

Basic technique for flattening backs

Hold the blade at right angles to the stone and, with one set of fingers, apply a reasonable amount of downward pressure to the top of the blade near the cutting edge. Push the blade back and forth on the stone, using the other set of fingers to lightly support and guide the free end of the blade that is hanging over the edge of the stone.

What's the angle?

The angles that I work to are 30° for plane blades and 20-25° for chisels. If chisels are being used for fine work I aim for 20°. If they are likely to be in for some abuse, such as chopping out housings, I would head for closer to 25°.

The steel in laminated Japanese chisels is excellent, but more brittle, and needs an angle of around 30°.



Sharp practices

Sharpening may be a chore but **John Lloyd's** practical approach gives him a cutting edge in the workshop

Above right: **You can't do much without sharp tools**
Above: **First things first, a flat back**

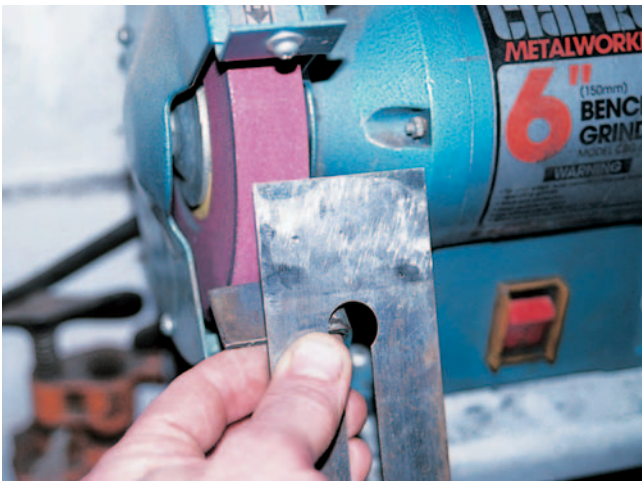
It's not fun and it's not glamorous but it's something that has to be done if we are to have any hope of progressing beyond bread boards and bird tables! I made my initial foray into woodworking at school and had a second faltering attempt at evening classes. At no time did any of my teachers remember to make mention of the word 'sharpening'. Consequently, my progress was so slow and painful that I nearly went off the whole idea. Yet, in spite of an almost complete ignorance on the subject of sharpening, my desire to work with wood endured and, fortunately, I eventually stumbled across someone who knew the secrets of how to make the edge of a piece of steel take on the properties of a razor.



Results can be reasonably fast with a diamond stone



Grinding on a wet stone is the best way to ensure that you don't lose the temper of your steel



Modern, dry stones are fine if there is much metal to take off, but still be careful



The hollow ground result

Armed with this knowledge, my woodworking skills took a dramatic leap forward, and woodworking was transformed from the frustration of wood butchery to the joy of engineering in wood. It was partly this that was to give me the confidence ultimately to pursue a career as a professional woodworker.

The concept of sharpening is, in essence, a very simple one, but the actual process can seem rather complex. There are so many different sharpening systems out there that it is very easy to become completely confused. The world of woodworking is now inhabited by all kinds of stones, from natural, man-made and water stones, to oil, ceramic and diamond ones. There are magical honing guides, mystical honing fluids and sharpening machines that are guaranteed to turn their master into a fine craftsman at the flick of a switch.

So, in spite of living in a world of glinting tungsten-tipped blades and 2-hp motors, in my book, hand tools and hand skills are the vital ingredients to creating fine furniture. That being the case, we might as well face up to the sharpening of those hand tools.

My aim in this article is to remove any mystery and confusion and provide a simple, foolproof system for sharpening hand tools. It's the method I use every day and although it requires a degree of skill, and therefore a bit of practice, it is a system I have developed by watching other professional woodworkers in various different commercial workshops. Most importantly, it can be fast and it works!

Flattening the back

In the days when I was a complete novice, if I made an attempt at sharpening a chisel or plane blade I just worked on the bevel, but I was missing the obvious point. A cutting edge is made when two surfaces converge, and this being the case both of these surfaces need to be worked on to create a fine edge – self evident really! So, before advanced things like grinding angles for bevels are considered, the back of the blade has to be dealt with, and this part of the sharpening process is generally, rather unimaginatively, referred to as 'flattening the back'.

The critical bit on the back of any blade, that must be 'flat', is the area just behind the cutting edge. This is why those cunning Japanese chisel makers create a concave area just back from the edge – less surface area of steel equals less mindless rubbing of carbon steel against sharpening stone!

In spite of the process of back-flattening having the potential to take the phrase 'mind numbingly boring' to a new level, once this is done, the back requires virtually no work during any subsequent sharpenings.

Which brings me to the subject of 'flatness'. Why is it so important for a sharpening stone to be 'flat'? It might seem obvious, but flattening something has to be done with something that is itself flat! And this requirement will generally rule out any form of mechanised grinding wheel, so a bench stone is required.

In the past most people seemed to have a Medium India



Creating a burr



The start of an edge



On to a 6000-grit water stone for the final hone



The edge starting to come

housed in a nasty oily box in their tool kit – some people were even daring enough to use it! There's not really anything wrong with a Medium India, or any other oil stone for that matter, but oil can get a bit messy and after a while, oil stones will usually have to be flattened, which can be a rather tiresome process.

In my experience the only bench stone that will stay flat during prolonged periods of flattening is a diamond stone. Ceramic stones should be blessed with the same properties but I have yet to come across one that is flat to begin with! I

spirit; it's cheaper than honing fluid and seems to do the job equally well!

Having flattened the back, the next consideration is grinding angles for the bevel. The general principle here is that the shallower the angle between the two faces that form the edge, the finer and 'sharper' the edge will be. But there is a compromise: if the angle is too shallow, the edge will become too fragile to be of any use because it will just break off. The angle must be as shallow as possible to give the sharpest edge, while at the same time give enough support

“Woodworking was transformed from the frustration of wood butchery to the joy of engineering in wood”

have tested a huge range of bench stones recently and my current favourite is the Trend double-sided diamond stone. The coarse side is good at removing lots of metal quickly when doing initial back flattening, the finer side is perfect for general day-to-day sharpening, and it's not too expensive! Only time, however, will tell how long it will last in regular use.

Compromise

Lubrication is required for diamond stones. The suggested lubricant always used to be water, but the steel in which the diamonds are embedded can rust, so a special honing fluid has been produced to stop the rust and apparently give a generally more fulfilling sharpening experience. I use white

to the edge so that it doesn't disintegrate.

A cheap bench grinder fitted with a decent white or red wheel will grind blades quickly and there are all sorts of jigs available to control the angle, but remember never to grind right up to the edge of the blade with a high-speed grinder. The steel is so thin right at the edge that it will easily overheat, which will affect the temper of the steel. I always grind in short bursts, cooling the blade between bursts by either dunking in water or holding it in the stream of air that is generated by the grinder.

A slow-turning, water-cooled grinder is a much more controlled system and is guaranteed not to damage your tools, but it is also guaranteed to make more of an impact on

your bank account! I like hollow grinding and use it on all my chisel and plane blades because it speeds up the next part of the process, which is known as 'honing'.

Freehand honing

Honing is just refining the edge of the blade. In effect it reduces the size of the scratches at the edge of the blade, which makes the blade sharper. I like to hone freehand and used to use a Medium India or 1000-grit water stone, but currently use the finer side of the Trend diamond stone for this bit. Add appropriate honing fluid to the surface of the stone and hold the blade in two hands with the bevel resting

this to be unnecessary showing off, and stick to simple circles.

This freehand part of the operation is the point where things can fall apart, inducing despair followed by an order to Axminster Power Tools for a honing guide. But persevere! If, however, everything is going according to plan, a wire edge will be formed along the full length of the cutting edge. If it's only forming on one end of the edge, apply a little more pressure with a finger over the bit with no wire edge. Also look at the bevel occasionally to check that all is well. Having achieved the wire edge, give the back a quick rub on the stone to remove it!

“A figure of eight motion is sometimes advocated but I take this to be unnecessary showing off, and stick to simple circles”

on the stone at a low angle.

Now lift the blade to increase the angle until a bit of the honing fluid is squeezed out, like a sort of bow wave in front of the blade. At this point the wrists have to be fixed to hold the blade at this angle whilst moving it in a circular motion back and forth along the stone. When honing, listen to the noise that the blade is making. If the pitch gets higher, the blade has been lowered. Just lift the blade until the pitch lowers again, or start again from stationary, looking for the bow wave. A figure of eight motion is sometimes advocated, on the basis that it wears the stone more evenly, but I take

The honing process is repeated on a finer stone to burnish the edge, and I use a 6000-grit Japanese water stone. These finer water stones don't need to be soaked before use, but they are quite soft and will need flattening occasionally. Just a squirt of water is needed to lubricate, then repeat the honing process until a mirror finish is achieved along the cutting edge, once again giving the back a rub.

The last task is to use a strop, which is a piece of leather stuck to a bit of MDF and dressed with a very fine abrasive. I use chrome cleaner with a bit of white spirit. A couple of strokes on the bevel and the back and you're ready for a shave! ■



A mirror finish where it counts



I like to finish using a strop and fine paste



The result should be a razor sharp edge



The John Lloyd preferred kit