What grit do you feel gives the best cutting edge?

Posted by Scott Sherman - 21 Nov 2012 20:45

Just curious to get some feedback from our experts here. I made my beater work horse knife into a bit of a prom queen by putting a polished mirror edge on it. It looks fantastic but doesn't really cut like the tool it was meant to be and quite frankly, I am a little hesitant to use it because it looks so nice. It's a big, thick heavy knife. A Grayman Satu for those of you interested. S30v steel so it can take and hold an edge. But now I want to take it back to being my EDC cut any and everything. So, no more mirror for this one. Just curious based on your experience, what grit might you think will give the best cutting edge at about a 16 degree bevel and allow it to stay sharp longer. I want to have the diversity of cutting things with very different textures and densities, from fruit and veggies to cardboard and rope.

I know an ultra low grit like 80 or 100 will give it some real tooth, but I think it will be hard to keep it sharp with daily use and I don't want bits of metal that I see in the micro pictures of the toothy edge that might be flaking off teeny little metal bits in food if I use it to cut and apple for example. On the other extreme, the 1000 and beyond such as ceramics begin to get more for show and less for sharp utility cutting edge. So what might be the best point to get an ultra sharp cutting edge that will cut fruit and cardboard?

I will do a bit of experimenting of course, but I know some of you have already been down this road and was curious of your findings.

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Re: What grit do you feel gives the best cutting edge?

Posted by ApexGS - 22 Nov 2012 02:53

Ohhhh boy, you opened the real can of worms

Without delving into too much on the technical end or specifics (especially since it's nigh 0300 right now and I should be in bed) I'll just say that experimenting is absolutely the best way to figure things out! There are a few solid guidelines you can use to develop from though. For example a lot of folks here, myself included, use the 1000 grit diamond stones as kind of a baseline working edge with some tooth to it; something along that line perhaps with a few passes on your choice of strops to finish turns out quite a nice edge with minimal upkeep. I have a 1000 grit edge with just a few passes on the 5um leather strop on my current EDC knife, and Clay has posted elsewhere that a similar setup with the 5um/3.5um has served him well in the past.

I happen to favor that setup for several reasons, not the least of which is that it's extremely quick and easy to touch up with the strops alone. If you end up rolling the edge, it's just a step back to the 1000 grit stones to fix, and right back to the strop. In this case, the strops don't provide the visual finish, but finish out the blade in terms of honing the edge razor sharp.

quick edit And there's also micro-beveling! You can keep that mirror shine and use a micro-bevel with a stone to give the very edge of the edge extra toughness and tooth for cutting!

I'll let the others jump in and delve more into it. Good luck, and most importantly have fun!

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Re: What grit do you feel gives the best cutting edge?
Posted by KyleMazur - 22 Nov 2012 09:05

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on most of my edc knives i use a 30 degree primary bevel with a 40 degree micro bevel. i always go for mirror polish (which i'm still trying to perfect) find that 40 degrees is almost always perfect for a final edge regardless of what i'm cutting. another thing that i think about is the thickness of the blade close to the edge. if it's thick i generally won't go down to 30 degrees. for example my zt 0560 i keep at a 36 degree primary bevel and 42 degree micro bevel which is what they recommend from the factory.

as for what grit i think it's trial and error. i remember watching a video on youtube of jdavis who's an excellent sharpener. and he sharpened a knife at his coarsest grit then went to 1000 then straght to 10000 and then gave him the best results. the 10000 gave him that mirror finish but he liked the bite of the 1000 grit. again it's trial and error.

kmm

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Re: What grit do you feel gives the best cutting edge?
Posted by Geocyclist - 22 Nov 2012 09:37

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I will offer some questions, sorry, maybe no answers:

One side of this is the "push cutting" vs. "slicing". Sounds like you want a slicer, and therefore you would want a bit of a toothy edge. I have not done this, but I suspect if the edge is too fine you can just go back one grit and get more tooth without having to start over (assuming you keep the same angle).

Another side is the question I raised about wether a fine edge gets duller quicker. I think even at a lower grit (you get more tooth) but the edge is still very fine (as in a burr is raised on both sides) opposed to hand sharpening where unless you are good you don't get a "properly" formed edge. Yes, with finer stones the edge becomes finer, what I am trying to say is that with hand sharpening (for me

anyways) the bevels don't meet perfectly and the edge is rounded some from the start.

Cardboard contains metal particles and other "junk". It is hard on any edge. I have seen people use cardboard for cutting tests as it quickly dulls the blade. But I understand cardboard has to be cut and that's why we have EDC's. I occasionally cut cardboard with my EDC, but I also baby my EDC's more than others. As a result I keep box cutters around for this purpose .

Have you trying stopping to straighten the edge back out? I find if I don't let the edge get too dull stropping brings it back, not 100%, but enough I can keep going with stropping touch ups before going back to stones.

Like Apex said its trial and error.

I would be interested in what Clay or others have to say about "general" guidelines for what edge they put on for different applications. Clay posted the other day about 3 hunting knifes for 3 different cutting tasks with 3 different edges.

16 degree edge seems shallow to me for cardboard and what you expect out of it. You do have good steel though. If you want it all 20 degrees may be better.

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Re: What grit do you feel gives the best cutting edge?

Posted by Scott Sherman - 22 Nov 2012 10:56

ApexGS wrote:

Ohhhh boy, you opened the real can of worms

Hey he he he! I love that you think so, I love opening cans of worms.

You guys have raised some good points and offered food for thought. I thought that a shallow bevel

automatically made a knife sharper (assuming no rolling of the edge and sharpening to get a burr etc.). But in fact, it is the actual bevel or micro bevel at the apex that cuts. The bevel seems less important, although I would love to be proven wrong on this. I actually forgot about micro beveling when I posted because up to now I have just concentrated on honing the edge and re-profiling to get a shallower bevel than what the factory provided.

I love the look of a mirrored finish, but I have found that the mirror finish also magnifies scratches and it seems that cutting anything coarser than butter, causes scratches to a mirrored edge. So because I like the mirrored finish so much, I found myself carrying a big ol EDC and then hunting down my box cutter to break open boxes, (which I do frequently) because I don't want to mar my beautiful work of art. Kind of like the old saying which was made into a popular song, "never make a pretty woman your wife, or you will regret it for the rest of your life". I don't want my EDC to be too pretty or I don't get the most use out of it. But I still like looking at it, so I do have some knives that I carry from time to time that are black coated with mirror finished bevels. I guess you could think of those as my girlfriends. Yes, I guess you could say, I do cheat on my EDC.

But I need to go back and revisit the mechanics of creating a micro bevel. Of coarse now I have the problem of a thick knife with a very shallow bevel that I re-profiled from a thick maybe 30-35% bevel to a 16% bevel that I now have to re-profile to a thicker bevel. Kind of a waste of good steel and a lot of time. Oh well, live and learn. That is why this forum is so handy to have. I can sometimes learn from the experience and reporting of others who have already made some of the mistakes that I will (or would have made) had I not read about it here.

So thanks for your responses. You never know what might come out of asking a question which may seem at least on the surface to be fairly simple to resolve.

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Re: What grit do you feel gives the best cutting edge?

Posted by Geocyclist - 22 Nov 2012 12:07

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Yes, a 16 degree bevel on WE will shave your face (if sharpened to a mirror polish). If you want to open a can of worms I suggest 25 degrees with your 80 grit stone. That should be fine for opening cans.

I have heard many folks talk about carrying 2 knives, a larger one for harder cutting tasks and a smaller for more delicate work. I am giving this serious thought as well. This way you can keep the mirror edge on the smaller knife.

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Re: What grit do you feel gives the best cutting edge?

Posted by coryschnaufer - 22 Nov 2012 12:07

Scott you if my understanding of micro bevels and convexing are good then you haven't made a mistake at all. If your going to convex an edge you start at a steep angle and broaden it. For example you would start at 15 on each side through your 1000 stone. Then move to 20 reburing and all through your 1000 stone. The bur in this case takes about 3 passes so don't worry about removing to much. At this point you would softly hit 19 then 18 then 17 then 16 and polish the entire blade when your done.

Clay has an awesome video of him doing this on a chris reeves knife on you tube. I have started doing this and my edges hold WAY better!

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Re: What grit do you feel gives the best cutting edge?

Posted by ApexGS - 22 Nov 2012 12:15

I'm by no means an expert, but for my EDC knives I tend to err on the side of a slightly wider but tougher bevel. My prior EDC knife, which was a 4" Hogue EX01 a friend talked me into selling (major seller's remorse over that one) had a 22-degree per side edge that held up extremely well despite the abuse I put it through. I actually used it to chop down small saplings and slice through encroaching weeds, without needing much of a touchup at all for a very long while.

My M16-13T, which isn't anywhere near the quality of that Hogue (AUS8 vs. 154CM, respectively) is holding up alright but needed touching up the first day alone from cardboard cutting. I've mentioned in another thread I may experiment with micro-beveling it

Since I'm sharpening for profit as part of my shop I tend to carry two knives, with one mirror polished and the other a normal working edge around 1000 grit. That way I get most of my hard use on the one that won't show it

On the subject of the bevel: angle does matter, but for your uses you'll run into the balance between toughness in holding the edge versus having a super fine bevel. I like toughness, and no matter what angle you use in the normal range on the WEPS you'll get a scary sharp edge!

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Re: What grit do you feel gives the best cutting edge?

Posted by cbwx34 - 22 Nov 2012 12:57

Scott Sherman wrote:

But I need to go back and revisit the mechanics of creating a micro bevel. Of coarse now I have the problem of a thick knife with a very shallow bevel that I re-profiled from a thick maybe 30-35% bevel to a 16% bevel that I now have to re-profile to a thicker bevel. Kind of a waste of good steel and a lot of time. Oh well, live and learn.

I'll type more on this later when I have some time, but either I'm missing something in this thread, or this isn't correct at all.

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Re: What grit do you feel gives the best cutting edge?

Posted by Scott Sherman - 22 Nov 2012 13:09

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Just for the record, I meant degrees where I used the % key. Sorry about that, let's just call it a brain fart.

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