

# MARKING OUT TOOLS

Expert hand woodworking tutor **Peter Sefton** moves on to the next stage in exploring the essentials of hand technique by discussing marking out methods

In issue 2, I wrote about measuring tools, which leads me now on to a discussion about marking tools and how most of them can be improved with a little extra work from you, or tested using some tips and methods to ensure they are performing.

## Pencils

When I mark out, I either use an H2 pencil or a marking knife, and I only use a softer HB for indicating face side/face edge marks, etc. My favourite pencils are the Staedtler Traditional – the black-and-red ones – and I sharpen them to a two-sided chisel point with a chisel, then improve the edge with a 240 grit abrasive paper on the two opposing edges. As a general rule, I will use a pencil line if marking out sawing work and I will use a knife if marking out chisel work. The

reasoning behind this is that the saw will not follow a knife line any more than it will a pencil line, but a chisel will sit comfortably in a knife line.

## Marking knives

When it comes to marking knives, you generally have three grinding shapes to choose from: the double-ground Swann Morton, the left- and right-handed Ashley Iles style or the spear point found on Veritas. My preference is the Swann Morton as the blade is so quick to either sharpen or replace and it's very thin and sharp. The single sided types may be required in both a left- and right-handed version for scribing around dovetails. The spear point can be used to mark either the left- or right-hand of a dovetail, but they can sometimes be a pain to sharpen! ➤



**Top:** I sharpen Staedtler Traditional pencils to a two-sided chisel point with a chisel



**Bottom:** A range of marking knives

## Peter Sefton

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One of my beautiful rosewood (*Dalbergia spp.*) and brass try squares – they look great but aren't very accurate



Checking for accuracy using a piece of MDF. Simply lay the square on it with the stock to the left-hand side and scribe a line

### Squares

The humble square; within my collection of woodworking tools I have some beautiful rosewood (*Dalbergia spp.*) and brass try squares but these have sadly been put into my display cabinet, rather than my everyday working tool kit. This is because they have lost their accuracy – if they ever had it – and have long since been replaced with engineer's squares that have proved to be far more reliable over the years. Although the old rosewood squares are very attractive, if a square's not square or true with the blade being at 90° to the stock, then it is useless.

The woodworking way to check a square for accuracy can be done using a piece of MDF or solid timber with a perfectly straight edge. Lay the square on it with the stock to the left-hand side and scribe a line with a very sharp H2 pencil or a sharp marking knife. Flip the square over with the stock to the right-hand side and check it against the line. If the lines are parallel, then the square is true; if the lines are



Above: Very accurate squares  
Right: Removing roughness

converging, you need a new square.

If you cannot mark or check your timber accurately you will fall at the first hurdle before even starting any real making. The quality of engineering squares varies; I recommend accuracy to at least BS939 Grade B or above to my students. I have seen various brands come through the School and have found Fisher to be the best quality at less than £20 but you can spend a couple of hundred pounds for a very expensive one. A slightly different style of square is the Inkra or Woodpecker versions, which have a lip on the inside of the stock; this allows the square to sit on the edge of the timber without twisting and falling off.

All good quality squares have a machined slot in the internal corner between the stock and blade. This is to ensure that the square can sit comfortably on the material being



tested rather than it 'rocking' on any burr or dust that might otherwise distort your measurement. Squares should always be well looked after – they are fairly robust but can get knocked about and this can lead to small dinks on the stock that might need to be carefully removed with a diamond lap file, which will remove the high spot.

In my experience, 45° squares are also prone to inaccuracy if they are the rosewood type. Personally, I prefer the solid plate Japanese or American style over our old English variety as the rosewood type, although very attractive, rarely stays accurate over the years. 45° squares are tricky to check and I tend to use my Angle Cube for this.



Using my Angle Cube to check 45° squares, which makes it much easier

### Sliding bevels

These are very traditional tools used for marking the slopes of dovetails and angles found around the workshop, but I always feel they are possibly more essential to site carpenters, particularly when roofing. If buying a sliding bevel, I suggest getting one with either a knurled thumb screw or end clamp rather than a wing nut fastener as these can interfere with the stock referencing on the timber. Removing the wing nut and turning the bolt around by 1/4th of a turn and replacing it in the stock can usually overcome this. Many workshops have now moved over to digital protractors for workshop use, although the use of my trusty Angle Cube can bring the old sliding bevel into the 21st century!

Right: Sliding bevels come in a variety of different types, as shown opposite



### Marking gauges

I was trained using 'Marples' style pin gauges for either marking or mortise work for going with the grain, and cutting gauges when making any lines across the grain. For me these work very well but I make some small adaptations to them before using them to improve their performance.

Marking gauges can either be pulled towards the user or pushed away from the body. I find more control



For setting, a ruler is used to set the point of the pin at a desired distance from the gauge's stock or fence

when pushing away from my body.

The setting procedure involves using a ruler to set the point of the pin at a desired distance from the gauge's stock or fence. To make any fine adjustment tap the end of the gauge stem on the bench to increase or decrease the setting, depending on which end you tap. This is fine to be done on a marking gauge but should be avoided on a screw thread mortise gauge, as it will strip the moving pin's fine thread.

The pins on these gauges come as a compass point shape but can be improved by being filed into a more chisel-like edge. This should be filed at an approximate 5° angle to the gauge's stock and keeps the gauge pulling into the timber rather than going with the grain. The newly shaped pin acts like a rudder steering the gauge for improved control. This can only be done once you establish whether you are a pusher or puller of the gauge, as filing needs to be done to suit your individual working practice.



An 'improved' chisel-shaped tip for precise marking

When using the gauge, my tip is to have your thumb and index finger on the stock and your other three fingers on the stem. Use more sideways pressure than downward pressure, which will help you to resist the temptation of the pin to follow the grain – it is best to use several light and short passes rather than one long heavy one.

### Mortise gauges

Mortise gauges traditionally come with the pins set at 6mm, which is too wide for smaller tenon work. Personally, I strip the gauge down and file the ends of the brass slider bars and shorten the stem until the pins come closer together. Be careful when removing the stock from any wooden gauge, as there should be a small metal or plastic washer protecting the stem from the

end of the threaded tightening thumb screw. Beware as this is very easily lost if the woodworker doesn't know it should be in there! But while these gauges will work well with the grain, they will tear the fibres if used across the grain, so for best results, a cutting gauge should be used. ▶

Right: Modifying a mortise gauge by filing the ends and shortening the stem







Cutting gauge with a point



A screw in the end of the stem makes for accurate repositioning

### Cutting gauges

A cutting gauge has a knife-style cutter that severs the fibres and cuts a clean shoulder line, which is particularly useful when marking out dovetail shoulder lines. The quality of most cutters is very poor so I have taken to replacing cutters with either a good quality jigsaw blade or an old hacksaw

blade. These will hold a very good edge but need care when grinding and sharpening, as they are small. My personal preference is a fingernail shape rather than a point.

The blades in cutting gauges have one flat and one bevel side; the bevel side should always be set to be on the waste side of the line. Swapping these

blades around can be tricky as they are usually held in place with a brass wedge, which tends to fall out very easily during reassembly. My preferred method is a screw in the end of the stem, which makes accurate blade repositioning much quicker and also helps to lessen the risk of cutting your fingers while doing so.



A selection of different wheel gauges

### Wheel gauges

Pin gauges can take a little time to master and newcomers to woodworking tend to prefer the newer style wheel marking gauges. These have the advantage that they don't tend to follow the grain and can also work across the grain as cutting gauges. The hardened steel wheel sits on the end of the stem, which means it can be set to the thickness of a piece of timber when the timber is laid flat on the workbench.

The better quality gauges also come with millimetre graduations along the stem, which means they can be set without the use of a rule. The disadvantage of this style is that, being circular, they can be difficult to use when marking out hinges or other occasions when you need to work up

to an exact finish point – the old style marking gauges are better for this type of work.

For those with larger hands, you may find some of these wheel gauges a little small to hold. The WoodRiver has a thicker stem and larger stock than some and doesn't roll off the bench as some designs do! The Veritas Dual Marking Gauge is a very well thought out tool. It can be used as a single marking gauge or a mortise gauge and has the advantage that the wheels have their bevelled faces opposing each other. This means that they can be set up so that the bevel is always on the waste side of the timber.

They also have a Veritas shaft clamp as an optional extra, which I would say is essential as it holds the dual bars in the correct position after setting prior



The WoodRiver gauge has a thicker stem and doesn't roll off the bench



Digital marking and mortise gauges are very easy to read

to moving the stock to the desired location. If this shaft clamp is not used, the bars move when you are setting it up, which can be very frustrating!

For those of you whose eyes aren't as good as they used to be, or who crave even more accuracy, iGaging have digital marking and mortise gauges that are very easy to read and are based on the wheel type of gauge. I am sure these types of gauges will become ever more popular as time goes by. ■