BAILEY'S ROUTER CLASS

Trophy cabinet

Anthony Bailey builds this great wall cabinet... perfect for all your sports trophies

THE PROJECT

This is a perfect project for any keen sportsman – golf, tennis, football, angling: you name it. A collection of trophies deserves a proper home of their own. This cabinet uses a light coloured birch ply inside and polycarbonate glazing around three faces, to show the trophies off to best advantage, and a suitable darker hardwood for the outer parts. It entails some careful setting out and execution but the result is worth it.

The router is still the most versatile power tool there is. Along with a vast range of cutters, jigs and gadgets – many of which you can also make for yourself – it can help produce high quality woodwork. This series is intended to show you what the router can do, while assuming the reader has a general level of woodworking knowledge. We hope to show you the aspects of each project that specifically involve the router and how this great bit of kit can expand your woodworking skills.

Each month, we will highlight the jigs, cutters and gadgets you will need to help you get more from this incredible machine. Feel free to send us pictures of your routing endeavours, or post them on the WPP forum at: **www.woodworkersinstitute.com**

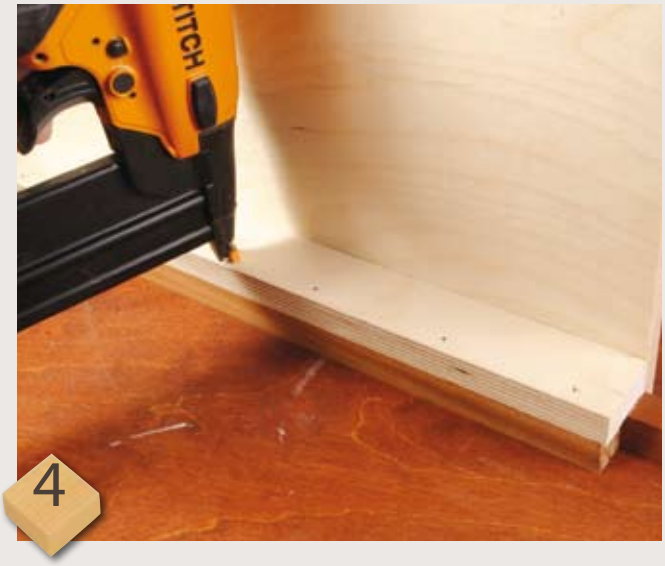
THE JIG

1

Clamp a sheet of ply or MDF in across the cutter, opening on the router table to create the through fence. Machine all the components to the same size using a thicknesser for accuracy. Lay one piece against the through fence and a second shorter piece next to it

2

Now cut a piece of ply to sit on top of both sections



4

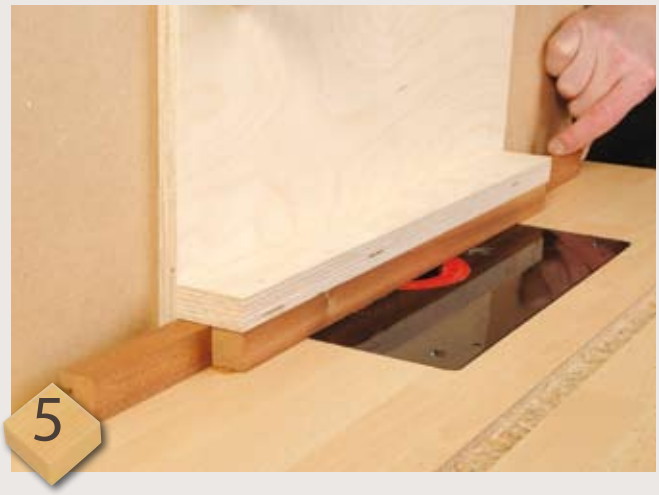
Now with the component and the length of component offcut pressed firmly in place, pin that offcut to the strip of ply. You should now have an inverted 'U' shaped tunnel which will enclose the components you are about to machine

Machining small sections

This is always problematic. It doesn't matter how small the cut or cutter, it can be dangerous and vibration can damage the work and even break a tiny cutter. Not having a through fence and just using finger pressure is quite inadequate. The solution is to create a tunnel which encloses and supports the work.

3

Remove the ply through fence and pin the narrow piece of ply to it using another piece for support while you do so. Use a try square and the intended component and the offcut to get the positioning correct. Note that the tunnel must fit tightly around the pieces you are going to machine

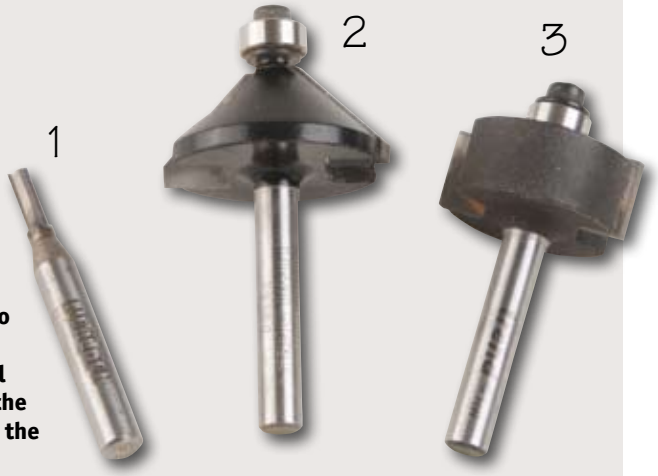


5

You need to experiment to get the tunnel positioned correctly over the cutter, so do some test cuts until it is right. You will find vibration drops considerably, improving the cut finish and preventing the workpiece jumping and causing damage. It will therefore lessen the shock caused to small straight cutters that might otherwise break, and avoids any risk to your fingers

PHOTOGRAPHS BY GMC/ANTHONY BAILEY

THE CUTTERS



Although this is a slightly tricky project, it doesn't need a lot of router cutters. I chose a two-flute 3.2mm diameter straight cutter (1) for all the glazing slots. The slots were all done in one pass so care is needed to avoid breakage. You need to do a repeat pass to loosen the tightly packed chippings that will jam the slot.

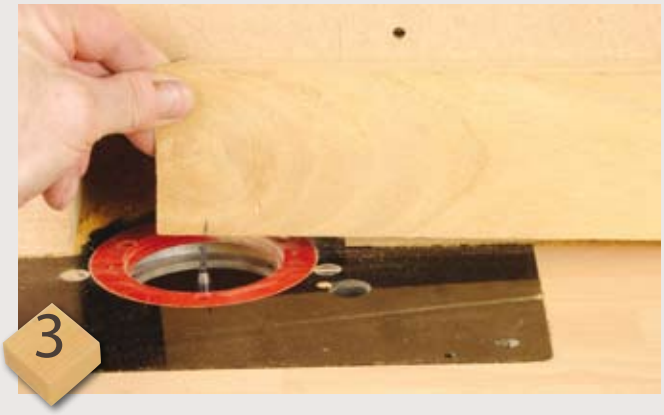
The 45° bearing guided bevel cutter (2) created the undercut shape on the trophy cabinet top. It needs to have a long enough cutting edge to achieve this.

Finally, a bearing guided rebate cutter (3) was used for the back panel rebates. It wasn't used to full depth as this would have been more than the 6.4mm ply thickness. All the cutters were on a ¼in shank, so it is within the scope of a small router.

MAKING IT...

Decide what size the cabinet needs to be – this is governed by internal height, width and depth sufficient to contain the trophies. Cut the cabinet top to size including the extra amount for the projecting edges. Set up a large bevel cutter in the router table and do the bevel edge in several passes to depth. In this case, you can alter both cut depth and width as you work towards the final cut

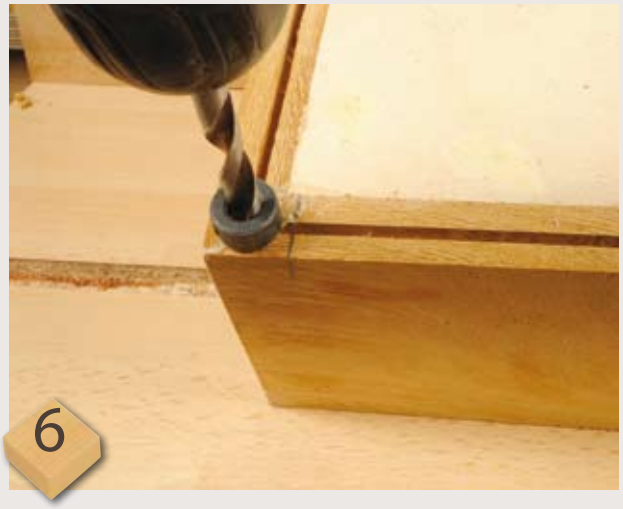
Having machined the bevel, mark out the positions for the four corner glazing bars and the slots for the polycarbonate glazing. This setting out is crucial and needs to be done using an offcut of the glazing bar to get the marking out correct. Put marks on the top side to show where to start and stop the slots when machining on the router table



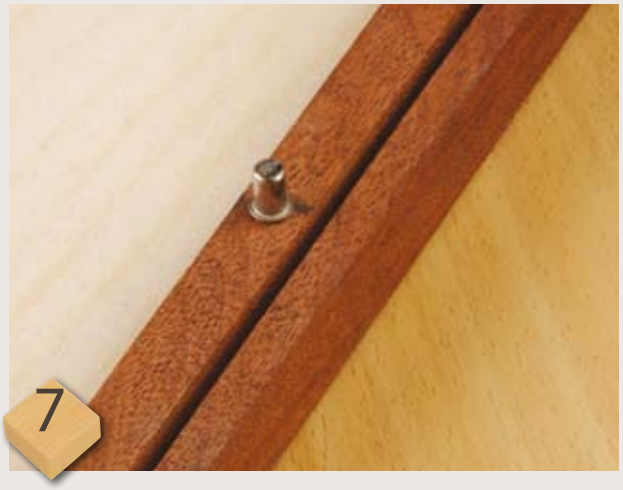
Machine up the front and side facings for the base including the glued on brackets for the ends. Use a mitre saw to create butt joints at the front corners, using the cabinet top as a position guide when marking out. Use 'drop on machining' for the glazing slots in both the cabinet top and the base facings. These slots must not meet in the corners as there will be location dowel holes there

Cut two pieces of 9mm or 12mm birch ply to fit inside the base pieces and four offcuts of softwood all glued together to create a box around which the facings will be glued. The top piece of ply is narrower to create a rebate for the cabinet back panel. The softwood and plies must be flush all round apart from this – check with a square after clamping up

The top has a rebate machined at the back to accept the birch ply back panel, as do the two rear glazing bars



All the location dowel holes are drilled in the top and base. Use a dowel pin to mark the ends of the glazing bars and drill those holes. The back panel is now glued and pinned into the base rebate and checked for square. The rear glazing bars can also be dowelled in place and glued to the back panel



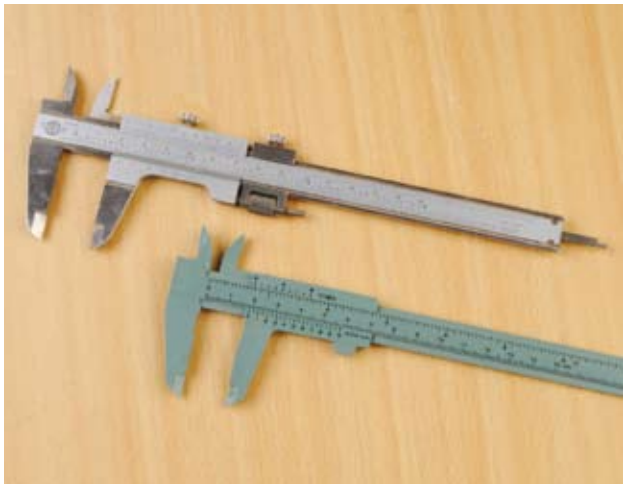
The polycarbonate sheet is cut to fit the slots and a ply shelf made that rests on small shelf supports fitted in the glazing bars. The whole cabinet needs to be sanded and a finish applied before the glazing is fitted ■

Router torque

Email your router questions to: anthonyb@thegmcgroup.com

Q I find that I need to check cutter diameters quickly and accurately. A ruler doesn't seem the answer, especially if I want to enlarge slot widths and check the size of the slots.

A There really is only one proper answer and that is to buy a good quality set of Vernier callipers. These are precision engineered and non-rusting, and are usually scaled in metric and imperial. Beware of cheap plastic ones– they are not very accurate and the jaws can be damaged by whatever you are trying to measure, such as a sharp cutter.



Beware of cheap plastic callipers like the bottom pair here

In the case of the 3.2mm dia straight cutter used in this project, we can tell the diameter exactly by closing the vernier jaws on the cutting edges, making sure the cutting edges are the widest points we measure. The middle metric scale when set against the '0' mark on the upper scale shows three whole divisions. We then look along the lower scale and see that one of the divisions lines up with the '2' on the scale above it, this gives us a result of 3.2mm, as the scale indicates 0.1mm divisions – or $^{1}/_{10}$ths of a millimetre in other words.
A standard Vernier also has internal measuring jaws and even a depth rod for measuring recesses. A very worthwhile investment to make for your toolkit.

Measuring the cutter diameter