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Good Woodworking

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Shoulder plane



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MINI SERIES

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tree to green
furniture

PLUS...

- Around the house: Phil Davy makes hardwood skirting
- Out and about: Edward Hopkins is inspired by a café
- On the lathe: Les Thorne turns a 3-legged stool



PROJECT

Make this oak
glazed corner
cabinet

PROFILE

HIS DARK MATERIALS

*Dredging the depths of
Marc Fish's creative mind*



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Welcome

How do you get inspiration? For Edward Hopkins it comes from looking about him: the picture above, of furniture in his local café, gave him the idea of a table he and his daughter could make together, **p62**. For cover star Marc Fish it is seen all around him and translates into gorgeous shapes that may or may not be made of wood, **p54**. For Bernard Greatrix inspiration was dictated by shape and space available, **p36** – as was the space allotted to this recreation of his cabinet. In order to bring you the whole thing we have placed the plans on www.getwoodworking.com. Regarding the Wood Awards, **p46**, we'll fully understand if your jaw drops to the floor like ours did.

We gave Michael Huntley a month off from his foundation course and sent him on his holidays to see how a timber-framed shipwrights' building was constructed, **p48**. And arborealist David Vickers starts a mini series that looks at how trees are felled and milled for furniture making, **p44**.

Meanwhile, Phil Davy makes some posh skirtings from hardwood, **p74**, and Les Thorne turns a three-legged stool, **p80**. We hope all this heralds a wonderful 2015 and that you are inspired for some great woodworking.

Andrea Hargreaves, Editor



Andrea Hargreaves
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Andy King
Technical Editor



Dave Roberts
Consultant Editor



Phil Davy
Consultant Editor

We endeavour to ensure all techniques shown in Good Woodworking are safe, but take no responsibility for readers' actions. Take care when woodworking and always use guards, goggles, masks, hold-down devices and ear protection, and above all, plenty of common sense. Do remember to enjoy yourself, though.

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Good Woodworking

January 2015

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Tools • Projects • Techniques • Advice



On the cover

54 River deep

Marc Fish is inspired by many things including the ebb and flow of the Ouse, finds Dave Roberts

Best of British

Winners of the Wood Awards leave us in jaw-dropping awe. See for yourselves

Shipshape

Michael Huntley watches the raising of a timber-framed building by traditional methods

Projects



Corner cabinet

Learn from a master: make Bernard Greatrix's corner cabinet and you'll pick up all sorts of techniques and tips that will stand you in good stead for other work

Shipwright's 'shop

Michael Huntley spent a fascinating few weeks visiting the Hampshire site to watch a timber-framed building take shape

Nice bit of skirt

Why buy softwood skirtings when you can relatively easily make your own from a tasty piece of hardwood like Phil Davy does?

Turning stool

Les Thorne doesn't make 'proper' furniture much, but his child-sized stool in ash requires only fairly simple faceplate work

Techniques

Bog oak magic

Dave Roberts finds out how Richard Warmisham fashions beautiful boxes from bog oak

The forger's art

Stephen Simmons justifies cheating rather than distressing

Timber

David Vickers sets out to explain the journey from tree to furniture piece

Table design

Edward Hopkins is inspired when he takes his daughter for a coffee at his local café

People & places

Centrefold

Marvel at the category winners of the 2014 Wood Awards, from bespoke furniture to huge construction projects

Material choices

Dave Roberts travels to the port of Newhaven to find out how Marc Fish is inspired by its industry and low-tide mud

Your favourites

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Finishing Touch

Good Woodworking

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...on a budget

With enough space this could work for hobbyists

16

GW
289
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The BIG build

Michael Huntley witnesses traditional joinery on a heroic scale as The Shipwright's School takes shape

48

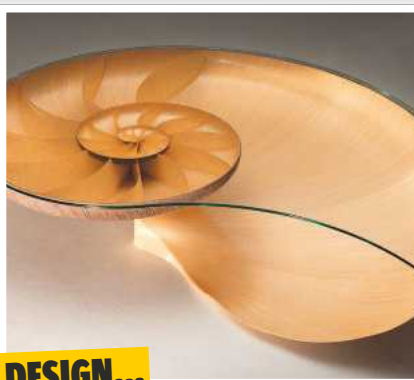


5 STAR...

...rating...

...for WoodRiver's pretty little shoulder plane

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DESIGN...

...and materials

Marc Fish's ideas often need ingenious solutions

54



CLASSY...

...bit of skirting

Phil Davy says hardwood is surprisingly inexpensive

74

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Good Woodworking News

from the bench

Comment, insight, views and news of woodworkers from around the globe

Axminster heralds New Year



Folding router table kit

The principal feature of this kit is the folding stand made from heavy-gauge steel section with a black powder-coated finish. The rear leg assembly opens to form a rigid A frame that will close flat. The router table top can also be turned so that it folds flat for storage.

The router table, with a phenolic resin insert plate and two rings, measures 604 x 400mm and is screwed directly to the folding stand. A standard 19mm aluminium T track is fitted into the tabletop for an optional mitre gauge.

The fence is made from a rigid steel back plate and uses a pair of aluminium alloy T tracks incorporating metric scales for precise location. A pair of adjustable extruded aluminium in- and out-feed fences can be opened and closed allowing various-width cutters to be used as well as optional feather boards that could be fitted on each side.

A clear plastic safety shield is included as well as a 37mm extraction port at the rear that has an additional 63mm adaptor. The setup costs £154.96 inc VAT.



...and wooden plane kit

With this kit – and some basic woodworking skills – it is possible to build a bevel-down, wooden-bodied smoothing plane.

The kit includes a blade, a Norris-style adjuster with a steel cup to seat it in, plus knobs, tapped insert and a cross pin for the lever cap, all made of brass.

The lapped blade, which is available in A2, O1 or PM-V11 steel, is over 3mm thick and just over 41mm wide with a 25° bevel.

The kit is available with an O1, A2 or PM-V11 blade and costs £46.96 for O1 and A2 and £51.96 for PM-V11, both inc VAT

Veritas shooting sander...

Producing a true square edge on very thin, friable material such as veneer is difficult at the best of times and compounded when burrs have to be edge jointed. The Veritas shooting sander allows stock to be sanded square and to size, as jointing by sanding, instead of planing, reduces the risk of splintering or chipping on thin material, difficult grain, or even lacquered or painted mouldings. The wooden knob is angled to allow the user to apply equal pressure to the sole and face. It can also be positioned at any point along the length of the sander, locking in place with a simple twist of the knob. Compatible with any shop-made shooting board sized for the shooting plane, each sander has a 6mm-wide lip along the bottom of the face that keeps the sander from widening the shooting board track. The body is extruded aluminium with a black anodised finish. The sander is supplied with six 225mm-long, 30mm-wide strips of PSA-backed aluminium oxide sandpaper and two each of 120g, 180g and 220g aluminum oxide grit with a zinc stearate coating. Further quantities can be purchased separately. For more info on all these products go to from www.axminster.co.uk



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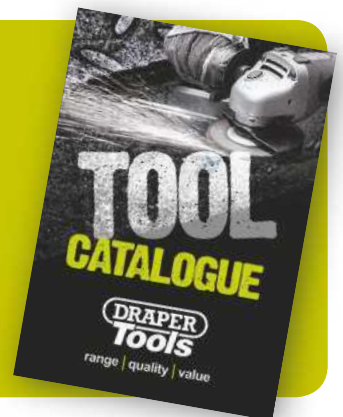
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COURSE DIARY

Make this the one resolution you keep: "in 2015 I will go on a woodworking course." To get you started have a look at this selection

January

5-9 Advanced furniture making/box
17 & 24 French polishing and refinishing

Peter Sefton Furniture School
The Threshing Barn
Welland Road
Upton upon Severn
Worcestershire
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Tel: 01684 591014

8-11 Making simple furniture/beginners
16 Greenwood spoon carving
22 Turn a bowl/beginners
22-25 Bowls & platters/intermediate, advanced

West Dean College
West Dean
Nr Chichester
West Sussex PO18 0QZ
Tel: 01243 811301

12-16 Double bow
26-30 Continuous arm

The Windsor Workshop
Churchfield Farm
West Chiltington
Pulborough
West Sussex RH20 2JW
Tel: 01798 815925

17 Sharpening/Tormek hand tools

(Sittingbourne)

20-21 Beginner woodturning (Sittingbourne)

22 Bandsaws (Axminster)

26-27 Beginner routing (Axminster)

29 Fine tuning hand planes (Axminster)

30 Sharpening (Axminster)

31 Spindle moulding (Sittingbourne)

Axminster Tool Centre
Unit 10 Weycroft Avenue
Axminster
Devon EX13 5PH
Tel: 0800 975 1905

February

5-6 Beginner routing (Sittingbourne)

11-12 Beginner woodturning (Sittingbourne)

17 Turned boxes, into (Axminster)

17-18 Bowls & platters (Sittingbourne)

19-20 Beginner woodturning (Axminster)

19-20 Beehive making (Axminster)

21 Sharpening, Tormek Woodturning
(Sittingbourne)

23 Pyrography (Axminster)

23-24 Beginner routing (Axminster)

24 Scrollsaw (Sittingbourne)

26 Spindlemoulding (Axminster)

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CEL succeeds without Dragons

In spite of initially securing backing from Peter Jones and Duncan Bannatyne in TV's *Dragons' Den*, Chris Elsworth decided to go it alone with his POWER8 Workshop. That was back in 2010, three years after the launch of the kit, which was featured on the *Gadget Show* two years later.

The compact and clever cordless design is based around a Li-Ion battery and utilises a POWERhandle that has interchangeable heads for different tasks. The toolbox which contains the power tools converts into a workstation, which doubles the functionality of the tools when they are combined with the box. So the hand drill becomes a drill press, the torch becomes a desk light, the circular saw becomes a table saw and the jigsaw becomes a scrollsaw.

Chris has since launched a second version of the POWER8; the 'POWERquattro Pro', with higher spec components to benefit the more professional user, and alongside, a range of 10.8V Li-Ion tools.

CEL has most recently launched the 14.4V Li-Ion platform, which allows users to 'mix and match' their individual tools with the stand-alone battery and charger pack, adding new tools to their personal range as and when they are needed.

The usual drill and impact driver is backed up with an SDS, a multi-tool, reciprocating saw, circular saw and jigsaw, sander, vacuum cleaner and beyond, as well as a neat little chisel/carving body that looks like a small Dremel-style body that vibrates (rather than rotates) to chip and carve away the material.

He's currently working on the Robox 3D printer, allowing designs to be brought to life via 3D printing and the building of small prototypes of their work. Chances are there will be a CNC-type machine on the horizon as well.

For more info visit www.cel-uk.com or www.cel-robox.com

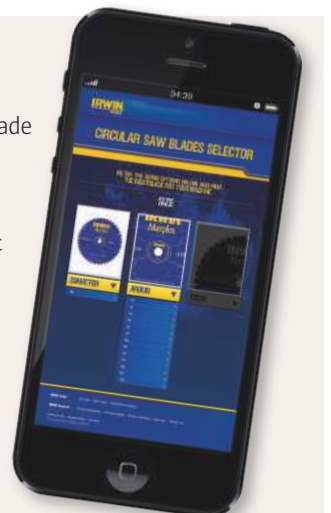


Irwin blade selector

Irwin has come up with a guide to help you find the correct blade for the job. The new circular saw blades range offers an assortment of blades for every application and material, all of which are compatible with any machine on the UK market. It includes the launch of Marples Stationary Blades and WeldTec Handheld Blades. The Irwin Circular Saw Blade Selector guide is there to help you decide which blade you need.

Available online and compatible with iPhone and Android, the guide matches any machine brand with the required diameter and arbor, leaving users to choose their desired tooth. You will be able to manually input specifications to bring up relevant blades.

For more info on Irwin products visit www.irwin.co.uk



Makita kits & bits

Combo tool packages

Makita Combo kits offer multiple tool packages sold as a single kit. The two latest Combo kits also offer a variety of battery options from the Makita 18V lithium-ion range including 3.0Ah, 4.0Ah and 5.0Ah batteries. The new DLX2040 2-tool Combo kit features the new DHP481 2-speed combi drill that will run up to 2,100rpm and deliver 31,500 impacts per minute to punch a 16mm bit through masonry. The brushless motor will give extended run time and generates up to 115Nm of fastening torque. This new Makita combi drill has a 20mm shorter body than its predecessor. Similarly the DTD129 18v impact driver has both the brushless motor and compact design. Generating up to 160Nm



of torque and up to 3,200 impacts per minute, this 1/2in hex drive tool is meant for heavy-duty site installation operations. The Combo comes with a DC18RC fast-charger in a MacPac case. The 6-piece Combo kit, DLX6017, includes a jigsaw, rotary

hammer drill, combi drill, circular saw, impact driver, torch, fast charger and three 3.0Ah Li-ion batteries in a carry case and offers a substantial saving over the individual tool purchase prices.

The DJV180 jigsaw has a 26mm stroke length and will cut up to 135mm timber. The DHR202 rotary hammer generates 2.0 joules of impact energy and can punch a 20mm hole in concrete while the DHP453 2-speed combi will drill 13mm in masonry, run up to 1,300rpm and generate up to 19,500 blows per minute. The DSS611 circular saw drives a 165mm diameter blade which will cut to 57mm at 90°. The DTD146 impact driver generates 160Nm of torque and up to 3,200 impacts per minute. You also get the BML185 torch.

Accessory range

A tiny magnetic booster is 17 times stronger magnetically than the normal bit. The Mag Boost simply slides over a 1/2in hex drive screwdriver bit, that is at least 50mm long, to increase the magnetism of the bit. Makita now offers a socket that will spin the threaded rod three times faster than manual operation to tighten or loosen quickly. An innovative design combines three hardened steel self-locking cams within a socket driven by an impact driver. The cams grip the threaded rod as the socket is rotated by the impact driver. The product is available in three sizes to suit 6, 8 and 10mm threaded rod. A shock driver is used to apply hammer power to unscrew a seized or damaged screw. The shock driver's bit is placed in the screw cross cut and a hammer blow on top of the shock driver rotates the screw just a few degrees to start its removal. Makita's latest range of 1/2in square drive sockets are made from high-grade chrome molybdenum high-impact steel for maximum wall strength, torque delivery and durability. Available from 8mm up to 32mm, all are coated in rust-resisting black phosphate; the 9-piece boxed set carries the most popular sizes.

For more info go to www.makita.co.uk



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Makita in the pink

Makita has donated pink cordless drill drivers to Team Run 12 as a contribution towards their challenging fund-raising programme. Lead by 23-year-old Becky 'Bexx Star' Beard, the team's aim is to raise £25,000 for Cancer Research UK and Breast Cancer Care (BCC) in 2014.

Becky has set herself a goal to run 12 marathons in 12 months, including London, Wales and New York, and having now completed nine of the events the team has already raised £19,000.

"What a spectacular effort, by someone who claims not to be a runner, and all for a great cause," says Makita marketing manager Kevin Brannigan. "In our own Charity of the Year event just a few years ago, also in support of Breast Cancer Care, Makita launched a pink cordless drill driver of which £5 was donated for every drill sold, the proceeds of which helped us to raise £70,000 for the charity, so we are delighted to donate some of these special-edition drills to the team's online competitions and Quiz Night raffle later in November."

The drill is a pink version of the DF330D Li-ion, 10.8V drill driver, complete with one 1.3Ah battery, fast charger, drill bit set and carry case.

Visit www.teamrun12.co.uk for more information about Becky's running.



OFFCUTS

Getting on for 8,000 visitors poured into the 'Harrogate' show and for many exhibitors it was their most successful show ever. Next year's North of England show takes place from 20-22 November at the Yorkshire showground, Harrogate. For more info go to www.skpromotions.co.uk



Cheam Woodturners had toy-making on the agenda when Chris Grace demonstrated how to make spinning tops, one with a separate launcher and one without.



Greenpeace is calling on authorities in Europe to seize suspicious timber and penalise companies that are not complying with the requirements of the EU trading regulations.

Good Woodworking Free Reader Ads

Machinery

Record Power router table RP R60T, £500ono, buyer collects
Electra Beckum 6in bandsaw, stand mounted, complete with various bits, very low use, £1000ono, buyer collects
Scanslib Scangrind wet grinder, £400ono, buyer collects
Elu MOF96 router with Trend 12-piece cutter bit set, £400ono, buyer collects
Richard Brunt, Derbyshire ☎ 07595 243567

Trend T5 MkII router bought 2013, not used, still in case, £90, buyer collects
Mr B Carroll, Manchester ☎ 01942 884076

Turning

Wadkin Bursgreen wood lathe, 5 B x L, various chucks and tools, £1500ono, buyer collects
Richard Brunt, Derbyshire ☎ 07595 243567

Nu-Tool lathe, 37in between centres, 2 faceplates and chuck, plus four sash cramps, 2 x 5ft & 2 x 4ft, whole lot £70
Alan Rhead, Staffordshire ☎ 01782 396648 or 07923 500128

Wanted

Carving chisels and sharpening stones wanted by beginner
Alasdair Barron, London ☎ 07711 05913

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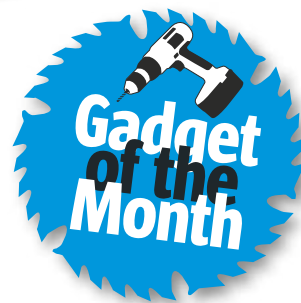
New products, tools and tests



I've always enjoyed getting exclusive first looks at new product, and I've just been given the chance to take a gander at a new dovetail jig from Leigh that makes through half-blind dovetails along with finger joints at the router table with incredible ease, so check out my thoughts in the next issue. Also coming up: so far I'm very impressed by the Milwaukee 12V drill driver and its interchangeable heads – read more in next month's GW.

Andy King, Technical Editor
andy.king@mytimemedia.com

Sjöbergs workbench



If you've ever combined metalworking with your woodworking and had to do any striking tasks, you'll know that it never does your bench any favours to start bashing metal directly onto it!

The Sjöbergs anvil is certainly basic enough, but looks to be a great compromise between damaging your bench or owning a full-blown anvil or similar.

The 250mm-long 6mm-thick steel angle wraps over the edge of the bench, and using the sliding dog post, it is secured to the bench firmly through a suitable 19mm dog hole.

As long as you have a dog hole between



22 and 90mm on centre from the edge of the benchtop, the anvil will fit, but of course you can simply drill an appropriate hole.

With a 125 x 250mm working surface on the benchtop, along with a 75mm x 250mm vertical face, it allows you to drop in and remove the anvil as needed and gives plenty of room to do your metalwork without damage to the bench.

Not the cheapest of gadgets for what it is, but certainly a very useful item nonetheless.

Typical price: £39.95
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- ★ Don't get your hopes up or your wallet out!
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- ★★★ Performs well, but you will find better
- ★★★★ Great performance and value for money
- ★★★★★ So good, even Andy would get his wallet out!

Kit & Tools

When you go down the route of combination machines there are usually two main factors that play their part: space and budget. There tends to be a train of thought that believes a combi frees up space and will work in smaller workshops. However, with a combi you generally need good all-round access to be able to use it to its full potential as they tend to come with a lot of features that need space.

This particular model, with its sliding carriage for the saw table as well as the gull-wing outboard tilting planer beds for the thickening function, requires a wide work area but it does come with a wheel kit and jockey wheel so you can move it around easily enough to orient for the job in hand.

On the budget side, the AW4 certainly gives you plenty for your money and with decent capacities across the board.

The 3-motor system means you don't have to start swapping belts to move between functions, although there's still swapping or moving of fences and tables on the top of the



Budget combination

This combination machine is fairly easy on the pocket, but it takes up more space than you might expect

machine as with any combi. While the three motors are advantageous, the setup demands a 16amp power supply.

Taking a look at the individual functions reveals some excellent features...

First, the saw

Starting with the saw, there's a scoring function as standard; alongside the sliding carriage it gives clean splinter-free cuts on veneered or laminated stock.

It's a single blade, not a shimmable one, so it must be matched to the main blade if you swap it for a different tooth count etc.

The scorer is easily adjusted with the top-accessible setting points.

The carriage has a 2000mm crosscut capacity when using the adjustable fence. The

fence will also alter on the carriage for angled cuts. It's certainly solid enough; a heavy-duty cast bracket supports the squaring table frame well, and there are adjustments that ensure the carriage tracks perfectly to the blade.

The clamping shoe on the fence is nothing to write home about, but it retains its setting well enough; as with many machines where savings need to be made, things like this tend to be some of the areas where this happens, along with the odd locking knob or two.

Ripping capacities are maybe a little shy for a 250mm-diameter blade, 65mm at 90° is fine but the 45° tilt is a tad limited at 45mm.

The maximum overall ripping width with the ripping fence is limited to 460mm; and this is an area where combi machines in general can come up short, more so on a compact model like this one.

The fence cam locks to the front running rail well, and there's also a rack & pinion fine adjustment facility that does a good job of tweaking any setting.

Separate rise and fall/tilt wheels work well,



▲ The jockey wheel makes it easy to reposition the machine as needed

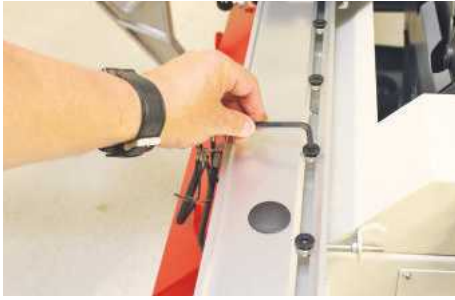


▲ Sliding the carriage back gives excellent access to both blades



▲ There are adjustments for the scoring blade through the table

Axminster AW4 combi



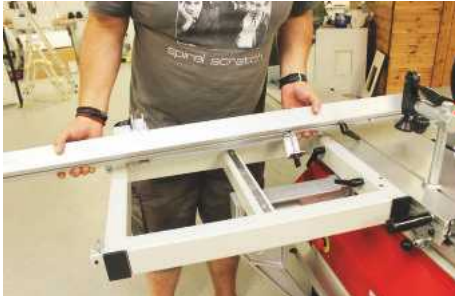
▲ There's also a raft of adjustments to set the fences and tables accurately



▲ A heavy casting supports the squaring table well



▲ Adjustment wheels run fluidly and sit flush when not required



▲ The sliding carriage fence locates on a pivot pin



▲ A big hold-down clamp keeps things secured and can be used in conjunction with the flip stop



▲ The fence has a solid cam lock along with a fine adjuster



▲ A spanner and hex key are used to swap blocks



▲ Reducing and blanking rings are supplied



▲ The spindle hood is solidly made and secures with Bristol levers



▲ The fences are fully adjustable to suit the work



▲ These wheels allow the work to pass through easily



▲ Heavy box sections ensure the guards stay rigid under load

and have folding handles to give a clearer work area when walking work through the functions.

Spindle function

Spindle work makes good use of the sliding carriage; ideal for working end-grain mouldings and scribing cuts, and with a top-threaded spindle, it is fitted with a suitable flush rebating block to enable tenon cuts to be made as well.

There is a set of collars as well as reducing rings along with a central blanking cap to give a clear flat table when the spindle is wound below the table and isn't in use.

Spindle speed adjustment is accessed through a hatch and needs a spanner to release

the tension on the belt to allow it to be moved and there's decent room to do so, making it fast and easy to achieve.

The hood is much the same as most on the market, but certainly better than many budget offerings. It has a heavily cast-alloy main section with thick walled box section aluminium for the guarding, so everything is kept rigid while the work is fed through. I found the use of a set of rollers on the top hold down was a bonus as it helped the work feed through more slickly while still keeping it down to the table.

The fences are aluminium with the standard adjustments for offset work, with each fence

facing having jacking screws to gain perfect parallel and coplanar alignment.

Planer talk

Moving to the planer, if there is an area where it could prove frustrating, it's the need to bolt down the dovetailed fence-retaining plate to the table when you want to face up stock.

I found that while it worked well when needed, to use the other machine functions I had to remove it, and with a hex wrench needed, along with the chance that the retaining bolts could be mislaid, I'd prefer an easier system to secure the fence as well as swapping the functions over.



▲ The bridge guard removes when not required



▲ The planer tables have to tilt away for thickness work



▲ You have to have the hood in place to use the thicknesser



▲ This bracket has to be fitted for the planer fence



▲ A cast-iron fence is a great feature and it adjusts easily



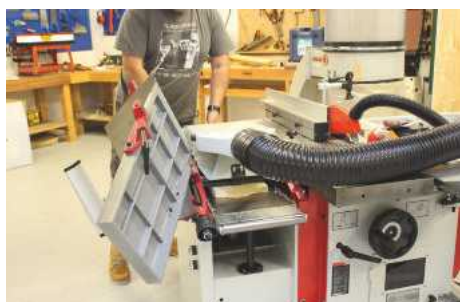
▲ The central ram is a feature normally found on more expensive models



▲ Various power options are dotted around the machine



▲ The saw functions are powerful and accurate



▲ The gull wing tables aren't ideal for thicknessing work



▲ There's loads of table space to support the work on the spindle

The plus side of things makes up for it though: a 3-knife block, while still offering the similar cuts per millimetre of a 2-knife block, does gain faster feed speeds through the thicknesser – 8m per minute in this case.

Alongside this there's a central ram-supported table that runs easily. You have to swing both tables away from the block and reposition the hinged fabricated dust hood to cover the block safely during this operation.

While access to the thickness table itself is first class, I found the tables themselves can get in the way when feeding stock through on your own as they restrict easy access around the machine to pick up the work as it ejects.

Conclusion

A foible or two doesn't detract from what is a very well-constructed machine for the money; the three motors all seem to be man enough for the tasks in hand, and with switching for the functions well positioned for either initial start up or to switch off after use, it's pretty user friendly.

It takes a more methodical approach to get a combi to work well as you don't want to be constantly swapping modes, but if you can get along in this way then you have three decent core machines here for a lot less than the individual machines would cost if you bought them as separates.

The Woodworking Verdict

+ Smooth adjustments; great capacities; micro fence adjustments

– A couple of cheap knobs; odd sub fence configuration; fine adjuster could get damaged

Rating ★★★★★

Typical price: £2,699.944

GENERAL

Number of motors: 3

Power: 3000W (saw)
2000W (planer)
3000W (spindle) 230V

Weight: 370kg

SAW FUNCTION

Blade speed: 4050rpm

Blade Tilt: 0-45°

Max depth of cut @45°: 45mm

Max depth of cut @90°: 65mm

Max ripping width: 460mm

Scoring blade diameter: 80mm

SPINDLE FUNCTION

Cutterblock diameter: 75mm

Cutterblock speed: 4,000rpm

Spindle speeds: 3500, 5500 & 7500rpm

PLANER FUNCTION

Feed speed: 8m/min

Fence tilting: 0-45°

Knives: HSS x 3

Max depth of cut: 2.5mm

Max planing width: 250mm

Max thicknesser capacity: 180mm

Web: www.axminster.co.uk

Jennie Starbuck



Mark Raby



Mick Hanbury



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On the level

On a 'green or blue' comparison, this Bosch 'green' tool gets the all clear

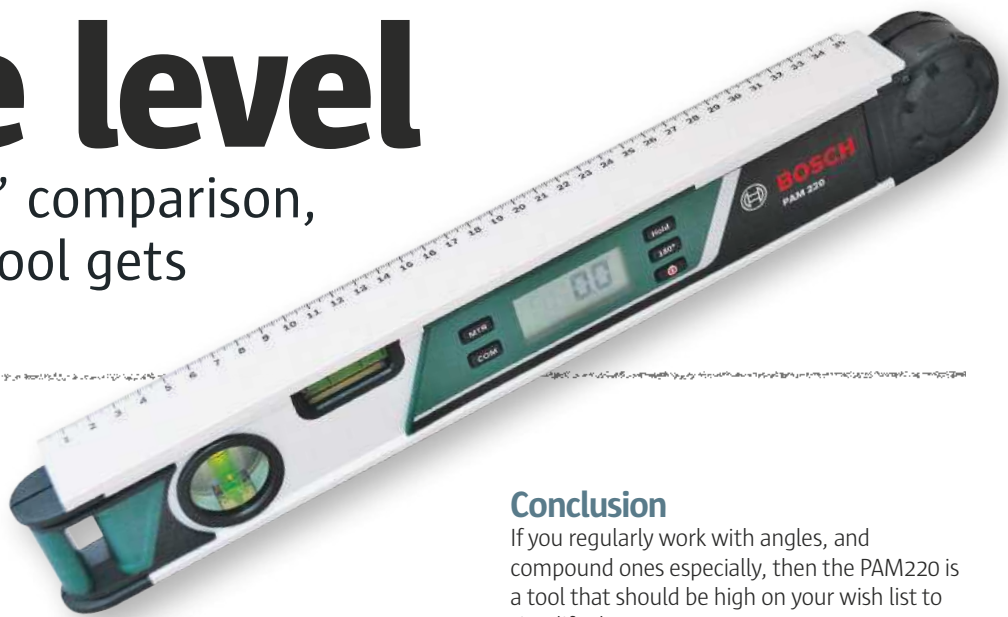
This little gem may be aimed at the DIY market, but it looks remarkably similar to the Professional-rated GAM 220, and boasts desirable features for those who need to calculate angles regularly.

The high-quality plumb and level vials are described as accurate to within 1.5mm per metre, about 0.8°, so not quite to the 0.5° accuracy of the pro-end levels from Stabila and the like, but it's certainly good for most purposes.

It comes into its own, however, when combined with a chop saw. It can measure and split angles for mitre work: simply push it into an internal corner or wrap it around an external one to check the angle. Pressing and holding the 'MTR' button bisects the angle so you can set the saw correctly.

In some situations the PAM220 won't be able to set correctly; a short corner for example.

A slide-out leg comes into play for this, sliding into the shorter part of the corner to take the angle. A button marked '180' corrects the register, removing 180° from the calculation to give the correct angle which can now be bisected.



Compound mitres

Cornice work on kitchen units can be tricky, and if you don't have a saw that is capable of cutting the cornice by positioning at the correct angle to replicate its position to the cupboard allowing a simple mitre cut, you need to calculate the correct angles for the tilt of the saw blade and the rotation of the saw table to gain the correct compound cut – and all it takes is four presses of the 'COM' button, see photos. The saw will now be set for the correct compound cut to suit the corner you are working to.

For something, say a tray with splayed sides, requiring geometry, this nifty tool will do the calculations for you in a few seconds in anything across its 220° range, so you can cut and assemble multi-sided designs easily.

Conclusion

If you regularly work with angles, and compound ones especially, then the PAM220 is a tool that should be high on your wish list to simplify the process

The Good Woodworking Verdict

- + Fast way to accurately calculate compound cuts; can be used as a standard level
- Level vials not as accurate as a pro level

Rating ★★★★★

Typical price: £84.99

Measuring range: 0-220°

Measuring accuracy, angles: 0.2°

Measuring accuracy, bubble vials: 1.5 mm/m

Accuracy of angle calculation: 0.1°

Automatic shutdown: approx 5min

Leg length: 400mm

Weight: 860g

Web: www.bosch.co.uk



▲ The slide-out leg is perfect for working out small external return angles and there are two good vials for standard levelling work



▲ Working compound cuts for things like cornices is its real strength; first, set the leg to the angle that matches your cornice spring angle



▲ Next, press the 'COM' button to store it; the leg is opened to match the angle, 90° here



▲ A press of the 'COM' stores the setting and a further press now shows the mitre angle for the cut



▲ A final press gives the bevel angle for the cut required



▲ Set the saw to these two angles and the cut is ready to be made. With the work flat on the table, make cuts set to left and right



▲ The resulting cuts show the work at 90° as set from the level...



▲ ...and with a corresponding pitch or spring angle of 50°

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Planing pretty

Andy is hard-pushed to find anything wrong with this medium shoulder



The advent and subsequent lower cost of machinery and power tools kicked a lot of hand tools into touch, particularly specialised handplanes. Take the shoulder plane for instance: when I was young it was an essential item but has been superseded by other methods; it's still a very viable tool though, and in furniture and cabinetmaking especially, ensures the crispest and cleanest of joints.

WoodRiver's medium is based on the very desirable Preston model. It's a good-sized plane to own if you are on the hunt for one as it covers most bases from cabinetry through to bigger joinery and is easy to control, unlike some of the more unwieldy large shoulder planes out there.

Build quality is top drawer; the body is ductile steel so will withstand a fall and is machined to a fine finish. Squareness of sole to the sides is an essential factor on these planes as they need to register from both faces to do the full range of their work and it doesn't disappoint here, registering smack on when I put my engineer's square to them.

The iron is Mn65 steel hardened to Rockwell 60-64Rc, although I have to say that the

composition of such steels is lost on me. All I know is that it feels hard on the stone and takes a great edge that is durable, slicing end grain to leave a polished finish.

The iron has bevelled sides to aid the cut when working into a corner such as a shoulder line, tenon or rebate, and is marginally wider than the sole of the plane to ensure the corners are cleaned crisply.

Advancing the iron is pretty standard, a fine adjuster at the rear altering the cut, but as with most shoulder planes there's no lateral adjustment and the tolerances between the iron and the side of the body are tight so it's essential you hone as squarely as you can to keep things on track, especially as the 12° bedding angle accentuates any discrepancy.

Where this plane stands out against the original Preston design is the inclusion of an adjustable mouth that sets the mouth as tight as possible to minimise tearout on fine fitting work while also allowing a wider opening for quicker removal of stock if the job needs it.

Conclusion

I found the plane very comfortable in standard planing work such as easing tongues and rebates as well as on its flat for trimming shoulder lines; the sculpted lever cap along with the polished eased edges of the body give a great feel in the hand.

At around £70 cheaper than its nearest premium brand rival, and boasting better features, this one should be high on your list.

Good The Woodworking Verdict

- + Adjustable mouth; superb quality; holds a great edge
- No/minimal lateral adjustment

Rating ★★★★★

Typical price: £105.95

Overall length: 225mm

Width: 19mm

Blade bedding angle: 15°

Web: www.woodworkersworkshop.co.uk



▲ The lever cap is easy to remove to allow access to the iron



▲ Slots in the rear of the iron engage the advance adjuster



▲ Adjustments to the mouth are made with a slotted screwdriver



▲ You can open up the mouth quite widely



▲ Using the plane in a conventional manner on long-grain work is comfortable



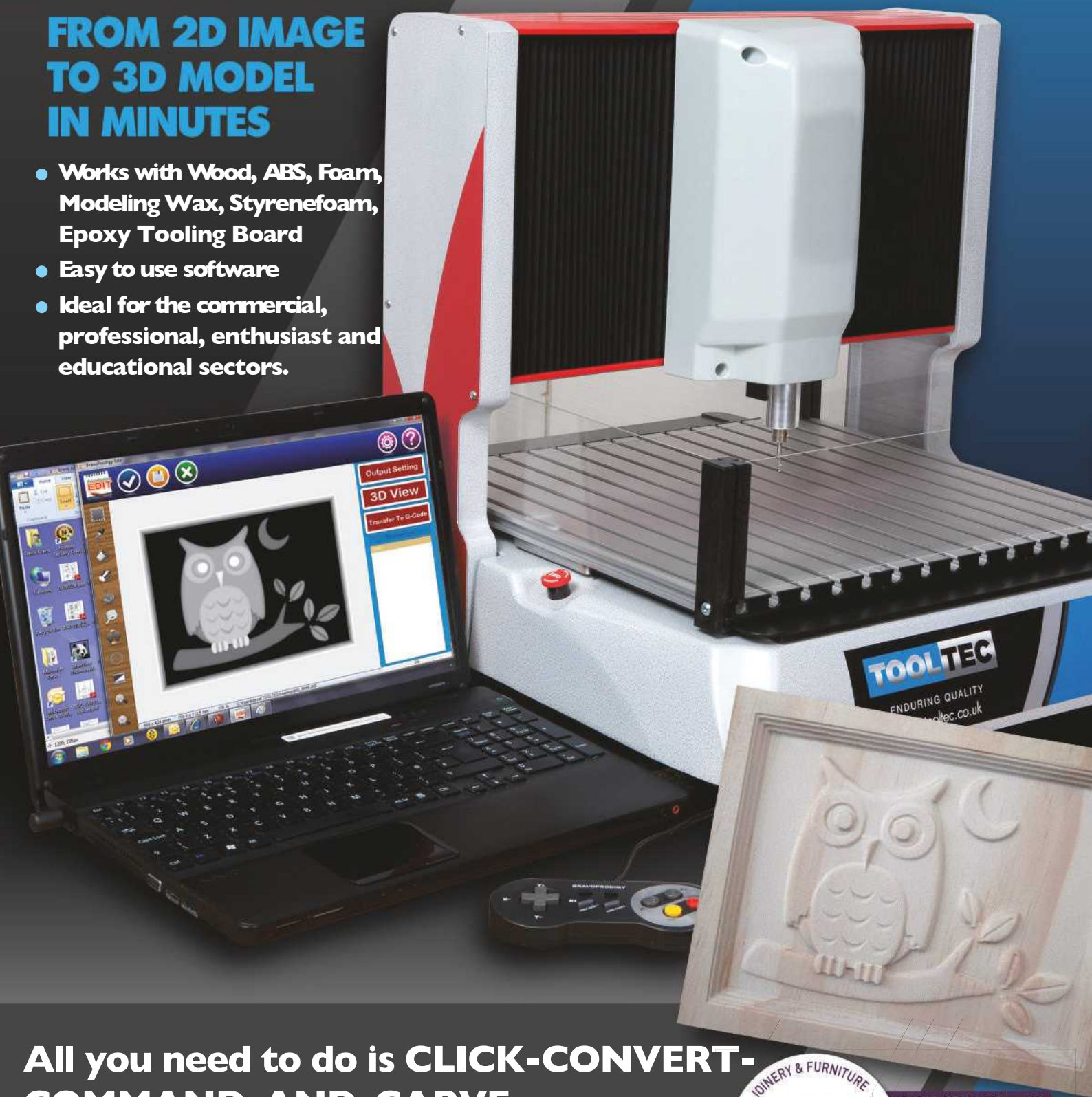
▲ The plane excels at end-grain work; fine controlled cuts are easy

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Joining the Jet set

Being highly impressed years ago with the JTD250, Andy is keen to see how this latest model compares with it

One, if not the, first cast iron table saw that came under my remit for testing was a Jet model, the JTS250, and it impressed me hugely back then as it was of excellent quality and at a very affordable price in comparison to rivals of the time. So it's good to see Jet continuing to offer machinery that hits similar parameters of price and build quality.

For the smaller workshop looking for a saw with decent capacities, at 1458mm wide with its sliding carriage and 1600mm-long carriage rail it has a small footprint while still having an outrigger setup for the carriage. This gives a crosscut capacity in excess of 1300mm, allowing standard sheet stock to be dimensioned across its width. And it will rip to 610mm, halving a standard sheet along its length.

This makes it a saw that despite the relatively small footprint will still dimension sheet material economically as well as having the clout to rip timber to around 75mm deep – which I checked out by taking my life in my hands and putting some 70mm-thick iroko through! Being sensitised to this particular species it was all there was in the way of hardwood of thick enough stature that was to hand so it had to be done...

It was certainly an opportunity to see if the dust extraction was up to scratch at the same time, and with a hose kit that connects the crown guard to the lower 100mm main dust port, it did a pretty efficient job and I lived to tell the tale.

Carriage & blade

The supplied blade won't break any records for the finish it left on the work, but it performed well, and of course can be swapped out for a better quality one. That's simple to achieve as



▲ Two smooth-running handwheels set the blade height and angle



▲ The squaring frame can easily be repositioned along the carriage



▲ A locating pin acts as a pivot for the crosscut fence



▲ Fence positions are firmly held with this lower locking knob

Jet JTS-600XLM table saw



▲ A flipstop on the fence allows repeat cuts



▲ The sliding carriage and adjustable fence work well for cutting sheet materials



▲ This arm slides in and out as the carriage travels during a cut



▲ The cast shoe houses a cam lever to lock it to the running rail and an adjustment knob



▲ A top lever allows the fence extrusion to reposition to suit the work



▲ Adjustments are via the running rail or the fence



▲ The bracket for the crown guard hose allows the work to pass under without snagging



▲ Ripping 70mm-deep iroko was effortless at a steady feed speed



▲ The finish from the supplied blade is OK for general ripping purposes

the carriage extends beyond the saw spindle for unobstructed access, with a tommy bar and spanner combination to do the business.

The carriage sits alongside the blade, a design that remains more accurate through its travel once set, as well as loading some of the weight of the workpiece down through the cabinet.

The extremities of the carriage also have support legs with adjustable feet to continue supporting the load at either end of its travel.

It runs freely throughout its range and the fabricated box-section squaring table can be easily re-positioned along the carriage to suit the work being machined, by loosening the double locking knobs.

Crosscut fence

The crosscut fence is solidly constructed with a big cast flip stop for repeat work. It sits on a pivoting pin through the squaring table to allow it to set angles up to 45°. There's a simple adjustable bolt to set the fence at 90° to the blade with a scale on the table for angles up to 45°. Nothing special here: it's a simple tape scale so precision setting will need to be checked before committing to a cut.

On the ripping side of things the full length Biesemeyer-style fence favoured on the original

Jet saw has been replaced by a more basic setup. A solid steel running bar keeps things steady and parallel to the table with a robust cam-lock shoe locking to it to secure the fence position.

The fence itself is an aluminium extrusion that can extend full length of the table if needed but doesn't secure to the rear of the table so there is some minor flex if you push hard against it.

A fine-adjustment knob built into the fence shoe to allow a tweak on the cut works well, and while the travel is only a few millimetres, the fence can be altered easily to need only a smidge of adjustment here or there as needed.

A simple but nonetheless useful addition is the bracket to lift the crown guard hose away from the table and off to the edge of the saw. It allows the fence to run its full rip capacity without the hose snagging on the work as it runs through; I've had a few saws where the hoses can drag and get in the way, so this is a brilliant addition.

Drop under the table and there are the usual twin adjuster wheels for rise & fall and tilt of the blade.

Operation here is smooth and sweet, with the blade tilting inboard towards the fence. I prefer an away tilt to avoid untoward clashes

between fence and blade, but aside from this it operates as it should.

Conclusion

The Jet did a good job of all that was asked of it, and with its compact footprint it fits in well for smaller 'shops looking to convert sheet stock as well as natural timber efficiently, making it a good all-rounder, if a little basic in a couple of areas. This is a solidly built, capable saw with good capacities for smaller workshops.

Good The Woodworking Verdict

+ Decent capacities for small footprint; easy blade access; good fences
– Inward blade tilt; mitre fence needs checking for angles; basic blade

Rating ★★★★★

Typical price: £1619.95

Motor: 2.6Kw

Blade diameter: 250mm

Max cutting depth@ 90°: 80mm

Max cutting depth @ 45°: 54mm

Max ripping width: 610mm

Weight: 130kg

Web: www.brimarc.com



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Fine materials deserve the respect of good craftsmanship, so when Hamish Low presented me with a piece of beautiful bog oak last month, it was as good as him throwing down a gauntlet: “What can you make that’s worthy of this?” Momentarily short of an answer, I’ve called in Richard Warmisham (above) as our guest Solutioneer. Before starting his year-long furniture-making course at Robinson House Studio (p54), Richard spent 30 years in politics – 15 of them (’83-’98) in the House of Commons itself – where he helped to mediate the grist...



Dave Roberts, Consultant Editor

Tall, dark & handsome

...O of the legislation being ground in the mills of government for interested parties among the governed. After all that, he’s probably very well-equipped to read the different characters of timber and the moods and likely intentions of their grains, though woodworking was a completely closed book to him until he began his course in May. This box, then, was the first project in which he began to bring together newly acquired skills, and for which he took inspiration from Mont Blanc pens. “I love beautifully engineered things,” he says, and his aim was to mirror the quality of the German-made writing instruments, “by making something equally beautiful [employing] the contrast between the silver and the richness of the oak,” whose story also complements the heritage of the pens.

From the outset, the box was always going to be rectilinear – “I like lines. I didn’t want curves; curves are too subjective” – and the inlaid silver bar certainly helps to reinforce the impression of something machined from solid. However, the oak’s figure helped to break the regularity of right angles by providing a starting point for the design. “It had a lovely ripple running at an angle,” that suggested the slash-cut lid, which in turn lends itself beautifully to the box’s vertical format – another break with the flat and the oblong.

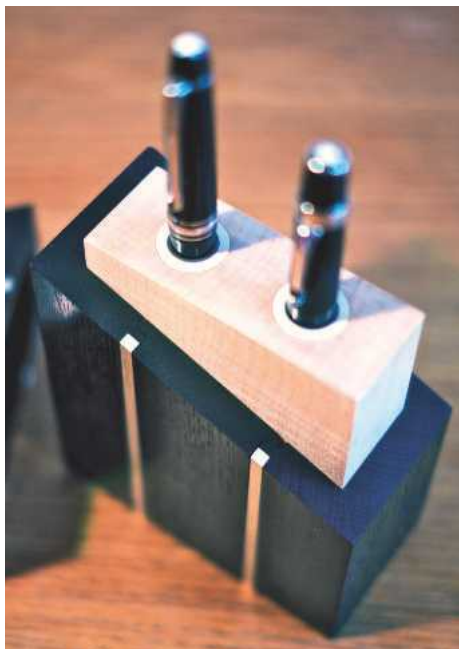
Lifting the lid reveals the contrasting ripple sycamore interior where the pens are loaded into perfectly fitting barrels whose silver ferrules hold them like chambered rounds. Tucked into the ‘secret compartment’ behind a

sliding door, meanwhile, a pair of spare ink cartridges sits in its profiled slots looking for all the world like something lethal issued to double-O operatives by Q Department.

Monolithic quality

Outwardly, it’s a simple-seeming design – indeed, its almost monolithic quality is one of its attractions – but any simplicity is deceptive; as Richard says, “In a box there’s nowhere to hide, everything is on show.” To start with, the six sides of the box are mitred together; that’s 24 mitres, half of them on tricky end grain, the other half on long grain, where any wavers or bruises will spoil the crispness of the lines. There’s no substitute for accuracy – it’d be churlish to mention repairs with König’s hard wax – and it took Richard five days to prepare the sides, top and bottom, shooting their edges on a custom-made jig that produced mitres at 43° degrees instead of 45°. Undercutting the mitres in this way removes material from the interior of the joint, ensuring that the edges come together to form tightly fitting corners. The other vital ingredients of clean mitres are a sharp plane – in Richard’s case a Lie-Nielsen block plane sharpened on Japanese waterstones – and plenty of patience. “It’s really important not to rush it,” he says. “You know when you’ve got a blunt blade, but when you’ve spent five days [working on a job] and just want to get it finished, the temptation is take an extra cut. That last shaving is the one that really counts, though, so you have to sharpen up for it.”

It was the same story when it came to planing the sycamore to fit within the



Richard's choice of materials for the box complements perfectly the look, feel and finish of Mont Blanc's pens

Photos: www.crabcreative.com



"I like lines," says Richard, and there's no shortage of straight lines in his monolithic box...



...though that slash-cut lid introduces a touch of excitement; the ripple that inspired it is less pronounced after machining, though



Mark of distinction: the laser-etched hallmark adds the final touch of class to this distinguished-looking box



"Please try and return it in one piece, Double-Oh Seven. Oh, never mind..." Looks like something Q Department would issue, don't you think?

assembled sides: "One shaving, try the fit; one shaving, try again." However, the result of this painstaking approach – once the sycamore had been cut in two and fitted into the top and bottom halves – is a piston-fit: as the lid slides over the pen holder of the base, its progress is damped by the escaping air. It's the pneumatic equivalent of the silicone damping used by car designers to bring a feeling of cushioned luxury to interior fittings.

Talking of luxury, the box's careful use of materials other than woods adds a dimension of what I hesitate to call 'extra sophistication' but which surely would be hard to achieve using wood alone. The pen-holder barrels, for example, were made from polycarbonate rod that Richard bored and turned to size, and which are capped with turned silver collets – Robinson House Studio has a metal-turning lathe among its arsenal of tools. The inlaid silver lines, meanwhile, were made from 4mm square bar, which is available to buy online – except, as Richard discovered, what's delivered will probably be coiled. If you buy the silver through a jeweller, however, they should be able to straighten it without diminishing its squareness. The trick then was to cut and mitre the bar to fit the routed rebates and match the angles of the corners and lid – a job for another custom-made jig.

Actually, the Robinson House approach very much favours the making of specialist tools, Richard says, and when it comes to speeding a process, making it repeatable with accuracy, or creating a point of difference in your work, there's often no alternative to a 'shop-built tool or jig. Squaring the rounded ends of the routed cartridge slots, for example, was done using a chisel made from the hardened steel tang of a file, ground to shape on the grinder.

Challenge answered

Is it any wonder that the first iteration of this, his first project, took 196 hours to complete, just a few tea breaks short of five weeks' work. The result, however, is a fine answer to Hamish's challenge. If, as Mont Blanc claims, a nib is not just a nib, then Richard's box is more than just a student project. In its five coats of Osmo polyx oil wax, the oak's colour and open grain could slip between Morocco-bound volumes on a bookshelf; the heft of its dense hardwood certainly makes it feel like a weighty book. Then again, the box reminds me of nothing so much as the heyday of cigarette packet design, which combined clean-cut paper engineering with beautiful and alluring finishes – matte whites, glossy blacks, metallic silvers, embossed lettering – and opened to present the perfectly rolled cigarettes in uniform rows beneath their foil wrapper. Even a non-smoker like me felt the allure of this branding exercise *nonpareil*, and Richard's box has all of their visual and tactile appeal, except that its quality is reflecting Mont Blanc's excellence, of course, rather than being used to peddle a dried weed.

Furniture forgery

Stephen Simmons thinks you will be better off copying the look of wear and tear than using distressing techniques

Always tie up all the loose ends of any restoration project: they make the job completely satisfying, and if you don't they'll come back to haunt you.

And the subject of 'ageing' is a case in point, distressing usually being associated with the dodgy end of the market, its purpose being to deceive the customer.

In the public imagination new pieces are thrashed with chains or bags of nuts and bolts to 'antique' them, with cobbled marriages of unrelated bits being treated likewise to give them a spurious unity.

Of course, some customers want a distressed look, and although distressing usually requires some sort of physical damage it can take several forms other than bruising, such as the removal of timber or smoothing of edges; cutting through finishes to the bare wood; spattering ink; false woodworm holes; and scratching.

So even if distressing isn't always crude, how does it differ from blending-in repairs, something I'm frequently advising? After all, both are deliberate and designed to deceive to some extent. Is it a difference of kind or of degree?

Difference of kind

For me it is definitely a difference of kind. Firstly, the distresser may wish to trick clients into believing that the piece is something that it is not, while a good restorer will discuss the degree of blending and artificial wear and tear – if any – that is appropriate for any project with the client beforehand, i.e. how the piece will look when finished.

This should apply whether you're a hobbyist doing jobs for your own pleasure for friends and relatives or a fee-charging professional. For the restorer, blending is not tricking the customer, but tricking their eye later with their prior



▲ Worn but not distressed: even on something as heavily used as an old shop counter, random marks are rarely the same, or form a regular pattern



▲ Exit only: authentic woodworm holes are virtually impossible to replicate

knowledge and approval.

Secondly, where distressing is concerned blemishes are features designed to be seen and appreciated, such as spokeshaven gouges to replicate the wear of centuries of eating at so-called refectory tables. With blending the objective is the exact opposite: to divert

attention from any repair.

Thirdly, distressing is generally done quickly and with little thought about how natural wear occurs. Similar recurring marks should immediately make you suspicious. Yes, table tops suffer wear but identical blemishes are rarely repeated or form identifiable patterns,

Replicating wear & tear



▲ Distresser's pitfall: woodworm can only stomach relatively thin mahogany veneer

and the rear seat rails of chairs are seldom worn so beware of marks here, particularly if they occur elsewhere.

More importantly distressed blemishes are made in one go so they all look exactly the same recent age without any sense of a longer history of cumulative wear. Good blending in takes time to be convincing.

Toffee-apple look

Fourthly, distressing is also done indiscriminately and although blending can include some similar techniques they should never damage any of the original.

For example it is quite legitimate to introduce a myriad of tiny scratches to a newly French-polished surface by working over it with crumpled newspaper to get rid of the toffee-apple look, but to do so on an existing surface is purely destructive.

Similarly it's fine to replicate the wear on the arm of a chair after a repair but to cut through original polish and stain to make it look older is not on. And if a new veneer or solid patch is adjacent to a scratch, bruise or stain in the original it is quite acceptable to extend that blemish to the repair to help in its disguise, but not vice versa.

Fifthly, distressing is generally done in isolation, with none of the accompanying subtleties of the age that it is trying to convey. It comes with none of the grain filling, depth of glow of finish or softening of the outlines of older blemishes that time brings... in other words, it comes without that vital patina. You can go some way to replicating patina but it takes far too much time.

False woodworm

And finally, false woodworm holes: true woodworm holes are exit holes and are much

more precise than false entry holes, be they punched with a nail or made with a sharp 1mm drill bit. Even if they're subsequently filled with black wax they rarely bear close scrutiny for long. They have no place in the restorer's armoury and should be left to the distresser. Also beware of woodworm holes in solid mahogany... woodworm just don't touch it although they can penetrate a mahogany veneer, particularly if it was stuck onto a pine or oak substrate with starch-rich animal glue.

Overall, I find most distressing completely unconvincing and the level of skill involved negligible. Thrashing something with a bag of nuts and bolts to replicate random wear usually looks as if... well... it's been thrashed with a bag of nuts and bolts, and some of the spokeshave gouging I've seen comes close to the risible.

Painstaking work

All this stands in marked contrast to the other end of the deception spectrum. The skill if not the ethics of the high-level forger has to be admired. The work can be painstaking in the extreme. Everything has to be done by hand – machine tools leave different marks and easily betray themselves. Timber knowledge has to be profound, down to the last sub-species of mahogany.

Original materials have to be used including the use of now banned substances. And attention to detail is of the essence: collecting old, soot-rich dust to force into crevices and joints is not unknown.

Now, I'm not suggesting that you do anything naughty but should you, as a hobbyist, be torn between the two extremes, go for the forgery. It would be far more challenging and intellectually satisfying than thrashing.

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Corner solutions

Bernard Greatrix's
oak cabinet had to fit
a tight space at the
bottom of the stairs

My design attempted to maximise the space available without imposing itself on the room. The piece is a little over 1m high and 0.05m wide (39¼ x 20in), with two shelves. The build is simplified by the use of biscuits.

I started by drafting the project on a CAD package and would strongly urge you to do your own drawings based on your own dimensional constraints prior to buying and cutting the timber.

Starting the build

The material I used was finished to 50 x 20mm (2 x 5¼in) for the vertical members so the first stage was to plane the timber to these final dimensions, ensuring that the surfaces were flat and free from wind. I stored the pieces in the next room during this process, separating them with sticks to help acclimatise the wood and to keep it flat. As it was, I noted a very slight movement, so the least affected pieces were chosen for the glazed panels, and the best kept for the glazed door. Horizontal pieces were made from 70 x 20mm and 80 x 20mm (2¾ and 3½ x 5¼in respectively) and these likewise were planed flat and stored in stick until needed.

The design was broken down into several sub assemblies to ensure that squareness was maintained – after all, spiral cabinets are not much in vogue. The first 'sub assembly' I tackled was the plinth.

The plinth

Mark the plinth pieces accurately to length, adding the 45° lines for the square corners and 67.5° lines for the 135° corners. Saw away the surplus and plane to the line to achieve accuracy. In each case a 'donkey's ear' shooting board makes life easy (see **Pic.1** – mine is adjustable between 45° and 90°).

Using the biscuit jointer, cut a biscuit slot to start about 2mm (⅛in) in from the inside edge of the boards which form right angles. Set the jointer to 67.5° and repeat for the boards meeting at 45° – see **Pic.2**, actually showing slots being cut in the main carcass back, but done the same way. Note the spacer to position the cutter 2mm from the edge and the inclined block for additional support.

Draw out the plans on a large sheet of paper and assemble the pieces for a dry run, which will enable you to check angles and make any minor adjustments to ensure accuracy.

Assemble the two back pieces of the plinth with glue, making sure that the diagonal dimension matches that of the plan you've drawn. Then assemble the three front-side pieces, adjusting as required until you have true fit. Because the components are at present open-ended the use of angled cauls will help support the pieces during gluing.

Once the glue is set, glue small pre-shaped pieces into the corners for reinforcement.

When this glue is fully hardened these two assemblies should mate together easily. If not,

Glazed display cabinet

don't try to spring them together as this will almost certainly crack the existing joints. Simply plane off a small amount from each arm that shows the largest diagonal, maintaining the correct angle, and check again. Repeat as necessary until correct then glue together and add two further corner blocks to form the finished plinth. When all gluing has set and hardened lightly plane the joints to clean up any errors and ensure that the plinth sits flat. To check, sit the plinth on a piece of 20mm MDF or chipboard and look for light.

Bottom and top panels

Both panels are essentially the same in the early stages. Select and mark out the materials as described in constructing the plinth, then saw away the waste and trim to accurate angles and length on a shooting board (Pic.4).

With the biscuit joiner set to '0' and 90°, cut biscuit slots in the ends of all the pieces. The only critical ones are the square joints where it may be necessary to cut inboard of centre but in all cases take care not to break the outside edge. Check the assembly and glue up generally in the same way as the plinth. To help keep everything flat I lightly clamped the pieces to a polythene covered 20mm chipboard. Again make any minor adjustments on the sub-assembly with the largest diagonal prior to gluing.

Glue a 50mm-wide wedge into the back corner as shown (Pic.5). The purpose of this is to remove the need for a short-grain corner on the MDF. When all the glued joints have set and

hardened clean up the joints, ensuring that the upper surface is as flat as possible. This should amount to no more than a whisper-thin skim.

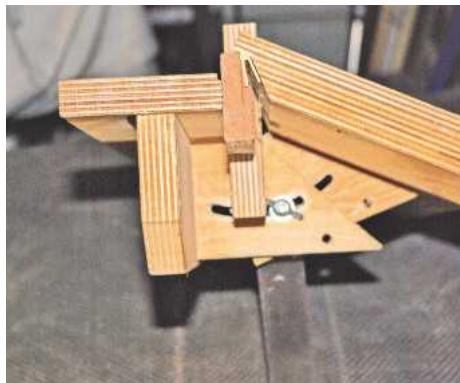
Mount an 8mm ($\frac{5}{16}$ in) rebate cutter into a hand-held router and set to about 1mm ($\frac{3}{64}$ in) deep for the initial cut. Proceed around the frame until the depth of the rebate is slightly smaller than the thickness of the veneered MDF panel (Pic.6). With a scrap piece and a set of feeler gauges estimate how much deeper the cut needs to be and adjust the router depth setting accordingly. The aim is to finish with the frame very slightly proud of the MDF (Pic.7).

Finally, cut the corners straight to remove the router cutter's radius, finishing up with 'mason's mitres' in each corner. At this point I realised I should have rebated the timber prior to jointing, but the finished effect is not too unsightly I think (Pic.8).

It is now time to cut the MDF and trim to fit the frame. On a makeshift shooting board – a chipboard panel on top of another (Pic.9) – I carefully planed the front edge straight and true. Mark off one side at 45° and plane this edge. Check that it fits the frame and adjust the angle as required until a snug fit is obtained. Mark off the adjacent back edge and proceed as before. The panel should now be a snug fit on three edges. Mark off the remaining side at 45° with about 1 to 2mm spare and trim with the plane until fitting, then the remaining back edge and finally the short back edge. The panel should now be a good fit all round and can be glued in place. Don't be over generous



► The veneered back panels are held in rebates rather than grooves



▲ Pic.1 A 'donkey ear' shooting board was used to get the right angles on the plinth pieces' ends



▲ Pic.2 Cut biscuit slots on the inside edge of the board which form right angles



▲ Pic.3 Assemble the pieces for a dry run, enabling you to check angles and make changes



▲ Pic.4 Once bottom/top panels have been picked remove waste and trim angles on shooting board



▲ Pic.5 Glue a 50mm-wide block (or caul) into the back corner as shown



▲ Pic.6 Cut a rebate in the frame slightly smaller than the panel...

The big project



▲ Pic.7 ...the aim being to finish with the frame very slightly proud of the MDF



▲ Pic.8 Rebating prior to jointing would've been easier, but the finished effect is not too unsightly



▲ Pic.9 Cut the MDF and trim to fit the frame. Bernard used a makeshift shooting board for this



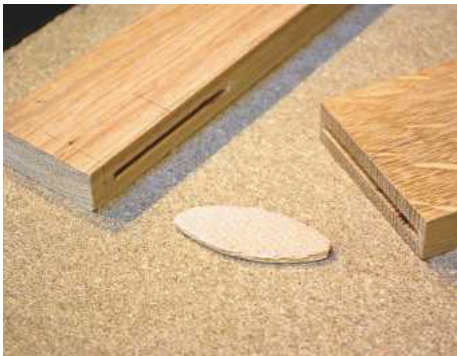
▲ Pic.10 For trimming/smoothing, Bernard prefers a No.5 jack followed by a cabinet scraper



▲ Pic.11 Having marked out materials for the main frames, trim to accurate 90° on shooting board...



▲ Pic.12 ...or a jig to mount the pieces vertically in a bench vice



▲ Pic.13 Cut biscuit slots in ends of all horizontal pieces and the mating ends of the verticals



▲ Pic.14 Check the assembly prior to gluing up. After cramping check for squareness



▲ Pic.15 A chamfer runs on the inside edges of back panels and outside edges of glazed panels...

with the glue as the veneer is not very thick and could be damaged if too much needs to be cleaned off. When trimming to the veneer surface I use a newly sharpened blade in a No.5 jack plane whose body sits on the surface and the blade on the frame to be trimmed. In this way dig-in is almost eliminated, providing care is taken. Once the difference in levels was down to 'finger smooth' I finished with a cabinet scraper (Pic.10).

The main frames

Construction of all the frames is essentially identical. Do not make up the door at this stage – it will be necessary to check the dimensions with the final assembly before cutting, etc. Select and mark out the materials to length. Saw away the waste and trim to accurate 90° and to length on a shooting board or a jig to mount the pieces vertically in a bench vice, (Pics.11 & 12).

Mark the centre line of the biscuits onto the

◀ Moulding was established with a router but fine-tuned with hand tools

verticals and across onto the mating horizontals. With the biscuit jointer set to '10' and 90° cut biscuit slots in the end of all the horizontal pieces and the mating ends of the verticals. If in doubt cut slightly outboard of centre, but in all cases take care not to break the inside edge. Any breakout on the outside edge will be hidden when the frames are attached to the top and bottom panels.

Check the assembly prior to gluing up in the usual way. After cramping check the dimensions and diagonals to ensure square-ness (**Pic.14**).

Once the glue has dried and hardened they are skimmed flat and readied for the next stage. With a 22.5° bit in a table-mounted router, trim appropriate sides to the required 67.5°. It would have been easier to rout the edges before gluing but then clamping during gluing would have been much harder.

On the outside of the back panels and the inside of the side panels rout a rebate nominally 15mm deep and 8mm wide ($\frac{19}{32} \times \frac{5}{16}$ in). Square the radius for the glazed panel to create 'mason's mitres' – the back panels can be left with a radius in the corners as it will be reasonably easy to round off the veneered panels. The veneered panels are held in rebates rather than grooves as it will provide access to the interior for fitting the glazing and it permits the use of small clamps when assembling the adjacent components. Both the glass panels and veneered panels will be inserted after final construction.

On the inside edges of the back panels and the outside edges of the glazed panels run a chamfer to reduce the visual impact. This is easily done with a spokeshave and bench chisel. Start the corners with a chisel (**Pic.15**) down to the pencil line which can just be seen, then remove the bulk of the waste with a spokeshave; push or pull as is your wont (**Pic.16**). With the biscuit jointer set to No.10 and 90° cut 5mm ($\frac{13}{64}$ in) off biscuit slots in the 32mm ($1\frac{1}{4}$ in) wide vertical member of the back panels. Copy the position across to the inside face of the side frames and cut 5mm off slots here also. With the same jointer settings cut biscuit slots in the top and bottom of the frames for later attachment to the top and bottom panels (**Pic.17**).

In addition to the production of the basic frames three other pieces of timber are required. The back spine – mark this to length and trim one end only, to the line, leaving the other untrimmed. It will be trimmed when assembled to the back panels. Using the same table setup, as above, trim both sides to 67.5°.

Mark out the position of five biscuit slots on each chamfer and transfer these positions across to the back panel chamfers. With the biscuit jointer still set to '10' and 67.5° cut a set of five biscuit slots on each edge to start about 2mm in from the inside edge of the board.

The door jambs were also marked to length but again left untrimmed. Chamfer one side only to 67.5°. Mark out the position of five

biscuit slots on each chamfer and transfer these positions across to the side panel chamfers. Cut the slots as previous. These jamb pieces can now be glued to the side frames, checking that the surfaces are at 135°. Plenty of clamps will be required as well as a number of preformed blocks – a bit of PAR with a groove cut in will do (**Pic.18**). When dry trim to the length of the main frame

It is important at this stage to decide which is the hinge and which is the lock side jambs. One jamb was also rebated 9 x 6mm ($\frac{23}{64} \times \frac{15}{64}$ in) to stop the door.

In both of the above cases support the jointer on a wedge of 22.5° and use the 10mm packing piece under the fence.

Shelf support facilities

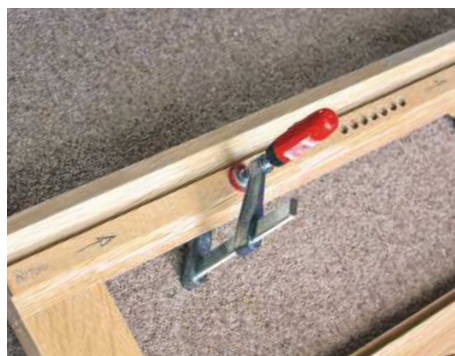
On a 1m length of lathe (20 x 4mm) trim one end square and true and chamfer the top face edge slightly. Run a line down the centre with



▲ Pic.16 ...Bernard created this using a chisel and spokeshave



▲ Pic.18 Lots of clamps will be needed while gluing up the main frames



▲ Pic.20 The reference line on the template was aligned with bottom of frame and cramped



▲ The spokeshaaved chamfer along the sides makes for a rather elegant touch

a marking gauge and with a marking knife mark out the position of the interior shelves, in my case 370mm and 710mm from the base. Add a further three marks at 12.5mm ($\frac{1}{2}$ in) spacing either side. Lightly centre-punch the intersections thus formed.

If necessary, grind the centre tip of a $\frac{25}{64}$ in



▲ Pic.17 Cut biscuit slots in the top and bottom of the frames for later attachment



▲ Pic.19 A drill with a reduced tip was used to make holes for the shelf supports



▲ Pic.21 Drill the frame at each position to a depth of 1mm

The big project

drill to a fine point. Mount in a drill press and drill through each position. The reduced tip ensures that the next drill to be used will have a centre to follow.

Line up the reference edge with the knife mark on the frame and securely clamp this template in place as shown in **Pic.20**. Drill the frame at each position to a depth of 1mm (**Pic.21**).

Change the drill to $\frac{5}{16}$ in and drill to a depth of 13mm ($3\frac{3}{4}$ in). Repeat for each frame and back spine.

A five-point shelf support may seem a little odd but the holes were positioned to knife line accuracy and a small piece of suede leather on each peg allows for any small inaccuracy. Glass is remarkably flexible and will soon settle with or without the suede. Too tight and there is a risk of splitting the frame or the support pegs will not be a sliding fit.

Push the sleeves into the holes with your thumb and they will sit proud by about 5mm



▲ Pic.22 Push the sleeves into the holes with your thumb and they will sit proud by about 5mm

Imperial problems

My tip and spur drills are imperial, hence the above. Metric drills are available but don't appear to be in sizes to suit the brass sleeves. I found that the $\frac{5}{16}$ in was a little on the big size and my next smaller drill, $\frac{9}{32}$ in, was too small so I sacrificed future $\frac{5}{16}$ in accuracy by honing it a 'smidgen' until the holes were a rubbing fit on the brass sleeves prior to final insertion.

(**Pic.22**). With a suitable mandrill drive them in until the flange is below the surface. Job done.

Assembly of main frames

First of all make up a quantity of clamping blocks – **Pic.24** gives an idea of what is required. The aim is that they will hook around the back panel rebates and enable a sash clamp to hold the back panels and spine together.

Assemble the back frames and spine using

biscuits, five each side. I placed them vertically on a polythene-covered board and ensured that the knife lines at the bottom of the adjoining frames matched up. Cramp together with a minimum of five clamps, but be careful not to over-tighten. The back panels must remain at right angles to each other.

In a similar manner assemble and glue the side frames to the back frames. Small clamps and protection blocks are used (**Pic.25**). Again, check that the assembly is square and that the bottom knife lines coincide. When the glue has set carefully re-trim the lengths so that you can feel no step at the joint interfaces. This shouldn't amount to very much if care has been taken at the previous stages of trimming and assembly; generally one or two passes with a fine-set plane should suffice.

I removed surplus glue from the joints and then finished with a sharp scraper and abrasive papers – 120 followed by 180 and finally 240-grit papers – giving a nice, polished feel to all surfaces.



▲ Pic.23 With a suitable mandrill drive the sleeves in until the flange is below the surface



▲ Pic.24 A quantity of clamping blocks will be needed for the assembly of the main frames



▲ Pic.25 In a similar manner assemble and glue the side frames to the back frames



▲ Pic.26 Finally, cut a rebate 8 x 5mm deep 'round the back face to accommodate the beading



▲ Pic.27 Cut the biscuit slots into the base panel and plinth, making sure to match up the positions



▲ Pic.28 With a 6mm bearing-guided ovolo bit, trim the underside of the bottom panel only



▲ Pic.29 The main frames were cramped to the base panel and plinth, then left to set



▲ Pic.30. Mould created

Glazed display cabinet



▲ Bernard later realised that the seven holes for the shelves were a bit superfluous



▲ Pic.31 He followed the same process for assembling the top panel to the frames



▲ Pic.32 Drill holes in the door frame, then connect the holes to create the keyhole

Making the most out of a mistake

The plinth joints were meant to be a discrete 3mm wide. I used a makeshift sled with 22.5° supports which ran against the fence on my router table. I packed out the plinth on the sled with scraps of hardboard to space the splines, but had what might be described as a senior moment and got the count wrong when I was indexing the cut. This meant that the slots were wider than required – one of them overlapped – so after two wrong attempts I settled for a wider spline. In retrospect I should have used my



rip saw and cut them by hand like I usually do, but it seemed like a good idea at the time...

Measure the dimensions of the rebates in the side panels for the glass and reduce by 2 to 3mm to ensure a good fit. Put these to one side for later. Do the same for the back panels but add a few millimetres and cut two pieces of veneered MDF to suit. Carefully plane the edges until a snug fit is acquired, round off the corners to suit the cutter diameter and label the panels. Finally, cut a rebate 8 x 5mm deep around the back face to accommodate the beading (Pic.26). Note the use of vacuum extraction while rebating the MDF panel.

Assembling the plinth and base panel

Using a flat surface as a reference, cut a set of eight No.10 biscuit slots around the plinth. With the base panel upside down place the plinth in position with the back edges coinciding. Measure the difference between the front edges and divide this by two. Cut a rebate in a piece of spare PAR to match this figure. Place the rebate over the base panel and move the plinth to touch, then check that the other side is also just touching and adjust the rebate accordingly.

Clamp the rebated timber on the edge of the base panel as a reference edge and transfer the positions of the biscuit slots across. With the biscuit jointer vertical, cut the matching slots. With a 6mm bearing-guided ovolo bit, trim the underside of the bottom panel only. Note the use of scrap to help support the router in this task (Pic.28).

Assemble and glue the two parts and when set remove surplus glue. Sand both pieces with 120 and 180-grit and finish with 240-grit. Then put the pieces to one side for later assembly.

Fitting the main frames to the base...

Position the frames on the base panel in exactly the same way as the plinth and measure the difference in width. Cut another rebate to match half the difference and check that it positions the main frame correctly all round. Adjust as required.

Clamp this template to the base and transfer the positions of the previously cut biscuit slots into the bottom of the frames and the top of the base, as previously described in fitting the plinth.

Remove the rebated template and round over the top edge. If this had been done earlier, when the bottom was done, there would've been great difficulty in mounting the biscuit jointer template. With the frame upside down, dry-assemble and if you're satisfied apply glue to the biscuits and frame components. I cramped up on the lounge floor and left it there for 24 hours (Pic.29). Afterwards, you can clean up any surplus glue and polish to 240-grit.

...and top panels

Proceed in exactly the same way as fitting to the base panel and using the same rebated



▲ Pic.33 Keyhole fitting

► The cabinet sits perfectly in the corner of the living room



The big project



▲ Pic.34 The hinges were marked out on the edge of the door frame



▲ Pic.36 ...leaving him with a gentle rebate



▲ Pic.35 Then Bernard used a chisel and performed a few chops...



▲ Pic.37 The hinges were first screwed in with steel screws to check for fit, followed by brass ones

template, but do not cut the slots for the side panels yet. Dry-assemble the frame onto the back biscuits. At this stage you will notice that the front edge is further out, a result of the required moulding.

Clamp a lathe to the top panel tight up against the side panel, then transfer the biscuit positions and use this as a reference edge to cut the final biscuit slots. Using a bearing-guided ogee cutter, mould the edge (Pic.30). Dry-assemble the remaining carcass, then apply glue and cramp up; clean up surplus glue and polish to 240-grit. I admit I did this out of sequence by cutting the moulding immediately after construction of the top panel, but happily there was enough surface left to clamp to.

The door

All the major construction was now completed and it was time to make the door. I carefully measured the width of the gap available, added a couple of millimetres and trimmed the remaining horizontal pieces to suit.

Biscuit joint the four door sections, dry-assemble and check for squareness before gluing. The frame must be square and flat – a door in wind is not going to fit correctly and will be a source of irritation forever after! When the glue has set clean up the joints and rebate the inside edge nominally 15mm deep by 8mm wide ($1\frac{1}{2} \times \frac{5}{16}$ in). Turn the rounded corners produced into 'mason's mitres' and

finish to 240-grit.

Cut a rebate corresponding to that on the door jamb. The door frame should be very slightly larger than the aperture available so trim accordingly until you have a snug fit.

Mark the length of the hinge in three places onto the frame to enable swing left or right as required. Cut housings to half the thickness of the hinge, mark the positions of the screws through the hinge holes and drill pilot holes, and then fit the hinges with steel screws.

Sit the door frame onto the plinth with spacers – I used pieces of postcard 0.4mm thick – to give a small clearance under the door.

Mark across the hinge positions and cut housings as above. Hang the door onto the three brass hinges with steel screws, make any minor adjustments as required to close door into frame correctly, and then remove the door for the remaining work.

On the inside of the door frame, carefully mark out and cut the housing to accommodate your chosen lock. Drill a 6mm hole through the frame to match the position of the key pin in the lock and a 3mm hole through the frame to locate the bottom of the key slot (Pic.32), and then carefully join the two holes to create a keyhole. Fit the lock with brass screws, not forgetting to use a steel one first – this is absolutely the one place where you do not want to break a screw.

Temporarily re-hang the door and on the vertical opposite mark out and cut a mortise for the bolt. Then position and fit a small piece of brass angle to cover the hole. This is slotted accordingly but will probably need a bit of additional filing with a flat needle file to arrive at a smooth closure. Finally fit an ornamental surround around the keyhole.

Hang the doors

Mark out the positions of the hinges on the wood using a square and knife for the length of the hinge (Pic.34). Use a marking gauge set to

Light it up

I wanted to provide light in my cabinet to illuminate the glass ornaments, apparently best done from below – I know not why. I did this before hanging the door.

Two brass cabinet 'down' lights were surface mounted on the bottom, in the corners. I originally intended to fit a third at the top –

the back of the cabinet spine would take the cable and be covered by a mounded timber strip, just in case you were wondering about the cabinet shape, but it soon became clear that two lights were sufficient.

A small lighting junction box, the 12V transformer and distribution block were all

mounted securely under the plinth (Pic.1); I changed the hardened pins in the cable clips for brass ones. I used a kit made by Halolite and while the circuit is simple, I have not provided this as if there is any doubt you should get a professional electrician to wire it for you.



► Pic.1 A small lighting junction box, the 12V transformer and distribution block were all mounted securely under the plinth



Preparation for glazing



▲ Pic.1 Plane the top face of strips of oak until the thickness is 8mm. This will be achieved when the plane blade just breaks into the small rebate above the bead, and a very thin sliver peels away

One of the final tasks is, of course, to fit the glazing. A piece of cardboard was used in the assembly of the carcase; this was pushed into service again, cut undersize with additional pieces glued to it until it was a smooth fit inside the frames. It was then used as the shelf template for the glazier.

As with the side panels, allow for any slight error in the glass cutting. Note that the shelves are plate glass with polished edges and the glazing panels are 4mm. I would strongly suggest that you liaise with your local glass merchant as to the regulations and thicknesses of glass. Mine won't sell me certain types once he's found out what I'm up to!

While waiting for the glass there is one small thing that needs to be manufactured – the beading. Plane the face and two edges of a 1m length of 9mm ($\frac{3}{8}$ in) thick x 30 to 35mm wide material ($1\frac{1}{4}$ to $1\frac{1}{2}$ in). Mount a 3mm radius beading cutter in a table router and trim the edges to the profile shown. Do not try to cut a bead on a 14mm ($\frac{9}{16}$ in) wide strip – it may end in tears, and might simply stain the timber a delicate shade of red...



▲ Pic.2 With a fine saw separate this into two strips each about 13 to 14mm wide

Plane the top face (the so far untouched one) until the thickness is 8mm. This will be achieved when the plane blade just breaks into the small rebate above the bead, and a very thin sliver peels away (Pic.1). With a fine saw separate this into two strips each about 13 to 14mm wide (Pic.2). These will be trimmed to width later. Make a total of at least 15m, which will allow for any spoilage – and besides it's better to have some spare than an inch short.

Apply Danish oil (or your preferred finish) to all pieces of timber, including the beading, and allow to dry thoroughly between coats and finally buff to a pleasant sheen.

Next, the installation of the glass can begin. First remove the door as it will only flap about when you least expect it. Lay the cabinet face down on its front, which will automatically put the glazing bars at 45° so that there is little chance that the glass can fall out while fitting the glazing strips.

As the veneered backs have yet to be installed there should be ample room to get each glass panel in place and, for good measure, your head and arms.

Measure the distance from the glass to the outside of the rebate. This is likely to be in the order of 10mm ($\frac{25}{64}$ in). Set up a marking gauge to slightly less than this



▲ Pic.3 Pin the strips to the frame – Bernard uses telephone wire to save his fingers!

distance and mark the sides of several lengths of glazing strip. With the rounded edge down on the bench trap the sides between two laths each about 8mm thick. With the strip thus secured plane to the gauge mark.

Cut the strip to length and mitre the end on a shooting board to exactly 45°. I arranged for the rounded edge to be on the panel and the 2mm rebate to be a tad inside the frame's rebate. Each strip was held in place with brass panel pins 15in x 0.5mm.

Prior to hammering home I drilled each strip about half way through with a 0.5mm drill held in a small die grinder type tool (Proxxon or Dremel will all do the job). This is to ensure that each pin goes in squarely and to prevent splitting; my luck usually runs out on the last pin thus requiring me to remove the whole strip and start again. Hold the pins with a short length of single core telephone wire – it saves your fingers (Pic.3).

With the cabinet on its front and the glass installed, the two back veneered panels can be installed with the rebate outwards. Again measure the distance to the edge of the frame, mark onto some strips and plane to width, fitting them as above. Glaze the door in the same way too.

the width of the hinge and mark out the waste. Then use a marking gauge set to half the hinge's thickness and mark the depth of the waste.

Deft blows were used to make a series of cuts the length of the waste (Pic.35). Clean out the debris and finish down to the depth mark. Alternatively, you could, of course, handle this task with a router.

Finally, mark the position of the holes, drill pilot holes and fit with steel screws. When you're satisfied that the hinge is correct and the door and frame mates correctly remove these screws and fit brass ones – not forgetting a quick wipe across a candle (Pic.37).

Better late than never

With the door now fitted, give the cabinet a final rub with a soft cloth and lift it into

position into the corner of the room. Then you can hand over the key to the new owner, sit back with a cup of coffee while the ornaments are installed, and try not to dwell on the fact that two years have elapsed since the cabinet was first commissioned...

The total cost of the project was about £150 for all materials used. I did save timber costs by planing the pieces myself and collecting material from the yard – my timber supplier was happy to cut the 8 x 4 MDF panel into manageable sizes.

I have to admit to being just a little disappointed with the American oak I used, mainly because of its tendency to splinter, but also due to one or two dead bits (shakes) which popped out during the planing. Fortunately I hadn't cut anything to length and could relegate these pieces to make shorter components, so little was wasted.



**New
series**



From standing timber to sitting down

In this short series, **David Vickers** from Drivelink Training takes us from standing timber to a completed item of furniture

It's hard to believe, but according to figures from the National Inventory of Woodland and Trees – England, there has been a near doubling of woodland since the 19th century. At this time woodland cover was down to around 5%, but by the start of the 21st century this had risen to around 8.4%.

There has been a marked shift towards the planting of coniferous tree species that have a much higher yield class than broadleaves – yield refers to the productive capacity of a forest – and although conifer plantings still form a crucial component within forestry, much has changed over the years with much

more emphasis on looking after specimen broadleaf trees and semi-ancient natural woodland (SANW).

Back to life

The biomass industry is attempting to bring long unmanaged and derelict coppice back into cycle again, using the timber gained from felling these areas to provide heating on projects of all sizes.

Many of these derelict, overstood and unmanaged coppice woodlands have sizeable standards within them, and I find myself working on one such 20-acre site near

Winchester. The site is typical 'coppice with standards', having a multitude of hazel coppice stools interspersed with larger trees, or 'standards'. However, as the coppice is now overstood, ie it is no longer being cut in a 7-10 year cycle, many of the standards are now also getting bigger and several trees that self-seeded have grown to a considerable size.

Originally, managing a coppice woodland was a long-term affair, with different areas being cut each year, before returning to the first area after 7-10 years. The larger standard trees, commonly oak, would be felled every 100 years or so. Overall the effect was to have continuity of small-diameter wood for hurdles, gates, handles, brooms, etc and larger timber for construction.

Upsetting balance

Three things happened to upset this balance – firstly, the world wars which left many woodlands unmanaged as many estate workers never returned to look after the coppice; secondly, the Forestry Commission started to plant conifer species as they grew fast and straight and then finally, the movement for conservation which tended to view the cutting of trees – and especially oaks – to be not such a great idea.

The result of all this was that the standard trees grew and were not managed in the same way, leaving large specimens in a coppice untouched. That's great for habitat to some extent, but not for the coppice as a whole.

It was with this background that I was able to take on this particular 20-acre coppice site, and began cutting the hazel. Many large ash and birch trees had also grown and these would need to be removed; then the winter of 2013/14 struck, along with the high winds that brought down several large oaks.

Felling the trees

Dealing with windblown trees is an especially dangerous activity, and although the cuts are simple, the sheer amount of tension and compression that can exist along the stem means that one has to carefully analyse the fallen tree before cutting; as a point to note, do not be tempted to cut all the branches off a windblown tree either – it may well stand back up again as you remove weight from the canopy!

There are many different methods to felling a tree, and the method chosen will depend on size, form and weighting of the tree. At the smallest sizes, up to approximately 200mm (8in) one can employ the 'step cut' – often used for pruning back branches – or the lesser known V cut if the tree is weighted in the direction that you wish to fell it.

Once the diameter of the tree moves up to 380mm (15in) then we tend to use a different set of cuts, from the 'basic felling' cut for upright trees, to the 'dog's tooth' cut for forward-weighted trees, or the 'split-level' cut for rear-weighted trees. Then there is the 'safe



Smaller trees are felled by different techniques from...



...large-diameter trees that call for a variety of different cuts depending on their stance, whether upright, forward or backward leaning



Note the carefully placed wedge in this forest monster



Clearing a downed tree before coppicing starts in earnest



The stump and root ball of this windblown tree are secured for safety

corner' cut that can be used in many circumstances and is a bit of a wonder cut!

Felling factors

Terrain, weather conditions and any signs of ill-health in the tree will all affect how the tree is felled, but once on the ground we can begin the process of branch removal to leave timber stems that are smooth and can be cut to the

required length.

For this series, we hope to be using a section of oak, cut from a windblown tree that fell during the winter and next month we'll take a look at how to process this timber into usable sections using a chainsaw mill, before handing it over to up-and-coming furniture designer and maker Hannah Dowding to see what she can create with it.

About the author

David Vickers started Drivelink Training after leaving Sparsholt College, where he had managed forestry and arboriculture short courses for nine years. David is a qualified teacher, and is a City & Guilds NPTC recognised trainer and assessor for land-based skills.

Drivelink Training provides high-quality training related to chainsaws, felling, tree climbing and aerial rescue, including dealing with windblown trees, assisted felling, aerial cutting with a chainsaw as well as dismantling and rigging of trees, see last issue.

Find out more at <http://drivelink.training> or follow Drivelink Training at <http://facebook.com/drivelink>

Contact David at david@drivelinktraining.co.uk or phone 0790 067 7715.

David Vickers at work among conifers





DITCHLING MUSEUM OF ART & CRAFT TAKES GOLD

Existing building & overall category winner
in spruce & English oak by Adam Richards

“As the Gold Award winner, Ditchling Museum of Art & Craft sums everything up. It is an exemplary little low-budget rural museum by an architect to note for the future. A mix of new-build and restoration, of ancient techniques co-existing happily with the high technology of today, it adroitly uses a mixed palette of materials (including spruce CLT and English oak) that suits its context admirably – and is designed in such a way as to waste practically nothing.”

Hugh Pearman,

editor of RIBA Journal and architecture critic for the Sunday Times



Structural

Lucky kids! Alfriston School swimming pool in Beaconsfield, Bucks took this award. Made in Scandinavian whitewood, glulam and CLT, it was conceived by Duggan Morris Architects



Bespoke furniture

Oak furniture for the new Dickson Poon Centre, Oxford won Tony Portus the Bespoke category. The highly commended award went to the Barnsley Workshop's rocking chair featured in last month's GW. The judges, led by Sean Sutcliffe of Benchmark Furniture, were John Makepeace, Rod Wales and Katie Walker



Endless Stair. Photograph by Giovanni Nardi



Ben Naylor carved these huge Gothic-style doors

Judges' special awards

Two projects won special awards: Endless Stair, in London, designed by drMM Architects in cross-laminated tulipwood, and Hand Carved Gothic Doors, near York, designed by Jack Badger in European oak



Production furniture

This stylish design in steamed, laminated European beech was made by Ben Fowler of Fowler & Co of Portslade, near Brighton



Commercial & Public Access

This award went to the Sam Wanamaker Playhouse in London. Constructed from English and European oak, and European redwood and spruce, it was designed by McCurdy & Co



Small project

James Wyman Architects came up with this design for a house in Oxford. It is constructed from English sweet chestnut



Private

House No 7, in Tiree, Scotland, took the Private category. Denizen Works designed it in Scottish spruce glulam, Scottish larch and reclaimed pitch pine



Mary Montagu-Scott knocks in the last peg; inset, the almost finished building

The Shipwright's School



Last summer Michael Huntley watched a traditional timber frame building being erected in the historic village of Buckler's Hard in Hampshire

The New Forest National Park Sustainability Fund had partly funded this construction to promote rural building skills and sustainability at what was an important 18th-century shipbuilding location.

Master framer Henry Russell constructed a 48ft by 20ft building from local oak grown on the Beaulieu Estate, and the story of the frame is shown in the sequence of pictures.

The Shipwright's School, which is an authentic 18th-century structure, will be used by The International Boat Building Training College (IBTC), which is based in Portsmouth Historic Dockyard. The college will teach,

among other woodworking subjects, the making of wooden vessels using traditional 18th-century methods. This will re-establish the historic shipbuilding link between Buckler's Hard and Portsmouth Naval Base.

The project was overseen by Mary Montagu-Scott who is a trustee of IBTC Portsmouth and director of Buckler's Hard. She is thrilled by how authentic the building looks and excited about next year's 2015 project of building the wooden infrastructure around the school such as the saw-pit and capstans. Keep up to date via her blog <http://www.bucklershard.co.uk/attractions/shipwright-school/blog>

Preparation of timbers



Pic.1 The timbers were felled locally and Master Framer Henry Russell selected which logs were to be used for each location. The oak was chosen standing and with a view to which component it would provide – in this case a tie beam. However it is only when the log is felled and converted that you actually know what size you will get



Pic.2 The marked logs were brought to site and stacked in the order in which they would be needed. These logs show the quality and size easily available today from English woodlands. While not joinery grade it is fine for construction



Pic.3 The first stage of hewing is snapping lines along the logs to give the required size. Notches are then cut almost down to this line with a felling axe. The final trimming off exactly to the lines is done with a side axe, which has a cranked handle and the blade bevelled on one side only. The side axe is a specialised timber conversion tool in contrast to the general-purpose felling axe. The timber 'dogs' bite hard into the timber and stop it rotating

Pic.4 Once hewn, the logs can be sawn into smaller timbers if required. Traditionally this was done either over a pit or on trestles as here. The hewn log is lifted up using the timber crane



How to learn timber framing

Learning the craft of timber framing is best undertaken by attending a workshop such as this one run by Henry Russell. Many of the tool tips and techniques are best learnt by being shown them by an experienced practitioner, which is of course one of the ways the apprenticeship system used to work.

I would like to acknowledge the help given to me in preparing this article by Joe Thompson, carpenter-in-residence at the Weald and Downland Open Air Museum at Singleton, West Sussex, which has been running such workshops since 1996. Many students have used this as a great way to help them develop their skills and knowledge and to go on and build or repair timber frames. The Carpenter's Fellowship also organises timber frame courses.

Next year *Good Woodworking* hopes to follow the progress of a new timber frame joint by joint.

International Boatbuilding Training College (IBTC)

The international Boat Building Training College has been training boat builders for more than 39 years, originally in Lowestoft. Most students go into the marine industry but the skills learnt are transferable and some end up in timber framing, furniture making or bespoke joinery. The new branch of the IBTC in Portsmouth will be the regional centre of the National Historic Ships Register's Shipshape Network. After many years of declining support for historic shipwrighting skills it is good to see the provision for training apprentices in the UK finally being increased. As one would expect, the Heritage Lottery Fund has been very supportive.



An IBTC student working on a carvel plank repair



Pic.5 He who has the most tools wins! A lot of carpenters can't help themselves when they see an axe for sale. Timber preparation by hand is hard work but the historic woodworkers did make life easier for themselves by having the right tool for the job. There are many subtleties in selecting which axe, saw or chisel to use



Pic.6 Tenons are often cut with a saw and chisel. Here the front cheek of the wallplate tenon, at the top of a jowl post, is being pared down to the line. A second tenon will be cut, later on, out of the swelling or jowl, below this wallplate tenon. In all construction the joint itself has to be cut no deeper than the minimum cross-section of the timber required to resist bending and twisting and shearing forces



Pic.7 John, Henry's twin brother, is carefully positioning the boring machine, before the seated student will auger part of the timber away that separates the wallplate tenon from the second tenon. Then the back cheek of the wallplate tenon can be pared back to its lines. The second tenon will fit into a tie beam that lies above the wallplate



Pic.8 Why use a chisel to pare the cheeks of a tenon when you can use a bisaigue? Andy is using this French version of the thrust axe or twybil, with a mortise chisel at one end and a bevel chisel at the other, using his shoulder to help guide the heavy tool



Pic.9 Because the timbers are not square, the best way of laying out the joints is to set up each roof truss assembly on a dead flat surface and scribe the joints. Here a cross-frame roof truss is laid out before scribing. The tie beam (large timber in the foreground) will have a pair of diminished principle rafters tenoned into each end of it. These will be stiffened by the pair of raking struts or raking queen posts (the diagonal timbers in the middle). The students pay close attention to the master's words!



Pic.10 Henry Russell demonstrating the use of the plumb-bob to scribe two irregular timbers together. Note the 'doughnut' shape of the plumb-bob that also allows it to be used over a full-size drawing of the building, if required. Precise, careful lining out is essential for successful timber framing



Pic.11 Andy and Barbara carefully laying out a brace, prior to scribing. The brace will tenon into the tie beam and jowl post. In the background others are cutting joints



Pic.12 The shaving horse used to prepare dozens of hand-made pegs

Actual assembly



Pic.13 The first tie beam being hauled up using a 'gin pole' crane. The pole can be moved around easily for each big timber as the roof is erected



Pic.14 Wiggling the next heavy tie beam in between the existing studs was interesting!



Pic.15 Then it had to be hauled up to clear the wall plates and lowered into position on the jowl posts

Pic.16 Lifting a wall plate...



Pic.17 ...and locating all the studs as it is lowered. You can see them looking to locate the tenons on the underside – a fiddly and finger-crushing job!

Pic.18 The gin pole has been moved and behind it a queen strut is man-handled up



Pic.19 The roof collars starting to be built up



Pic.20 A diminished principle rafter going in



Pic.21 Now the roof structure can begin to be seen



Pic.22 The last tie beam going in



Pic.23 The open bay at the front is starting to be assembled



Pic.24 The end of a hard day!



Pic.25 Common rafters being fitted before the last peg is knocked in



Pic.26 The frame finished and waiting for roof tiles and cladding

Timber-frame building



Pic.27 Internal fitting-out beginning



Pic.28 A view of the bay structures, showing clearly how the roof is supported



Pic.29 External cladding and windows now going in



Pic.30 The roof almost complete – note the covered open bay, a feature often forgotten when workshops are designed

Contacts

For details of any of the framing or boat-building activities mentioned see these websites:

Buckler's Hard

www.bucklershard.co.uk

IBTC

www.ibtcpportsmouth.co.uk

Weald and Downland

Open Air Museum

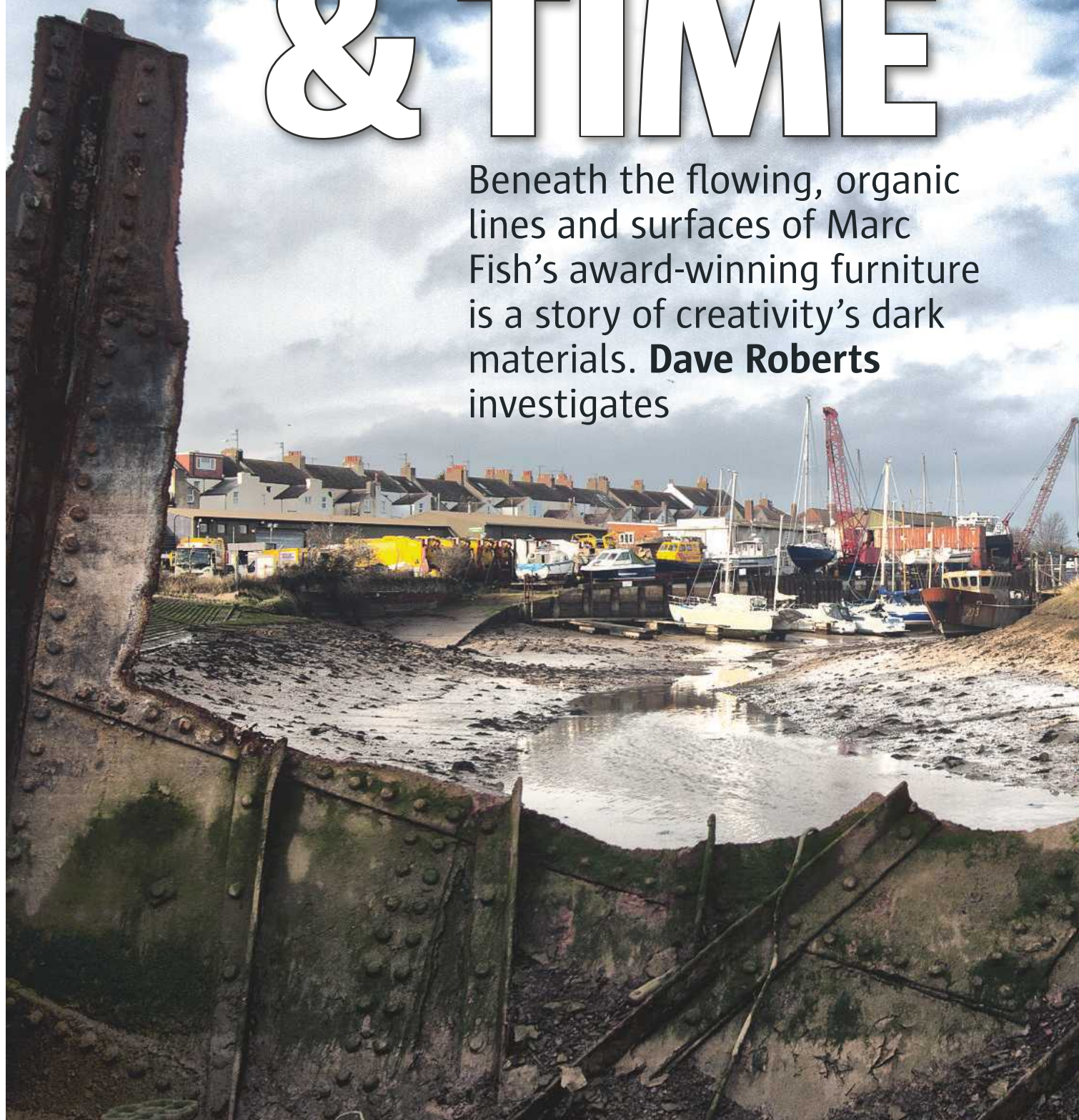
www.wealddown.co.uk

Carpenter's Fellowship

www.carpentersfellowship.co.uk

TIDES & TIME

Beneath the flowing, organic lines and surfaces of Marc Fish's award-winning furniture is a story of creativity's dark materials. **Dave Roberts** investigates





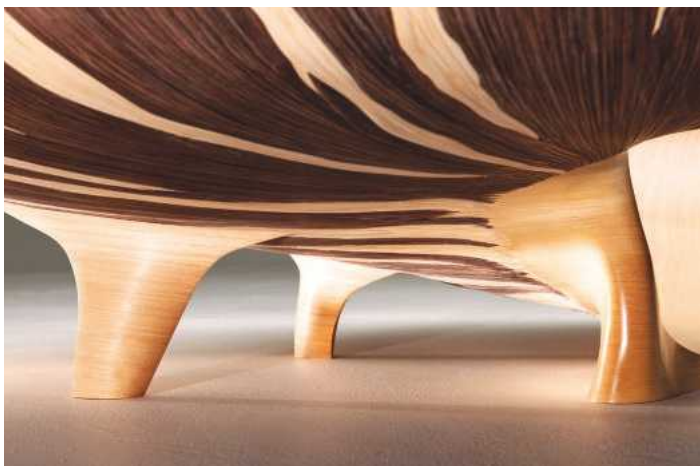
To visit Newhaven under a November sky and at low tide is perhaps to see the port at its grittiest. The onomatopoeically named River Ouse reveals what's otherwise hidden at high water, the old roots and foundations of the industry that has been corralled against the coast by the wall of the South Downs, which herds it into the densest concentration of commercial property in East Sussex. Compared to the county's rural parts, it's an unlovely corner, yet it has that rumpled, earthy attraction that places have when trades carry on their businesses cheek by jowl, creating a restless jostle of commerce and productivity. And right in the middle of this busyness is Robinson House Studio, home to Marc Fish's workshop.

"We didn't come here because of the industry," Marc explains. "I lived in Brighton at the time that we were looking for a commercial property, and this just came up. But I wouldn't want to move now; the benefits of being here far outweigh a lovely rural barn somewhere. I like being among the industry – it's more representative of our work."

Now, you may already have seen Marc's recent work: his Babel cabinet, Mollusque and Nautilus low tables and L'Orchidée desk are all striking, contemporary designs that combine the organic and the mineral in their inspiration, materials, shapes and textures to create remarkable pieces in limited editions. So, with all due respect to the good burghers of Newhaven, in what possible way could this tide-marked town 'represent' the beautifully executed lines and polished surfaces that have won his furniture Guild Marks and an international audience, and Marc a steady succession of students keen to learn at his benches?

What lies beneath

Surprisingly perhaps, the answer lies in that view at low water, because in many ways creativity is an equally messy business. But just as those littered channel beds and weed-grown pilings will be hidden by the returning tide, so Marc's



It takes around 5000 pieces of veneer to create a Nautilus. The basic form is built up around a series of formers, with two layers of veneers laid in shiplap fashion either side of an intermediate layer of carbon fibre; sycamore on the inside, sycamore and walnut on the outside.

The shell's sections are butt-jointed, the glue line hidden by the pattern created by the veneers as they spiral out from the shell's centre; this is sanded smooth and sealed on the inside, but ridged – a painstaking job

finished pieces conceal the tangled processes that lead to creation, the inspirations, the unexpected connections and sketched ideas, the experimentation, the blind alleys and breakthroughs. And here in Newhaven, Marc not only has his own 'shop in which to practise those processes, but access to other raw materials to feed them – the knowledge and skills of a

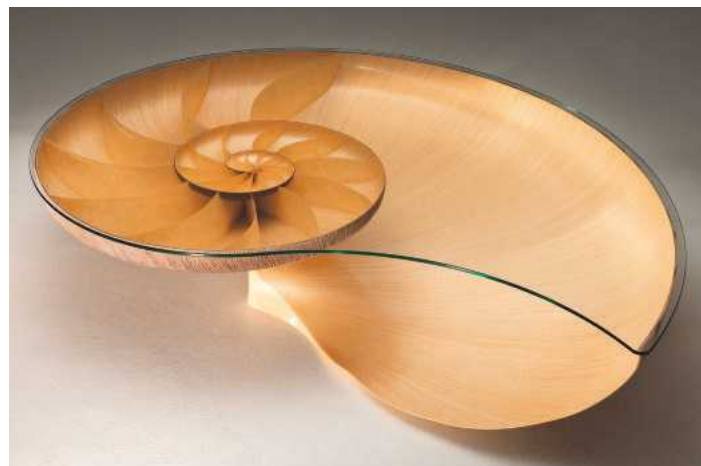
dozen or more trades and their suppliers, from metal fabricators, machinists and fibreglass workers to foundries, glass merchants and props makers for the film industry.

To borrow Assemble's description of Sugarhouse Studios (GW283), Robinson House Studio is a, "home to a range of messy, noisy, tactile and experimental processes" that inform the making of Marc's furniture, no matter how graceful its finished lines, nor how smooth its surfaces."

It'll come as no surprise, then, to hear Marc say that, "for me [furniture-making] isn't about woodworking, that lovely Arts & Crafts movement; it's about the end piece. It's about producing work that's innovative, creative, experimental and different. That's what I like; that's what inspires me. I don't care how it's made – that doesn't interest me. Yes, it has to be done right, it has to be done correctly with attention to detail and accuracy, but the construction is just how you get from A to B."

A place for tradition...

That's not to say that he dismisses the value of woodworking techniques. On the contrary, if you talk to the students in the first weeks of their 50-week course at Robinson House Studio you'll find them practising all the hand-tool and timber preparation and joint-making skills of traditional cabinetmaking. It's more that, in one important respect, these skills are taught as a means to an end: the micrometer-accuracy that's demanded of the students serves to illustrate the standard of craftsmanship to which they should aspire, not just in wood but in whatever material their projects require. So, while the course projects set by Marc's syllabus may be familiar to students elsewhere – boxes and low tables, say – there's no prescription for exactly how they should be made, only that they're made to those standards (See Solutions, p28, for an example of mixed media).



involving elbow grease and abrasive wrapped around the edge of a cabinet scraper – and on the outside, which is left unfinished.

The result mimics both the pearlescence of a real shell's interior, and the calcareous texture of its exterior. The delicate membranes that divide the chambers, meanwhile, are made up from five layers of Japanese paper and resin, each one being carefully scribed to match the painstakingly made profile of the shell



Danny Maddock: the former Chichester student is one of Marc's maker-collaborators, and divides his time between helping the students and maintaining the workshop, and experimenting with methods and materials like woven synthetic horsehair and copper wire, Coremat and carbon fibre



Developing an eye: Roi, one of the Robinson House Studio students, chooses a leather with which to line his jewellery box

"At the end of the day," Marc maintains, "if we teach our students properly and [then] let them go with their own interests, there's no reason why they shouldn't design in wood, glass or whatever. Design is design." A case in point is Neil Davies, a student who, in addition to the normal coursework, recently made a table in stainless steel. "He's drawn it on CAD," Marc explains, "worked out all the angles, gone to a metal fabricator, negotiated pricing, finish, etcetera – all those sub-contracting things which are a very big element of what we



A crucible for creativity: crowded but well-equipped, the Robinson House workshop

have to do. But many woodworkers would say, 'That's not woodworking, why's he bothering to do that?' Because," Marc answers his own question, "he's learning how to interact with people he may have to deal with in future. Even woodworkers will possibly need an upholsterer or somebody to cut a piece of glass for them. And if you haven't got the ability to talk to those industries you're going to struggle. It's a difficult thing to sub-contract work and get back [the result] you want."

By 'even woodworkers' he seems to be suggesting those makers who limit themselves to thinking in narrow, canonical terms; who are held back by "over-romanticising," as Marc calls it, the traditional forms of construction. "Something I discuss with the students," he expands, "is the fact that we're [generally] surrounded by a lot of nice work, but it's not great work. It's very well made, but from a design [point of view] it's very old-fashioned." The reason being, he suggests, that too many makers allow their thinking to be conditioned by what has gone before, by the limits of traditional methods and materials, and pre-conceptions about how things are done and made. "And that," he says emphatically, "is not what we're about."

...but ideas come first

For Marc, "the idea has to come first, and then we worry about how to make it. Nautilus, for example, was pitched to a client by showing them a nautilus shell. They asked, 'How are you going to do that?' And I said, 'I don't really know, but I think we can do it.' It's the Sydney

Opera House approach to not letting the want of a method compromise or kill off a great idea: if the idea's innovative and exciting enough, people will want to buy into it, and the method will come eventually. "So we're constantly doing experiments – stick this with this, burn this, bleach this, what happens if we do this?" That 'we', by the way, seems to be all-encompassing: it doesn't just mean Marc and his two full-time collaborator-makers, Chris Funnell and Danny Maddock, or the 10

students whom he's helping to find their own style; instead, it's a Robinson House Studio condition, where a 'what if' buzz seems to pervade throughout.

For Nautilus, then, the studio evolved a technique to create the shell's compound curve using thousands of strips of veneer laid up shiplap-style either side of a layer of carbon fibre. In its biased-ply approach there are shades of the Linton Hope design for boat and flying-boat hulls, but it's a method, Marc



Who doesn't hanker after a workbench like this?



The gang's all here: Marc Fish, extreme right, enjoying the sunshine outside Robinson House with students and maker/collaborators

claims, that at present no-one else is using in furniture design. And no wonder: it's extraordinarily labour-intensive, with the latest version, which is 2.5m-long, taking around nine months to make. Ultimately, though, the story of Nautilus isn't about how it's made but about how the piece works. And proof of its success, perhaps – aside from the fact that three of the run of five Nautilis have already been sold along with one of the two special editions, and that construction is about to begin on the fourth – came in a recent enquiry from abroad, asking whether Nautilus was a real shell. "When you get a comment like that," Marc laughs, "you know you've nailed it!"

Or at least they've nailed the challenge of translating that particular vision into reality. The process of problem-solving never stops, however, and for the last few months, for example, Marc and his team have been wrestling with an aspect of a new design that involves gluing copper to walnut. The problem is that copper's readiness to oxidise inhibits adhesion, on top of which the project calls for laser cutting of the copper and wood, which means that the bond has to withstand heat, too. "If you started off by saying, 'Oh, copper doesn't glue very well', then the project would die. But we know what we want, and we know that the answer is out there; we just have to find it, and then the project will move forward."

As Mark says, however, these constructional challenges are only about getting from concept to completion; their art is in what Paul Klee would've called the process of 'making visible', of realising the idea. The concept itself, however, comes about through a far less deliberate operation.

Dark materials

"Having a bit of space, a bit of time, and some things to play with," is how Marc defines creativity. "And if I'm romantic about anything," he says, "it's about creativity; it's the one thing that excites me." Somewhere along the way from childhood to adulthood, however, many people lose the facility or willingness to explore; to find materials that

they like – whether it's clay, paint, charcoals, wood, words or whatever – and simply to play with them to see where that leads.

It's an occult process: somewhere in the dark, below the high-water line of conscious thought, imagination goes to work among the channel beds and pilings of all the things that we've collected as, in a small way, interesting shapes and textures and materials have been collected on Marc's 'glass wall of inspiration'. All the ideas and images and fragments we've gathered, some of which we didn't even realise we'd absorbed, are sifted; some are discarded,

The Babel cabinet was booked for several exhibitions in 2013 but sold at its first outing, at the prestigious Masterpiece, London show



Brief: to design a dining table incorporating stainless steel, glass and wood with echoes of the sea. It is welded together using a TIG welder

others are joined, and by being connected in this way all manner of scattered things are turned into wholes.

Somewhere beneath Marc's next project, for example – a cabinet with 28 interlinked doors that will open consecutively to give the piece the appearance of blossoming – may lie his empathy with the Victorians' love of mechanisms and machines, and their regard for natural history. The creative process by which the concept arrived, however, is not the same as sitting down and being creative. As Marc puts it: "You cannot set out to be unusual



for the sake of being unusual; you can't start from there because that won't necessarily give you an interesting product." Instead, creativity is what happens when imagination is given space. What you can deliberately sit down and do, though, is work out how to carry the idea forward – that's the bleaching, burning, experimenting bit – while maintaining the subtlety of imagination's connections.

The ultimate commodity

All this, however, takes time, the ultimate commodity that always has to be bought at a price. For his part, Marc chose to make more room for creativity by forfeiting what he could earn from commissions, which he stopped accepting three or four years ago. It wasn't an unqualified sacrifice, however: most customers, he believes, wouldn't or couldn't pay for the time it would take to make the answers that he would want to give to their commissions. Even then, he doubts that he'd enjoy making them: "As soon as I have to make something, already I'm squeezing things" – squeezing out possibility, narrowing the job down towards predictability." In the end, he's happier, he says, creating his speculative pieces and letting them find their own market, and sharing his enthusiasm with his students in the meantime.

"I did City and Guilds with a guy who was four years away from retiring, and boy did it show!" At Robinson House Studio, then, there's no dutiful plodding through an Ernest Joyce-based syllabus: "To me it makes sense to teach what you're passionate about, and for me that's mixed materials; it's being imaginative and creative. I'd like to think that the majority of students here have come because of that." There's no requirement for students to mix their media, mind you; even if they worked wood exclusively, they'd still be in an environment that," Marc says, "is constantly creating and critiquing itself; that's questioning this, questioning that."

While the teaching, along with the five or six makers who rent space in the studio, may help to offset what he doesn't make from commissions, balancing what's earned from pieces like Nautilus or work made from the studio's back catalogue with the cost of developing new projects is a continual challenge. "Our pieces take so long to make that making one speculative [design] could be financial suicide: you're gambling one guy's wages for a year plus materials against the possibility of selling it, so we're careful. We have to be commercial to make a profit, and if there's a machine to make [things] quicker, we'll use it; if there's a computer programme that will enable us to make the formers, we'll use it. But that's not what drives us forward," and it's not, he insists, a consideration that he's willing to let compromise the idea or the finished piece. "I'm a bit of an idealist: I'm in it more for the art than for the money."

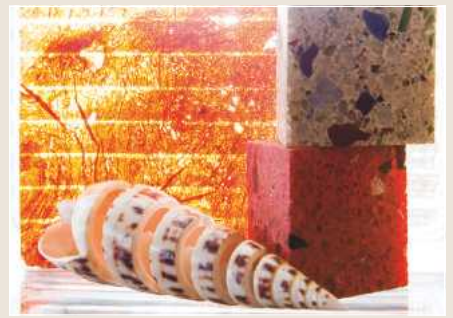
And that's what gives the whole enterprise its wonderful sense of adventure. No, Marc's

Marc Fish: then and now

Leaving aside a stint in a bank ("Which I hated!"), Marc's background is in restoring classic cars where he discovered that experimenting was more fun than rebuilding cars. His initial foray into furniture-making – making metal furniture for shops in Brighton in late '90s – was self-guided, but when that market dried up he turned to more formal instruction, with a C&G qualification in furniture-making, and computer-aided design and went on to tackle upholstery.

Though he has used a range of materials in his furniture – copper, bronze, cast alloys, stainless steel, aluminium, as well as wood, of course – it'd be a mistake to pigeon-hole him as a mixed-media maker. After all, he points out, "Nautilus is a wooden table with a glass top. I don't have a preference on materials; they're just there to be used," and what a project requires, he gives it.

"I've no idea what materials we'll be making furniture from in five years' time, and that's really exciting. There are lots of new materials out there with no applications to furniture-making – yet. But they're in the



"Inspiration is made of the ideas, images and fragments we've gathered," says Marc Fish

back of my head going, 'How are you going to use magnetic liquid? How are you going to use metal thread that's thinner than a human hair? How can we make furniture out of that?' Will I even be making furniture in five years' time?" He shrugs. "If I'm not making furniture in five years' time but I'm still making [and] being creative, I won't care. I like furniture, but I'm not romantic about it. Being creative and making stuff is what I believe in; it doesn't have to be a table or a chair."

business model isn't the most profitable – "I've never made a kitchen," he says. "It'd put money in the bank, but it wouldn't move me forward creatively" because he's willing to forego short-term financial gain in return for the freedom to create and, in the longer-term, the recognition that makes a maker 'investible', as they apparently say in the world of contemporary art and furniture at which he's aiming. It's a market in which, he explains, "there are lots of people with a lot of money who want unusual, original stuff. And at the moment the market's here" – he raises one hand, palm downwards, to indicate its size – "and the people producing [that stuff] are here," he says, lowering his other hand.

"There's a handful of people producing really innovative work that's feeding the market, and that's where the growth is. So we just design what I want to design; all we make at this stage is what I want to make." Besides, he admits, "I couldn't keep coming up with products one after another, but what I can do, I think, is to produce a couple of pieces a year that you look at and think: 'Wow, I've never seen anything like it; how do you get wood to do that!?' But even if he told them the story behind those beautifully executed lines and polished surfaces, they probably wouldn't really appreciate the how and the why of them – not unless they visited Newhaven under a November sky and at low tide.



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STC = Sliding Table Carriage, TWE = Table Width Extension, TLE = Table Length Extension.

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"I've always loved the lines of ply," says Martin (left). So much, it seems that he and Richard have adopted stripes as their uniform: "Any colour, any size as long as it's stripes!" There is an ease, levity, *joie de vivre* about these two that surely contributes towards their success

THREE-DAY WONDER

Edward Hopkins' busy daughter wants to make a coffee table with her dad, but time is limited – and she would like a drawer...



Were there to be chairs here instead, they would seat 10 people at most. "We've had 20, all squashed up. People love it," say the pair

Imogen would like a coffee table. More than that, she'd like to make it – not by herself because her experience is limited – but with me, her dad. She'd like to make – she'd like to have, in the centre of her living room – something different, something special. What greater commission could a furniture maker wish for?

Like all great commissions, it is restricted. I don't want to sound like Sir Tony Robinson, but we have just three days to do it. Imogen is busy, and we're lucky to grab a long weekend, say 9am Saturday to Sunday tea-time, then up to Monday lunch-time. You might think it would be easy to create a wonder in three days, but to do so you have to be organised.

Imogen is capable and enthusiastic but techniques take practice and we can't spend time on a learning curve. I want her on straightforward repetitive operations. This table must be as simple as possible, consistent with it being stunningly attractive.

Dickie the brickie

Simple, anyway, is all I can do. My workshop, sorry, my garage, is growing slower than a snail's shell because Dickie the brickie has been building his own extension. However, we're up to lintels and I have trusses on the way.

My limited workshop space and tooling suggest to me ply. I can't cut it up – I wouldn't dream of sawing it by hand – but James can. His works has a circular saw rail system. Or I could ask my good friend Richard. In my last place the builders' merchants would have sawn it very neatly, but the yard here doesn't have the facility.

However I have it sawn, it must be accurate. That means that the sawing schedule should

be well thought out and easy to execute. Any measurements that are nominally the same size should all be cut on one machine setting. Resetting, though sometimes necessary, is asking for trouble. I shouldn't need complex shapes. Well cut ply, chamfered, sanded and finished, looks smart.

Ply screws together so well that it seems daft to do anything else. Just as an exposed mortise & tenon displays the structural characteristics of timber, so a screw says something about the nature of ply. Far from wanting to lose screws beneath plugs, we'll keep them as a decorative feature. For this, they might be brass, but



Their builder embraced the idea of ply and helped trial different contours until they hit it right

maybe it's more honest to use steel. Either way: slotted. When the slot is lined up, it becomes a tiny and precise detail taking screws one step closer to being jewels.

The coffeecabin

I'm not alone in liking ply. Imogen and I stopped in at the coffeecabin on The Quay in Appledore, North Devon. Along one wall, scattered with various cushions, was a bench made of double thickness 18mm slatted ply showing end grain; curved for your back and swept under for your heels. The slats are nailed to 'formers' along its length; nails punched, filled and inconspicuous. It's smart. It's clever. It's fun. It's also practical – being a radiator cover allowing good ventilation, and being freestanding so it can be pulled out for cleaning.

Martin and Richard, the owners, designed it, as they did everything else. The tables are double thickness ply on metal stands. On the other wall is a reclaimed corner settle panelled and painted, as different to the ply as it could be. The place is energetic and happy, of relaxed unpretentious quality. This, and they, their coffee and Richard's cakes ("I just opened Mary Berry...") are why it works so well.

Martin and Richard are alert, alive, interested in art and it shows. There is no substitute for this enthusiasm. You can't hope to design something special unless you know what 'special' is, and because there are no rules, you can only do this by looking and trying to work it out.

Being opinionated, I make assessments. It's a quiet hobby. I look at a building or a poster or a piece of furniture and, in that first second, I see how it hits me. Not what I think about it, but how it makes me feel. What is pleasing and

Woodworker's journal



In the window are two barbers' chairs with Deco echoes. On the sill where a higher table needs to be is another ply construction



The main light is of LED tape within a cluster of demijohns. There's nothing overworked or laboured about thecoffeecabin: flair comes as standard

what isn't? What would I do differently if I could?

More exacting is to make this assessment of my own work. I walk away from it, and come back, consciously forgetting what I've done so far. I see afresh how it makes me feel and where I want it to go.

Try, try & try again

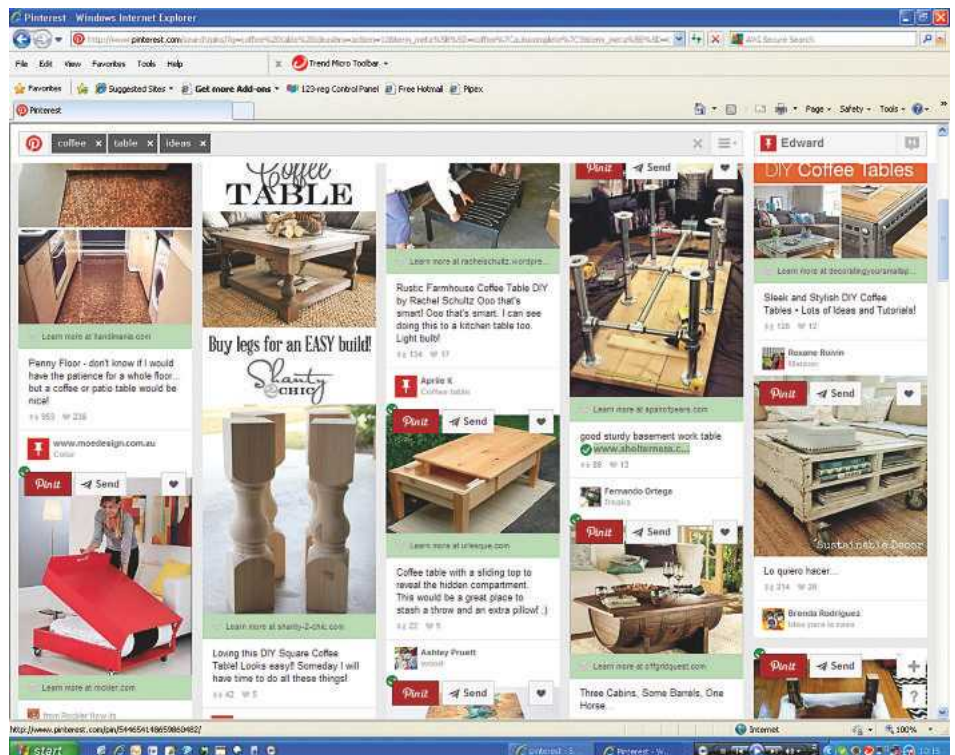
I'm prepared for the bin. No matter how long I've spent on it, I'll throw it away, or up in the air just to see how it lands. I do this until it

becomes clear – even obvious – and shines with a light of its own. The excitement of woodwork for me is not chisels and saws, but seeing a vision manifest itself before my eyes. It begins as whim and a fancy: next minute, I'm walking round it; or, for Martin and Richard, through it.

How does inspiration work in practice? 18mm ply is heavy so Imogen's coffee table mustn't use more than one sheet. Less would be better. At the moment she's in a flat in an Edwardian house so her living room is quite large. That might change. We'll discuss the size later; at the moment, it's the configuration that matters.

Imogen wants a drawer. It's not for major storage but for the little things of domestic life. I tried to talk her out of it because drawers are demanding, but I failed. How then would we make the drawer, bearing in mind that so far we're using just 18mm ply, and I'd like to keep it that way? It clearly won't be an ordinary drawer.

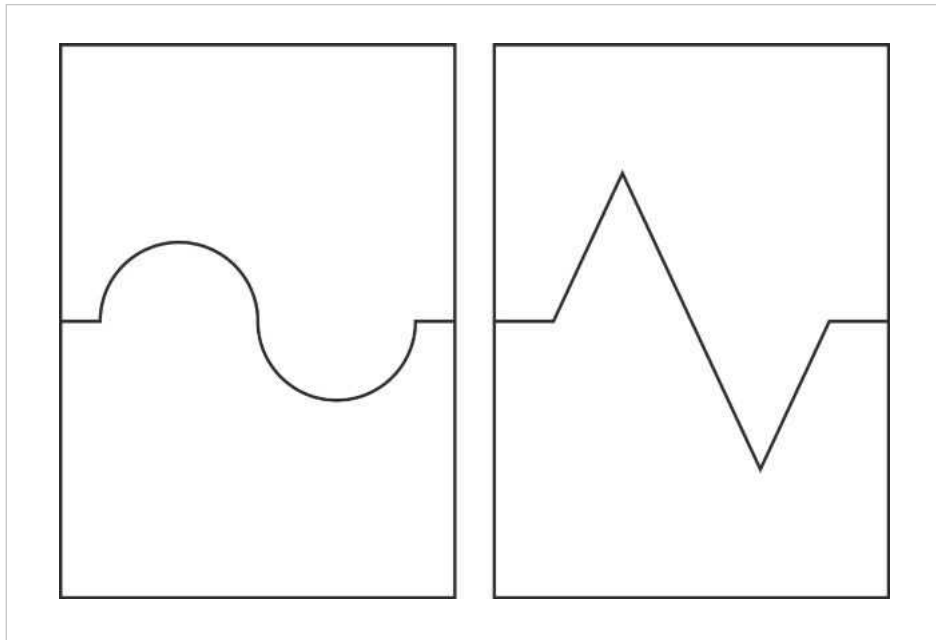
I began with essentially two or three sheets of ply with many receptacles routed into them – circles, triangles, squares going down and leaving just 6mm or so as a base. I saw the drawer pulling out from either end of an oblong table. Perhaps there would be something to stop the drawer in the middle. What about a ball-bearing pushed into a notch by a spring? Mmm. That alone could take an hour or two of development. Too complicated.



Martin and Richard use pinterest.com to search for inspiration among a mass of images. Other people look through papers and magazines then stick images in a source book. Edward prefers to look around wherever he goes and have it all soak in by osmosis. It doesn't matter how you collect ideas as long as you stay open and attentive to design

Eureka! moment

I then had a key thought – the main idea of the whole table: instead of pulling the drawer from the table, I could pull the table from the drawer! The top would slide to reveal the fixed compartments. I'd split the top in two. At first I drew a yin-yang shape to connect them. Then I drew a dart. I don't know if it has a name. It is



The top will be split in two to accommodate a drawer

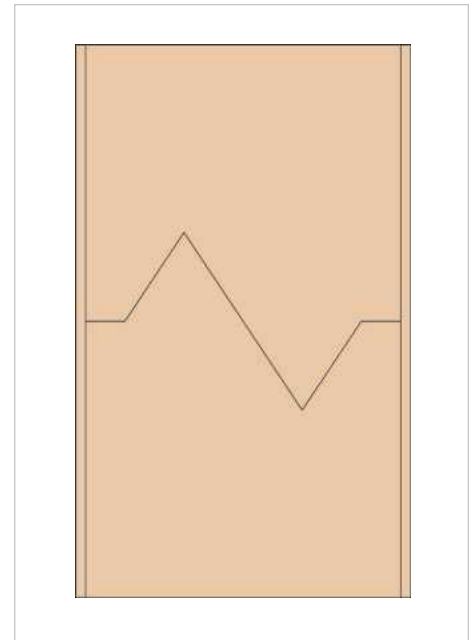
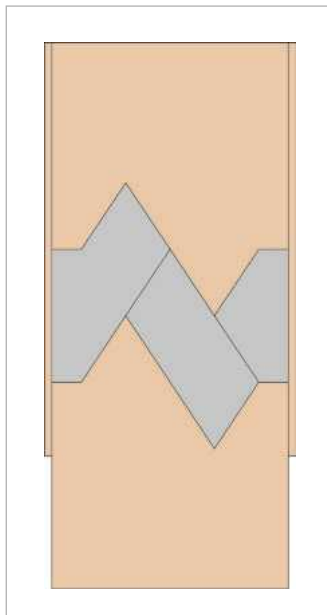
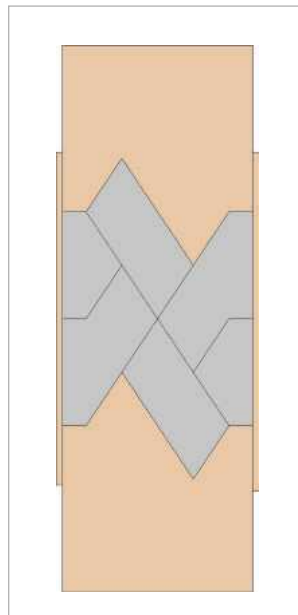


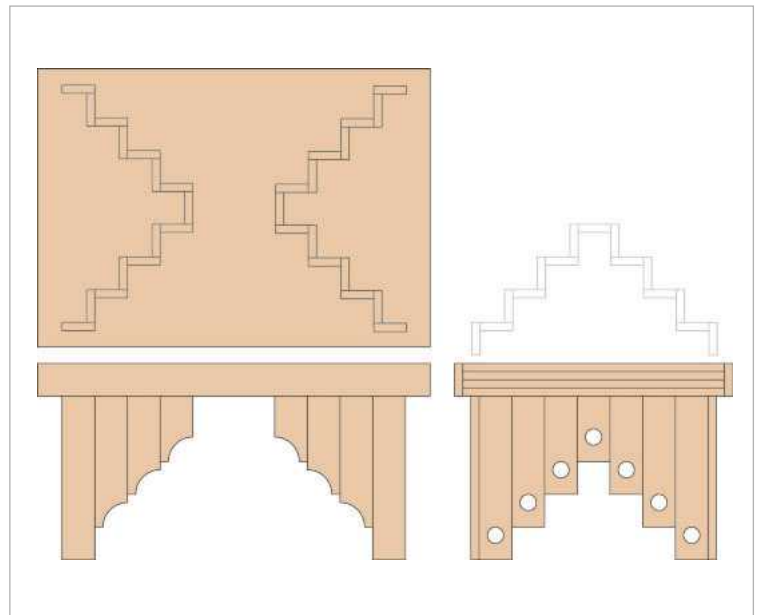
Table closed...



...one flap open...



...and both flaps open



Cutouts and holes take the weight off the feet

the device that shows 'and so on...' in a structural drawing. It is also a lightning flash. It is sharper, more exciting than the semicircles.

I wondered about practicality. Would a sliding top be easy to use? Admittedly anything placed in the middle would have to be moved. The tops would have to slide smoothly or coffee would be spilt. But it takes up no more room than a conventional drawer. It isn't going to be opened and closed even once a day. And, as a bonus, it is something of a safe, perhaps unnoticed by the casual burglar.

I resisted being carried away. This was hard because I like being carried away. I could see this table unlike any other table in Bristol. I saw Imogen demonstrating it to her friends and them saying "Wow!" This is my favourite word. It is what I aim for in everything I do. Why would I settle for less?

I used to draw on paper, but it is so much

faster and neater in Adobe Illustrator – I'm told that Inkscape is a comparable but free programme.

These drawings are not to scale. I'm using the grid in the programme for the sake of convenience and just to give an idea. It's a posh version of the back of an envelope or a rough diagram. When the 'client' has approved it I'll draw it again in much more detail.

There is a lot more going on than I've shown. I'll need to be sure of the slides for the top and whatever finger pulls are needed. I want to see the compartment dividers drawn out, and know that I can fit them well.

Flash table

When the table is closed, it will be a block of ply only distinguished by the flash on the top. There is a danger that it will look heavy. The leg structure should therefore do what it can to

introduce lightness. It could at best make the table 'float'.

This thought combined with the need to have Imogen on repetitive drilling and screwing resulted in the drawing. I like the cascading scallops on the side. They remind me of Islamic plasterwork. The slats seen from the end have to remain square, so I've introduced a compatible piercing to lighten their bulk. And the way the leg structure rises up as it moves in suggests that the table is about to take off.

I know that this structure will work, but without a lot more drawing – preferably in 3D – I can't quite see it. Some people would make a model, perhaps in balsa or in card. My limit is usually Lego, but these legs aren't Lego friendly. I'll do another drawing, but first things first: I'll send this all off to Imogen to see what she thinks.

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The Didac Woodwise workshop



At work in a Proskills' apprentice workshop

LETTER OF THE MONTH

Proskills & Didac work together

Proskills' MD Jonathan Ledger recently took a trip to see all the fabulous work going on down at the Woodwise Academy and was blown away by the high-class skills training, fantastic facilities and superb support that is delivered to students by a really committed team of industry-focused trainers. Jonathan along with Proskills' Wood and Furniture Industry Lead Lisa Williamson met directors Martin James and Job Gibson to discuss how partnership activities will be shaped in the future.

The wood, furniture and merchanting industries benefit from strong employer support and have a wide range of training courses, qualifications and apprenticeships at their disposal. However there remains difficulty in reaching some employers so that they can realise the benefits of using all the existing skills system to their maximum potential. In a world where the skills system is being challenged to deliver advanced level and higher-quality training and skills to employers, it's clear that we don't need more new initiatives or facilities or training providers.

Jonathan said: "We all need to maximise the existing skills system and facilities so that we get it doing what employers want and if what's already there doesn't quite work in the way that industry would like, then employers need to get involved to help repurpose and enhance it.

"Part of this comes down to us continually informing the industry of what's out there and part is about helping employers and individuals access the right part of the skills system so they get the very best from it. Of course part of the responsibility falls on to employers – who just need to contact us as Proskills UK continues to develop the wood, furniture and merchanting skills system led by employers, but is always seeking more employer involvement. So get involved!"

Martin added: "This year has seen the launch of several new qualifications developed exclusively for our sector. This has had an immediate positive impact on demand from employers because the new qualifications are just what the sector needed, which is hardly surprising because seasoned executives from the wood, furniture and merchanting sectors were heavily involved in the development of their qualifications.

"The training, facilities and support that Didac provide for the industry is essential for its future success, ensuring we have the right skills in place to make the industry safer and prosperous. The Woodwise Woodworking machine competence programme is one example, where they are delivering the skills needed to ensure that both employees and employers meet the HSE requirements in making the industry a safer place to work and more productive."

Lisa said: "This year has seen the launch of several new qualifications developed exclusively for our sector. All of them currently attract government funding, but it's a case of use it or lose it, so I can only reiterate Jonathan's comment – get involved, otherwise funding will migrate to other sectors."

The above press release from Proskills contains a valid message to those with an interest in keeping our craft alive – use it or lose it! It also serves to show the value of good marketing to any business.

Andrea Hargreaves

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Baluster safety

I am a professional joiner with over 25 years experience. I subscribe to *Good Woodworking* magazine and have read it for many years. I do think it is the best woodworking magazine available. In issue 286 there is a feature where Edward Hopkins builds a winding staircase down to his cellar. I can see that this is an interesting project which many people will enjoy reading but the finished staircase does in no way comply with building regulations. I feel that for safety reasons something like a staircase build should not be shown unless it is done by professionals and complies with all current regulations.

Doug Smith, Bubwith

I spoke with Doug. His two concerns were that balusters should, for safety's sake, be set with a maximum 100mm gap. I made sure of this on the conservatory level where babies and small children might roam. I went further than building regulations in adding a gate at the top of the stairs with the same baluster spacing. On the cellar section of the handrail, I pondered long and hard about effecting the same spacing but decided that horizontal tubing would provide adequate safeguard. I would no more allow a child to clamber down the stairs unaided than I would have it explore the cellar unsupervised.

His other concern was that the 'goings' were not consistent. This is not so. Given three winders at the top and three at the bottom, my choice was between three or four steps in the straight flight. Four steps would have made the goings short and the winders then, too long. Three steps, happily, produce steps with even and comfortable spacing.

Edward Hopkins

More please!

After reading GW287, what a good idea it was seeing so many jigsaws being reviewed. The only alteration I would suggest is all reviews on one page. I hope you continue with other power tools. **johnhooley1, www.getwoodworking.com**

Thanks for that John. I am sure that our Andy will be only too pleased to expose other types of power tool to his extensive testing. Perhaps next time we could devise a table showing how the tools score on various criteria.

Andrea Hargreaves



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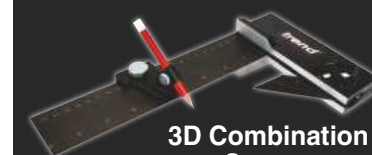
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Around the House

with Phil Davy



Cordless technology is amazing, isn't it? Who would have thought that one day a battery-

powered drill would be boring holes remotely into rock on the surface of a comet, some 300 million miles from Earth! It's infuriating when our cordless tools run out of juice and there's no second battery, but the outcome is probably not quite as critical as that of Rosetta's probe. Of course, some tools are likely to remain mains-powered for a while to come yet. Some Good Wood readers will remember Porter Cable's cordless router we tested many years ago: certainly an innovative tool at the time, but rather frustrating when the battery died halfway through a cut...

Phil Davy

Phil Davy, Consultant Editor

Useful product

Rolson LED safety glasses

Every woodworker should have safety glasses ready for action in the workshop and this pair from Rolson is particularly neat. The wraparound clear plastic shield features an LED light at each side, which can be rotated to direct the beam. Individual on/off slider switches are easy to reach while wearing and each arm has limited adjustment for length. You can activate each light independently of the other, as you can their swivel action. These LEDs are surprisingly effective for something so tiny and each one is powered by two 3V lithium button batteries. These are quite tedious to access as you need to remove five tiny Pozi screws to open their covers, so hopefully replacing them won't be necessary too often.

These lightweight glasses are not CE marked and may not comply with PPE Regulations, so don't assume they will give protection against flying debris or whatever.



Conclusion

While they may not withstand a heavy impact, they're still useful for close-up tasks such as inlaying, model-making or any situation where you need to work hands-free.



Typical price: £6.35

Rolson

Web: www.rolsontools.com

Useful product

Magnetic LED flexi-light

Localised lighting is particularly useful at small machines such as bandsaws or scrollsaws. If the light is cordless and easy to move from one spot to another then it's a bonus. This small LED flexi-light from Axminster has a magnet at one end enabling it to be placed anywhere on a steel or iron surface. At the opposite end the head contains three LEDs, activated by a slider switch. It runs on three LR44 batteries; you open the compartment by removing three small Pozi screws.

Although the LEDs provide plenty of illumination, the head is slightly top heavy for the flexible stem when fully extended. This means the light doesn't always remain where needed, so you need to loop head over stem to prevent it dropping downwards. As the device is 360mm overall, there's sufficient



length to do this. The magnet is powerful enough to stay put when positioned on a surface, though.

Conclusion

Quite a useful little gadget so long as you're aware of its limitations.



Typical price: £9.95

Axminster

Web: www.axminster.co.uk

Winter project

Takes: *one weekend*

OAK SKIRTING



**Tools
you'll need**
Mitre saw, router,
sander, jigsaw, drillstand

Class for low cost

Making your own skirting from hardwood is not so much dearer than buying readymade softwood says **Phil Davy**

 Although softwood skirting is usually available in several patterns from most builders' merchants, it's harder to find something similar in hardwood. Not surprising really, due mainly to lack of demand; few suppliers would want a quantity of boards sitting in stock for months before a customer perhaps spotted them. You may find a specialist timber merchant stocks ready-machined skirting in perhaps oak, ash or sapele, though the range of sizes and profiles could still be limited. Assuming you have a $\frac{1}{2}$ in router it's easier and cheaper to make your own skirting, and relatively inexpensive once you've bought the appropriate cutter.

A couple of months ago my stone porch was finally plastered, and with oak door and window already installed it just needed skirting to complete what had been a major construction project. The elegant torus profile is one of the most popular mouldings, though I reckoned its regular size would look slightly

heavy in a small entrance area. I decided to replicate the skirting I'd made a few months ago for the bath panel (GW284). By using a Trend bearing-guided corner bead cutter ($\frac{1}{2}$ in shank), it's possible to create a similar pattern on a smaller scale. Either use a router table or produce the moulding using the router freehand. For the latter you'll need to support the router by cramping a wide piece of timber along the rear edge of the skirting.

I reduced the 25mm-thick sawn boards to 20mm before truing up the top edges by hand. Although it's normally far more efficient to plane edges by machine, this time I had no support rollers for what were fairly long boards. Overall skirting height finished at 150mm, which looked about right in the porch.

Mitres and fixing

Skirting at internal corners should always be scribed, which admittedly is a bit fiddly. On

simple profiles cutting both pieces at 45° may look OK initially, but you can almost guarantee that in time the skirting will shrink, revealing a gap in the corner. If scribed, the gap will be far less obvious. A scribing tool such as Trend's Easyscribe is extremely handy here.

External mitres are easy enough with a hand or powered saw, though don't assume your walls are square. You may need to trim the mitres to fit neatly, or set the saw a degree or two under or over 45° to compensate. Here a sliding bevel is essential.

You could fix skirting with a fast-grab adhesive, though I prefer to use screws. They should be concealed with oak plugs, though make sure these are cut from an offcut of the same board. I used a $\frac{1}{2}$ in plug cutter for 5mm screws, with a 13mm spade bit for counterboring. This was ground down slightly to reduce its diameter so the plugs were a nice snug fit. Finally, a couple of coats of Rustins satin polyurethane varnish completed the job.



1 Plane oak to thickness of about 20mm. If knives leave ridges, remove with block plane



2 True up upper edges of boards with bench plane, if necessary. Check these for square



3 A bearing-guided corner bead bit will create a similar profile to a torus but on a smaller scale



4 Cramp straight timber to rear of skirting to prevent router from tipping when machining profile



5 Start fitting skirting to long section of wall. Cut to length, drill and counterbore for oak plugs



6 Where walls are out of square, scribe short piece of oak to check angle for accuracy



7 Cut first board to length. If too tight between internal corners, trim sawn ends with block plane



8 Sand surface with 180-grit abrasive before fixing skirting to wall.



9 Mark wall, drill with masonry bit and insert plastic plugs. Screw skirting firmly in place



10 Cut matching oak plugs using appropriate cutter in drillstand. Check spade bit for fit



11 For internal corners, mitre next board at 45°. Then cut along profile with jigsaw



12 Cut small radius curves using coping saw fitted with new blade. Teeth should face downwards

Winter project

Takes: *one weekend*

OAK SKIRTING



13 Clean up inside curves with file or abrasive wrapped around dowel, but watch for breakout



14 Check joints butt together neatly at internal corners. Trim edges carefully as required



15 Mark external mitres with pencil by holding next piece of oak above existing skirting



16 Use combination square to mark 45° mitres, sliding bevel for other angles



17 Cut external angles with powered or hand mitre saw. Check sawn finish from blade on offcut



18 Walls are rarely dead square, so trim mitres with finely-set block plane where necessary



19 Saw and fix remaining pieces of skirting. If floors are uneven check top edges with level



20 Glue and insert oak plugs to conceal recessed screw heads. Tap these home firmly



21 When glue has dried, saw off protruding plugs. Thin card prevents blade scratching the surface



22 Carefully trim plugs flush with block plane or chisel. Fill any defects and sand surface



23 Dust down and brush on sealer coat of satin polyurethane varnish, thinned with white spirit



24 Remove masking tape from floor. Completed skirting finishes off porch, matching door and window

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Useful kit: Skil Tornado multi-stripper

Jack of all trades

 Skil power tools are perhaps less familiar on these shores than they once were, but that's not to say that the Dutch brand has been standing idle. The latest product is this rather unusual multi-stripper, which is both a preparation and finishing tool for a range of materials including timber. Based on a vertical angle grinder with interchangeable heads, the Tornado is arguably unique as a woodworking tool. It can be used for stripping paint, sanding and finally polishing, so could be described as a Jack of all trades tool for the workshop.

Designed to be held with both hands, it has an adjustable Velcro strap that can be pulled tight to improve grip. For most work this is perhaps unnecessary, though if working off a ladder it could save you dropping the tool accidentally. At the opposite side is a flip-down arm; squeeze the two red buttons together and this secondary handle can be unfolded to horizontal. Closing it up makes the tool easier to stow away when not in use. You can also grip the tool at the top, though there's no soft-grip rubber here like there is on the side handles. A 36mm-diameter dust port enables you to hook up an extractor.

Plenty of torque

With a motor rated at 550W there's a single fixed speed of 2600rpm, much slower than a random orbit sander, though there seems to be plenty of torque. Located at the top of the casing is the unusual on/off switch. You can either depress this for a short burst of power, or slide it sideways to lock it on. Overall weight is 1.7kg, while cable length is 2.65m.

A spindle lock button makes changing accessories easy, the 125mm backing pad screwing directly on to the M14 thread. This pad accepts hook & loop abrasives as well as the wool polishing bonnet provided. Disappointingly, only one sanding disc is included; a few more to get started would be handy. The coarse mesh stripping attachment is secured with a sturdy retaining flange, tightened with a two-pronged wrench in a similar way to a standard grinder. Skil suggests this disc should be cleaned when it becomes clogged by running it momentarily against a concrete block, rather like cleaning a bench grinder wheel with a dressing tool, I guess.

Don't expect the Tornado to operate as a



It is designed to be held with both hands



A Velcro strap can be tightened for extra grip



...but more like that of a big disc sander. Whatever head is fitted the disc must be tilted at a slight angle

fine finishing tool, though it is efficient. For coarse paint stripping the tool is fast and furious, though you won't achieve as smooth a finish as you'd get from a belt sander.

It's more like using a big disc sander, with undulations in the work surface inevitable. It's important to tilt the disc at a slight angle while for any task, no matter which head is fitted.



You won't get the smooth finish of a belt sander...



Conclusion

Most woodwork projects are unlikely to need a powered polisher, though this could be handy if you use spray finishes. As it's derived from an angle grinder the Tornado is not as quiet as a random orbit sander, so you may want to wear ear defenders if using for any length of time.

So, an interesting tool that's perhaps of more interest to DIYers with renovation work ahead than serious woodworkers. Like most Skil products, the Tornado comes with a zipped storage bag and two year warranty.

★★★★★

Typical price: £59.95

Skil

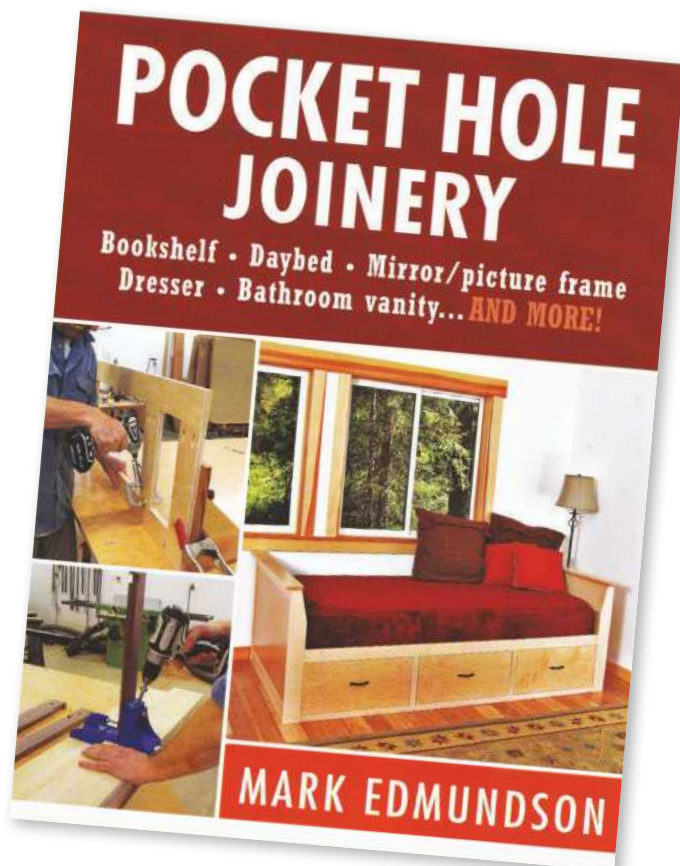
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Book reviews

Pocket hole joinery

By Mark Edmundson



Although woodworking purists may give pocket-hole jointing a wide berth, it's without doubt an efficient method of making fast and reliable butt joints. Whether assembling boards edge-to-edge or angled, building face frames or simply making workshop jigs, it's a straightforward system and does not require expensive tools. Assuming you already have a cordless drill, all you need is an appropriate jig and bit, which are relatively cheap to buy. In this book Edmundson concentrates on using Kreg jigs, though the techniques are the same no matter what brand is used. He introduces dowelling techniques where alignment from pocket-hole screws alone would be tricky, plus the benefits of adding biscuits alongside screws in certain situations.

Once the hardware choices have been discussed, eight furniture projects are explained in detail. Cutting lists (imperial only), drawings, tips and detailed instructions are given, accompanied by plentiful photos. In the American Craftsman style, these range from a simple but elegant blanket bench and mirror to daybeds, vanity units and dressers. All furniture is built from solid timber – plenty of black walnut and maple – or veneered plywood. Results are so impressive that you'd never guess that pocket screws were largely responsible for holding everything together. If you've never attempted pocket-hole joinery before, this is an excellent manual to guide you through the technique.



Published by Taunton

Price: £16.99

Web: www.thegmcgroup.com

Finishing

By Jeff Jewitt

As woodworkers we all tend to have our favourite finishes, though certain timbers and situations call for alternative solutions that we may be less inclined to discover. This comprehensive guide will help point you in the right direction, though its American terminology could be a slight problem. Once you get used to terms such as mineral spirits (white spirit) or asphaltum stain, the text makes more sense. I'd never heard of mordants before and I'm still mystified about the word cutch, though... Most American finishes are unavailable in Britain, so you need to bear this in mind with some of the hundreds of first-rate photos and accompanying captions.

This is a pretty technical book, with topics such as measuring finish thickness, pore distribution and checking finish viscosity included. If you're considering spray finishes, there's a lot of solid advice on selecting equipment as well as technique. This is far more than a manual on finishing, though. Easier chapters on preparing flat, curved and complex surfaces with hand and power tools, plus fixing defects contain a wealth of information.

Some of the quirkier topics covered include making natural dyes from walnuts or using iron and vinegar solution. Plenty of tips and instructions on using more familiar finishes, such as glazes, fillers, oils and varnishes, make these pages worth checking out.

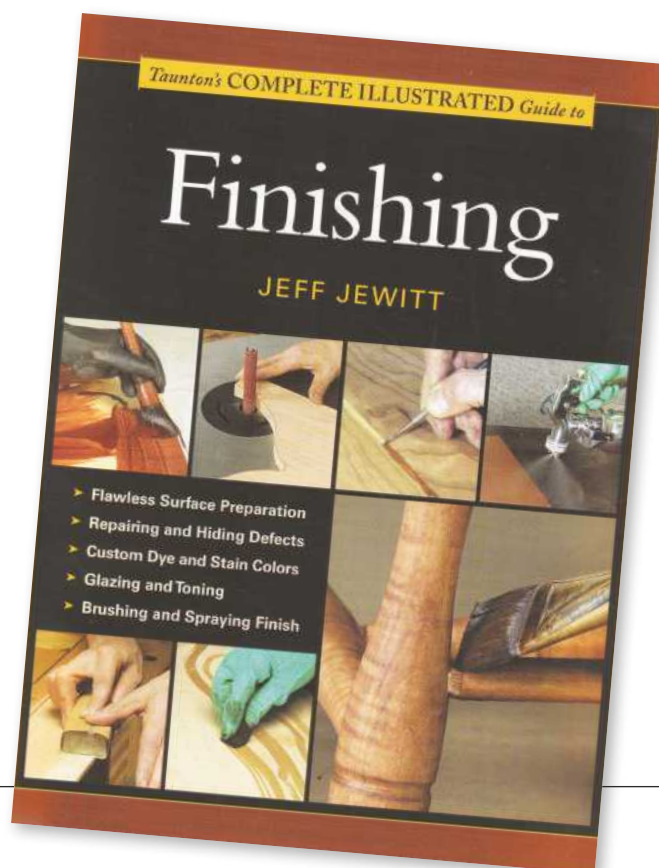
So, a fantastic resource if you want in-depth knowledge on wood finishing, though it could be slightly overwhelming if you simply wish to know how to apply wax or oil perhaps. Jewitt is a renowned expert with his own brand of finishing products in the States, so he certainly knows what he's talking about.



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Three-legged exercise



Les Thorne's child-sized stool requires only fairly simple faceplate work

This project is about as close as I come to being a 'proper' furniture maker. From my point of view it's the fact that I

haven't got to get the legs the exact same length that is the attraction of making this. Turned to seat a child, it would also make a great stand for a plant or to sit a teddy bear on.

This is a really good project for the occasional turner as it requires fairly simple faceplate work and, apart from getting the spigots right, the legs are pretty easy. I have put some detailing on the legs but you could even leave most of it square and it would still work as a stool.

Turned from ash

The timber for this project is ash, taken from a number of boards of air-dried stock that I purchased a few months ago. It has some great colour in it, the boards were 500 to 700mm wide so they came from a big tree. There was a little worm in the edges that had started to go slightly rotten but the majority of the wood seems fine. Ash is a very easy timber to work and if your tooling is not quite up to scratch yet you can sand yourself out of trouble.

The finish on a piece like this needs to be durable so something like a lacquer or a hard wax oil is perfect, or you could even stain it. I would personally keep away from the soft waxes as they do not wear very well.





▲ Pic.1 The sizes to which the wood is cut are only a rough guide and are worked out from pictures. This ash has some stunning grain and has a moisture content of around 16%



▲ Pic.2 Because Les doesn't want deep holes in the surface he is gluing the blank onto an MDF faceplate using hot glue rather than using a faceplate



▲ Pic.3 He is using a 10mm bowl gouge in a pull-cutting technique to do the initial truing of the base. A push cut could cut directly into the end grain, resulting in an uneven surface



▲ Pic.4 The chuck recess on the bottom will be hidden by turning an insert and gluing it in. He is measuring the perfect dovetail jaws on his Axminster Evolution chuck with dividers



▲ Pic.5 Set the toolrest on the centre height and scribe a circle with only the left-hand point; if this lines up with the right you are correct. Do not let the right-hand point touch the wood



▲ Pic.6 After taking the majority of the timber with the gouge use the skew as a scraper and cut the dovetail; this will be covered later so a good finish is not necessary



▲ Pic.7 To turn large flat surfaces on the lathe Les uses a 13mm round skew with the corner just taken off. The removal of the corner means that it cannot create lines on the surface



▲ Pic.8 His knuckles are running along the toolrest; this keeps the tool cutting at a consistent depth all the way along and will create a flat surface



▲ Pic.9 Les likes to drill the leg holes now, using the indexing system on the Oneway lathe, but this could be done afterwards on a pillar drill

Turning



▲ Pic.10 His drill wizard is set up with a 22mm saw tooth and the lathe locked in the 1, 17 and 33 positions as it has 48-point indexing; on 24 point it would be 1, 9 and 17



▲ Pic.11 The depth stop on his jig is set to drill 25mm deep; a piece of tape on the drill would do the same job. Doing this accurately will keep the legs the same length



▲ Pic.12 Even though the hole is drilled at an angle it's really clean. The hole is drilled at an angle so the legs splay out, giving the stool stability on its three legs



▲ Pic.13 To maintain the flatness of the bottom and avoid sanding out the softer grain to leave ripples, sand the base with sandpaper wrapped around a block of wood



▲ Pic.14 Once it's mounted on the chuck round over the edge with the gouge. When doing a pull cut don't hang the tool too far over the rest as you could lose tool control



▲ Pic.15 For definition hollow the top slightly using the same gouge with the long grind in a push cut; slow the feed of the tool as you get towards the slower wood in the centre



▲ Pic.16 You can see the light under the straight edge. You can also see how pretty the figure is on this ash, the colours almost making it look like a piece of brown oak



▲ Pic.17 To mark the centres on the legs Les uses a marking gauge. Set the point up on or near the centre and mark it all the way round



▲ Pic.18 Marking the centre with a bradawl helps to locate it onto the drive and the live centre. The end grain of the timber is just as stunning as the side grain



▲ Pic.19 This is the small steb centre available from Robert Sorby. They are not cheap but the spring-loaded point and the multi-tooth design make them the most effective of drives

► Pic.20 Not Les's best drawing: a simple design is all that's needed on the legs. You could make them more ornate or literally just round if want



► Pic.21 After making the wood round with the spindle roughing gouge remove some of the waste from the tailstock end with the parting tool



▲ Pic.22 The most important measurement is the spigot that fits into the stool top. Vernier callipers are more accurate than the bow-leg type



▲ Pic.23 Using the spindle gouge turn half a cove down to the diameter of the spigot, pick up the cut with the flute towards 9 o'clock and then open up to 11 o'clock as you progress



▲ Pic.24 You can see how the cove flows perfectly into the spigot; the larger-diameter curve will hide the joint where the spigot goes into the base



▲ Pic.25 The area of the three beads is marked up and a series of V cuts is made with the skew. They are now ready to turn into beads or you may think they look fine just as they are



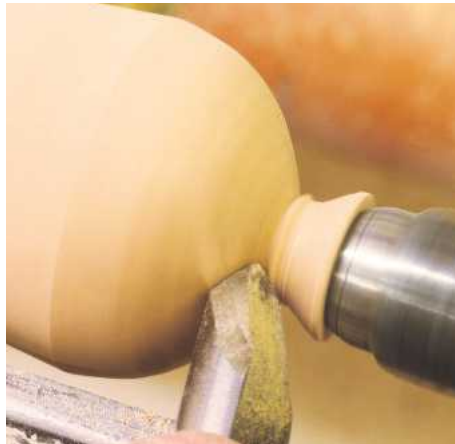
▲ Pic.26 Les is using the skew chisel to form the beads. The long point slices through the wood with a small amount of bevel in contact, keeping the chisel going forward all the time



▲ Pic.27 To make the legs look lighter turn away some of the material to left and right of the beaded detail in the middle, using the small roughing gouge for more control



▲ Pic.28 Shaping the bottom of the leg is done with the Signature spindle gouge. Roll the tool over to the right keeping the bevel in contact with the wood



▲ Pic.29 At the end of the cut the tool is right over with the flute at 3 o'clock. If the bevel came away from the wood and the point came into contact with it there would be a 'dig-in'



▲ Pic.30 To see the shape more clearly and not sand away the detailing Les likes to sand the wood behind like this. Be careful not to sand the spigot



▲ Pic.31 He uses copying fingers to measure the next two legs, removing the wood until the fingers fall through; this is much better than using callipers



▲ Pic.32 Once the waste on the ends of the legs is cut off they must be sanded. His Sand-o-Flex rotary sander is the best tool for this as it doesn't over sand the end grain



▲ Pic.33 All that's left to do is turn the cap to go into the recess. A piece of ash from the same board is cut to size and mounted between centres



▲ Pic.34 Once a chucking point is turned on the piece it can be held while the top is rounded over. Les decided that a large button shape would look the best



▲ Pic.35 The button and legs are glued in with a good-quality PVA. Traditionally the legs would go through the seat and be wedged, but modern glue makes this unnecessary



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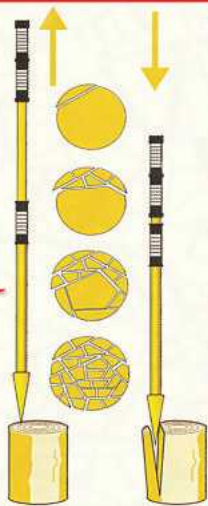
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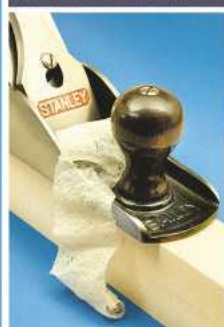
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Finishing Touch

Shelves in 'cellar' condition



Pic.1 The wall shelf as found

This dirty, dusty, broken object is a very nice Victorian set of little hanging shelves 20in long by 12in high. It is in what one would call 'cellar' condition because that is where it has been for many years. It is the kind of thing that you occasionally find in a saleroom. The carcase is oak and the veneer, most of which it has lost, is burr oak. You may think: "Well, it is so dirty, how does he know its age?" The answer lies in the construction. Firstly, hardly anyone used burr oak in the 20th century and the veneers are thick, indicating that they were hand cut. Secondly, as can be seen, the shelf-to-side joint is dovetailed on the underside. This is a nice touch that wouldn't have been used in a little thing like this in the 20th century. It means that the sides do not have to be pierced with pins or screws to hold the sides and the shelves together. Remember, the veneer that was glued down has been lost in places; had the sides been glued to the shelves they would have come apart



Pic.2 The pierced ends of the little shelf

because the glue would have lost its adhesion in the damp surroundings. The person who made this was aware of the potential for shrinkage in the width of a board and cut dovetail housings to prevent any problems.

To restore this is fairly simple, but first it needs a gentle clean over a white sheet. Don't vacuum it. Any pieces of veneer that come off with a dusting brush will fall onto the sheet where they can be easily seen and collected. Once the majority of the dirt is removed then it can be lightly wiped with a cloth dampened with white spirit.

For veneer repairs cut new thick veneer on a bandsaw and glue down with animal glue. Give a few coats of shellac to the new veneers and,

when dry, wax the whole thing with Mylands wax. Then buff up carefully a few hours later. The hanging brackets are still there and these could be removed and cleaned with fine Garryflex before re-hanging it on the wall with suitably delicate screws.



Pic.3 The dovetail housings



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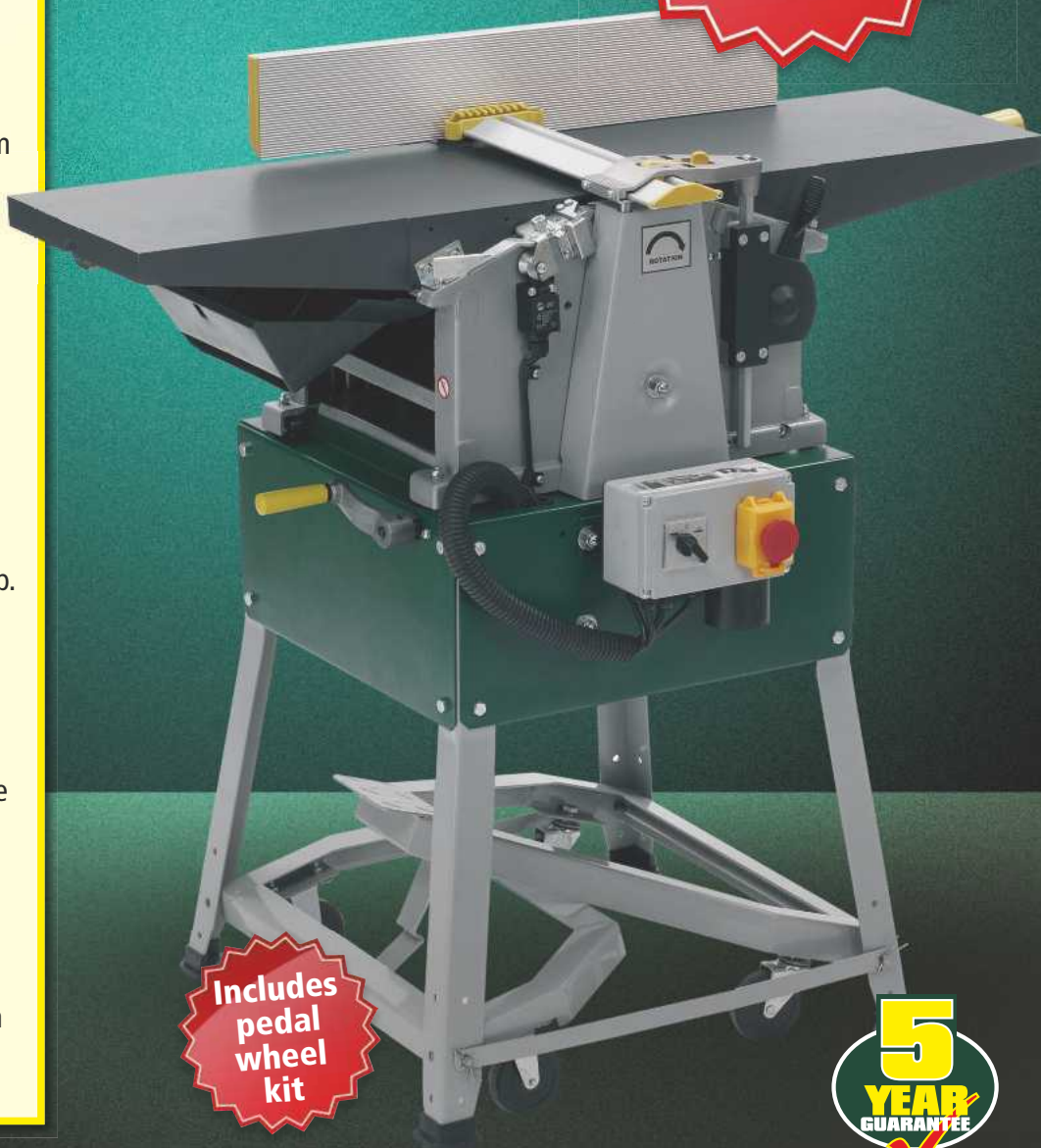
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"In use the Record performs well. It feels solid and secure and the finish is good. The wheel kit is a real boon, making it easy to push the machine around the workshop. Overall this is a good all rounder and with that 5 year guarantee, it certainly looks enticing."

The Woodworker

"At an overall length of one metre the tables are ideal and they are remarkably accurate as well. My straight edge showed no significant discrepancy over the whole length - something other major manufacturers should learn from... a very capable machine."

Practical Woodworking



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