Fiction or Fact - Do sharp knives dull easier?

Posted by Geocyclist - 02 Nov 2012 20:14

I am curious what is the truth and does anyone have evidence to support their claim. Will a knife with a very fine edge dull easier or is this a myth?

The test I have in mind is to sharpen two identical knives, same bevel, one to 600 or 800 diamonds, the other all the way with the finest grit stones/strops available. Then perform a series of cuts and test sharpness.

How do your sharpen your EDC knives? Do you go all the way or stop short?

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Re: Fiction or Fact - Do sharp knives dull easier?

Posted by FredHermann - 02 Nov 2012 20:48

My EDC is a Kerskaw Leek. The bimetal blade one. For the last 2 years ive kept it at a 20 degree bevel with a landsky landsky kit. Edge polished all the way to mirror with their sapphire stone.

Whew....enough factoids.

I've deliberately used it as a screwchisel and all around abuse knife. The one it replaced I just kept shaving sharp. I honestly feel a sharp knife stays sharp longer if only due to starting with a finer edge. Its hard to keep it sharp, but that's because I try to keep my crazy standard.

My friends bring me knives they think are sharp. I scare them with mine and offer to teach. So really much of this is anecdotal but id love to see this dissected like the stropping thread. Imagine the fun when testing proves us all wrong. 🙂

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Re: Fiction or Fact - Do sharp knives dull easier?

Posted by xuzme720 - 04 Nov 2012 14:25

It might just be a matter of perception. As in you notice a very sharp knife getting dull more readily than a somewhat sharp or even dull knife getting duller. It's the difference you feel rather than the actual sharpness value.

If you look at it from a mechanical standpoint, a very keen edge is only a few micron thick or less. It's an extreme amount of pressure concentrated in a tiny area on every cut. As that edge dulls, the apex will get wider and distribute the cutting pressure over a wider area and relieve the concentration of pressure. Therefore the change in the edge or sharpness is more apparent at the start when the blade is wicked sharp than later on after it's somewhat dull. Of course once you add in variables like steel type, bevel angle, grind type, cutting medium, etc. it adds an entire range to the equation.

I feel like the sharp knife will still be sharper in the long run for the most part, even though it "feels" like it gets duller faster. Does that make sense?

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Re: Fiction or Fact - Do sharp knives dull easier?
Posted by Geocyclist - 04 Nov 2012 15:04

I think you're right. Part of this is the perception. A sharp knife is already sharper to start with. So it's not an apples to apples comparison.

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Re: Fiction or Fact - Do sharp knives dull easier?
Posted by cbwx34 - 04 Nov 2012 19:46

You may want to take a look thru Dan's site...

www.howsharpisit.com/Edge_Retention_Tests/

I linked to an article that shows some testing he did, but you might also look thru the other pages and videos.

Might give you some ideas.

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Re: Fiction or Fact - Do sharp knives dull easier?
Posted by BluntCut - 20 Nov 2012 02:41

It mostly depends on steel toughness. Thin smooth edge on high toughness steel will roll the edge to

butter dull quicker than toothy edge. If degradation is dent/blunt (from ductile) when the force is normal/perpendicular, then dulling rate is in favor of keen edge. High strength, low toughness steel will micro chip/fracture, thin edge could be in advantage - unless grain boundary is weak which lead to nasty big chip. High end Japanese kitchen knives are mostly high strength, small grain conducive for thin-edge (to certain level depend on duty).

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Re: Fiction or Fact - Do sharp knives dull easier?

Posted by WayneReimer - 20 Nov 2012 07:59

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I think there are too many factors at play here to make anything more than a subjective opinion. I usually carry two knives; one smaller knife, sharpened as sharp as I can make it, stropped nightly and used for light duty cutting (envelopes, fruit etc.)

The second knife is usually either a Strider fixed blade, or one of several Emerson folders. These knives are generally taken to 800 grit, then stropped, and finished with a micro bevel (only a few passes, mind you) of the 800 stones offset 2 degrees from the original bevel, to restore a slight tooth to the edge. It's this knife that gets the "grunt" work...cutting zip-ties, breaking down boxes, general digging, prying, stripping wires, that sort of thing. It will get a light stropping at night, but not anything too extensive. I usually wait until it's showing signs of actual dulling before going back with the stones.

Since I rotate through about 10 knives for this role currently, I seldom carry one "hard use" knife more than a couple of days in succession, so it takes a while (as a general rule, about every third rotation for the knife, or roughly a month)

I sort of prefer the "two knife" approach since I can be pretty confident that regardless of the job I'm tackling, I'll almost always have the right knife, and I will usually have the right knife sharpened properly for the task at hand.

I don't think you can discount the medium you're cutting, the frequency you cut it, nor where you cut it. Although when I'm at work I still carry two knives, the smaller folder gets used much more often for fear of intimidating someone with a larger knife, so at times it "seems" like the smaller, sharper knife dulls more quickly. I think it does also due to the concentration of forces on the edge multiplied by the frequency it's used.

Apples vs. oranges...and then a highly subjective answer results anyway

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Re: Fiction or Fact - Do sharp knives dull easier?
Posted by wickededge - 20 Nov 2012 15:50

Wayne, you bring up a really good point about carrying more than one tool. I normally only carry one knife on a daily basis, but I carry two when I hunt. The first has two blades, one with a sharp tip and drop point for initiating cuts in the hide and skinning, the other with a bull nose used as a 'hide blade' for unzipping the hide from the inside out. The other knife is a folding filet knife, used for quartering the game in the field. It's a very flexible Benchmade knife that works in and around the joints and bones, allowing me to easily do the work. I finish each blade differently since they have different requirements and when I walk away from a field dressed elk, all three blades are still shaving sharp.

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Re: Fiction or Fact - Do sharp knives dull easier?
Posted by wickededge - 20 Nov 2012 17:36

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cbwx34 wrote:

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Might give you some ideas.

Thanks for posting the link Curtis. This is great stuff. If only I had more time, or a bunch of interns, I would test every knife I could get my hands on to help determine the optimum geometry and finish for specific use! I wonder if there is a way to crowd source a project like this...

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Factor in the steel?
Posted by KenBuzbee - 20 Feb 2013 08:01

Geocyclist wrote:

I am curious what is the truth and does anyone have evidence to support their claim. Will a knife with a

very fine edge dull easier or is this a myth?

This is a great question and I'd love to revive it with a few additional thoughts/questions...

By sharper you seem to mean more refined, yes? But is that a "real" definition? To me sharpness is the ability to pass a knife through some material. It likely involves both push and slice components

I can have a knife plenty "sharp" after 1000 diamond but I can also take it all the way to 12k Naniwa stones which leave a great mirror polish.

But you also have the angle of the bevel, the thickness of the edge & the steel to take into account, yes? So the question of "sharpness" goes beyond refinement.

If I have a low carbide steel with a thin polished edge, my edge rolls? Thicken the edge and/increase the angle maybe it doesn't?

Then take a higher carbide steel (say S110V) now my thin polished edge chips out carbides, Thicken it and they become more stable. Also, if you don't refine the edge as far, the carbides are more stable.

So, it would seem the answer to the original question is a qualified "yes" Since you can take a harder edge thinner (sharper?) But harder low carbide steels fracture more easily. Harder high carbide steels will chip out carbides if you refine them too much. And thin, low carbide edges will roll and wear more quickly. You can help all these issues by thickening the edge and increasing the angle but you reduce the "sharpness"

This is by no means exhaustive or maybe even accurate, so I welcome thoughts and input.

As a note to Clay, I watched your video sharpening a Strider S110V. IIRC you took it through 10K Choseras, then stropped it (it looked beautiful, by the way) Did you ever get any feedback as to how well that edge performed? And for how long? Given you angle you put on it and the refinement of the edge, if any knife were going to see carbides chipping out, I'd think that one would have.

Ken

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