***How* many miles do you have on that KLR?**

Last update: July 6, 2024

Photo on June 17, 2024.
The addition of a "1" and a comma in 2013, and now the "2" seemed like a requirement.

As the miles add up on my bike, this question comes up a lot. And people want to know details of what oil I use, or life-increasing modifications, or how long various components lasted. This article captures all three issues with respect to my 2004 KLR650.

There's a bit of overlap with a separate article at this site titled "Modifications to my KLR" which addresses the changes made to my bike to make it last longer, safer to ride, or easier to live with. That might be of interest to you as well. You can find it at **watt-man.com**.

But in this article, let's address the longevity-related questions.

Today's Date: July 7, 2024
Current Mileage: 200,700 miles

I believe that there are four main reasons that the bike is still doing so well with all these miles:

- **Proper maintenance**
- **Ride it like you own it**
- **Eagle Doohickey and Torsion Spring**
- **Thermo-Bob cooling system modification**

The first two items on that list are pretty self-explanatory. The last two items are expounded on in the other article listed above.

Just to be clear up front for the people who will skim this write-up: the only things replaced so far is one gear in the transmission, and the typical consumables: drive chains and sprockets, spark plugs, tires and brakes. **Yes, it still has the original engine internals: piston, rings, valves, guides, cam**

chain, balancer chain, all bearings, clutch, and so on. The engine has been apart only to install the doohickey and torsion spring when the bike was new, and at 140,000 miles to replace only the 3rd gear in the transmission. I'm on a quest to determine engine longevity with a Thermo-Bob, so I reassembled the engine with all the original components and used new gaskets. As the miles increase, the oil burn rate is increasing – it's around 18 to 20 ounces per 1,000 miles. That is documented at **watt-man.com** as well. I think I'll wait until it's 32 oz (one quart) per 1,000 miles before tearing into the engine because there doesn't seem to be any rush - it still starts and runs like the day I bought it in 2004 with only 990 miles on it.

Common Questions Answered:

This bike gets Mobil 1 car oil in its crankcase, usually the 15W-50 but in the dead of winter I have been known to pour in Mobil 1 0W-40. It gets changed every 3,000 miles because I live in a warm climate and have a Thermo-Bob. These both extend the service life of oil. I pour in 80 fluid ounces (2.5 quarts) every time, and yes, this fills it above the top of the oil inspection window by about 12 fluid ounces. My rule, right or wrong, is to never let the oil level get below ½ on the oil inspection window. This rule seems to have worked.

The oil filter is changed every 9,000 miles... I can hear the gasps already. The filter that is removed is always visually inspected and it always looks good (no appreciable debris in the filtering media). The original oil filter cover o-ring was used until 169,000 miles.

Valve checks / adjustments (rounded to the nearest thousand miles) were done at 1K miles, 16K, 44K, 74K, 92K, 140K and 176K miles. That's it. The KLR valves settle in quickly so as you can see, my interval between checks has grown. DISCLAIMER: I do believe that keeping the revs down really helps here. I've kept a log of the gaps and shims as well, which is why I was comfortable to have ridden 30,000-50,000 miles between recent checks. Backing up that "keeping the revs down is easy on valves" statement, the intake valve gaps at the last check (176,000 miles) are the ***same*** as when the bike was new! The exhaust valve gaps are constantly closing though, by about 0.001 inch every 20,000 miles. At this rate I'll have to do something by 500,000 miles as I'll be down to the thinnest shims on the exhaust and at minimum allowable clearance. Humble brag for the KLR.

I'm still using the stock clutch. I'll hear occasional bellyaching from forum members that my 17-tooth front sprocket is hard on the clutch, or that automotive oil will hurt it... well, I've got both and it's still doing fine.

I'm also still using the stock rear shock. There is a longevity comment in the 'modifications' article about this, found at **watt-man.com**.

The stock CDI unit and ignition coil are still doing their thing just fine but I do carry a spare of each on longer trips. As you'll see below I did install a new pulse generator at 176,000 miles.

Component Life:

I'm not going to get into the life of tires, brake pads, spark plugs or chains and sprockets. That's covered everywhere on the internet. Let's get to the items that you know won't last forever, but there isn't any standard replacement interval out there.

The stock clutch **cable** lasted **64,000** miles, and I use the clutch a lot. The Kawasaki replacement cable only went **17,000** miles... odd. The next Kawasaki replacement lasted **74,000** miles. The fourth

cable is currently on the bike and I do carry a spare Kawasaki clutch cable in the bottom of my tank bag all the time... it's one of those things that you know will eventually go out.

The stock **fork seals** made it to **92,000** miles. I then replaced them with new Kawasaki seals. I didn't have the best fork seal life in past motorcycles using ATF (automatic transmission fluid), so I am now a "only Use Fork Oil in the forks" kind of guy now. My KLR gets fresh Bel-Ray Fork Oil every 15,000 miles since new. Since the steel fork bushings rub on the inside of the aluminum fork lowers, these are getting sloppier as the miles pile on. The replacement seals made it to **159,000** miles, and started leaking at **199,000** miles. So the trend is clear. First set, 92K. Then 67K. Then 40K. It's time to find some new fork lowers.

The **four seals on the four valve cover hold-down** bolts were getting leak so new ones went in at **94,000** miles. They were replaced again at **140,000** miles as I installed a fresh valve cover gasket.

The original **speedometer cable** made it to **96,000** miles. Since the A-models clamp their factory speedo cable to the right fork tube (causing a kink that reduces life in my opinion), I modified the bike (thank you, Jeff Saline!) with an E-model speedo cable guide back at the 46,000 mile point. The current speedo cable has **104,000** miles on it, still working fine.

I don't ride through deep water, so I continued to use the factory **wheel bearings** for years. At **96,000** miles, I felt they didn't owe my anything, and since this bike gets big annual rides, I swapped them out to have a clear conscience for the upcoming summer ride. I don't detect any slop or noise yet at 200,000 miles, but will keep an eye on them.

Also in the 'not broken yet' category were **all three key locks**, which I did replace at **100,000** miles. The gas cap lock and the helmet lock were fine, but the ignition switch would occasionally act up (switch on, no lights, jiggle it slightly and viola... lights) seemed to be enough of a sign that it was time for a new set. It would only act up once a month or so, but my annual multi-state rides are important to me and the chance that this was a sign that I was going to have a problem in the middle of the annual ride was enough for me to buy all three new locks and install them.

All I can say about **water pump seals** is that they "last more than **103,000** miles". I replaced the first set (not leaking) at 37,000 because I was doing the famous 'right side cleanout' (oil pickup screen cleaning). I replaced the second set at 140,000 miles (also not leaking) because I had to tear into the transmission to replace 3rd gear. Anyway, looks like these seals last a long time.

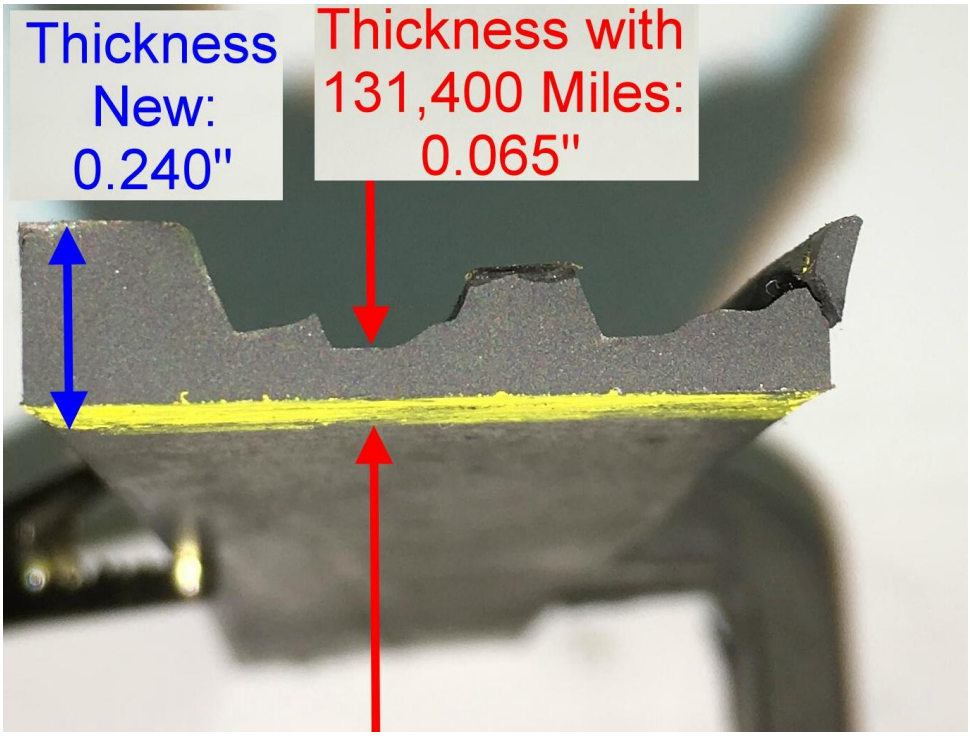
As soon as you feel any looseness in the front end over bumps (sort of a clunking), keep those **steering head bearings** snug. They're not the easiest to replace. I was able to make it to **104,000** miles on the stockers before it was time to replace them and their races.

The **seal under the countershaft sprocket** did fine until **118,000** miles, then started leaking. One new Kawasaki seal went in its place.

Brake rotor life is dependent on how aggressive you are with the brakes of course, but also the pad compound. My **rear brake rotor** thickness was 0.197 inches when new. The minimum thickness spec stamped in the disc is 0.177 inch... which my rear disc was down to at 65,000 miles. But that's a lawyer-ese kind of number... I felt comfortable running mine down to 0.150" before replacing it at **131,000** miles with a used rear rotor. I've seen used discs on eBay that were 0.103 inch...

Also at **131,000** miles I was replacing the chain so the swingarm was off and I tossed on a **new chain guide.** By cutting the old one at the most worn area, you can see it wasn't totally worn through to the swingarm, but was getting down there (see next page). I'd suggest that the wear rate is dependent on

a few things, one of them being front sprocket diameter, as my 17 tooth front sprocket holds the chain further away from the swingarm than a 14-tooth sprocket ever would! These are pretty cheap, so I sectioned it for the picture on the right and tossed on a new one.



At **140,000** miles, it was evident that the **clutch actuator arm** in the right case had a lot of slop so I pulled it out to inspect. It was sloppy enough that I cut it apart to find this nasty wear pattern (photo below on right). This is a dry joint that gets loaded every time you pull in the clutch, and not only was the hole in the arm worn notably 'oblong', the pin that goes inside that hole was quite worn as well - about 1/3 of it was gone! Thus I threw in a used clutch arm.

Unrelated but also at **140,000** miles, I **broke a dog off 3rd gear** inside the transmission while upshifting. When a dog breaks, odds are in your favor that the little cast piece will simply fall to the bottom of the sump and you won't even know it has happened. But in my case, I heard a noise on the 3-4 shift, and at the next traffic light I could not conduct a 1-2 shift because the broken dog chunk had actually wedged itself onto one of the two shift fork shafts *in-between shift forks…* long story short, I had to conduct a teardown to see why I couldn't get the trans out of low gear.

As stated at the beginning of this article, this is a quest to determine engine longevity with a Thermo-Bob, so once I had it apart to see what the problem was, I obtained a used 3rd gear from Eagle Mike and a new set of gaskets - and THAT'S IT. I reassembled everything as-is: same piston and rings went right back in, I didn't touch the head, and just bolted it all back together. As evidenced by the oil burn chart (at **watt-man.com**), the oil burn rate stayed the same after the reassembly.

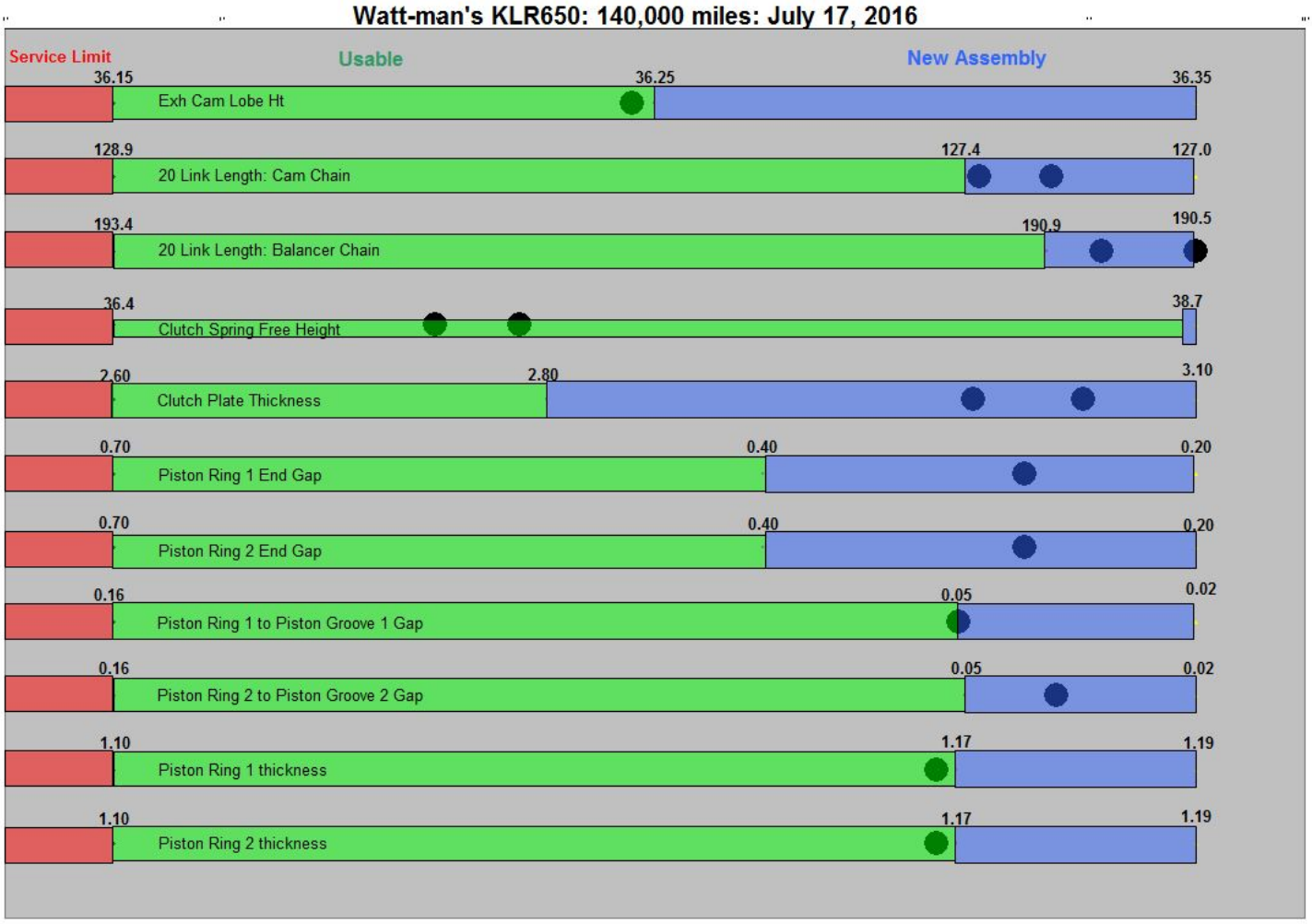
Since this article is also about part longevity, I'll point out that the stock valve cover gasket was finally starting to get weepy so it was on my list to be replaced at the next valve clearance check. Since I had it off at 140K, a new **valve cover gasket** went on at **140,000** miles.

Even though all the original parts were going back into the engine, it did give me a chance to measure a few important items such as cam and balancer chain wear, as well as piston ring end gaps and compare them to the shop manual, which lists dimensions for "New Assembly", "Usable" and "Service Limit". The goal of course, was for me to be BETTER than the Service Limit dimensions, and check out the chart on the next page!

The red band represents 'below the service limit', and should be replaced.
The green band represents parts that are doing fine and are re-usable.
The blue band represents parts that are still within the tolerances of brand-new parts.

The dots represent my hardware at 140,000 miles - almost everything was in the blue zone! A few of the parts, such as the cam chain and balancer chains show two dots, as those represent the minimum and maximum dimensions I could find anywhere on the parts. I'm still on the original clutch, look at that thing! Check out those piston ring end gaps!

I think you can see why I'm not afraid each year to take off on a multi-state ride on the KLR 'with such high mileage' on the bike. These numbers are great!



The factory **'cush drive'** under the rear sprocket was getting sloppy by **142,000** miles and was replaced with a new one.

The **rear turn signal stalks** actually started to fatigue crack at **159,000** miles so I treated the bike to a new set of rear turn signals.

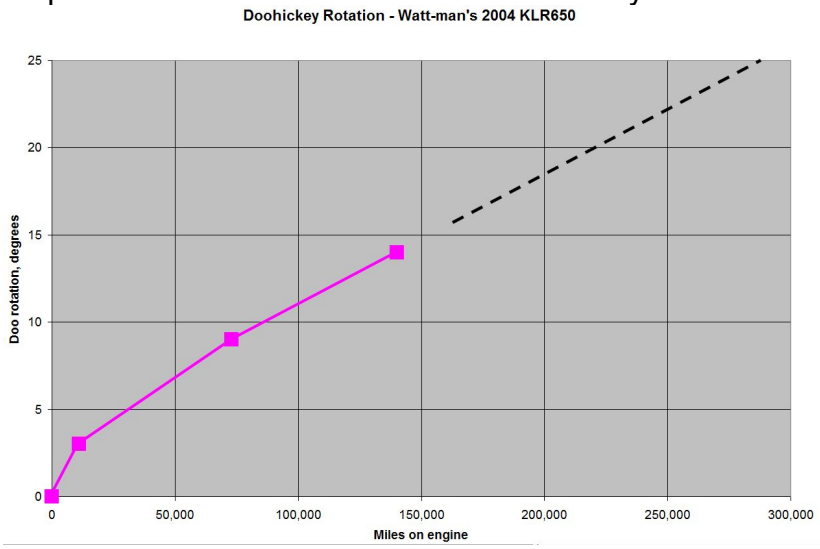
At **176,000** miles, the bike simply stopped running while at speed on one of our annual multi-state rides. It is not fun to mess up a vacation that you've been waiting months for! We pulled to the side of the road and it clearly was an ignition issue, so we swapped out the CDI and coil (as I always carry them on multi-state rides). Long story short, it was intermittent, proving the CDI and coil were fine so we put the stockers back and ended out playing with the pulse generator's wiring to the CDI. That seemed to solve it and got me home. Since this bike doesn't owe me anything, and it has many multi-state rides planned for the future, I installed a new **pulse generator and entire wiring harness** just in case. It has never acted up since.

At **185,000** miles, I was starting to notice a rattling noise on the front forks – it was the front brake caliper rattling on it's guide pins… the noise would go away with even the slightest application of the front brake. I chased down a used front caliper (hey, odds were it had less than 185K on it!) and installed it, solving the problem.

Since we were talking about brake disc wear a few pages ago, it's time to discuss the front disc. Not that this affects the results, but I'm running the EBC 320mm oversized front disc, and I'm amazed at how critical the brake pad selection is. When I had EBC FA130X pads on the front, not only did they wear very slowly (I ran them for 130,000 miles!) the disc wore slowly as well. Then when I bought the used front brake caliper, those pads went on and now the front pads as well as the front disc are wearing far more quickly. I'll need a front disc by **220,000** miles: it went on the bike at 11,000.

The last thing to discuss are the two chains inside the KLR650 engine that at some point, will need to be replaced. Fortunately, each system is inspectable for wear without an engine teardown. As you can see above, the chains themselves WERE inspected at 140K, but of course most of you reading this aren't going to do that just to get the numbers. Fortunately, it is pretty easy to inspect each chain ***system*** for wear:

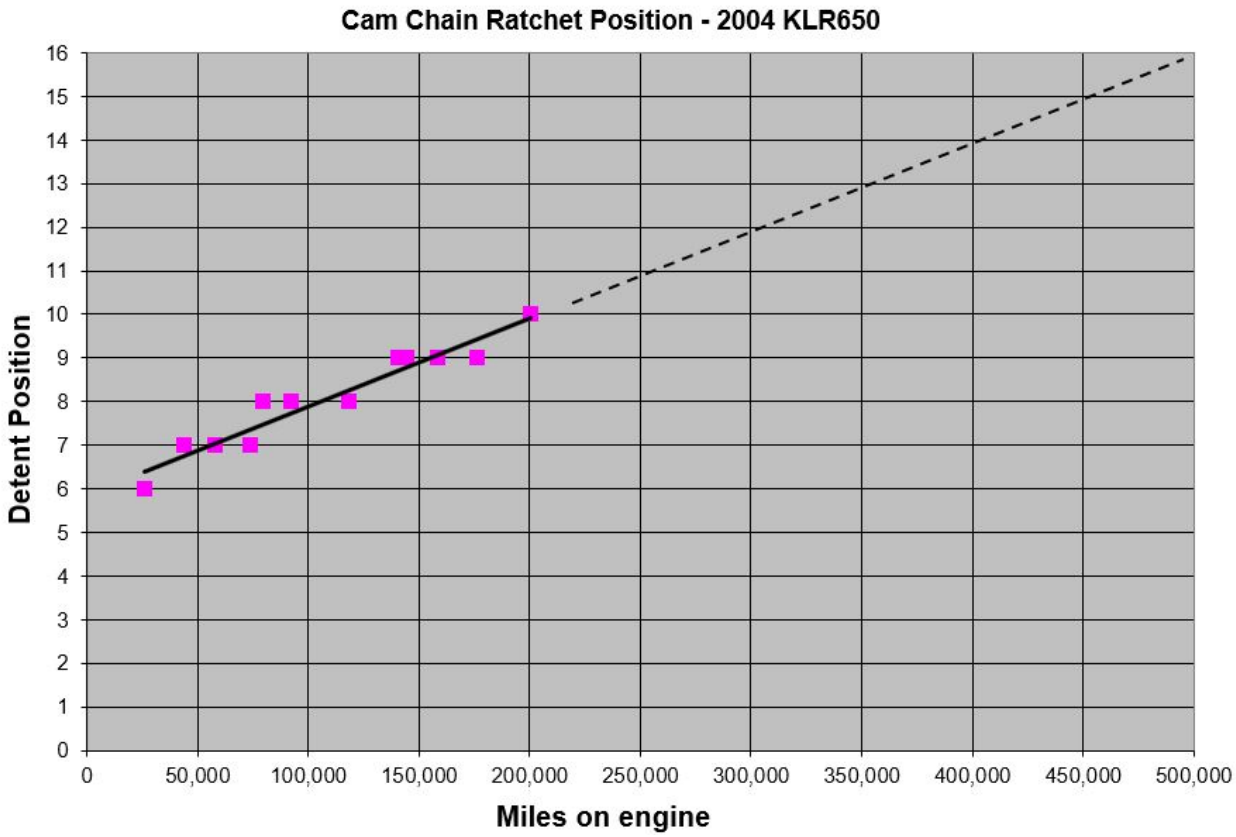
> The ***balancer chain system*** wear is indicated by how far the doohickey must rotate to keep the system tensioned. According to Eagle Mike, after 25° of doo rotation, it's time to at least measure the internal components... and if you're at that stage, you know that you'll just replace the parts. So with 25° as the 'upper limit', I marked my doohickey with machinist's dye when it was installed and have pulled the left cover a few times over the years to monitor its rotation.



> As you can see above, it looks like the balancer system will need some fresh parts just before **300,000** miles. The point - and I hope this is clear as there are some people out there who

don't appreciate how great the torsion spring is - a properly tensioned balancer system will last a very long time.

The ***cam chain system*** wear is indicated by how far the cam chain automatic ratchet system has to move to keep the cam chain tensioned. The system is topped out at the 16th detent. The chart below is a log of my findings over the years. Time will tell but if the system continues on at the wear rate that it has held for the last 150,000 plus miles, I'll be topped out when the engine has **500,000** miles. It looks like the cam chain will not be the part that limits the life of the KLR.



I hope you find this information useful. In the meantime, I'll keep riding and monitor how this all goes!

Watt-man