PHOTOGRAPH: WWW.DEEGANHARPSICHORDS.COM

Double Manual Harpsichord after Christian Zell

PHOTOGRAPH COURTESY OF ROSIE DEEGAN

The Zell design used by Robert Deegan and later daughter Rosie

Wood Working
Wood Turning
Wood Carving

good timber

Carving
pre-cut carving
blanks and tools

Wood Turning
tools, bowl, spindle
and pen blanks

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What you will need:

- Combination plane with 3mm, 6mm and 13mm cutters
- Rip and cross cut saw
- Block and jack plane
- Marking gauge and knife
- Card scraper – optional – and try square

Chess board

from old wood scraps

Michael T Collins makes a chessboard and a box to store the pieces

Cutting list

Chessboard:
2 pieces of contrasting wood – 460 x 38 x 38mm
1 piece of 6mm ply 343 x 343mm
1 piece of 10 x 12 x 1,525mm
Base
1 piece of 20 x 100 x 1,525mm
1 piece of 10 x 430 x 430mm
Drawer
1 piece 20 x 38 x 760mm
1 piece 20 x 230 x 200mm

The true origins of chess are unknown, but it's believed to have originated in India some time before the 7th century AD and since then has become a very popular pastime. This article looks at creating a chessboard and a box for the pieces from two contrasting wood species.

The wood

Start with two pieces of contrasting wood, I am using some very old wormy maple (*Acer spp.*) and a piece of equally old walnut (*Juglans spp.*). The pieces are about 460mm long. You will also need a strip of wood 12 x 10 x approx. 1,727mm for the edging and 1,727 x 20 x 100mm wood for the box and drawer – for this I am using an old pine (*Pinus spp.*) panel door.

Making the board

1 I like butcher blocks and this very decorative wood lends itself to showing end grain. Rip and plane the contrasting wood to 38mm square – it is important that the pieces are perfectly square.

2 Then cut all the pieces to approximately 100mm long and glue together in an alternating pattern.

3 Next, using the marking gauge, mark a 10mm strip…


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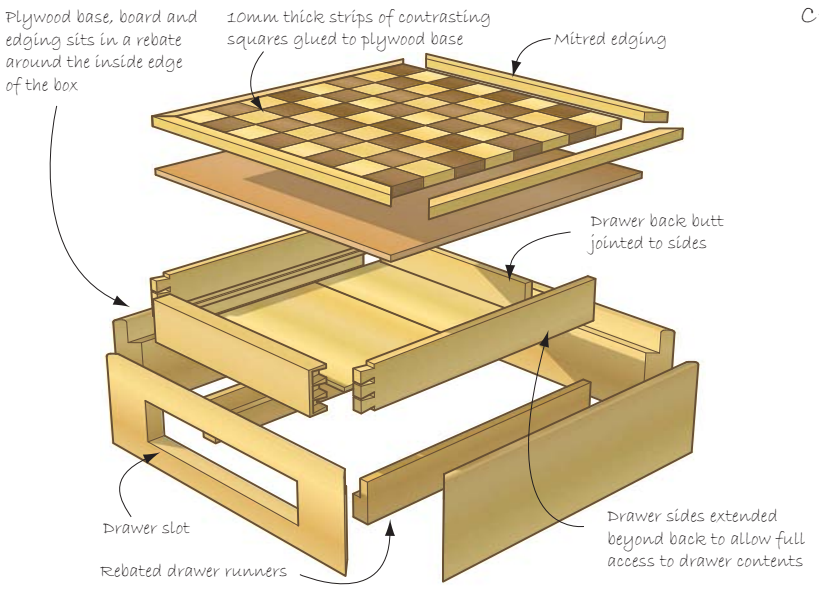
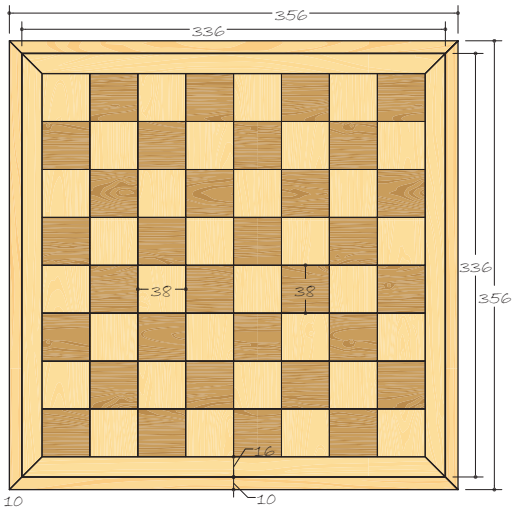
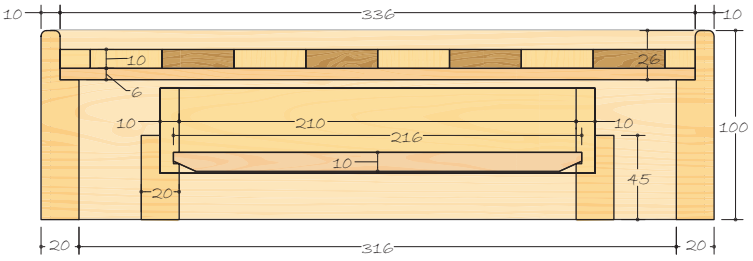


CHESS BOARD CONSTRUCTION DETAILS



PLAN
Scale 1 to 6



CROSS SECTION
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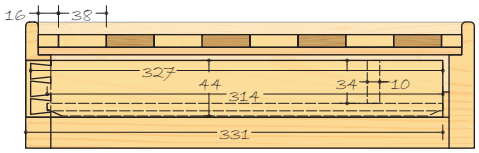


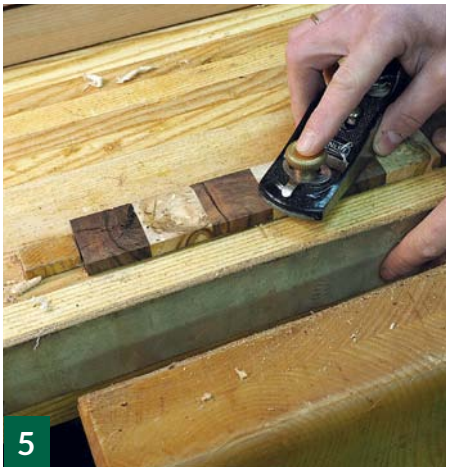
SECTION
Scale 1 to 6

4 … and then rip on the waste side.

5 Plane the back of the first strip; there is no need to make the backs perfectly flat, just remove the bulk of the saw marks.

6 Repeat the process of marking, sawing and planing until you have eight strips. I am backing the strips with a 6mm sheet of birch ply 336 x 336mm, this will allow for a 12mm shoulder all the way round for the edging to sit in and allow for planing.

7 Mark the outline of the chessboard on the ply and position the strips on the board, applying glue to the plywood. Ply absorbs glue readily so you might need to apply a couple of coats to seal the surface and don't forget to seal the back – not doing so will cause the wood to bow as the glue on one side dries and contracts. Apply glue to the back of the first strip and rub it into place. Here, I am using hide glue but you can use any PVA glue. Apply glue to the inside edge of the strip. ➤



8 Apply glue to the next piece and align with the previous – rub them into position. Continue working until all the pieces are in place – remember to alternate the pieces.

9 Place the banding strip in place, mitring the corners. Wipe off any excess glue and place a second board on top to weigh it down while drying. If you are concerned about glue squeeze-out, place a sheet of newspaper between the two boards – this can easily be removed later. The whole board now needs to be flattened. First remove any glue with a card scraper. Use the smoothing plane to level the surface – work from the outside in. Finish off with a card scraper or 120, 180 and finally 220 grit sandpaper.

Making the box

10 To make the base, first rip the pine and plane to 20 x 100mm, mark the face and edge and then using the combination plane create a rebate in the inside top edge. Planing rebates was covered in *Woodworking Crafts* issue 7 'Small sliding lid box'.

11 Using a plane, put a nice bull nose profile on the top edge.

12 A nice technique to use after planing, is to burnish the wood with a handful of shavings. Once the profile is cut, use a mitre box and cut all but the front panel to final length, this piece has a drawer and needs to have some additional treatment. Remember to always saw from the face side. Clean up the mitred ends with a block plane.

13 For the drawer front, take the piece without mitres and mark a section 45mm wide in the centre. From the centre piece, cut out a piece about 200 or 230mm long in the middle. This will be the front of the drawer.

14 While keeping all of the pieces in the same orientation, clean up all the saw marks and glue the outside pieces back together. Now mitre the ends of this front piece. Ripping will remove some of the height from the side, so plane all the side parts down to match the front piece's height. Using the combination plane, add the base rebate of 10 x 6mm on the inside of all the bottom edges.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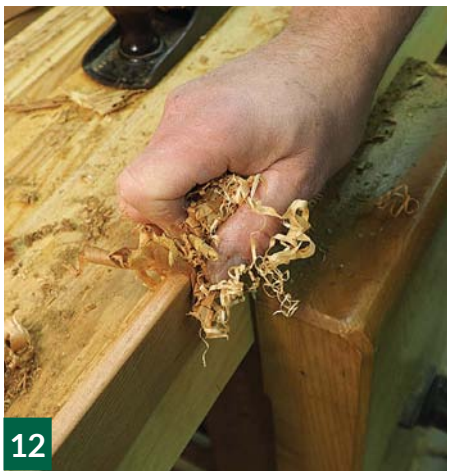
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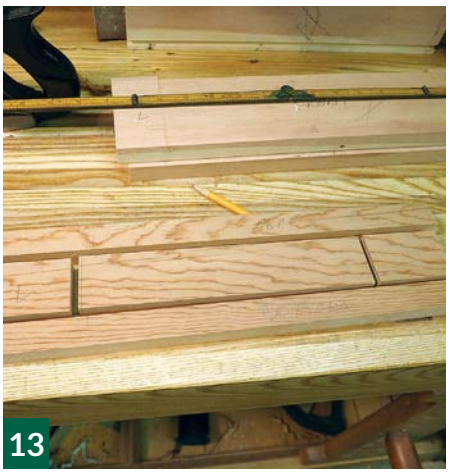
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15 The drawer will be made using half-blind dovetails. Take the cutting gauge and mark the depth of the tails on the end grain of the drawer face. I make my tails three quarters the thickness of the wood, so in this example about 15mm.

16 Take this same setting and mark the location of the front end of the drawer sides.

17 Now take the cutting gauge and set it to the thickness of the drawer side and mark the inside of the drawer front.

18 There are two schools of thought regarding the cutting of dovetails – do you cut the pins or the tails first? For me it has to be tails first. I like to gang draw sides together and cut tails simultaneously, and this would be impossible to do if pins were cut first. This drawer will have three evenly spaced tails. To mark the dovetails – use a pair of dividers, setting them to a little over one-third the width of the piece. Starting at one end, walk them across the end grain of the drawer front, then reposition and walk back – this involves a little trial and error.

19 Using a shop-made dovetail template and try square, mark the tails. Tails are angled at approximately 1:6 – 26° – I prefer to make 'English' style dovetails, which have a very narrow apex to the pins.

20 Clamp the two sides together and cut the diagonals on the waste side …

21 … then use a coping saw to remove the waste.

22 Clean up the tails with a chisel placed in the knife line. Since all dovetails are custom fit, now is a good time to label mating parts. Use a marking knife or a very sharp pencil to mark the pin location on the end grain of the drawer front – be careful not to move the pieces when doing this.

23 Using a set square, bring the lines down the face side. Mark the waste and saw at an angle to create the boundaries of the pins – make sure you don't go beyond the end grain line. Sawing into the face however, is quite acceptable, historically correct and shows that they are hand cut. ➤


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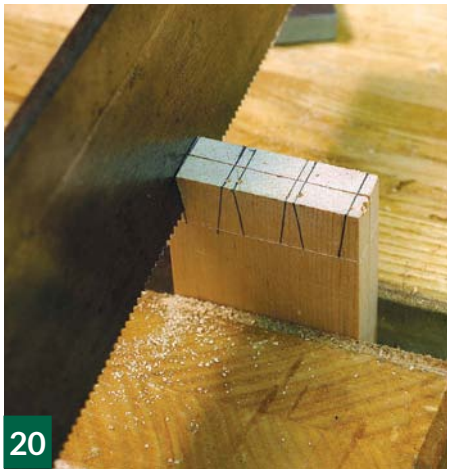
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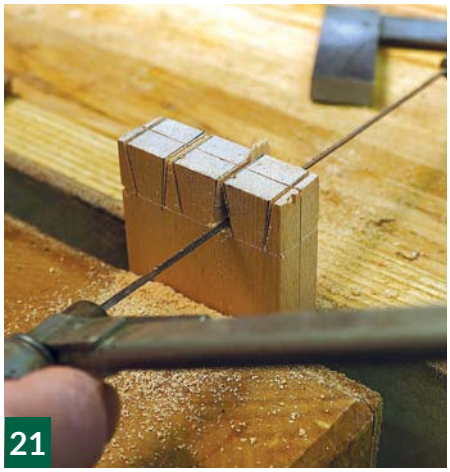
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24 Start cutting the pins by placing the chisel about 1.5mm from the line and chop into the waste, then from the end grain, use the chisel to remove the waste – continue to repeat this process until you have excavated the waste.

25 Clean up the pins, however do not go beyond the lines. Slightly undercutting the front vertical wall of the dovetail will provide a cleaner, tighter fit. Slightly chamfer the inside edges of the tails to aid in the fitting.

26 Test fit the joints. When making dovetails, it is important to not test too often as this can make for a sloppy fit.

27 The rear of the drawer is a 10mm piece of pine that is butt jointed to the draw sides. Set the combination plane so that it will cut a 6 x 3mm groove that lies within the bottom tail and pin – the back will not need a groove as the back panel sits on the drawer bottom.

28 The drawer bottom is made from a couple of pieces of 10mm pine jointed with a rubbed glue joint and the edge is chamfered to slide into the groove. Plane the mating pieces together to create a perfect joint. The drawer's grain should run parallel to the drawer front to allow for expansion. In order to control the direction of that expansion, run a small bead of glue on the leading edge of the drawer bottom and seat it into the groove, leave the draw about 12mm over long so that the end can move in and out without leaving a gap at the back of the drawer. Glue the drawer together and check for squareness. Test fit the drawer and plane accordingly until a good fit is produced. Make a couple of 'L'-shaped runners and a stop for the drawer. The chessboard can now be lowered into the top rebate – just a thin bead of glue is all that is needed on the bottom of the rebate. Place a heavy object on top while the glue dries.

29 For my board I chose to use old gnarly wood to give the appearance of age to go with an old chess set that I have, and what better way to bring out the colours than to use an oil varnish finish – in this case, Danish oil. Best results are achieved by flooding the surface and allowing the oil to soak in. After leaving for 30 minutes, wipe off any excess oil and repeat – the second coat will not soak in so readily. Leave for 20 minutes, then again wipe off any excess oil and finish by rubbing the surface out using 0000 steel wool. Apply one final coat of oil. Finish off the drawer with a pull – here I used an antique brass pull that I have had for many years.

That's it – game, set and match. ■


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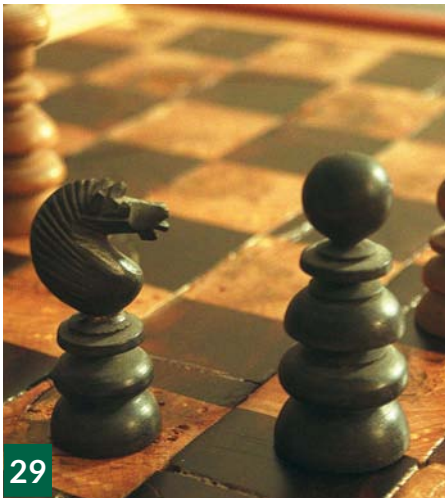
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Michael T Collins

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

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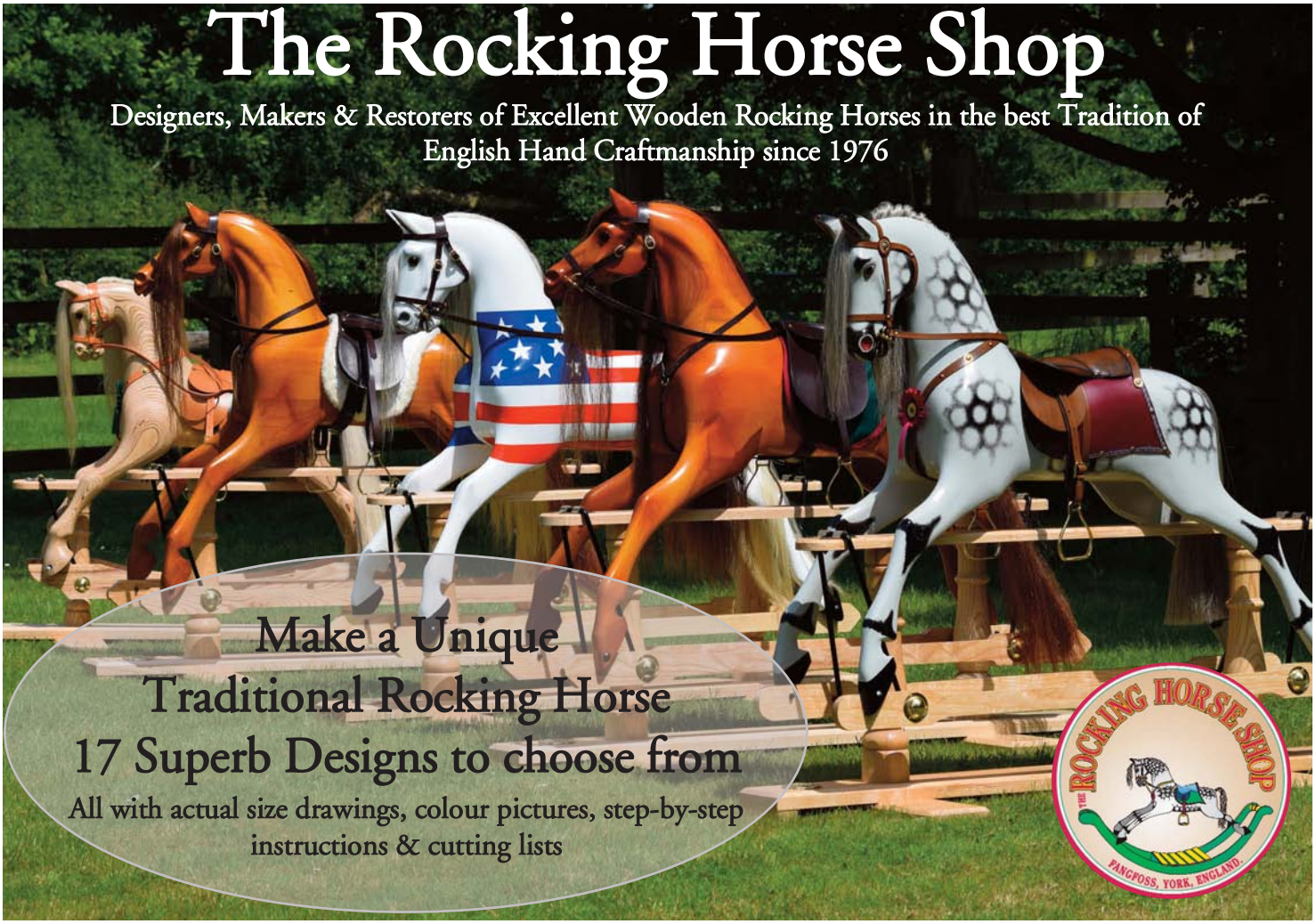

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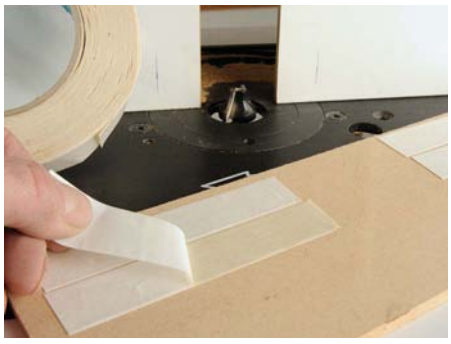
ROUTER TABLE BASIC

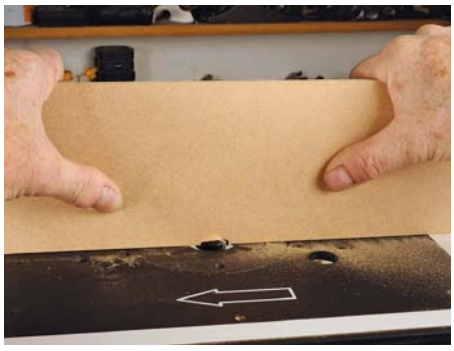
PHOTOGRAPHS BY GMC/ANTHONY BAILEY

Control with routers is everything, whether working handheld or inverted in a router table. A table confers instant control up to a point but there are other things you may need to do. The router is fixed so the workpieces need to be carefully fed across the cutter whatever type you are using. Whatever you do, it is important to make some test cuts first so keep a bit of same-size material handy for this purpose.



In the previous issue I referred to the through fence or breakthrough fence. Readymade router tables may not easily accept an additional fence so you can be stuck with whatever gap is present around the cutter. However, you may able to use heavy grade doubled carpet tape or drill and screw into the fence faces.

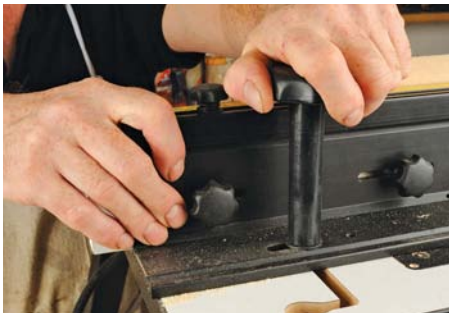
The purpose of a breakthrough fence is two-fold. It supports the work properly throughout the cut while enclosing the cutter as much as possible, but it also prevents the wood tearing out. However, a breakthrough fence does tend to compromise extraction so it may sometimes be necessary to fit an outlet in front of the fence.



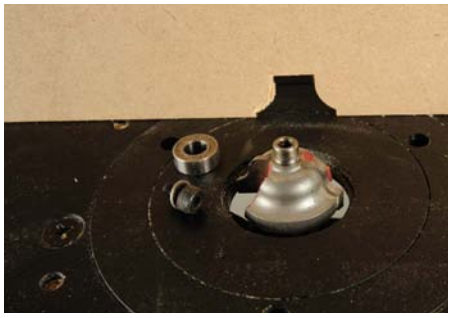
To make the cutter breakthrough, ensure the fence's own facings are clear of the cutter then pull the fence forward, attach the breakthrough fence and switch the router on and, while gripping the fence at each side, push backwards until roughly the correct amount of cutter is showing. Switch off and wait for the machine to stop before tightening the fence knobs.

TIPS

The Editor suggests some quick and simple ways to improve your table routing technique



Do a test cut; if the fence has moved slightly while tightening the knobs the cutter may clash slightly with the fence and make you jump but should be all right as it trims the breakthrough fence a fraction. If the cut isn't deep enough, undo one or both fence knobs and push the fence back slightly while running, retighten and then try the cut again.



The maximum depth of cut with any straight fence in place is generally limited by the maximum diameter of the cutter. However, many come with bearings, which reduce that cut depth even further. Normally it is possible to carefully remove the machine screw, washer and bearing and thus get a bit more cut for your money.

Where a cutter removes most or all of the face of a workpiece you need support on the outfeed side to make up for it. The easiest way is to double-sided tape a thin fillet of wood against the fence so the workpiece moves through smoothly without any dips in the machined face.

If you want to machine narrow sections it is not only difficult and potentially dangerous but the wood can also vibrate causing chattering and damage, which will ruin the work. It is better to machine the edge of a wide board and then cut off the moulding on a tablesaw and repeat as many times as necessary.

If you do need to machine narrow sections the safe way is to make a tunnel the same size as the stock you are machining. It encloses the stock completely and ensures it moves through smoothly. You can use work hold-downs but these are not as reliable as a tunnel.

When making scribing or cross cuts you need a mitre protractor, which runs in a groove in the router table top. Just as effective is making your own from an exactly square piece of board with a batten screwed to the front edge. The corner that meets the cutter becomes sacrificial as the cutter enters it. It will, however, last quite a while before needing replacement.

Although it isn't standard practice, if you don't have a fine height adjuster you can use a board instead as the means to raise and lower the router more easily and precisely.

Next time I will look at some jigs for freehand routing to make it predictable and accurate. ■

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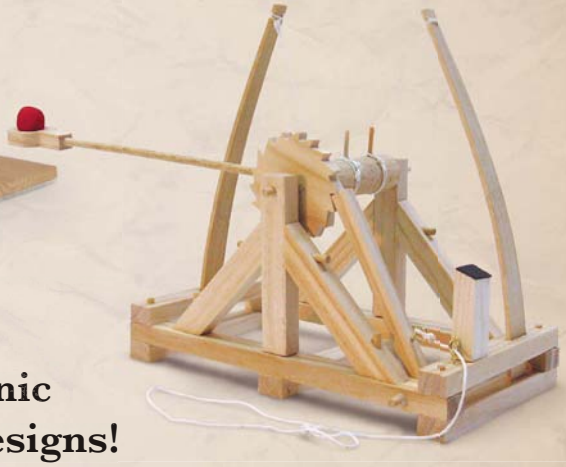

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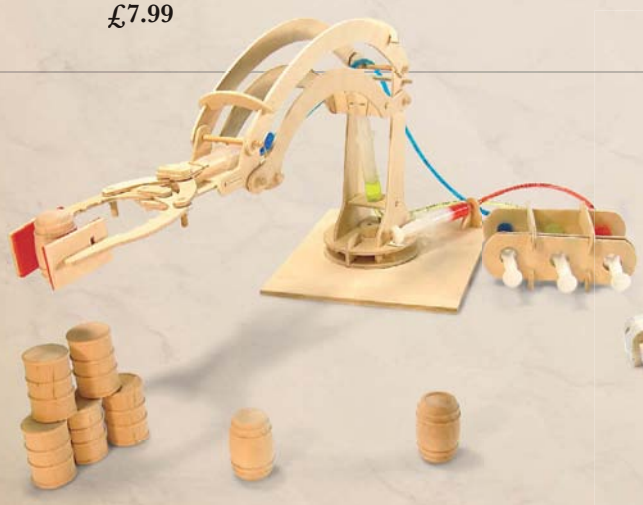

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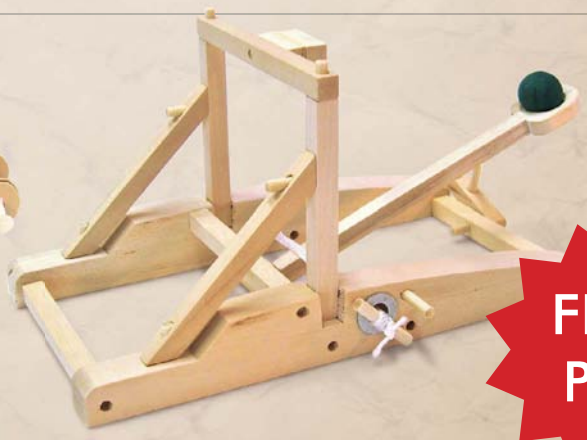

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PHOTOGRAPHS BY BOB ADSETT

Vintage saw bench rebuild

Machinery expert **Bob Adsett** was a bit rusty when it came to getting this old sawtable running again, but that didn't stop him getting his teeth into it

Some time back, while delivering a machine to a customer I was offered a small old cast-iron saw bench. Being a solid machine, albeit with no motor, guards or riving knife, I thought rebuilding it to working order might be a worthwhile project. Now here we are 12 years down the line and retired thinking maybe now is the time to do it, little knowing how much work would be involved!

THE BIG CLEAN UP

1 The machine was in pieces and stored with the main body covered in plastic bags to protect it from any water, as it was stored outside until three years ago. It was dirty and had some rust when I collected it, but the bearing housing was an oil bath type and oil was in there so rust was kept out, only the outer surfaces and shaft had some rust.

2 The motor mounting pivot bar, the top, the rip fence and mitre guide were in a totally different state needing a complete reworking to get them usable… ➤

Safety

Bob Adsett is a very experienced woodworker with an industry background, so this article is really for interest only. A rebuild should not be attempted by readers unless they have the relevant experience and knowledge of safe working practices and current guarding requirements combined with good electrical knowledge.

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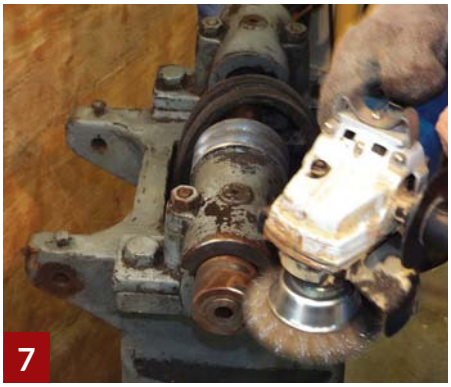

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3 Where to start first – check that the bearings are still rotated freely, without any roughness or juddering. This was done by rotating the shaft by hand and feeling and listening for any possible problems.

4 Next job is to remove rust from the top using WD-40 and rust remover gel. I painted on the gel and left it as per the instructions. When I came back it had almost solidified so I sprayed the top with the WD-40 to soften it a little, then I used a scraper to remove as much of this gunge as possible, including the two tracks in the table top. The mitre track was a square track, but the fence track was dovetailed and harder to clean out. After another good wash with WD-40 I then went over the top with a wire cup brush on an angle grinder. I went over it with an orbital sander using 120G paper.

5 Next I oiled the top. As I have mentioned before, I use engine oil on cast iron tables as cast-iron is porous and absorbs oil; this prevents rusty fingerprints on the table. The excess oil was removed with a rag and left to dry as the oil soaked into the casting.

6 Now to the mitre guide and rip fence using the wire cup brush on the angle grinder. All the odd angles and corners would have been a nightmare with an ordinary hand wire brush. Mounting them in a workmate kept them firmly held while working on them.

7 The motor mount had to be cleaned. It looked like I had been down a coal mine after cleaning these; a facemask and shield were a must and I also wore an old warehouse coat.

Pulley calculation

The machine had no motor with it so I had to get one and a pulley to fit, looking on Ebay I found a 2HP motor. I then worked out the required pulley size to get the blade speed needed as follows:

The existing pulley is 75mm dia. on the shaft so I figured it out that if I multiplied that by 1.30 it would give me 97.5mm diam. on the motor taking the motor speed from 2750rpm to 3575 rpm. A 10 inch blade running at 3575 rpm should give:
10 inch x 3.14 = 31.4 inch dia. x by 3575rpm = inch per min. = divide by 12 inches = 9354 ft. per min. = 155.9 ft. per second.

I ordered the pulley from Bearingboys in Norwich and waited as it had to be bored-out to 16mm with a keyway in it.

New 2hp motor with built-in reset button on the top box

Measuring the machine drive pulley size to calculate the motor pulley size

Now for the pedestal and main bearing assembly. This was covered in dirt and oil but a good wash down with white spirit and WD-40 soon cleaned this. I thought about stripping and re-painting the body but decided the machine was not going to any show or exhibition and after all, it was a sawtable.

8 The main shaft with the mountings for the blade and the chuck had some superficial rust on them. A clean up with the wire cup brush cleaned it enough to be workable.

MAJOR SURGERY


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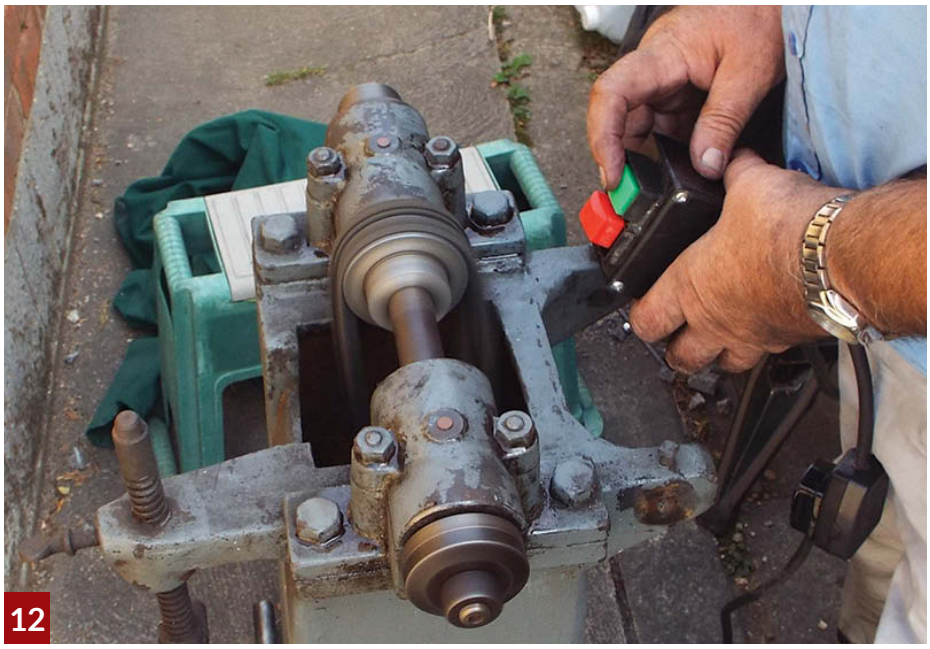
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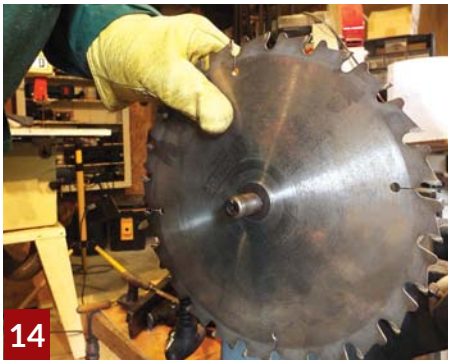
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9 The hole in the base casting was too small to take the pulley through; I knew before I started I was unable to cut anything until I had all the parts. Taking some scrap steel plate from an old Kity machine, I marked out with a marker pen. Using a metal cutting disc in an angle grinder and clamped in the workmate I cut it to the marks. Then set it up on the motor mounting brackets and marked out the holes for drilling on a pillar drill ready to fit to the machine base.

10 I started to cut out the cast-iron base to allow the motor, pulley and mounting plate to pass through using an angle grinder, again with a metal cutting disc and then a grinding disc. After four attempts and much grinding and cutting, things started to go together.

11 I decided to drill oversize holes in the mounting plate for the motor and use large washers so I had some movement to help line up the pulleys and belts. With a bit of fiddling about this all went together and the motor fitted and lined up.

12 I put oil into the oil chambers on top of the bearing housings and plugged them to keep the dust out. Now it's time to run it up. The motor came with a short length of cable fitted, so to make life easier I fitted a 13amp plug to this. In my collection of things I had a NVR (no volt release) switch with a plug on one end and a 3-pin socket on the other. Connecting these together I took a deep breath and pushed the green button and bingo! – it worked, a little bit of bounce on the twin V belts, so I needed to fit a tensioning adjuster once the table and blade were in place.

13 The machine table is fitted through two cast lugs on the rear of the base that are bored to take the pivot bar on the underside of the table. The bar was knocked through the table casting gently with a soft hammer so as not to damage the castings under the table. There are sets of spacer washers on the bar, one steel and one a type of hardwearing plastic either side. Then by aligning the table the bar was gently tapped with the soft hammer to engage it into the lug on the top and driven to the other end until it engaged with the next lug. This took a lot of fiddling and getting all the holes to line up as this was a tight fit.

14 I racked my brains to solve the problem of the 1.1/4in to 30mm on the arbor, taking the shaft off and getting it machined down was one way, but this meant dismantling the complete shaft and bearing assembly. The amount that needed to come off was 1.75mm that is .875mm all round. Knowing that metal turning machines use TCT cutters I decided to use a large straight TCT router cutter mounted in a heavy router collet extension. The collet extension was mounted rigidly in front of the arbor and advanced slightly into the steel. I only needed to remove a few thousandths of a millimetre with the corner of the TCT cutter taking ultra fine cuts until the blade fitted perfectly on the boss on the arbor. Now I was able to check that the blade sat square to the table and it was perfect. ➤

NEW GUARD


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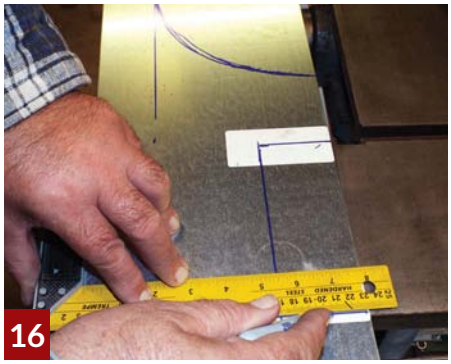
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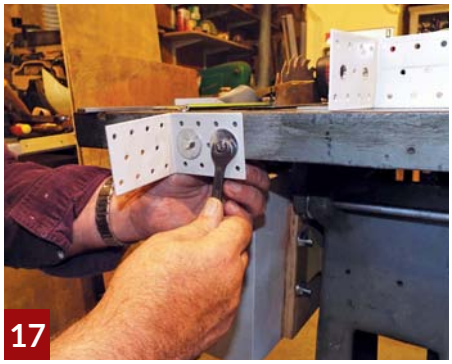
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15 The problem now was there were no guards on the machine, so to make a guard under the table I took an old metal drill carrying case and cut out the handle side so that the blade could sit inside it. I left the two lid clasps in place and the hinge on so that the side can be opened to get access for blade change and cleaning. How could this be mounted to the machine? I had two brackets that were used to hold a machine to a pallet for shipping. They are heavy duty and all I had to do was drill holes to bolt them to the saw base and fit a 20mm thick ply board between them and the guard to space it in the right position.

16 Now for the riving knife; it looks like this machine never had one fitted so a completely new one has to be made and a way found to mount it. By putting a straight edge to the plate of the saw blade and not the teeth I marked the table with a pencil, then transferred the line down the edge of the table. Then I marked out on a piece of plate steel lines to be cut to produce the riving knife. Then I had to cut out the section that will sit over the table behind the blade and file the edges flat to get a clean contact and mark out and cut the curve for the blade.

17 To make the mounting brackets I bought two heavy duty 90° angle brackets and drilled and fitted them to the table edge. I fitted the riving knife between the two brackets and bolted them together.

18 I then cut a slot through the end of the wooden table insert to allow the insert to be fitted without taking the guard off when fitted in place. This was remarkably sturdy and needed no other mountings to secure it.

19 The guard came next; I could have bought an off the shelf guard but I wanted to make sure that the guard was covering the blade properly as I wanted it to. So with the use of some 10mm birch ply triangular sections that I had, I cut them to the size I needed and glued and screwed them together using a piece on top and fitting the sides under it with two spacing strips to keep them apart at the front. Then I marked out the position to mount the guard onto the riving knife.

20 The corners and edges of the guard were rounded off and sanded smooth. The guard was clamped to the riving knife in the required place and drilled through to take the fixing bolt. Next, two spacing washers were put in place with double sided tape – one either side of the knife – to make up the space between the sides of the guard and the mounting bolt fitted with a Bristol lever to adjust the clamping tension to set the guard at the required height or so that it can


21


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23


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drop behind the wood as it is cut.

21 I thought this would be a good time to see how stable the machine was and if there was any adverse vibration, so with the saw running I stood a 50 pence coin on edge on the table and it stayed there without falling over or slowly rotating. I was very happy with the result.

22 Dust extraction was an interesting problem as I have never had to fit extraction to a metal drill box before and wanted to make it as simple as possible. A 45° downpipe connector 65mm dia. solved the problem so the position was marked out and cut so that the pipe fitted through the hole. It was secured on the outside with Gripfill and inside with duct tape around the pipe to help keep, with a seal and a Jubilee clip holding the pipe tight to the wall of the guard box.

23 To mount the switch I took a piece of the leftover riving knife plate cut this to the required size and putting it in the vice bent it to about 45° with a soft headed hammer, drilled to appropriate holes and mounted it onto the front edge of the saw.

24 Now for the test. Will it cut properly? Do I have enough motor power? Were my calculations correct? First a cross cut, 45mm timber the machine went through like cutting butter, then the rip cut, a 68mm deep cut clean with no vibration or stalling.

Conclusion

The rip fence is a little short, but it has the ability to be adjusted forward or back and I can fit a longer wooden fence if needed. Being a solid cast-iron fence that fits into a dovetail slot in the table it is extremely rigid and stable, probably more so than a lot of small modern machines. If you are able to get your hands on something like this and want to do a rebuild, think it through thoroughly. I made some mistakes as I went along, but nothing too drastic. Probably the worst was cutting out the cast-iron base for the motor to fit through. ■

Bob Adsett

Bob started his woodworking career in 1967 in furniture manufacturing before moving into the construction industry. He then worked as a demonstrator and trainer for Kity Machines, which included factory-based training in Soviet-era Latvia. He then joined Axminster where he marketed CMT cutters and helped launch Lamello products. He is now retired and waiting to see what offers may come up!

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Key Rack
by Anthony Bailey

Rosewood table restoration

Bean-to-heart novelty

Scrollsawn tiger portrait

Feature – plantation trees

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SANDING BLOCKS

STAR TIP

I don't like ordinary cork sanding blocks. It's easy for the abrasive paper to unwrap and it never stays flat properly on the block so I don't think it's very reliable at all. I found I could make up wooden blocks using ply glued together and then rout a grip profile around the sides. Next, a piece of leather or self-adhesive cork tile is stuck on and cut to size to make a surface with a bit of 'give' in it. Then I found spray carpet adhesive on both the cork face and the back of the abrasive made it easy to attach. You can make up a series of blocks for different grit grades and even mark the grade on the top of the block so you don't need to guess what grit it is. It works so much better than the standard method and you can replace the abrasive once it is worn.

Ben Withers

You too can create better sanding blocks than you can buy readymade

It isn't necessary to make big cornice sections in one piece they can be built up instead

BUILT-UP CORNICE

I've found the easy way to make impressive cornice is to glue and pin two flat sections together which can be fitted in place first. I had a run of wardrobes and I didn't fancy all the mitres involved so this method suited me fine. Once the L-shape was cut and butted together I could then infill the shape with smaller flat sections and mouldings to create the right profile. It's a lot easier dealing with mitres on small sections and gluing and fixing in place one piece at a time. They cover up most of the flat stock anyway and the result looks good to me.

Leonard Foster

TANKED UP!

I felled a small walnut tree in my back garden some years ago. I needed to seal all the cut faces to slow the drying process and prevent splits setting in. After head scratching and rejecting the idea of buying proper end seal wax just for a smallish job, I realised I had some tanking compound from sealing my cellar walls. It worked a treat and years later still no splits and the walnut is dry and ready to slice!

Ed Rogers

ASSEMBLY BLOCKS

I have often struggled to align carcass pieces for marking up joints and checking the fit. So I made up some supports to hold them in lieu of an extra hand. I make a U-shape screwed tightly to a base and twist the U on the base so it clamps the wood upright. That way it can be adjusted for the thickness of the wood. It needs two per component so it sits level and lines up properly.

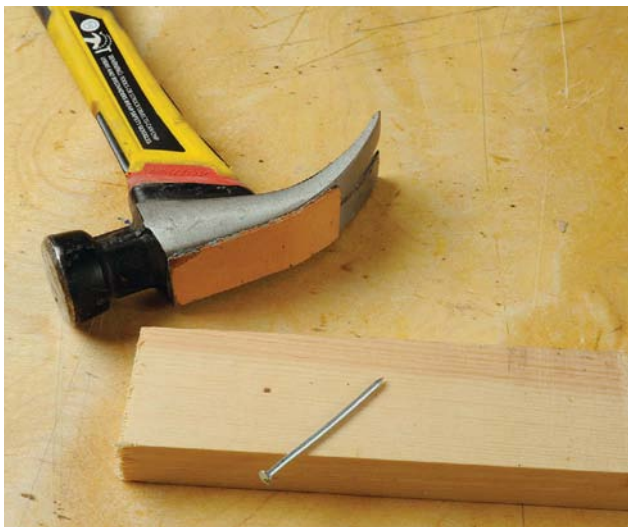
Den Harris

Once you have made up several assembly blocks it becomes much easier to do dry assemblies for marking up

PROTECTING THE WOOD

Like most 'woodies' or DIYers I use a claw hammer to pull out nails, but it dents the wood. Then I had a brainwave; why not stick something on the hammer? It can be thin rubber or anything tough that is flexible and reduces the damage. It is just stuck on with contact adhesive. Why doesn't a hammer manufacturer make one with a non-denting head? After all, the front face isn't used for anything else except nail pulling.

Ronnie Stevens



A leather pad on the front of the claw doesn't adversely affect its effectiveness for clawing nails

End grain breakout is easily overcome by the simple strategy of turning the workpiece around

STOP END GRAIN BREAKOUT

You aren't supposed to plane end grain using an overhand planer, but I had to do some wide-ish panels and it seemed the logical way to get the job done. After a bit of head scratching about how to stop the dreaded breakout I decided to do a short pass from one end, reverse the panel and machine from the other until the cuts matched. It works!

James Cleaverly

Five-bar gate repair

Our **Editor**'s idea of a day off involves repairing footpath stiles or slashing weeds with his scythe. Even mending a gate is no bar to his progress

My footpath maintenance group doesn't like to waste anything, so when I repair any woodwork they are especially pleased. And it was no exception with this five-bar gate. Although it is used for public access, some of the questions and techniques that I raise here can be applied to garden or estate gates, too.

The basic issue is how do you deal with rot? Burn it or fix it? I usually take the latter course. However, bear in mind that this does mean you are purely extending the life of the item in question, it doesn't somehow make it new again.

1 The top rail had two rotted tenons, the larger one at the hinge end has holes for dowels and galvanised strap hinges. Having the original component makes it possible to make a good new copy without difficulty.

The rail tapers to the other end which was in a worse state. Even having the broken-off piece meant I could get exact measurements. It is a sort of 'wood forensics' because it simplifies making a copy before the old section gets burnt!

2 The gate posts were both about 250mm square and still fairly sound but were leaning a fraction. I knew the rails would need trimming slightly so I could cheat and make the stile at the latch end lean in about 6mm at the top so it wouldn't rub on the gate post. The new top rail also needed trimming for the same reason.


1


2

PHOTOGRAPHS BY GMC/ANTHONY BAILEY

No one would see the slight lean but it would be vastly easier than resetting the huge post vertical. I decided to leave the top rail the same width instead of tapering as it would give a bigger bearing surface at the ends.

3 A mortise gauge was needed to mark the tenon widths at both ends. The care in setting out is just as important as new work, more so in a way, because the surrounding components are no longer in great condition and the structure needs to regain its strength.


3

4 This is a woodwork editor's photo trick, using a pencil to highlight the gauge lines, because in this case bright sun made it hard to see them. The hatched areas are the waste of course. Also the tenons had slanted shoulders to help lock them in the stiles so that had to be drawn in as well.


4

5 First the cheeks were cut, then the tenon shoulders. The slant on them meant I had to bend the saw blade slightly to follow the shoulder line, which surprisingly it managed to do.


5

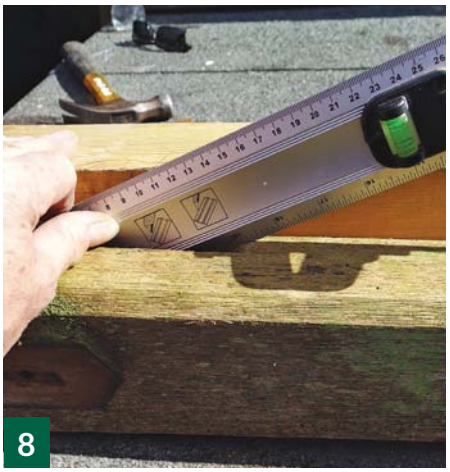
6 New and old side by side, the tenon looks small but of course the previous rail was heavily tapered unlike this one. There would not be as much strain on this end of the gate as it hinged at the other end.


6

7 Now for the hinge end with a much more substantial tenon. No attempt was made to enlarge either mortise as that would weaken rather than strengthen the whole thing.


7

8 I checked the entry angles so that I could see how far the braces might penetrate. Unfortunately, it wouldn't be enough to do any good and the thinner top rail meant visible rebates rather than pockets would be required.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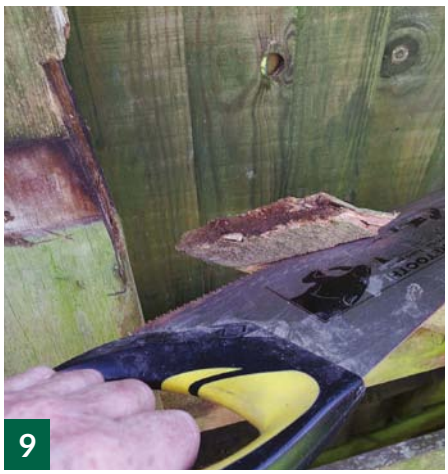
9 So, the braces were marked on the line where the top rail would sit and be trimmed off. I would bevel the exposed top edges but they would no longer function fully as braces to the gate.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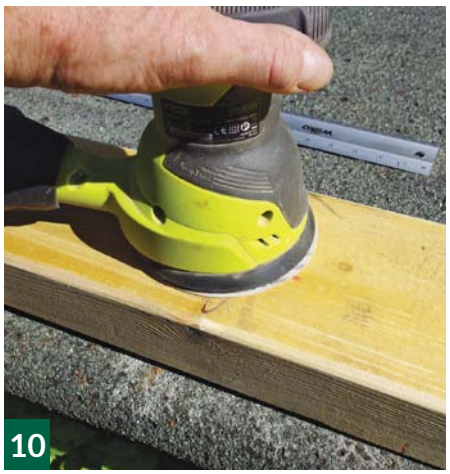
10 The top rail arrises were planed to a round over and then sanded. This was important because footpath users would have hand contact with this part of the gate and no splinters or hand cuts are allowed! ➤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11 Next the brace tops were bevelled ready for gate assembly. The bevel should look and feel better and aid 'weathering'.

12 Sometimes only a club hammer and block will do. As it happened the big tenon came to a halt part way through because the mortise was slightly shorter on the outside face of the stile so a notch had to be cut in the tenon.

13 I did a check on the adjusted stile position to make sure no tenons were too long to prevent correct assembly.

14 The small tenon had rather full cheeks, giving a tight fit in the mortise, so my bullnose rebate plane was used to clean them off a bit until it was a good sliding fit.

15 Normally dowel pegging is done by 'drawboring' which pulls the joint together as the dowel is hammered in. I didn't have drawbore spikes. Instead I chose oversize dowel, which I figured would find its way through the slightly softened timber so long as the 'nose' was chamfered.

16 A few hefty thumps and dowel after dowel obliged and went home perfectly, then cut off flush with a flush cut trimming saw.

17 Now for the hinge strap holes and I was almost ready for rehanging the gate. I got a phone call from the rest of the footpath group who were at the pub downing a thirst-quenching pint after a morning of clearance work. "How was I doing, is the gate ready?" Almost, I replied, trying hard not to be bitter (geddit?).

18 The inspection committee, Malcolm (who did buy me a pint of Harvey's Best afterwards) Tony and Tony – that's three Tonys including me! Hopefully another five or more years of life before a new, replacement gate will be needed. ■

Have you considered joining a volunteer working party? Here are some organisations to contact.
www.nationaltrust.org.uk
www.ramblers.org.uk
www.volunteering-wales.net
www.forestry.gov.uk/england-volunteer


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Woodland ways

Holly

Gary Marshall dares to tackle the wood featured in most winter scenes, holly

Gathering holly for Christmas decorations must surely have affected the shapes of our hedgerow and woodland hollies, mainly since Victorian times

PHOTOGRAPHS BY GARY MARSHALL, UNLESS OTHERWISE STATED

Perhaps by the time you read this you may have a good idea of the 2016 Hollywood Oscar winners with the usual glitzy ceremony due to take place on 28 February. This article has little to do with those celebrity shenanigans. In fact, the Hollywood Hills have no hollies as we in Britain know them, although there are around 13 native US holly species. In the UK you can buy a cultivar of our own native holly (*Ilex aquifolium*) named 'Holly wood'.

There are many ancient woodlands in Britain that have holly in the understorey – or, occasionally, in the canopy. Needwood in Staffordshire was once a prime example, but it was deforested following the Enclosures Act of 1803. More than 100,000 mature hollies were felled in Needwood in the 1800s in order to make bobbins for cotton mills.

Where animals still browse freely – as in the New Forest – extensive areas of low holly undergrowth, like stunted natural topiary, can occur. Where trees do grow larger these provide good shelter for stock. Some stockmen still lop off limbs or pollard holly to provide winter feed for their animals.

Holly wood is considered to be 'the whitest known' and so is used in veneer form for marquetry and in small timber for white chess pieces, furniture making and, of course, the aforementioned bobbins. It burns well too, even when green.

Favourites

My favourite holly rich wood is Ebernoe Common. This is a complex tract of ancient woodland hidden away in the wooded Weald in West Sussex. It has been much studied as it's

Ebernoe Common: special bat box high above holly in mature oak

Ebernoe Common: regrowth from a holly pollarded some 15 years ago

particularly rich in lichens – more than 200 species have been recorded.

Ebernoe's character has developed from wood pasture – commonland that was seasonally browsed by livestock. Although it has recently been reintroduced, during much of the 20th century livestock did not browse. Consequently, a dense understorey developed, and where that understorey was composed of holly, it thrived. Some of the lichens became shaded out while the bat population soared.

Crevices and niches in Ebernoe's many old, shattered oak (*Quercus robur*) and beech *(Fagus sylvatica)* trees provide excellent roosting habitats for bats. Special bat roosting boxes can also be seen up high, often with holly below. Amazingly, 16 out of 18 UK bat species are found here. The lichens' favoured habitat is often on unimpeded, partially shaded old trunks, the bats need crevices, niches and shelter to roost

More than 15 years ago my colleagues and I carried out a small amount of special management on this large SSSI. We cleared rides, glades and some new accessways through the

Old holly seen growing out of a sandstone outcrop

Not all hollies have berries – since trees are either male or female

invading holly over several hectares. The brief was to favour the lichens, but to leave known bat roosts undisturbed. We even pollarded selected trees. I'm amazed at the way these trees have grown back – so that now it's hard to tell which trees were pollarded.

I'd always admired holly as a species. When not grown as a hedge it has smooth, grey bark, with old branch whorls like an elephant's eyes. The branches and wood are tough, with a pleasing smell when cut. Holly spreads by seed – with avian helpers – and by vigorous suckering and layering, particularly in shady woodland, with a clayey or sand and clay soil.

Look at a mature tree. Lower branches and outgrowths near the ground will be covered in spiny leaves. As you look further up the leaves lose their prickles and can become perfectly ovoid. Why should the holly waste its energy producing spines when it needn't? After all, livestock doesn't fly. And yet, look at a high holly hedge – it has prickly leaves all over – it still reacts to human 'browsing', i.e. hedgecutting as if we were giant herbivores. It can even be laid successfully.

Holly is much recorded in myth and legend. When all the other trees have lost their leaves, holly remains evergreen. It has been immortalised in the words of the Christmas carol *The Holly and the Ivy*. The word 'holly' doesn't have the same roots as the word 'holy' though – some mystics find it easy to ignore this misconnection. You'll often see lone holly trees in country hedges – many a hedgecutter deemed it bad luck to cut a holly down – they were believed to ward off malevolent faeries, or even to stop the devil running along the hedge! ■

Gary Marshall

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

Laid holly hedge that has grown back and thickened very well

Lone holly in rural hedge – will it ward off malevolent faeries?

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PHOTOGRAPHS BY GMC/ANTHONY BAILEY

Modern magazine rack

The Editor came up with a design for a rack that isn't torture to make....

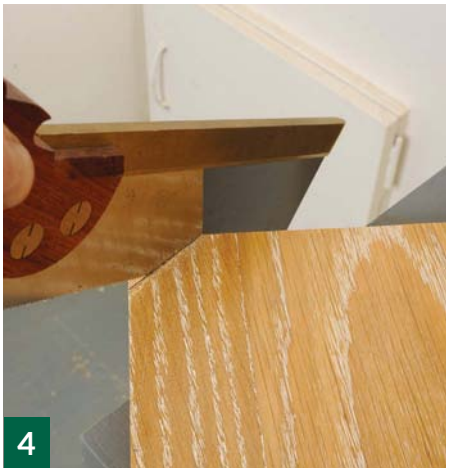
Good design makes efficient use of materials and is simple in principle. This magazine rack uses just five components, is quite easy to make and it looks good too! I found some odd bits of board and some oak (*Quercus robur*) to fashion it from, but you can use whatever you have to hand.

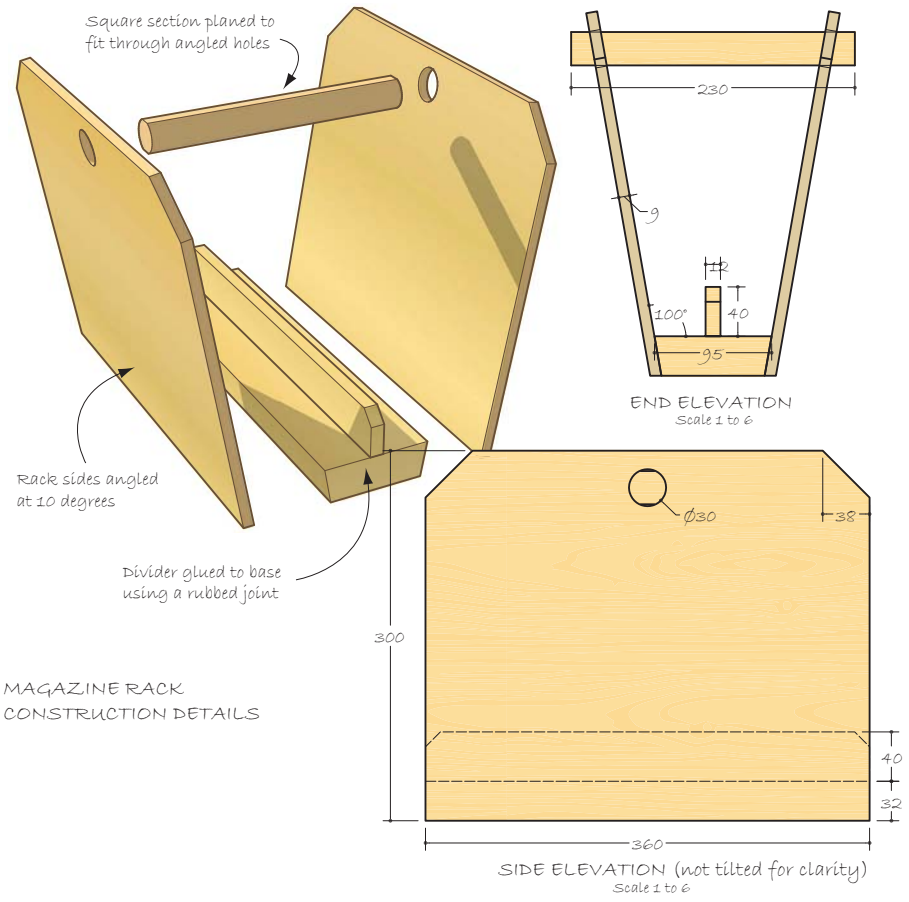
1 These are recycled pieces of 9mm oak-faced MDF from an old wardrobe that had been limed in the grain and already had a lacquer finish. You can use any board of a similar thickness and apply any finish you choose.

2 Place an average size magazine on a board and mark a larger area allowing for the thickness of the base and the hand grip above. It is better to make it too large rather than too small.

3 Next, saw the first piece to size and then mark, measure and cut a second matching piece. These will form the sides of the rack.

4 Nip off the top corner with a fine tooth saw at an angle of 45°, this will make the rack sides look and feel more comfortable. ➤





MAGAZINE RACK
CONSTRUCTION DETAILS

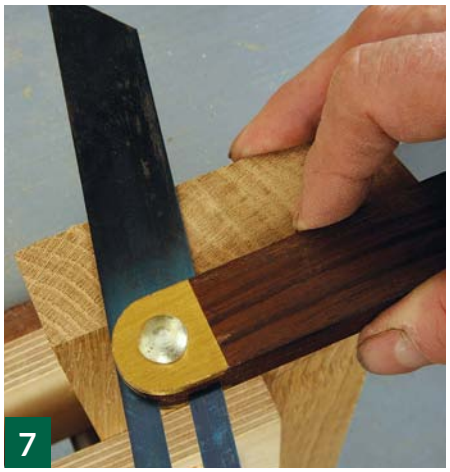
5 Use the first offcut to mark the other three corners, so they all match. This avoids having to adjust them afterwards and struggling to get them all the same.

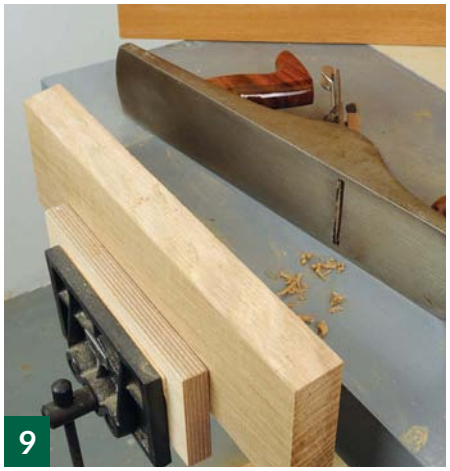
6 Sand all corners and edges with medium abrasive so they are smooth. Run the abrasive pad along all the arrises – corners – so they look more finished and cannot splinter or feel rough.

7 The base is narrower than the top by quite an amount, but it must not topple over. Mark the width and use a sliding bevel to mark an angle at each side of 10°.

8 Now take a sharp handsaw and cut neatly down the marked line from end to end. This is a test of your ability to cut a straight, but angled line. Repeat down the other edge.

9 Use a hand plane to smooth the sawn slopes. They need to be level from and to end, not bowed up or down as the side boards need to glue on to them.





10 Mark and drill a 30mm diameter hole in the top of each side board, using a sacrificial board underneath so your bench does not get damaged.

11 Tap in some small panel pins so the points break through enough to hold the board on to the base while positioning. Run a line of glue along the edge of the bottom board.

12 Press the first side board on and make sure the glue has spread evenly. Hold it on firmly with the bottom edges aligning perfectly and tap the panel pins all the way home.

13 When both sides are firmly pinned in place add a couple of clamps to gently hold the sides on and thoroughly wipe away any traces of glue with a damp cloth.

14 The side boards are angled so it isn't possible to push a tight-fitting round dowel through – it will need a slightly flattened profile to do this. Instead take a square section of matching wood and repeatedly plane the corners and then the faces until it will just pass through the 30mm holes.

15 Gently wriggle the hand grip through until a small amount projects, then mark the same amount at the other end and cut to length. Sand all edges and the ends so they look and feel smooth.

16 Very gently tap in a panel pin centred on the edge of the board and fixing the hand grip in position. Do the same at the other side. If a tiny split appears, rub some glue in to hold the wood or MDF together.

17 A centre divider is necessary to prevent the magazine slipping down. This is glued and 'rubbed' into position in the centre. Rubbing makes the glue exude and a suction effect occur; in theory no clamps should be necessary.

18 The bevels and angles of this design suit oak but if you use another wood like ash or maple then you could round all corners instead for a slightly different look. Meanwhile, you have one fine, contemporary rack ready to hold your favourite magazines and easy to move around as well! ■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READER GROUP TEST

Welcome to our **Reader Group Test** by members of our very own Woodworker's Institute Forum

Sparky Professional Circular Saw TK65

The Sparky TK65 on test here and the larger TK85 are both conventional corded portable saws. The TK65 has a 36-tooth TCT blade, comes with a straight fence and is supplied in a blow moulded case. Available in domestic or site voltages depending on the user, it is badged as professional however.

PHOTOGRAPH BY ANTHONY BAILEY

Tech Spec

Cutting capacity at 90°: 0–65mm
Cutting capacity at 45°: 0–43mm
Blade diameter: 185mm
Blade arbor dia: 20mm
No load rpm: 5,000rpm
Weight: 4.0kg
Voltage: 110V~50Hz230V~50Hz
Power input: 1,200w

DETAILS
Price: £85.49
Contact: Sparky Professional
Web: www.sparky.eu

TESTERS

Mike Trundle, Stuart Cunningham, Karen Winnery, Alex Botes, Derek Higgins

We asked the testers a range of questions, some of which were graded, others needed more articulated answers rather than just scoring. We asked about their experiences using the product and if they had any problems using it.

Mike Trundle: There was no discernible breakout on the rip and only minimal breakout on the cross cut. I re-sawed some old 28mm strip beech (*Fagus sylvatica*) worktop, which it cut cleanly on both the rip and the cross cut. I then cross cut some veneered chipboard and found that, as long as the saw was not hurried through the work, there was barely discernible surface breakout on the veneer. This was helped by the pristine condition and 36 teeth of the TCT blade. The sawn edges show the usual circular saw marks, which should disappear with a few passes of the router.

Mike Trundle had some difficulty getting the baseplate dead square

There were a couple of problems; the most important one was achieving a 90° cut. I used an engineer's square to check the angle between the blade and the baseplate and made unsatisfactory trial cuts before checking the pressed steel baseplate with a straightedge and finding it was not quite flat.
I experimented with minor adjustments of the bevel adjustment and found that it would cut at 90° with the datum line set to +2° on the bevel scale.

The bevel adjustment knobs are difficult to tighten and loosen as they are quite small, it was difficult to get a grip on them for a decent leverage.

Dust extraction is also difficult, not helped by the oval shape of the extraction port for which I could find no suitable adaptor.

Stuart Cunningham: The cut finish was OK with the blade supplied, although cross cutting oak (*Quercus robur*) veneer MDF – normally I wouldn't cross cut oak veneer with this type of saw but did it as a test – there was a lot of breakout, but a finer blade would probably reduce this. On cross cutting a compound angle on regularised 200 x 45mm, the saw just cut through the thickness at a 45° angle, therefore it wouldn't cut all the way through 47mm timber on a 45° angle which, in my opinion, is a necessary requirement for a professional saw.

Stuart Cunningham had several circular saws against which to evaluate the TK65

No real problems, but the laser felt like a bit of a gimmick and would be better with an LED light to see better. Being left handed, the safety switch posed no problems for me. The guard feels solid on a strong spring, you can feel it going back into safe position with a clunk.

There is nothing wrong with the actual saw; it is good, well built and a good weight, the cable is a good length at 4m although I do feel personally,

and this applies to all portable tools that I have used, that the cord should come out at an angle. What lets the saw down is the flimsy bed and adjustment stays for height and angle. They seem to be made out of very thin metal and can be easily bent with your fingers and for a tool described as professional; this certainly wouldn't last long with the rigours of everyday use. Comparing it with three other similar saws I own they are much more sturdy in this department, therefore on this basis I would not recommend it.

Karen Winnery: The cut finish was clean, very little breakout. I found the cutting speed to be good and smooth, the TK65 comes with a laser line and the blade was spot on the cut line.

I was impressed with the saw. It felt heavy to pick up and handle but once placed on the wood to be cut the weight actually made it nice and stable through cutting. The saw guard is a little stiff and you need to push firmly when you first start cutting, but other than that the saw was easy to use. I would recommend it to other people.

Alex Botes: There was a small amount of breakout, but it was expected. It cut at a reasonable speed in average thickness material and the blade followed my marked cut line. It is a very noisy saw for the size, and I found the working of the motor very 'grainy', almost as if the bearing is about to fail.

Alex Botes felt the motor and bearings too noisy and the laser to be inaccurate

Derek Higgins found the Sparky to be a good machine all round

The laser sights are not true and about 4mm away from the running line of the blade. On the plus side, it's lightweight and has good size handgrips. The lead is a comfortable length for most tasks. There is no way of connecting a bag or extractor to the saw. For the price, it does the job. It's ideal for the weekend DIY market or for those with a smaller budget.

Derek Higgins: It comes with a 185mm 36T blade which seemed excellent for general cutting for cross cut, rip sawing, ply sheet and chipboard flooring. It cut smoothly and efficiently with all the materials I tried and the blade remained sharp.

The laser guide was useful and bright

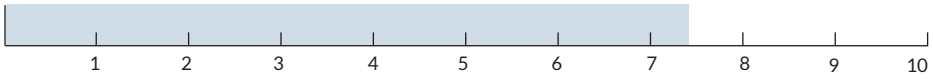
Karen Winnery thought the laser line marker was spot on and got a smooth cut result

and it followed with ease. The laser means you can position yourself to avoid getting a face full of sawdust and still follow the line. The saw worked efficiently and was the ideal balance of size and weight. The 60mm cutting depth and the lead length of just under 4m make it easy to use.

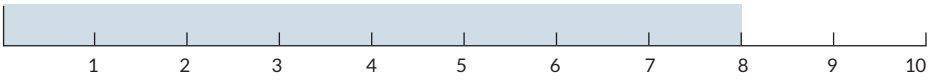
I would recommend it to other people. Obviously it is still fairly new but the 1,200w motor never seemed to struggle so I would hope not to have any reliability issues. ■

How our testers rated the product (Average marks out of 10)

How would you rate the product performance?



How would you rate the product ease of use?



How would you rate the product overall?

Editor's Comment:

If you visit the Sparky website you will see they are quite serious about their professional powertools status. However, to achieve that the build quality has to be impeccable and judging by a number of the testers' comments on this particular machine there is still some work to do. In particular flimsy metal parts and no proper means of dust extraction stand out. Having said that, it is noticeable that testers did not find anything amiss about the power and cutting ability of this saw. One tester commented on the amount of breakout but this can be mitigated by reducing the amount of blade showing through the wood. An economic buy if you have a need and are on a budget. ■

If you would like to be part of our panel of product testers, please go to our website – www.woodworkersinsitute.com – and **SIGN UP NOW!**

Ask the *Experts*

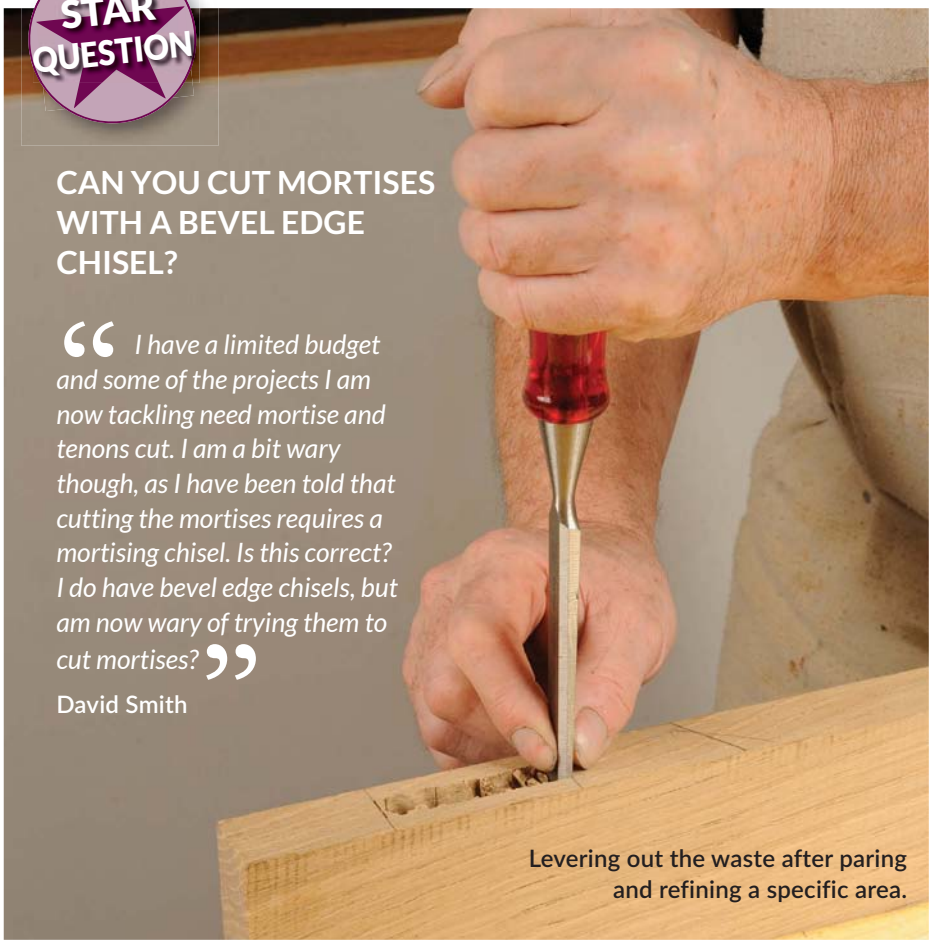
This is your chance to challenge our Editors and for them to answer your comments and queries

STAR QUESTION

CAN YOU CUT MORTISES WITH A BEVEL EDGE CHISEL?

"I have a limited budget and some of the projects I am now tackling need mortise and tenons cut. I am a bit wary though, as I have been told that cutting the mortises requires a mortising chisel. Is this correct? I do have bevel edge chisels, but am now wary of trying them to cut mortises?"

David Smith



Levering out the waste after paring and refining a specific area.

Anthony replies: Well, you will be happy to learn that you certainly can cut mortises with a bevel edge chisel. Look at most carpenter's tool kits and jobbing joiners and you will not see many dedicated chisels like a mortising one. The reality is that a mortising chisel has a thick section blade that is strong enough to be levered in the mortise to remove the waste. The bevel-edged chisels are a tad more delicate – they can be very refined blade wise and are ideal for some finer cabinetry jobs, or, some blades are a bit more chunky and these are typically those sold for 'general' joinery jobs – so can cut out waste, but cannot be used as a lever/to loosen thick waste. So, opt for the more general joinery type makes – often with non-split handles – and make lighter cuts to lever out smaller waste sections at a time and you shouldn't have a problem.

To help, you could consider drilling out a series of holes in the work first then just chopping out the waste that is left. The bulk is removed this way first so you effectively refine the inside surfaces of the mortise.

A mortice chisel and a bevel-edged chisel

BANDSAW BLADE QUANDARY

"Hi, I've acquired a bandsaw, but I'm not sure what kind of blade to buy, can you give me some advice? I need to cut through softwood but sometimes I might want to cut thin ply for toys and other projects."

Marlene Hooper

Anthony replies: There are many variations of bandsaw blade you could choose but a general purpose blade that will cope with the average run of work would be a 9mm wide, 6tpi – teeth per inch – skip tooth blade. 9mm is narrow enough to turn most corners but wide enough for deep cutting, while 6tpi ensure there are always enough teeth in the wood at any one time while it is running. Skip teeth, where alternate teeth are missing, will allow the dust created to escape without jamming the cut. For thin ply you need a standard non-skip blade and more teeth per inch so at least one tooth is cutting as the blade revolves.

ANTHONY BAILEY
Editor, *Woodworking Crafts* Magazine

MARK BAKER
Group Editor, GMC woodworking magazines

DEREK JONES
Editor, *Furniture & Cabinetmaking Magazine*

FINISHING OFF THE BOTTOMS OF TURNED WORK

"Do you know of an easy way of refining the underside of bowls and work after the main turning is done without the use of Cole jaws or a Longworth Chuck? I want a cheap but accurate method that will work most of the time on bowls, platters, boxes and that type of work."

Daniel Barker

Mounted work between a friction drive and tailstock revolving centre

Mark replies: The simplest, cheapest and probably the most versatile methods would be to fix the work between centres using a friction drive held in a chuck or on a faceplate.

So shape your work. If it is a bowl you are making, shape the outside, sand what you can and then mount the work in a chuck. Now turn the inside and when happy with the shape, sand it and apply your finish.

Now you would typically have to remove the chuck part or refine it to create a foot section. To do this mount a waste or appropriate piece of wood, or manmade board, in the chuck. Shape the front end to fit inside your work so maybe a dome shape if you have a bowl, but a flatter shape if it is a platter and a deeper narrower shape if you have a box. Ideally you need to support the work at the bottom of the inside section. Lay tissue paper over the waste-wood drive and then bring up the tailstock to support the piece. I always mark the centre of the underside of work so I can locate the centre easily later. A ring centre is better than a point revolving centre due to it not punching in the work so far. So be careful to provide enough pressure to hold the work without slipping but not so much as to create a huge indent from the centre.

Now refine the work leaving a small pip where the revolving centre is, sand the area you can reach, then remove the work from between centres and carve off the pip and sand to a fine finish. This is the simplest and cheapest method used by thousands of turners to deal with the bottom of work.

SECURING A ROUTER CUTTER

"I have a ¼in router that I mount in a router table, but I'm not confident about how much the shank can be left in the collet without the cutter being dangerous, it can vibrate sometimes. I'm fairly new to woodworking so any help would be appreciated."

Roger Smythson

Anthony replies: Well Roger, you have already found out it is potentially unsafe if you are getting vibration whether under load or not. All new router cutters must have a 'K' mark on the shank, this is actually an arrow placed against a line. This line is the depth the cutter must be in the collet for it to be safe to use. The general rule is that 19mm or more of shank must be in the collet to be considered safe. Older cutters or some Far Eastern ones may not have the 'K' mark on them. If you need extra cutter height in a router table then you should consider buying a collet extension which is the safe way to do it.

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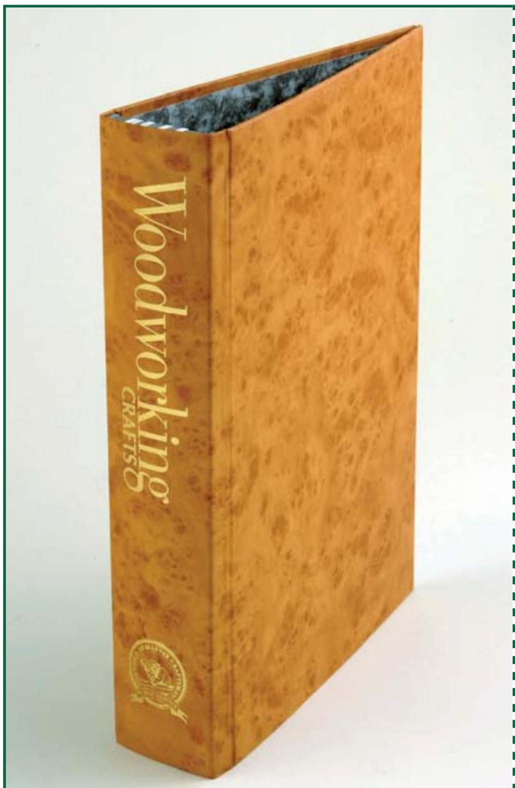

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OILS, WAX & GREASE

– lubricants and rust protection

PHOTOGRAPHS BY GMC/ANTHONY BAILEY

Some people think **the Editor** is a bit of a slippery customer, but we think he's more like greased lightning. In fact, he's decided to wax lyrical about the sticky subject of keeping your tools shiny and running smoothly...

A recent email from a reader querying my advocacy of using that ubiquitous product WD-40 and it's limitations, set me on a train of thought about how we need to keep the wheels of woodworking turning, so to speak.

Ever since human beings have had a need to get objects to move or tools of any kind to function well, there has been a need to lubricate and protect. As tools and technology get more sophisticated, so newer more specialised materials have become available to help do this. I haven't written an exhaustive list of lubricants and rust protection, but I hope it will be a guide to help ease the way.

The first thing is to consider what the general descriptions of different materials means as shown below. These descriptions have been written in a rather academic way trying to encapsulate all the relevant properties of these materials. ➤

CLASS DEFINITIONS

Oil – an oil is any neutral, non-polar chemical substance that is a viscous liquid at ambient temperatures and is both hydrophobic – immiscible with water, literally 'water fearing' – and lipophilic – miscible with other oils, literally 'fat loving'. Oils have a high carbon and hydrogen content and are usually flammable and slippery.
– All above quotes courtesy of Wikipedia

Grease – grease is a semisolid lubricant. Grease generally consists of a soap emulsified with mineral or vegetable oil. The characteristic feature of greases is that they possess a high initial viscosity, which upon the application of shear – sliding motion – drops to give the effect of an oil-lubricated bearing of approximately the same viscosity as the base oil used in the grease. This change in viscosity is called thixotropy.

WHAT SHOULD I BE USING?

That is a big question, so let's look at typical workshop situations. I have given some real world examples and usage qualifiers.

HAND TOOLS

Modern hand tools are more self-maintaining than traditional ones, Teflon-coated blades, for example, and hard-point handsaws, are effectively disposable items once damaged. I do use WD-40, but go online and you will find plenty of people who think it does more harm than good. That seems perverse since it is a water displacement agent designed to repel rust. It doesn't fit neatly into any of the class definitions above.

Rust inhibitors – volatile corrosion inhibitors – VCI – are a type of corrosion inhibitor used to protect ferrous materials against corrosion where it is impractical to apply surface treatments. They slowly release compounds within a sealed airspace that actively prevent surface corrosion. A typical application is to protect stored tools or parts inside bags, boxes or cupboards, one advantage of VCIs being that if the container is opened and reclosed, levels of inhibitor will recover. (Volatile substances are those which easily evaporate at room temperature.)

Wax – waxes are a class of chemical compounds that are malleable near ambient temperatures. They are also a type of lipid. Characteristically, they melt above 45°C to give a low viscosity liquid. Waxes are insoluble in water, but soluble in organic, non-polar solvents. All waxes are organic compounds, both synthetic and naturally occurring. (A lipid is chemically defined as a substance that is insoluble in water and soluble in alcohol, ether and chloroform.)
– All above quotes courtesy of Wikipedia

I use a scythe for grass mowing and it gets very wet especially as dewy dawn or dusk are the preferred times of day for hand mowing. A careful wiping off of wet grass and a spray with WD-40 has kept the blade rust-free for a long time. It can help clean tools of grease and dirt.

Bench tools such as metal hand planes, chisels and traditional handsaws fare better with other solutions. A wipe over with an oil will help no end, but standard mineral oil intended for machinery such as lawnmowers is smelly sticky stuff. Nowadays camellia oil, which is lighter and more pleasant, is to be preferred. You can buy it cheaper by shopping around as it has various uses, which can affect the price.

A low-cost alternative for surface protection is baby oil, which has slightly higher viscosity than camellia oil. It is generally a mix of paraffin and palm oil, it is clear and hopefully unscented but check the label. It is widely available.

Trend lapping fluid used for sharpening on diamond hones has an oily nature so it gives a degree of protection to newly sharpened edge tools.

More recently users of traditional handsaws have taken to using good old-fashioned tallow to wipe on their blades for rust protection and give much smoother cutting. Tallow is a form of rendered beef or mutton fat and solid like wax at room temperature, which will last if kept in a sealed container.

MACHINES

Oiling or lubricating power tools is generally forbidden and unnecessary unless the manufacturer specifies otherwise. Parts given to rusting like drill chucks can be wiped over with WD-40 or duck oil, which is longer lasting but more oily in nature.

Incidentally, power tools have bearings on the motor spindle, in the case of a router these are special sealed high speed bearings. Different classes of bearing will use a particular type of grease suited to that application and will last for their working life.

Bob Adsett in issue 3 explained how he treats new cast-iron tables with engine oil, which is allowed to soak in overnight as cast iron is a porous material, thus preventing rusting of machine tables.

Routers are an exception to the 'no lubrication' rule. The plunge action can get a little bit stiff but I don't like using wet lubrication as it can get on the work and make the columns more sticky and messy. My preference is for a light application of clear hardening furniture wax. It gives just enough slip to ease the plunge motion.

Never use a silicone based spray because the silicone content can contaminate wood preventing finishes from sticking.

There are exceptions such as big machines with sleeve bearings rather than ball bearings. These will have grease nipples so a grease gun can be snapped on in order to repack the bearing with grease. The definition of grease earlier explains that grease liquefies under motion providing the necessary lubricating effect.

Where you have simple mechanisms with sliding or rotating parts especially on vintage machines, then spray grease available from car accessory stores is an easy answer as it can be directed on to the exact area needing lubrication. I used it to coat the big steel hinges on my garage/workshop doors 25 years ago and they have never rusted! ➤

EASING WOODWORK

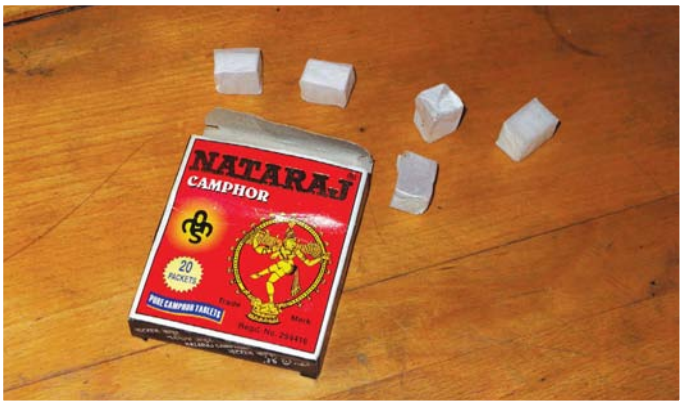
Hardening wax – a mixture of different waxes, the most important one being carnauba which is incredibly hard – can be used to give jigs and work aids some 'slip' so that they work better. While wood doesn't rust of course, it does get used in conjunction with several tools so wax has an important part to play.

AVOIDING RUST

It is always rather tragic when you take care of tools including oiling them, only to discover later on that they have developed a film of surface rust. Unfortunately the average workshop is generally a cold, humid place where moisture lingers in the air waiting to oxidise iron and steel. However there are steps you can take to avoid this.

Firstly, if you have a special collection of tools that need protection, build a cabinet to keep them or a tool case. That way they are in their own enclosed 'micro climate'. Now you need to add a corrosion inhibitor which keeps the moisture at bay.

There are several to choose from such as Shield Technology's Toolguard VCI, which comes in small pots, or Boeshield T-9 spray.



My own choice though is camphor blocks which are more natural. These have a strong smell but are very effective at keeping damp out. Whichever inhibitor you use it will need renewing every once in a while to maintain its effectiveness.

Suppliers

Oils and greases – car accessory dealers
Camellia oil and camphor blocks – various suppliers online – tool, health, bonsai pot, etc
Tallow – available from trade electrical suppliers used as a cable pull-through lubricant
Toolguard VCI – www.shieldtechnology.co.uk
Boeshield T-9 – www.boeshield.co.uk

Whatever your situation make sure your tools are well cared for and work smoothly, that way they will last and give good service for years ahead. ■

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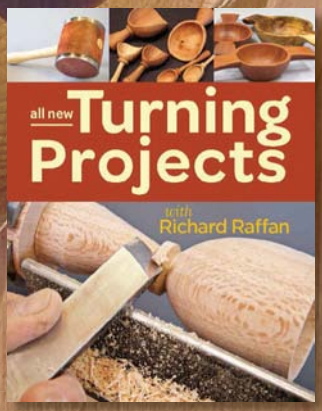

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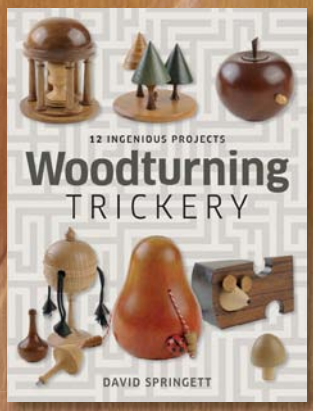

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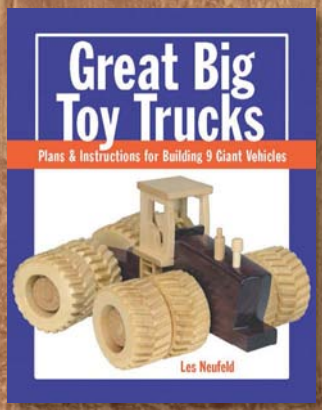

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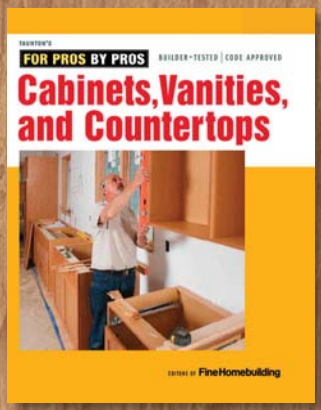

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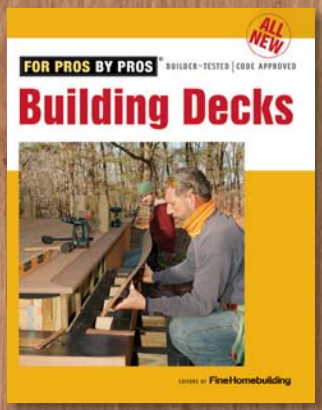

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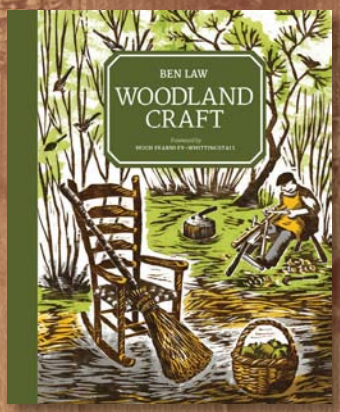

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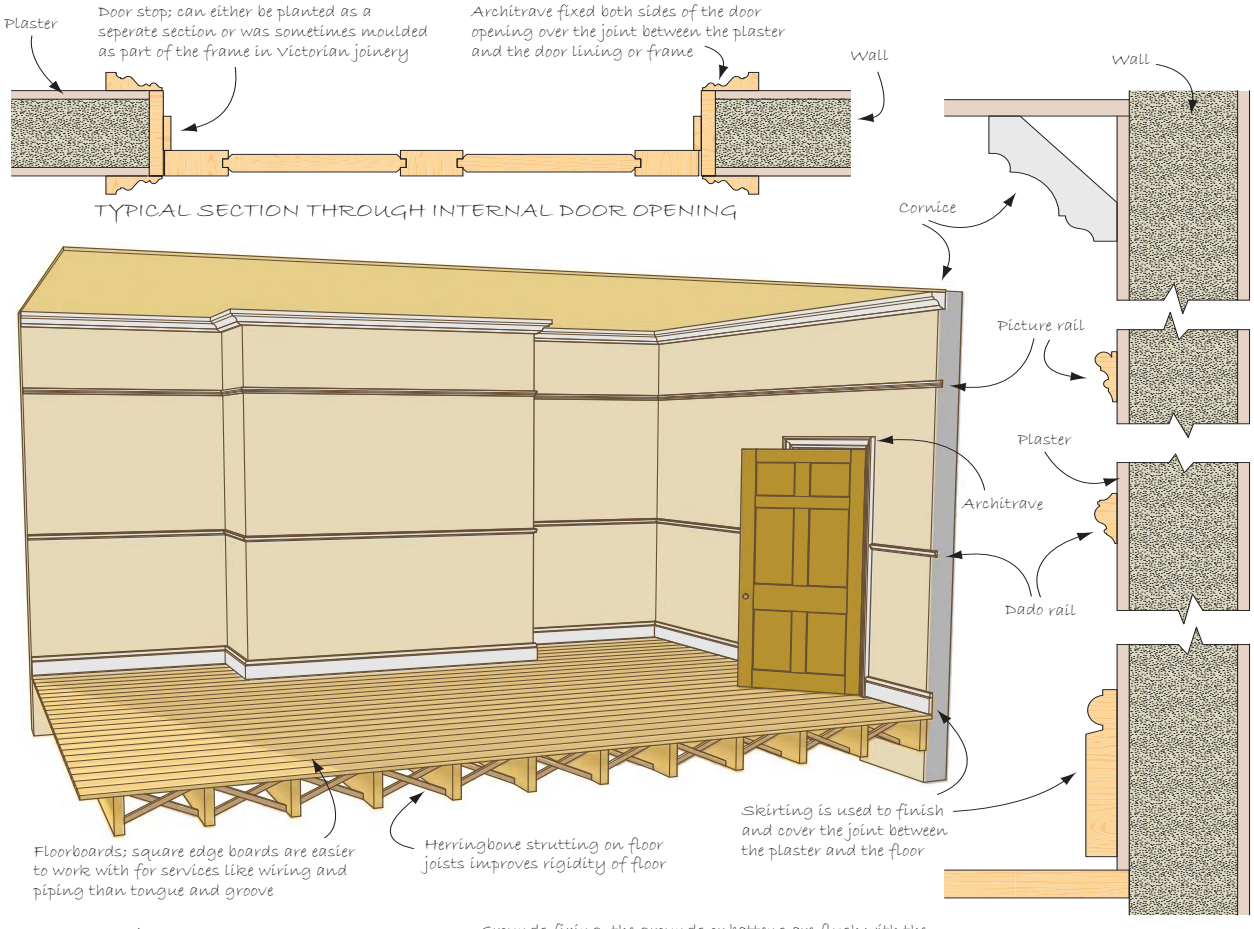
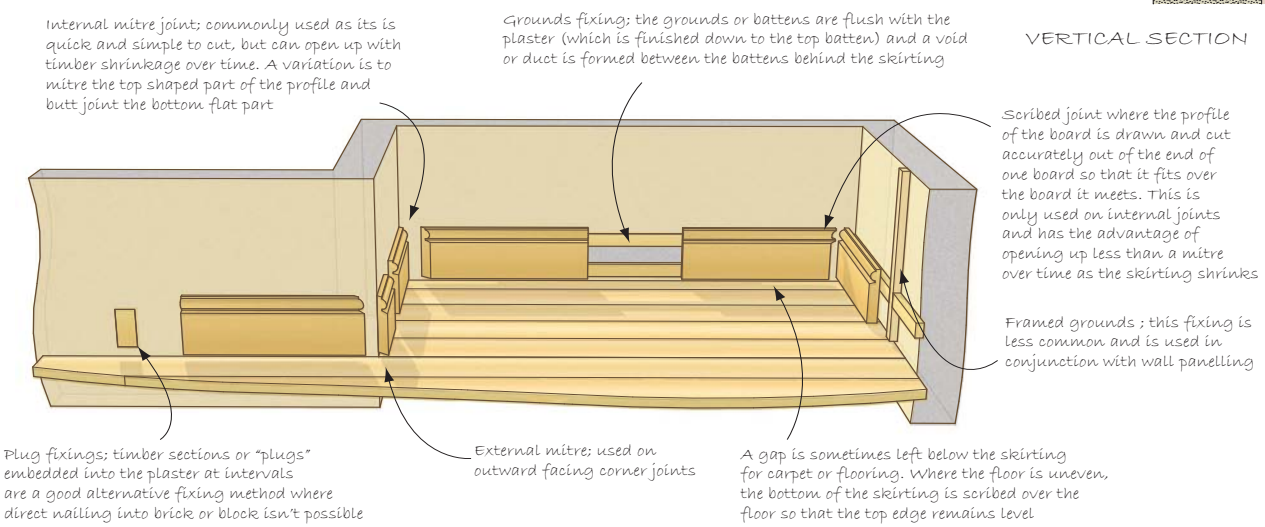
WOODWORKING GEOMETRY

Simon Rodway takes a closer look at second fix carpentry

The second fix or fixing in carpentry covers all the non-structural work in a building and is usually carried out after the plastering. In many cases it is used as a means of finishing off the joint between the plaster and the structure, such as around door frames. From these functional beginnings, and with the development of more sophisticated moulding techniques, second fix features like skirting and architraves developed into important architectural elements of buildings, particularly from the 18th century onwards, emphasising and adding visual interest to door and window openings, and definition to wall junctions with floor and ceiling. Even apparently decorative features like dado and picture rails had functional origins, the dado rail capping the dado or panelling once used to insulate or protect the lower portion of a room, and picture rails combined with special hooks were a means of hanging pictures without damaging plaster walls. ■





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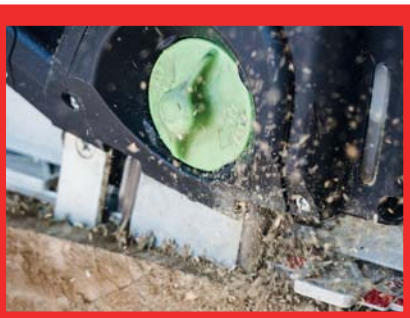


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