Thought on Hand Stropping with cheap compounds?

Posted by dschur - 21 Aug 2011 10:28

I was wonerding what thoughts are on hand stropping with the mass produced compounds after using the wicked edge for maintenance?

I currently use my wicked edge down to 1 micron strops and I love the edges. I'd like to keep it that way for as long as possible.

But, I do have a few strops around from my pre wicked edge days. I keep one at home, one in the office, and a portable one for camping. Typically they are loaded on one side with the green compound (chrome oxide?) and the other with red rouge (ferric oxide?).

There is just something so convenient (and a little Zen) about being able to pull out the hand strop after a little knife use and touch it up. It's a bit more convenient than setting up the WE, and to be honest I find it relaxing (I know, I'm weird).

I think I would just use the red jewelers rouge for touchup, as it is very low abrasive, more of a polishing compound from what I understand.

So my question is, would this be a bad thing (hand stropping on the red rouge)? Am I actually regressing the blade faster by giving it 20 or so strokes occasionally and requiring more frequent trips back to the WE, or is it good for the knife/edge (better than leaving it alone)? I also wonder if the randomness (varying angles/pressures/draws across the edge) inherent in hand stropping (and controlled out on the WE), might actually lead to a higher polish or appearance of it, by crossing the scratches.

Dave

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Re: Thought on Hand Stropping with cheap compounds?

Posted by leomitch - 31 Mar 2012 10:43

Quote "I've also had enough experience with super polished edges to feel that they aren't ideal for all situations - cutting zip ties for example. They also don't help with tough skinned fruits and vegetables if the blade is super thick and the angle is somewhat wider. They take more work to create and more work to maintain. They are perfect for some things, not for others. I took some photographs using sliced

strawberries and kiwis the other day and played with the knife edge while cutting them. At 17 degrees and 1000 grit, the cuts were doable, came out well but felt like too much work. I took the knife down to .5 microns, still at 17 degrees and the blade sailed right through as though there were no resistance at all." Quote by Clay

What kept me from seeing the answer to my question, "How sharp is sharp enough?" is that I didn't realize there were different kinds of 'sharp' not just one! One sharp might cut paper nicely but do poorly at cutting plastic ties, another might be good for cutting cardboard but not so good butterflying chicken breasts. Over a couple of years experimenting with various edges, methods and stropping with different compounds I came to realize what Clay alluded too in his post.

I have seen differences using sub-micron media and so your comment took me aback, especially since you seemed to have some kind of background in the sciences...reference to level 5 clean room, et al. I realize that there is a big difference between a subjective/anecdotal observation and a measured scientific/objective observation, so I thought perhaps you were basing your comments on the latter.

Good stuff. This is the way people learn, by exchanging differing views and perhaps getting a clearer picture of things as they really are. I look forward to more back and forth with thoughts and experiences. Please continue. I believe this is a very important subject.

Cheers

Leo

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Re: Thought on Hand Stropping with cheap compounds?

Posted by BassLakeDan - 31 Mar 2012 13:37

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leomitch wrote:

Quote "I've also had enough experience with super polished edges to feel that they aren't ideal for all situations -....." Quote by Clay

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...differing views and perhaps getting a clearer picture of things as they really are. I look forward to more back and forth with thoughts and experiences. Please continue. I believe this is a very important subject.

Cheers

Leo

Well, this discussion quickly runs up against the common brick walls of any subject where there are differing points of view. It is hard to discuss anything unless we all agree on the definitions for the subject matter at hand. For starters 1.) What is a sharp edge for your purpose, How do you, personally, define that? For a suggested frame of reference, if you will: a set of ground rules for the discussion, maybe we can take the following definitions of a “sharp edge” from the famous monograph (which probably everyone has by this time read: www.bushcraftuk.com/downloads/pdf/knifeshexps.pdf

In that paper John D. Verhoeven. Emeritus Professor. Department of Materials Science and Engineering. Iowa State University states two important frames of reference for his definition of a sharp edge in any discussion of knife sharpening systems. First he establishes “razor blades” as the gold standard against which he will test various knife sharpening methods. Second he mentions his set of “standards of comparing blades sharpened (in his study)” to the following metrics: 1.) edge width 2.) straightness along the edge 3.) smoothness of the face surface.

Clay quickly zeroed in on my issues with all this “sub micron, super sharp knife, turn everything into a .24 micron razor blade edge” discussion. I feel knives (at least the type of knives I personally am sharpening with the WEPS system) are in the realm of purpose specific tools. For me, all sharpness is not created equal for all possible purposes that the blade may be pressed against! Just ask any wood worker who has accidently over sharpened his tools to too fine an angle and then tried to work his prized piece of lignum vitae. Sometimes razor blades are NOT the ticket to success !

So, are we agreeing with Professor Verhoven? Are razor blades the Gold Standard? Do you want to turn *all* your knives into razor baldes? To that I say, “Hummmm… let me think about that..”

So, for me, working a range of blades from pocket EDCs to fine kitchen cutlery to my friends Sushi knife (personally I hate raw fish!) I am working with old strips cut out of Cigar Boxes and the cheapest polishing compounds I can find (heck I have even used some of my girl friends Wrights Silver Polish!!!) .. and getting excellent results

Yes one of these days, just for sh*&%ts and grins, I will try to mount a piece of optically flat glass in a WE Blank and spray it with CBN and proceed to sharpen my metronome blade (just kidding…), but for now, I will stumble along with my “cheaper is better” point of view.

Happy sharpening and have Fun !

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Re: Thought on Hand Stropping with cheap compounds?

Posted by KenSchwartz - 01 Apr 2012 15:04

Well a few comments here on this post and some subsequent posts.

Regarding the medium or substrate that the compound is on:

I feel that leather does have it's place as well as harder substrates. Of course the pressure applied makes a hugh difference here. Convexing an edge is both a measure of the substrate's 'give' as well as angular consistency. So you have a range of substrates going from softest to hardest for example:

Thick neoprene / mouse pads

Thinner neoprene - various thicknesses found at dive shops - thinner has less give generally

Cardboard from corrugated to thin cardboard to card stock or index cards. This continues to various papers which can themselves be supported by various media (the substrate's substrate).

Leather. Not all leather is the same - at all. So soft thick cowhide has much more give than thin Kangaroo hide. Here the surface characteristics also come into play. The edges I get from Kangaroo that is about the thickness of index cards allows for less convexing OR more pressure or somewhere inbetween - ie technique differences.

Woods. Various woods have different amount of give. Depending on the compound and grit sizes some are more ideal than others. I find that a slightly softer wood like Balsa is ideal for many things because the slight bit of give lets the particles stay in place a bit better. Too hard and the particles roll around. Harder woods like Baltic Birch do give a good flat surface, but particles slide around a bit too easily for my tastes. This is similar logic to using a soft steel platen to help the particles stick rather than just roll off on a harder steel surface. Of course different woods will have different abrasive properties themselves.

Paper. Revisiting this separately, paper can give one of the harder surfaces over glass, similar to films. Paper qualities become more critical at the finer grits as one competes with the clay abrasives that are a common contaminant of the paper manufacturing process, to say nothing of the abrasive qualities of the wood pulp in paper. Cotton and sugar cane pulps can give a finer finish in many instances, with cotton typically thicker stock and bagasse or cane pulp yielding very thin paper. My preference for paper with finer compounds is Rhodia or Clairfontaine. For coarser grits, just plain copy paper suffices.

Nanocloth - here you have the extreme of a neutral substrate, giving an absolute minimum of abrasiveness, allowing a pure effect from the compound applied.

Now angle control also produces convexity. So if you can control this, then the 'give' of the substrate is more worth consideration - like the control a WE affords.

Compounds can be put directly on film or be stuck to them as part of the manufacturing process. Like sharpening belts, there are various film substrates with specific qualities.

Waterstones - You can use various compounds on the surface of stones. This, depending on the stone gives a fairly hard surface to work with easily flattened to maintain precise flatness.

We have a similar issue with grits. Finer grits are best appreciated when other variables are controlled.

While we don't have or need the luxury of a level five clean room, a few things will give us adequate control. KEEP strops with finer compounds in their own ziploc baggies. An uncontaminated ziploc gives you all the control of contaminants you need in a practical sense. When you aren't using them, keep them there to reduce airborne contaminants.

There is no need whatsoever to associate what you can see in terms of finish with that being your rate limiting level of finish. You will get a mirror finish with a 5k Shapton, but certainly you can go past that in terms of sharpness. Indeed many cheap compounds do. But the biggest problem with cheap compounds is their inconsistency. You see this in particle size distribution data. You also have an issue of particle hardness with some particles eg iron oxide vs diamond or CBN. To say that a cheap supposedly 0.5 micron chromium oxide particle doesn't require a clean room but a 0.25 particle does just doesn't make a lot of sense.

And then there are natural stones. Here you have a hardness level that has a complex distribution and a particle size distribution equally complex with particle sizes varying during use as the mud refines, producing a more complex edge which has less of a single point of failure.

Here too you can separate the abrasive from the substrate by applying the mud produced from the stone

to various substrates. Want a hakka stone that has little give? - put the mud on a hard surface (paper over glass). Want a soft version of say a Nakayama Asagi? - put it on a soft substrate like paper over neoprene. I often use balsa for these preparations. And of course you can blend natural stone slurries with CBN and diamond too for some superb effects.

Personally, I don't think the price of a compound should be the chief concern. If a single spray of a concentrated compound of known formulation is used, the cost per sharpening is miniscule since a bottle will last SOOO long. What is more important is the value of your labor. I'm not saying this to be offensive, but having explored the realm of ultra refined small particle compounds, there truly is a difference in results best appreciated by trying it, as Clay mentions in his posting. There is sharp, there is sharper and there is even sharper. I thought I knew what sharp was, but I have proven myself wrong so many times that now I just look forward to reaching the next level.

Ken

BassLakeDan wrote:

KenSchwartz wrote:

leomitch wrote:

Like any kind of stropping, aside from touching up the edge, it is also slowly convexing the edge. So eventually that bevel will change its shape to the convex shape we know and love. Nothing wrong with that! But if you want, it is but a few minutes work on the WEPS to get a nice sharp shoulder with the attendant bevel. Sweet!

Leo

Well you could use the strop mounted on the paddle to freehand sharpen as well, but as LEO points out, stropping on the WEPS will give you greater precision and less rounding of the edge over time. Precision stropping is especially advantageous if you are using several levels of refinement (grits) stropping as opposed to just your final strop. Of course, the compounds you use for stropping on the WEPS can be applied to bench sized strops as well. And the cheap compounds could be used on the WEPS too (not that I would recommend that, but I'm biased 🙂
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Ken

I did not realize that this thread was here on the forum, as I am a newbie to posting, and have limited understanding of how all this works. So long story short mistakenly I posted my thoughts about the above topics at:

www.wickededgeusa.com/index.php?option=c...tart=6&Itemid=63 but will expand them here a bit..

Mentioned in my other post was my preference for non-leather strops and the use of cheap easy to obtain spanish cedar wood strips for a non compliant base material to hold strop compounds. I feel there is a strong case to be made for the abandonment of leather as the stropping material of choice. Now that you have a nice edge on your steel via the WEPS system, why should you convex it with a leather strop? It is the form compliant nature of leather that is causing the convexing, not the compound. I have been stropping blades for many years, experimented with all sorts of compounds and strops, and can say that (for me anyway..) the evil-doer of a bad strop is (in order of issue..) : 1.) a compliant base material 2.) bad hand technique 3.) and running a distant third (if at all) is the compound itself.

For what is worth, I feel that in the world of knife sharpening, once you get past the level of any compound that is capable of mirroring the metal to the naked eye then you at the limit of what you can reasonably achieve for the purpose of knife sharpening. Discussions of 0.25 micron high purity CBN sprays and the like, are to me (sorry not trying to offend anyone) are more or less of an exercise in nonsense and probably frustration. It takes very specialized, and very expensive equipment to apply such abrasives in a productive way. If you are a technician in a Class 5 clean room, with the right equipment, and the task at hand is flattening the base for a space satellite sensor then yes maybe we should be talking sub micron abrasives.

So I say, go ahead and use "cheap compounds" ... experiment, and have fun!

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Re: Thought on Hand Stropping with cheap compounds?

Posted by KenSchwartz - 01 Apr 2012 15:28

I do think it is important to understand Verhoeven's use of razor blades for his studies. It was not chosen to be a gold standard of sharpness, but rather a matter of practical convenience.

A razor blade will fit into the chamber of a SEM (scanning electron microscope). Most knives will not. Further, the SEM chamber requires a very high vacuum. in the range of 10 to the minus 6 torr (pardon the sloppy notation). For this the gasses in the handle will 'outgas' and contaminate the vacuum. This is

the reasoning.

Obviously these razors have extremely thin geometry and the edges are at a more acute angle than even straight razors. They typically have a much coarser finish than many of the knives we sharpen off the shelf. This is also true with most scalpels. Sharpness is more a phenomen of geometry here than finish. Go to a grocery store and using a loupe, look over any number of razor blades and you will see coarse grind marks, not refined edges.

With knives and straight razors you will see notable improvements with edge refinement. But the TYPE of edge you use is task specific. Indeed for some tasks a certain amount of 'teeth' is desirable, moreso for tearing type motions. Thus you can cut a tomato skin by 'ripping' it with teeth, eg seratted edges, or actual teeth a la the never get dull type edges. But you can also push cut a tomato in thin slices with a very refined edge, eg a tenth micron edge. Here again it is important to distinguish edge geometry from finish. You can put a shaving sharp edge on an axe for instance, but it will require a more refined edge than what would be needed on a razor.

I'm certainly not condemning experimentation regarding compounds or sharpening in general. But having tried many myself, I've come to prefer a more precise preparation and more precise angle control. I've gone to landscaping yards to try stones, used India stones, various auto polishes, green sticks, all my wife's buffing compounds she uses for jewelry, etc etc and tossed out many tests. If I had nothing else to use, I would use them. But I prefer better alternatives.

Ken

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Re: Thought on Hand Stropping with cheap compounds?

Posted by BassLakeDan - 02 Apr 2012 00:11

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KenSchwartz wrote:

.... Go to a grocery store and using a loupe, look over any number of razor blades and you will see coarse grind marks, not refined edges.

Ken

Oh jeessh! .. as if I don't already have enough problems with my local LEOs and my ex-wife attorneys !

But seriously I will be responding to your detailed post with detailed comments of my own. Give me a bit of time for that.. and also I have to figure out the PM features here on this forum, as one set of my response is for you, and an edited version of that for public consumption..

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Re: Thought on Hand Stropping with cheap compounds?

Posted by leomitch - 02 Apr 2012 00:14

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Curiouser and curiouser! said Alice.

Leo

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