Leading or Trailing Strokes

Posted by wickededge - 21 Aug 2012 16:45

I did a quick experiment with the .6 Micro-Fine Ceramic stones and edge-leading and edge-trailing sharpening. First I polished the edge .25um with the kangaroo strops. Here is the clean edge:

I didn't go for perfect, just good enough to have a clean slate.

Next I did 5 very light trailing strokes with the .6um Micro-Fines at 5 degrees wider. Here is the result:

I did another 20 strokes, edge-trailing:

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Re: Leading or Trailing Strokes

Posted by wickededge - 21 Aug 2012 16:48

I cleaned up the edge again:

Then did 5 light strokes, edge-leading:

and 20 more edge-leading strokes:

I'm again fascinated by the way metal can be so easily pushed along the surface and piled up on the bevel. I was using whisper-lite pressure.

Hopefully people will jump onto this topic to explore it further and relate anecdotal information about cutting performance with edge-leading and edge-trailing techniques.

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Re: Leading or Trailing Strokes

Posted by cbwx34 - 21 Aug 2012 19:29

This interests me, but I can't tell what's going on in the 2nd edge leading photo, other than the metal being pushed you referenced. I don't see a defined bevel like the edge trailing photo, it looks like a serious burr or that the edge is folded over, and it looks like the pic was taken farther away?

Sorry if its just me... but can you interpret it a bit?

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Re: Leading or Trailing Strokes

Posted by wickededge - 21 Aug 2012 20:21

I agree that the second edge-leading image is odd. Clearly a big burr (you know, about 4 microns or something ☺) was formed. I'm not sure why since I used very light strokes. I'll have to wait until tomorrow to repeat it and redo the photography.

cbwx34 wrote:

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Sorry if its just me... but can you interpret it a bit?

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Re: Leading or Trailing Strokes

Posted by razoredgeknives - 21 Aug 2012 23:35

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very interesting Clay! I have a theory on why the edge bevel is wider on the edge-trailing strokes... I believe it is because you were using more pressure. The reason being is because you are lifting the paddle as you push into the stone, therefore your muscles are keeping the contact and it is harder to regulate the pressure. With the edge-leading passes, you basically just are using the weight of the stone and almost letting it fall. Sound about right? Just a theory

that's really weird why the edge looks so un-even in the edge-leading photos... why do you think that is?

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Re: Leading or Trailing Strokes

Posted by wickededge - 22 Aug 2012 07:28

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razoredgeknives wrote:

very interesting Clay! I have a theory on why the edge bevel is wider on the edge-trailing strokes... I believe it is because you were using more pressure. The reason being is because you are lifting the paddle as you push into the stone, therefore your muscles are keeping the contact and it is harder to regulate the pressure. With the edge-leading passes, you basically just are using the weight of the stone and almost letting it fall. Sound about right? Just a theory

that's really weird why the edge looks so un-even in the edge-leading photos... why do you think that is?

Interesting theory - I bet I could put the sharpener on a scale and measure the pressures I'm exerting while sharpening to test it. As for the unevenness, I'm not sure - I'm going to repeat the edge-leading portion today and see if I get the same results.

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Re: Leading or Trailing Strokes

Posted by PhilipPasteur - 22 Aug 2012 08:19

Clay,

What kind of steel is this blade and what hardness was it tempered to, that you used for this round of tests?

BTW, even though it is not constructive in this case, this sort of deformation or "plastic" flow of the metal is what burnishing is all about (what I have fixed in my head that it is anyway).

This is why I ask about the type of steel and the hardness. It looks more like plastic that has been partially melted than steel

Phil

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Re: Leading or Trailing Strokes
Posted by wickededge - 22 Aug 2012 08:42

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It's just an unspecified high carbon steel - I'm using a bunch of utility blades so that I can easily compare apples to apples in different sharpening sessions. I don't know anything about the hardness. I agree about the burnishing and I find it really fascinating that leather can do it so easily.

PhilipPasteur wrote:

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What kind of steel is this blade and what hardness was it tempered to, that you used for this round of tests?

BTW, even though it is not constructive in this case, this sort of deformation or "plastic" flow of the metal is what burnishing is all about (what I have fixed in my head that it is anyway).

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Phil

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Re: Leading or Trailing Strokes
Posted by PhilipPasteur - 22 Aug 2012 08:46

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Well, in the case of these pictures, was that not done with and by the ceramic stones.

You did get rid of it with the srops though...

Phil

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Re: Leading or Trailing Strokes

Posted by wickededge - 22 Aug 2012 09:11

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Yes, in these pictures the deformation we're seeing is from the ceramics. I'm about to clean the edge back up and then repeat the edge leading photos.

PhilipPasteur wrote:

Well, in the case of these pictures, was that not done with and by the ceramic stones.

You did get rid of it with the srops though...

Phil

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