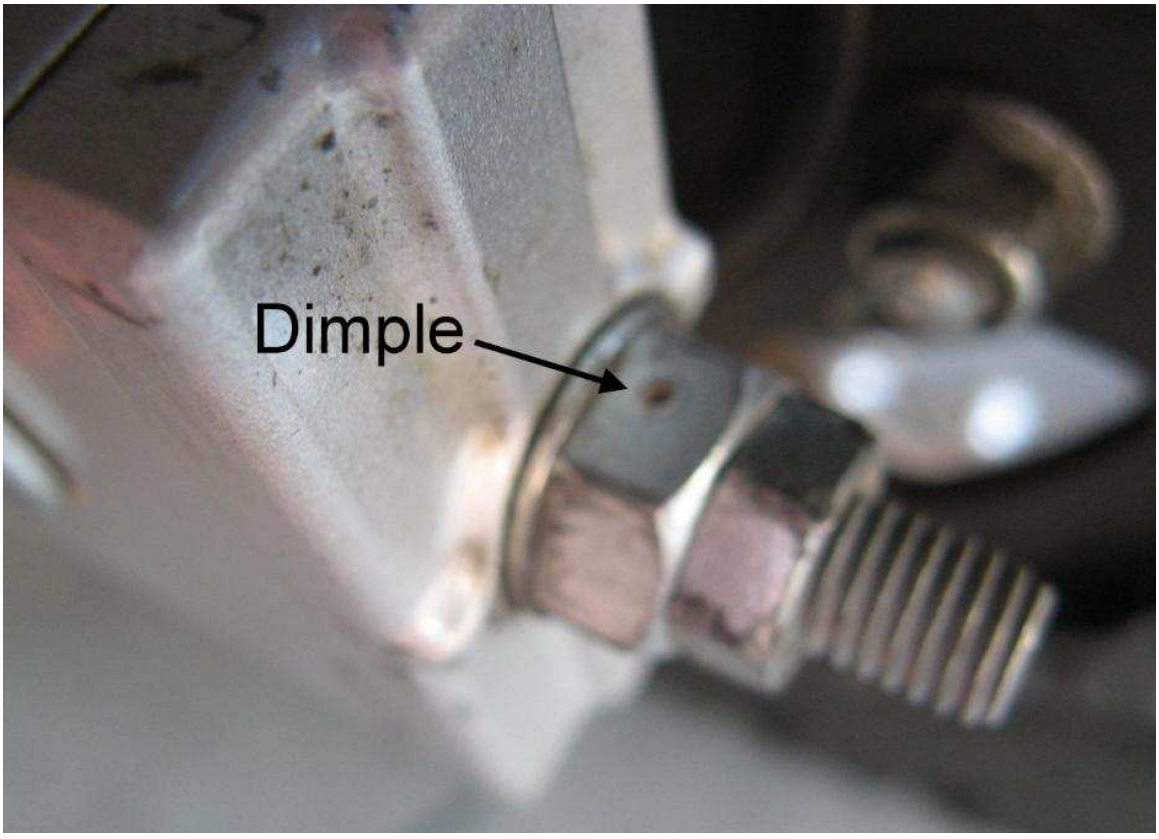
# *The WD40 Experiment*

Ask any motorcycle forum about what chain lube to use, and you'll have your hands full with replies. Some people will even get nasty telling each other how stupid they are to use lube "A" when lube "B" is clearly far superior. One claim that I originally found particularly unbelievable was to use WD40 as a chain lube on my KLR650, as it seems way too light for this application. I had grown up with non-O-ring chains, and used the commercial spray lubes with reasonably good results. But when I bought my KLR, the light bulb came on… the KLR has an o-ring chain, and the lube is inside the O-ringed areas… and all I'm doing is keeping the O-rings clean and alive by spraying with WD40. *Maybe this idea had some legs after all!*

A few forum members would chime in with surprising life numbers, over 20,000 miles while only using WD40. Well, it was a perfect time for me to see if this was true or false, so I bought the 1-gallon jug of WD40 at Home Depot and a refillable spray bottle and figured I'd give it a try.

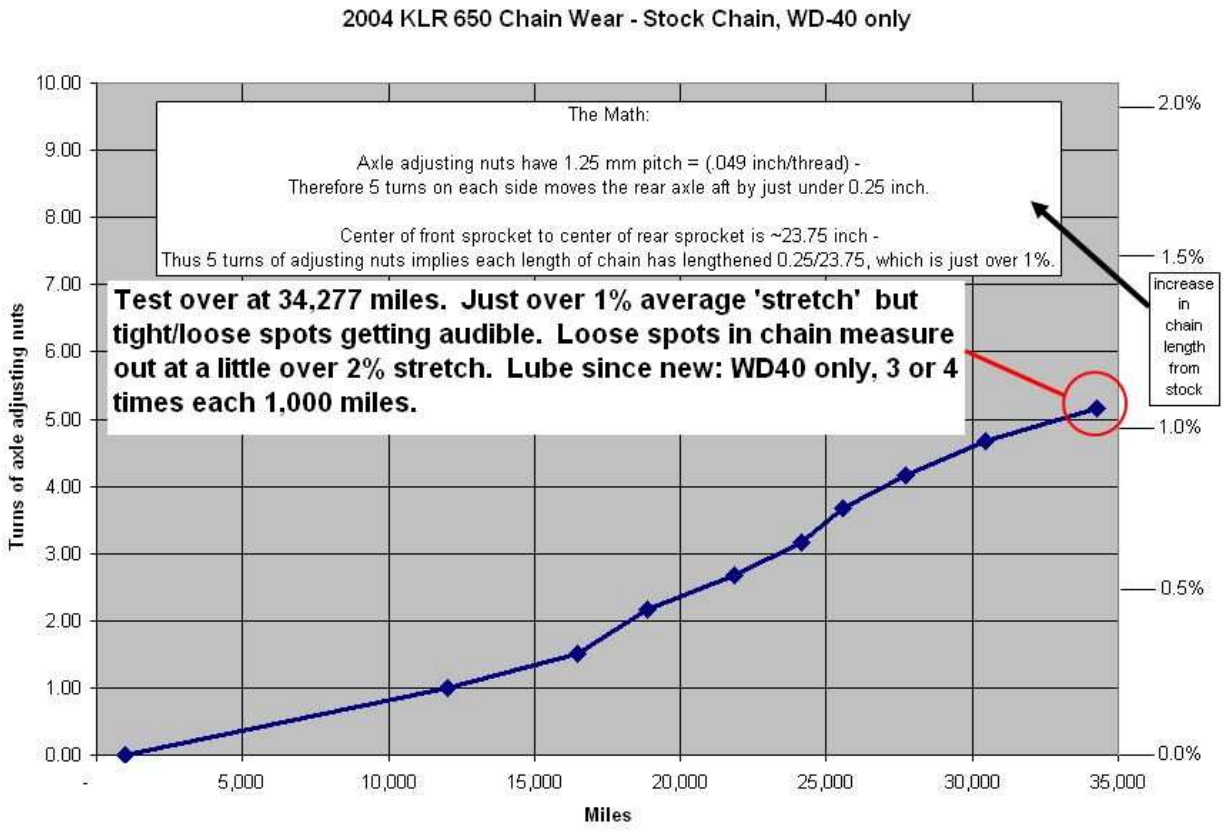
**The bottom line – I went 34,300 miles on the stock chain with WD40 only.** Amazing. I do ride easily, in a dry environment (Phoenix, AZ), and mostly on the street so I recognize that's an easier-than-average life for a chain to live through. But still… it has gone far further than I ever would have guessed. I love the "*but WD40 is not a lubricant*" argument that some people immediately use. I don't care that they think it's not a lubricant… I went over 34,000 miles using it on my factory chain? That's the bottom line.

OK, here are the details. To keep track of chain wear, I dimpled each adjusting nut right away (the bike had 990 miles when I bought it) so it would be easy to keep track of how far the adjusting nuts had been rotated in 1/6 turn increments. This really wasn't a lot of work, as the first adjustment was at 12,020 miles!



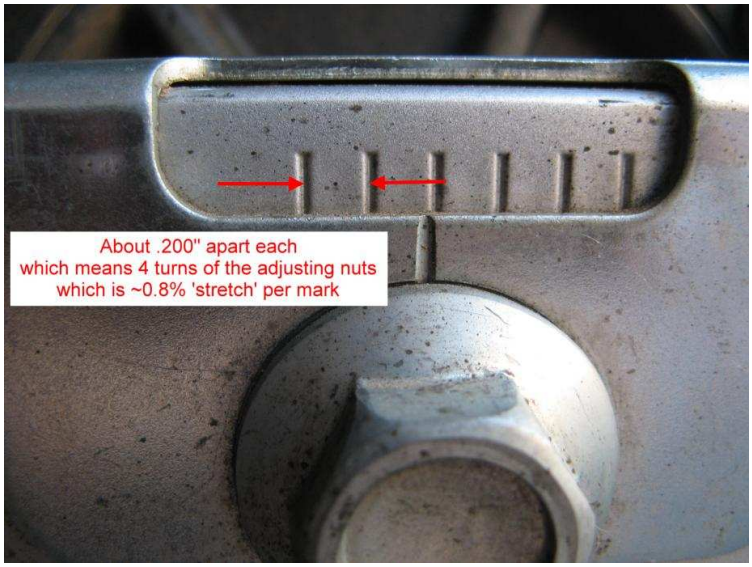

All I did was keep a log of the odometer reading when I would adjust the chain, and how many extra turns were added to the nuts to keep the chain adjusted properly. There's some scatter in this process,

but after multiple points I'm comfortable with its accuracy. Here is a graph of the data:




As you can see, the chain was pulled at 34,277 miles after turning the adjusting nuts a little over 5 turns each. Since the adjusting nut thread rate is 1.25mm per thread (.049 inch per thread), I had moved the rear wheel back 0.25 inches from the day I bought it. And the center-to-center distance of the sprockets is about 23.75 inches, so the chain had lengthened just over 1% over time.

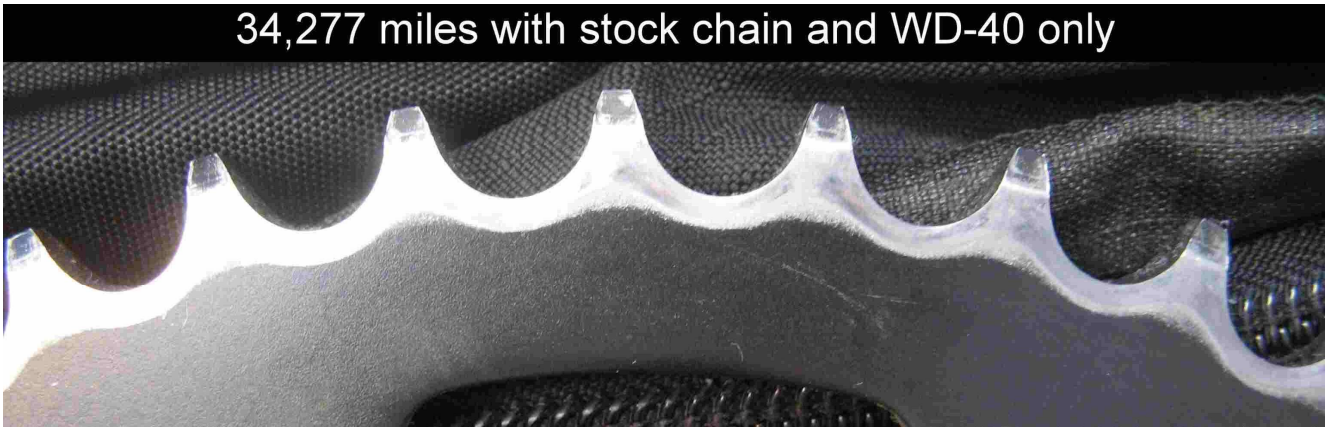
From doing a little research, it seems that 2% is a pretty common chain replacement point that many suggest, and of course to replace the sprockets at the same time. What's interesting is that some of the bicycle crowd recommend replacing the *chain only* when stretch hits 1%, because they have 7 sprockets on the rear cluster and it's not cheap to replace it – so they toss on a new chain before the sprockets have to take too much wear from the slowly-lengthening chain.




(By the way, if you want an easy rule of thumb, you'll note that the swingarm marks are pretty much 0.200 inches apart, or 4 turns of the adjuster nuts. Thus each mark is equal to about 0.8% increase in chain length.)

So, why did I quit at 1%? Because that was *average* stretch. At about 30,000 miles I started noticing a one-per-rev clunk in the chain that you could hear (or feel in the left footpeg when conditions were right). The chain was starting to show uneven wear, and when I pulled it, the loose spots had a little over 2% stretch. I didn't want to beat up the sprockets too much just to get an impressive number so I moved on. For the record, the chain still had all of its o-rings and all of its rollers.

I am still running the stock rear sprocket and have flipped it over once (if that's worth anything, I don't know). A photo of the rear sprocket is below. In my case the front sprockets wear faster than the rear, so I flip the fronts every 7,500 miles and replace them every 15,000. So I just installed the third front sprocket on this bike.




OK, so what's next? If I wanted to buy another Kawasaki EK520SRO stock O-ring chain (well over $100 but clearly a great chain)… then I'd definitely want to invest in new sprockets. But these sprockets aren't too bad, so I thought I'd get some more use out of them while finding out how much fuel economy improves with a non-O-ring chain. My past experience with a swap from O-ring to non-O-ring on a different bike was eye-opening (but that was from a 630 to 530 chain size so that might be why) so we'll see what happens here on the KLR. I purchased a $28 EK chain and put it on the used sprockets. This forced me back to normal chain lube: no more WD40 because of the lack of O-rings. The results can be found under the continuation article, Sprocket and Chain Wear.

Anyway, I'm not telling everyone that WD40 is the best chain lube or that every other lube is a waste – there are lots of good products out there. But for my riding style, it has been really inexpensive, plus the rear wheel has stayed cleaner than any bike I've ever owned. In my opinion, it did very well.

Back to Watt-man's KLR Homepage