Formation of Micro-Serrations - 800x

Posted by wickededge - 24 Aug 2012 11:35

This was a fun study to do - I started with a clean slate, a very highly polished (.25um Diamond on Kangaroo Strops) edge and then created a micro-bevel with the 10k Chosera Stones with 10 edge leading strokes:

In this second image, you can see how smooth the surface is on the main bevel and at the shoulder of the micro-bevel.

The abrasives hit the edge and begin digging a trough, immediately creating micro-serrations and continuing the scratch all the way to the shoulder. Were the strokes done edge trailing, the same effect would occur in reverse, still resulting in micro-serrations. I'll repeat the study with edge trailing strokes soon.

Next I flattened and re-polished the bevels before repeating the same procedure with the 5k Chosera Stones:

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Re: Formation of Micro-Serrations - 800x

Posted by wickededge - 24 Aug 2012 12:50

Here is the 10k Chosera again with edge-trailing strokes, both edge and shoulder:

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Re: Formation of Micro-Serrations - 800x

Posted by cbwx34 - 24 Aug 2012 14:22

Looking like edge trailing leaves a cleaner edge?

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Re: Formation of Micro-Serrations - 800x

Posted by wickededge - 24 Aug 2012 14:41

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cbwx34 wrote:

Looking like edge trailing leaves a cleaner edge?

So far it looks that way, at least in the finer grits. I'll post pictures of the coarser grits soon.

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Re: Formation of Micro-Serrations - 800x

Posted by wickededge - 24 Aug 2012 14:59

Here are some shots of the edge after the 100# diamonds:

Edge-Leading

(Looking straight down on the edge)

Edge-Trailing

(Looking straight down on the edge)

And here is the edge of a blade at 30 degrees per side stropped on kangaroo to .25um:

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Re: Formation of Micro-Serrations - 800x
Posted by mark76 - 24 Aug 2012 16:13

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wickededge wrote:

I'm out of superlatives. Absolutely incredible.

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Re: Formation of Micro-Serrations - 800x
Posted by wickededge - 24 Aug 2012 17:13

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Here are a few more -

First I cleaned up the edge again:

Then I did 10 edge-leading strokes with the 600# stones with very light pressure:

Next I cleaned up the edge again and then did 10 edge-trailing strokes with very light pressure:

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Re: Formation of Micro-Serrations - 800x
Posted by wickededge - 24 Aug 2012 17:40

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Here is the 600# edge trailing blade looking straight down:

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Re: Formation of Micro-Serrations - 800x

Posted by cbwx34 - 24 Aug 2012 19:09

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I don't see a clear winner at the 600 level...

Love the straight down view. Pretty cool how fine an edge you can get at that level.

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