Coming to terms with the fact that sharpening is a necessary irritation when making furniture is only half the battle. The other half is not making a meal of dealing with this unwelcome distraction.

Last month I looked at the general principles of sharpening and now I'm going to examine technique in a bit more detail and in addition look at sharpening carving chisels, using some of the tricks of the trade that I have picked up over the years.

The process of sharpening just about anything involves the four processes of grinding, honing, burnishing and stropping. At each stage, with the exception of grinding, both of the faces that form the edge – the bevel and the back – are worked on. Flattening the back of a blade was covered last month, and fortunately this rather tedious part of the process only needs to be done once.

Grinding chisel bevel on slow-speed water-cooled wheel grinder – in other words, the Tormek

John Lloyd trained with Bruce Luckhurst and gained a City & Guilds silver medal in Furniture Advanced Crafts. He now has his own workshop on Ditchling Common, Sussex, where he restores and copies mainly traditional furniture. John is a full member of the British Antique Furniture Restorers' Association.

No need to get stroppy

Concluding his mini series on sharpening, **John Lloyd** says his methods require the minimum of fuss

PART 2

Chisel 'straight out of the box' shows fairly rough grinding and a rather jagged cutting edge

The as-it-comes back of the chisel

Using the Tormek plastic gismo to set the grinding angle

Grinding

Grinding gives the opportunity to quickly re-establish or change the angle of the bevel, and a hollow grind will result in a bevel that can be honed and burnished to a razor-sharp edge quickly, with the minimum of fuss.

The shape of the grinding wheel is responsible for giving a hollow, or concave, grind, and a slow-turning water-cooled wheel is the safest way to achieve this without the risk of overheating the steel.

To obtain the desired grinding angle, Tormek provide a handy yellow plastic gauge which is placed on the wheel and against the back of the blade, but it would be easy enough to create a similar home-made gauge out of a piece of Perspex. The most useful angles are 25° and 30° and, unless there is time in your life for a little indulgence, getting close to the desired angle is going to be good enough – in my book a few degrees either side really isn't worth getting worked up about.

PHOTOGRAPHS BY THE AUTHOR

Bevel after grinding on the Tormek

Flattening back of chisel on coarse diamond stone

Chisel back showing grinding marks. Achieving flatness in the area of the blade behind the edge is the critical bit; the slightly concave area behind the ground area will reduce with subsequent sharpenings

Honing

Having ground the desired angle, it's time for a little honing on a medium bench stone. I'm sure there are more than two ways of holding a chisel or plane iron for honing, but two methods seem to work for me and for the people who attend my sharpening courses:

EITHER grasp the handle or the main body of the blade in the right hand – if you're right handed – and apply pressure above the bevel with the fingers of the other hand

OR cradle the blade between both hands, with the top of the blade resting on both thumbs and the first and second fingers of each hand applying pressure above the bevel.

Theory

Now the time will have come to start refining the edge. Convention has it that the whole surface of the stone must be used during sharpening. The two schools of thought on this matter have it that:

EITHER the body remains stationary and the arms move back and forth

OR the arms stay in one position while the body rocks back and forth.

Either way, the scientists among you will spot that unless the hands make the necessary microscopic adjustments to their angle during this process, the angle of the blade in relation to the stone will change as the blade is moved over the stone's length. Not something that is ever a problem if a honing guide is used, I hear you cry, but life's too short for honing guides.

The reason that it is suggested that the blade is moved up and down the stone is not to make the process more challenging, but in an effort to achieve an even amount of wear over the stone's surface. If, however, this added dimension proves to be too much of a distraction from the matter in hand, just work in small circles in a small area and keep moving the area on subsequent sharpening. After all, even if a diamond stone is being used and there's no risk of it going out of shape, of course it will show signs of wear if only one small area is used repeatedly.

Practice

Small, slowish circles in a smallish area of the stone are a good starting point. Concentrate on keeping the angle fixed, rather than rocking backwards and forwards and trying not to fall over. If the angle is right, a narrow, dull strip will appear on the bevel just behind the edge, and because of the hollow grinding, this will only take a matter of seconds to achieve.

A glance at the bevel, and feeling on the back of the blade for a burr, will give you an idea of progress. To even things up if necessary, adjustments can be made in the finger pressure above the bevel, but once again, perfection is not necessary.

Because all that is required is that a burr is formed along the whole width of the edge, a tiny bit of skewing doesn't matter; just make a mental note and adjust your technique during subsequent sharpenings.

Having taken the trouble to create a burr, it is removed by flipping the chisel over and rubbing the back on the stone.

This process also refines the surface that forms the other half of the cutting edge.

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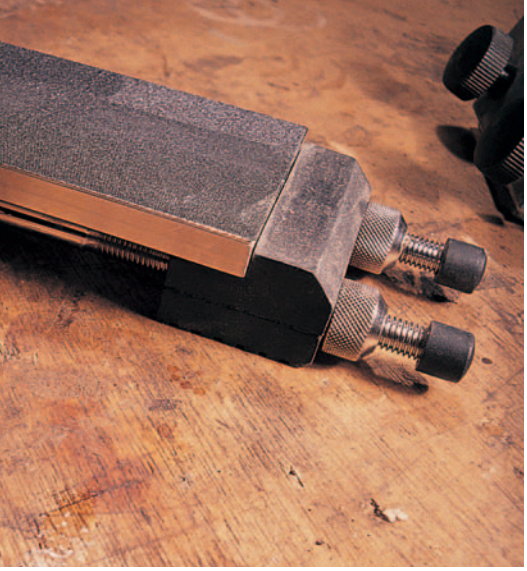
"Unless there is time in your life for a little indulgence, getting close to the desired angle is going to be good enough - in my book a few degrees either side really isn't worth getting worked up about"



Two different hand-holds that can be used when honing bevel

"Concentrate on keeping the angle fixed, rather than rocking backwards and forwards and trying not to fall over"

Burnishing

More refining is done using a finer stone for the burnishing part of the procedure. A 6000-grit water stone works really well for this, but water stones are very soft and it is very easy to dig great gouges in them. This does little to refine the blade and certainly doesn't enhance the stone. The only benefit of these stones being soft is that they are very easy and quick to flatten using a piece of glass and some 220-grit wet-and-dry paper, using plenty of water to prevent the stone from getting stuck to the paper.

Only the same small area of the bevel that was honed needs to be burnished, but a burr won't form this time, the only visible difference being that the burnished bit will take on the properties of a mirror. Even though there's no burr to remove, having finished working on the bevel, give the back a rub too.

Stropping

The final part of the process is stropping, *see page 22*, which doesn't involve stomping around the workshop shouting at people, but is what barbers do with their cut-throats with the strip of leather that hangs on the back of their chairs and keeps them razor sharp.

Flattening 6000-grit water stone using 220 wet and dry stuck to a piece of glass and lubricated with water

"Stropping doesn't involve stomping around the workshop shouting at people but is what barbers do with their cut-throats with the strip of leather that hangs on the back of their chairs"

Burnishing bevel on 6000-grit water stone

Burnished strip on bevel, just behind edge. The area will extend on subsequent sharpenings until the whole bevel is burnished – then it's time to regrind

When honing the bevel of the carving chisel, move the chisel from side to side along the stone while turning the chisel and holding it at an angle of 25° and at right angles to the stone – this makes patting your head while rubbing your tummy seem ridiculously simple

John uses a leather strop with chrome cleaner

Burnishing the bevel on a piece of carved softwood with chrome cleaner makes keeping a keen edge on a carving chisel a doddle

Sharpening carving chisels

Sharpening carving chisels is a slightly different proposition to the techniques described earlier because the curves of the chisels make the previous obsession with flatness irrelevant.

Grinding angles stay the same at somewhere in the 20° to 30° range depending on the level of abuse they are going to have to endure, and jigs are available to aid the grinding process.

Free-hand grinding will work just as well but needs a bit of practice, preferably with a chisel that you don't mind seeing disappear in a shower of sparks.

Carving chisels, like any other blades, need honing and burnishing using bench stones, but this time the stone is set with its long side running parallel to the front of the bench. With the chisel set at the right angle, it is moved sideways along the length of the stone while it is rotated from one end of the bevel to the other. This may sound as if you need the suppleness of a contortionist, but while the chisel is moved from side to side and rotated, it also has to be kept at right angles to the stone, rather than describing an arc. It's a bit of a knack, but by no means as tricky as it might sound.

The resulting burr has to be removed, but this time with a curved slip stone, and burnishing the bevel can still be done on the 6000-grit water stone.

Tricky stuff

The next technique is the clever bit. I spotted some professional carvers using it when re-creating fire-damaged carvings at a National Trust property in Sussex. It is particularly useful for very tight curves and acute-angled V-gouges which don't fit standard slip stones, so presenting a sharpening challenge.

All that is required is a lump of softwood and some chrome cleaner. Two straight parallel cuts are made into the end of the softwood, one with the bevel and one with the inside of the blade, for a length of about 50-75mm (2-3in).

These cuts will by definition be exactly the same shape as the curve of the chisel because they will have been cut using the chisel.

A squirt of chrome cleaner is added to the two carved channels, and the bevel and the inside of the chisel can be drawn backwards over the curves in the softwood, which are now covered in a very fine abrasive.

It takes seconds to give a chisel a quick rub on one of these softwood burnishing blocks. Repeat every few minutes to maintain a razor-sharp edge without having to go back to the grinding and honing stages for quite some time.