

Top of the Blocks



With a rash of new block planes appearing, John Lloyd asks what they're really for



The last time Axminster ran one of their big shows – incredibly some five years ago – I was, on reflection, unnecessarily rude to Rob Lee, the top man from Veritas. The gist of the ‘discussion’ was that his planes worked wonderfully well but were rather ugly. My comments elicited a look of excited triumph, and Rob told me that Veritas were working on a new, exciting, sexy-looking block plane, and I thought, well I’ll believe that when I see it!

The second discussion was with the boss of Clifton planes. He beckoned me over and with a furtive movement he extracted a package that had been secreted in a brief case. He carefully folded back the wrappers to reveal what he explained in hushed tones was a prototype of a block plane that Clifton were currently developing. He didn’t say that if I so much as mentioned this new plane he would have to shoot me, but I think it was understood. I said that it looked really interesting and that I looked forward to seeing the finished product which would no doubt look as handsome as all of their other planes, and resolved never to mention this new plane to a soul.

So here we are five years later and sure enough Veritas have produced what is indeed a very sexy plane in shiny nickel resist ductile iron. At the recent European Woodworking Show at Cressing Temple one of their designers told me that their initial design brief was to come up with the best, ‘money no object’ block plane that they could, and the result is not just good looking but is beautifully engineered and has oodles of those clever ideas and features that we have come to expect from this company.

The Clifton block plane, on the other



Angles If block planes are designed for working across end grain, why should we need a standard angle version? Surely the low angle would be preferable. Stanley have recently launched a new model, which isn’t very nice, really. It’s heavy and clumsy, with lots of sharp corners and edges

hand, is I fear still just a prototype hiding in a briefcase somewhere in Sheffield.

New planes

In the meantime more block planes have emerged to add to the original Records and Stanleys. Unfortunately the old Record block plane looks like it has been got at by the bean counters and is worse than it was 20 years ago, and there are various Indian and



Chinese copies of the original Stanley which are also ‘made to a price’.

Now to these old stalwarts Stanley have produced a new ‘quality’ block plane using the ‘Sweetheart’ logo, a nice idea but very poorly executed, and in my opinion a great disappointment. There’s the extensive and elegant range of Lie-Nielsen block planes; and now we also have the shameless, blatant copies of the Lie-Nielsen 60½ and



Marvellous The beautiful, slick Veritas Premium Block Plane has an effective adjustable mouth for fine shavings (top)

09½, this time executed rather well, probably in China. The result is that there are more block planes on the market now than you can shake a stick at!

Block plane design

So what is the block plane designed to do? I was once told that it got its name from being designed to level or re-surface the end grain on a butcher’s ‘block’. If you



Small One of the attractions of the block plane is that it can be held in one hand

believe everything you read on Wikipedia, a block plane is designed for one-handed planing of the end grain of boards, apparently known as ‘blocking in’! The consistent feature here is that they are good at end grain, but these diminutive planes come in ‘low’ and ‘standard’ angle versions, are a variety of sizes and weights and some have adjustable mouths. Surely these different designs must have different uses, and they can’t just be popular because they’re cute!

I’m not sure how the design of the block plane developed, but the key feature, apart from it being of a diminutive size, is that the blade is fitted with the bevel facing upwards. This has two important consequences when compared with a bench plane which is ‘bevel down’.

1 The blade doesn’t stick up in the air like a

bench plane. This means that it is compact and comfortable to hold one-handed. 2 With a normal 25° ‘bevel angle’ on the blade, the effective ‘cutting angle’ can be reduced from the usual bench plane angle of 45° to 37°.

This lower 37° cutting angle is one reason why a block plane can get through the tough fibres of end grain with less fuss than a bench plane. The enemy of planing in general, and planing end grain in particular, is ‘chatter’. Vibrating blades are never good news, but chatter on a low angle block plane is reduced partly by the low angle of attack of the blade. Another big ‘chatter’ improvement is to use a big chunky blade which is less likely to flex, a feature that’s used on all of the better block planes. In addition to this, another effect of the

'bevel-up' arrangement is that the 'bed' of the plane extends right along the underside of the blade supporting it almost right up to the cutting edge. More support means less chatter!

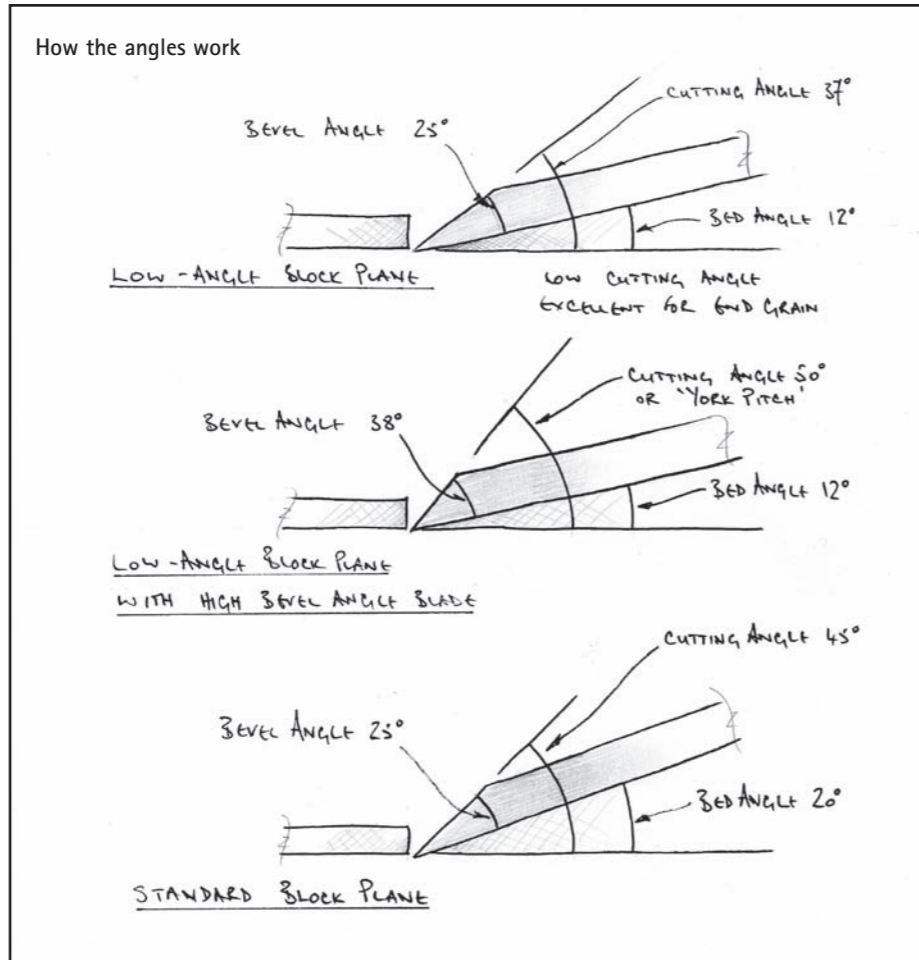
So a block plane can certainly be an advantage for dealing with end grain and the fact that it can be used one handed makes it a useful plane because the free hand can steady or hold the thing that's being planed. It's small enough to get into tight corners and will fit in a pocket which can be useful both in the workshop and when visiting the timber yard!

What about angles?

Block planes come in 'low' and 'standard' angle. The low angle version is the one that's particularly good at dealing with end grain because of its low bed angle of 12° or sometimes 12½°, but it's only good at end grain if the bevel angle of the blade is kept low, typically 25°. If the bevel angle is allowed to creep up to around 30° most of the advantage will be lost!

However, the disadvantage of a low, 37° cutting angle is that if it's used on 'long grain' the cutting edge will tend to get under the fibres of the wood and cause tear-out, giving a nasty rough surface. The 'standard-angle' block plane, on the other hand, has a bed angle of 20°, add a bevel angle of 25° to this and you have the standard 45° of a bench plane. So this must be a sort of mini smoothing plane which will be much better at dealing with long grain planing than the low-angle version, and that's just about what it is.

As I mentioned earlier, changing the bevel

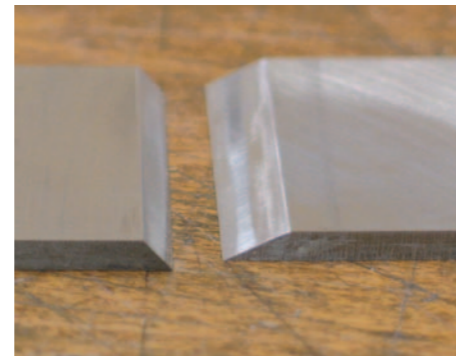


angle alters the cutting angle. If you only have room in your life for one block plane, or your finances will only stretch that far, the variable cutting angle feature of a bevel-up plane should make choosing a block-plane an easier decision. The low-angle plane with a 25° bevel blade, as we already know, will work well on end grain. The same plane fitted with a 33° bevel blade will have a cutting angle of 45°, and will work pretty well as a smoothing plane. It's not a case of owning two planes, but two blades. Lowering the bevel angle below 25° is not an option because the cutting edge will be fragile and disintegrate, especially when dealing with hard end grain.

So a low-angle plane with a couple of blades with different bevel angles can be just like owning two planes. In fact, fitting a blade ground with a high bevel-angle to a well-tuned low-angle plane will at a stroke turn a plane that's great at dealing with end grain into a very efficient, small smoother.

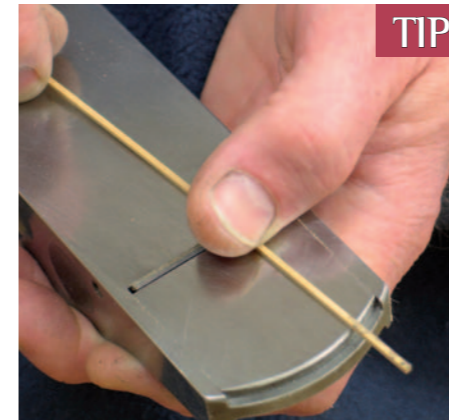
Adjustable mouth

The big downside to any bevel-up plane is



Bevels If you have a low angle block plane you can have more than one blade, and just have them set at different angles for different jobs

that there's no chip-breaker, so tear-out might be a bit worse than would be the case with a bench plane at the same cutting angle. Not all block planes have an adjustable mouth but it does have a vital function which will come into its own when doing really fine work. A smaller gap between mouth and blade means that the wood fibres are supported until a mere



Banding Fine tune edge bandings etc... by running them over the edge of a block plane

fraction of a second before they are cut to reduce tear-out.

The mouth opening should always be set to the minimum possible, especially when planing long grain. Try always to set the gap so that it is only just wide enough to let the shaving pass through. This isn't the same palaver as changing the mouth opening on a bench plane. Adjusting the mouth on a block plane should be the work of seconds.

Which size?

The only benefit that I can see of different sizes of block planes is how they feel in the hand, but this is probably only particularly relevant at the 'dwarf' or 'giant' ends of the spectrum. I am quite happy to use any block plane. My hands are fairly big, but I don't have a problem using the tiny 'apron planes'; so it's got to just be a matter of personal preference.

Watch out for the tiny curve-sided block planes though. They are great at planing little bits and pieces and will take up very little room in an apron or pocket but won't work well if you plan to use it on its side on a shooting-board. And while I'm on the subject of sides and shooting boards, an accurately-ground side that's at right angles to the sole is vital for shooting board duties.

So I would counsel buying a low-angle plane with an adjustable mouth. Apart from that it's a question of buying the one you like the look of and can afford! But if you're only going to buy one of these extremely useful little planes and you want it to last a lifetime and make you smile every time you use it, you might as well get a good one!

Fundamentals Fact File

No.5 Planing End Grain

Three ways to use a block plane on end grain

Planing end grain is probably one of those operations that falls into cabinetmaking's 'least looked-forward-to' category, but it doesn't have to be feared if you have the right equipment and the right technique.

A well-tuned, well set-up low angle block plane is critical, as is a razor-sharp blade, preferably made from chunky, high quality steel. Dealing with endgrain is the most traumatic thing a plane is going to be asked to do so it's now that the extra few pounds that you wrestled from your piggy bank to buy that high spec plane will pay dividends.

One of the challenges when planing end grain is to prevent break-out at the end of the cut. This is caused where the fibres at the edge of the board are planed but unsupported. There are a few ways to provide this vital support. You can plane a small chamfer on the far edge. If there's room for it this can work, but it's a pretty risky strategy because when you get to the bottom of the chamfer the fibres are once again unsupported and will tear if you take one shaving too many!

A better solution is to add a sacrificial piece of wood at the end of the board



Options Planing towards an end stop is a popular way of avoiding tearout (top). Or you can work towards the centre (above)



Shear Working at an angle can help reduce tearout

which supports the far edge of the cut; this ruse will work on a shooting board or when planing the end of a relatively thin board in a vice, but might not be so successful on a piece of wood of larger proportions, for example the end of a leg. In this case I would scribe around the end of the leg and work slightly uphill from each of the four faces in turn, creeping down to each line to create a shallow pyramid in the middle. The pyramid can then be levelled with a few careful, fine shavings.



Scribe One way to reduce tearout is to scribe a line around the workpiece with a knife (left), and work back from that

Angled planing

Skewing the plane to 45° makes the start of end grain cuts easier. It produces a slicing or shearing effect on the fibres and effectively lowers the blade angle by about 10°, giving a 'cutting angle' of only about 27° in the direction of the cut, which is pretty much on a par with a paring chisel!



I also recently read somewhere that wetting end grain with water or meths to soften the fibres can be helpful, and you know it is!

Whatever plane you're using to deal with end grain a razor sharp blade is the most vital ingredient and if this means sharpening the blade several times in the space of only a few minutes, so be it! In the end, successful cabinetmaking always comes back to the most basic requirement of sharp tools!

Smooth Whatever method you choose, the iron has to be very sharp to leave end grain smooth



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