

THE RIVENDELL READER

43

Spring 2011



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THE MAURY WILLS BASEBALL CARD MYSTERY

If you were to weigh a motorcycle, car, airplane, or motorboat, you'd weigh it with the engine, but people weigh bikes without engines all the time. That's the normal way to do it. In fact, the engine weighs the bike.

A superlight modern racing frame and fork may weigh 3.7 pounds. You can get lighter, but that's still superlight. A more useful, durable steel frame and fork may weigh 6.5 pounds. That's 43 percent (2.8 lbs) more.

You need parts for the frame, though. The parts on the racing frame typically weight about 13.8 pounds, bringing the subtotal to 17.5 lbs. On a more useful bike the parts

weigh about 16.5 pounds. Add the 6.5-pound frame and fork, and the subtotal is 23 pounds. My bike has heavier stuff on it, and is even more useful, but 16.5 pounds of parts gets you lots of utility.

The five-and-a-half pound difference between 23 pounds and 17.5 pounds sounds like a ton, but it's just 14 percent, and neither bike has the engine yet, so it can't even move. Let's say the engine weighs 150 pounds. That's a light engine, but let's go with it, anyway.

With that engine, the racing bike now weighs 167.5 pounds, and the normal bike, 173 pounds—a difference of now of 5.5

pounds or 3.2 percent. (The heavier the engine, the smaller the percent difference.)

Look what that 5.5 pounds and 3.2 percent buys you.

The light bike has a carbon frame and fork that you'll ride maybe four or five years before either it breaks or you just don't trust it anymore. The normal bike has a steel frame and fork and may easily last 20 or 30 years, at 6,000 to 10,000 miles a year, barring bad luck or foolishness.

The light bike won't let you ride a tire bigger than 25mm, so it's lousy on rough roads, unsafe on trails, and not nearly as cushy even on smooth roads. The normal bike lets you

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ride tires up to 38mm wide, minimum, so it can be ridden over any paved surface with remarkable comfort (because you can lower the pressure in the wide tires).

The normal bike is good in wet weather too because it'll fit fenders. The light bike can't. The light bike has high gearing, which is no good for trails, long hills, steep hills, or even moderate hills when you're tired. The normal bike has go-anywhere gears.

The light bike requires special shoes; the normal bike works with any shoes.

All of the weight savings—in the frame, fork, and parts—come at the cost of usefulness. You end up with a bike that is practically limited to smooth, dry, flattish roads; cannot carry a 12-ounce tube of blueberries, and has such a short lifespan that its cost-to-ride per mile ends up being — well, it all depends on how you figure the cost. Twenty-five cents, for some; a dollar for others. Plus the risk of sudden failure, which if it happens, is more expensive than the money part.

How about speed?

In the '70s The Schwinn Bicycle Company hired the Cornell Aeronautical Laboratory to figure out how weight translated to speed. It concluded that for every 12 lbs. gained or lost, there was a 1 mph difference in speed. In the real world there are countless real-world factors that have a far more dramatic effect on speed than bike weight.

For example, on a stop-and-go commute, a red or green light wipes out 100-pound differences instantly. All else equal on a descent, the heavier bike-rider wins (but would you really rather sail down a hill at 43mph than at 39mph?) Light wheels accelerate faster than heavy ones, which helps when you're taking off from a stop, but heavy wheels maintain more of their momentum than light wheels, which helps you keep your speed on rolling courses. On a 25-mile club ride, a flat tire wipes out any advantage that may have accrued from riding superlight tires. On club rides in packs, where all riders are even halfway matched in fitness, it is easy for anybody to ride pack speed, because the pack provides a

near vacuum, you aren't fighting the wind nearly as much, and presumably, you aren't all trying to drop one another. Theoretical speed on paper, figured out by scientists is one thing, but actual speed of a rider on a bike anywhere in the world is a mushy, fuzzy, gray area.

Whatever the speed to be gained, and however important or unimportant it is, it makes no sense to cut the frame-fork-parts weight and compromise the bike. The smart weight cuts are in the fat of the engine, but they're not the ones people attack.

There are other weight considerations on a bike, anyway.

Sitting on something versus lifting it; leg strength versus arm strength; friction versus wheels, and the detectability of 3.2 percent.

You can sit on a park bench alongside other people, but you couldn't get off and lift it. If you have to lift something, it's easier to use your legs than your arms. If you have to move furniture, it's easier if the furniture is on wheels. When you ride a bike you're combining all of those advantages, and when you do that, a 3.2 percent weight difference (with a 150-lb engine) can't be easy to detect. People don't think of it that way, though. They hear "five pounds heavier" and imagine the difference of lifting nothing versus lifting a five pound sack of fruit with their arms, and then doing that thousands of times. As Tracy Morgan says better than anybody else, that's crazy.

Every ounce on your bike should earn its keep by making the bike safer, more useful, more comfortable, more fun, less expensive, or even prettier. But not all bike-pounds are the same. A superlight bike that you can't ride in the rain or on rough roads, or that's prone to flats and won't let you carry anything is like the anorexic model who always needs help with her groceries. It's skinny-fat and impressive (or whatever) until you need to use it, as opposed to just ride it.

-Grant

LETTERS



Kieth Beato, bicycling bruiser.

After finishing my regular Sunday morning ride with a couple of friends, I headed home on my usual route eastbound toward the Oakland Hills from Alameda a little after Noon. As I clipped into to my new A.H.H. to begin my ascent after turning left through a main intersection at Foothill and Coolidge, a man wearing a long dark jacket and beanie began to walk towards the middle of the street. Suddenly, he veered quickly heading directly towards me and said "give me your fffnng money." I began to think out loud in speaking in slow motion "I don't have any money." He continued towards me and began to drop his hands on my handlebars as if to stop me. Without thinking I cocked my fist and punched him right between the eyes. His head snapped back, he lost his balance, and fell over landing on his butt. My heart was racing. I felt liberated but scared as I managed to clip in and ride away as he threatened to "pop a cap" in my ass. I looked over my shoulder and he was still on the ground. Why would this guy try to rob and threaten to shoot someone with so many eye witnesses at a major intersection across from a Walgreens parking lot? I should mention I'm a shade under 6'4" and 230 lbs. (age 47) and ride a 65cm frame. Maybe he actually did have a gun? All I had was a bike, empty water bottles, tubes, small pump, and a multi tool.

Then again, maybe it shouldn't have come as a total surprise. Since buying my first bicycle in April 2005, I have had rocks, bottles, and cans thrown at me. Someone even shot paint at me from a super soaker water gun. I also had a guy lunge at me while stepping off a curb not far from the incident two years earlier. Another friend/rider was robbed at gunpoint while riding on Webster.

-Keith Beato, California

I own a small business specializing in high quality remote controlled model helicopters. They're injection molded of fiber-reinforced engineering-polymer (plastic), which are tough, fly well, and easy to repair.

The polymer I use is tough and durable, absorbs vibration and withstands shocks, and is safe because when it fails it fails slowly, which is why it is also used in other applications where these qualities are important. My enormous Asian and European competitors offer model helicopters featuring side frames made of carbon fiber, which are a little bit lighter, but also more fragile, a lot more expensive, and prone to catastrophic failure. Does that sound familiar?

While reading your site (about the Rodeo) I was struck with how merely substituting the phrase fiber-reinforced engineering polymer everywhere you used the word steel made it seem like we were explaining the same benefit of our material selection versus carbon fiber. This blew me away because it was like I was in your head writing copy for lugged steel bikes and you were in mine writing copy for my model helicopter!

The comparison in use is a little different. A model helicopter isn't stressed in the air as much as a bicycle is on the road, so your carbon fiber helicopter won't just explode in the air. It explodes when something goes wrong during the landing, but that happens all the time, especially when you're learning.

Just as a bike can be built up with exactly the same components otherwise, so can a model helicopter. Every single one of the components required to actually make the model fly can be exactly the same, so the only difference is the frame material and maybe a few associated de-

tails. The overall weight is within a few ounces, and I defy anyone but the most expert pilot to tell the difference. I've been flying models for more than 35 years and I'm not sure I can.

Yet manufacturers rave on about carbon fiber as if it's the secret to flying success and enjoyment, so new flyers almost always buy expensive carbon. I think it's because the local hotshot flies and equips his model with exactly the same carbon fiber helicopters the pros and paid skills are flying. They ask the accomplished flyers what kind of helicopter they have, then go online and get the same thing. They don't ask, "what's a good machine for me to get my feet wet with?" This usually happens without even visiting the local hobby shop to seek advice from someone whose livelihood is answering beginner type questions.

The new flier doesn't ask the right questions. He doesn't ask whether the helicopter he's considering is good for learning, sport, competition, or aerobatics. A few months and a few thousand dollars poorer, he has either learned to fly, or given up. And if he's learned to fly, it's with medium skills because he's conditioned to fear his model since the costs and time to repair it are so high. Many model helicopters, and especially the carbon fiber ones, end up as a pile of parts, because they're simply too fragile.

A while back a guy crashed his carbon model, wiped out the \$250 engine and many expensive electronic parts. This repair cost over \$700, and took weeks.

If it had been one of my tough polymer side frame models, the engine would have never been damaged, and the repair likely would have cost \$40 and taken 10 minutes.

-John Beech, Genesis Hobby, Florida

Send your letters to:

The Rivendell Reader

PO Box 5289

Walnut Creek, CA 94596

CURRENT BIKES



Roadeo

For tires 25-35mm. Our zippiest model for riders wanting a light, safe, and gorgeous road bike. Fits tires to 33mm with fenders, so you can ride it all year long. The fork is steel, lovely and strong enough for decades of riding. It's all a pure road bike should be. Threaded or threadless, you choose.



A. Homer Hilsen

Best for tires 33 to 40mm. If we could make only one, this would be it. It's a country bike. A roadish bike made to carry loads up to 20lb, for any surface short of boulders. For any road or fire trail. Fits tires to 40mm with fenders. Everybody needs one. Also in the most sizes: 47cm-72cm



Sam Hillborne

Best for tires 32 to 45mm. The budgeter's A. Homer Hilsen, and our most popular bike. It's too inexpensive, too comfortable, too versatile. Tires up to 45mm, or 40mm with a fender. Great road riding or road touring, even with 50lb. loads.



Atlantis

Best for tires 38 to 52mm. The first production bike we made, designed for loaded touring, and used for almost everything, on and off road. Commuting, road riding, trails. Always the same color. From 47 to 64cm. If you need a taller frame, get a Hunqa or Sam.



Hunqapillar

Best for tires 38 to 55mm. The People's Bombadil. Less brazing, lower cost, all of the function. Our usual first recommendation for all-around rugged, go anywhere riding and touring. Named after a mailbox in Indiana, but with a Q, not a K. There's nothing it can't do.



SimpleOne

Best for tires 33 to 42mm. A one-speed frame, buildable as a two-er if you like. It fits tires up to 45mm, racks, fenders (with up to 38mm), and is up to anything non-stupid you may have the legs for. A good tough bike for fire trails, touring the flatlands, commuting, just riding.



Bombadil

Best for tires 38 to 55mm. Our over-the-top super indulgent mountain/expedition bike for the most rugged terrain with heavy loads, and yet it's not at all like a Hummer in the suburbs. Rides great, ready for anything. Good stout all-rounder for commutes, trails, expeditions.



Betty Foy & Yves Gomez

Recommended for tires 35 to 40mm. Few mixtes are as versatile as the Betty/Yves. It's basically a Sam without the top tube. You can commute, shop, tour, or ride it on fire roads. A skilled rider with some sense can ride it anywhere. Super comfortable, easy on and off.

We have two other buns in the oven, but it's too early to blab about them. Check online.

Also still available are custom frames designed, built, and painted just for you, your dimensions and your riding style. If you're interested in a custom Rivendell and know your pubic bone height, call us up and ask for Mark.

(800) 345-3918



...and a saddle like this may even cure it.

SADDLES DON'T CAUSE IMPOTENCE

Sometime in the mid-to-late '90s a study came out linking riding a bike to erectile dysfunction, and it was cover-story news in the cycling media. Naturally the bike industry was worried about losing customers, so responded with denials and harrumphs and testimonials from guys who weren't impotent. But stories like that don't die, and a few months down the wake some victims wiggled forth (after they'd been cured, of course), verifying that yes, it can happen.

It was the best thing that could have happened for bike saddle makers, who re-tooled to make saddles with slots and soft spots and air gaps. Riders threw out their old saddles, and bought the new ones, and now you have to look long and hard to find a saddle that hasn't been influenced by that Primal Fear.

The Fear is founded in science (anatomy). There are nerves and plumbing behind your scrotum where you sit, but bike commuters, and students riding to campus, and guys who go shopping on

their bikes don't have erection problems related to too much pressure on your nerves.

It's the megamilers who sit down for hours and grind away the miles and don't pay attention to their numbness who have problems. Of course your saddle, riding position, and weight distribution affect your crotch, but nothing prevents a numb crotch and ED like a cut-back in hours a-saddle. A well-shaped saddle helps too though, and here's what to look for:

1. At least 6 1/2- inches wide where you sit, and fairly flat back there. Some riders can't ride one that wide, but for 9 riders in 10, 6 1/2-inches is a good starting point.

2. Not spongy. Supersoft gel saddles feel better on your hand than on your crotch. If the saddle is too squishy, your sit bones compress it, and push it up into your crotch nerves.

3. The "neck" or middle portion should be narrow enough not to scrape your thighs as you pedal. Large thighs make

this difficult, but at least there shouldn't be any extra width from the middle of the saddle forward.

4. Slots may not help, but probably don't hurt. If all these things are in place AND you don't ride for 5 hours or more at a time, you won't need a slot. But these days it's almost hard to buy a saddle without one.

Honestly, there has never been a better time to buy a saddle. The selection is amazing, prices are cheap, and there are tons of well-designed saddles out there.

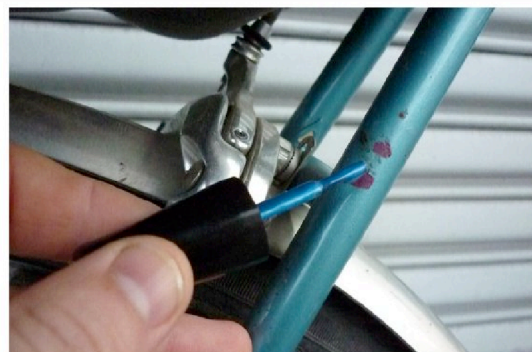
Don't return a saddle because it didn't work out. There are variations in crotches and saddles, it takes some experimenting to get it right, and that's one of the costs of getting into bikes. Expect to go through three or four saddles before finding one that's feels really good. Then pay attention to your zone down there, stand up now and then to let your give your nerves a break and open up your arteries, and you'll be fine.

TOUCHING UP DINGS

Your bike shouldn't stay pristine forever, because it's a plaything, and playthings should show signs of use. It will pick up chips and scratches. Rather than demonstrate how to do a near-pro job at home, we suggest a radical attitude shift that makes that unnecessary, even undesirable.

If you care about superficial scratches on a painted steel frame, you shouldn't. They're inevitable, and caring about them means inevitable pain whenever they happen.

Just get some fingernail polish at Target, and paint over the nick. The color doesn't matter, and there are more colors of fingernail polish than you can imagine. Red is the classic, though.



That's the brush from a bottle of nail polish. Not an exact color-match by any means, but close enough. Shoulda used red.



Lugged seat post and Selle Anatomica. Seat posts and saddles vary in how much you can shove the saddle back. This combo is the all-time champ.



Usable rail space comparison: Selle Anatomica, 10.5cm; Brooks B68S, 6cm.

SEATPOSTS AND SETBACK II

(Another variation of this appeared in an earlier Reader, but...tough! This is far from a duplicate, with one new super duper insight.)

The problem with most small frames is overly steep seat tube angles. The designers do that because a steep seat tube angle lets them use a short top tube (which they know you're going to focus on) while still maintaining a certain front-center. That's the distance from the center of the crank to the center of the front wheel, and in some circles the maker wants a certain minimum there. Saying that puts me on the edge of a related tangent that would get me way off track, but let me just say that the practice of making small bikes with steep seat tube angles is based on assumptions that I don't buy. I mean, I understand what the manufacturer or designer is thinking, but think they're thinking's off, or incomplete.

Ninety-five in 100 bikes 53cm and smaller have steep seat tube angles, by which I mean 74 degrees or more. Fine. But when you combine that either with a seat post that has no offset, or a saddle (esp. with a women's saddle) with a short usable parallel section of rails that's biased toward the rear of the saddle, then it's impossible to get a good position on the bike. You sit on your seat and the pedal's too close to you. The saddle's location itself is too far forward, which puts the forward pedal too close to you. Then when you pedal, the downstroke pulls you forward more and puts more weight on your hands.

The pedaling action is too unrecumbent-like. Here's a way to

visualize it in extreme, because visualizing in subtlety is harder to do. This is that new insight.

Imagine Hussein Bolt or Marion Jones or Bob Hayes on the starting blocks. They're track sprinters. The guy fires the go-gun, they fire the first stroke and lunge forward. They go forward because their knee is ahead of their foot. If it were the other way around, they'd go backward.

Your pedals are the starting blocks, and if you're too far forward on the bike, it is the exact bike-riding equivalent of putting the starting blocks behind your knees. When you push down, you're pushing down and back too much on the pedal..

Hold on. I know how the pedals move, in a circle and all. After 3:00 they move backward, no way to stop that. But what I'm saying is that a more rearward saddle puts the crank more forward and hugely tends to lessen that effect. A recumbent does it in the extreme, which is one reason why recumbent riders don't scooch forward and feel weight on their hands. I know there are other reasons, but the point is, pedaling pushes them back. That's why recumbents need those funky seats with back rests.

The recumbent pedaling position isn't the goal or ideal, but it illustrates (in a rearward way) the same thing the track-sprinters taking off at the crack-o-the-gun-does.

On a bike, the difference between a 72-degree seat tube angle and a 74-degree one doesn't sound like much. But for every 1-degree difference and 55cm traveled, the fore-aft difference is 1cm.

Don't be intimidated by the metric system or the math. All that means is, if you draw two 21.6-inch lines from the same point in space, and one is 1-degree different from the other, then the far ends of the lines will be 4/10ths of an inch apart.

Man, hold on! The top of your saddle is way more than 55cm/21.6-inches from the bottom bracket (representing the "point in space"), and 74 minus 72 is 2, and so that 4/10ths of an inch easily grows to an 1-1/2 inches. That itself is significant, but it doesn't stop there. The difference in seat post offsets (where the clamp is located fore and aft relative to the center of the shaft) ranges from nothing to 45mm (1 3/4-inches). Add that to the 1 1/2-inch difference from seat tube angles, and you're up to 3 1/4-inches, and you're still not finished. Seats vary a ton in how far back you can shove 'em. The King of all seats was the Selle An-Atomica, designed by Tom Milton, who died of a heart attack last year on a double-century. It turns out that he put too much rearward shovability into the saddles, and heavyweights would shove them back too far and bend the rails. But the Selle-A saddles still set the record. On the other extreme, many women's saddles, and even

a few Brooks men's saddles, don't let you push 'em back far enough even for Joe-Likes-To-Pedal-Forward.

It's frankly too much trouble to measure the range of saddles. I'm not going to buy \$1,000 worth of saddles and even then wind up with an incomplete survey and a bunch of saddles we don't want. But the range in saddle rail clampability is at least an inch, and that's

not even including the off-the-charts Selle-A saddles.

As the leg gets longer the saddle gets higher and the seat tube angle difference increases. In small bikes, though, most start with such seat tube angle deficits that they need the right combo of saddles and seat posts to even stand a chance. Small bikes, as a rule, are the worst-designed bikes in the world. There are

some other reasons for this. But the seat tube angle is a biggie.

This is supposed to be a useful, informative story, not a bummer, and certainly not a sales pitch for our bikes. But imagine if you felt this way, and you were designing small bikes. Would you blindly copy the mistakes others have made, just so you'd have a lot of company? Me neither!



Periscopa, DirtDrop 8, DirtDrop 10, Tech Std, Tech Dlx, Lugged.

HOW HIGH CAN YOU GET YOUR HANDLEBAR WITH THIS OR THAT STEM?

We get asked a lot (once a week or so) how much higher this stem can put the bars compared to that stem. Here are the numbers, but don't hone in so much on the numbers that you lose the bigger picture.

For instance, higher isn't better unless you need higher. Albatross bars rarely need highest. Even our lowest is higher than what comes on normal bikes.

On the other hand, to get maximal fabulous benefits out of the wonderful Moustache H'bar, higher really is better. Shoot for height (use a DirtDrop or Dove or Technomic Normal).

On one of our bikes, sized by us for you, a Tech Dlx will likely be delightful. In almost all cases you'll be able to get the bar a couple of centimeters higher than the saddle. And that's the "shortest" of our stems.

We sell a funky device called a Stem Riser. Tho funky it may be, though made by Nitto it is not, it is still a smart and really helpful de-vice that lets you use your ancient and short-quill stem and still get your bars up. Its contribution is listed here, also. Related, we don't recommend it for super classy bikes, because it looks too funny. But for low- to mid-class bikes you like but don't love, and are too small but you want to keep, the funky Stem Riser is just the ticket. The maker, Delta, also makes them for threadless rigs that need them even more. We don't sell those, but maybe your local shop does, and if not you can buy direct from deltacycle.com.

In the chart below, we list the shortest stem as "0", and the other numbers are how much higher in centimeters the bar can get than that. Keep in mind there are other compensating things that aren't addressed here. Like thickness of bar tape, stem extensions (where there are options), and too many to even shake a stick at in the design of the frame.

Stem	Height above Tech Dlx
Stem Riser adds to any of these:	14.2
Nitto DirtDrop 10	8.9
Nitto DirtDrop 8	7.2
Nitto Periscopa	5.9
Nitto Technomic Standard	4.1
Bullmoose 200	1.9
Bullmoose 150	1.9
Riv Lugged (higher min-insert)	1
Nitto Technomic Deluxe	0

Starting with a Tech Deluxe which has 11.5mm of usable height above the MAX-INSERT line, use this chart to see how much higher each stem will getcha.

FRAME ARITHMETIC

Your frame's geometry is important, but its influence on your bike's ride quality and comfort - or on your riding experience - is overrated. Riding position and tire pressures matter more.

Over the years there's been a settling-in of most of the angles and tube lengths on bicycles. Touring bikes have wheelbases an inch to four longer than racing bikes, and slightly shallower head tube angles. Mountain bikes sometimes have longer tubes and are slightly shallower still, but the significant difference is the mountain bike's increased tire clearance and strength. Once you have a good position on the bike and the frame geometry isn't wacky, a degree or two here or a few extra centimeters there won't make a huge difference.

Seat tube angle...

...affects your seated pedaling position. Most seat tubes are within the 72- to 75-degree range (vertical would be 90 degrees). A 72-degree seat tube is considered "slack" or "shallow," and a 75-degree one, considered "steep."

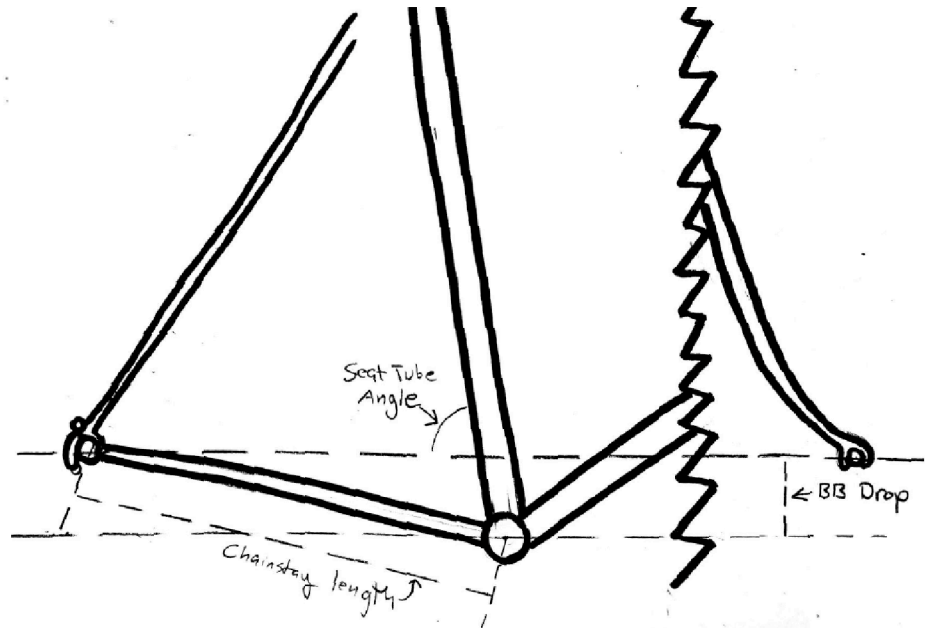
In the old days and even today, many builders, coaches and general "experts" mistakenly believe shorter thighbones required steeper seat tube angles to achieve a proper knee-to-pedal orientation. As a result, small frames have seat tube angles of 74-degrees or steeper—compared to 72 to 73 degrees for most taller frames.

But as the saddle moves back it moves up (as it would for a rider with a longer femur) and forward as it moves down (as it would for a rider with a shorter one), the knee-to-pedal relationship is conveniently maintained.

I like shallow seat tube angles—71 to 72.5 degrees—because I like to sit well back when I pedal, and a 74-degree seat tube angle makes that harder to do. But that's just me. (Well, it may be "just me," but I recognize that is what I like I do to our frames.) Even so, different saddle rail configurations and seat post clamp designs can usually compensate for a seat tube angle that's on the opposite end of where you want to be. That's what the adjustability is for. In some cases there's not enough adjustability, but that's what new saddles and seat posts and frames are for.

Head tube angle...

...is the steepness of the short little head tube, and the bike's steering axis. Mountain bike head tubes are 70 to 72 degrees;



road bikes are 71 to 74 degrees. Touring bikes have shallower head tubes than racing bikes—usually 71 or 72 degrees. There are always going to be radical bikes that play out of bounds, but these are the normal numbers.

Small bikes, especially small road bikes, tend to have shallower head tubes than bigger bikes. Some bike makers do that just because they always have, because they inherited the precedent, or because they see other makers who they trust or like to copy do it. But for whatever bad reasons they might do it, there are good ones to do it.

Head tube angle works with fork rake, chainstay length, and bottom bracket height to determine how a bike responds to steering input and external influences like wind, speed, and bumps on the road. You hear people say, "a 72-degree head tube makes a bike gentle and stable, and a 74-degree head tube makes a bike feel quick." That's an oversimplification but there's some truth in there.

Part of the truth is that, all else equal (same seat tube angle and top tube length), a steeper head tube angle shortens the bike's wheelbase, and a shorter wheelbase quickens steering. So is it the shorter wheelbase or the steeper head tube? Both, of course, and the percentage of influence doesn't matter and is nuts to try to quantify. Steeper head tubes tend to make a bike handle quicker or jumpier, or whatever other way you'd describe the same effect.

Fork rake...

...is the how far the front wheel axle (or center of the dropout, on a bare frame) sits ahead of the steering axis, or straight-line extension of the head tube. Fork rake combines with head tube angle and wheel radius to produce "trail." For any given head tube angle, more fork rake means less trail.

The amount of rake matters more than the actual radius of the bend. Some riders firmly believe a lower, small radius rake soaks up bumps better, but I'm not sure.

Trail...

...is the distance between the wheel's contact with the ground and the imaginary extension of the head tube angle's contact.

Trail figures range from about 35mm to 70mm, but 98 percent of road bikes have between 56mm and 64mm of trail, and 98 percent of mountain bikes have between 63mm and 69mm. When I state percentages like that, you can read them as "almost all."

Trail is a stabilizing influence that helps a bike maintain its course when high speed, bumps or the wind try to upset it. Too little trail makes a bike hard to control in these conditions, and too much trail makes it hard to control at slow speeds, particularly during slow speed turns. Some riders believe that bikes with trail figures at the low end of the range, 32mm to 40mm or so, are easier to control when they're carrying a few pounds

of weight in a handlebar bag, and so prefer more fork rake (for any given head tube angle) to reduce the trail.

I like trail figures from the high 50s to low 60s for just about any road riding, figuring the self-righting qualities of a “medium amount” of trail are worth taking along on any ride. But some intelligent people—to my horror—disagree with me! Preferences are a big part of it. You can learn to like anything as you become accustomed to it. The power of suggestion works on both sides of the “trail” equation.

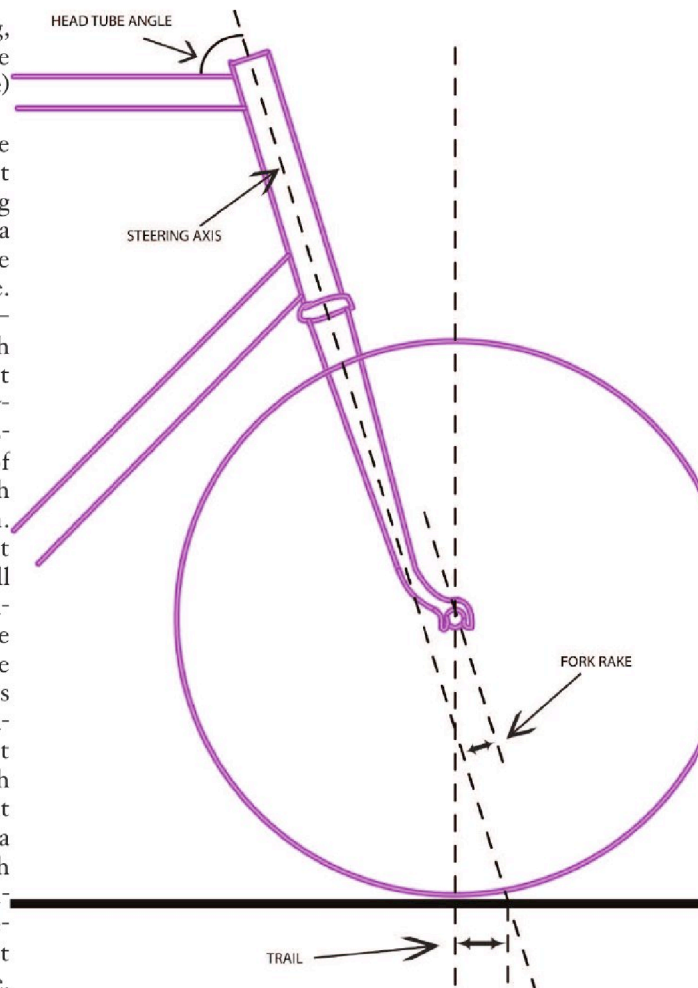
Whatever the case, trail is yet another instance where it is all too easy to peer through a microscope when you should be looking through a wide-angle lens. Wheel mass has at least as much influence on bike stability as does trail, and on a fast and swervy descent, a “high trail” bike with a featherweight wheel can be just as much a handful as a low-trail bike with a heavier one. (Here’s a fascinating fact, or at least something I believe to be a fact based on my source at the time, now long forgotten: When Andy Hampsten (famous for the “Hampsten hook” handlebar grip) won the Giro d’Italia, his famous epic high speed super dangerous snowy-sleety descent of Whatchamacallit Mountain was on a bike with 70+ mm of trail. Theoretically ridiculous, but it just goes to show you...trail isn’t all.

Top tube length...

...is way more misunderstood than it should be. The simplified, conventional thought goes: For any given stem length, a longer top tube means more stretching to reach the handlebar.

But how much you have to lean and stretch to grab the handlebar depends on the combination of top tube length, seat tube angle, head tube angle, and handlebar height.

It works like this: If two bikes of the same size have the same top tube length, same saddle position, and same handlebar-and-stem combination - but different seat tube angles, the one with the shallower seat tube angle offers the shorter reach to the handlebar.



A bigger bike with a longer top tube can provide an easier reach to the bar than a smaller bike with a shorter one. That’s because as the handlebar comes up, it also rises toward you, and on top of that, your arms become more horizontal, thus effectively longer.

Drop and Bottom Bracket Height

Drop is the vertical distance between the wheel centerline and the center of the bottom bracket.

So: Wheel radius minus bottom bracket height = drop.

Drop by itself means nothing, but when you put wheels on the bike, the wheel’s radius and the drop result in the bike’s bottom bracket height, which affects pedal-to-ground clearance. If the bottom bracket height is too low, you might scrape a pedal if you pedal around a corner with the bike leaning. You aren’t supposed to pedal around fast sharp corners, but people do.

If the bottom bracket is too high for a wheel size, the bike (to me) feels as though the wheels are in a trough. It

doesn’t tilt nicely as you stand up and pedal. It wants to be straight up, and that’s it. I’m fuzzy in this area, because although 65mm of drop on a 700c bike feels lousy to me, 40mm on a smaller, 26-inch wheel feels fine. I just don’t know.

Bottom bracket drop also affects standover height, the height of the top tube above the ground. All else equal, a 58cm bike with a short drop and consequently high bottom bracket, will have a taller standover than will a bike with more drop and a lower bottom bracket. Just because the starting point for measuring the frame’s seat tube length will be higher.

The range of bottom bracket heights in road bikes is about 254mm to 280mm (10 to 11 inches). On mountain bikes, which roll over logs and rocks, the range is from 280mm to 320mm (11 to 12.6 or so inches).

I like bikes, both road and mountain bikes, with bottom bracket heights at the low end of the range.

Chainstay length

The main thing to know is this: Shorter chainstays don’t make a bike faster. That’s a common myth, but it is a myth. Short chainstays make a bike react more dramatically to powerful pedal strokes, but the reaction is lateral, not forward. Short chainstays and short wheelbases (in part due to short chainstays) make a bike more active, more easily upset over bumps and in the wind, and in the same way, more reactive to your body’s input.

Over the past 50 years, road bike chainstays have gotten shorter, as manufacturers have made their bikes racier and racier. Eddy Merckx, the winningest pro racer of all time, won nearly all of his 450 or so races on a bike with 42.5cm or longer chainstays. A modern racer would scoff at chainstays that long. Normal these days—for race bikes—is about 41cm.

A good unracier’s bike will have chainstays in the 43.5-46.5cm range.

The extra length adds stability on rough ground and at high speeds, and increases comfort. It pushes the rear wheel further behind you, so when it rolls over a bump, it’s not directly beneath you and you don’t feel the bump as much.

DESIGN MADNESS

When you don't know about something and want to learn and don't want to read a whole book on it, and you want constant updates on technological changes or bike reviews, you read magazines or websites, probably operated by magazines.

The magazine staff has access to the inside goods and those on it are supposed to be experts, or are at least more expert than you are, because that's their job, and you're sitting there working at Dunder Mifflin.

Magazine experts span the range, from 20-somethings fresh out of college with a bike habit and too much enthusiasm and not enough knowledge, to guys like Lennard Zinn, who runs a tight ship and at his best and at his limits can teach anybody anything.

Whatever—my intent here isn't to single out any mag or any review, but to point out how misleading and plain wrong some of the reviews can be. In the bike world we all live in now, an enthusiastic review of something wacky can lead to disappointment or death. It can at least shift values in the wrong direction. This is vague so far, but that's coming to an end. Following are things that get praised in the bicycling press, but may not be good for you.

Light wheels

Discussions on wheel weight always focus on the grams and talk about how easy light wheels are to accelerate. Acceleration happens mainly as you leave your driveway and at restarting at stop lights. A mid-ride sprint is acceleration, but that's where your muscles are supposed to kick in. You don't buy acceleration, you grunt it.

When acceleration means the difference between getting kissed by the podium girls and watching your arch rival get kissed, OK, buy the lightest, most accelerable wheels. Put on them the lightest, skinniest, hardest, most ridiculous tires...if you race. The lightest carbon wheels can easily cost \$3,000 per set. The most expensive run about \$6,000.

Also, you don't get oodles for zip. Superlight wheels make any bike twitchier and less stable. You can get used to it and learn to control it from your end (above the bike), but a bicycle is influenced by what it runs over, too, and there's no learning going on below the tires. Bumps and rough patches and potholes are crudely, stupidly consistent in their effect on the bike. They basically don't care and have no respect, and if you hit one at night, or unexpectedly, or with only one hand on the bar as you're doing who knows what with the other, a light-wheeled bike (and a light bike in any case) will react more dramatically than a heavier bike—and wheels make the big diff.

But nobody ever talks about the benefits of heavier, and I'd even say heavy wheels. A heavy wheel adds stability. When you hit a bump, the bike keeps its path better. That's a big matter, because when you hit bumps it's generally a surprise, and you want some help from the bike to, as they say, keep the rubber side down. Heavier wheels give you that help.

A heavier wheel plows through things like an ocean liner dividing the waves that toss the rowboats in their wake. It's pleasant, safe, and good.

Bigger tires are part of heavier wheels. There are so many advantages to bigger tires, but the main one is the lower

pressure they allow. Lower pressure = more comfort and more safety over bumps.

Heavy wheels maintain their momentum better than light ones, too. This gets us into the uncomfortable territory of "performance," because clearly, once you have achieved a speed, you want to maintain it without undue effort. Imagine a 12-foot diameter solid iron wheel turning horizontally on a smooth bearing, at 25 rpm. Imagine the same size wheel doing the same thing, but this time it's Styrofoam. Imagine trying to stop both of them with one hand. That's what I'm talking about.

In my experience, momentum maintenance matters more than accelerability. The mathematical formula for this equation is $4M > A$.

When it comes to spokes, more... are usually better.

At some point diminishing returns kick in, but for most people who weigh under 260 lbs., that point is more than 36 spokes. The multi-spoked hand-built (or hand-trued) wheel is almost the last vestige of a time when labor costs were cheap, and so didn't dictate manufacturing methods. Now labor costs are high, and nothing is more labor intensive on a bike than a many-spoked wheel.

But to a point, the more, the better. More spokes mean less stress per spoke. More spokes mean the spoke-to-spoke distance on the rim is shorter, so all else equal, a single broken spoke will have less effect on the trueness of the wheel. A broken spoke in a 28-hole wheel is a much bigger deal than it is in a 36-er. But these days 24-spoke rears and 20-spoke fronts are normal on high-end road bikes, and they're ridden by heavy guys who don't race and don't get thier wheels for free.

Here's a good, and admittedly conservative guide for rider-weight to spoke count. It's kind of a lousy guide because rim strength, build quality, and tire size and pressure have a huge influence on the strength of the wheel, the stress to the spokes, and the amount of wobble a broken spoke will induce. Still, it's not as nutty to throw these numbers out there as it is to sell 44-spoke bicycles to 44-year olds who are 44 lbs overweight, and that happens a lot:

Sheldon Brown thought it made more sense to have fewer spokes in front and more in back, and favored 36 x 32 spoked wheels for most riding. The logic is sound, but when the rider is not a flyweight competitor, it is hard to make a case against a 36 x 36. Sheldon himself would even concede that for his bikes, a 36-spoke front wheel made sense. What he didn't like was the imbalance of logic, but imbalance or not, any wheel with more spokes is a stronger wheel, and four extra spokes don't weigh diddly, and so—draw your own lines in the sand, but don't use high-end wheels as a starting point, because for most riders, they're just wacky.

Bike load, rider and gear	Minimum rear wheel spokes	Minimum front wheels spokes
Under 150lb	28	28
Under 200lb	32	32
Under 260lb	36	36

Frame Flex as Comfort Contributor? (F₂=C₂?)

As I've said a hundred times if I've said it once, shock can't be absorbed without movement, and so frame flex, at least in the vertical plane, has to contribute to comfort. The better question is, what flexes on a bike and why, and how much, and how good is it that it does it at all? There are rules, not laws, and observations without fantastic conclusions. That's my style, so...

Bent seat stays: They *suggest* flex more than they flex, and if they flex at all, they flex way below your ability to feel it. Your butt fat compresses. The tires deform. You rise off the saddle some and let the ground bump the bike up into the newlyformed space between your saddle and crotch. Your joints open and close.

That's real, undeniable, effective-and-feelable shock absorption.

The rear half of a typical bike is a triangle formed by the seat stays, chainstays, and seat tube. Triangles work by distributing stress among all the sides and joints. That's what makes them good for bridges, electrical towers, scaffolding, and bike frames. But that means you aren't going to get a flexy, shock-absorbing set of seat stays moving in isolation from the rest of the triangle. The chainstays would have to move upward and the seat tube would have to tilt back more, and this is getting ridiculous. Don't look to rigid frame members for flexible shock absorption. That's the job of the tires and you, the rider.

Frames that claim shock absorption in this way are snake oil, and anybody who says they do is fooling—well, probably a lot of people. The power of the press and suggestion are strong. But don't be fooled.

The same is true of forks. Shock-forks absorb shock. Rigid, straight bladed carbon forks don't. Slender, curved steel forks with small diameter ends and low, small-radius bends may, must flex and absorb better than lesser forks, but the bulk of the absorption is still in the tire. It's easier for low-pressure air to deform than it is for steel to.

What's "big" and "comfortable" in a tire?

To read the reviews, you'd think a 25mm tire was a cushy, and 28mm, positively super-cushy. On what scale? Why do they say that? On the scale of racing bikes that don't fit anything fatter, and that's why they say it. Let racers ride whatever they like, whatever the hype says to, but don't run your equipment options through the racer filter. Listen, on the real world's rough roads and unseen bumps and potholes, 28mm is a skinny tire. Nobody short of a racer should ride tires any skinnier, for sure. Just because there are 22s out there doesn't mean 28 isn't skinny. Racing bikes don't fit bigger than 25mm tires, generally, but that's a race bike no matter how you ride it. It's like wearing point shoes off stage, or fins on the rocks, or something.

A bike that can't fit a 32mm tire is not for general use.

The PPR Factor

That's "price per ride." It's unlikely that the \$10,000 bikes out there will be active on the road in ten years. People who buy them don't ride them that long, have other bikes to ride, and are too into the latest-greatest to ride, I'd say, even a 5-year old bike. They don't ride bikes daily, because if they did they'd be more practical. They'd know what matters in a bike, and they'd know it doesn't cost \$10K to get it. The main reason for spending \$10K on a bike in 2011, is to brag about it.

The guy who does it already has several bikes. He may ride his \$10K bike four times a week. That would be a high max if he has other bikes, but let's go with it. Four times a week is 200

times a year (he's a world traveler, and is away from his bike at least 2 weeks a year). Times 5 years, that's 1,000 rides. If the bike hasn't broken by then, if the bike still is safe and known to be safe and is trusted to ride, it comes to \$10 a ride. In rainy weather he probably won't ride it. He shouldn't, because the bike won't take fenders.

A reliable steel bike, even a fancy \$4,000 one, will last, maybe 20 years at 5 rides a week, because let's say it's good for year-round riding and it feels good enough to ride all the time, and the \$4,000 broke you. Five rides a week x 50 weeks a year is 250 rides, x 20 years is 4,500 rides (2 weeks in the Poconos), that's \$0.09 per ride. Did I do all that right? Is there that much difference, and does it matter to Daddy Warbucks, and should it matter to anybody? I'm not sure about anything but the math. Ten bucks a ride versus nine cents a ride. Plus maintenance, of course.

How stiff do handlebars need to be?

Several years ago and after scores of 26mm (or so) clamp diameters, the Italians pushed clamp diameters to 31.8mm. Thirty-one eight is a bizarre number—why? Thirty-one eight is an inch and a quarter, and in the bike world that's a steel tube diameter. Why arbitrarily go to that for a stem clamp, as opposed to an even 30mm? Why go fatter, anyway? Stiffness has to be the reason, but Bo Jackson isn't sprinting on these bikes, and what benefit is there to more stiffness? There must be something going on, because now there's a 35mm bar. That's cartoon-style, and it sends the message that bars weren't stiff enough with 26mm bar clamps. Not only are they stiff enough, but they're better looking thinner.

Theadless forks + carbon steerers = dumb

They're clever. They make life much easier and less complicated for frame and fork makers, because there's no length to match to a particular head tube length, and there are no threads to line up with the threaded parts of the upper headset. Those are monumental benefits for everybody except the rider who's trying to dial in the bar position and get comfortable. When you combine the gigantic drawback of a threadless headset (severely limited vertical adjustment) with fitting methods that put riders on smallish bikes, you end up with guys who are 6-ft x 220 lbs. riding 58cm or smaller frames, and that's almost never right.

Internal headsets are even dumber. I'd list the benefits, but I can't count that low. Sometimes they're described as "sexy", and that's a red flag. Describing inanimate objects as "sexy" is the last resort, after the describer has looked for other good things to say about them that actually make sense, and came up empty. Internal headsets further lower the handlebars; or I should say, make it even harder to get them higher.

Pedals + Shoes

I'm not getting into this. Already done it, with The Shoes Ruse, which you can read on the site. Or Google "Shoes Ruse."

Summary

This is not meant to be self-serving, but for it not to be self-serving there'd have to be some hypocrisy going on. We sell what we believe in, and what we believe in is this... stuff. But if you buy the arguments here, you can use them to your advantage anywhere you shop. You may end up rejecting a lot that you might not have rejected a year or five ago, but that in itself isn't necessarily bad. You'll end up with a smarter bike.

Q/R AND DROPOUTS

We've covered this before, but it's the kind of topic that warrants repeating every few years—not because you need a remedial course in how to close the wheel's quick-release, but because every so often we pick up a new reader who doesn't know, and needs to.

In the pre-carbon era, most of the lawsuits that involved bikes also involved the front wheel's quick-release. Back in the late '80s I remember hearing from a reliable source that 80 percent of the bike lawsuits were about the quick-release.

Of course—or as a matter of fact—the quick-release itself was never to blame. I've never heard of a faulty one. If you're in the business of making quick-releases (the guts of which are simple), you don't design ones that don't work. You don't turn the spoon scoop 45 degrees to the handle, you don't reinvent the rubber band, and you don't monkey with the mechanism inside a quick-release. Plus you test the ones you make to make sure they work.

Anyway, the lawsuits focus on the dropouts, specifically whether or not they had a “positive front-wheel retaining device” which could take many forms. All PFWRDs prevent the wheel from coming out of the dropout when the quick-release is open, which it should never be when you're riding the bike.

And, when the Q/R is closed properly, it can't vibrate open. The mechanism that makes it work is the same as that which makes a Vise Grip lock closed. It's called an “overlocking taper,” and is an eccentric cam that, when closed under pressure, can't be shaken or vibrated open by any force of nature or deity.

The Q/R was designed by Tullio Campagnolo after a cold race during which he went to flip his wheel around to get another gear or to fix a flat—it doesn't matter which, since both require wheel removal—and found that the large wingnuts he used to hold the wheel in place had frozen in place, and his weak cold fingers couldn't loosen them.

He said shoot, and a year or so later the world had the quick-release, and life for bicycle riders has been great ever since, until somebody fails to close it under tension. It doesn't require much. The recommended amount is usually stated thisaway: Close it with enough force for the lever to leave an impression on the heel of your hand.

That's good advice, but the reality is that even the amount of closing force a typical 11 year old can generate with her baby finger will hold a front wheel in place, since all it has to do is fight gravity. Nobody's down there trying to pull your wheel out when you're riding, and you have gravity on your side.

The problems come when somebody doesn't close the quick-release at all, and on top of that, bunny-hops a bump or goes over a deep curb and lifts up on the front of the bike while the wheel's falling out. It's a mini perfect storm, and when it happens, the wheel comes out and you crash.

If the crasher sues, the bike maker (and often bike shop, and maybe the county where the accident happened) are all named, and the plaintiff's lawyers always blame it on lack of a positive front-wheel retention device. The most common kind of PFWRD is a little nub or two on the bottom of the dropout, unaffectionately and widely known as “lawyer lip(s).”

Lawyer lips totally negate the Q/R, though. Suddenly, you can't open and close the Q/R to remove or install a wheel. You have to open it, unscrew it, and then readjust it the next time you close it. If you forget to readjust it, the wheel may come out;

and at the least, it will wobble a lot—enough, conceivably, to cause an accident.

The argument can be made that it's more important to keep a fool safe than to make a fast and convenient wheel change, and there's no arguing with that, but it's the kind of argument that could change how we do everything we do and what we do it with. No more knives or forks, just spoons. No more hot food, no more razors, and no more glass anything except camera lenses. No more bicycles. When safety takes the form of dysfunctionalizing a highly functional mechanism that is easy to use properly and 100 percent safe when used properly, it's not a good kind of safety even bicycles. There are lots of ways to crash a bicycle.

Fast backward to about March 2010 or so. I got a call from a lawyer who asked me if I'd worked at Bridgestone. He knew I had, but had to ask me.

Here's the story. A woman, XYZ, is an “experienced triathlete” in a local state. She bought a 1989 model RB-1 in 1994, new, from a shop. I don't know why the shop had or still had that bike five years later, but it doesn't matter, she bought it. She rode it for 15 years (trihaloning on it), and during those 15 years she naturally changed a lot of parts.

One day she and her husband were riding up the road and famous movie director you've all heard of who isn't Clint Eastwood was directing a movie, I don't know which one. XYZ was not in the movie, she was just riding up the road. There was an electrical cord across the road, and when she came to it, she tried to hop the front wheel over it. I would have just ridden over it, but whatever, she lifted the front of the bike, and the wheel came out and she crashed. She's OK, but she sued the movie production company, the bike shop, and Bstone Japan.

Her lawyer called me because I'm so associated with Bstone.

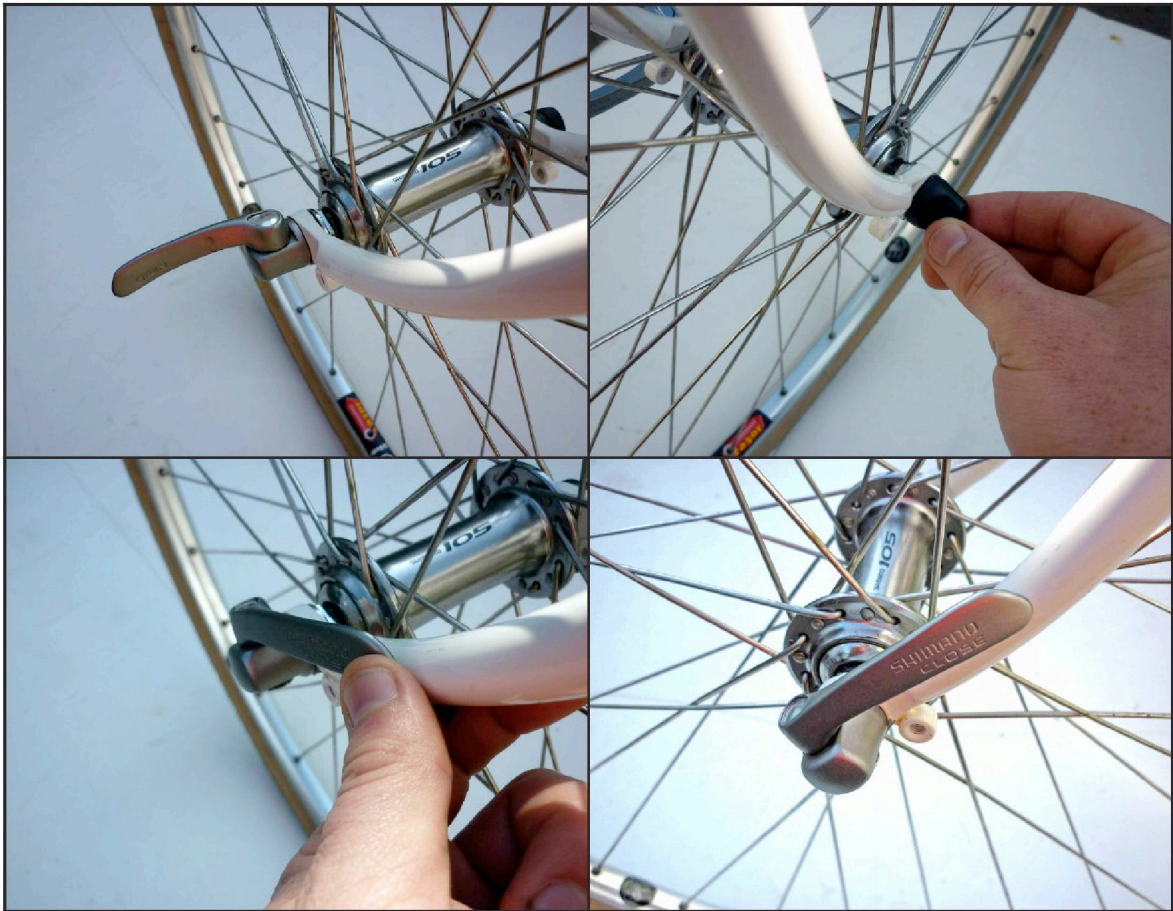
I went to the Oakland Airport Hilton, where I was to be deposed (sworn in and interviewed). There were about five lawyers there, and a court reporter/typist, and several of them on both sides knew OF me, and Bstone, and Rivendell. I was a celebrity, and shook hands all around and made small talk about bikes and Bstone—XO-1 this, bike riding that—all in a friendly way. Then I was deposed for 4.5 hours. I have a DVD of the whole thing. In it they asked me background information about Bstone Japan and its American subsidiary/outlet where I worked; and my title there (Marketing Manager) and my role in the bikes (suggested geometries, recommended parts, but didn't have final say over anything at all).

It all went fine, and I was paid \$40 for my time, which would've thrilled me in 1968.

Then fast forward to sometime in late August. A fellow comes to the door and asks, “Grant?” and I said yes, thinking he was a customer, but of course I'm not going to introduce an irrelevant happening into this story, so he was a process server, and now I was named as a defendant in the lawsuit.

It's unusual for an employee of a company to be sued, because when you work for a company, you're just following orders. But in my case they made an exception, because my internet reputation has me as a God of Bstone, and so I am considered “much more than a mere employee,” or something to that effect, as the plaintiff's lawyer put it.

Here's where it splits off into funny directions. I got famous because I was the media contact, I wrote articles in bike maga-



Clockwise from top.

- 1) Have the Q/R lever sticking straight out.**
- 2) With the lever still sticking straight out, tighten the nut on the other side.**
- 3) When there's just enough resistance to make it hard to close, close the lever**
- 4) Try to have the lever lined-up with the frame so its not sticking out, waiting to get knocked loose.**

zines, I was interviewed and quoted in bike magazines—because as Marketing Guy it was also my job to be the media contact person. Who else would be that guy? Not a salesman. Not the Japanese boss. Not the credit & collections department ladies or guy. I had the bike experience and technical knowledge to answer questions about the bikes, and that plus media contacts makes fame. But all the bike “design” stuff was presented to Bstone Japan as “suggestions from the US division,” not as demands or final answers. When you’re a big Japanese manufacturer with a full design staff of engineers and smart guys, you don’t kow-tow to an American bkie, but in the interest of good relations and a certain amount of success in the market, you do listen, at least, and they listened—at most. If what I said made sense and there weren’t secret insider reasons to do otherwise, they’d prolly go that way.

But it all comes down to the dropouts, and here are two more funny but related things. One, I never even knew who made them, and didn’t specify any particular brand or model or even style. And Two—lawyer lip or no, then or now, there’s not a frigin’ thing wrong with that dropout. Forged steel, plain and simple, and no lawyer lips.

LL weren’t required then, and I don’t think they’re required now. They’re more common now, but not because they’re an improvement that manufacturers have opted to adopt. They’re all over now because most bike makers and all big ones with a legal department have said screw it, whatever it takes, just put them

on. In 1989 things were different, and bikes like the RB-1 (which were often raced) would never have LL, because they make it too hard and slow to change a wheel.

So: Not only did I have nothing to do with that dropout, but I also—after the fact, after this lawsuit and retrospectively—still fully endorse it.

Bstone is paying for my defense. Its lawyer (AF) is my lawyer. He has tried to get the judge to kick me off the case, but so far no luck, because of the “he was more than a mere employee” deal. It’s great to have such a reputation.

Rivendell has nothing to do with it, of course and thank Buddha for that. It’s ME they want. But I don’t know how much they want from me. They may think I am richer than I am because I’m famous. My house is worth \$425K or so, and I owe \$100K on it. My entire savings and stocks and retirement come to \$300K, which is a lot of money, but I’m 56 years old and have been at this a while, and most 56-year olds I know have more than that. I don’t want to lose any of it, but my wife says we have some insurance, and maybe they’d get money there.

They deserve nothing, but we’ll see how it goes. Meanwhile, here’s how to close a quick-release. Don’t ride your bike unless it’s closed properly, and once it’s closed properly, don’t worry about it coming open, because it can’t. There is nothing wrong with a dropout that doesn’t have lawyer lips. There’s a lot wrong with a legal system that doesn’t understand that.

FRAME MATERIAL BASICS

Steel

Bicycle frame steels, like all steels, are 95 percent or more iron. Pure iron isn't suitable for use in relatively lightweight bicycle frames, so it's alloyed with other elements to give it the necessary mechanical properties and weldability (or brazability).

Cheap bike frames are made from steels variously called "high carbon" or "high tensile" or "low alloy" steels, depending on who's talking. In equal dimensions, they weigh the same as fancier steels, but are roughly fifty to eighty percent as strong as the best bicycle steels, and these steels are used in frames whose customers want strong, tough bikes and can't afford to pay for, or just don't require, frames that are both strong and light (strong is enough). These lower alloy steels are highly weldable, and degrade less under the torch than do the higher strength steels used in the best bicycle frames. So it doesn't take a light touch with a torch to weld or braze them. The tube walls are generally 20 to 30 percent thicker than they are in fancy frames. On older frames, sometimes you see a "1010 steel" sticker, denoting the series of steel used.

The "fancy" steel frames are made from steel alloyed mainly with chromium and molybdenum, with lesser amounts of other elements, including manganese, niobium, silicon, and vanadium. They're strong enough to be used in lesser amounts, but generally (not always) degraded more by high or prolonged temperatures. When use or price dictates a lighter steel frame, they're what you get, and to my way of thinking, alloy steels are the best material for strong, light, safe, and enduring bicycle frames.

Steel's big advantages over other materials is its toughness. A scratch can remain a scratch for thirty years without growing into a crack. A crack can exist for hundreds to thousands of miles before the frame is unsafe to ride—and the long time it takes to become "dangerous" is time you have to discover it and deal with it. In many steel frames, a broken tube can be replaced, without the frame suffering for it. When a tube or other steel part is cracked, it can often be repaired instead of being replaced. The same toughness that makes steel good for hammers, nails, bridges, loading cranes, building skeletons, and electrical towers also make it highly desirable for bicycle frames.

Steel's disadvantage is the public's perception of it and the lack of support it gets from manufacturers and the media. Critics say it's heavier, and there's no denying that. In the context of the whole bike with all the parts, accessories and the rider on it, though, the actual frame weight is rather insignificant.

There's also the rust issue, but it's more a theoretical problem than a real one. Steel can rust, but paint protects the outside, and the inside isn't as vulnerable. Still, there are plenty of rust-inhibiting sprays that take four minutes to apply and take care of the inside. Even without them, as long as the steel tubes aren't ridiculously thin in an attempt to compete in weight with aluminum and titanium, the tubes should last a quarter century or more, easily. Still, the sprays are cheap, so you might as well use them. Boeshield and FrameSaver are two that your bike shop may stock. LPS makes a strong rust inhibitor, and car parts places have it.

Aluminum...

...is one-third as dense as steel. A one-inch cube of it weighs one-third as much as a one-inch cube of steel. This is true for any alloy of steel, any alloy of aluminum. So it has a weight advantage right off the bat, but aluminum frames don't weigh one-third as much as steel frames, because aluminum isn't as strong and stiff as steel, so you have to use more of it. Still, aluminum frames wind up weighing less than steel frames. Maybe 25 percent less, or so.

Aluminum doesn't rust, either, because it has no iron.

There are many alloys of aluminum used in bike frames, with varying degrees of strength and weldability. In the '70s and '80s it was common to see unwelded aluminum frames, where the tubes were glued into or over lugs, but now almost all aluminum frames are welded (it's less costly, and aluminum is no longer the new material, so doesn't feel pressure to look like a steel frame).

Aluminum's Young's Modulus — a metallurgical term that more or less equates to stiffness—is half that of steels, so an aluminum frame that's as stiff as a steel frame will have either thicker-walled tubes, or larger diameter tubes, or both; usually both.

The larger diameter tubes make it easy to distinguish an aluminum frame from a steel one, and in the '70s and '80s the

wide-tubed aluminum frames stuck out. These days they're all over the place, so it's the skinny-tubed steelies that stick out.

Aluminum gets an undeserved bad rap for providing a harsh ride. The "ride" of the bike is far more influenced by rider position, tire pressure, and wheelbase than by frame material. I think many of the early aluminum bike had short wheelbases and hard skinny tires that created the hard ride blamed on the frame material.

Aluminum's weak point as a material is its fatigue resistance—its ability to withstand repeated flexing without degrading. Smart aluminum frame designers realize this, and that's why aluminum frames are built to minimize flex.

Once an aluminum frame has been bent, even a little, it can't be straightened and ridden safely. At that point its fatigue strength has been reduced so much that it's ready to break in half. That's a scary thought, but it doesn't damn the material. Just don't ride damaged aluminum frames.

Titanium...

...has been used for bike frames since the early '70s, but really took off in the late '80s, on the heels of aluminum and before the big boom in carbon fiber.

The earliest titanium frames were made of unalloyed, "commercially pure" titanium, but they lacked the strength of alloyed titaniums, and now virtually all titanium frames are made with alloyed titanium.

Titanium's density is about half that of steel, so one cubic inch of it weighs half as much as a cubic inch of steel. And it doesn't rust, or degrade over time with exposure to weather and bad conditions, as can aluminum or steel. It has much more fatigue resistance than aluminum, but still falls behind good steel in this way.

Titanium frames are almost always tig-welded, are rarely painted, and tend to all look alike; or to look similar enough that the decal becomes their distinguishing feature.

Damaged titanium frames are more easily repaired than are aluminum frames, but not so easily repaired as steel frames.

Carbon fiber frames...

...are less dangerous than carbon forks. It's the forks that are the problem. Carbon's Achilles Heel is that it is really sensitive to imperfections (notches, nicks) and when it fails, it fails too quickly

for you to figure out what's happening and get off your bike. That would almost be acceptable in a racer's frame—in the right uphill racing circumstance, when there may be a slight psychological advantage in knowing your frame weighs only a pound and a half. But it's unacceptable in a fork, which is your link between safety and extreme danger. And yet, carbon forks are common.

Carbon is an amazing material in so many ways, and in some applications (outside of bicycles) it is either the only material that works, or is just clearly superior to every other option. But given its questionable advantages—and total lack of them for the unracer—and its undeniable history of failures and consequences, it's not the unracer's choice for a bicycle frame—and certainly not the fork.

You can go on the internet and find videos of guys hammering (literally) carbon forks to no effect; but you can also go online to bustedcarbon.com and see real-world failures, often of nearly brand new frames and forks and bike parts, that have failed “for no apparent reason.” So as phenomenal as carbon is, there's still a gap between its theoretical strength and potential, and its history on bicycles. It will continue to improve, but it has a ways to go.

Wood and bamboo

Everybody roots for these underdog materials, and there's been lots of progress in the past five years. Of course, wood was the first bike material, and when it's the only material available (as it is in some poor villages in some poor countries), it's the normal everyday bike frame material. But crude yet charming pedal-less push bikes are one thing, and

bikes that work like the bikes we're used to are another, and those are the kinds of wood and bamboo bikes I'm talking about.

Craig Calfee trains Africans to make cargo bikes out of native (or at least local) bamboo, and the bikes can carry 600 pounds. They're so neat! You should google Craig Calfee bamboo bike and link up to the videos.

Renovo is an Oregon company that makes wood bikes with carbon (usually) forks. They're at the chi-chi end of the wood spectrum, and the frames have that fat, monocoque carbon look, but they're wood. I suspect they'll outlast any carbon frames, but all but one model has a carbon fork, and that's not where you want your weak point. Still, Renovo is certainly advancing the possibilities of wood, and we're rooting for them (except for the forks).



Shimano 105 front hub with 100mm O/L

A matching 105 rear hub with standard “road” 130mm O/L

OVER-LOCKNUT-DIMENSION (O/L)

This is the distance between the inner faces of the dropouts. Since most front dropouts have an overlocknut dimension of 100mm (there are a few exceptions), “overlocknut” is almost always the subject of rear dropouts, whose O/L varies from 120mm on track bikes and some single-speeds, to 160mm on some tandems. Typical O/L dimensions:

120mm: Track bikes, trackish bikes and road bikes before about 1977, when 5-speed freewheels were the norm.

126mm: Road bikes from the late '70s through the late '80s or early '90s, when 6-7 speed freewheels were the norm. Increasing the O/L made room for another cog or two.

130mm: Introduced as a mountain bike O/L to reduce wheel dish and give a stronger wheel. Used on mountain bikes from about 1980 through 1990 or so. It's also the current road standard, introduced in the early '90s with 8-speed cassettes, and compatible also with 9- & 10-speed cassettes.

135mm: The mountain bike standard from about 1990 on, and common among touring bikes now, too. For the decreased dish and stronger wheels it allows.

145mm+: Introduced for tandems and still most common on them, but as wider hubs are developed to fit in the wider O/L dimensions, it is inevitable that other users will adopt them for non-original uses. So you see this wider O/L dimensions (usually 145mm) on some mountain bikes and touring bikes.



A useful and well used bike

FIRST-WORLD BIKES IN THIRD-WORLD COUNTRIES

Bicycles help people in third-world countries with farming (transporting seeds and the harvest), education (kids can get to school by bike), and health care (use your imagination, but it involves transportation). When there's the rare bite of recreational time, kids goof off on bikes.

But in developing countries, bicycles have always paved the way for mopeds, then motorcycles, and then cars. It has happened that way in every car-loving country in the world, and it's happening now in China and India. When bikes are the alternative to walking or horses, people are gung-ho for them. Put a motor on one, though, and then see how many still feel the thrill of moving on their own muscle-power. Muscle-powered locomotion is often the only choice for poor or desperate people, and when a motor of any kind enters the picture, the green pedal power doesn't seem as great anymore.

If you buy the reasonable notion that Third Worlders would rather drive than ride, and you also see how bikes eventually come to have motors on them, and a couple mutations down the road we have cars and pavement and all that comes with them, then it takes some of the fun out of equipping kids in

Africa with bikes. Not all of the fun out of it, but some. It's one of those complicated things in life.

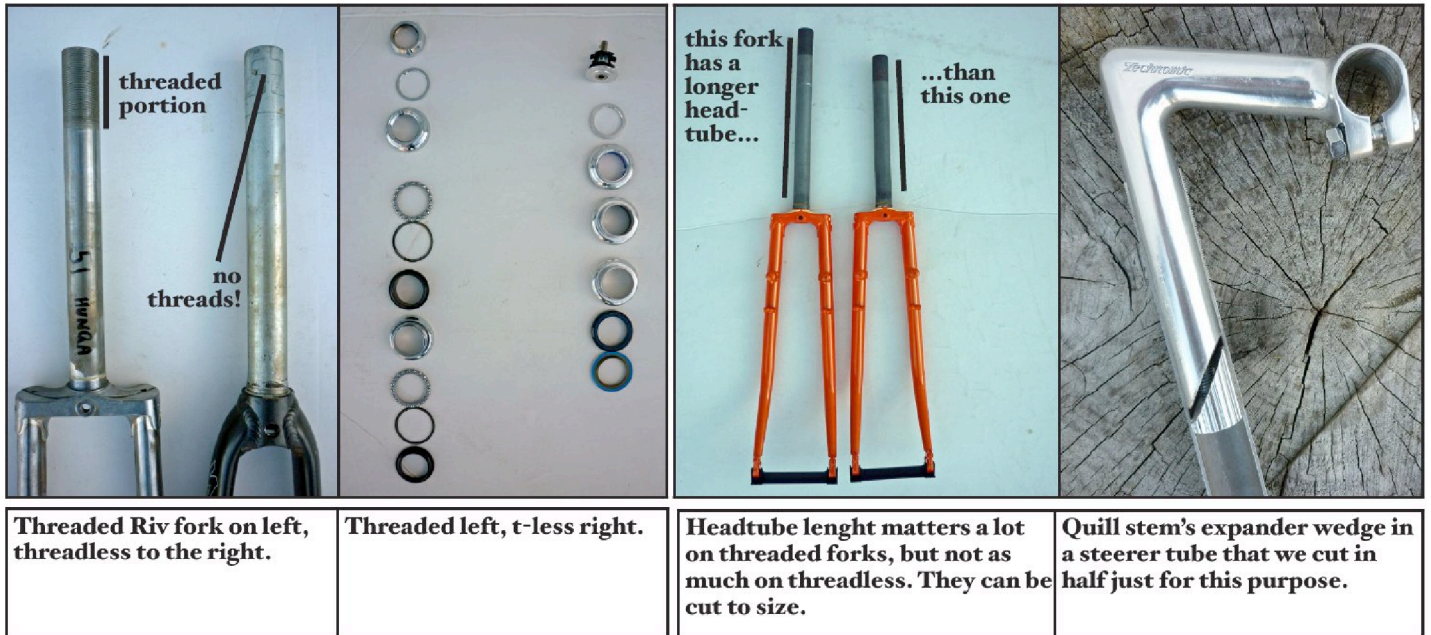
I wonder what a good plan would be, and how involved we should be in it. My natural impulse is to "give 'em all bikes", but well-meaning introductions by outsiders have a long history of bad unintended consequences, so "give 'em all bikes" may be the naive, feel-good, short-term solution. I wonder if electric bikes and electric cars could be a good way to go. I've never been to Africa (or any Third World country), and I don't have the background to come up with any sort of informed solution, or even opinion about it. BUT, I don't like the idea of bikes turning into cars in 20 years, that's for sure.

I like the Craig Calfee deal, making bikes out of native plants. Wait a minute—is bamboo native to Africa? Well anyway, that seems like a good way to go. It's a natural governor, it minimizes pollution, it encourages self-sufficiency (I'm all for foreign aid, but also all for self-sufficiency), and a bamboo bike seems further from a metal motor car than does an all metal bike imported from China.

IS IT TOO MUCH TO EXPECT DESPERATE PEOPLE TO BE GREEN?

I think so. Unstressed rich people recycle more than stressed poor people do, but even a super green stressed rich person is unlikely to sort out and clean recyclables from a mound of garbage. And by the same old token, a poor person who's living a humble but low stress life may hookup with a bunch of local greenies and get into the recycling groove himself. The early politeniks who let everybody else eat before they did never got a chance to pass on their genes. Where am I going

with this? Oh yeah—well, the point is, the stressed Rwandans and Somalians and Kenyans may be all over bicycles when they're an alternative to walking, but they're not into them for the greenness, and they're a major step toward motorized transportation, and the infrastructure that comes along with it. For whatever good bikes will do, and it'll be a lot, there will be unintended consequences that aren't all good. That's what history suggests, anyway.



HEADSETS

John Rader patented the ubiquitous threadless headset system, including the threadless headset, in 1990. It was called the Aheadset, and was licensed to Cane Creek. The patent ran out in the Fall of 2010, so now ennybuddy can make one.

It's a smart design, and we offer it as an option now and then, mainly on the Rodeo, but we haven't jumped on board whole hog like everybody else has, because as smart as it is, as clever as it is, and as smarter than I am as John Rader is, the whole threadless system has some quirks about it that keep the threaded headset the winner here. Rather criticize threadless rigs—not a nice or necessary thing to do, and I've already exceeded my comfort limit in that regard—I'll explain and sing the praises of the nearly forgotten quill stem and threaded headsets they require.

How it works

In both systems, the fork gets a bearing cone, and the upper and lower ends of the frame's head tube get a bearing cup or cone, depending on the particular model headset. The difference is the rest of the headset. In a threadless system, the steer tube and other parts of the headset are threadless, and in a threaded rig they aren't. So setting up and adjusting the two styles is different.

Both sides have their defenders, but it's quite an unfair tug-o-war, with the threadless side having about 245 pullers to every one the threaded side has.

The Small Undeniable Advantage of Threadless Headsets

If a threadless headset comes loose a-ride, you can resnut it with a 5mm allen. If a threaded one loosens, you can do a half-baked job tightening it with your hands, maybe, but it'll be loose again soon enough. To put that in context: I haven't had a threaded headset come loose in so long I can't even remember when it last happened. If the headset is adjusted right and snugged, it'll probably stay that way for years and years.

The Bigger Undeniable Advantages of Threaded Ones

It's not in the headset itself, but in the kind of stems it requires. A threaded bike uses a quill stem, the kind that slides up & down inside the steer tube and stays put wherever you tighten it with the 6mm allen bolt. The advantage is the ease and the range of adjusting the height of the handlebar (by means of the stem). The height depends on the length of the quill and the angle and length of the extension, but holy cow, there's a huge range. And since handlebar height is so key to comfort, and since higher generally leads to more comfort, this vertical raise-ability of the quill stem and threaded system is nothing to sneeze at.

Old style classic quill stems tightened inside the steer tube with an expanding cone. The base of the quill was split to

allow a cone at the end of a threaded bolt to hike up the bolt, expanding the splits as it went. The adjustment was firmed up by the walls of the quill pressing against the inside of the steerer. Snobs still prefer them for microscopic and largely theoretical advantages: As the bolt is tightened, the stem doesn't tilt 0.0001 degree, as it does in the way that comes next. But practically, they have to be tightened too much to hold in place, and if you over-tighten the expanding cone type, they'll bulge the steer tube.

The other way—formerly considered low-brow but these days preferred by almost everybody, and certainly everybody who isn't swayed by the classical roots of the cone-way, is the wedge. All our stems are wedgie, because a wedge holds better with a lower tightness. The tilting action is too insignificant ever to mention again. And here's a minor but actual thing: The stress riser on a cone stem is at the base. On a wedgie it's at the point of the wedge. If you screw up and tighten a coney in the threads of the steerer it may break, and you suddenly can't steer your bike. With a wedgie, the steer tube can break and the wedge holds the top and bottom pieces together, and I've known guys who've ridden for months this way. It feels like a loose headset, is all.

On all of our bikes, we use only enough threads to adjust the headset. So that break can't happen.

HELMETS AREN'T ALL THEY'RE CRACKED UP TO BE

Helmets save heads with their sacrificial Styrofoam. The styrofoam in the helmet compresses on impact, slowing your brain so it doesn't bang against the inside of your skull as hard. The shell protects against abrasion and penetration, and prevents the Styrofoam from exploding upon impact.

We could wrap it up right there if that were the end of the story, and I promise you I wish it were, but disturbingly, it isn't. For the record and publicly, I'm 90 percent pro-helmet; privately, I'm about 50-50. The difference is because:

Helmets Increase Risk Compensation

Any protective gear you wear or use increases the likelihood of your living dangerously, a phenomenon not talked about much in the world of bikes, but known far and wide as "risk compensation."

Risk-compensation deniers say safety gear is just taking sensible precautions. I agree. But if you wouldn't do the deed without the safety gear, it is still risk-compensation. You wear a haz-mat suit when you're mopping up toxic sludge, a parachute when you jump out of an airplane, a bullet-proof vest if you're a cop in Juarez, and a seat belt in a moving car. I've heard a hundred bike riders say, "I won't leave the house without a helmet. I feel naked without it." Once they say that, they're admitting they're taking chances they wouldn't take without the helmet. That's the deal. And they don't look naked without it.

We're all risk compensators in many areas of our lives, so why should riding a bike be any different?

Risk compensation makes the most sense when the protection is absolute, and it never is, absolutely. A bulletproof vest doesn't protect your head, and a parachute could be improperly packed, or ripped. But some safety gear is more protective than other. A yellow slicker and rubber boots really will keep you dry in the rain, silicone gloves really do protect your hands from hot pot handles, and a catcher's mask and crotch cup really do work as promised. What about bike helmets?

Eight ounces: Not a lot to work with

Bike riders require superlight, super-vented helmets, and eight ounces, or even a pound, isn't a lot to work with. It's kind

of like a 6-person baseball team, or a 30z bulletproof vest. No motorcycle helmet is as light as a bike helmet, nowhere close, even though bike riders and motorcyclists often ride the same streets, and at the same speeds, but no bike helmet would pass a motorcycle helmet test. On the other hand, a bike rider wouldn't buy or wear a helmet as hot, heavy, and expensive as a motorcycle helmet.

That's where things go south. Bike helmets are compromised so you'll wear them. The question is whether you're safer wearing a helmet that doesn't totally protect you and riding as though it does; or going skull-to-air and riding more carefully. Neither of those is a great option, but if your head is destined for pavement, you're better off with the helmet. Not all accidents are due to "risk compensation," and the unseen oily metal plate is one of many arguments for helmets. That doesn't mean there are no arguments against them, though. It's not that cut-n-dried.

You can get killed below the head, too.

If a car runs into you hard, you'll probably die of internal injuries below your head. It's not a lovely thought, but it happens, and the helmet doesn't prevent it. If the helmet makes you risk riding in thick drunken traffic when you otherwise wouldn't have, and you get hit, then the helmet (via risk compensation) has not been your friend.

Helmet Laws have unintended consequences

Sometimes when helmet laws are enacted, bike ridership goes down. Teenagers especially quit riding. They're a bit over-concerned about their looks, and teenage girls who get up half an hour early on a schoolday to bouffant their hair don't want to put a helmet on it. This doesn't mean helmets are bad; it means teenage girls hate helmet hair.

Any suggestion that helmets aren't fully fantastic is quickly twisted into a disregard for human life, or gross irresponsibility. People crave simple solutions, hate the burden of complex issues, and bike helmets are a burdensome complex issue.

In the Netherlands, nobody wears a helmet

And bike ridership and safety are way better there than here. If helmet laws were enacted, would ridership drop? It al-

ways does. Adult Netherlanderians who've grown up on bikes and never worn helmets aren't going to take to a law like that. American bike riders vacation in Amsterdam or wherever and come home amazed at how many people ride, and how safe it is. Would it be safer with helmets? Countries with helmet laws have much worse safety records than high-ridership countries without them, so it's hard to make that case.

How to fit and wear a helmet

Some heads are round, some are oval, and you need to find a brand that fits yours. Giros don't fit Japanese heads well, for instance. Bells do.

When the helmet fits, you should be able to shake your head around without the helmet moving much even when the strap isn't snug. Start with the right size shell, and goof around with the pads until it's right.

Don't wear your helmet like a 9-year old girl does

For some reason, young girls wear the helmet so far back on their head that their entire forehead and the first inch or two of hairline is exposed. Sometimes boys do that, sometimes even adults do it, but most of the adults who do are women just getting into bikes. Don't do it. Wear your helmet smack-dab level.

Adjust the straps so that on each side, the front and back strap meet just below your ear. Then adjust the chin-strap (which goes behind the chin) so that you can yawn comfortably, but that's all.

A helmet fitted this way, worn this way, and adjusted this way will stay on your head even in the most rolling-tumbling falls.

Wear a small helmet

Helmets make your head bigger, and more likely to hit something. Lie on your side on the floor or stand against a wall and try to make your head contact the ground. Now try it with a helmet. Don't not wear a helmet; just make it a smallish one.

Wear a round helmet

Elongated shapes with Cadillac-like fins in back not only look foolish, but they increase the size of the helmet unnecessarily, and can catch on the road and leverage your head and neck around.

Own at least two helmets

One for hot weather, with vents big enough to let in air and to allow you to scratch an itch on a long summer ride; a warmer, more protective one for cold weather riding. The best winter helmets are multi-sport helmet (bicycling, skateboarding, snowboarding, in-line skating). They cover more, vent less, and may have removable ear warmers. They cost less than fancy bike helmets do.

Make it cooler without compromising it

If your helmet comes with removable pads of varying thicknesses, rather than use them full-length for full-contact around your head, cut them into pieces about the size of a nickel or quarter, and just cover up the Velcro spots with them.

This way, there's a small gap of air between your forehead skin and the helmet, so there's more circulation and cooling.

There isn't as much foam to soak up the sweat, but with a cooler head, there's less sweat to soak up.

The helmet feels better with the full-length pads, and that helps sell it in the shop. But the modified pads aren't uncomfortable, and after a moment you forget about them. You can feel the improved ventilation, though.

Reflectorize it

A helmet gussied up with reflective tape looks on fire when headlights hit it, and may prevent the impact it may not fully protect you against. I always wear a helmet at night unless I forget to, and that's mainly because it's a great platform for reflective tape and a headlight. I like the headlights.

Bees and bright helmets

The all-time biggest bee-attractor helmet was the yellow MSR helmet, popular in the late '70s. It had dime-sized holes

and not many of them, but bees still found their way in, and stung me and two of my friends. If you're allergic to bee stings, don't wear yellow helmets.

Don't be a helmet scold

When a stranger barks at you, "Where's your helmet?!" to remind you to wear one, it has the opposite effect. Sometimes scolders argue that medical costs of head injuries are often borne by society, so by not wearing a helmet you're risking becoming a financial burden to others. That argument could be applied to hundreds of activities. If that's their concern, they should walk through bars and ask the drinkers where their designated drivers are.

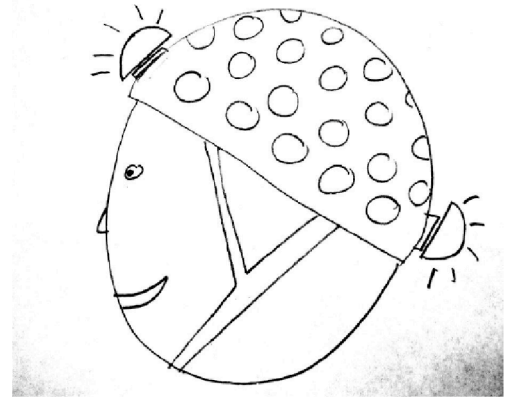
The best argument for wearing a helmet, is that your head is better off hitting the ground wearing one than not wearing one.

How I'd design a helmet if I were in any position to get it made

Trying to make a cool-looking helmet is a losing battle. No helmet looks cool, but helmets that try and fail look horrible. I say drop all hope of cool and go for simple, dumb-downed...

The Moe Howard Bike Helmet

- Bowl shape
- One-inch round holes for ventilation and itch-access
- Fixed straps so it never slips out of adjustment
- Clip-on straps front and rear, for lights
- Replaceable EPS liner, so you can reuse the shell
- Reflective paint? no biggie, because you can use reflective tape
- Colors: red, orange, yellow, green, blue, indigo, violet, silver



THE IDAHO STOP (TIS)

I think it's more likely that Idaho will repeal the Idaho Stop than it is that another state will adopt it, but we'll just have to see. Over the decades I have experimented, now and then and under safe conditions, with TIS in California, and I can report that it works. I can't help but wonder whether other riders, in other states, have found the same.

One argument against TIS—maybe in Idaho, but certainly in other states—is that it ticks off motorists and makes them hate all cyclists. They are frustrated in their cars, they don't like being cooped up and stuck in traffic. They don't see your victory as theirs, too—as part of the same kingdom, filum, class, order, phamily, genus, and species living on a 4.6 billion year old spec of dust in a possibly infinite cosmos. They don't see the common bond and share your joy.

TIS-ers get scolded by other cyclists, too. So, for the record, I and we here at Rivendell are not advocating TIS except in Idaho; although I would like to see other states adopt it.

As it is in non-TIS states, there is a little inequity in the law. This is a controversial topic, and is bound to make some people mad, just talking about it, but it seems to me that since bike riders are more vulnerable than car-covered motorists, they should be able to ride more defensively while within the law. Treating a bike rider like a car driver sounds respectful and fair on the surface, but it doesn't address the nearly opposite amounts of vulnerability between the two, and the potential damage each can do.

On another but related note, I think it's funny and unfortunate, the idea that one

scofflaw cyclist "ruins it for all cyclists." That every rider out there is a spokesperson for everybody else. I don't assume every motorist is a drunk or on a cell phone or on drugs or all three. I think if there were more riders out there, maybe this wouldn't happen. It's a variant of the Juggling Unicyclist syndrome, where you've seen one or two unicyclists juggling, and then think all unicyclists can juggle. If I were a non-juggling unicyclist, it would infuriate me no end to have people watching me ride and thinking, "that guy can probably juggle, too. I'd put good money on it."

Back to TIS: Interesting law, and if it weren't the law I'd bet a million dollars it would never be the law. But it is there, and I'd like it to be the law at every intersection I come to. Until then, most of the time I wait.

RIDING IN TRAFFIC

In the Jan or Feb of 1982 issue of *VeloNews* there was a letter written in response to a comment or letter in a previous issue, and the topic was riding in traffic. The original writer wrote in complaining about his fellow bike riders not obeying the rules of the road, endangering themselves and creating ill-will toward all bike riders by not doing so. We've heard that before, because it still goes on. "How can we expect THIS if we do THAT?"

Roger Durham, then around 45 or so and the owner of Bullseye Components (hubs, cranks, pedals) wrote a rebuttal to the letter, a super nervy, un-pc rebuttal, in which he advocated "riding for survival" as opposed to behaving like a car driver. He recommended minimizing the time you spent in the mix with cars, and suggested that riding to survive sometimes meant riding the wrong way on streets—not as a rule, but when the right way was crowded or dangerous for another reason and the wrong way seemed fine; and on sidewalks when the road is packed with cars; and through red lights when there's no cross traffic, and doing so would give you that much more carless riding, as the cars sat there back behind the red.

I thought at the time, wow, people are going to be mad at Roger. They'll probably boycott Bullseye. I don't think the boycott ever happened, but I've no doubt it would happen now, because with the Internet and all, it'd be easy to twist things around some and organize a boycott.

Oddly, Idaho has this thing commonly called the "Idaho Stop," which allows bike riders to slow a bit, check first, and ride through stop signs and red lights. It's been in effect since 1983, and bike accidents have not increased. Objectively, it seems to be a success. It still irks people, but they can't point to an increased number of accidents as proof that it doesn't work.

Here it is:

49-720. STOPPING -- TURN AND STOP SIGNALS. (1) A person operating a bicycle or human-powered vehicle approaching a stop sign shall slow down and, if required for safety, stop before entering the intersection. After slowing to a reasonable speed or stopping, the person shall yield the right-of-way to any vehicle in the intersection or approaching on another highway so closely as to constitute an immediate hazard during the time the person is moving across or within the in-

tersection or junction of highways, except that a person after slowing to a reasonable speed and yielding the right-of-way if required, may cautiously make a turn or proceed through the intersection without stopping.

(2) A person operating a bicycle or human-powered vehicle approaching a steady red traffic control light shall stop before entering the intersection and shall yield to all other traffic. Once the person has yielded, he may proceed through the steady red light with caution. Provided however, that a person after slowing to a reasonable speed and yielding the right-of-way if required, may cautiously make a right-hand turn. A left-hand turn onto a one-way highway may be made on a red light after stopping and yielding to other traffic.

(3) A person riding a bicycle shall comply with the provisions of section 49-643, Idaho Code.

(4) A signal of intention to turn right or left shall be given during not less than the last one hundred (100) feet traveled by the bicycle before turning, provided that a signal by hand and arm need not be given if the hand is needed in the control or operation of the bicycle.

So far TIS seems to be working fine. Motorists don't scream, "Hey, I want some of that, too!" and I read somewhere, don't remember where, can't cite the source for you, that it hasn't affected accident rates.

Driving or riding in traffic, and just living a life, is about predicting things. You predict your neighbor won't kill you tonight. You predict the restaurant food hasn't been poisoned. You predict red lights will stop all cars. When you can't predict, or aren't confident of your predictions, you're more careful. Maybe that's what's going on with the Idaho Stop. Drivers can't be so sure that there won't be a careless bike rider entering the intersection at the wrong time. Maybe they've learned to look and be extra careful.

Some other states have tried to pass the "Idaho stop." The argument is that it encourages riding, because losing all your momentum at a stoplight, times ten or fifteen stoplights on a bicycle trip, is enough of a bummer to keep people off bikes. That argument doesn't sit well with opponents of the Idaho Stop, but it is the main argument for it.

Another argument against it is the danger to kids, whose brains aren't developed and who can't make the good judgments that adults can. The argument against that is that laws aren't, and shouldn't be, aimed at the lowest common denominator. If they were, lots of laws would have to be changed, and the non-lowest common denominators would be hugely inconvenienced.

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In most places it's the law that bicycles must obey the same laws as a car, at least as much as practical. Or practicable. (Should that be pronounced "practicable"?) It makes some sense, because bikes are vehicles, and there is the vehicle code. All pc-ness aside, I wonder if it makes perfect sense, though. All vehicles are not the same. Some weigh 4,000 pounds and can travel 80 mph, and some weigh (with the engine) 160 pounds, and can travel 18 mph. There's a big diff in danger, and danger seems to be, and ought to be, the issue.

Should danger be the issue, or fairness? If it's fairness, then there are lots more questions. Is it fair that the less dangerous less polluting vehicle play by the same rules as the super dangerous polluter?

You're eating at a restaurant, and a guy walks in with a pocketknife in his pocket. Should he be seated? What if instead of the pocketknife, he had a loaded gun? I know an imperfect analogy, but it makes the question: Should less dangerous toys have to abide by the same rules as more dangerous ones? When children play, is the plastic toy gun as bad as the real one? Is that just another lousy analogy? Should a wiffle ball and bat be banned from the backyard? I have tried my hand at many things, but this is my first crack at analogies. How lousy are they? (Rhetorical question, please don't write and tell me.)

Lousy or not, consider that if a bike rider smacks into a motorist, the damage done to the motorist is a lot less than it would be if the bike rider were in a car. If I hit a pedestrian on my bike at 15 mph, some carnage will ensue, but mostly cussing. If a car hits the ped at 15 mph, maybe death, at least broken bones, maybe lifetime paralysis. YES, a bike rider who hits a ped just the wrong way can do those things too, but most victims would prefer the bike.

A rider who enters an intersection is like the small fish in the pond. The car is the shark. These are facts (analogies aside). They aren't arguments for or against the Idaho Law. A car is way, way more dangerous. Car drivers are less aware of their surroundings. They're more likely to be distracted by things going on inside the car, and they absolutely feel less

vulnerable, more protected, and so are more likely not to care, or not be as careful.

There's also the issue that, if a bike rider scares a driver by suddenly appearing out of nowhere, that might start a chain reaction leading to a multiple-car accident. This possibility quickly leads to the Domino Theory, which takes us off track. But briefly, if you want to pursue the Domino Theory, at least do it fully and

consider the long-term repercussions of being hit by a car, versus being hit by a bike.

Kind of related to that is: When a bike replaces a car, are the roads safer for everybody? Of course you can have a super lousy bike rider and a super safe driver, but in general, I mean, is it better to drive golf whiffle balls in the picnic area of the local park, or real golf balls? Another lousy analogy, I'm sure.

SHOP SOLO

This is especially true for women, not because women can't handle themselves, but because guys often think they can't. I'm not sucking up to ladies there; it's just true. When a guy tags along he tends to interfere way too much. It's the shopping equivalent of leading her through an unruly mob, except there's no unruly mob, it's just a bike shop and a bike salesperson. She doesn't need your bulk to protect her, and she has her own brain.

Some men feel as though when the widget being bought is made of metal, the woman needs help. Maybe they'd make an exception for a frying pan, but when it comes to bikes, they can't hold back.

A bike is gender-neutral and not all that complicated. Everybody knows how to ride one, and anybody who wants one has a pretty good idea about how they plan to ride it—commuting, shopping, getting in shape, whatever.

So when Wilma shops for a bike, Fred should either stay home or hang out in the helmet section and clam up. Fred can't know the bikes you're looking at as well as the bike shop's expert does, and when Fred butts in and says something that doesn't agree with the bike shop's experience, the salesperson is muzzled. If the salesperson speaks up, he risks a dialogue nobody wants, or makes your Fred look stupid.

Wilma doesn't have to buy a bike right there. It's fine to discuss things with Fred later on, get his take on things, and it's possible that Fred will save you from some bad advice given by a nitwit salesman. There are lots of them around, and running interference is a gender-neutral nice thing to do. But give the guy at the shop the benefit of the doubt, the first

crack at helping you pick out the right bike and get the right size. If it makes sense to you and seems to work for you, you're off to a good start, at least.

The Six Things To Tell the Salesperson (Unisex Advice)

1. How much you ride.
2. Where you ride.
3. What you want out of riding—health, weight loss, fitness, transportation, recreation, stress reduction, fun, travel, whatever.
4. What bike you have now, and why you're looking for a new one.
5. What your biases are going into it. Notions or opinions picked up from other sources, or formed from your own experience. Bikes you've looked at or are thinking about, if any. And...
6. How much you can spend.

Bike shop bikes start at about \$300 and can go to over \$10,000. Most salespeople are too squeamish to ask "How much can you spend?" and most customers are reluctant to give an answer. Narrow the field, at least. If you'd rather not talk about your budget, tell the salesperson what you're currently riding, and that'll give him or her a ballpark idea. But it's best to just blurt it out. Then the helpful dialog can begin.

If you want to be a dream customer, follow this script, at least loosely:

"Hi, my name is Wilma, and I want a new bike. I have an old mountain bike now, ride mainly on the road, and I want something for that. I'm not into racing, Man, I'm not even in a club; I just want a bike for riding the decent bike roads

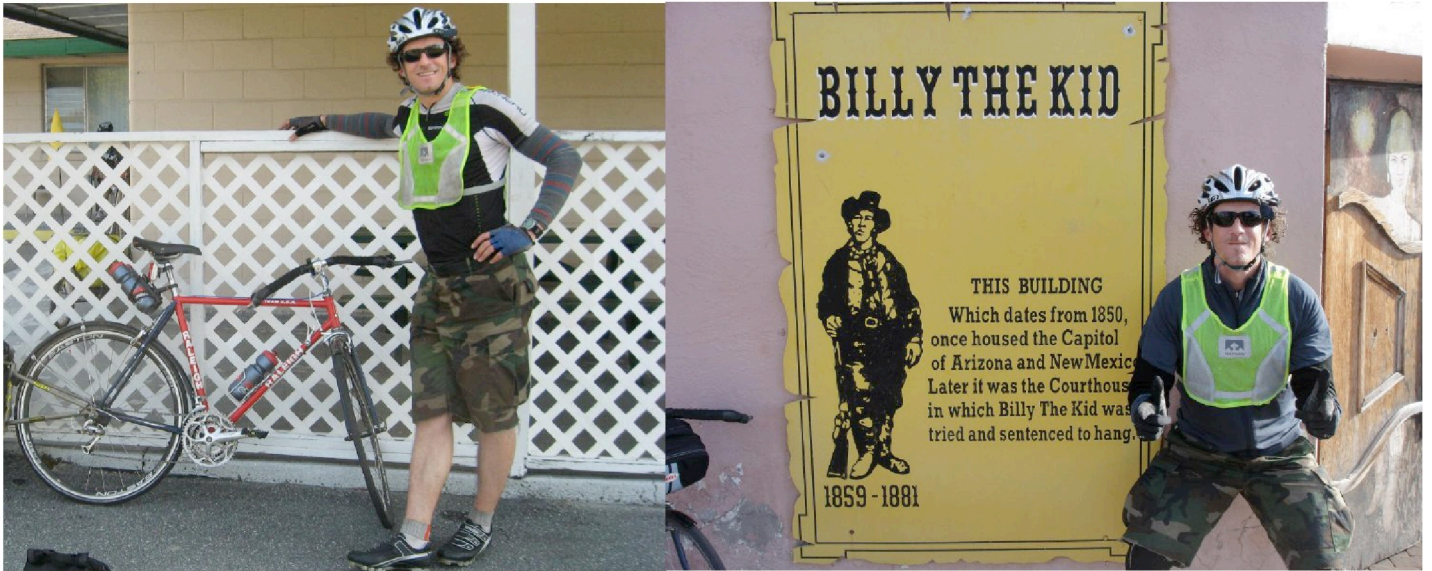
around here on weekends for exercise, mainly. Eventually I'd like to work up to about 60 miles a week. My budget is \$2,000. I've got a helmet and all the clothes I need, so just sell me a bike. I want to be comfortable and don't care that much about speed, but I want it to be reliable, because this is the last bike I'm going to get for at least ten years. Whatcha got for me?"

Other tips

Don't say, "I'm not going to race or anything." They know that already. Racers don't shop the way normal people do, and generally know what they want, in every detail, before they buy it. And they're always hunting for deals. Bike shops tolerate racers and feel a certain pressure to suck up to them because shops know racers are influential. But the closer the relationship the shop and racer have, the better it is for the racer and the worse it is for the shop.

Don't think it doesn't hurt to ask for a lower price, free extras, or a discount on a second bike for another family member. It does hurt to ask. It hurts your reputation. It puts the dealer in the no-win position of either losing money or appearing like a cheapskate, and losing your repeat business. Bike shops depend on you buying more profitable accessories when you buy a bike, and giving away freebies kills that chance.

They'll probably give you a bottle or something else small, or they'll offer a discount on this or that accessory, but the prize isn't worth the weird vibes and awkwardness it creates.



The author with his \$100 Craigslist find.

ACROSS AMERICA ON A \$100 BIKE

By *Brendan Leonard*

When a friend of mine asked if I'd like to bicycle across the country with him, I knew which bike I was going to take: the one I rode to work every day.

A few of my friends own four to seven bikes apiece. Not me. I live in a small apartment and I don't mountain bike, so when I open my front door, I don't have to decide which bike to wheel out. I only ride one. I'm a monogamist.

Many of us in central Denver ride a similar type of bicycle: Steel frame, lugged, mostly mismatched components, sometimes a classic paint job, sometimes not, usually purchased from an ad on Craigslist for \$200 or \$300. My bike is the one with the dings in the paint job, chained to the railing out in front of the coffee shop, too ugly to steal, but protected by a four-pound chain lock.

I ride everyday, everywhere. I like to race cars downtown, go for night jaunts on our finally-calm bike paths, and sometimes ride the 20 miles out to Golden to ride up Lookout Mountain alongside the folks who drive their road bikes to the parking lot at the start of the climb. I ride in mountain bike shoes and rolled-up jeans, and swear by Continental Gator Skins in the city.

That August, when we started to plan our cross-country ride to start the following February, I was on a steel cyclocross frame, that would have been great for touring. But then a guy backed his Accord out of a blind parking spot in an alley when I was riding too fast, and I

went over the back of his car, crumpling my frame. I had a crisis on my hands.

I frantically searched Craigslist for days, until one Sunday, there it was: "1985 Raleigh Team USA - \$100." I called, got five crisp \$20 bills, and raced out to the suburbs to rescue the beat-up old racing rig from a guy's dusty garage.

If you Google things like "How to choose a touring bicycle," you'll run across all kinds of advice on geometry, wheels, frame materials, comfort, how you should carry your gear, and more. I made my choice based on two criteria:

1. The bike was made of lugged steel.
2. It said "Team USA" on the top tube, and was red and blue with white stars on the fork.

I was in love.

I swapped out all the 1985 components and wheels, using parts from my old bike or stuff I had laying around my apartment. Then I rode it to work and the coffee shop. It was too long. I put on a taller stem and moustache bars, but kept black handlebar tape to keep with the original Team USA color scheme. My friends looked at it and smiled, happy for me, but not interested in the bike. It was beauty in the eye of the beholder, bike snob style.

I put it on a trainer a few times, to get in some miles during an unusually cold January. I went over the dings in the paint job with clear fingernail polish. I put a double water bottle cage on the seatpost -- the frame only had mounts for one cage. I learned to ride with a BOB Trailer hooked to the back, taking laps around

my neighborhood park with a pile of gear in the back.

We started in San Diego the first week of February, picking our bikes up at Bernie's Bike Shop in Ocean Beach. There was no turning back once we dipped our wheels in the Pacific and started to pedal east. I was putting my money where my mouth was about American steel bicycles, staring at 3,100 miles of pavement and betting on a 25-year-old bike that was built when I was in the first grade, watching Willie Nelson and Stevie Wonder sing "We Are the World" on MTV, and Marty McFly travel "Back to the Future" in a DeLorean. Now, I was already seeing wrinkles on my face when I looked in the mirror -- how was that old steel frame holding up, underneath the patriotic paint job?

We rode, quickly building to 70 or 80 miles a day. Curious locals chatted us up at every stop, every convenience store and greasy spoon across California, Arizona, New Mexico, Texas, Louisiana, Alabama, Mississippi and Florida. I proudly told everyone we met about my \$100 bike, and not a single person cared.

Three thousand-some miles, hundreds of conversations, and not even a "Wow, really?" from anyone. Raleigh didn't care enough to respond when I sent them an e-mail about our trip. By pure coincidence, the mechanic who overhauled my bottom bracket in Austin, Texas, actually worked as a traveling tech for the current Team USA, and even he couldn't scare up a smile.

My pal Tony beat me to the top of every single climb, atop his custom titanium rig, a bike that started more than a few conversations with admirers. I didn't even know how much a bike like his cost until some guy at a convenience store in Florida announced that bikes like that retail for a price 50 times the cost of my Raleigh.

I rolled the Raleigh onto the beach in St. Augustine, Florida, a handful of minor

mechanicals behind me, but nothing to shake my faith in steel. Before it all started, I had daydreamed that our journey would be a great statement about American consumption, recycling, our throwaway society, something. An everyday guy riding an everyday bike thousands of miles, proving that you don't have to be Lance Armstrong to do it. Alas, nothing.

In the end, it was pretty much as heroic as riding to work every day. Which, any avid bike commuter will tell you, is unremarkable to the outside observer. Back in Denver, I stripped off the water bottle cages and the fenders, put on a new chain and some new brake cables, and rolled up my pant legs for another unremarkable ride to the office. No one noticed, but I sure had fun.



Heart-rate monitor kit left, Blood Glucose kit on right.

KNOW YOUR GUTS

It's useful to know how your body works and how it's working. It's not vain, and it's not a racer-and-racing obsession. It's your body, and you should know something about it. You don't have to know everything, but these are three things are near the top:

1. Your resting heart rate
2. Your maximum heart rate
3. Your fasting blood glucose

Resting heart rate

It's your pulse when you wake up in the morning, even before you get up. Count it for fifteen seconds, multiply by four.

Maximum heart rate

It's as fast as your heart is capable of beating when you're riding as fast as you can up the steepest hill. When you know your maximum heart rate you can calculate with reasonable accuracy your fat-burning range (about 50 to 75 percent of your max), your glucose-burning range (high 70s to maybe 85 percent of max), and your anaerobic/ATP-burning zone.

The unracers should shoot for riding in the easy, fat-burning zones almost entirely, with now and then a foray into the painful-but-short anaerobic zone: attack a short hill or sprint all-out for half a minute or so, repeat five or six times within about fifteen minutes, and do that once or twice a week.

Get a heart rate monitor.

Don't think they're only for vain, self-obsessed geeks. They're for others, too. You can take your pulse with your finger, but it's hecka-inconvenient, and the simple kind of heart rate monitors that I like (because I don't need to know anything except the heart rate) cost as little as \$39. If you find one with one button, get it. If you see one with more than two buttons, forget it.

Your fasting blood glucose.

This is slightly over the top, but just because nobody else does it (except diabetics) doesn't mean it's nuts.

You test it with a kit you can get at a decent pharmacy, or ask a diabetic friend to test you with a new needle. Your "fasting glucose" is the glucose in your blood first thing in the morning, provided you haven't been up eating all night.

It's good to know, because your blood glucose level controls your insulin level, and your insulin level determines, among other things, whether you burn glucose or fat for energy. If you're already as lean as a rock climbing ballerina, maybe it doesn't matter to you. If you'd prefer to burn fat when you exercise, then you'll keep your blood glucose below 100 (milligrams per deciliter, or mg/dl), because that will keep your insulin low, and that will encourage fat-burning. High blood glucose (generally from a high carb diet) leads to high insulin levels, increased fat storage, and decreased fat burning.

Who knows? You may even discover that you're pre-diabetic, in which case you can nip it in the bud.

CYCLOCYRUX

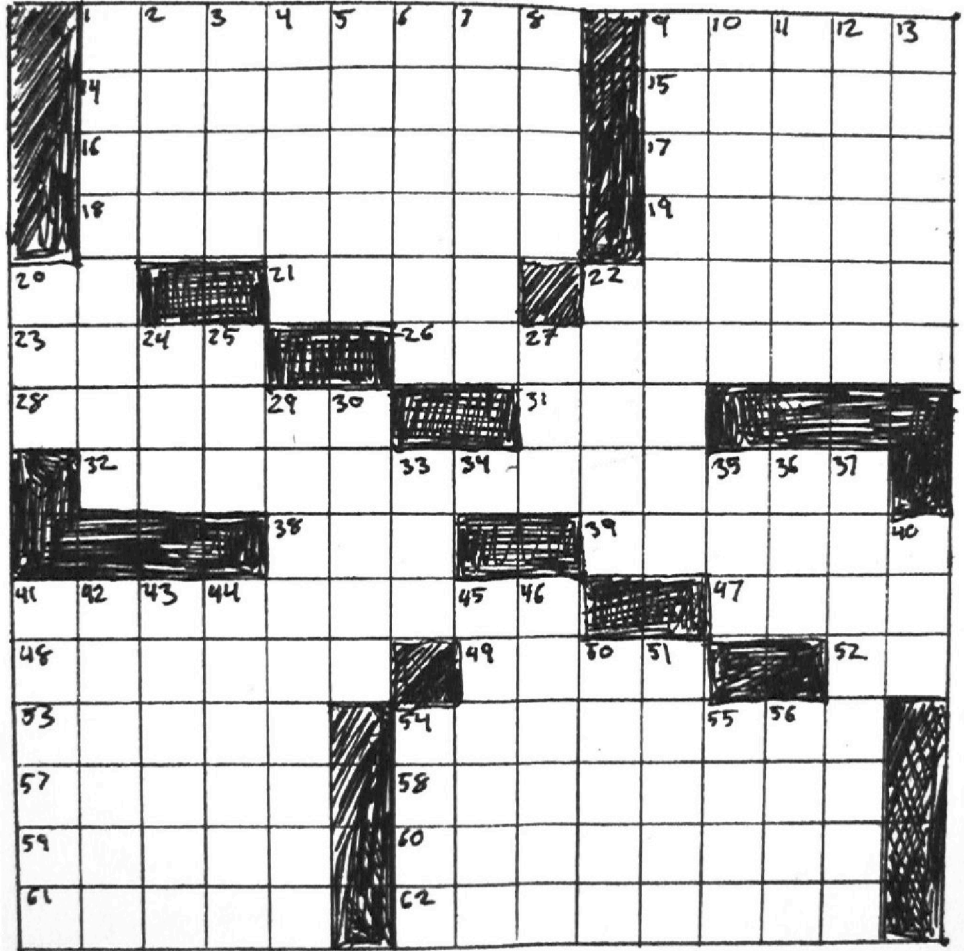
by Dave Schonenberg (my first, sorry it's so hard)

ACROSS

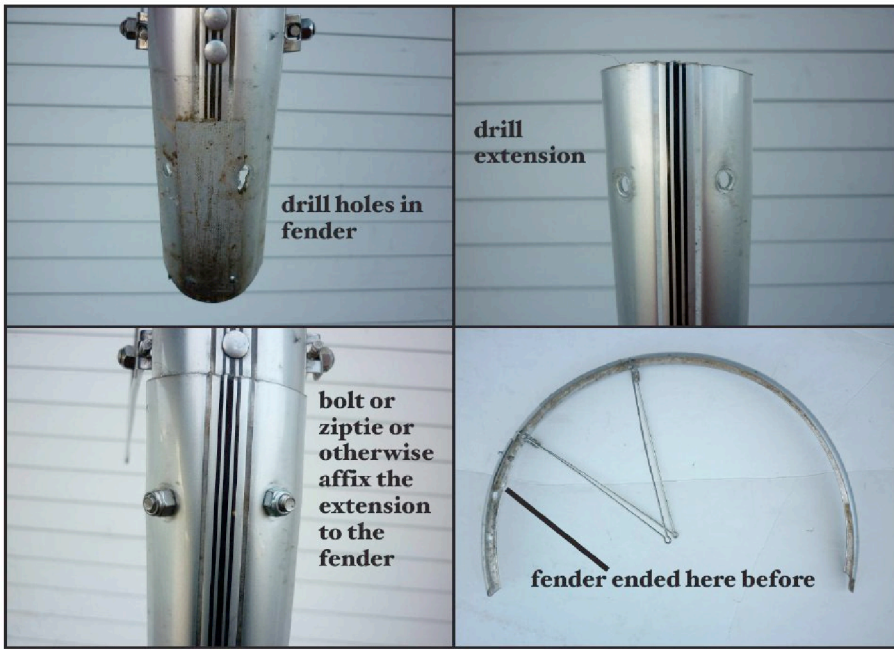
- 1 Support your local ____ (2 wds.)
- 9 Change gears
- 14 Famous Palin daughter, and others
- 15 Plural of oasis
- 16 Fancy tandems
- 17 A new ____ on life
- 18 Person for whom pleasure is paramount
- 19 Groucho's song: "Hello, ____ be going." (2 wds.)
- 20 Gandhi: "-- the change you wish to see in the world."
- 21 Tug
- 22 Pyrrhus's place
- 23 Baldwin of 30 Rock
- 26 A spinning bicycle wheel is one
- 28 Internet inventor?
- 31 -- Chi
- 32 Canker curtailers conquer?
- 38 "There, I proved it" Lat. Abbr.
- 39 Like some bikes and bases
- 41 Lewd limerick location
- 47 Scrapes by, with -out
- 48 Evoke
- 49 French sports club, -- Lille. Abbr.
- 52 La di --
- 53 California, Uber ____ (1979 Dead Kennedys song)
- 54 '40s French front-end geometry
- 57 Affleck and JLo flop
- 58 Working
- 59 -- Skye, Scotland
- 60 Rivendell's flying rings
- 61 Finland's ____ Orchestra
- 62 Tune in, turn off types?

DOWN

- 1 They hold downtubes to chainstays, for short
- 2 Philip K Dick novel; Deus --
- 3 Loving
- 4 "I am" to Jose
- 5 Actress Katic
- 6 Using a whetstone
- 7 Controversial Christian Marvin
- 8 Library sound
- 9 One who thinks self is everything



- 10 Produced by blood
- 11 Belforte all'--
- 12 "Out with it!" (2 wds.)
- 13 Nasty African bug
- 20 Barnyard sound
- 22 Paddles for kayaking the net?
- 24 Swelled head
- 25 -- pulmonale. aka heart disease
- 27 Hwy.
- 29 Pre --, a required class
- 30 Pick a president
- 33 Greek honor society known as The Circle
- 34 Curvy letter
- 35 Ophelia: "-- is me."
- 36 Kin
- 37 "-- to say, I should have checked my PBH before picking a size."
- 40 Federal cryptological agency
- 41 MLB pitcher Denny
- 42 Joined sides
- 43 Himalayan antelope
- 44 Lymphocytes (abbv.)
- 45 He got married in a fever
- 46 It comes after Tower N?
- 50 Sharpen
- 51 Badminton champ Astrid
- 54 An Atlantis will carry it well
- 55 Amazon fruit that tastes like caramel
- 56 -- -- my fists do the talking (2 wds.)



With a little ingenuity you can turn a combination of old fenders into a Honjo-beatin' Longfellow for your beater.



If you don't have fender scraps, just use duct tape or cut up one of those old, poisonous plastic water bottles.

FENDER EXTENSIONE SYSTEME AUTOMATIQUE

The best-designed fenders, so far and perhaps forever, are the Japanese-made Honjos. I think they're a pain in the neck to install, and most who've installed them would agree. But that is an installer defect more than anything else. Installer-defect or no, they remain a pain to install but a model of design superbity.

Le best thing about the design is coverage. They're long and cover tires better than any other fender. They can be that way because they're stiffer metal, not less stiff plastic; so they don't wobble.

Le other thing is, you can get the coverage with your existing plastic fenders, and even solve le wobbling (which isn't that bad, anyway), if you're clever, a little handy, and — let's just say — aesthetically flexible. Here's le deal:

1. Get the length you want by drilling or reaming holes in the fender and an extra chunk of fender (the extension). Then zip-tie (you knew that was coming) the extension on.

2. Alternatively, hot-glue, nut-and-bolt or duct-tape it on.

Both ways work. If you're a serious rain rider, the artsy points lost by this DIY long-ifying won't bother you, or at least shouldn't. On the contrary, you should be proud of it.

The only non-easy part is getting the section of fender to graft on in the first place. We don't sell fender-extensions; we get 'em for personal use from old personal fenders that are currently not being used, or have been permanently retired for reasons unknown.

But you don't need actual fender chunks. Do it with a plastic milk bottle or cut up water bottle. Granted, the further you veer from an actual fender chunk, the uglier it gets, and at some point the pride you may feel in this creative grafting may be lessened by the super ugly result. But just do your best. You can always change it, or get used to it and lower your standard.

If the DIY way is too cheap or unclassy for you or your particular bike, and you want something with the easy of installation and quietness of an SKS fender, for example, and with nearly the coverage but not all of the classiness of a Honjo without any Honjo baggage (installation, cost, sometimes noise), then shall we have the fenders for you. In the late Spring of 2010, SKS gave us the opportunity to request certain detail changes to the Olde Standbye Chromoplastic models, the ones we've sold for more years than you can shake a

stick at. They're 95 percent perfect, to our way of thinking, as they are, but the nailing the final 5 percent was an opportunity we couldn't refuse.

The Fender Team was Mark and Jay, our mechanics and main fender installers. Over several weeks and several prototypes and in-house customizations and experiments—all the while keeping an eye on the big picture, that these are fenders and not modifications to current heart valves or something, and so let's be real about it—after all of that and lots of it, Mark and Jay concocted the final Perfectomundo fender, with the Most Elite attachment points, and Super Sufficient coverage.

SKS agreed to the recommendations, and now we're going to get them. It's not only us. You can buy SKS "Longboard" fenders from any SKS dealer. At the left is a look, and we have them on the site, ready to go. They're \$38, \$1 more than the Oldes which are still Fantastic Fenders, but fenders take a lot of room here, and we're not going to devote a whole wing of the asylum to fenders, so we'll go only with the Longfellows in the 650b/700c size.



Eben Weiss (a.k.a. BikeSnobNYC) on tour in Portland promoting the new BikeSnobNYC book.

INTERVIEW: BIKE SNOB NYC

Eben Weiss is the blogger-author who goes by BSNYC, or BikeSnob New York City (bikesnobnyc.blogspot.com). He was an anonymous blogger with a huge audience until he came out with a book in the Spring of 2010, called BSNYC: Systematically and Mercilessly Realigning the World of Cycling. I'd say it's as essential reading as any bikey book can be, and it covers territory no other book does, and it's a great combo of entertainment, perspective, humor, and joy. Eben Weiss is 37 years old, married, and a new dad.

Sum up your life through the age of twenty-five.

I was born in New York. We lived in Bayswater, Far Rockaway, and when I was older we moved to Woodmere, which is right nearby and one of the so-called "Five Towns." Notable people from Far Rockaway and the Five Towns include Bernie Madoff, Harvey Milk, and Donna Karan. Tony Kornheiser, the guy from ESPN who recently advocated running down cyclists, also graduated from my high school, as did the creators of the TV show "Entourage." This should give you a good sense of the local flavor.

I always loved riding bikes and as I got older I started racing BMX. I was also into things like skating and hardcore music and in my teens I spent as much time as I could in the Village, which made me a bit of an outsider in my neighborhood. Plus, I was interested in reading, writing, and humor, and English was one of the few subjects in which I did

well. In my teens I worked in the local hardware store, and I went to college at SUNY Albany, which is where I decided I wanted to work in book publishing.

After about two years as an Editorial Assistant at Dutton Books in New York I became restless and quit to work as a bike messenger while I angled for, and eventually got, a job working for the filmmaker Michael Moore. So that was the state of affairs for me up until my mid-twenties.

I have a younger brother who lives close by in Brooklyn.

What did you do for Michael Moore?

I worked as his assistant. He was promoting a movie called "The Big One" at the time, so when I started my job involved traveling all over the country with him to promote it. I was basically a luggage-schlepper and Wendy's-fetcher who was supposed to get him to

interviews on time and didn't and who got yelled at by pretty much everybody.

How did you go from there to here?

I wasn't very well suited to the film world, which involves a lot of getting yelled at and yelling at others, so I went back to book publishing, this time working for a literary agency. I tried and failed to be a literary agent but still found a niche at the company and ended up working there for ten years. However, I always knew I was a writer and always wrote extracurricularly, mostly trying to be funny in one form or another.

Even though I've loved cycling all my life and was heavily involved in it, I never tried writing about it since it didn't occur to me that there was any way to do that beyond race reporting or product reviewing. Eventually though I decided I wanted to experiment with blogging, and that's when it suddenly hit me that I should try writing funny commentary

about the cycling world, since it was what I was thinking about most of the time anyway. I was really thrilled when people started relating to it almost immediately.

So it turns out the “Write what you know” thing is actually true. Duh.

What date did you start BSNYC?

June 13th, 2007.

How many readers did you have in the first month? Did it snowball naturally, or was there a kicker?

For the first couple of months I didn’t have my blog set up to register traffic, so I didn’t really have any idea how many people were actually reading it. I was only able to tell from the volume of the comments. Then, I set it up to track stats, and the numbers seemed way too good to be true—and it turns out they were, because I somehow screwed up the code and the counter was like tripling or quadrupling the numbers. Eventually I got it right, but after awhile I stopped paying attention. I now only look at my traffic every so often. Obsessing over internet traffic is like collecting stamps or constantly polishing the Colnago you never ride.

How has the blog shaped your personality and the way you look at bikes? What I’m getting at is—let’s say you’re a stand-up comedian. Going in, you say the word, I’ll just pick a random word, “humongous”—let’s say in your private life it’s one of a dozen words you use when you’re describing something that’s really big, which you don’t do a lot, maybe every week or so. Then in your first gig you say “humongous” and the audience laughs like mad. You don’t make the solid connection, but there is a weak connection there, and the opportunity to use a “large” synonym comes up again, and you throw out “humongous” again, to the same response. It keeps getting the laughs, and sooner or later you find yourself loving “humongous” in a way you never would without the association with laughs. After a few years you and “humongous” are inseparable, like “sock it to me” or “what ‘choo talkin’ ‘bout, Willis?” Has anything like that gone on, do you think? If no, then “no.”

I do think when I started my blog I gave voice to what a lot of people in the cycling world were thinking that they were amused to hear articulated, but if you’re

asking if I feel pressured to repeat “catch phrases,” or what in the Internet age they call “memes,” the answer is “no.”

I didn’t mean that exactly. I mean, clearly, with no feedback and no audience your blog would be different than it is now, or it wouldn’t exist at all. At some level, maybe even unconsciously, you’ve got radar for what your audience likes, and I’m just wondering if you yourself have noticed a shift in your own values, something like that, based on what works on the blog. Or even, do you find your thoughts becoming clarified as you write them? It happens to me, so I’m just wondering if it happens to you.

I started out writing about the kind of cycling and bicycles that I’m interested in, or that capture my attention, or that I have strong opinions about, or that annoy me, or that I encounter in the course of my day. That’s still what I do, but thanks to my readers I’m aware of a lot more than I was when I started. One of the best parts of writing a blog is being “plugged into” a bunch of people, and receiving feedback in the form of

Obsessing over internet traffic is like collecting stamps or like constantly polishing the Colnago you never ride.

comments and emails and so forth. That’s certainly taught me a lot more about cycling, and it’s certainly made me much more aware of the world beyond where I live. For example, before I started my blog I had only been to Portland once for about twenty hours during my Michael Moore days, and I had only this vague sense of it as this place on the other side of the country that is really, really into bikes and Gus Van Sant. In becoming a bike blogger though I started to get a real sense of its character and how large it looms in the context of cycling, and I started reading Bikeportland, and I started hearing from Portlanders, and I visited, and so forth. Not only was my mind broadened, but it opened up fertile new territory for ridicule—which is of

course the most important thing. I’m the BP of the “bike culture.”

At the same time, I’ll occasionally receive requests from people asking me to write about some specific bicycle or type of riding or place that’s sort of outside of my consciousness or is simply plain uninteresting to me, and I never do that because it just wouldn’t ring true. That part never changes.

If I write something, it’s because I have opinions about it or I think it’s funny, and I’m always pleased if it resonates with people or becomes a running joke. To an extent, your readers do train and guide you with their reactions, and you want to keep them entertained, but that’s a good thing and the beauty of blogging. It’s a “collabo” in the best sense.

In the beginning I did sort of think that any day I was going to lose my audience, but I just kept writing what I wanted to write and fortunately that didn’t happen, though it certainly still could. Honestly, that has less to do with my ability as a writer than with the fact that I made a point to post regularly no matter what. The easiest way to lose an audience online is to post erratically or intermittently, and the Woody Allen quote “Eighty percent of success is showing up” is especially true of blogging. I was more than prepared to get fired from my job in the process of posting every single day if that’s what it took. Once people started reading my blog I committed to it and them like a marriage.

As far as how the blog has shaped the way I look at bikes, it’s taught me a lot. Through my commenters and the people I’ve met I’ve learned things about bikes and cycling I hadn’t known before, and I’ve learned about and visited cities I’d never been to before. In terms of my personality, it’s simply made me a much, much happier person, since I’m now doing what I’ve always wanted—writing about something I love for a living.

From reading your book, I got the strong impression that no bike is safe in NYC, and it makes no sense at all to ride one and park it outside if you can’t stand the thought of losing it. Is that about right?

Yes, that’s right. If you want to ride for transportation and need to lock your bike outside, you need to take every precaution—yet even when you do you always need to be prepared to walk

outside and find it gone. Actually, that's probably good advice when it comes to pretty much anything.

Is there a bike you'd like to have that you don't want to get because it'll be stolen?

For the most part, no. It's commuter bikes that run the risk of getting stolen in New York because you need to leave them outside, and I really feel no need or desire to ride some kind of fancy or special commuter bike. I suppose I could have a \$5,000 handmade version of the commuter bike I ride now, but why? It wouldn't do anything any better except attract thieves. Maybe if I lived somewhere safer I'd commute on something with quick release skewers (luxury!) or that wasn't a total beater, but it's not really that big a deal.

Then again, there are plenty of bikes I probably don't even realize I want. For example, Surly lent me a Big Dummy cargo bike—I might never have sought out such a bike on my own for the very reason you cite, theft. Now that I have it though it almost seems indispensable, and I'd probably use it even more if I wasn't worried about it getting taken. Doing errands in Brooklyn is one thing; locking it up for an hour or two in Manhattan would be another.

I appreciate your proper use of "lent." I attended your signing in San Francisco. It went pretty well, I thought. Was that a typical question-answer session? What questions do people ask at those signings?

I really enjoyed the signings. The crowds and questions were pretty different in every city, and the San Francisco crowd was a bit more irreverent than the others (in a good way) but the questions I hear everywhere are:

"How long does it take you to do a typical blog post?"

"How many bikes do you have?"

"Where is your helper monkey, Vito?" and

"Have you ever met or heard from the Lone Wolf?"

I was the first guy in San Francisco who asked about the Lone Wolf, and for the benefit of our readers, you do NOT know his name, but you assume he knows he's been on your blog and in the book. And he is a

funny part of it all. He's marching to his own drummer with his combo of mullet, white shoes, and white ultra-aero track bike, maybe a pursuit or team time trial bike. And you have, as I recall, about five or six bikes (me too). The monkey question, there's no answer for it.

Your new baby boy was born just before the book tour, which must have been hard. Tell us how your dialogue with Chronicle Books went on that topic, and on the tour in general. In exchange for their paying for the tour, what were your obligations?

Originally I was supposed to go on tour in early May since that's when the book came out, but as the time drew closer my wife and I realized it was too close to her due date—obviously if she were to go into labor while I was in Seattle giving my goofy slideshow then that would be bad. So, I told Chronicle I wanted to hold off until June, and they were very accommodating. In terms of my obligations to Chronicle, they are simply to help promote the book, which I'm pleased to do since I'm proud of it and happy to be associated with it. I'm also lucky they sent me on a tour, since that obviously costs money and it's not something publishers tend to do with first-time authors.

I suppose I could have a \$5,000 handmade version of the commuter bike I ride now, but why?

By the time you made it to S.F. you'd done several of the signings. Were you nervous on the first one? I'd have been a mess, but you seemed calm with it.

My first actual signing was actually in Brooklyn in the beginning of May, right when the book came out. (Before the postponement the rest of the tour would have kicked off from there.) I've always been really afraid of talking in front of people—it was one of the things in life I dreaded most, and I would literally get nervous in front of my own family reading from the Haggadah at my Seder, though

maybe that's because I'm only half Jewish. When I started my blog, the first person who ever wanted to interview me was a guy in Rochester named Jason Crane who does a podcast, and I was so nervous talking to one guy over the phone I had to make him start the whole interview again because I was so tongue-tied with nerves. That got easier over time, but in the day or two leading up to that signing I was absolutely terrified and miserable and trying to figure out how to have a serious-but-not-too-serious bike accident that would prevent me from having to do it and so forth.

Then, at the end of May, my son was born, which was a life-changing experience in a lot of ways—particularly in that a lot of stuff I was once afraid of or worried about suddenly meant nothing, in the best possible sense. One of these things was talking in front of people. So between that and having already done it in Brooklyn the rest of the tour was relatively easy in terms of nerves. Also, having traveled with Michael Moore the city-a-day thing was already familiar to me—and it was nice not to have to carry someone else's luggage. I've got a lot to learn about actually being an interesting or entertaining speaker, and I'll probably never be either, but it's definitely nice to be liberated from one of your biggest fears, and it's all because of my wife and son.

Years ago when I was in Boston visiting the editorial offices of Bicycle Guide magazine, the editors brought up the phenomenon of going on social-business rides with clients or the public, and having everybody gunning it from the start, either trying to drop them or impress them. Has that happened yet with you? Does your new celebrity in any way add pressure to perform, either comically, entertainingly, or riding-wise?

I can't imagine anybody would seriously want to impress me, and I don't think anybody has really tried.

People like to impress total strangers, and certainly a well-known blogger-bike rider is worthy of impressing, from their point of view, I'd think. But I hear your humility.

I don't know, even armed with my newfound post-fatherhood confidence I'm still pretty insecure in a lot of ways, so if someone were trying to impress me I'd be poorly equipped to notice it. I just

assume people are generally disappointed I'm not entertaining in real life like the blog. Of course, it's kind of silly to think someone would be entertaining just because he writes a blog. Richard Sachs builds a mean bike, but if you met him in person you probably wouldn't try to jump on him and ride him.

Anyway, cycling can obviously get competitive, so as an insecure person I wanted to take all that out of the equation on the tour. That's why it was important to me though that when we did "organized" rides on the book tour that they be just mellow spins and not attempts at "hammerfests" or "epics," or anything like that, since I wanted anybody who felt like it to be able to join in. I mean, I do that stuff on my own time, but it seems silly for socializing. If anything, I felt like people were avoiding me on those rides and that I was just some random person who was tagging along.

Again, I'd say you were the reason the group was there, so they were aware, and they talked about it later.

I do feel under pressure not to crash and make an idiot of myself when on these rides, though I failed in that regard in Seattle—I hit a small bump while taking a picture of the skyline and fell off my bike. This was on a bike path, too, which is kind of like living in New York your whole life and then getting mugged in Nantucket.

So far, what are the pros and cons of taking off the mask?

I love not having to worry about slipping up and getting "figured out" anymore, and I especially love not having to be coy or unresponsive with people, because when I was anonymous that was really embarrassing. I feel really fortunate that people enjoy what I write, so when someone would reach out to me on a personal level it just felt gimmicky and pretentious after awhile not to reciprocate. In that sense I'm relieved to have finally dispensed with the anonymity. The blog's voice is established,



Eben Weiss aka BSNYC sharing his "Exploration of the Epic" PowerPoint presentation.

everybody gets it by now and the anonymity has served its purpose.

At the same time, though, I'm a low-key person, so while I love nothing more than when my writing gets attention, I don't particularly crave attention myself. So in that sense being anonymous was a huge luxury. But really, most of the attention I'm getting now is only because there's a publisher promoting a book and working to get me interviews and so forth.

How did you get your contract? With the help of an agent? Did the publisher (Chronicle Books) contact you directly?

Nobody contacted me about doing a book—it's something I decided to do on my own. Since I have a background in book publishing I knew how the process worked, and I knew the fact I could demonstrate to publishers that I already had a readership would be a real advantage. However, I didn't want to use the company I was working for or reveal myself to anybody in publishing—or really anywhere. I was still deeply anonymous, and I also had sort of a chip on my shoulder with regard to the

publishing industry and didn't want to go around asking for favors.

So, what I did was make a list of agents I was interested in working with, and I contacted them as BikeSnobNYC. I was fortunate enough to get some interest, and I chose an agent who eventually made the deal with Chronicle.

When it was clear that you were going to be published, was "going public" part of the deal, and would staying anonymous have been a dealbreaker?

I always realized I wasn't going to be anonymous forever, so when I decided to do the book I also decided that's when I would dispense with it. I also knew it would be attractive to a publisher to play a role in the reveal.

Do you feel pressured to live up to the image of you that the book conveys? I'd say that image is "friendly, irreverent, unimpressible, a bit loose with the tongue, and a keen observer and social commentator."

Would you agree with that, or what would you change?

No, there's nothing to live up to. The book is pretty much who I am—more so than the blog, which is also me but arch and stylized for purposes of comedy. I think you make me sound a little more sophisticated than I really am and that "insecure wiseass" is more accurate, but I'll take it. I can only be myself, and I don't worry too much about letting people down when I meet them.

Now you're a columnist for Bicycling. Is that the only door that's been opened? Have other companies approached you? Do others want "in on you"?

I've been fortunate to have gotten other writing opportunities from the blog, which is great. I've also had the chance to test stuff now and again, but I'm not exactly fending off tons of corporate suitors. Most contact from companies comes in the form of individuals at those companies saying they enjoy what I write. Even when I say I like something I tend to do it with derision and sarcasm since that's my style, and that's probably hard for a lot of companies to work with.

Do you feel that this is your time, that you've got to strike while the iron's hot? Do you have the feeling you're one right step or one misstep away from super fame and fortune?

That's a really dangerous way to think. I came to writing my blog mostly by accident, and I've grown it by writing what I want and doing what I want. When I decided I wanted to write a book, I did the same thing—wrote what I wanted and what felt right and true. So I don't plan to start suddenly second-guessing myself, making decisions based on fear of losing my audience, or trying calculated gambits to become more popular. I want to be successful, but having had what amounts to an ice-cold iron before starting my blog, I can't really worry about its temperature that much now. Trying to do what you "should" instead of what you want to or what you're excited about is a good way to screw it all up. Remember when Cannondale started building motorcycles?

What would be your dream job?

What I'm doing now.

I understand that, but you're thirty-six going on thirty-seven and have started a family, and as anybody semi-responsible parent knows, once you've made a new person there's no going back. To make a bike-riding analogy, I'd say it's like riding a bike downhill with no brakes. You must be looking to the future and maybe planning more now than before, or something. Has becoming a parent changed your view of your job, and what you might do in the future?

I just want to keep writing—that's what I'm good at, and that's what I have to contribute. I wasn't doing anybody any good being a lousy literary agent, but a decent-sized chunk of people get pleasure from reading my writing. I want to keep blogging and to write more books. I'm a conservative person and of course I plan to the extent that I can, but I'm pretty confident I'm finally at least headed in the right direction professionally speaking. If you're speeding downhill with no brakes a good way to crash is to stiffen up or make sudden moves—you've got to relax and hold your line, which is what I'm trying to do.

Your site is on Blogspot. How does the advertising work on that? Would you be better off with your own domain?

Some of the ads are network ads and some I've sold directly to people who have asked. I actually own the "bikesnobnyc" domain—I bought it almost at the beginning. However, I had trouble with the redirect and still have yet to address it. I'm not too good with that sort of thing—or with selling advertising for that matter. Blogging is my "dream job," but in my dream I'd have someone to help me with the tech and revenue-

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generating stuff. In the meantime, I sort of like keeping things as "lo-fi" as possible. I started my blog using a free Blogger account and default template, and over three years on I'm still at it. I love that that's possible now. Plus, thanks to the popular search engine URLs are irrelevant anyway. It's easy to find anybody.

Have you said no to anybody?

Yes. For example, a big bike company wanted to use my logo on its "urban fixies" or whatever you want to call them and I declined. I've also declined the opportunity to test various products, including e-bikes, which for some reason certain manufacturers really seem to want me to try. Keep in mind, though, I'm not bragging about turning people down. Firstly, I'm grateful for any offer I receive, even if it's stupid and I turn it down. Remember, I know what it's like to have a cold iron. Secondly, it's not like my integrity has been tested by some enormous sum of money or anything like that. My boasting about saying "No" to people at this point would be like bragging about winning a charity ride in which nobody's racing. If I turn down a house or a million dollars, or a thousand dollars for that matter, then maybe I can start bragging.

You're a Category 3 racer, but you know, still, that in some areas there are huge fields of Cat 5 racers, and winning against sixty is never a walk in the park...but I get your drift.

What does your wife think about this, and your relatives? They must be excited. Are they surprised?

Yes, sure, they're very happy for me, and now that I'm doing what I love I think I'm probably an easier and more pleasant person to be around. I don't think they're surprised that I'm having a little bit of success with writing, though I do think at first they were probably surprised that so much could come from a cycling blog. But again, it's great that this is possible now—people who write well about a subject they're knowledgeable and passionate about can publish themselves and find an audience. You can create your own "genre," for lack of a better word. You don't have to wait for some company to decide that there's enough interest in something to publish material about it. You just do it yourself.

When did it occur to you that your blog might lead to a book contract?

Once I had a solid readership and started getting some attention from the press I knew it was a possibility, but I didn't pursue it until I knew exactly what sort of book I wanted to write. I had no intention of trying to simply reiterate the blog or reprint old posts like most other blogs-to-books do, which would have been very short-sighted, unfair to readers, and uninteresting to me. It was the summer of 2008 that I figured out what it was I wanted the Bike Snob book to be and started making queries.

Can you see yourself moving out of NYC? If you had to, where would you consider? Does being BSNYC decrease your options in that way?

I think about it all the time. One place in particular that comes up is Northern California, since I really like it there and my wife is from the area. However, apart from going to college upstate I've never lived anywhere else, and it's hard to imagine what it would be like to live in a place where I have no roots. As much as I fantasize about leaving New York, I also love seeing places I remember from childhood or that figure into my family's history on a regular basis. I enjoy watching the area change and having some perspective on that change. Also,

while the size and intensity of New York is what makes me want to move, it's also the thing I miss most when I'm away from it. It's a great place, obviously.

I wouldn't forego an opportunity to move someplace beautiful based on some dumb reason like the title of my blog, but I also wouldn't move just for the sake of moving. There would have to be a real reason.

What kind of a reason? If you're a blogger-writer you can work anywhere, and you have family on both coasts now, with your wife's out here. Would you be like Zap Espinoza and take a job with a big bike company as a...well, what else would you like to do, or do you think you'd be OK at?

My wife's family isn't out there anymore, and my wife works in book publishing as well, which is based in New York. Our lives are here and my family's here, so we'd be more likely to move in pursuit of opportunity rather than for the sake of change. Like, if someone said, "We'll give you a bunch of money and an office to write your blog every day, only you have to live in Northern California," obviously I'd take them up on that.

Let's talk a little more about the book particulars. Did you pick the illustrator for the book? How does that work?

I didn't, that was all Chronicle. They chose the illustrator and designer and I'm tremendously pleased with how it all came out. My blog can look funky because it's free, but if you're going to pay for a book it's nice if it's a bit special, and good-looking books are Chronicle's specialty. I did offer the odd suggestion and "vet" the illustrations to make sure they were accurate and so forth, but the people involved had a good understanding of cycling so it was really easy for me. The fact is I really wound up with the right publisher—they did a great job.

How much back-and-forth was there as the book developed? Were you corresponding with your agent or editor, and what parts of the book shifted during this time? There must have been several things, no?

As the writer, some stages of production are busier than others for me so there are lulls, but overall there's always back-and-forth—from editorial stuff, to giving input on illustrations, right on through the marketing part and planning the tour. The quiet parts are when they're reading what you wrote, or when production is finished and you're waiting for the pub date.

Is there a page or a passage in the book you wish you could change?



I don't think so—I really don't think about it. I don't mean that as in, "I don't care about it anymore," nor do I mean I think it's perfect. I just mean that at a certain point the books done and that's that, and even if there are mistakes or I feel differently about something now than I did when I wrote it they're still part of the book. It's important to learn how to put something down and stop fussing with it—in fact that's probably the hardest part about writing a book. Anything I need to address I'll just deal with in the next book.

Bikes and writing are key to you, but what else matters? I'm not trying to pry or ask for anything personal, but there's more to you than that, so what other things matter to you, or

interest you? A quick panorama of superficial and not personal things you like—like your favorite movies, food, books, topics, areas of interest that you'd like to have more time to explore, or something you like to read about, or just want to know more about, something that fascinates you even though you don't know much about it—like black holes, or whatever it may be. (I will rewrite this question in a less rambling way, but you've got enough to go on. Don't reject it as too trivial or anything—you never know how some trivial answer will strike somebody. No need to cover all of these things, though please do it if you like—I'm just trying to show you as a normal person like everybody else.

I love entertainment and popular culture in general and humor in particular, which probably doesn't come as much of a surprise if you read my blog. S.J. Perelman, Douglas Adams, P.G. Wodehouse, W.C. Fields, "Monty Python," "The Young Ones," "SCTV," the "Airplane" movies, Steve Martin, Mel Brooks, Woody Allen, Louis C.K., highbrow, lowbrow, satire, slapstick, parody and so forth—I've always been kind of a comedy nerd. Also, I've also always been interested in religion—not from the standpoint of practice or belief exactly (I don't practice or believe) but more in terms of history and its contribution to the popular culture.

I mean, I'm not a scholar or anything, but it is something I studied a bit in school along with English and would probably delve into again a little bit given the time. All of this is a pretentious way of saying that, when I'm not riding or writing, I'm probably watching "Spaceballs" for the 80th time.

You have other book or books planned. Sequels or different?

I'm planning to write another Bike Snob book. It will be substantially different from the first book but still in keeping with the attitude and subject matter of the blog.



The oldest and least sophisticated form of bike shock-absorption, the big pneumatic tire.

SHOCK ABSORPTION

Shocks get absorbed by movement, either compression or deflection or a combination, but movement in any case, yet there's a notion among bike riders that shocks can get absorbed without it. They don't go around saying that exactly, but when they rave about their carbon road forks that absorb shock, they might as well be saying that.

"I know what I feel" doesn't make it so. Personal testimony and observation have a long history of unreliability. Still, people who ought to know better claim that carbon forks offer a "plush, shock-absorbing" ride, even though they don't compress at all, and are designed not to deflect enough to make a difference in comfort. The media and many "experts" continue to praise carbon forks for their shock-ab-

sorbing qualities. Advertisers love it when the media says that. The media might say that because the advertisers do. It's easy to agree with those who pay your salary.

I have read bike reviews that claim straight-bladed forks absorb shock better than curved ones. Of course, there was no explanation of how this could be. It was just another "fact by publication."

I wouldn't suggest the *Rivendell Reader* isn't biased. It's extremely biased. I don't trust carbon forks, and everybody who knows anything about us knows that. If you'd seen what I have, you wouldn't trust them either. In any case, they are not shock absorbers, just aren't.

The most effective shock absorber is a body relaxed enough at the joints to move with the bumps. It comes from a good

riding position, with the handlebars high enough take the weight off your arms, so you can ride with a firm but not tight grip on the bar. Ride with unclenched fists and relaxed elbows and shoulders, so your hands, elbows and shoulders can flex with the bumps.

The next best shock absorbers are your tires, but only if they're fat and soft. Softness is the point of bigger tires. With the combination of good position, good technique with relaxed joints, and big soft tires, you can ride in comfort anywhere a bike ought to go. If your body and tire pressures are in order and you're still getting bounced around too much, then slow down, avoid the worst bumps, walk the bike or buy a bike with shocks.

HOW SMART ARE YOU ABOUT CERTAIN STUFF?

1. Frame sizing to Rivendell starts with what acronym?
2. Which Rivendell frame / bike is, more than any other, referred to acronymously? Answer in the non-acronym form.
3. Which car makers name is a combo of the letters in a Rivendell frame suppliers name and those in the acronym for a French company whose first product was a front wheel drive car?
4. "Seersucker" could be many things, if you think about it: a gullible prophet; a leech specializing in prophets; or if you're from ancient Persia: milk and sugar. Bike riding wise, what is seersucker good for?
5. The whale's closest living relative is the what?
6. The cost of a cleft palate surgery is about \$_____.
7. 130mm is a common dimension twice on certain bicycles. Where?
8. Where on a bicycle might 28.6 meet 26.8?
9. Which English poet wrote which English poem that gave us the name of which bike model?
10. Insulin's main function is to _____ blood sugar. Eating carbohydrates _____ blood sugar. Fat is burned/stored when insulin levels in the blood are _____.
11. Fueling long, high-effort level bicycles rides with sports drinks and energy bars is a (fantastic/forlorn) way to shed unwanted blubber.
12. True or False: The best thing about leather saddles is.... Breatheability.
13. What did the moon used to be?
14. Name six models of 650B tires.
15. How did a meteorite lead to Rivendell Bicycle Works? (briefly)
16. Grame Obree is "The Flying Scotsman." If you haven't seen the movie, you should _____ it.

Write your answers down on a postcard or a letter and send them to:

RR43 Quiz
PO Box 5289
Walnut Creek, CA 94596

Five randomly-selected fully-correct responses will get a \$25 RBW store credit. Emails don't count.

FAT, RIDING, WEIGHT, FOOD

If you could reach your ideal weight and look fine naked, and be strong and healthy, but it meant cutting your riding by 75 percent, would you push that button? I know what you're thinking: What button? Anyway, chopping riding isn't the goal or the secret to losing weight and shaping up, but no matter what your current weekly hourage is, increasing it, even tripling it, is a lousy way to lose weight.

Body weight and fat pounds are almost entirely diet, not exercise. People who suddenly ramp up their exercise also don't want to blow it by eating badly, so they always cut out the large portions of super crummy food at the same time. At that point the riding part just horns in on the credit that should go to eating less. (And eating less isn't an answer by itself, either, but later for more on that.)

Still, riding to lose weight is a common but underadmitted reason to ride a bike. I'm guessing that because I've talked to hundreds of heavy, middle-aged men and women who want to start riding or want to ride more, and it's not because they crave the commute, or the struggle up the hill, or the training leading up to the century ride in 6 months. They've not been oblivious to exercise up to now, but it hasn't been their calling, because it's hard. But at some point they get desperate for exercise, and riding a bike makes the most sense. It's less jarring than weight-bearing exercises, and more convenient and less humiliating than swimming in a Speedo.

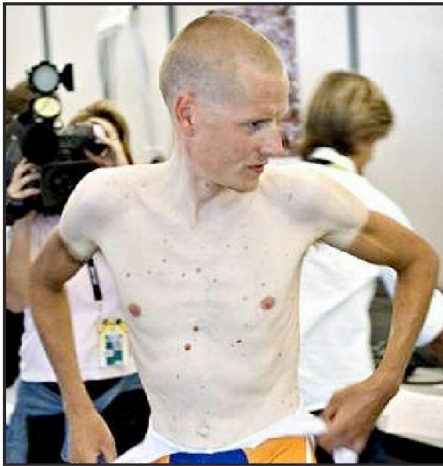
People think riding more and harder helps because the harder you ride the more you grunt and gasp, the more miles and hours you ride, the more calories you'll burn on the bike.

Nobody will argue that, and if they did nobody else would listen. Pro racers ride 20,000 hard miles a year and look how skinny they are. You'd probably like to have ridden 20,000 miles in a year, because it would be a neat thing to bring up at a post-ride coffee-beer-bagel-pizza-biscotti pow-wow. But if you and your buddies were picking next year's mileage out of a hat, and one guy got 4,500 and another got 20,000, and the final number, you were assured, was a duplicate of one of the first two—would you be nervous?

A 20,000 mile year is 55 miles every day. Even then, you'd have to watch your diet. Your muscles would get so tuned to turning those 13-inch circles that they'd adapt and wouldn't demand as many calories. Hurray? It's common for racers to have to

drop a few pounds to get to racing weight for a big race.

Remember "working up an appetite"? It's one reason riding harder and longer doesn't help much. All wild animals eat more when they exercise more. It's the natural order, and it kicks in hard when you work out hard. Sometimes humans with too easy access to food eat out of boredom or to pass the time, or because high sugar levels in the blood lead to carbo-cravings. You eat when you're bored, you eat when you're stressed, and you eat when you've worked up an ap-



Michael Rasmussen, pro rider at the peak of his bike fitness.

petite on a long hard ride. Your body registers calories expended and demands they be paid back. Under certain circumstances you can operate in calorie deficit for a few days or even a few weeks. In a controlled environment such as a fat camp, when somebody else is dishing out the food, you can go longer. But in the end you gain the weight back, because your body likes homeostasis. On top of your body telling you to eat more, you figure you've earned the right, too—and so you eat more on top of it all, as your reward, and from a calorie-loss perspective, you've just negated all those miles. That's one reason it's so easy to be a fat rider.

Another reason it's so easy to be a heavy megamiler....is the food-fuel propaganda you can't escape (as a cyclist).

Open a bike magazine, a health magazine, or even read the newspaper, and you're told everywhere you look that carbs are your fuel of choice. Carbs are the best fuel for long, hard rides, because at those effort levels, you burn carbohydrates (in any of their forms – glucose, glycogen). You're working too hard to burn fat efficiently, so your body switches

fuels. Your muscles so much require carbs during hard training efforts that if you don't get them from your water bottle or back pockets, your body will break down muscle tissue and convert that protein to carbohydrates. That's why so many endurance athletes are so gaunt. They can't eat enough carbs to supply the fuel.

But that kind of riding, besides being more hard than fun, specifically doesn't burn fat. To burn fat, you have to exercise easier and not eat carbs. You have to exercise at a level at which your body prefers fat for fuel, and then make sure it uses fat for fuel.

Your body evolved to store fat to be used as fuel for all day roaming, with occasional sprints. To simulate that on a bike, back off some and let the old ladies catch you. Ride at a pace that feels too easy, but still gets your hear beating between 50 and 75 percent of your maximum rate. Warm-up or warm-down pace, is what it is.

And whatever you do, don't carb-up for such rides. You have the fuel already—your body fat—so you don't need the chocolate-peanut butter-caramel energy bar for fuel. If you eat carbs for fuel, you can forget about burning fat. That's because carbs turn to sugar, sugar increases your blood insulin levels, and in the presence of insulin, you burn glucose for fuel and store fat.

Even for hard rides of up to 2 hours, there's no need to carb up. Your muscles can store about 2 hours worth of carbohydrates (as glycogen), which means anytime you go out for a dreadfully hard 2-hour charge you don't need to eat anything. Most riders eat for reward, anyway. You feel deserving of the crunchy gooey apricot banana cookie bar, and it's supposed to be for bike riders, so why not? The message on the wrapper is: "Eat me and look like the wirey yet muscled guys in our ads." It's all a hoaxlie.

There are many ways to lose weight riding.

(1) You can fight homeostasis and try living a life in caloric deficit, always being hungry and feeling deprived, always keeping the wolf at the door. That's fun.

(2) You can flip a switch and become one of those rare people who sometimes forgets to eat, or can't be bothered, or just doesn't like most food. That's easy.

(3) You can ride 20,000 miles a year like a pro does, and have somebody else control your portions for you. That's fun and easy.

(4) Or you can cut out the carbs that make you store fat. If the ride is less than two hours long, drink water and eat nothing. Ride easier, gear down extra for the hills to keep your heart rate in the fat-burning range, and enjoy yourself. Cut back your carbs by at least 80 percent, eat all the fat and protein you like. Once a week ride hill intervals or do Tabatas on the bike or stationary bike. (Google Tabata Intervals). Work your muscles (and not just your quads) anaerobically (hard, slow, painful burn) two or three times a week for maybe half an hour total....and you'll be all set.

The usual medical/don't sue me if you get a heart attack disclaimer. - G

Good books to read:

- The Primal Blueprint (Sisson)
- Protein Power (Eades)
- Why We Get Fat and What To Do About It (Taubes)
- The Slow Burn Fitness Revolution (Hahn and Eades)
- Also, watch the Gary Taubes videos on YouTube

FITNESS ISN'T HEALTH

If you pay attention even a little to the health happenings in the world of sport, you've noticed that every year one or two super fit and sometimes famous or competitive endurance athletes unexpectedly die of heart attacks.

The deaths are always shockers, because endurance events are supposed to be good for your heart.

You hear about the super famous ones, or the super fit but unknown ones who die in famous events. If there are only two degrees of separation, you hear of more, and word travels faster. In 2010, Tom Milton, the Selle An-Atomica saddle guy died of a heart attack while on the Devil Mountain Double, a local 200-miler. Tom came by here a lot, we knew him well, and he looked like we'd all like to look at 56. Lean, smooth, tan. I'd guess he was about 6 feet x 165 lbs.

Ed Burke, a professor, author, coach, and ultra endurance rider (RAAM /Race Across America veteran), died on his bike in 2002 at age 53.

PowerBar founder/coach/marathon runner Brian Maxwell died in 2004 at age 51. In 2009 Steve Larsen collapsed and died during a track workout. He was 39, the father of 5, and may have been the fittest 39 year old in the history of sport. It wasn't obviously a heart attack, but given his history with riding and triathlons and the mounting evidence that sustained high heart beat exercise is bad for you, it's hard to not suspect his training.

These are a handful of the fit-deaths that come to mind immediately, and that I either knew personally (the first three) or had met (Steve Larsen). Of course there are ten thousand people who've benefited from exercise for every one it has killed. But given the growing number of fit-deaths, it still seems fair to say that being super fit doesn't protect you from

exercise-induced death. It makes you wonder if they'd have died if they'd halved or quartered or even totally abandoned their mileage and hourage in the decade before dying. I know hikers and birders and couch potatoes die too, but still. Hard exercise is supposed to supercharge your heart, and it's not doing that. Maybe it's overcharging it.

Many athletes push themselves far beyond anybody's idea of normal, in order to give themselves that extra measure of fitness, which they confuse with health.

Fitness is how fast or far or easily or skillfully you can perform, and health is what's going on inside.

From a bike rider's point of view, fitness is the ability to cover a lot of miles fast. Bike riders gauge fitness as speed over distance, and the top finishers in the BORAF (Big Ol' Race Around France) are considered—by other bicycle riders—to be the fittest athletes in the world. Bike riding doesn't use many muscles, and the BORAF winners don't do anything fundamentally different than kids racing kids around the block.

But put the BORAF winner on a pommel horse, or on the mat with a high school sophomore junior varsity wrestler of the same weight, or in a swimming pool, or on a rock face, or set up the pole vault bar for him, and let's see how fit he seems then.

Every sport has its own self-serving definition of fitness, but when you look at which muscles are used, how they're used, and the technical difficulty (and complexity) of the movements in different sports, it's hard to make a case for the fastest bicycle rider being the best or fittest.

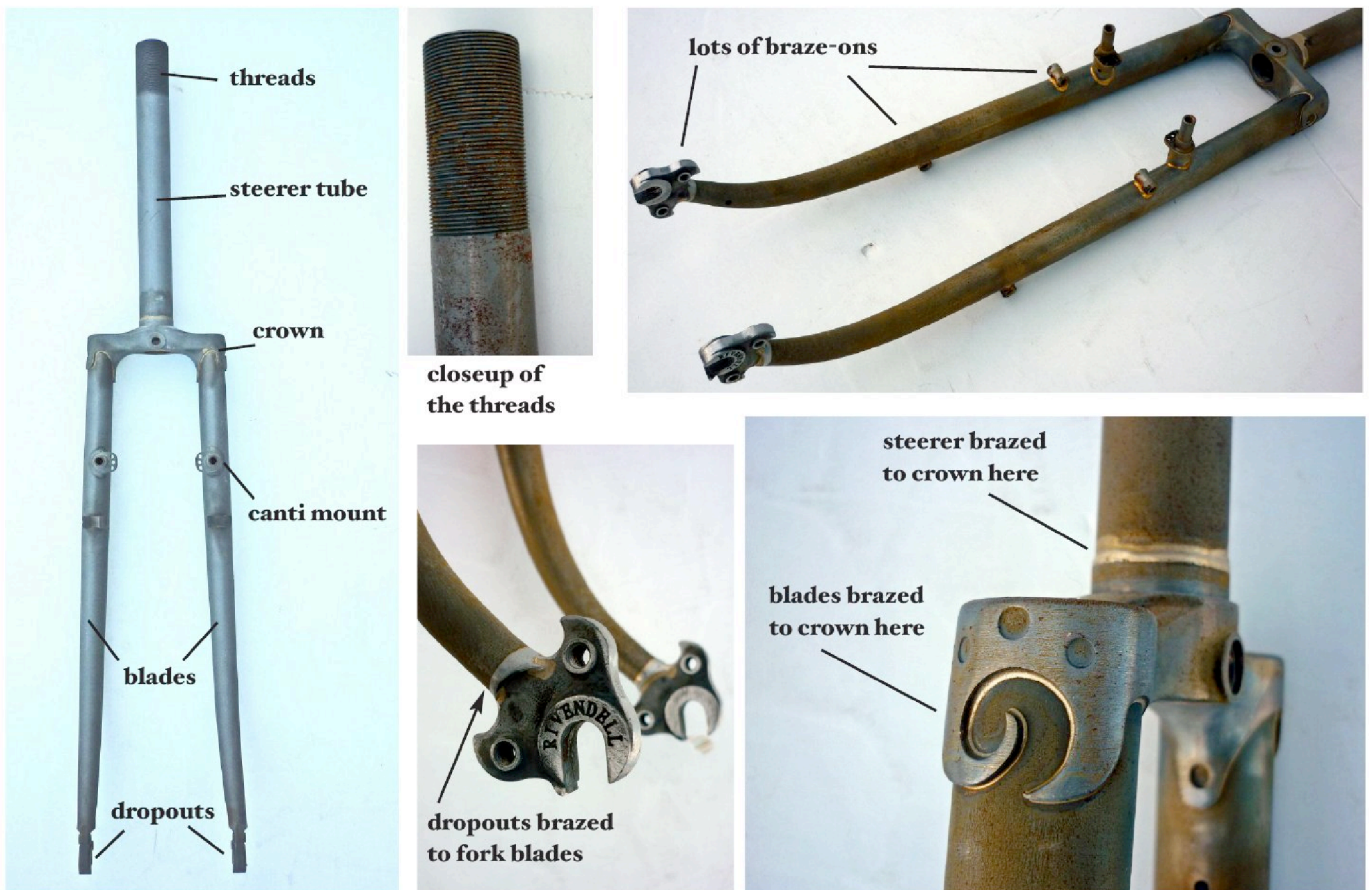
So the only way the cyclist is even in the running in a fitness competition is if you reduce the scoring to a formula derived from speed, distance traveled, average

heart rate and hours of out there. That's aerobic fitness, but it's not the same as extreme health, though. A good case can be made that extreme aerobic fitness comes at the cost of all around fitness and health. A good case can't be made that these uber-human efforts we're seeing so much of these days is good for you and gives you an extra margin of safety from heart attacks.

Extremism is the new norm

With so many people doing so many things, it's inevitable that a certain number of them will break away from the pack and do something that's a super nutso variant of the parent activity. The immediate community admires it and society rewards it with praise and fame and usually some kind of commercial endorsement. That's why, over time, rock climbers end up speed-climbing 2,700-foot walls unroped, and 14-year olds sail around the world solo, and sword swallowers become sword swallows. These are things not done in private and kept silent. Every sport and activity succumbs, over time, and there's nothing you can do about it except Not Participate. You won't get ooh'd and ahhh'd when you don't, but if you can resist the immediate praise of the community for doing something wacky, you may live longer. Of course, the extremists would say that's a life not worth living, but that's a philosophical discussion, and right here we're more concerned about health.

It's important to distinguish between health and fitness, or else it's too easy to wind up thinking fitness is the way to health, and that as long as you can ride your bike fast and long, you're doing OK in the health department.



THE FORK

The fork holds the front wheel and tries to destroy the frame. The first job is obvious, but the less obvious second is important, too.

The fork isn't part of the magical truss, the mess of triangles that the main frame is. It's a lever, and levers exert force. Every time you use the front brake or run into something, the fork pushes backward and applies force to the upper underside of the down tube, an inch or so behind the head tube.

If the down tube is wimpy or the force is too great, the fork will win, and the tube will buckle.

If the fork is wimpy and the down tube is super stout, maybe the fork will bend and the downtube won't. In a hard front impact, both fork

and downtube get wrecked, and often the top tube does, too, right behind the head tube joint. You never see only a buckled head tube, though. It takes a mighty whallop to wreck the down tube and the head tube. (In the Bstone days when we were testing prototypes of the MB-Zip mountain bike, we'd take turns running the frame head-on into a 3-foot high cement wall, to see how much impact the frame and fork could take, and which part would go first. We never got a top tube to buckle, even though the top tube was light. Nobody liked these tests much, and for the record, they weren't sanctioned.)

From a lugged frame repair point of view, the best case is when just

the downtube is buckled. The old one can be replaced easily (relatively). If the frame is tiggid, it's not as practical to replace the downtube, because in welding it the first time around, the head tube got heated to about 2500 degrees, and doing that twice is lousy for the metal. Plus, the time it takes to extract the wrecked downtube and prepare the head tube and bb shell for a fresh one is more productively spent making a whole new frame.

But from a get-up-and-running-again-fast point of view, it's best when the fork goes. Sometimes a new fork is just a UPS delivery away. It all depends.

HOW TO BURN FAT DURING AND AFTER YOUR RIDE

Before your ride

Don't pork out on carbohydrates. In fact, keep them out of your system. Sure, you've been raised to believe they're your pal. Actually, they're not. Not unless you're a racer and already super lean or otherwise aren't concerned with vain trivialities such as burning fat.

Carbohydrates raise blood sugar, high blood sugar triggers an insulin release, and insulin stops fat burning and, quite the opposite, makes you convert calories to fat, and store it. Ride on empty, or near it. Your plan is to burn fat, not bagels, and you have enough fat-fuel already.

During your ride

Pedal at an effort level between about 55 and 75 percent of your maximum heart rate. At this pleasant level of effort, your body easily converts fat to fuel, and it will do that unless you have high insulin and sugar in your blood from eating bagels and orange juice, or whatever, for breakfast.

Riding carb-free doesn't mean old ladies are going to pass you. It doesn't work that way. Even without eating carbs-in-gut, you have about two hours-worth of them stored in your muscles as glycogen. Do you need to go full-blast for longer than that? Only if you race. Racers don't race on fat. On a normal ride of 2 hours or less, drink water and eat nothing. It's simple.

After your ride

Well, muscle burns fat, so you need muscle. Serious bike riders tend to do

zero upper body exercise, because pro racers don't, and it's understood that a light upper body is an advantage in races. But muscle burns fat, and the kind of anaerobic exercise that leads to muscle also burns fat, especially if you do it—again—with low insulin levels. Lifting heavy weights, even pull-ups, with low insulin levels triggers the release of growth hormone. That builds muscle and burns fat, which is why all those athletes inject it. Don't be like those guys.

After dinner

Go to bed without a gutful of 'bohyd-rates, so your insulin is low when you sleep. Then you'll be burning fat as you sleep. Not enough to wake up with a 12-pack, but you aren't exactly working out hard as you sleep, anyway. If you burn fat every time you sleep—hell, that seems like a good deal, doesn't it?

The worst thing you can do is eat a bowl of whole grain cereal or ice cream or eat a carbo-snack before you go to bed. You'll wake up fatter. Don't eat at least 4 hours before you go to bed; or if that's not possible, ride or workout some to lower your insulin by lowering your blood glucose.

Other ways and times

Lift heavy weights with your blood sugar between about 75mg/dl and 95mg/dl. That's not weak and wobbly, not at all. It feels the same as 150mg/dl, but the internal effect is way better, and you won't get there if you carb-up, so be the hungry gym-rat dude. You know those protein bars and canned drinks they sell at the

front counter that cost, like, \$4 each? Read the friggin' label and you'll see they have 30g to 40g of carbs per can. You might as well inject your waist with pig fat.

Be a fanatic, even if your friends a family think you're nuts.

If you want to know where your blood glucose is, you need to pretend you're diabetic (one in ten of you are already). Go to your pharmacy, get the cheapest, house-brand glucose meter and ten test strips. This starter kit welcomes you into the grand world of finger-prickin' and squeezin', just like diabetics do all the time. You can test your glucose in 30 seconds wherever you are. Nobody need be any the wiser, if you're discreet. It sounds and seems extreme, but it's just a little finger prick, and if you register 150 or so in the morning before eating...well, this is something you ought to be aware of. Tell your doctor.

Glucose testing ought to part of a standard lipid panel, but the usual way is to wait until you're depressed and hungry and thirsty all the time and peeing constantly (symptoms of diabetes) before going to the doctor. So before you think this suggestion to buy a \$10 kit and check yourself is a wack-o thing for the vain and fat-obsessed, think of it as a preemptive thing you should do anyway. This isn't deep down dirty medical advice. It's almost the equivalent of brushing and flossing, but with a little blood involved. You get some of that with aggressive flossing sometimes, too. Oral B brand dental floss is made in Ireland, by the way.

DON'T OVERTHINK YOUR UNDERWEAR

I haven't changed my underwear to go on a ride in ten years, and I've never, even once, been three-quarters of the way through a ride and thought, "Son-of-a-what-ever, why did I have to wear this underwear? What was I thinking?" But I've often gotten home and stripped down to find cotton boxers, and thought, "Hmmm. These are supposed to be lousy. How come they weren't?"

When I think a little about it and can as easily grab one kind or another, I like thin wool seamless underwear, but mainly because I can ride it in all weather and not change it after the ride, because it

doesn't clammy. Then I can flip it inside out the next day and use it again. The day after that, another flip. Wool is three-ride underwear.

But cotton underwear is not going to kill you or wreck your crotch. Life on a bicycle is rarely like life in the snowy mountains. Most of the time, the challenge is a fair-weather ride of half an hour to two and a half hours, and nothing bad can happen on a ride like that.

I'll go out on a limb and say that any ride that requires, or actually genuinely benefits from a padded, anatomical, high-tech, microbial synthetic chamois

slathered in crotch cream is a ride I don't want to do. Wearing shorts like that on a non-epic ride works—people do it, people like it, and no harm's done; but it's kind of a weird-looking, expensive overkill.

Socks are not performance wear.

High socks look kind of funny, but if you don't care, nobody else should, either. By the time you're an adult you know not to wear thin cotton socks in cold or wet weather. The same kinds of socks you'd wear for a hike will work fine. Underthink your socks, if that's possible. Bike-specific socks work great, but they're just neck-and-neck racing with any other kind.

CHARITY RIDES

I'm all for charities, but lukewarm on charity rides, because it's hard to tell if the ride or the charity came first. I think, just give the money privately and just ride your bike privately. The idea of hitting up other people to give their money so you can ride your bike as the "fundraiser" is a little off. I know a lot of money is raised this way, and I suppose it shouldn't matter how the money is raised, as long as the research is funded, or the wheelchairs are purchased, or whatever. But it just seems a little off, to me.

If you're considering going on a charity ride, at least find out how much out of every dollar actually goes to the cause directly, as opposed to administration. Some charities spend 80 cents of every dollar on to salaries, travel, and administration. If the person in charge can't answer or isn't forthcoming, pick another charity ride.

If you happen to be the rider and it's your job to get pledges:

1. Donate out of your own pocket first.

2. Hit up your family next.

3. Then friends you don't mind losing.

4. Then co-workers you don't mind alienating.

5. When you ask anybody for a donation, specify an amount. If you have a quota it's tempting to leave it open and hope for some big ones so you can stop hunting early, but leaving the amount up to the person you're asking is a double dose of bad form. It puts the person you're hitting up in awkward position of either giving too little and looking cheap, or giving too much and feeling like a doormat. You're the person asking for money, so you should shoulder all that awkwardness. Be specific, and ask on the low side—\$5, or maybe \$10. If they come up with more than that, fine, but the main thing is, they won't feel cheap for giving only that.

This is not a veiled tip on how to get free Riv-stuff. We got people to employ.

SELF-CHARITY RIDES

Every Spring and Summer, bicycle companies get pitched by riders who want to free new bikes and gear for their dream tour. The riders point out that when others see them on a certain bike or wearing these particular shoes, they'll want them, too. Most people tend to overestimate their influence and drawing power, but manufacturers know the score.

If you can't ride on your own dollar (like the previous generation did) but are still a good person down deep, here is a list of do's and don'ts that will help your chances of getting some aid. Even if you strike out, you'll do it with some dignity intact. Not all, but some.

DON'T

Email your request to "To Whom It May Concern" and write a generic letter that can be sent with no changes to a hundred different makers.

Refer to "your product," over and over again without naming the product. You might as well just say, "I'm using the shotgun approach. I'm interested in anything at all I can get for free."

Play up your value as equipment tester. That suggests they don't test it themselves and need your expertise to keep them from looking like idiots. It is insulting. Remember, this is under "Don't."

Be vague about what you want (remember, this is a "don't"), or leave it up to the business to suggest something. Beggars are always afraid to ask for too little or too much, and that puts the onus on the business to stick its neck out. You contacted them, so you ask.

Say you're writing a book or magazine article unless you also show them the contract without them asking.

DO

Tell the company exactly what they will get in return, and come up with something better than "good will." If you can't think of anything, your plan is too one-sided.

Could you offer to put on a video presentation or slide show in their shop for customers, even if it's inconvenient, requires organization, and you don't like public speaking? If you offer, actually do it.

Get the name of the decider, and spell his or her name right in a real paper-and-envelope letter. Ask on paper. Don't pretend to be green by sending an email. Your bike trip has a carbon footprint ten-thousand times bigger than a one-page written letter.

Ask your question in the first sentence. No wind-up. The details can follow, but a bold request is more impressive. It really is. Every measly beggar beats around the bush, and you'll stand out if you don't.

Ask for a discount of 30 percent off of retail. Thirty percent probably amounts to the company's employee discount, and it can probably handle one or two more of those without folding. Asking for thirty percent is another way to stand out among the true beggars, and shows you're not greedy. The company will give more if it can, and it feels good for a business to feel like it's going overboard for you. If thirty percent isn't enough for you, don't ask at all.

Over-deliver politeness. Actually, it's not possible to be overly polite. Send postcards you didn't say you'd send. Send a written thank you letter if you've already said thanks in person, over the phone, and by email. Be "1950s polite."

Be humble. Not falsely humble, just humble. Acknowledge what the company already knows—that their business is no more likely to benefit from this than Nike has by your wearing its shoes. If you're begging for gear, you've got plenty to be humble about, and acknowledging that truth won't kill the deal.

If you already use their product or products, and you like them, tell them that. (And if that's true, maybe you don't need another one.) But maybe you want the latest model, or yours is worn out from lots of love. But if you've been sleeping in North Face tents for eight years and now you're asking Marmot for a freebie, it doesn't look good.

Once you get a freebie or a deal, there's a tendency to think of yourself as "beyond retail" from that point on. Don't let that happen. Be grateful and buy retail from them in the future. You're not a pro, and one discounted trip is enough.

SLINGSHOTS FOR BIKE RIDERS

When I was 7 a pal got a Wham-O slingshot, and I wanted one too. I asked my dad, and he said, "Don't buy a slingshot; make one. The Wham-O is too chunky. The grain doesn't follow the shape. A tree branch is skinny and strong." I snickered at Wham-Os from that point on, and he showed me how to make a slingshot. It couldn't be easier, as these pages show.



Saw or knife time: Prune off a fork. Buckeye trees yield perfect, symmetrical forks; oaks, not so many. Symmetry is overrated. Some assymm forks are more ergonomic.



Knifetime: Bevel all the edges to prevent splitting and catching. You can use auto-tools, but whenever there's a chance to cut wood with a knife, take it, man.



Score the borders of your groove all around. About 3/8-inch or so is about right, depending on the elastic or tubing. Back off from the end.



Cut toward the center, within the boundaries. Get it as smooth as you can. The Swiss Army Pioneer is made especially for slingshots; a little-advertised fact.

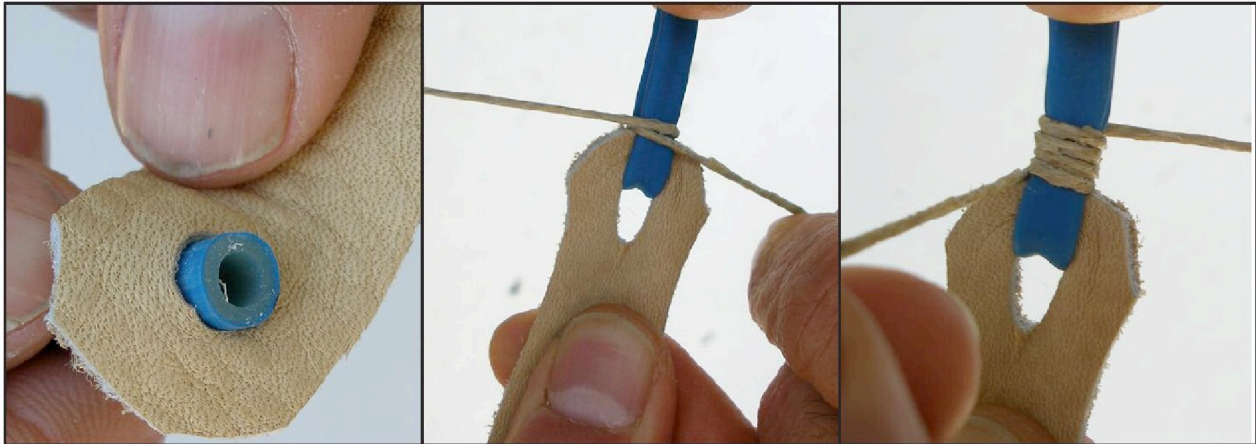


It should look about like this. On both forks. This one is shaping up superbly! The best one yet, in fact.



Cheater alert: You can make the grooves with a rat-tail file, but that's a shame. If your knifed grooves are rough, you can smooth them with the file, or ramp up your blade skills.

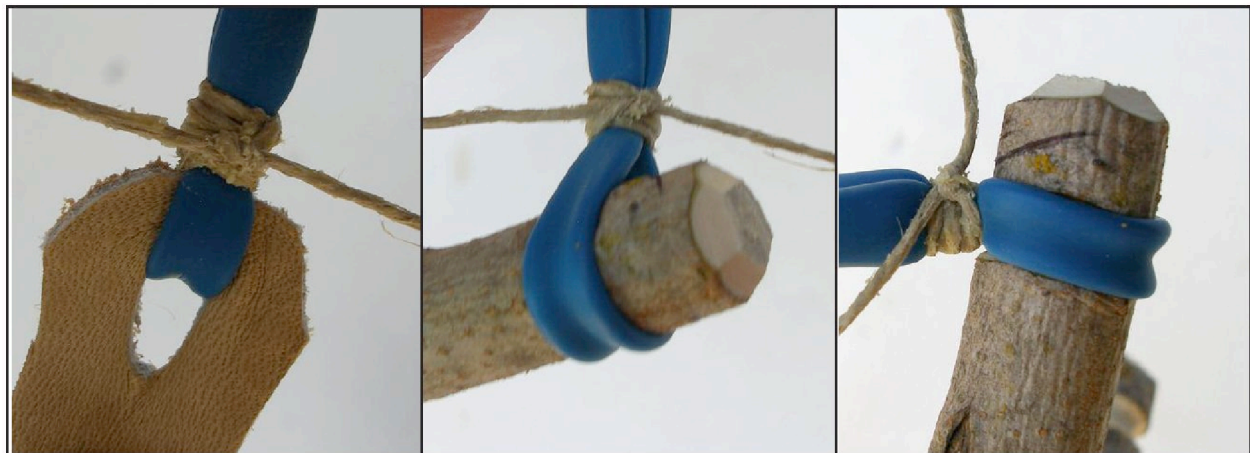
LASHING THE POUCH & FORKS



Ream or otherwise make a hole in the leather. Push the elastic through. Smooth side out, if applicable.

Fold the stub back (on the smooth side) and have pal grab & stretch. Use beeswaxed twine and start a-wrapping.

Wrap four or five winds, and prepare to tie a square knot or other knor diagonally across the bed-o-winds.



Tie it like this.

Same procedure on the forks. Stub goes to the outside.

Add an extra overhand knot, just for fun. Then snip the ends.

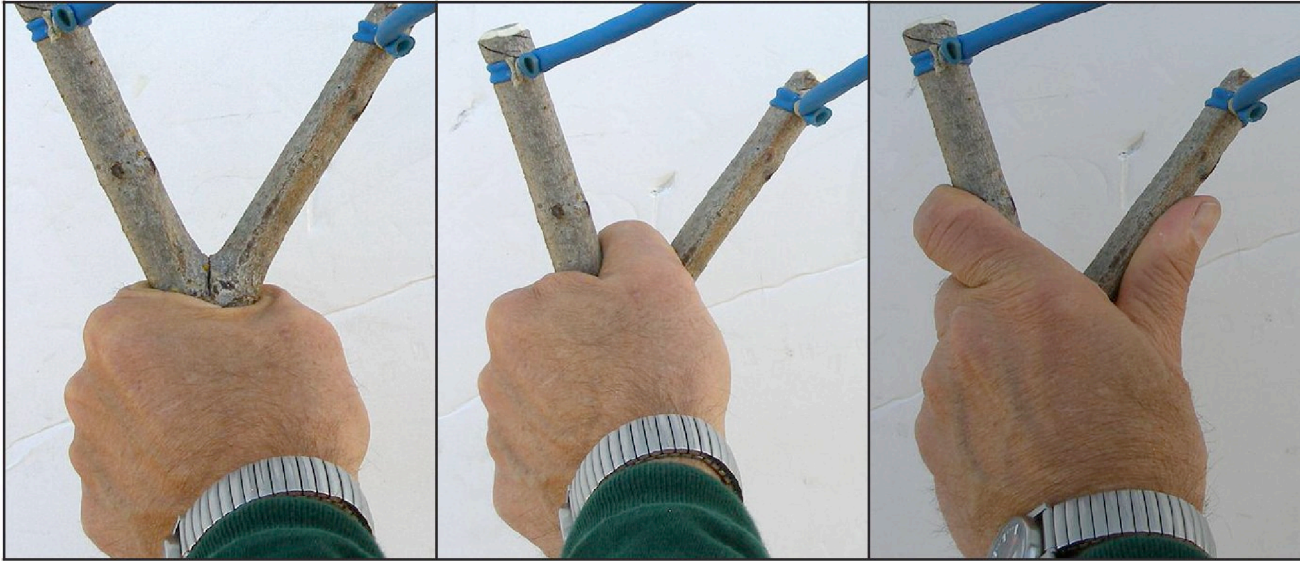


What it should look like, for the most part

Most of the time, most of the ones here, look way uglier an asymmetrical, and it doesn't matter. For show and demo, though, I thought a higher standard was called for, and there it is. It nailed its first three shots at the bean can across the parkin lot.

We're all adults here, but just in case: Don't do dumb stuff with slingshots. Wear whatever safety gear you feel compelled to wear. TSA doesn't allow slingshots—that has been verified. Your children can shoot mini marshmallows and cotton balls. You can shoot rocks or bearings. Google slingshot ammo.

THE ONLY THREE GRIPS ALLOWED



Fistgrip: The way Joe Blow grasps it the first time. It works better with long fat handles than with short thinnies, but still allows twisting.

Thumb-in-crook: Prevents backfire of the fork and twisting. Allows a shorter handle than Fistgrip.

Bracegrip: Pretty much prevents twisting, supports the fork, allows a short tail. My dad's grip, and mine.

WHERE THE SAM HILL DO YOU GET THE STUFF?

The forks come from trees and online, of course. As already noted, the supreme trees are buckeyes, or at least the variety of buckeyes that grow around Walnut Creek. Pussy Willows are good, too. Oaks forks are few and knotty, but the wood is great, if you don't mind assymmetrical forks. The trees are out there for the pruning. Be somewhat selective and secretive.

The leather comes from animals. Old shoe-tongues are ideal, but you can buy scrap leather online or get it from shoe/luggage repair places, too. Don't be cheap. Show 'em a \$10 bill and ask how much scrap you can get for it. Look for top- or full-grain, or thick suede. Try to tear it; you shouldn't be able to. Soft clutches a rock better than stiff does. If there's a smooth and a rough side, the rough side holds the bullet.

The rubber shown here is surgical tubing, bought online (4fishing.com, reefscuba.com) and at hardware stores. For children and weak women, 1/4-inch is good. For general use, 5/16-inch. Buff dudes who like to destroy coconuts may prefer 3/8-inch. You can buy flat latex bands, too, but surgical tubing is fine, easy, and let's not get weird about micro nuances.

The **twine** is our own hemp twine. **Beeswax** it to add strength and prevent fraying, rotting, knots a-loosening. A **knife** comes in handy, and should be your main cutting tool. As already noted, a **rat-tail** file can be useful, too. That is the best tool name of all time.

What to shoot: Rocks are green; 3/16-to-1/4-inch slingshot ammo (bearings) are more accurate and easier. From slingshots.com, of course. Buy it in bulk unless you're insane, in which case you probably shouldn't even have a slingshot. Make targets of thick cardboard, which holds the ammo, and hang up cans in front and shoot away. Get creative.

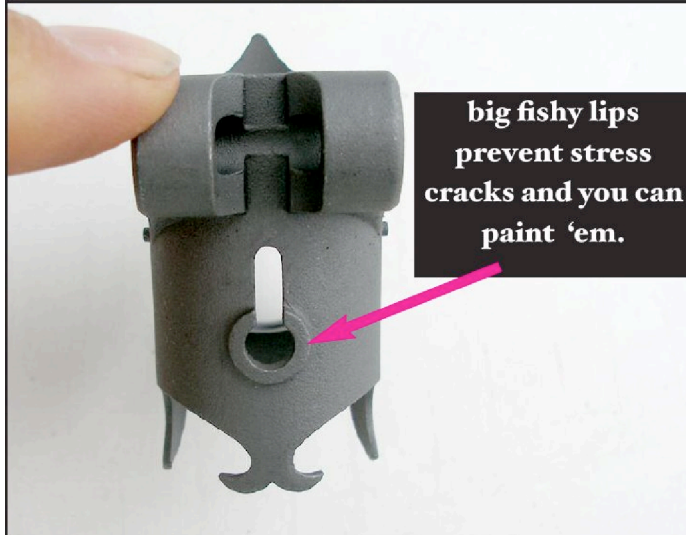
A BRAGGY LOOK AT SOME OF OUR LUGS

There's more to appreciate than is immediately obvious. That's what we'll focus on. The lugs shown come from a range of our models, but the details harped on are common to all.



Seat lug

The binder bolt is a standard hardware-store bolt (M6 x 20mm) and nut, so you'll never lose it and not be able to get another. Yes, people lose binder bolts. The nut cavity is a hex hole. When the bolt threads directly into the lug and then breaks, you're semi-upacreek. When the nut is a proprietary piece for just that one seat lug and you lose it, you're all the way upacreek. This way is best. In a pinch, you can cinch up this lug with a Vise-Grip. It's unlikely anybody has ever had to do it, but it was designed to be Vise-Grip compatible, with no harm do-able except to the paint.



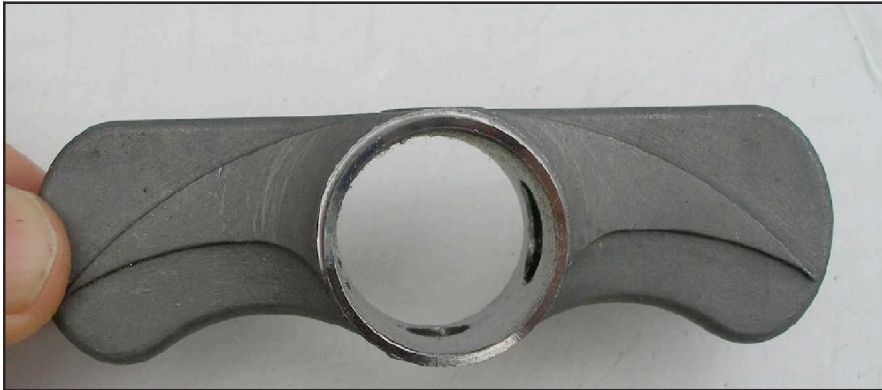
Seat lug, back view

The reinforced stress relief hole at the bottom of the slot offers an opportunity to paint it differently, and avoids any problems that may arise by drilling the hole and cutting the slot. No burrs, no problems ever. As a bonus in the bargain, it's also a good place to add contrasting paint, ideally the same color as the other contrasting paint on the bike. It's not hard to paint. You can even do it yourself. If you have to ask, "B-b-but why?", then you're no fun at all.



Bottom head lug

Here's a bottom head lug. Sometimes called "lower head lug." All bottom lugs should have a round, spoon-shaped contour, as this one does. Points there are a bad idea. Braking the front wheel pushes the fork rearward and focuses stress on the upper underside of the down tube. A point here would concentrate the stress (serve as a "stress riser"), and lead to a crack. It's happened many times, but not on our bikes, on account of ours have a spoon..as do most but not all modern lugs.



Fork crown, top view

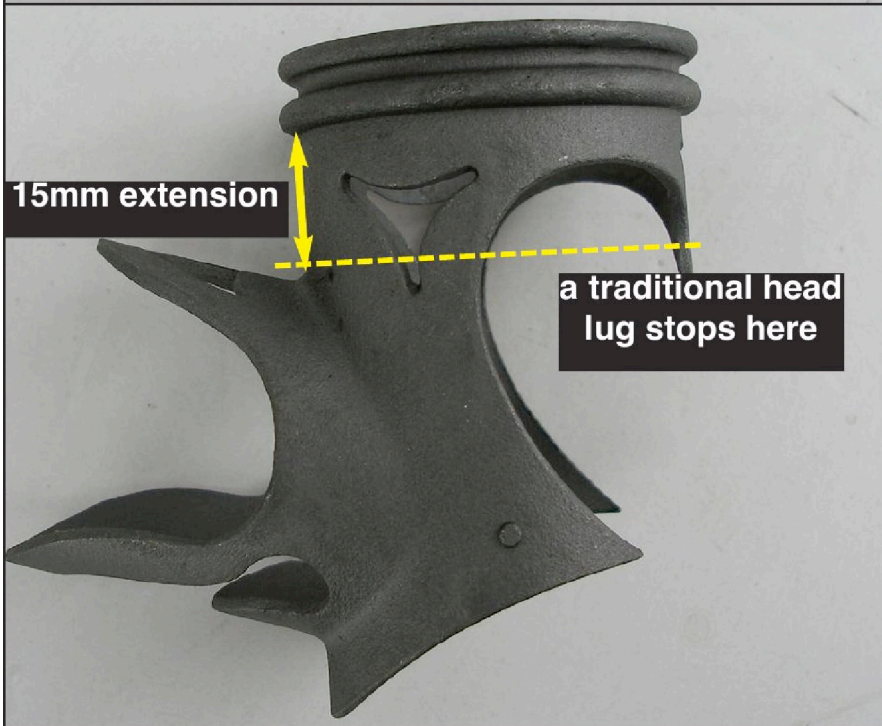
All have “bat wings” on top, purely cosmetic. Many older crowns and some new ones have symmetrical points, and that’s a nice touch, too—you get something to look at while you ride. We curved these backward, for speed and a luscious look.



Fork crown, rear view

We have record-setting low brake holes in our crowns—a unique and fantastic detail for any bike with a bolt-on brake. The low hole minimizes the amount of metal below it, maximizing the tire and fender clearance. If you’ve ever had a tire run into the underside of the fork crown, you’ll get the point. Carbon forks typically have bad high holes, but hole placement isn’t a matter of material, but design. Most crowns have the hole halfway between top and bottom, but that leaves too much metal down there.

7mm center to bottom (normal on good steel crown is 9 to 10mm; on carbon, 12mm+ is common)



Top head lug

A traditional top lug has no extension. It looks too short to me now, but when we introduced tall head lugs (to help raise the handlebar) in 1995, we had holy hell to pay. “It looks funny! Not classic! I expected better from you!”, and about 4 frame cancellations.

Over time, the extended head lug has become accepted, and even tig-welded bikes have ‘em, as they should. And now, any bike without one looks to me like a bike that’s trying too hard to be an ol’ classic, at the expense of rider comfort; which is dumb. But of course, it is a matter of taste.

The reinforced rimmy top part is both functional and ornamental.

THE GEOGRAPHY OF CHILDHOOD RIDING

There's a book titled *The Geography of Childhood*, and it talks about how, when you go to places like Yosemite or the Grand Canyon or Glacier Bay with a four-year-old, or four and a five-year-old, or even a couple of six-year-olds, or maybe a five and seven-year-old and expose them to grandeur, they'd rather play in the dirt a foot beneath their noses and not even look up. Old people look around with outstretched arms and raised palms in awe as they mumble about Intelligent Design, but young kids can be a raised head away from purple and orange alpenglow over majestic spires and calving glaciers, and not even notice. They're focused on the mouse house they're making, or the arsenal of pine cone bombs they're stacking like firewood, or the monsters they're trying to kill on their Gameboy.

I bought *The Geography of Childhood*, but didn't actually read it. I read a thorough review of it, though, and this is one of those times when that's enough. It seemed to match my experiences with my own children (mouse houses), and probably yours too, I bet, because that's how kids are. Kids do kid stuff, adults do adult stuff, and there's no way around it. Grown-ups can't expect kids to respond to scenery at age 2 to 10, the way they do, at age 32 to 82.

It's the same way with riding bikes. Children take scenery for granted, it bores them, and they have to earn it through huffing and puffing, what's the point? Exercise for its own sake doesn't make sense to them. Children like bikes because they can coast and go faster than they can move on foot,

and it's easy. They aren't desperate for exercise, or concerned with their health.

As they grow into pre-teens they're allowed a longer leash, and the bike gets them out of your sight faster, on to downtown or over to a friend's. Some kids still insist on the car ride, but in the '60s kids 7-12 pedaled where they wanted to go.

In the old days, teenagers might head off on their J.C. Higgins speedsters for a weekend or weeklong trip in pairs or threes, but that was never common, and it's super rare now. We all know what they do with their time. (You're thinking I'm thinking self-abuse. But I'm thinking social networking and video games).

However they go about it, teenagers need to establish their independence. One way is not going on weekend family bike rides. Recreational riding of any kind is rare for teens. Racing, maybe, or tricks and stunts on BMX bikes with now and then a dirt ride – but whatever kind of riding they do, the kind of riding they don't do falls under the lonely category titled “family recreational.” (Jeopardy break: The category: Fun for the whole family?)

The 400-point answer is: Go on a family bike ride with little sister, mom, and dad instead of hang out with friends. The answer is: What is the last thing a 15-year old wants to do on a nice Spring day?)

This is the natural order, not a shame. If your teenager would rather hang out with mom, dad, and siblings rather than with his or her friends, it's probably because there's a friend shortage or a social problem, and if

that's the case, a family bike ride won't help. You don't want your teen to hang out with heroin shooters or liquor store robbers, but there's a middle ground that doesn't involve family bike rides.

Now and then kids race and do well, and this can be fun for the whole family for a while, but there's a fine line between “fun for the whole family” and “ahh man, my parents are forcing me to race.” Every family is different. Sometimes it works, but it often does not.

If you want to encourage a lifetime of liking to ride bikes, you can't make it a chore or obligation during the teen years. If they associate it with not being free to flirt or be with friends, they'll have bad memories of the bike.

The best way is something along these lines:

1. Have a bike available, but don't make riding it an obligation, and even if you buy your teens a Hunqapillar or Hilsen, don't use the cost of the bike to guilt-trip them into a ride.
2. Demonstrate that riding is fun for adults, but don't expect them to want to be just like mommy and daddy at this point. They'll want to copy you when they're 9 or under, maybe even 11 and under, but not when they're 14.
3. Don't make 'em dress like a weird cyclist for the ride; and forget the clipless pedals and shoes.
4. Be the friend, not the coach.

What effect will “adults riding bikes” have on kids riding them?

This is subject matter for some desperate sociology student, but my butt-of-the-pants guess is that when people associate any activity with a demographic they don't admire or aspire to belong, dey dat much less likely to take it up dem-

selfes. You don't see 40-year olds playing bocce ball or bingo.

But overall it's a good thing, because when the under-20s and under-30s reach their 30s and 40s, riding a bike will feel right to them. Plus the intervening years

will give them time to destroy their knees in other sports or to gain enough weight to get scared enough to want to do something about it, and usually that something is riding a bike.

MYSTERIOUS FORCES

By Maynard Hershon

My buddy Tom works in a bike shop. He and I are talking over coffee about what matters to us about bicycles: sizzle versus steak. Steak is usability: what a bicycle offers in terms of performance, durability and handling. Sizzle is what it represents in the mind of its owner over and above its bicycleness.

Tom rides a Gunnar, a production frame made by the nice folks at Waterford. A Gunnar is built as well and as painstakingly as a Waterford, but it's not "made-to-order" so it's cheaper to buy. Tom did not let that deter him. He knew what he wanted and realized he could find it with a Gunnar.

It was okay that it didn't say Waterford on the downtube. In truth, it did not matter much to him what it said on the downtube.

Tom said he suspected that lots of Gunnars are sold to bike shop employees, meaning (if I got his point) they are owned by folks who have shed the need or craving to own a prestige, upmarket brand. They choose Gunnar steak and don't miss Waterford sizzle.

I asked Tom if he'd mind if his Gunnar was painted flat gray and unidentified: no stickers or decals. Tom said that'd be fine; he'd know what he had and didn't care if anyone else knew. I said I feel the same way. I'd ride Brand X and never miss the flash logo.

I asked Tom if he would buy a prestige frame like, say, a Colnago. He said he probably would not. Plenty of less expensive frames would suit him fine. Then I asked him, if he did want a Colnago, would he choose to buy a stickerless one - for \$1000 less money. He said maybe he would. I asked him if he thought that many people would do the same. Maybe not, he said.

Years ago I rode a Bridgestone RB-1. They were steel production racing bikes, designed and constructed well enough so that you could not ever say: I lost that race because of my bike. RB-1s were in-

expensive and totally adequate but not likely to draw oohs and aahs from passersby.

If your RB-1 did draw a comment, it'd be in praise of your restraint. You hadn't been swayed by advertising or by conspicuous, paid placement under some team's racers. You'd thought realistically about what you needed and bought a sizzle-free RB-1. Cool.

I thought about steak and sizzle. I wondered how free of mysterious longings any of us are. Even bike shop employees and cycling columnists.

I thought about riding an RB-1 (even today, as they're becoming objects of worship in certain circles) powder-coated flat gray and without stickers advertising its RB-oneness. I decided that I would be delighted to ride such an RB-1. Hey, I'm no snob.

Then I thought about riding an RB-1 painted flat gray and emblazoned with Trek decals. And I no longer wanted it.

In the '70s, while I was forming my tastes in cycling, most Treks were sturdy, lugged steel touring bikes. A roadie might ride a racing Trek if his or her team was Trek-sponsored, but we didn't buy them with our own money. Trek's high-level racing successes were years in the future.

I still have some of that old feeling about Treks. I've been to Trek factories and seen how they do things; they do them as well as any bike factory in the world. I have seen Treks excel under some of the greatest riders in the sport. I own a LeMond - made by Trek. I rode a Trek-built Klein for a while. I can't explain why, but I'd resist riding a Trek-stickered Trek. Maybe I am a snob.

I owned a Schwinn Paramount in the '70s too, but I don't want a Schwinn today. Sue me; I'm telling you the truth. I don't want a Lance replica Trek, but I do want an early '80s Gios, a blue one. Like the ones Roger De Vlaeminck and David Mayer-Oakes rode so well.

Is the Gios as fine a bike as the Trek? Not nearly. Does it advertise my success, my achievements, my purchasing power?

No. Does a Gios tell the world I'm a demanding, discerning rider? Nope. Does the Gios represent something to me that the Trek does not? You bet. A Gios speaks to me in a way that the Trek doesn't. It sings to me.

I thought about my bikes and why I love them. I looked at my 18-year old Lighthouse road bike and got all sentimental. So many associations...

Tim Neenan built the frame for me in Santa Ynez, California years ago. Tim got the seatstay caps for my bike from the late, legendary framebuilder Mario Confente; I never met Confente but I never heard a bad word about the guy.

Guys I knew and liked at Shimano rewarded me for working for them at races with the parts group and the wheels. The Nitto bars came from Grant at Rivendell. I got the Salsa stem when Ross Shafer owned and ran Salsa. My old friend and boss Tom Petrie of Velimpex gave me the Wiperman chain and instant attaching link. The recycled, super-green spare bag under the saddle is from my buddy Jay Elhardt at super-green Pedro's.

I bought the SPD pedals at a parking lot swap meet at Salvagetti Cycles here in Denver from my friend Fawn, who works there. I bought the saddle from great-guy Bruce Schwab; it was in the take-off bucket at Schwab Cycles in nearby Lakewood, Colorado. Lucky me; I can ride ten-dollar saddles. The sweet bottle cage came from Tamar's and my friend Mike McGary, when he was the Klein-Lemond-Fisher rep in Arizona.

Nothing about my bike is new, and nothing about it charms anyone but me. Each piece represents a personal connection with someone behind that item - a friend who made it or sells it.

I'd like to think that I could ride just anything, anything that works. But I admit I can't. I'm as manipulated by unseen forces as the next guy. Probably we're all manipulated, each and every one of us. Only the forces are different.

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