Reprofiling Edge - How to even them up?

Posted by FredHermann - 28 Feb 2013 10:32

Hi All,

I'm reprofliling an old machete blade, just as a teaching aid to myself, and having an issue.

It's a fairly wide blade, and when I do the sharpie test, the edges have completely different bevels.

One is 23 degrees, the other is 16. (best guess) So the 16 degree is about a 7 mm bevel, the 23 is about 4mm.

So what should I do, I tried regrinding the edge flat and removed lots of metal, then tried reprofiling, and it looks like the edges are still going to come out uneven.

I vaguely remember seeing something about this in a video, but can't find it, as it was an offhand comment by Clay or Smokeeater...

Any suggestions? Do I grind more on one side than the other, and if so, which side?

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Re: Reprofiling Edge - How to even them up?

Posted by cbwx34 - 01 Mar 2013 07:39

You need to also check and see if the edge is offset to one side, and if you need to correct that also.

Then answer what angle do you want to sharpen at? For example, if you're splitting the difference, say 20 deg., and depending on if there's an offset, you'll start on the 23 deg. side, and work it until it's close to the edge, then start working both sides until you reach the edge. The 16 deg. side will still look a little wider, but you'll have a symmetrical edge. Sharpen at a lower angle, and again you'll work the 23 deg. side first. If you match the 23 angle, then you'll work the 16 side to set a bevel, but you'll work more to maintain the symmetry, until you get a bevel set on the 16 side. (Again, it will probably look wider for a while.)

You might consider getting a smaller knife, and practicing some of this first. Learning on a large machete could be frustrating.

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Re: Reprofiling Edge - How to even them up?

Posted by BobNash - 01 Mar 2013 09:27

Also be aware that as your blade stock gets thicker the center of the knife is shifted to the right, (not necessarily the cutting edge, but the center of the blade stock) so the right hand side angles will be more acute than what the rod tells you. So you can't just set them at equal angles according to the base rod, you need to measure the angles with some other device like an angle cube and make sure you are even.

I know your using the machete as a teaching aid but like Curtis I'd also suggest if you are in fact moving the edge back to center, working on a smaller (and potentially softer) blade to practice

Of course, since it is a long blade - and if it is something that is just for fun and learning - you could try a variety of methods on different sections of the blade (since it is nice and long) so you can see what happens first hand when you do it different ways.

Oh, I just assumed that your goal is to make the blade 50/50 on the angles, are you instead just trying to even the bevels? In my mind this is a perfectly reasonable goal since most of us can't tell if the edge is off center on most blades just looking at them, the bevel width is a dead give away that something is off though. If that is your goal, angle measurement isn't as important and what I do is creep in on it a degree or two at a time. I use the sharpie and on the 23 degree (4mm) side find the matching angle, then come in a degree or two (depending on the amount of difference in bevel size) so I am riding on the shoulder only with the stone - recolor the edge with a sharpie and go to work pushing down the shoulder (work just that side of the blade). The sharpie will help you see as you approach the cutting edge. As you work keep an eye on the bevel sizes so you don't overshoot your goal and keep going watching as you get closer to the edge with your scratches. If it isn't going to be wide enough, just move in your angle and go at it again. If you get to even width and aren't quite to the edge with your scratches, color in your bevel with the sharpie, move out on your angle so you are off the shoulder and then flatten out the bevel - again just getting close to the cutting edge with your scratches and not pushing on the shoulder, when you are almost there, start working both sides to bring up your burr and then you are off to the races!

Trying to make them even at 4mm now - I haven't ever worked that way that I can think of. I suppose I'd start by working up on the edge on the 7mm side and match the angle on the other side and work both sides evenly keeping an eye on what the bevels are doing as I go. Both sides since I'd be making the blade narrower taking off metal with my stone on the 7mm side so I want to make sure I'm keeping the other side the same width. Then as they got close to even I'd adjust the 7mm side in to flatten the bevel.

Have fun! Great that we can try these things with the Wicked Edge

And hope that made sense (I'm more long winded than Curtis is)

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Re: Reprofiling Edge - How to even them up?
Posted by cbwx34 - 01 Mar 2013 09:34

BobNash wrote:

And hope that made sense (I'm more long winded than Curtis is)

More like...

BobNash wrote:

And hope that made sense (I'm more long winded informative than Curtis is)

Good post!

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Re: Reprofiling Edge - How to even them up?
Posted by FredHermann - 01 Mar 2013 12:25

Thanks guys, this makes a little more sense now.

I think now that Bob mentions it; the edge may be off center, which is making the issue worse. I need to look closely at that one.

The thickness variance isn't much of a problem, as this is a Cold Steel machete, so made from a fairly homogenous flat blank, but the edge was obviously hand done, and very uneven.

And as you both mention, it is VERY frustrating, since it's so large. What the H3** was I thinking?

On the positive side, if it pisses me off enough, my belt grinder has not been fed in a while...

So I'll look for the off center edge, and work the higher degree side to see where this ends up.

More updates later...and thanks for the great advice as always. I could really screw up an expensive knife if I didn't learn this. It also explains a few odd things I've seen on a few knives over the years.

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Re: Reprofiling Edge - How to even them up?

Posted by PhilipPasteur - 01 Mar 2013 21:23

FredHermann wrote:

Thanks guys, this makes a little more sense now.

On the positive side, if it pisses me off enough, my belt grinder has not been fed in a while...

I would go the the belt grinder first on something like this... get it close..and off to the WEPS.

I am not much for excercizes in frustration as a learning device...

I have to little patience and too much else to do...

The path of least resistance, it the path well chosen.

Do let us know how it works for you though... And Bob's analysis was worth all of your frustration

To me anyway...

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Re: Reprofiling Edge - How to even them up?

Posted by FredHermann - 02 Mar 2013 22:11

Bob cut to the point, I love it.

Now to implement. So far this weekend has been a bust for sharpening...maybe tomorrow.

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