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# Pedalin' Times

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Official Journal  
of the Columbia  
Bicycle Club

December  
2024

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December meeting at Shakespeare's West is December 3<sup>rd</sup> at 7:30 PM. Club Membership dues are due Jan 1st! \$20 per household membership. Cash or check please.

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Jan 1<sup>st</sup> Chili ride is ON! Stookey household, ride rolls at 10:30 AM. Chili etc pot luck starts about 12:30 pm. Chili and fixin's, BYO and some to share. Many thanks to Dan and Rita, who provide the rest, all in a festive venue

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A question was raised about considering alternative locations for future meetings (i.e. Shakespeare's South or Downtown) to accommodate other members. Those present at the November meeting were happy with the current location BUT if you have another opinion, speak up/get in contact!

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Inflation is everywhere and not likely to go away. Pizzas cost \$23 – \$32, depending on size and flavor. Given the number of slices, a slice costs \$3 each, just to break even.

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## **News from the Bicycle and Pedestrian Commission: Oct 16, 2024** by Frank Schmidt

### **Vision Zero:**

- No new fatalities since previous meeting, which is good. As of the meeting, 2 pedestrians, 2 cyclists, and 2 motorcyclists have been killed in 2024. In 2023, there were no cyclist fatalities.
- The City is submitting a grant to the Safe Streets for All program; it will be submitted early in December.
- Vision Zero will put out a Request for Proposal for a Road Safety Audit of high-injury areas and intersections. A Request for Qualifications is out for a map of Pedestrian Level of Comfort.
- Complete Streets – a contract has been awarded to CHC Construction.

### **Parks and Recreation:**

- Perche Creek Trail: They are pouring concrete for the trail from the MKT Trail to Gillespie Bridge Road! No date for delivery of the bridge yet, though. Planning money has been OK'd for extending the Trail from Gillespie Bridge Road to Smith Drive, with completion of this section in 2026-27.
  - Colt Greenway: Current discussion is for a Rails With Trails where the trail would run parallel to the existing rail line. Note that the tracks South of Route B aren't usable because two bridges can't hold the load from a train; however, there is apparently hope that sometime in the future, the bridges will be fixed. We'll see about that.
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## Pedalin' Times

Pedalin' Times is the official publication of the Columbia Bicycle Club, P.O.Box 110, Columbia, MO 65205-0110, a not-for-profit corporation for the promotion of biking.

Pedalin' Times is published monthly. Deadline for submissions is the second Tuesday of the month.

Pedalin' Times welcomes articles that would be of interest to the membership. We request submissions for publication be Emailed to the editor at:

[brendap.home@gmail.com](mailto:brendap.home@gmail.com)

Articles may be edited for grammar, clarity, and good taste. The editor reserves the right to refuse publication of any item.

Annual dues for the Columbia Bicycle Club are \$20.00 (US) per household.

If you move, please let us know by sending a notice to the address listed above or Email to Secretary Joe at the Email address below. We really do want you to get your copy of the newsletter.

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## Minutes from Bike Club Meeting, Wed Nov 6<sup>th</sup>

The meeting was called to order at 7:35, 10 members present

**Treasurer report:** opening balance 10/1/24 \$1,465.72; Expenses: Shakespeare's Pizza \$43.56; Income : Pizza Donations \$36. Closing Balance 10/31/24 \$1,458.16

### Old Business

The LAST CBC t-shirt was sold.

### New Business :

- **Elections** : Joe and Brenda agreed to run (albeit unopposed) for their current positions and those present unanimously elected them to another term at their current positions.
- In order to preserve the few remaining checks, the Club now has a **debit card** attached to the account of reserves for purchases. Welcome to the 21<sup>st</sup> century!
- **2025 Club Membership** dues are due! \$20 for a household membership. Cash or check (made out to CBC) to Joe at the next club meeting (or mail it to him if you must)
- Joe and Carol were **gifted trikes** from Jenny and Craig who are leaving CoMo. If interested in checking them out and/or taking them for a spin, contact Joe & Carol.
- A question was raised about considering **alternative locations** for future meetings – see p1 and get back to us
- **Local Motion** asked the Club for a donation. In the past we have donated annually, usually near BWW. This year several of us donated time in sponsoring a table (by BeetBox – a new favorite brunch location!); we did not donate cash. A motion was put forward (seconded, then passed unanimously) for CBC to donate \$100 from Club funds to LocalMotion during the [CoMoGives](#) drive (Dec1 - 31). An additional \$50 was donated by Bob and Marlyn and will be added bring the total CBC donation to \$150. Many thanks Bob and Marlyn!

### Ride Report

Joe rode on the outer banks very soon after Helene hit more inland, causing a much longer drive to the destination but nice once there. Biking was reported to be very good – except for the sand.

Dan S. mentioned chain lube vs dry wax – a conversation that continued to devolve just as pizza arrived - the meeting adjourned at 8:01 pm

Dan, the rest of the Newsletter is aimed at you.

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## Why You Should Be Using Dry Bike Chain Lube, If You Aren't Already

By Jessica Coulon, *Bicycling Magazine*

The bike market is brimming with maintenance products these days; there's a variety of greases, chain lubes, cleaners, compounds, and more for nearly every component out there.

But that wasn't always the case. As mountain biking rose in popularity in the 80's, Hank Krause—who is a tribologist, a scientist who specializes in friction, lubrication, and wear—jumped on the bandwagon. It was a time of rapid innovation, yet Krause noticed there was one area of technology that was sorely lacking for the new sport: effective, high-performing chain lubricants.

“Many people were using motor oil, some were using cooking oil, some were using hot-wax dipping,” Krause told *Bicycling*.

There weren't any lubricants designed specifically for bicycles, he pointed out, and most of the products were from the hardware industry. The lubricants in use at the time were especially poorly suited for mountain bikes. “They'd leave a wet, sticky kind of film that would become a magnet for contaminants, dirt, and grime,” Krause said.

So, alongside a team of other tribologists, using some of the knowledge he'd gained from working at Mobil, Krause went on to found the company Finish Line in 1988, with dry bike chain lube as its very first product.

We chatted with Krause to learn more about dry chain lube—what it is exactly, how to use it, and when to use it.

### ***What is dry bike chain lube?***

First of all, a dry lubricant from the industrial industry is vastly different and should not be used for the same application in bike care. “There are dry lubricants that are 100 percent solids,” Krause explained.

On the other hand, dry bike chain lubricants contain a small amount of oil, additives that let it dry and set up with a “wax-like film,” other additives to help prevent corrosion, and a solid to help with lubrication. These solids are usually a mix of PTFE (like Teflon), synthetic ceramic (like Boron Nitride), molybdenum, or graphite. They reduce friction between the chain's metal surfaces by acting as a boundary. Teflon has

typically been used, but Krause said that his company is moving towards focusing more on ceramics, specifically Boron Nitride, because it's proving to be even more effective. (Similarly, you'll find synthetic ceramics widely used in cookware, coatings on cars, and more.)

Ranging from the driest-of-the-dry to “wet,” Krause said that chain lubes generally go in the following order:

***Wax → Dry → Wet***

Krause pointed out that this can vary by brand. His company differentiates between dry lube and wax lube, while some companies market wax lube as dry lube. Krause says that a true wax lube will be oil-free. So, technically, a true wax chain lube would be the driest option. “There are wax lubricants in the bike industry that are not that dry. There's no regulation around that,” he said.

According to Krause, “dry film” lubricants are the driest—though not for chain use—because they only use solid lubricating powders; Finish Line's Pedal and Cleat Lubricant is a good example. At the other end of the spectrum is grease, which Krause says is simply oil that's been thickened in order to help it stay in place.

### ***Should I use dry chain lube?***

The short answer: probably. For mountain bikers and other off-road cyclists, it's a great choice. Riding in dusty, gritty conditions is why it was created in the first place, and it can handle slightly wet conditions. Most cyclists would benefit from using dry bike chain lube as their go-to, according to Krause. He sees it used in all disciplines.

“The concern about dirty, greasy chains is universal. It is arguably one of the last remaining somewhat negatives about riding a bike,” Krause said. “So if you're a commuter, if you're a gravel rider, if you're a Saturday morning road club cyclist, it's just a really good choice.”

But there are situations where wet chain lube is undoubtedly the better choice. For one, it's far superior in really wet riding conditions—Krause likens it to putting a raincoat on your chain. Plus, it

lasts longer than dry lube, making it suitable for bike tourers and pro cyclists alike, who take on long rides of 100 miles or more. He also said that most pro road cyclists prefer using wet chain lube because it's quieter and smoother.

"If you're in extreme wet weather, you're doing stream crossings, you're going for a 100K road ride and it's raining, or you're really stressing your drivetrain because you're a pro cyclist, then wet lube starts to be a better choice," Krause said.

The downside is that wet chain lube does easily attract grime. But as Krause pointed out, many pro cyclists have their bikes cleaned daily by their team mechanic during race season and don't often have to personally deal with the hassles of a greasy chain.

At the other extreme, Krause said, is the cyclist who wants total cleanliness and doesn't mind frequently reapplying. They should use a wax lube, which is oil-free and dry to the touch.

"It's like a hot [wax] dipping of your chain. Dirt will not stick to the chain and will not be absorbed," he said. The downside is that wax chain lube does not perform well in wet weather and should be reapplied every 50 to 100 miles.

### ***How long does chain lube last?***

Krause recommends reapplying any chain lube often—it's an easy and affordable way to prolong the life of your drivetrain. "A lot of the wear on your

chain and chainring happens before you hear it," he said.

Dry chain lube typically has a lifespan of up to 100 miles. Wax chain lube should be reapplied every 50 to 100 miles. Wet chain lube can last well over 100 miles, and Finish Line's Ceramic Wet Chain Lube can reportedly last even longer with a limit of 175 miles.

Krause said there are advantages to routinely degreasing and cleaning your chain and drivetrain. At the same time, you risk degreaser being left in hard-to-reach spots, like the internal bushings of your chain. To help offset that, here's how to apply chain lube, according to Krause:

Apply a steady stream of chain lube to the chain as you rotate it slowly in reverse two to three revolutions. The goal here is to fully saturate the chain with chain lube. Wait 60 seconds or so, backpedaling the chain to distribute the lube. Then, continue to backpedal and use a rag to lightly remove any excess lube.

As for how long it takes dry lube to fully dry after application, Krause said it depends on the ambient temperature and humidity, so you might not want to apply it immediately prior to riding. It could take anywhere from minutes to up to half an hour.

Lastly, dry bike chain lube can help you care for your bike beyond the chain. Krause said it can also be used on derailleurs, cables, shifters, and brake pivot points.

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## **The Right Chain Lube Can Save You Thousands**

***If you run a dirty chain, you are burning cash—and other inconvenient truths about chain lube.***

**By Dan Chabanov, *Bicycling* magazine**

Consider the humble bicycle chain. It's an often overlooked part of a bike compared to wheels, cranks, and the frame itself, but the chain connects the rider's power to the bike's rear wheel. The chain's links constantly articulate around the drivetrain's gears, creating immense friction points between pieces of metal. With that much metal-on-metal contact, chains wear quickly, sometimes needing replacement several times a year.

Most mechanics will estimate that a chain should be replaced every 2,000 to 3,000 miles. But depending on

your riding conditions and lubricant of choice, your replacement interval can be much shorter or much longer. If you miss that critical service interval for your chain, it could lead to costly parts (such as your cassette and chainrings) needing to be replaced, meaning you've just gone from replacing one chain, a cost of \$30-80 excluding installation, to replacing

your chainrings and cassette as well as your chain. Depending on the parts of your bike, this will potentially quadruple your bill.

**If there are only two things that you take away from this story, they should be:**

***Regularly lube your chain.***

***If your chain is dirty, clean it before lubing.***

For the time-crunched, simply wiping away the grit and grime that collects on the chain after a ride with a rag prior to applying fresh lube puts you miles ahead of riders who don't do this (or those who apply lube to an already dirty chain). Because if you leave the chain dirty and add more lube, that lube will simply pull that contamination inside the chain. Whereas before, that grime was simply on the outside of your chain, ready to be cleaned off, now it's inside, wearing away key load surfaces until you have time to flush it out. Leaving a dirty chain dirty doesn't only sap your leg's effort by creating unnecessary drivetrain friction, it unquestionably costs you money, too.

A chain lube's job is simple, provide lubricant for the inner workings of your chain while keeping out as much contamination as possible. There are many chain lubes out there that do the lubrication part quite well. But the difference between a good chain lube and one you should avoid is often in how they do the second part. The better a lube is at keeping road grime away, the thing that causes accelerated chain wear, the better that lube will be at prolonging the lifespan of your parts, and in most cases, these lubes prove to be quite efficient as well.

Below are our three top-performing lubes and some of our favorite tools to keep your chain running smoothly. Learn how we selected these lubes, why you might want to spend more money on chain lube, and our professional insights on the most effective methods of cleaning your chain.

Best Overall: Silca Secret Chain Blend Hot Melt Wax  
Best Budget Lube: Squirt Chain Lube  
Best Drip Lube: Silca Super Secret Drip  
Favorite Degreaser: Pedro's Oranj Peelz Degreaser  
Best Chain Wear Indicator: Birzman II Chain Checker  
Great Chain Pliers: Park Tool Master Link Pliers

The easiest way to fight drivetrain friction is staying on top of cleaning and lubing your chain. Often the thought is that fighting drivetrain friction is something best left to the racers. But even if speed and efficiency are not something you're worried about, perhaps you're more concerned with having your bike last longer and saving money on maintenance. Consider that the friction robbing you of watts is also slowly wearing away at your drivetrain, which can potentially

cost you thousands of dollars in long-term maintenance.

Efficiency testing done by Jason Smith of Friction Facts, a website that was doing independent testing of chain lubes before its purchase by Ceramic Speed, a company that makes parts such as bottom brackets and bearings to optimize drivetrain friction, in 2016) showed that a dirty chain could cost a rider upwards of five watts (at a constant 250W effort). The testing was done on a machine that set a constant input power into a chainring and then measured the output at the cassette within 0.02 of a watt.

Five watts lost to a dirty chain doesn't seem like much, but consider that the number of lost watts only increases as your effort goes up. So the efficiency gains you make with more training, better nutrition, or a fancy set of carbon wheels can easily be negated by a dirty chain.

### ***Pricey Chain Lubes Are Worth It (When They Work)***

When I first started riding, I figured most chain lube was the same. As waxed chains and subsequently high-end lubricants became more and more mainstream, I viewed them as products aimed at riders seeking the smallest marginal gains. So like many riders, I scoffed at spending \$25 or more on a bottle of chain lube and moved on.

Then I started looking into Adam Kerin's data. Kerin has obsessively tested various chain lubes for chain wear and how that directly correlates to the cost of drivetrain maintenance. Kerin funds his independent research by selling the best-performing products through his business Zero Friction Cycling. He kindly shared his data and expertise with us for this piece.

I was stunned by the amount of money I've likely wasted using sub-par chain lubes. Kerin's testing focuses on the wear rate of chains when used with particular lubricants. The testing, conducted by running chains through 1,000 kilometers (621 miles) test blocks with various contamination levels, measures how quickly (or slowly) the chain reaches its wear limit. Then using this data, Kerin calculates the "cost to run" figure for each lube. Most basically, this means that when all things are equal, like how they are in Kerin's test setup, different lubes will result in different component wear rates. Over a given number of miles, the lube with the lowest wear rate will also have the cheapest cost to run number. It's worth noting that these price estimates are based on likely outdated prices, and the costs for many components have only

increased since Kerin compiled these numbers.

Over 6,214 miles (10,000km), the cost of using a poorly performing chain lubricant can be shocking. A rider using Ultegra 11-speed chain, cassette, and chainrings (in mixed road conditions) running Muc Off Lydicrous AF (\$65) chain lube would spend \$613 on maintenance. If the same rider uses Dura-Ace parts, the cost goes up to \$1,629 over the same distance.

Compare that to using one of the top performing lubes, such as Silca Super Secret Drip (\$28) With Ultegra 11-speed parts, the cost to run with Super Secret Drip is around \$197, a savings of \$416. Switching to Dura-Ace, the cost difference between poor- and top-performing lube is dramatic. Silca's Super Secret Drip riders are estimated to spend \$551 per 6,214 miles, a massive saving of \$1,078 over using the Muc Off lube.

Many riders know that keeping your drivetrain clean and lubricated saves money in the long run. But it's eye-opening to see in plain numbers that your choice of lubricant can also potentially save you a thousand dollars.

### ***First Things First: Clean Your Chain***

Let's start at the very beginning. First—remove the factory grease that comes on a chain before use. Despite what chain manufacturers will tell you, its main function is to keep the chain from rusting during storage and shipping inside its package. In Kerin's lab testing, the factory grease wasn't just inefficient; it dramatically shortened a chain's lifespan. The wear rate for Shimano factory grease was almost five times the rate of the top five drip-on lubes and nearly 10 times that of Silca's Hot Melt Wax (\$43) treatment. Making matters worse, the wear rate of factory grease only accelerates as contamination like dirt, grit, or dust gets introduced to the chain.

If that's not bad enough, factory grease prevents high-end lubes (especially wax-based ones) from bonding to your chain. If you apply these lubes to an uncleaned, factory-greased chain, you'll end up with a gunky mess. That does nothing good for your drivetrain—or your wallet.

Regardless of which lube you decide to use, it has specific application instructions that you should carefully follow for the best results. If you've applied the lube correctly, your chain should not be accumulating a ton of grime. Two things have happened if your drivetrain is black with grime and anything it touches becomes covered in grease. First, you're likely using too much lube, and second, you're

not cleaning your drivetrain often enough.

If you're using a lubricant that claims to "clean as it lubricates," please believe me when I tell you that this is complete nonsense. Keirin explains it well, "Manufacturers can claim whatever they want because there's basically zero accountability. But there are marketing claims, and then there are physical realities. Lubricants do not clean as they lubricate. What they do is minimally and temporarily improve the ratio of lubricant to contamination. But if you don't remove the contamination by cleaning your chain, that ratio will continue to degrade rapidly."

Always keep a clean(ish) rag on hand to keep your chain clean. Make a habit of running your chain through a rag after every ride to remove any dirt that might have accumulated. Refer to our more detailed chain cleaning guide if your chain needs a deeper clean. Only apply lube to a clean chain to maximize the lifespan of your chain and drivetrain. In a pinch adding lube to a dirty chain will still improve efficiency. But, it will also continue to accelerate wear by pushing contamination (dirt and grit) into the chain rollers.

If you mostly ride in nice weather and use a clean-running lube—like Rock N Roll Gold (\$9) or one of the wax-based lubes—you can go many weeks between needing to deep clean your chain. You should still wipe away even the small amount of grime your chain occasionally picks up after every ride and add lubricant as needed. But if you live somewhere where wet weather riding is unavoidable, you'll need to deep clean more often.

Wet weather riding is an extreme test for even the best lubricants. And unfortunately, there's no magical solution.

"When you think about it, there are not many lubrication challenges as tough as riding a bike in the rain," says Kerin. "You have a chain doing a huge amount of mechanical work under a very high load, and it's completely exposed to the elements. The whole time it's doing that, your wheels are ensuring that it's being hosed with gritty water from the road or trail and water is really good at carrying abrasive contamination into your chain."

So if you ride in wet weather, you must clean your chain thoroughly after every ride or come to grips with your drivetrain parts wearing out more frequently.

## ***How to Lube Your Chain***

The most common mistake with lubing a chain is using much more lube than is needed. If your chain is black with grime, you have likely added too much lube and didn't wipe away the excess. If this happens, clean the chain and start over. Lube only helps your chain when it gets inside the chain's rollers. Excess lube on other parts of your chain (or if the chain is visibly wet with lube) will attract more contamination and grime.

All of the lubes in this roundup have precise application instructions. It's essential that you follow those instructions when applying any of these products to your chain if you want to get the lube's full benefit. Many require just one drop of lube per roller on each chain link. Silca Synergetic (\$27) only requires that for the first application, it needs only twelve drops of lube on the entire chain for re-lubing.

Silca's Super Secret Drip must be worked into the rollers and left to set for at least 8 hours. Many of these lubes also have a setting time, meaning you should give the lube time to sit and be absorbed into the chain. This set time can be anywhere from a few hours to a full day. After which, riders should wipe away the excess before riding. For example, Silca Super Secret Drip has a recommended set time of eight hours, but its performance improves further if given twenty-four hours to set. If you want to be good to your drivetrain, never lube your chain right before going on a ride. It's best to add new lube after you've cleaned the chain (or at least wiped it off as much as possible). Then re-lube following manufacturer instructions, allow it to sit, and wipe away any excess lube before riding.

## ***How Often Should You Lube Your Chain?***

Your riding conditions are the main factor. As I've previously mentioned, wet weather is incredibly taxing on chains and lubricants. But let's assume, for the sake of simplicity, that we're mainly talking dry road miles. A conventional drip lube like Rock N Roll Gold should last 60-150 miles between applications. But more realistically, you're probably adding lube every couple of rides to keep things running smooth and wiping the chain after every ride to keep it running clean.

Some lube (like Silca Synergetic) have excellent longevity and can go up to 300 miles between reapplication. Kerin's testing also includes a test for single application longevity. Not surprisingly, riding conditions is the determining factor in how long your

chain lube will last. In dry road conditions, Synergetic lasted almost 500 miles. However, using the same lube in dry gravel conditions, its lifespan dropped to only 140 miles. So, it's not just the number of miles you ride; the conditions you ride in will impact how often you need to lube your chain.

Unfortunately, there is no handy guide for exactly how often you should lube your chain. According to Kerin, "The lifespan of chain lubricant on your chain is going to vary enormously based on what lube you use and your riding conditions. I generally recommend listening to your bike and re-lubing when things start to sound or feel a little dry. Then take this one step further and figure out how many miles you typically ride when your bike starts to feel or sound like that. Once you know that distance, you should plan to add lube just a little bit before that point."

## ***Various Lube Types and When to Use Them***

→ Wet Lube - One thing that's clear from Kerin's testing: If you ride off-road, you should stay away from wet lubes because these lubes will attract dust, dirt, and other contamination. And since contamination leads to wear, it can get costly quickly. (Have you seen the price of a SRAM Eagle cassette lately?)

It's important to point out that wet-lube refers to the type of lubricants that tend to be a thicker oil (like NFS or Silca Synergetic), NOT to lubes marketed for wet weather riding, although many wet lubes can be good in these conditions. In a dry off-road environment, wet lube simply attracts more contamination, leading to premature drivetrain wear.

Wet lubes are very good in high mileage applications, where they stay in place better than dry or wax lubricants. Wet lube performs well in very harsh wet conditions because they are more resistant to being flushed out of the chain. In these conditions, it's better to have lube on your chain (even if it's contaminated) versus having no lube.

→ Dry Lube - Rock N Roll Gold is an example of a conventional dry lube that you'll find in a bike shop. Dry lubes, typically, are a carrier liquid designed to deliver the "dry" lubricant inside your chain. This liquid then evaporates, leaving behind a relatively dry and well-lubricated chain.

In reality, most dry lubes don't last that long because the amount of actual lubricant inside them is small, meaning it needs frequent reapplication to keep a

chain running smoothly. Additionally, even when riders give the carrier plenty of time to evaporate before riding, most dry lube does not fully dry and continues to pick up contamination and dirt. Many riders stick to dry lubes because they can be the easiest to use, it keeps drivetrains relatively clean (if you stay on top of wiping your chain clean after adding lube), and in ideal conditions, dry lube tends to perform okay.

→ Wax-Based Lubes - When people talk about wax lubes, they usually refer to lubes like Silca Hot Melt. This lube comes as a solid and needs to be melted in a crockpot before use. Then a carefully cleaned chain is immersed in the melted wax and allowed to sit. In Kerin's testing, this lube is the best for wear and longevity by a long shot. The main reason is that wax-based lubricants are very dry, so contamination doesn't stick to them. The small amount that does manage to cling on can't penetrate the chain because the wax is already in there.

The downside of wax is that it is more complicated than other types of lubes. But if I took one thing away

from talking to Kerin about chain lubes, it's that he (based on 6,214 miles using 11-speed Dura-Ace parts). Our Gear Team also ride-tested each lube to confirm the data correlated to real-world conditions. We used the data, our own ride testing, and our years of expertise to make recommendations for the type of rider we think will be best served by

believes immersion waxing can be easier than using other types of lubes with the right tools and setup. I'm not sure if most riders are ready to embrace that position, but his cost of running data is very convincing. Kerin estimates the cost of using Silca Hot Melt over 6,214 miles (with Dura-Ace parts) to be \$187. Using Rock N Roll Gold for the same distance will cost you \$1,006.

Over the last few years, brands have introduced a new kind of lubricant that aims to combine the performance of immersion wax treatments and the ease of use of conventional drip lubes. Chain lubes such as Allied Grax, Squirt, Smoove, and Silca Super Secret Drip are all wax emulsions lubricants that work (more or less) the same way as dry lubes, except it's wax-based. The main advantage of using these lubes is they don't require melting wax, although you still need to start with a perfectly clean chain. While not as good as immersion wax, performance is still exceptional compared to conventional dry lubricants.

#### *How We Selected the Lubes on Our List*

All of the lubes below were tested by Kerin. His data is where we obtained the Cost to Run amounts for each lube ....

(the article then goes on to describe several products pricing and their assessment – if you WANT this info please let [me](#) know – the CBC does not want to appear to promote products.)



Karen Bataille  
Realtor®



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+++++ All Memberships expire in December  
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Liability Waiver: Please read waiver and sign. I certify that I am (or that my child is) in sufficient condition to participate in the activities sponsored by this club, and that I will wear an approved bicycle helmet on all rides. I understand that there are risks inherent in bicycling. I here by hold harmless the Columbia Bicycle Club, its officers, and any event organizers or sponsors in the occurrence of my (or of my child's) personal injury.

Signature(parent or guardian if under 18)  
\_\_\_\_\_

Date  
\_\_\_\_\_



203 N Providence Rd,  
Columbia, MO 65203  
Phone: (573) 874-7044

Mon: 10:00am - 7:00pm  
Tue - Fri: 10:00am - 6:00pm  
Sat: 9:00am - 5:00pm  
Sun: 12:00pm - 4:00pm

The next meeting of the Columbia  
Bicycle Club will be at 7:30 p.m.,  
**Tuesday December 3<sup>rd</sup>**

We will meet at Shakespeare's West  
Enjoy great camaraderie and the good  
feeling you get from spending time  
with fellow bicyclists.

Hope To See Ya!

Need a Bike Box for Travel? Remember the club  
owns two. Contact either  
Dan Clinkinbeard (442-8932) or the folks at  
CycleX (573) 874-7044 to reserve one.

Support our Sponsors !  
Let them know that they are appreciated.

Pedalin' Times  
c/o Columbia Bicycle Club  
P.O.Box 110  
Columbia, MO 65205-0110

A Non-profit Organization

