

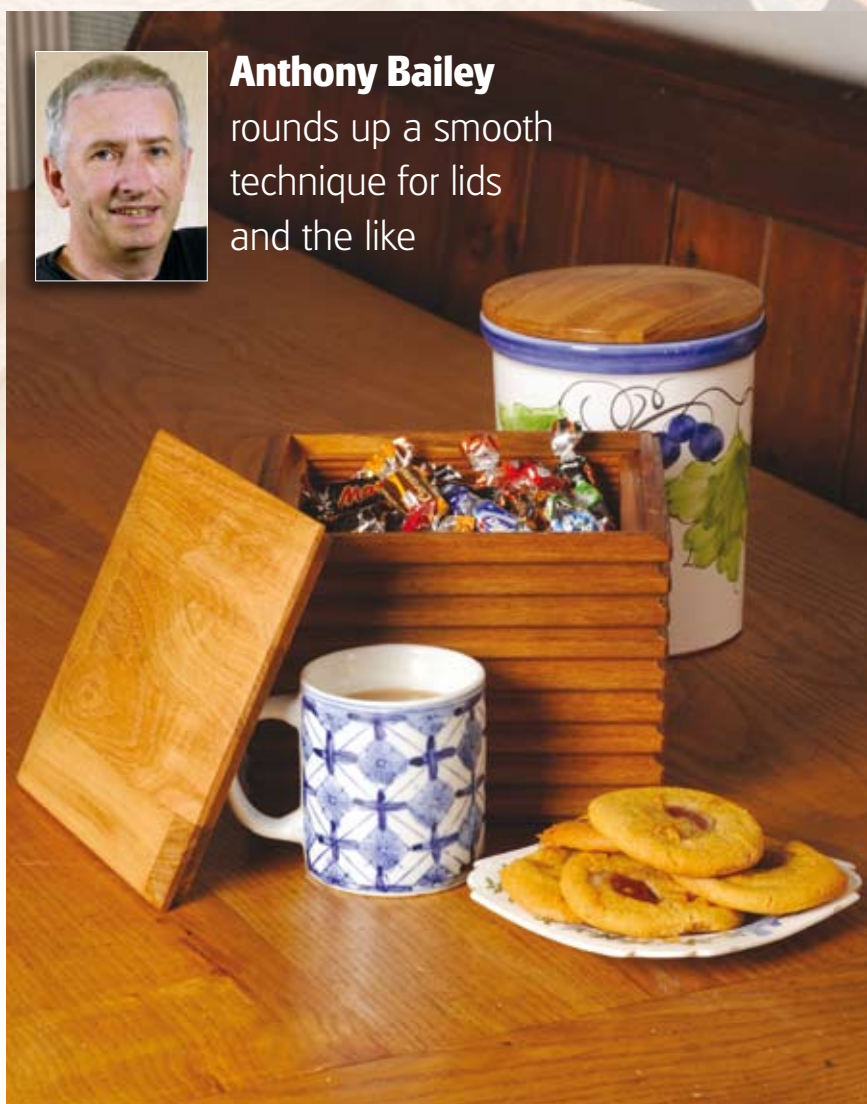
## BAILEY'S ROUTER CLASS

# Curved shapes



### Anthony Bailey

rounds up a smooth technique for lids and the like



## THE PROJECT



This month, in search of a new kind of jig to play with, I've gone slightly round the bend... but don't worry I reckon I've now put a lid on it!

Most of the time we woodies make things that are straight and square, at least in one dimension, but there's often nothing more pleasing than a gentle curve - easy on the eye and pleasant to the touch.

With that in mind, I wondered if I could persuade my trusty T5 to follow a shaped jig and thus create lovely curves, possibly as a way to make box lids - read on...

**T**he 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](http://www.woodworkersinstitute.com)



**A handy storage box and a lid for a cookie jar are just two possibilities using this machining method**



# THE JIG



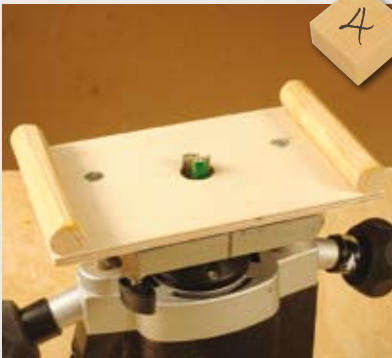
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The first step is to make a tray that will limit the length of the curved section, both when gluing up and when in use. The right-hand stop can be moved in and out when the curved sections are placed on it dry, until the correct shape is formed



3

To prevent the jig moving around, a piece of non-slip router mat is spray glued to the underside



4

A special su base is fitted to the router using the table fixing holes in the base. Hot melt glue is used to stick the two sections of dowel in place – these allow the router to contact the jig properly as it moves over the 'bridge'



6

Here, the jig is almost ready for the first cut – making the working slot in the jig itself. First, two strips are added either side of the bridge to prevent the router moving sideways



2

I used flexible MDF which is pre-kerfed to allow it to bend easily. However, thin birch ply or even hardboard should do the same thing. Two layers are used with PU glue between and plenty of clamps. The dried glue is trimmed off only once the glue has gone off



5

Any tendency for the jig to sit crookedly or wobble can be corrected by hand planing the high areas down, thus creating slight flats



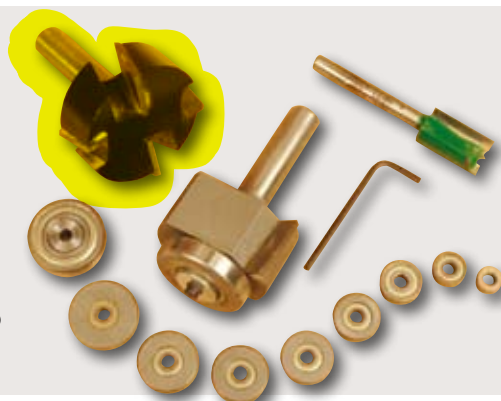
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The side strips have been added using the router base to set the width. Once the glue has dried, check the router runs smoothly, adding some wax to the MDF if necessary. Then the working slot can be made, ready for action, starting with a plunge cut

# THE CUTTERS



Just three cutters were used, once again demonstrating that most jig work requires only a limited selection of cutters. The curve work was done with a Trend Craftsman long shank 16mm dia. straight cutter (right). The square box rebates were machined with my favourite **large Wealden tenoning cutter** (left), while the round lid rebate was formed using the Whiteside multi bearing rebate set (centre) – this comes with five bearings but as you can see, in my cutter box I keep plenty of other sizes that are a proper engineering fit and therefore safe to use and expand the range of rebate sizes accordingly.



# MAKING IT...



Before starting to form the curve, you need to decide on the stock width and then fit some guides for the workpiece to slide smoothly between. You also need support underneath so it can't tip up as you slide it gradually underneath the bridge



Fit the bridge in place and use a single screw at each end so it can't slip sideways



Fit the cutter and move the static router so the tip of the cutter just rests against the square workpiece. Only set for a shallow pass as the shock of the cutter biting into the corner can start what is called a 'rising cutter' where it gradually begins to pull out of the collet with potentially disastrous results



Extraction is a real issue because a lot of fine chippings are ejected on each pass, so I used a drum extractor and large bore hose, held in position by hand after the first few corner breaking passes. Note that you should move the router in the direction of cutter rotation i.e. so it bites into the wood, then slide it back and move the workpiece along slightly and make the next pass, and so on. Note how extra guidance strips have been added as the workpiece is packed up to raise it nearer the jig as the shape forms



In order to end up with a reasonably smooth finish, I moved the workpiece along, running the router back and forth at the last depth setting but pressing down on it so I got a consistent standard of finish overall. At no time during machining should your fingers be underneath the jig





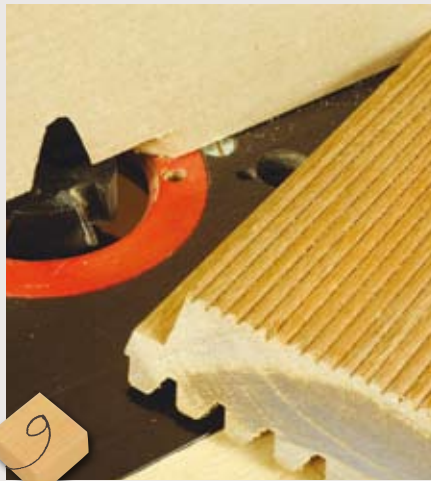
The left-hand example would suit a treasure type chest while the right-hand version, machined in both directions, would look good on a box



You can make a round lid by taking a square version and marking a circle on the underside, bandsawing it out and smoothing the edge carefully until fully round. Then mount it on a screw projecting from the packing board in the jig so it is just free to turn



Now make repeated passes, turning slightly each time to machine a new area, until you have cut the full circle. Then pack up the workpiece to make deeper cuts until you have the full curve. I wore a latex glove to make holding the workpiece easier for turning and holding steady. Remember, your fingers must not be under the jig with the router running



A tenoning or rebate cutter is used to form the lid and base rebates for the square box once the corner joints are cut on the mitre saw. Butt glue the box together and check the joints are held tightly and square. I used gaffer tape as a form of band clamp at top and bottom



Machining the cookie jar lid rebate was done using a bearing guided rebate cutter with a suitable size bearing fitted. A lead-in pin ensures a safe run off into the cutter. Ensure the lid is turned into the direction of cut, or it may just become a Frisbee and fly off the table. Note the Perspex cutter safety shield over the top

## Router torque

**Q** I enjoy working with wood but sometimes I feel supremely ignorant about timber, where it comes from and its different properties – I don't think I can actually name many trees by sight which is a real shame. I would really like to know more about trees and timbers.

**A** "You can't see the wood for the techniques" – that is my paraphrasing of a well known adage about trees. What bothers me in this world of power tools and high-tech woodworking solutions, is that many of us don't appreciate the raw

material we work with. Recently my wife and I became National Trust members and since then we have visited a number of properties in our neck of the woods. Not only is the antique furniture with its patina of age and handworking fascinating to examine – the first thing I tend to look at when I enter a room – but the accompanying gardens and woodlands are a delight to dally amongst in the dappled sunlight – yes it does make me come over all poetic. Thankfully, many trees have labels pinned to them and so you can develop your tree recognition skills. There are handy pocket books on the subject too, which you can carry with you. You are right – we need to respect, understand and enjoy the source of our woodworking enterprise. ■

Email your router questions to:  
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Would you recognise an oak tree?