The Rivendell Reader

Issue No. 36 Winter 2005

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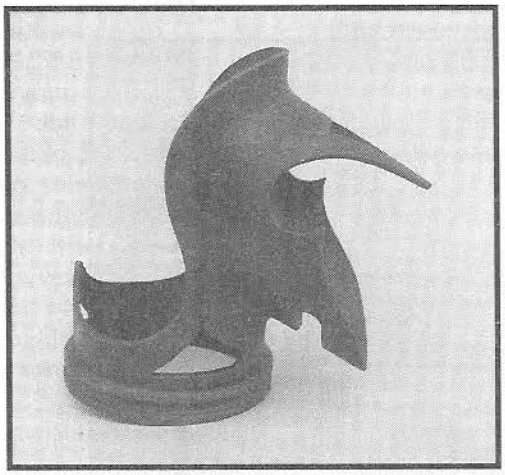
A Quarterly For Non-Racing Bicyclers

The poison in the middle of a golf ball

In 1964, a year after the local Lafayette Little League was formed, Rick Finch would arrive at the game in a new Thunderbird commandeered by his relatively fancy mother, and Rick was relatively fancy himself. One of his front teeth was gold, and I never heard him speak. He was more tan than most kids, had a butch, and wore wrap-around sunglasses, which not even Elvis wore back in 1964.



Finch was a pitcher, and his warmup jacket was better than the team-issue ones, and when he got out of the car he wore it over his shoulders the way only girls and women used to do, or guys with arm casts. Then he'd walk to the field with his head down, like a shamed public figure, but not holding something up as a shield.

On top of that, Rick Finch didn't hang out or play pick-up ball with the other kids, and nobody knew what school he went to, although to play in Lafayette Little League, he had to live in the district, so we knew he was legal that way. "Finch is pitching tonite" was the last thing you wanted to hear if you were on the other team. Nobody could hit Rick Finch. He had a fast fastball, and almost everybody struck out looking or swinging late and on their heels.

Another curious thing about Rick Finch was—how did a kid who never played ball with the other kids on weekends before and after the Little League season get to be so good? He wasn't any bigger or taller or stronger than anybody else, and except for the gold tooth, he didn't stick out. Baseball is a game of skill, not just raw strength or speed; and he was never out there playing with us before and after the season, or on weekends after the scheduled games.

If we were talking about modern times, it would be conceivable that he went to special baseball camps for kids with obsessive parents, but those didn't exist back then, and his mom was too cool to be obsessive, and I don't remember his dad being a presence at the games, and if he were obsessive, he would have been. Finch was twelve the only year he played, and twelve was and still is the oldest you can be and still play Little League, So that was Rick Finch: Fancy car, fancy mom, silent, head down, gold tooth, loner, mysterious background, and he always struck you out. That part was accepted, but you just hoped you didn't look too bad doing it. If you were ultra-lucky, you'd pop out foul before you had a chance to look stupid.

Jeff Walkup was the only kid (in my memory) who ever who got a hit off Rick Finch. He was on my team, the Lafayette Sports Center, and when he got the hit, everybody asked him how he did it, and he said, "I didn't try to swing. I just put the bat out there and sort of let the ball hit it. I knew that was my only chance." The way he explained it, it sounded calculated, not just putting the bat out there and hoping the ball would hit it. So from that point of view, his hit was impressive on two levels.

In the mid-'60s in Lafayette, California, there were dozens of good young athletes, thanks to no video games and parents who provided the sports toys and said, "alright, now go out and play," and lots of other kids to play with.

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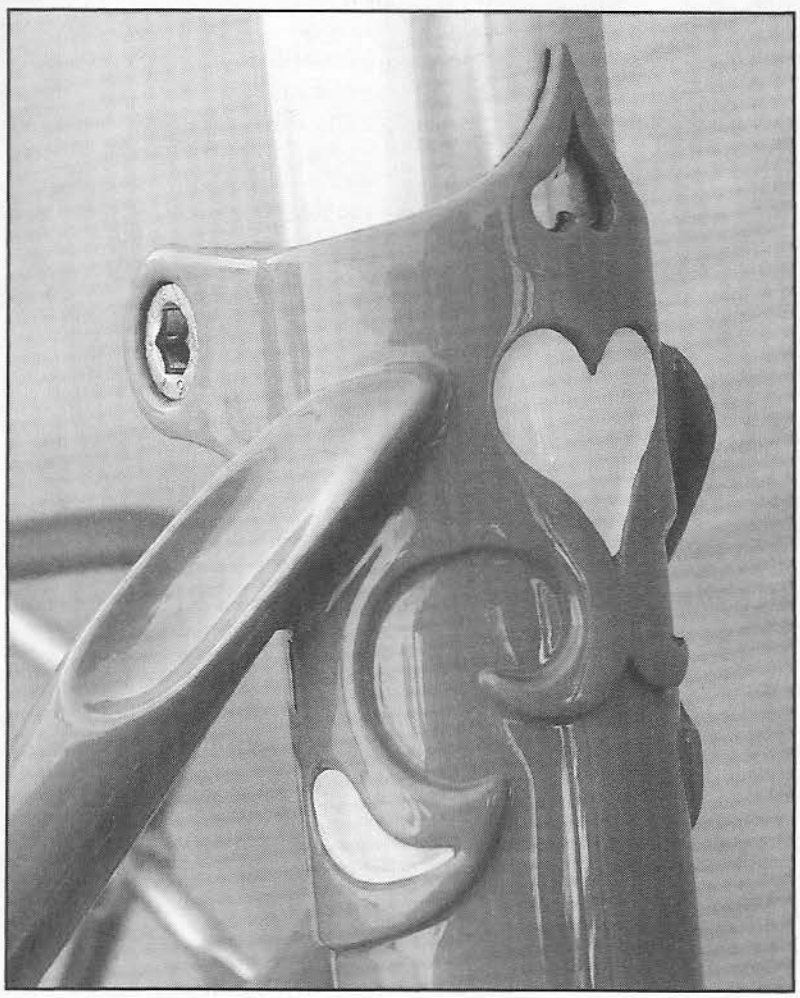

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Jeff was the best, most natural, most gifted one around, though. He was almost as quiet as Rick Finch was, but less mysterious and less of a loner; although he never whooped it up, either.

Shoes-wise, every kid who played sports or thought of himself as an athlete or wanted to be an athlete, wore Converse All-Stars. They cost only $10 back then, and the other shoes were $7 to $8, so it wasn't as though the desirable shoes were costly status symbols only a few could afford. Mostly, the only ones who didn't wear them were the quiet, religious kids with strict parents who made them wear dress shoes. Those poor kids. We never made fun of them, we just felt sorry for them.

Jeff Walkup didn't wear dress shoes, but he didn't wear Converse, either, because he had a heel condition that was related to a growth spurt or a bone spur, or something that sounded like that. It was probably the bone spur, because he was average height and never had an obvious spurt in growth. Anyway, his doctor said he couldn't wear sneakers, so he wore desert boots. Two companies made them—Evans, and Clarks. The Evans desert boots had slippery light brick-colored soles, and the Clarks had equally slippery translucent natural crepe soles. I didn't know at the time that the soles were slippery, because I didn't wear them, and nobody but Jeff Walkup did. I found that out years later.

Desert boots were ankle high and had only two sets of eyelets, which guaranteed a loose fit. The story was that they were developed for the British troops for use in the deserts. You couldn't walk ten steps with untied desert boots and still have the laces in the eyelets. You couldn't run four steps in them and keep them on your feet. How that made them good for the desert, I don't know, unless it was that they were easy to take off to drain the sand out of, then put back on. The slippery soles didn't matter in the desert. Desert boots were rumored to be the shoes sung about in the song that went, "He wore—tan shoes, with pink shoe laces/a polka-dot vest and man-o-man/a panama hat, and a purple hat band." I think the more common version used "a big Panama" instead of "a Panama hat," but our family sang the "Panama hat" version.

During those years schools held yearly physical fitness testing, using nationwide tests and a standardized scoring system based on how fast, how far, or how many seconds it took you to do something. Kids took the tests seriously because they were individually scored, and your scores were posted for all the other kids, including the girls, to see. Even if you were actively involved in sports daily, you'd ramp up for the tests by practicing specific drills or events two to three weeks before the test. There were 9 events, with a maximum score of 6 in each event, so top-maximum score of 54. A score over 50 earned you a "superior" ranking overall, and not many kids got it. It was widely acknowledged that the 50- and 75-yard dash requirement for "superior" was much harder to attain than it was in any other event. You needed a 6.6 in the 50 and a 9.2 in the 75.

For most of the tests, like the softball throw and pull-ups and sit-ups in a minute, kids would wear their normal school clothes, because they weren't too restrictive. But for the 50-yard and 75-yard dash tests, all the contenders would wear gym shorts instead of jeans, a light t-shirt or a singlet of some kind. The fastest kids, four or five of them, somehow got ahold of some superlight sneakers that were lighter than Converse, and looked like rubber-soled track shoes (or Bata bikers, if you remember those). With four or five pairs of those circulating around, anybody who was fast could borrow a pair to run in, to gain an advantage that might result in a personal best score, or make the difference between an excellent 5 and a superior 6.

Kids had their distinct sprinting styles. Hand positions included tight fists, cupped hands to push the air back, or taught, karate-chop hands to slice through it.

During the stress of the sprint, kids would contort their faces into evil, weird, and bizarre expressions you'd never see except during the sprints, and some odd biomechanics surfaced, too. One kid turned his head to the side and used only one eye. One kid swung his elbows side to side. One kid bobbed his head like a horse, and just about everybody had his own way of huffing and puffing, some through the mouth, some through the nose, and the sounds were all over the place.

Jeff Walkup was above all that. He wore his daily jeans, a plaid, square-tailed, short-sleeved cotton button-down shirt, and his desert boots. You'd think that he could give up the desert boots for two events, for less than 16 seconds of running, but he didn't, After the tests, kids were talking about their 6.7s and 6.8s, and there'd be talk of a 6.5, and then everybody would gasp when Jeff Walkup, running as smooth as Joe DiMaggio, as silent as a pigeon coasting, his hands only half closed, his arms moving robot-like parallel to the lines on the track, his face relaxed, his feet in desert boots, ran a 6.1 50-yard dash and an 8.7 in the 75. That smoked even the sprint specialists who couldn't play any sports well, but inherited the fast-twitch muscles.

Walkup was the only one to get a superior in every test, and he continued that through high school, even though the tests changed. Jeff didn't do track and field, but he was the kind of guy who could watch somebody pole vault, then grab a pole and clear eleven feet on his first try. He's 52 or so now, and I'll bet even now he could clear 10 feet on his first ever pole vault attempt. Nobody who knew him then would bet against it, and I'll bet nobody who knows him now has any idea. I think he's living in Bend, Oregon, but I haven't had any contact with him for 28 or so years, and I don't know if he rides a bike, but I know he'd be smooth and fast. He'd never crash.

The *Reader* story that's had the most influence on me is the truss story, a few issues ago. You can look up truss information on line, and you'll find there's a whole world of them out there, but this particular story, written by Kevin Moore, is the one that turned me around. What it did, specifically, was make me appreciate (and even see) the beauty in electrical towers, and bridges that aren't obviously beautiful in a conventional way.

Electrical towers are amazing, when you look at them structurally, and consider how strong they are with so little material, and the consequences of failure, and how they never fall down, even though they're so gangly. Until I saw them as giant truss gods, I thought they were ugly. But consider how much we depend on the electricity they provide—being that we aren't cave-dwelling, self-sustaining organic farmers and all. The towers provide it with a minimal visual impact, and when you look at them from a truss perspective and see the triangles within the triangles, and the voids that are triangles outside of the normal triangles, and you see that what at first looks like three triangles is really about seven or eight, and that bigger triangles are made of lots of smaller ones, then the whole big ugly gangly urban blight power pole starts to look just as beautiful as the Eiffel Tower, and there are lots of them, just connected by the lines they're holding up.

Bridges are full of triangles, too, and let me tell you, once you start seeing triangles, you start seeing them everywhere, in any sort of structure that supports weight. Any load-bearing structure that's not made with triangles is inefficient. There might be a perfect dome somewhere that's not triangulated, but on the other hand, it probably is triangulated underneath its skin, where you can't see the triangles. Triangles hold up the whole world, just about. Triangles are trusses.

I never had an erector set when I was a kid, but recently went shopping for one, thinking that I could build things with triangles. There are all kinds of projects you make with erector sets, including bridges and the Eiffel Tower, but I was disappointed to find out that the pieces are prefab, and bolt together crudely, with no opportunity to play with triangles. Anyway, I won't ever look at an electrical tower again without seeing some fantastic, efficient, structural beauty in it. That's how it is for me.

Today on a bike ride with two friends, we stopped near the end for some refreshment, and our bikes were there, and my bike was there, and there were a couple of other cyclers there, and we were doing our thing and they were doing theirs, and then the one fellow, with a normal modern, dark carbon bike with low bars, high saddle, and black parts, walked over to our bikes (a Romulus, a Ritchey, and my Rivendell) and said loudly but not to anybody in particular, "Well, he's really Granted it out, hasn't he? Look at the bar tape, look at the Phil Wood hub. Hey, look at the tires (they were SpeedBlends) —who has time to paint that?" He apparently didn't know they come that way, But he wasn't looking at us, and it wasn't clear whether he was talking to his companion, a woman-on-a-bike, or trying to start a conversation, so we just sat there eating.

I'm not wound-up tight, but I get uncomfortable when I feel pressured to respond to something and I don't know how. The bikes we sell and the bikes I ride, I know they're different, and I know they're nice and special and I like all of the details, but in the end I think of them as well-designed, proper bikes, and there shouldn't have to be any fanfare when something is just the way it ought to be. Of course, not everybody sees it like that. I think a bike *should* be beautiful, but simple, and it *should* have the integrity of a power pole. There *should* be signs that somebody cared about how it looks, and there should be evidence that human hands worked on it. At least in the bar tape, and twining. I don't see the appeal of amorphous & generic dark bikes, but that doesn't mean somebody else can't.

If I have an opinion, it sometimes comes off judgmental or like a proclamation. But like cigars, sometimes opinions and observations are just opinions and observations. I realize that at some level, the observations and opinions are the triangles that make the whole company and make it work, so I appreciate what they do for the company, but I don't particularly like what they do to me, as a person who wants to get along with everybody else. Who doesn't have opinions? If you like something and spend enough time around it to understand it, you'll form some opinions, that's for sure. You can't go around prefacing everything you say with, "In my opinion," even if that's all it is. On the other hand, every now and then I say a fact.

Rivendell has been the longest-lasting job I've had, and there's some satisfaction in that. I know the unlikelihood of it all. I'm also feeling nervous about my own future, and eventual retirement, and wondering whether I'll have enough money to retire. I worry about it, as I'm sure most of you do, too. But I figure I've got 12 or 13 years to go, and on one hand that's not a long time to save up money, and on the other hand, it's a long time to continue the nervousness and emotional attachment. So, I was thinking about rich people who continue to work, and thinking what are they sacrificing for their next few million? And what I'd do if I were in their place. You can't really go on and think that way, though. There's a better way to define "rich." If I can take the family out to dinner in week one, and see a movie with popcorn and sodas week two, have ice cream at the parlor week three, and not have a sit-down/let's-watch-our-frivolousness talk week four, that's rich enough. *Reader* and Rivendell-wise, if I was a bulti-billionaire, I'd still be doing this, but our projects would get done on time and somehow we'd find a way to reach more people. Money could do that.

One thing Rivendell could use is a sub-30 person who can afford to stay around for ten to twelve years, then take over. The fit would have to be perfect, and that's the hard part.

Gas is still way too cheap, and even if it doubled in price, it wouldn't change most people's driving habits.

Because even at 15 miles per gallon and gallons at $5 each, that's still just $5 to avoid walking 15 miles or taking inconvenient public transport (which itself isn't free), and trying to carry children and groceries in some vehicle other than a car. I am as pro-bike and anti-car as anybody I know, but even at $6 per gallon, you'd get a lot of bang for your buck, and it would still be the cheapest gas in the world. Subsidize people who drive for a living—truckers, cabbies, salespeople—but make others pay. Why should we pay any less than the rest of the world? It's a rhetorical question.

Early next year there's a good chance another 650B bike will sprout up. If it does, it will be lugged, made in Taiwan, designed within half an inch of where I'm sitting now, and be more widely available than our bikes are. We remain committed to Japanese to the bikes we have now, but finances plain, plain, plain don't allow us to get more bikes, or bikes more often. So we're working with somebody who'll make it possible for us to get more bikes without suffering hard cash hits. We'll make a big deal of it sometime this fall. It *is* a big deal.

The new catalogue has some missing prices on p. 45:

DirtDrop stem: $42; Periscopa, $20, Technomic: $38.

Also, we underpriced the SS Superlight Ts on p6. They should be $38, which makes sense, since the sleeveless ones are $38. We'll stick by the $30, but don't order, like, ten of them at the $30 price. Next time around they'll be $40, if that's okay. Thanks.

The website is about to change a fair amount. Lots of you like it now, and the things you like about it won't change or get wrecked at all, but it'll be easier to find things, especially the Gallery. We definitely need and want pictures of your Riv-designed bikes. Ideally, one broadside, and you can be in it, but if you are, kneel behind it so the bike can be as big as possible. Show the drive side, and shoot in flat light or shade, if possible. Then show 2-3 unique or interesting details—the bar wrap, the way a bag is mounted, or whatever. Supply captions to each photo, and maybe a 50 to 100 word assessment of the whole bike, what you like about it, how you ride it, and so on.

Ideally, you'll submit color Jpegs, but prints are fine, 'cause we can scan (but we don't have a good scanner). If you send by email, send to john@rivbike.com. In the subject field, put bike name-size/your name/city state, quite a ton like this:

Atlantis 56/Joe Blow/Centerburg, OH

— or if you prefer more privacy, just name and state.

If you follow these rules and we put your bike up there, we'll send you a credit for $25. We're shooting for a new Gallery by the end of November, so that's when the deadline for this is. Maybe we'll extend it, but in general it's best to have cutoffs, or people don't do it.

Last month a reader suggested something I thought of myself about two years ago, and would have forgotten about forever had he not mentioned it, so thanks, Lawrence. It's this:

Bike riders find things on the road. Now and then it's something interesting or valuable. If you get lucky, send us a photo of your find, and say in 30 words what you did with it. I know what you're thinking—what's the prize? No prize, but we'll show it in a future *Reader*, if it merits a spot. No bungee cords or ripped up *Playboy*s. Remember when they used to litter the back roads?

I was feeling uncomfortable about the Jeff Walkup part of this, because I didn't want to violate his privacy. I could have just changed the name, but then it would be weird when *I* read it, so I made an effort to find him, and did. I called him up and at first didn't identify myself other than saying I was on his Little League team and this wasn't a weirdo crank call. The next thing I said was, "Do you remember anybody ever getting a hit off Rick Finch?" He immediately said, "*Nobody* could hit Rick Finch." He did get the hit, though. We've all done things we don't remember, but that doesn't mean nobody else does, right? You never know what makes an impression.

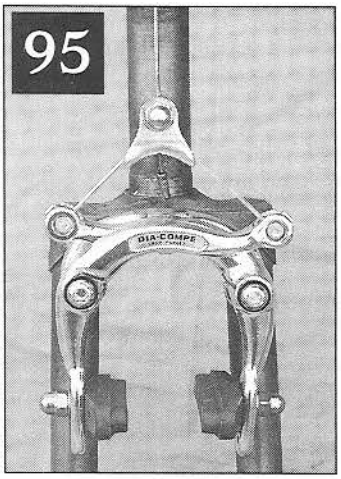
Curt Goodrich, long-time Rivendell builder, now has his own site and is selling some of his own-brand bikes. He will continue to build our bikes, and we wish him the best. curtgoodrich.com. Go, Curt!

Two days after finishing this and as the printer is ready to print it, the hurricane hit and made everything seem unimportant, and every sentence here seem disrespectful. Many of you have wondered and asked if we're going to give any money to the cause, and we will, and soon enough. It's not like we have any extra, but we'll come up with something, and that'll be that. On a related note, friend, New Orleans denizen, and canvas bag co-conspirator Bill Laine of Wallbike.com (sells lots of Gilles Berthoud bags) is okay, as is his inventory, but suffered a major setback, and won't be able to ship orders for a couple of weeks. He may be up and running again by the time you read this, but even so he will have suffered a loss, and so...through the end of November, for every Berthoud bag you order from us, we'll send all the profit to him.—Grant

Straddle Wires: Cuantos mm between los buttons?

As a topic, straddle wires are too arcane & boring and not racing-related enough for real bike magazines, so here again, it's right up our alley.

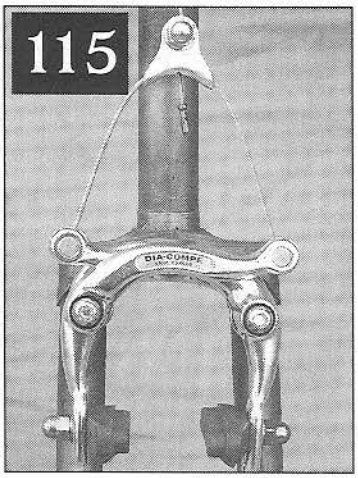
Straddle wires are for cantilevers and traditional centerpull brakes. A straddle wire is the wire that connects both brake arms and activates the brake, when pulled on by the cable carrier that's connected to the brake cable itself. Straddle wire length is sometimes determined by the manufacturer, sometimes by the frame (some frames don't allow you to make 'em long), and sometimes you can do anything you want. How straddle wire lengths affect the physics of the brake is not beyond the scope of this article, but is beyond the education of its author. But don't go away yet—its author has considerable experience with a considerable range of straddle wire lengths, and is confident his take on them is pretty much on the money. So you can take what follows to the bank.



The standard cable is short. This one is 95mm between the buttons, and is the stock straddle wire on the Dia-Compe Mod. 750 centerpull that we like so much we could marry it.

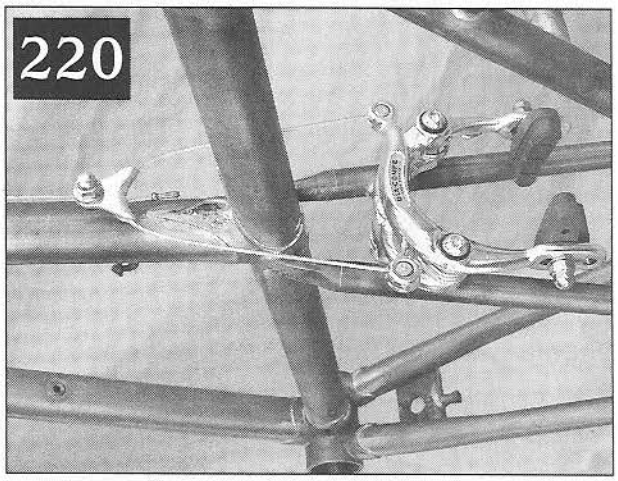
Short straddle wires fit small frames better than longer cables do, a fact that led to the development of the "low-profile" cantilever brake, to fit small mountain bikes.

Short cables seem to make the brake feel mushier than with a longer cable, and with centerpull brakes, at least, seem to result in less power. So, all ye fans of mushy and weak, go short!



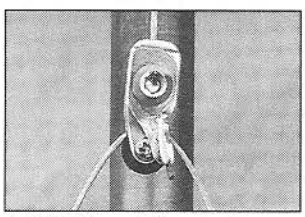
This medium length (115mm between the buttons) double-ended straddle wire was made to our specs. Besides adding a crisper feel to the brake (and more power?), it more importantly makes it easier to disconnect the brake, for easy wheel removal. That's because the cable enters the brake arm nearer the exit-slot for the button-end.

This one is a front brake, obviously. On the rear brake of a smallish bike, this length cable is impossible. There isn't enough room between the brake cable housing stop and the straddle wire hanger to activate the brake.

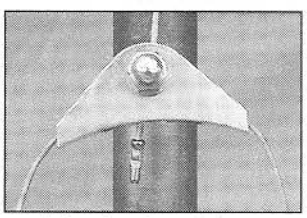


A mixte frame presents rear brake problems that require some thought and commitment. There are several solutions, involving sidepull, V-brakes, or traditional centerpulls, as shown here. If the particular frame has an extra set of seat stays below the normal ones, you can mount a brake down here, thus avoiding the S-bent cable. And, if you go for this lower mount, you can run a sidepull, V-brake, or traditional centerpull. But if you go with a centerpull, there's the matter of the straddle wire. It has to be monstrously long, so the straddle wire hanger clears the seat tube, and so the straddle wire itself doesn't saw the seat tube. This one here is 220mm—count 'em—between the buttons.

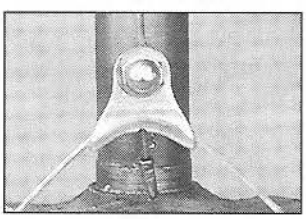
Dia-Compe didn't offer a stock super-long straddle wire, so we had them make these for us, and at 220mm long, we thought braking might suffer. Ha! If anything, this is the best brake on the bike. I think the straddle wire could likely be five times as long, with no ill effects, and maybe even more benefits. The long straddle wire makes releasing the brake simple. Long live the long straddle wire, pal!



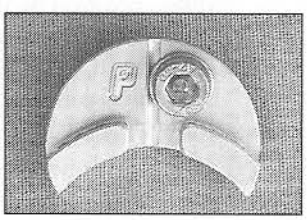
A FANCY straddle wire hanger, made by Dia-Compe in 1982. It has a pulley and a quick-release. The pulley, no big deal, but the q/r was nice.



A wide Salsa (brand) hanger. This makes the wire enter the brake at a different angle, and makes releasing it easier. Also good for small frames with small clearances. A good design.



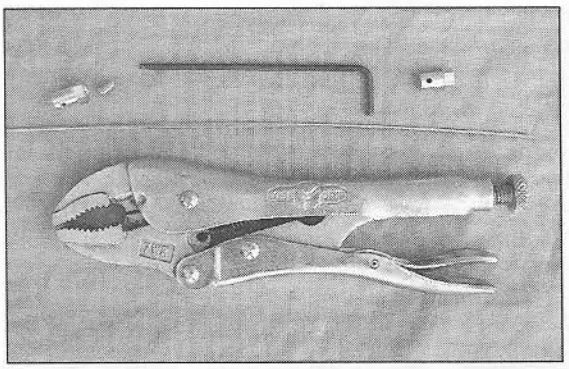
Here's a normal, typical hanger. There's nothing wrong with it, not at all. We're glad the wide ones are available for small bikes, though.

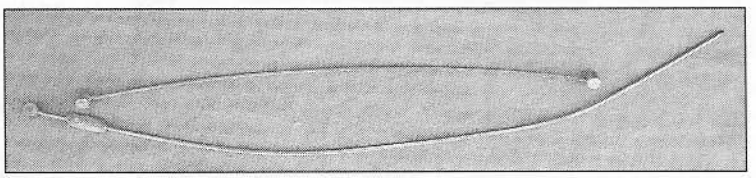


Paul's newish Moon Unit hanger, shown unrigged. The cost is $36 per pair, but it's a good looker. We wouldn't squawk if the washer beneath the head was a hair bigger.

Custom straddle wires at the turn of a screw.

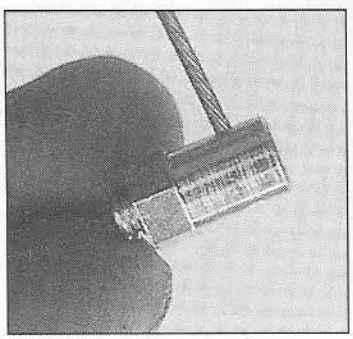
Most brakes use single-button straddle wires, and you can make them any length you like, anyway. But if you have Dia-Compes, Weinmanns, or cheap imitation copycats, your brakes need the two-button wires, and if that's the case, it's handy to be able to make your own.



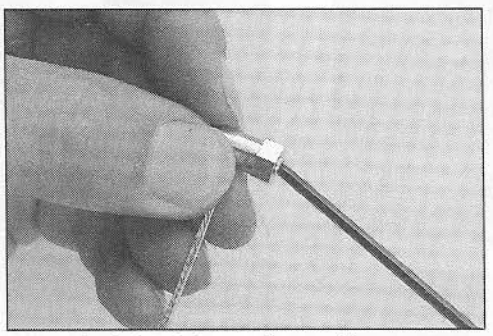


Above: Two kinds of straddle wires. You know what? This picture probably should have the Shimano-style in it, too, but if I may be frank, John already shot it as a separate photo (below), and we aren't going to reshoot it.

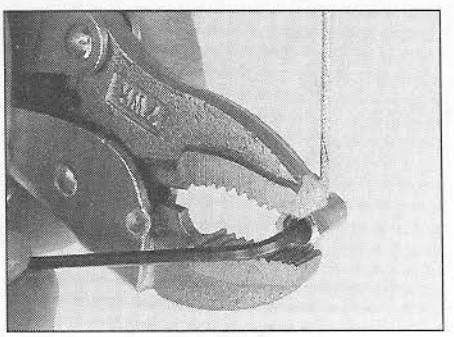
Left: The tools to make your own. An 8mm or adjustable wrench works, too, but vise grips grip better. One button is shown apart. It's two pieces, and the threaded insert (set screw) is what secures the straddle wire.



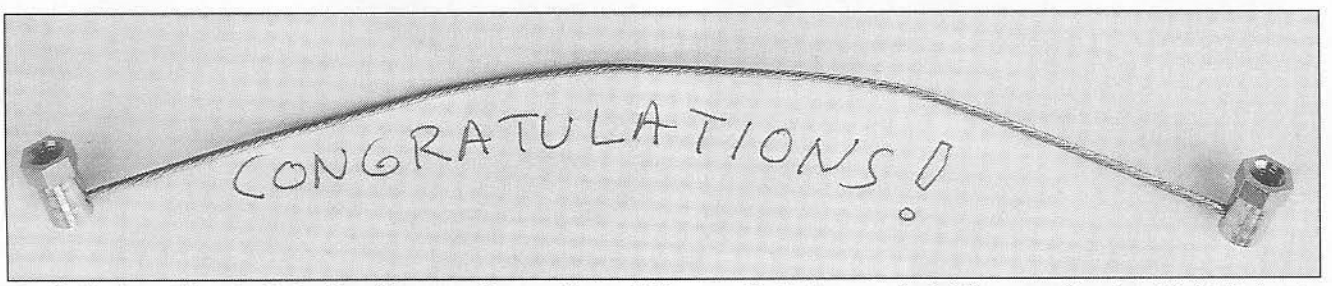
Put the cable into the hole. Don't let it stick out the other side.



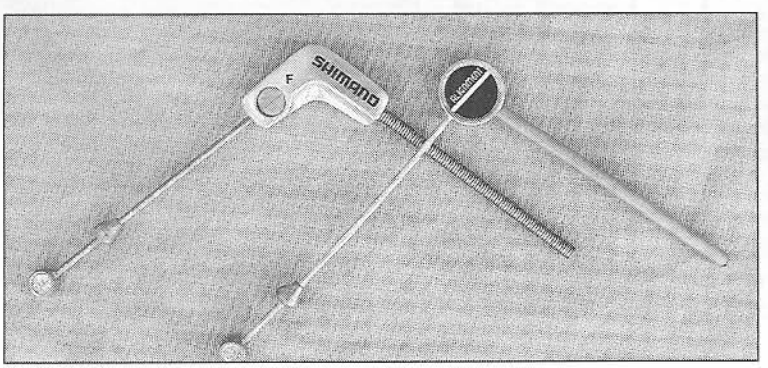
Cover the hole with your fingernail as you thread the set screw in.



Hold the nut part and tighten the set screw. Then do the same to the other end.



The finished straddle wire looks like this, or maybe even better. Make sure the buttons are facing the same direction. You'd find out the importance of that soon enough. This works perfectly in a Dia-Compe centerpull brake. You did tighten the set screws, right?



The new, modern, Shimano Types

In an effort to simultaneously make life easier for mechanics (always a good thing) and reduce the likelihood of accidents and lawsuits, Shimano developed this kind of straddle wire. The brake cable enters the top corner gizmo and tunnels through the housing on the "open" side, opposite the button end. Then you clamp that to the brake arm according to instructions and the plan. At that point, the brake leverage has been optimized, and it's impossible for a slipped cable to hook onto your tire and flip you—a rare event, always

Installing a Cartridge BB, 2 pages

Cup-and-cone bottom brackets are extinct, and most modern bike people say good riddance. I say *bad* riddance. The simple mechanics of a hollow forged CrMo steel spindle with ground and polished races spinning quarter-inch hard and smooth ball bearings is efficient, long-lasting, and mechanically and environmentally tolerant. It takes a lot to knock one out of commission, and they continue to function with impressive, though not peak efficiency, even when all the balls are pitted so badly they should have been replaced 8,000 miles ago.

They required more maintenance, and that's a marketing Achilles's heel. But a well-maintained top quality cup-n-cone bottom bracket could easily last 50 thousand miles, and many have.

About a decade ago, lots of makers introduced cheap sealed cartridge models, as inexpensive to buy as a cheap ball-and-cone model, but way faster and easier to install and adjust. That's a good thing, if you think about it, but the early cheap cartridge bottom brackets themselves stunk. I knew riders who'd go through one of them in a month, and there was a mountain bike team that used to go through one per race. I know the team mechanic, and he told me.

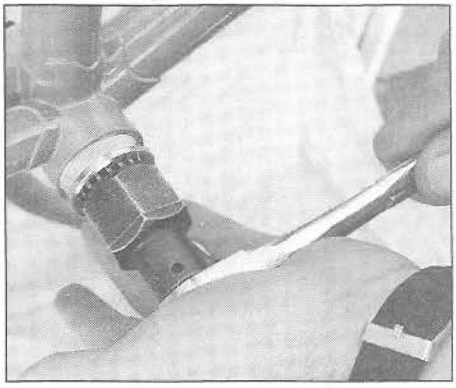
The ones we use now, made by Tange and Shimano, are exceptionally reliable, and remain a cinch to install. They're not Phil quality, but they aren't bad, either.

Note on torque specs: "Proper" torque specs vary considerably, depending on which bottom bracket you use, and which authority or manufacturer is you go by. Because of that, and since most home mechanics don't have a torque wrench, we've omitted torque specs. If your life were at stake, we'd somehow list it, but if the bb comes loose, nobody gets hurt, and other than that, just give it some muscle on the drive side and a little less on the non-drive side, and use a pinch of horse sense and intuition, and it'll be fine. Seriously.

Step One

Grease the threads and on most modern non-Italian frames, screw the cartridge into the drive side, counterclockwise.

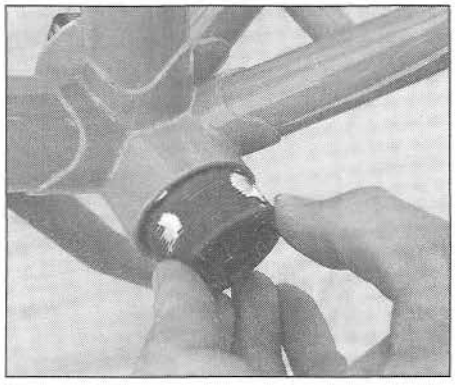
It'll go in about halfway or a bit less by hand-turning alone.



Step Two

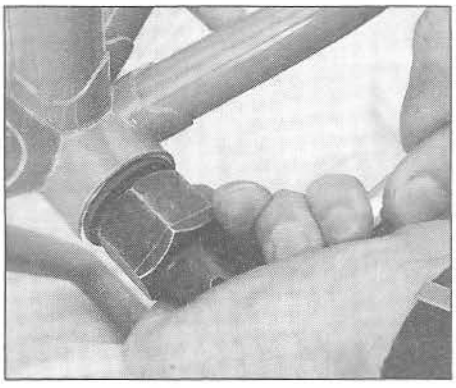
Use a Shimano-type splined BB tool to finish this side.

Tighten it snug, but as always, don't be a hero. It's okay to almost be a hero, but don't actually be one, especially with a long wrench. There are no prizes for wrecking bearings.



Step Three

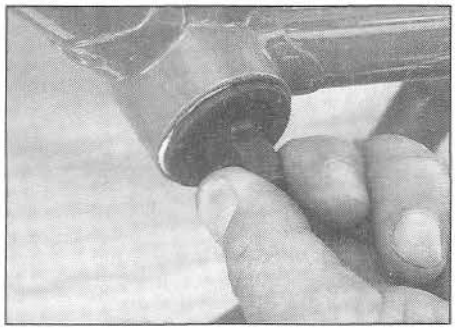
Screw in the non-drive side (left, as you sit on the bike!) clockwise. Start it by hand, and make sure it's going in evenly. Cleaning the bb shell threads helps.



Step Four

Finish this side like you did the other side, using a Shimano tool and an adjustable wrench or whatever kind fits your tool.

Then tighten it snug, but not as snug as the other side. A little white knuckle will do.



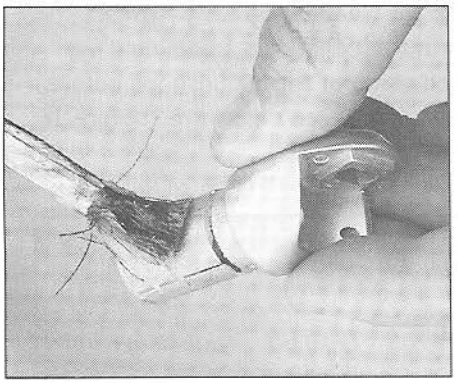
Step Five

Turn the spindle to check for smoothness. If it's smooth, mount the crank. If not, loosen the cup on this side until it is.

Maintenance

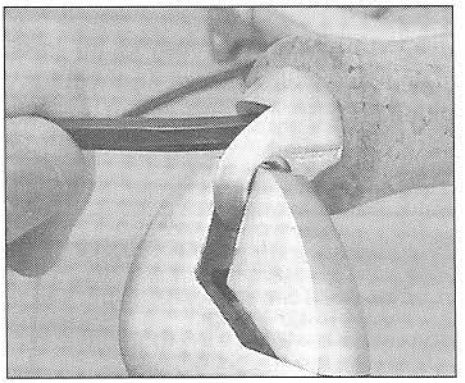
Ideally, you don't mess with it ever. It's not made to be worked on, it's made to go in easy. Every now and then somebody might not tighten the right side cup enough, and it'll get looser with use and eventually you'll feel it cluck a bit with each pedal stroke. When that happens, just remove the crank, retighten it, and go back to what you were doing.These bottom brackets should last you at least 15,000 miles. That's plenty, for the price.

Installing Bar-End Shifters



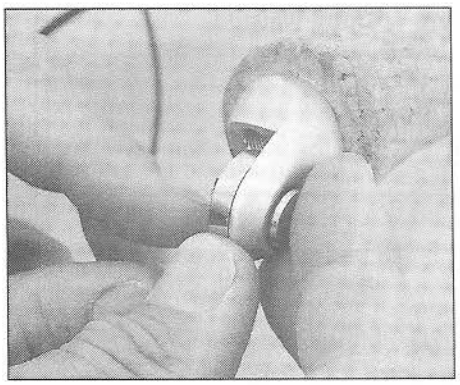
Step One

Grease either the expanding wedge surfaces, as shown here, or the inside of the handlebar. If you do neither, you risk the metals getting somehow stuck to one another, and then if you ever try to remove the shifter, good luck, pal.



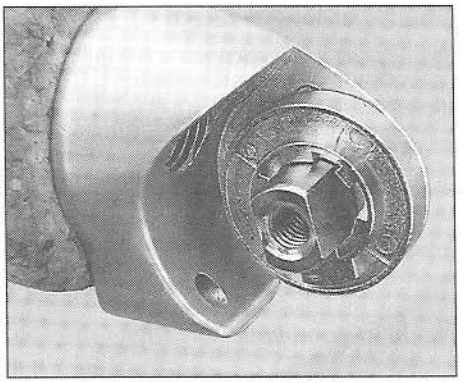
Step Two

Hold the pod to keep it from twisting as you tighten the bolt that expands the wedges that lock in the pod into the handlebar. Counter-clockwise tightens.



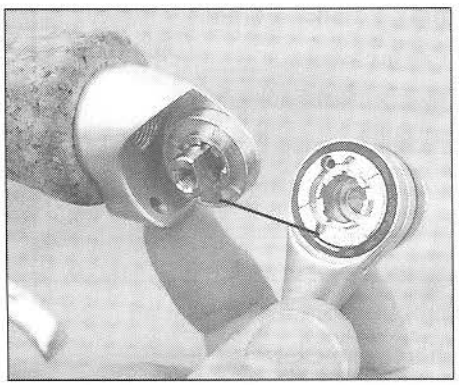
Step Three

Two things going on here: Push the internally threaded bolt with two opposing flats into the pod hole from the outside; and on the inside of the pod, mount the shifter base...



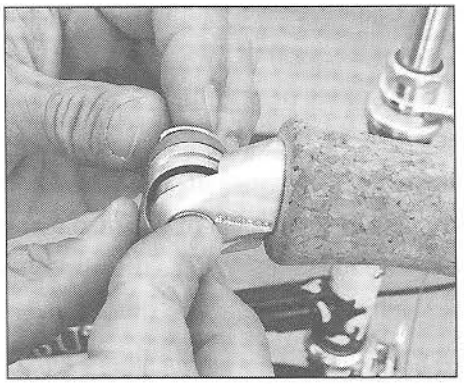
Step Four

...so it looks like this. You'll see a large rectangular tooth-like thing. That baby goes at the bottom at around 6:00, if it were a clock face. The one we're working on here is the right shifter, the indexable one.



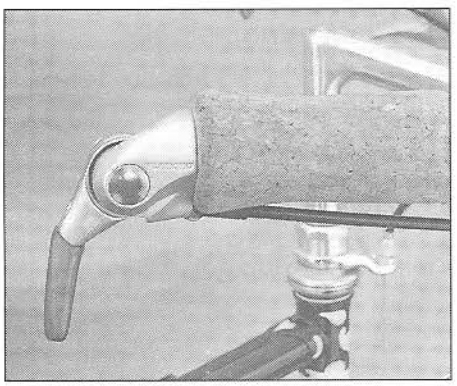
Step Four & 1/2

The drawn in line shows the toothy part of the base plate, and the reciprocal part of the shifter, into which it goes. It will go in there only when the shifter is pointing downward, like a clock hand pointing sixward.



Step Five

Push and wriggle or finagle the shifter on so that it seems to snug up reasonably. Then use a bladed screwdriver to tighten the screw. The wingnut is there only to allow you to switch from index to friction.



Ta-Daaa!

Here's what it should look like from the outside. This one happens to be on a cork-gripped Wilbury. Actually, this one looks like it's been shifted once. Yours should point a bit more downward. But, basically it's like this.

Tips and notes that might help

Silver shifters mount the same way, but are actually easier, and we supply directions with them. With Silvers, we mount the pod marked R on the left, and the L one on the right--which makes the shifters more vulnerable in a crash, but easier to tighten as you ride.

With cork grips on Albatross bars, you have to make a 7/8-inch hole to insert the shifter pod. Brian and Mark here then do some fancy file work and twining on the grip, to bury and snug the cable housing. On drop bars with bar tape, either wrap 5 winds over the housing, or leave it all out. The cable won't flop. —Grant

Female Issues

Fill this in only if you're a Riv member/subscriber or living with one and read the Reader regularly. We just want to know some things, and we may or may not publish some responses in the next issue, but even if we don't, your female voice will be heard and will have its influence. We've asked some of these questions before, but this issue will be distributed far beyond our subscriber list, and a lot of women haven't answered before. If you have, please answer again. Next issue, we'll ask men something, maybe.

Questions about your age and body

Again, it's not what you fear, hope, or think. Circle or fill in.

1. How old are you? 10 to 25 26 to 40 41 to 55 56 to 70 71 to 85 86 +
2. How tall are you? under 5-feet 5-1 to 5-5 5-6 to 5-8 5-9 + exactly: _____
3. Short-, medium-, or long-waisted? short-waisted medium-waisted long-waisted
4. Short, medium, or long-armed? short medium long
5. Can you do a pull-up? Yes Nope
6. My realistic dream weight is: what I weigh ____ lbs less than I weigh ____ lbs more than I weigh

Questions about your riding.

1. Days per week, in good weather: _____
2. Percentage of time you ride with 3 or more friends? 0 to 5 10 to 25 26 to 50 51 to 75 75 +
3. Relationship to your most frequent riding partner: friend good friend mate other
4. What keeps you from riding twice as much as you do?
   time/other obligations or priorities weather traffic fear comfort (lack-o')
   other (specify)
5. What other outdoor activities do you like as much or more than riding?
6. Does overnight touring appeal to you? On a scale of 1 to 10, with 10 YES!!!: _____
7. How about off-road riding? What's the appeal, same scale as above: _____
8. Reasons for riding, rank them (1 = most, 2 = yes, this too, 3 = not too much, but some, 4 = not at all
   Social ____ Transpo _____ Health ____ Seeing the sights ____ It's fun to exert _____
9. Were you athletic & active growing up? Yes Somewhat No
10. Did you play a sport at least 3 years in high school? Yes, _____ No
11. What person or event most influenced you becoming an adult bike rider?

12. Briefly describe your ideal ride. Use a separate sheet if you like, or email: grant@rivbike.com, and put IDEAL RIDE / YOUR NAME in the subject field.

Questions about your bike(s)

1.How many?_____Brands/models?_____ _____ _____ _____

3. How old is your newest?

4. State your height again, and the frame size: Ht: ____ ft ____ in. Frame size(cm): _____

Note: Frame size is measured from the center of the crank to the top of the seat tube.

5. What or who influenced your decision to buy it? friend mate magazine shop person other (specify)

6. Describe a dream bike that you don't have now (we will not hold your honest answers against you!):

Questions about magazines, books, movies, and clothes

1. Which bike publications do you read? _____ _____ _____ _____

2. Which other mags do you read?

3. Three books you really like?

4. Three movies?

5. It's 77°F out, not humid. What do you wear on a ride? (bottoms, tops--we assume a helmet)

6. What influences what you wear?
   Weather: ____% How I think I look in it____ % How I look to others ____ % Comfort ____%
   Chance of being harassed by jerks ____% Other (specify)_____ ____ %

7. True or False: I generally prefer women's-specific cycling clothes T F

8. True or False: If I dress in unisex cycling clothes, or MUSA stuff, it might send a message that I don't particularly want to send, personally: T F

9. MUSA garment we don't have but oughta:

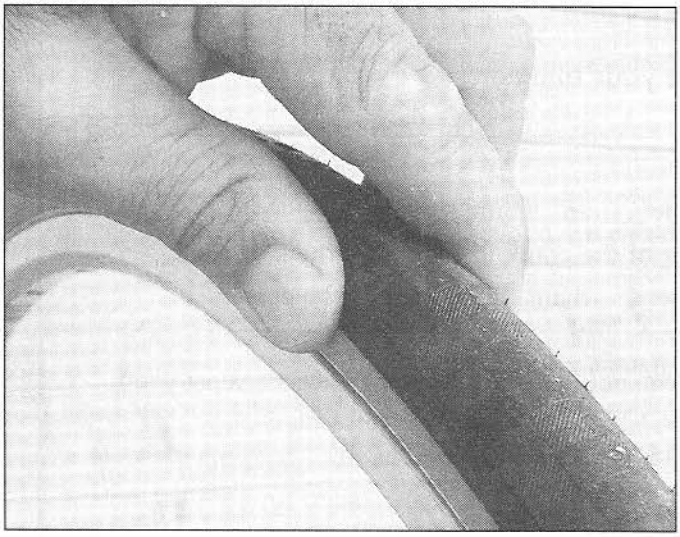
Women only: Mail this in for $10 off your next order. Postmark by November 19.

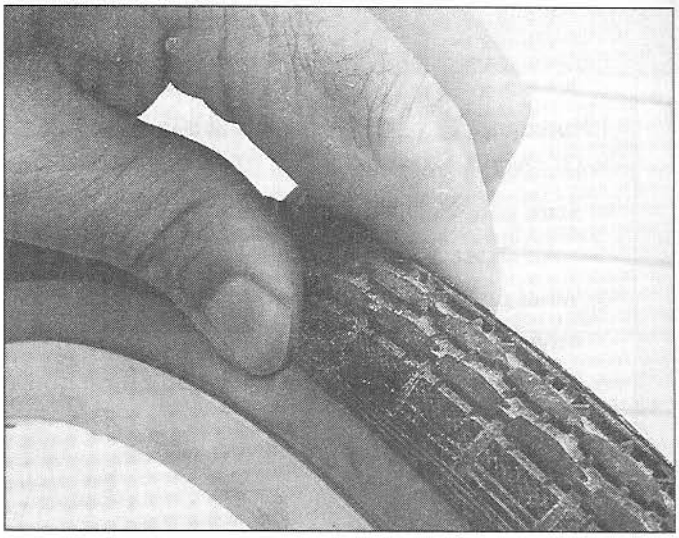
If you don't want to identify yourself, that's fine, but no money. We just want the information. Thanks.

Name:

Address, if we don't have it on file already:

State: Zip:





How much air in the tires?

Tires always have recommended pressures. The pressures never take into account terrain or body weight, or other loads you might put on the bike. Whattya do?

Tire makers list recommended tire pressures, sometimes in a range ("inflate from 95 to 110 psi") and sometimes just an exact figure ("inflate to 95 psi"). They put those numbers on the tire to get you headed in the right direction; and no doubt they arrive at the figures after considering liability, too.

Just for the record and to prevent this page from being Exhibit D in a future lawsuit, we recommend most heartily that you go by the tire maker's ratings. The only exception is if you want improved performance in a circumstance that the tire maker isn't considering, and (not "or") you and your heirs aren't the lawsuit type.

Molded into the Panaracer Col de la Vie is the recommendation to "Keep Inflate to 50 psi." To me, at 185 pounds, that feels hard. I ride them between 24 and 40 psi, and much prefer the 24 (or so) on rough trails. To somebody who's used to road tires, where 100 psi is normal and 70 psi is by most standards way too soft, that sounds nuts. It doesn't even seem to add up: The Col de la Vie is only 36mm wide, and most mountain bike tires are about 46mm wide, and they recommend about 35 to 45 psi for them. Since the fatter a tire is, the lower pressure you can ride it without risking pinch flats, it would seem that 25 psi is way too low for a 36mm wide tire under a 185 pounder, especially on rough trails. It doesn't seem to work that way, though.

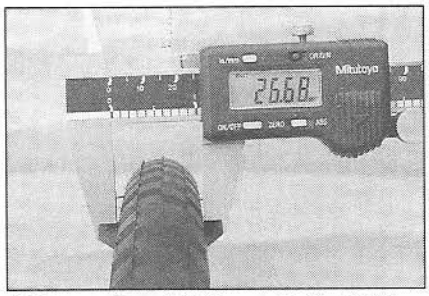
Mark rides the Pasela 700x32 at 40 psi, less than half of the recommended 95. He weighs 150 pounds, which is about typical for a typical Japanese rider or a European pro. Those tires measure about 31.25mm, and based on that, a sane person would have every right to say "too low, Mark. Sorry, you must stop," but the thing is, it works for Mark.

Harder tires help you go faster on smooth roads, but slow you down on rough roads. On a rough road or over a bump or pothole, a softer tire deforms more and bounces less, effectively smoothing out the bump and letting you keep your forward speed. More important, it's safer because it's less jarring. Less important but still important, it's more comfortable. Around corners, especially bumpy ones, and especially wet bumpy ones, a softer tire grips better. Even pro racers know that!

The most comfortable tire you can put on any bicycle is the fattest tire that will fit it, ridden at the lowest pressure that will prevent pinch flats. Tire components such as rubber compound, casing or sidewall composition, and kevlar belt or none, pale in comparison to tire pressure. Some tire makers claim their tires are comfortable even at the high, recommended pressures, because the sidewalls are supple. A sidewall may indeed be supple when the tire has little or no air in it, but when it's filled with 120 psi, the tire is hard. If you can't squeeze a dent in it with your fingers—and you can't—it won't deform much over bumps. And if it doesn't deform, it doesn't increase comfort.

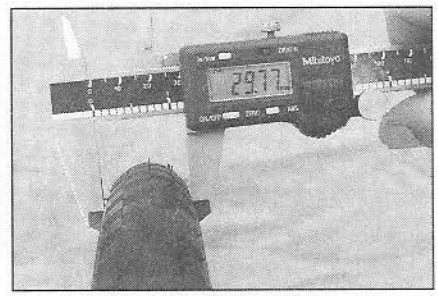
How rim width affects tire width

Knowing how tires get reshaped on various rims is of minor interest at least, not often discussed, and has never before been shown...I think. So here you go!



18.6mm rim: 26.68mm Ruffy-Tuffy

23mm rim: 28.06mm Ruffy-Tuffy



26mm rim: 29.77mm Ruffy-Tuffy

What's it matter? Well, it doesn't matter all that much, but if you want to split hairs, here's how to do it: A skinny-rim/fat tire combination is slightly better at protecting the rim from rock damage, because the rock has a smaller target to smack. The skinny tire/fat rim combo is at its worst when the rim is really skinny, like about 20mm, and the tire is really fat, like about 48mm, because the skinny rim doesn't support a soft (20 to 25 psi) tire well, and the tires tends to get pushed a bit off the rim when you go around corners. It's noticeable. and if it bothers you, solve it, either use a skinner tire, a wider rim, or more pressure.

Talking to Panaracer's Masa Odani about tires, pressure, and so on

GP. How do you determine the right pressure?

MO: By use, structure, and rider weight. It has to to with the best size of the tire's contact patch, too—which varies with rider weight, and so on.

GP. That makes sense. A 700x32 Pasela is rated to 95 psi. What's it's minimum and maximum range, and at what point will it blow off the rim?

MO: Our psi figures are based on a standard rider weight of 60kg, or 132lb, but it's safe to ride them at plus or minus 30 percent (about 67psi to 120 psi). But all of our tires are designed to stay on the rim at 200 psi.

GP. If the rim is narrower or wider, is it safe to run the tire softer or harder?

MO: No, it has nothing to do with it.

GP. Something's not making sense to me. The Pasela is rated to 95 psi, right?

MO: That is correct.

GP. And the correct pressure is largely determined by the tire's contact patch. And presumably the correct contact patch for the Pasela 700x32 is achieved with a rider weight of 132lb. If that is the case, it would seem that a normal American rider of 185lb might need about 150 psi for the same sized contact patch. That would be ridiculous for that tire even if it were within your plus/minus 30 percent range, which it isn't. One of our guys, Mark, weighs 150 lbs and rides that tire at 40psi. Please comment on all of this.

MO: Right. But as manufacturers, we must put some number on the tire, and of course certain riders in certain conditions may find it better to ride the tire outside of that range. But we can't recommend it as a general rule. In general, of course, if the pressure is too high, the traction gets worse and the chance of a blowout increases. When the tread is under such tension, a small cut can grow more quickly, too. But if the pressure is too low, you may damage the rim, and the tire will wear faster.

A skillful rider like Mark could calculate the suitable pressure from his experiences, no problem, but normal common riders cannot do it. As the tire manufacturer, we set the general recommended range.

GP. Will you please make a 603 tire next year, for less than $17,200 mold charge?

MO: Oh, you don't need to invest. Everyone can enjoy 603 tire easily. I'll show how. First, you should prepare sharp scissors, wire cutter, strong string and so on. Second, cut off 19mm wire from your 700C tire. Sew it together. Last step, inflate carefully, use less than 5 psi.

If we've seen it once we've seen it googolplex times—a front end impact, easily the most common kind of damage.

How this happened to my new Atlantis

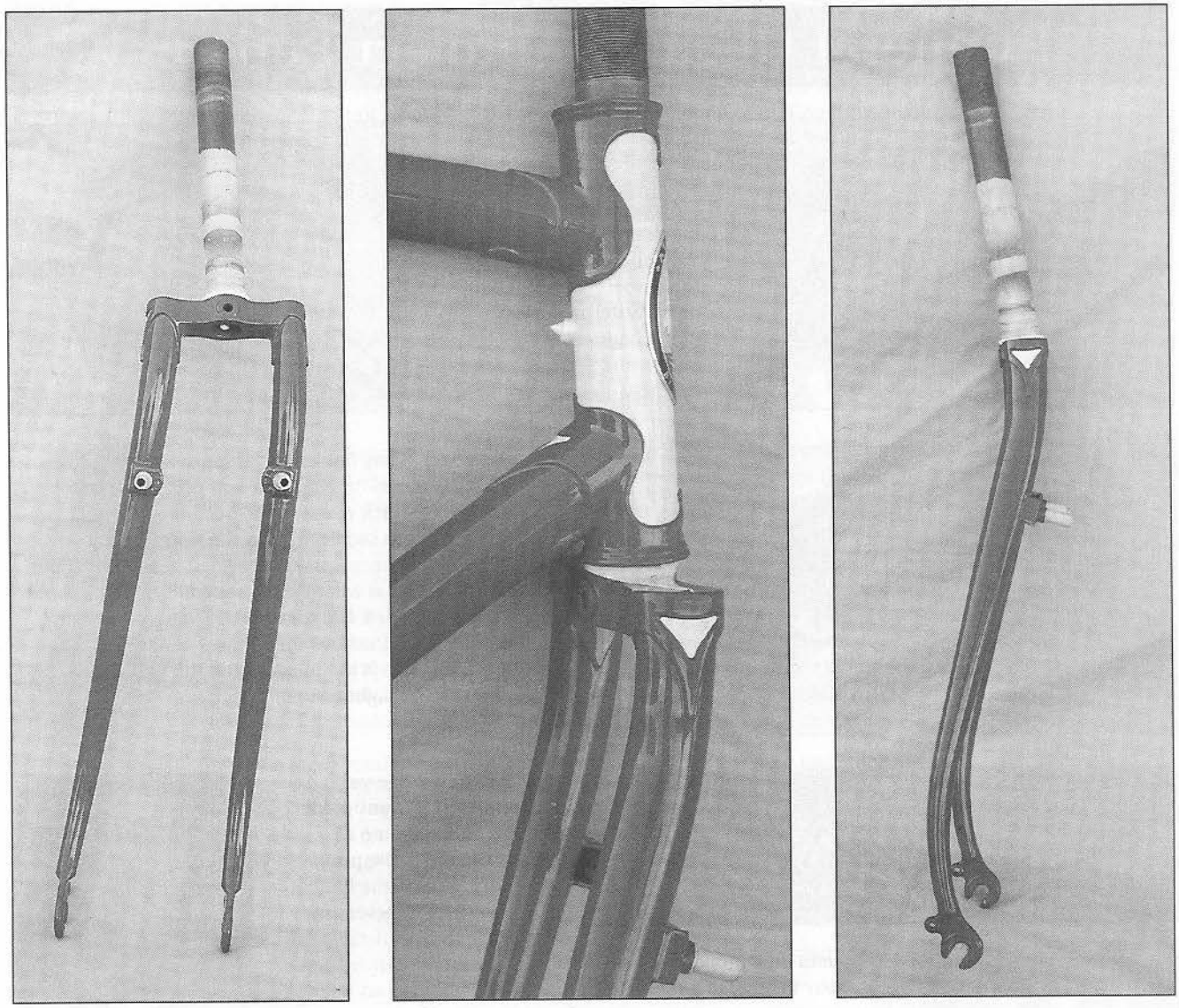
by Roberto Harrison

I was on my last 2 miles of a pleasant 35 mile morning ride on a Sunday, 3 days after receiving my Atlantis. I was just starting to get used to the bike, and just beginning to lessen my sense of guilt for having spent so much money on something so extravagant—I had it custom-painted red, too. The Atlantis is my first fancy bike.

I was riding through a park, going slightly down hill, at about 12-15 miles an hour. The other person was coming in the opposite direction, and now that it's nearing the end of summer, trees are especially bushy. A tree was in the way and we didn't see each other until just before we hit at the bottom of the slight hill. The other fellow was definitely going as fast as he could.

I can't say it was the fault of either of us, just one of those freak things. I've wiped out on bikes before, but never had an accident like this.

I'm fine. The other guy was fine too.I did a flip and landed on my lower back. I have a golf- ball size swelling, some cuts and bruises, but doing ok. The other guy and I didn't yell at each other at all. There was no reason to get mad, it was just one of those things. We were like: 'dude, you ok?' and that was about it, and we carried our bikes home.



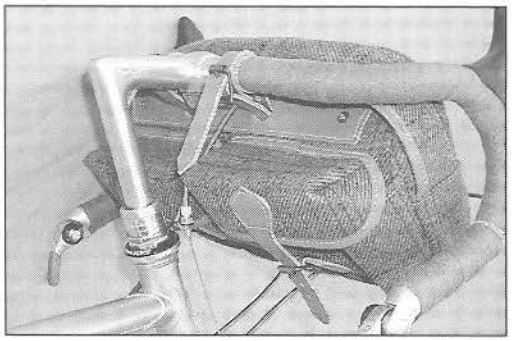
Observationisms

This is the worst-bent fork I've seen, of more than a hundred. Actually, the second worst, but the first one was a superlight fork that was bound to die anyway, someday. We used to run Bstone prototypes into 3-foot high cement walls to see what it took to bend them. If that sounds like crazy-good fun, it wasn't. Everybody wanted to watch, nobody wanted to ride, so we took turns. Anyway, this fork is really bent, and it takes a lot to do this. In an accident, you never know what's going to survive, or how much damage will be done, but for 1.2mm-thick walls of CrMo to get all bent like this, religiously revered bovine! It is interesting, but not particularly telling, that the top tube is buckled, but the down tube isn't. All that means is, the down tube was about to buckle. The fork took most of the load, but did its job. We've seen and held in our own bare hands carbon forks that snapped off clean in much less severe accidents, and just recently Sterling was riding a brevet in which a Canadian fellow's carbon fork snapped while he was riding over a bumpy road. Bending good, snapping bad. This is why we like steel.

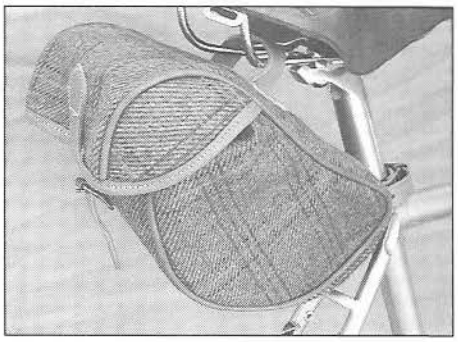
What happened to the other bike? Don't know, didn't ask, but depending on where the forces were, maybe more, maybe less. This fork is technically fixable, but not worth it. The frame is easily fixable, but Roberto wants a fresh one, and since we're up to our ears in empathy around here, we'll make that happen for as little money as we can possibly stand. He wants it red again. Meanwhile, Roberto assures us that he has another bike to ride.

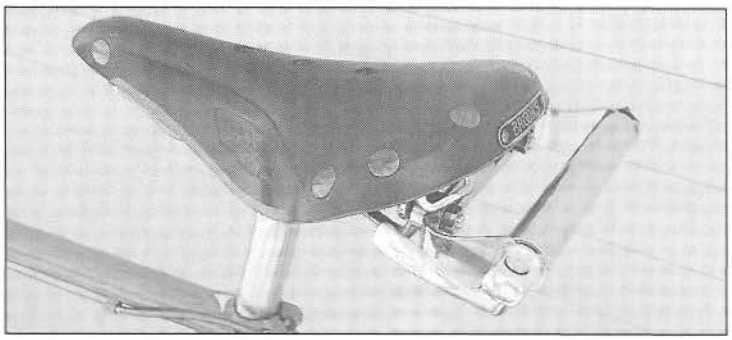
If you're out our way, stop by and see this frame, and a few others like it. We're proud of the way it bent.

General Update & Project Report

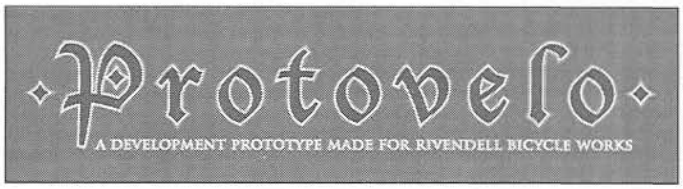


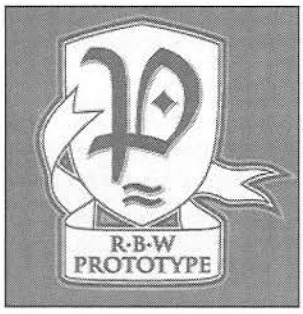
Nigel Smythe & Sons bags. We're getting five models, some new, and some Smythe-versions of existing familiar models. By gosh, they ought to be here in late November. These are laminated waterproof wool tweed bags, ultra uppercrusty, and priced commensurately.



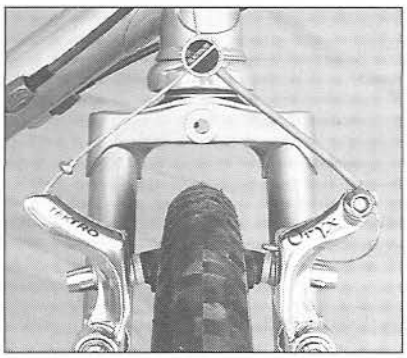


New Nitto S'bag holder. It clamps onto most saddle rails, even non-Brooks ones, and provides a lash-on point that quick-releases and becomes a handle for carrying your saddlebag into the store. It weighs about 10.5 ounces, and is designed to support about 11 lbs, which is what we requested. If there's a rack underneath it, it doesn't matter. They made several models, using various thicknesses of aluminum and steel, and this is the one that has the best combo of strength and lightness.

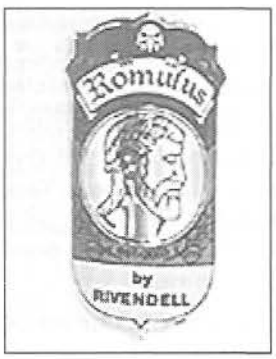




Protovelo. Over the years we've had prototypes made for this and that kind of frame. Generally the prototypes are close to the final in spec, but they're never exactly right to the last detail, and so we end up with perfectly good frames that are unpainted and not ready to assemble into bikes. Sometimes, when it's an issue of how they ride (as opposed to tire clearance or brake routing or something), we build them up and ride them, sometimes painted, sometimes not. In any case, the collection has grown, and we thought it high time to turn frames to cash. We dinna want to put real-frame decals on them because they aren't real frames, real production models. So now we inventigated the brand name Protovelo and are using that for the prototypes that don't yet have decals. There's no head badge, just a head tube decal, seat tube decal, and down tube decal. Sometime this fall we'll have a Protovelo button on the website, and you can go and see the frames and buy them if you like.



Cantilever Romulus. We got 79 in, and are down to about 25. It's hard to pump these too hard, because they're so cheap and so good, and we have so few of them. If you're covered, great, but if you aren't and you're waiting for a better deal, it's not going to come around in this lifetime. Go to our site for ordering information, or just call us up and talk. (800) 345-3918.



Nobody here can ride a unicycle, but we thought it would be not too much of a distraction/money pit to make 50 of them. They'll be lugged, of course, and the plan is to have them by December 1. Unsure about the cost, but we'll keep the price as low as can be, and hope to sell 50 of them, and hope nobody rides one and crashes and sues us.

Over the top? Too much, too far, out of control? Yeah yeah yeah, but we think it'll be fun to have tweed noggin-covers to match the Nigel Smythe bags. The bags are made in England, the hats, in Scotland. No price yet, but look for them around October 3.

TIRES. Nifty Swifty and Fatty Lumpkin. The NS is here now, and the Fatty Lumpkin is scheduled for late Fall or Winter. It's a 39mm sort-of-knobby 650B tire for rugged trail riding and more traction in loose dirt.

603. Innova was going to make the mold for $3500, then they said it would cost more than twice that, so we put the brakes on it. Have not given up, but it'll take a bit more time. Before I die, 'twill happen. We will now approach IRC and Mitsuboshi, two makers who haven't heard of the project, and hence, haven't rejected it yet.

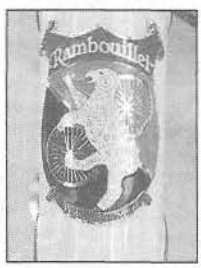
Quickbeam. We're out but have ordered 50 more for early 2006 delivery, and they'll be orange. The next ones will be the same as the last ones except they'll have fork braze-ons for a Nitto Mini-front rack. They might have SpeedBlend tires, too.

Saluki. We're out of all but the small sizes, and we're getting more in the Spring. If you want one, by all means reserve it with a $200 deposit.

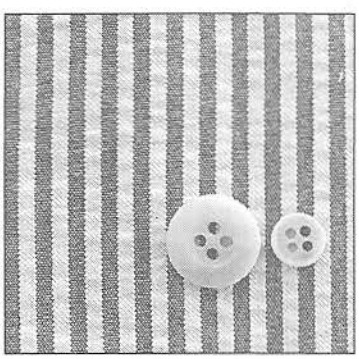
Rambouillet. We're out of some sizes, have plenty of others, and are getting in 100 in January. We may change the color, not sure. Every time there's a color change, folks clamor for the dropped color and denigrate the new. It's the clamor/denigration phenomenon. All the colors we pick have certain qualities that we like, and we hope whatever color we go with is well-received.

Atlantis: More coming in November. We're out of 56, 58, and 61 until then.

Mixtes: The Glorius and Saluki are doing well, but it takes a long time to paint them, and even though we've sold 75 of them, by the time you read this, only 15 or so will have been shipped. But they sure do look and ride great.



MUSA, our line of Made in the USA clothing, has been successful enough that we've reordered everything. Although I/Grant like the current length of the shorts, some of you have asked for another inch and a half or so, and so we're going to do that. We're also getting another seersucker, this time striped blue and cream, and it's the best-looking striped seersucker I've seen. If you like the current one (which we plan to stock always, as our standard), you'll likely like this one, too. The price will be $46, since it now costs us $30, and if you think a markup like that is high for clothing, bear in mind that Ralph the Horseman probably gets his for $7, and ours is better. The new one will have tagua nut buttons, too--and a button behind the collar. The first sample, the one Miesha's wearing, doesn't have the tagua nut buttons. The real one will.



We've also been working on a MUSA shell (wind/rain top) but that won't be here until Fall 2006, so stay unhypothermic until them. Mark is calling the shots on it, and he always does a good job. And for winter, we'll have a slightly heavier, warmer MUSA pant. Next spring, knickers. We wouldn't do any of this if it was easy to buy elsewhere, but it's not.

The Ritchey Breakaway, $2500 or so.

Tom Ritchey has long been a friend, and is one of the five smartest bicycle people living today. He's not just smart, he's clever, and he's not just smart and clever, he's an independent thinker too. That rare combination of qualities has given birth to some pretty brainiac ideas over the past 30 years, and to make matters more impressive yet, he's still in his 40s.

Among other things, Tom is also a pilot, and being a pilot and a rider, he is interested in Bikes That Get Small. It's rare that anybody else's ideas meet his own high internal standards, and so Tom developed his answer to S & S couplings: Breakaway frame joints.

They debuted about four years ago, maybe three, and Tom himself has been riding them longer than that. Is his everyday bike a breakaway? Yes it is, and he puts about 10,000 miles a year on it, with many of those miles being off-road. I hear he rides 3 or 4 bikes regularly, and they're all breakaways, and there are Zero Problems with them.

Does that mean that you'll have the same success? Nope. The couplings that hold the frame together are simple and reliable and safe, when used properly and with care; and they aren't finicky or anything like that. But as is the case with most good things, they aren't foolproof. You can misalign them. You may fail to tighten them up. You could do both at the same time, but that's not a knock on the couplers or the technology.

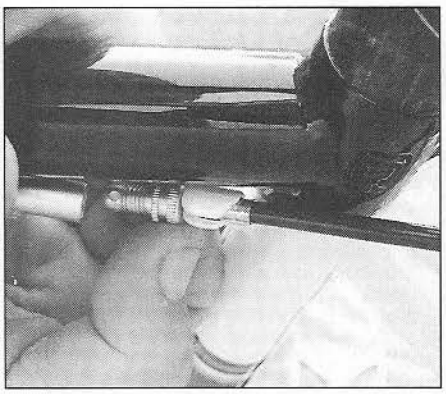
Tom's breakaway couplers compete with S & S couplings for your full-size travel bike dollar. Both are readily available through selected builders, and the cost is similar. Here are some differences:

1. Breakaways are lighter. A pair of S & S couplers adds at least 7 ounces to the frame. We here don't care about that, but if you're a combo bike geek/traveler/weight fanatic, you will like that the Ritcheys weigh about 2 ounces.

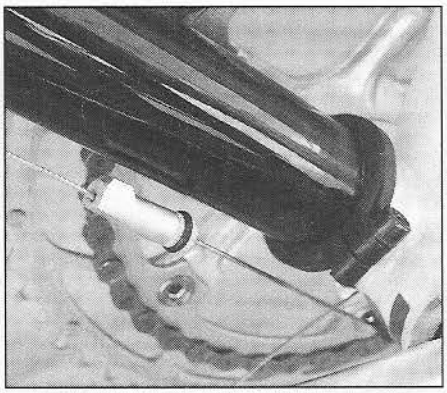
2. Compared to S & S couplings (which are excellent, by the way), Breakaways are faster to do and undo, and require no tools other than an allen wrench, which should be part of your kit, anyway.

3. S & S couplings are less prone to mangling or suffering damage from heavy-handed mechanics. You can still mess them up, but if you're finicky enough to want a bike that comes apart so well, you ought to be conscientious enough to learn to do it right. Both systems work well, but they're not the answer for everybody. That's where Bike Fridays and regular old folding bikes come in.

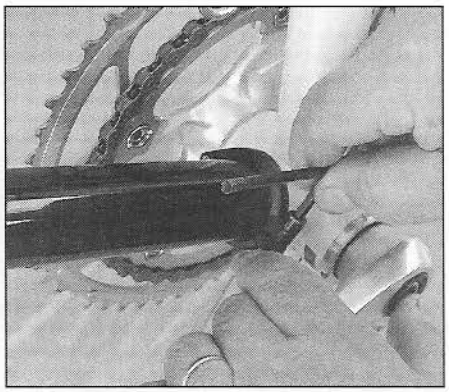
4. There's something for everybody out there.



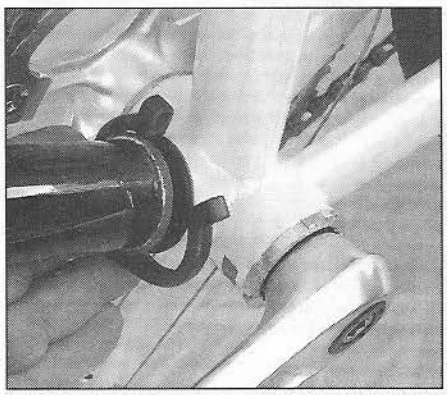
Disconnect the cable separator on the top tube. It's easy.



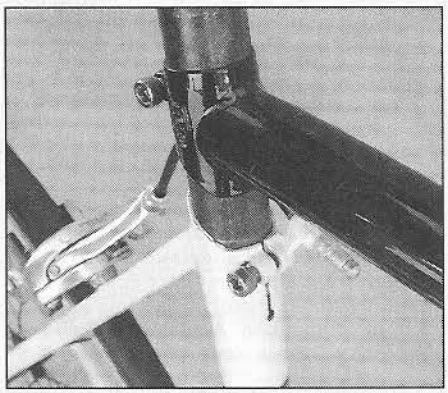
There's one at the bottom bracket also, and you have to disconnect it, too. You can see the coupling there.



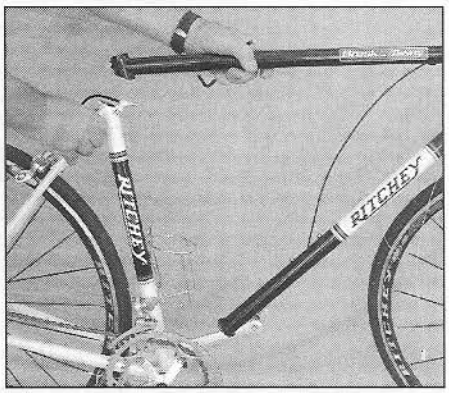
After separating the cable, loosen the coupling at the base of the down tube.



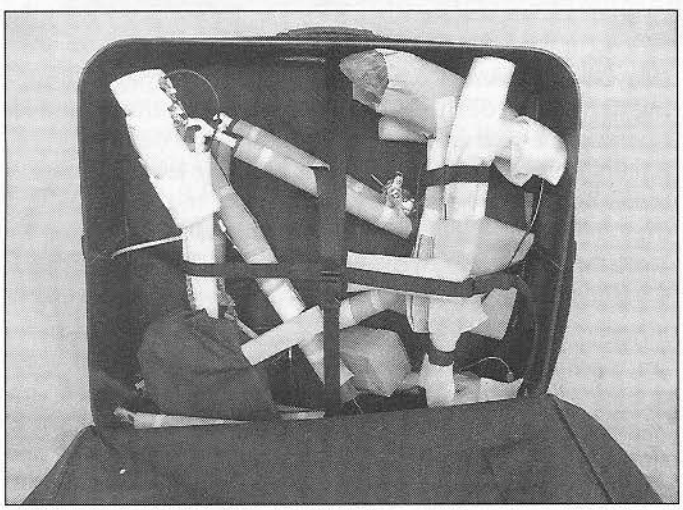
And continue loosening it until it comes off; and then don't lose it.



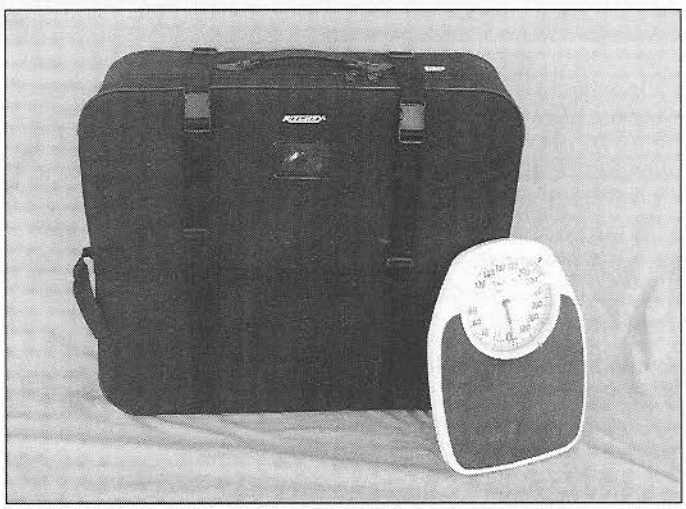
Then go to the seat post area, and loosen the two binder bolts that hold the seat post in the frame, and the frame together.



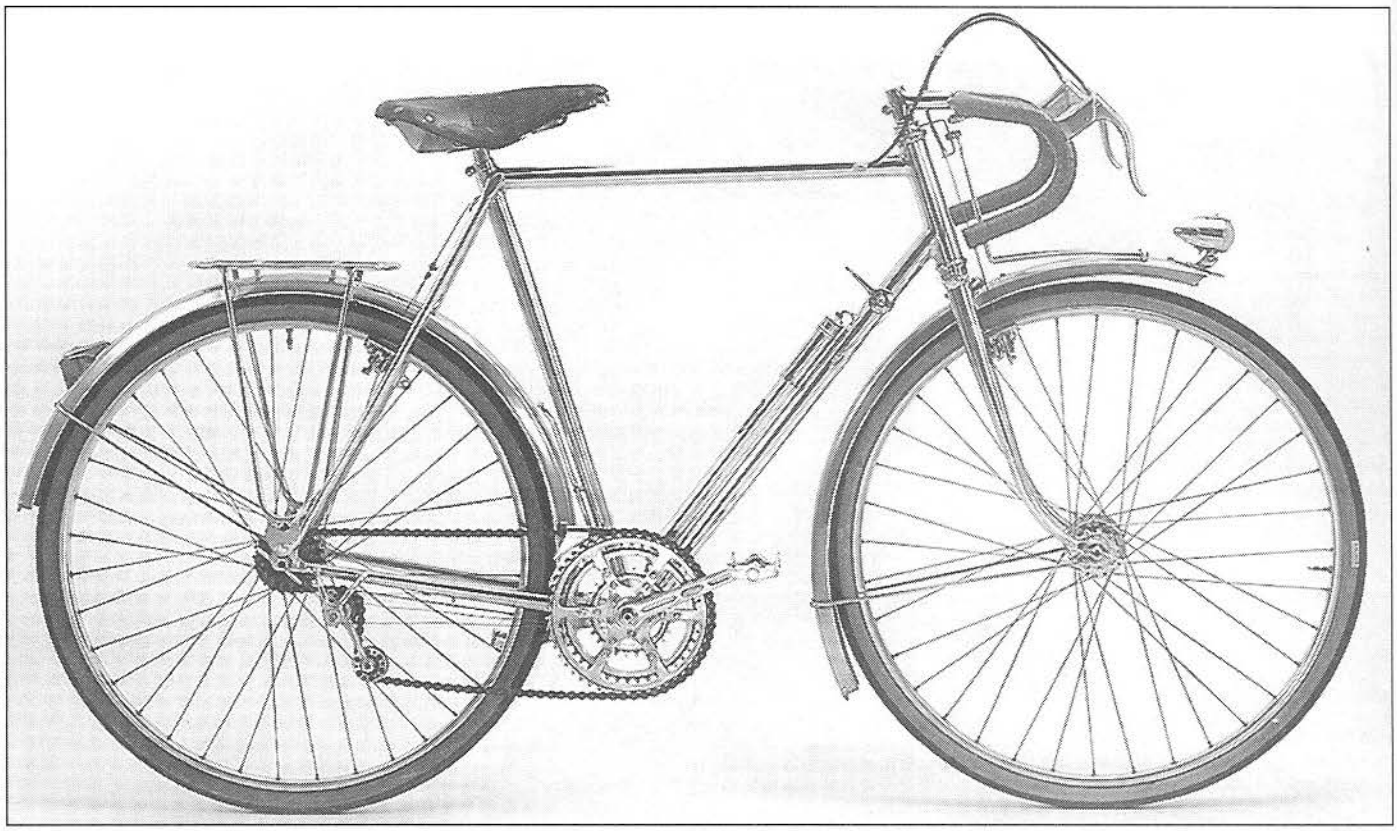
Remove the seat post, and there you go.



This is the original packing job, and the only time you'll ever see your bike so neatly packed.



Here's the closed case, ready for Tom's airplane, or a bigger one of your choosing. For a video of how to take it apart and put it back together, go to ritcheylogic.com. It shows Tom himself.



Marcadier randonneur: In the 1950s, various makers made beautiful aluminum bikes. This Marcadier weighs 21 lbs. fully equipped with fenders, lights and racks. [The photos here are from Jan Heine and Jean-Pierre Pradères' new large-format book "The Golden Age of Handbuilt Bicycles." On 168 full-color pages, professional studio photographs show 50 of the most beautiful bicycles ever built. Additional photos show the bikes with their original owners and in competition. Available for $ 60 (+ $ 5 S&H) directly from:Vintage Bicycle Press, 140 Lakeside Ave., Suite C, Seattle, WA 98122. www.vintagebicyclepress.com]

Bike technology we consider to be modern & hip, but if you must know the truth, the French did it 50 + years ago

by Jan Heine, with photos by Jean-Pierre Praderes

For most of the last year, I have been researching French cyclotouring bicycles for our new book "The Golden Age of Handbuilt Bicycles," which charts the development from the 1910 "Bi-Chain" of Vélocio to a 2003 Campagnolo Ergopower-equipped Alex Singer. I was surprised by the "modern" features of some old bikes. Many of these features later fell by the wayside, only to be resurrected decades later. Today, they are commonplace...

Consider rear derailleurs: Most of the first rear derailleurs were indexed. It makes sense - if you have, say, three cogs on the rear, you need three derailleur positions. So the levers for the "Le Chemineau" and the "Funiculo" had notches for each position. Only later did makers and riders realize that it was simpler to use friction shifting. Friction shifting offered finer control and a smoother feel of the lever. Furthermore, friction shifting did away with the constant need to adjust the derailleurs. Almost all derailleurs developed from 1925-1975 were designed for friction shifting.

(Maybe you wonder where the famous Campagnolo racing derailleurs of the 1940s fit in, the ones that required opening the rear quick release and backpedaling? Racers mistakenly believed that a spring-loaded chain tensioner caused considerable friction. In the 1930s, they devised various systems that did away with that "resistance" - more than 20 years after the first indexed derailleurs had been developed!)

Indexed rear derailleurs are not the only example of "modern" designs that were developed and then abandoned. Almost everything has been done before, whether aluminum frames, "oversize" tubing, suspension forks, direct-pull brakes, stems clamped to the steerer tube, splined cranks and more. Even clipless pedals had been around for the better part of a decade before there was widespread interest.

Many believe that these designs fell into oblivion because the technology was not yet available to make them work. And in some cases, this may be true. For example, affordable titanium frames became possible

This Reyhand from 1936 does not need to shy away from a comparison with today's best "real world" bikes. Its geometry combines nimble handling with stability. Its wide 650B tires allow exploring any road. It has powerful brakes, an ample gear range and even hollow (steel) cranks. At 24.2 lbs., it is lighter than most fully equipped bikes today. From this bike, it is only a small step to the 1950s Marcadier shown in the first photo.

with the end of the cold war, when surplus titanium was available at good prices. And bicycle suspension did benefit from work on shock absorbers for cars and motorbikes over the last 60 years. (Whether both technologies are true improvements for most riders is a different question.)

But most advances in bicycle technology are gradual. It does not take a genius or some space-age technology to cram an extra cog or two onto a rear hub, to increase the diameter of a downtube, or to change the rake of a fork. If builders in 1938 had felt the need for 10-speed cassettes, mega-downtubes or 75-degree head angles, they could have made them.

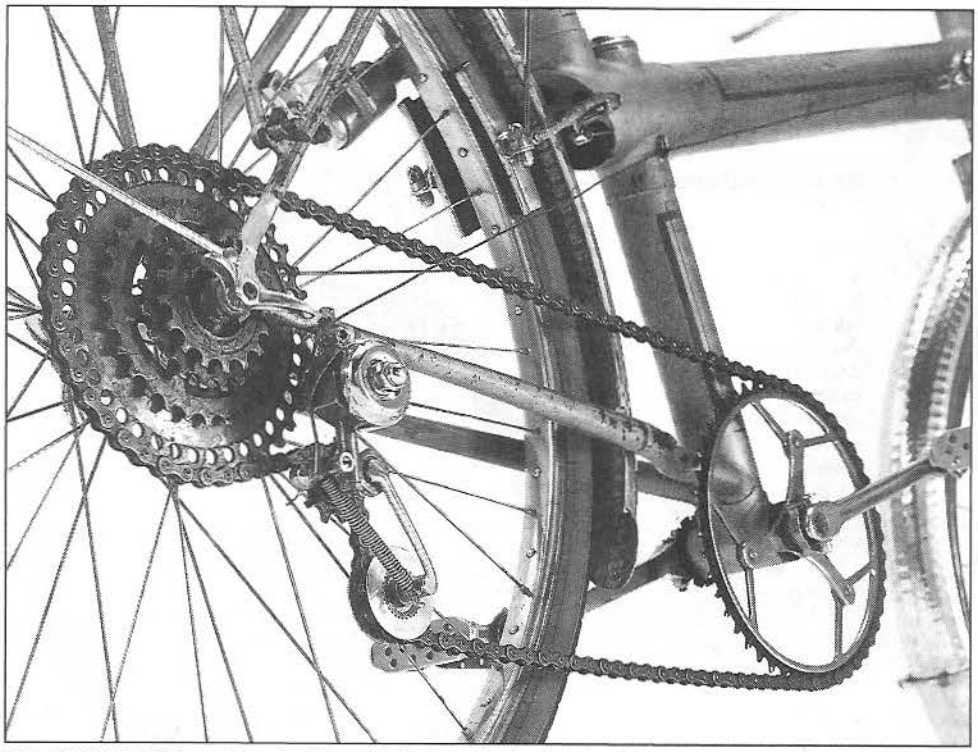
While some materials have evolved in recent years, a lot of sophisticated materials have been available at least since the 1930s: butted steel tubing (including super-thinwall 3/10 mm Reynolds 531), high-strength aluminums, precision ball-bearings, even exotic stuff like magnesium.

Most of the "innovations" that were tried and found wanting did not require technologies that were unavailable at the time. For example, the French component maker TA had the best machine shop in the business. In 1949, Georges Navet, the owner of TA, had his tandem equipped with shift levers that were mounted onto the brake levers. If anybody could have made it work, it was TA. Obviously, they thought about it, they made a prototype, and the company owner tested it. By showing the tandem at various events and allowing Daniel Rebour to publish a drawing in the magazine "Le Cycle," TA appears to have tested the market for such a system. Three years later, we find that TA instead has introduced a pedal with needle and ball bearings, and integrated grease ports, which vastly outlasted and outperformed all other pedals available at the time.

This example illustrates why most of these "innovations" were not developed further. Cyclists did not see any obvious advantages in being able to shift with their hands on the brake levers. Instead, they wanted pedals that didn't wear out and that could be regreased without disassembly.

Similarly, the other "innovations" mentioned above fell by the wayside, in many cases because nobody wanted or needed them. They lay dormant for decades, until they were resurrected. Backed by powerful marketing campaigns, manufacturers finally persuaded cyclists of the need to incorporate them into their bicycles, even if they provided few real benefits to experienced riders.

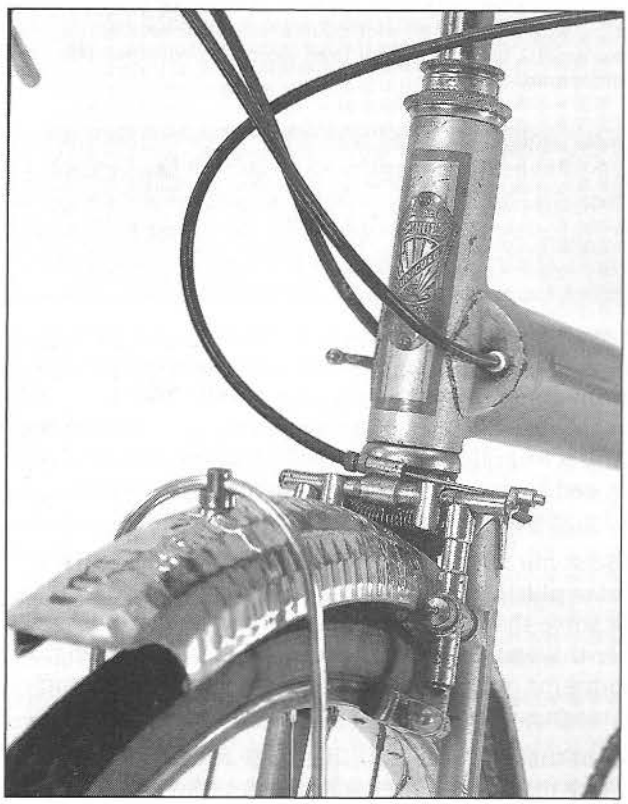
It is interesting to contrast these "marketed innovations" with those that truly were useful. Real progress



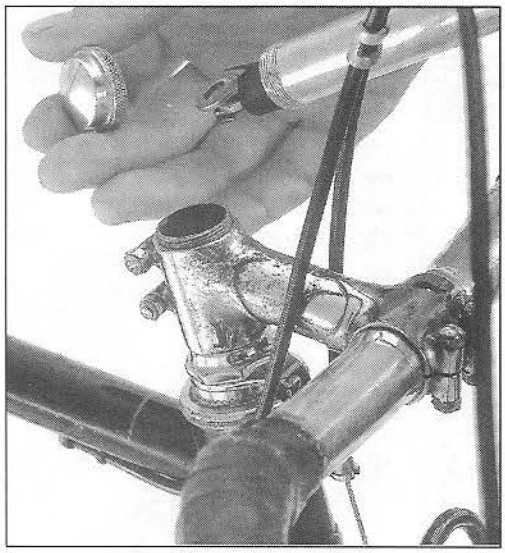
This 1935 Schulz is equipped with an indexing "Funiculo" derailleur. I have tried it: It shifts very well over the huge cogs on the freewheel. The Funiculo was available years before Campagnolo introduced their "Cambio Corsa," which required opening the rear quick release and backpedaling to change gears.

in bicycle design was adopted by French "real world" cyclists almost immediately without much, if any, marketing: Cotterless aluminum cranks and aluminum rims were introduced around 1932, and within a decade were found on almost every top-of-the-line cyclotouring bike, despite their high cost. Cantilever brakes replaced the various "roller cam" designs of the 1930s within a few years of the first models being introduced by Nicola Barra. Front racks to carry a handlebar bag were proposed first in the mid-1930s technical trials (bicycle design competitions). By 1948, they had become standard equipment on most better cyclotouring bikes. Low-rider racks, also developed for the technical trials, followed soon thereafter for carrying heavier loads. And when the rules of the first technical trials in the 1930s favored "modern" geometries ("steep" head angles of 72-73 degrees, "short" chainstays measuring 430-450 mm), these geometries quickly were adopted by most custom builders once they had been shown to handle better than the old designs.

Back then, real innovations did not need marketing campaigns. This still seems to hold true today. Recently, powerful generator hubs have become widespread among randonneurs and "real world" riders, despite no marketing at all and generally very poor availability. Experienced cyclists seek them out and find them. Even Shimano seems to understand this: Their revolutionary SPD clipless pedals - or more importantly, the shoes that provide a firm connection to the pedal and allow walking - were introduced without much marketing fanfare compared to their other "innovations," yet they were adopted by many riders almost immediately. But true innovations are few and far between, and most of what is marketed as "revolutionary" has been tried decades ago, whether shift levers incorporated into brake levers, splined cranks, Aheadsets or oversized tubing. It offered few advantages then, and it offers few advantages now. At the same time, we still are left waiting for parts that last longer, are easier to maintain, or otherwise improve the enjoyment of cycling.

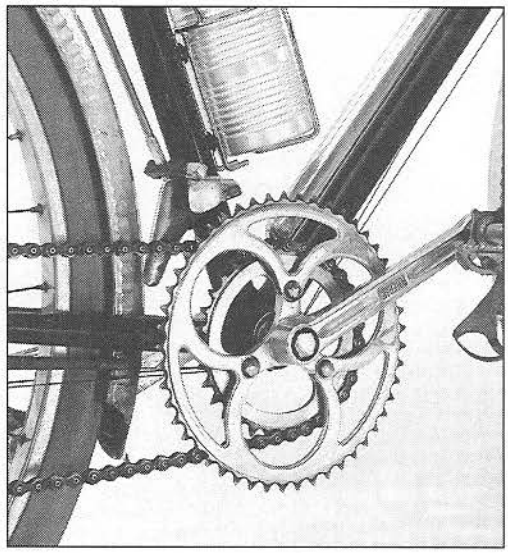


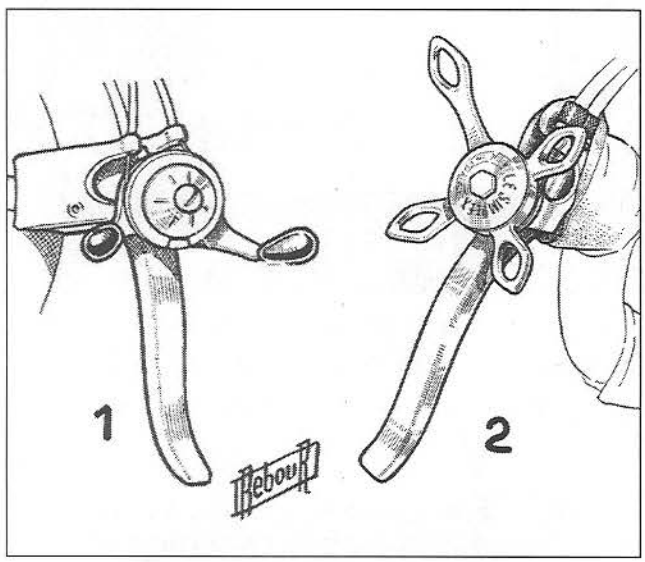
The 1935 Schulz not only had an indexing rear derailleur, but also "direct-pull" brakes. Like their modern counterparts, the brakes are very powerful, but lack modulation. A year later, the first cantilever brakes made this design obsolete.



LEFT: Clamping the stem to the steerer tube was common practice on 1940s cyclotouring bikes. Camille Daudon used the space inside the steerer tube to stash the tool kit. But makers soon found that being able to adjust the stem height is useful for many riders

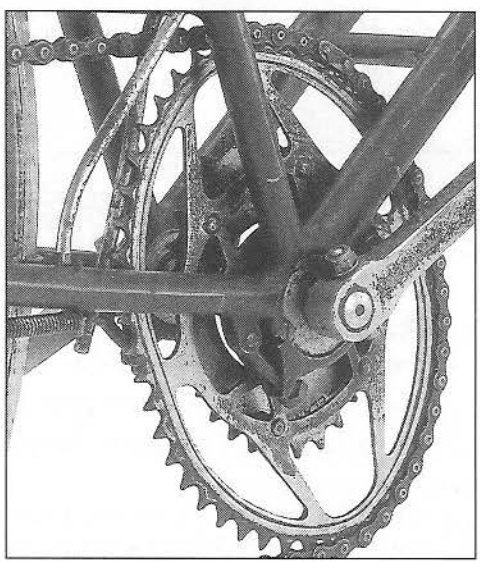
RIGHT: Most early front derailleurs were operated remotely through cables. But many makers found that a simple lever was the best way to move a front derailleur: Less weight, better control (no dropping the chain even with 46-26 chainring combinations), and, with a "floating" derailleur, the cage never rubbed on the chain. With a well-handling bike, taking your hands off the bars to shift wasn't a problem.

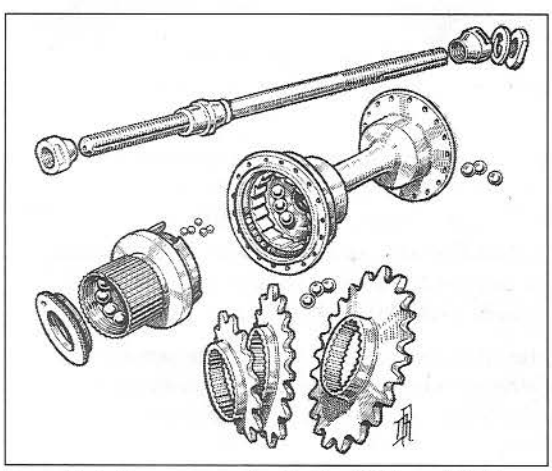




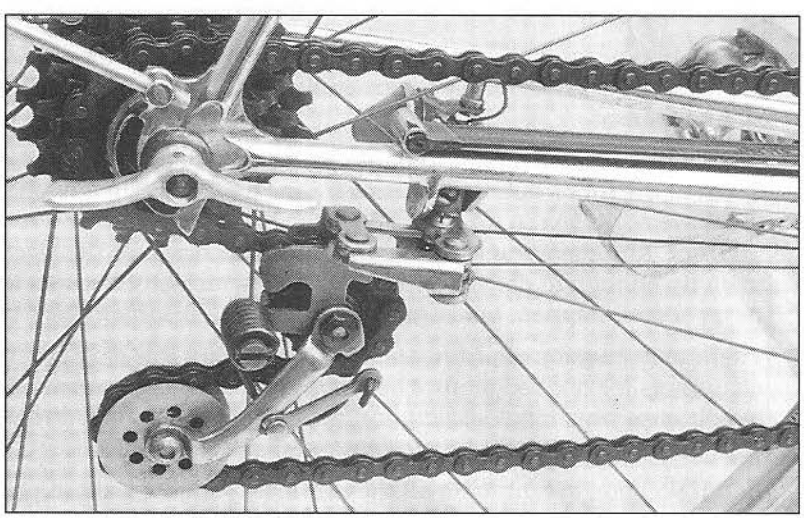
LEFT: Combining brake and shift levers is not a new idea. In 1949, the owner of TA equipped his tandem with brake/shift levers (1). For Paris-Brest-Paris, the Maury of this rider even incorporated the bell and generator control (for the lights) into the brake levers: Total integration in 1951!

RIGHT: This late-1930s Integral featured oval chainrings (and many other "innovations"). I would not be surprised if we saw a comeback of "Biopace" before the decade is over.

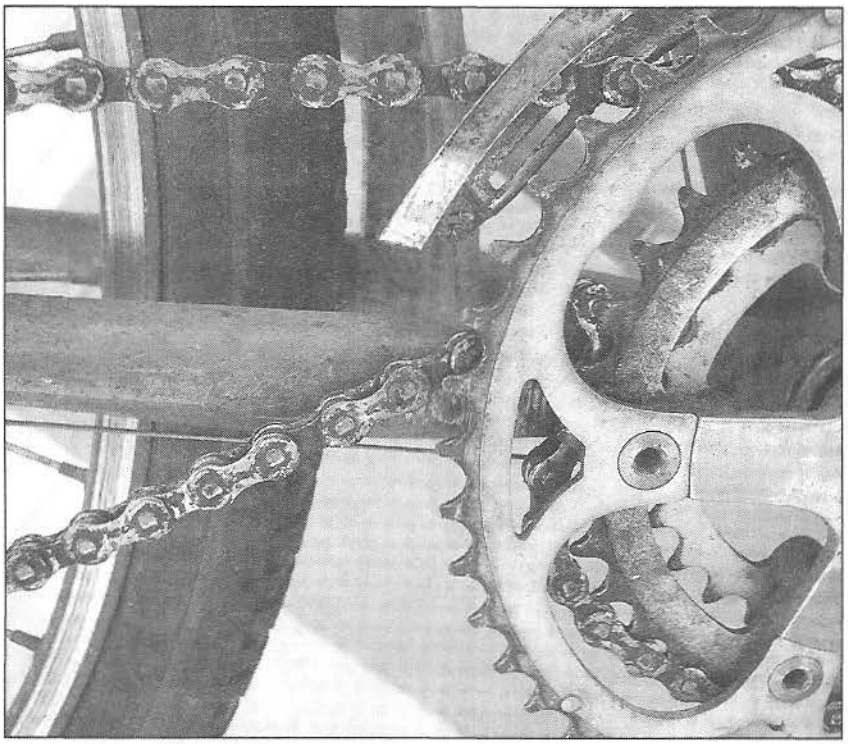


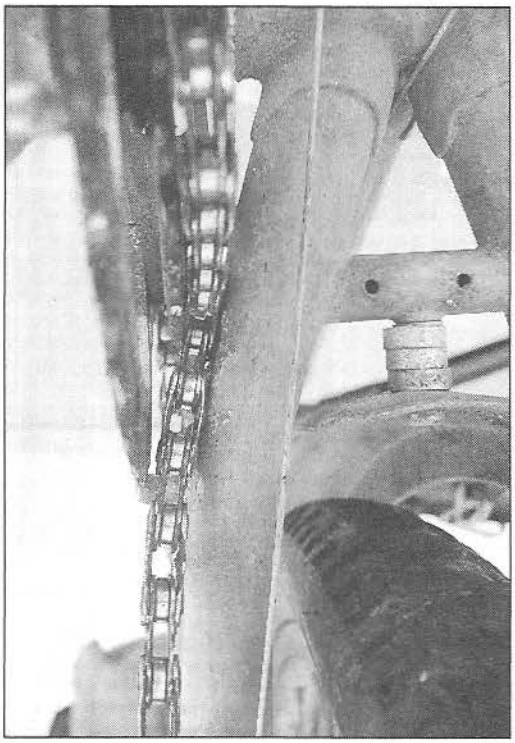


Cassette hubs were popular in the 1930s and 1940s. But once the famous Maxi-Car hubs had solved the problem of breaking axles, nobody saw a need to combine freewheel and hub any longer. Instead, riders looked for double labyrinth seals and other true improvements.



The Nivex derailleur (with friction shifting) on this Alex Singer tandem was developed in 1939. Its parallelogram follows the contour of the freewheel. The little arm on the spring keeps the spring tension constant in all gears. These features ensure consistent, easy shifting in any gear.





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Chain-suck and how to prevent it

Chain-suck is when the chain, just when it's moving backwards off the bottom of your inner chainring, magically defies gravity and stuffs itself between your chainstay and the inner chainring, taking paint off and sometimes getting so jammed that you can't get it out without using your foot or a decent-sized stick.

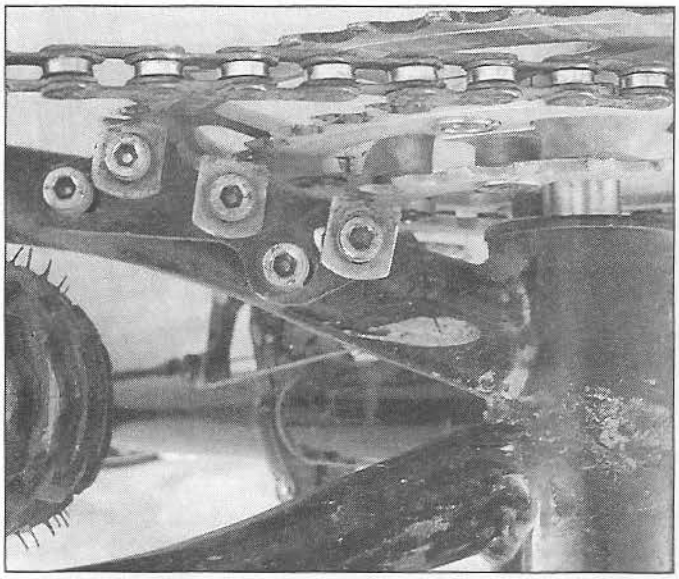
One common cause is worn out chainrings that become hooked, like a breaking wave on a famous African beach. The hooked rings don't release the chain & allow it to continue moving horizontally toward the rear derailleur. Instead, they pull it upward into the gap between the rings and chainstay, jamming it there. But sometimes chain suck happens even with new chainrings, so that's not always the problem.

Another common cause is a gunky chain that sticks to the chainring instead of releasing. That can cause chainsuck also, and does, but sometimes even with a new chainring and a nice & slippery chain, chainsuck still happens.

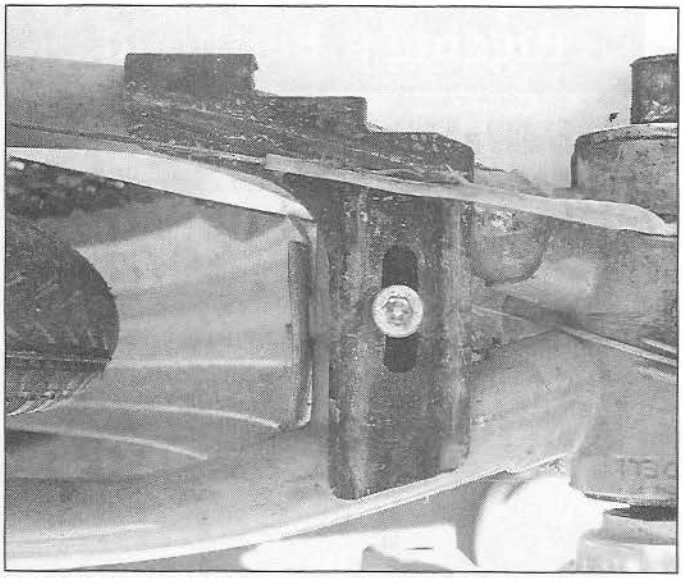
A third cause is a sudden influx of chain slack that happens when you shift from the middle or large ring down to the inner one, particularly if the chain isn't already on one of the larger cogs in back. For instance, you have a 48x36x26 up front and a 12x27 in back; and you're in the 36x18 combo, and you shift to the 26 up front. And then you ride over a bump, which makes the slacking chain flop up, and somehow it manages to go up enough to catch on the chainring, which stuffs it into the gap between the chainstay and itself. I've never seen it happen, but somebody told me that sometimes causes chain suck. A reliable source, generally.

There may be a fourth, fifth, and sixth cause, but this isn't about causes, it's about solutions. Check your chainrings for hooked teeth. Clean the gunk off of your chain. Shift before it's too bumpy, and when you ride over bumps on a long descent, for instance, put the chain on the middle ring up front and one of the larger cogs in back, to keep the chain tensioned and engaged.

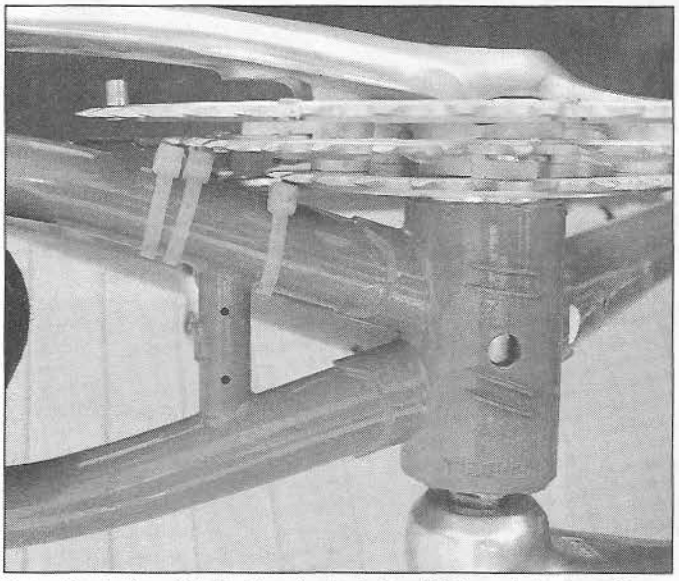
And if you don't want to do all these things, you just want to prevent chain suck even though you haven't taken all the precautions, then look at the next page for ways to do it.



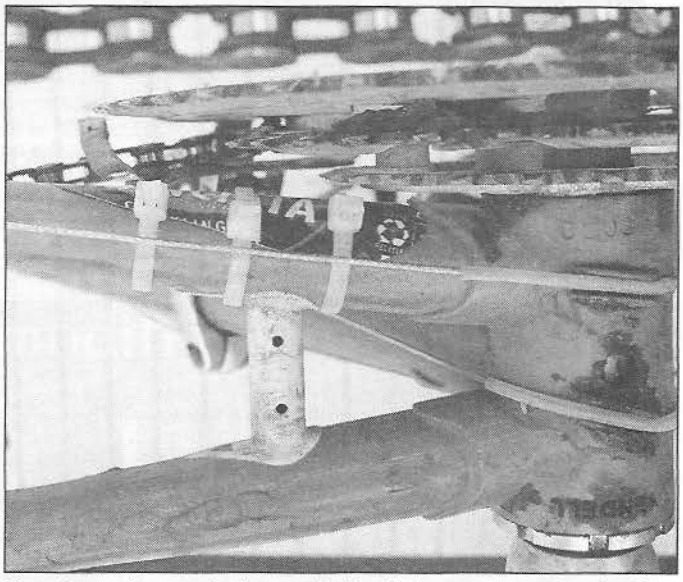
Bontrager device. Two threaded nuts are welded onto the chainstay, and the black base plate bolts onto them. Then three guards, one for each chainring, bolt onto the base. You can adjust the in-and-out because the holes are ovalized. All Bontrager things work.



Minoura (Japanese) device. A top plate (not visible here) fits above the chainstays, and this here bottom plate with the guards fits below them, and they bolt together to stay in place. The in-and-out is adjustable, as you can see. It works well, too.



Robert's zip ties. Big zip ties cinched ultra-tight work the best. In a really bad case maybe these won't work as well—being plastic and all. But Robert is a clever fellow who rides in chain-sucky conditions, and says this works pretty well. Maybe add another by the inner ring. Shown on a new frame, about to be built up.



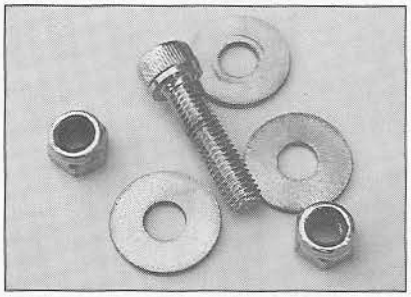
If you're really scared of scraped-off paint, you can combo glue & zip-tie a shield-o-metal to your chainstay. This shield was cut from a pop can. Once you get a rock-solid grasp on the theory, you can come up with your own way.

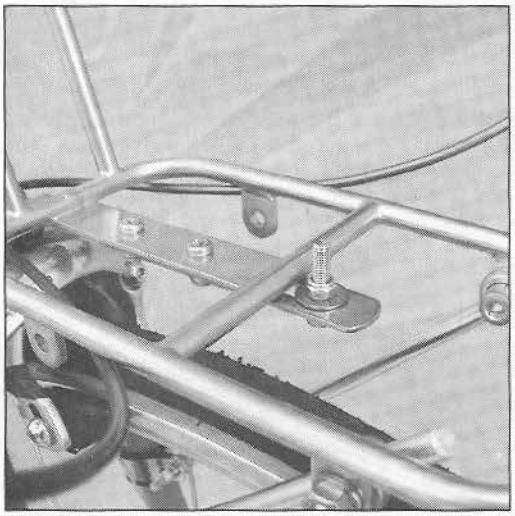
I haven't got time for the pain...

Chain-suck is *most* emotionally painful when the bike is new or really expensive, or just got a fresh expensive paint job. But it's a rare off-road bike or touring bike that doesn't suffer from it eventually, so be ready when it's your time. One thing not to do is exaggerate its damage. Steel chainstays are usually at least 0.7mm thick, and in the case of our bikes, they're almost for sure 0.8mm. It would take continuous chainsuck to damage them significantly. Losing paint, likewise, is hard to take the first time, but not the end of the world. You can spray the bare metal with Boeshield, or brush it over with nail polish or any kind or color of model paint. Get that at your local hobby shop. Remember those?

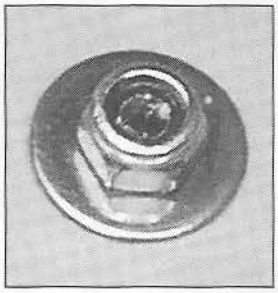
Rigging a Berthoud Bar Bag Onto a Mark's Rack

The Gilles Berthoud handlebar bags come ready to rig onto a handlebar, with a rack and everything made just for it. But clever as they are, they can also mount onto either the Berthoud support racks, or Mark's rack, made by Nitto. Mark figured out a slick and perfect way to do it. All you need is the hardware shown to the right here: A bolt about 20mm long, three washers, and two nuts.





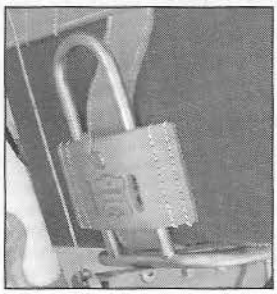
Mounted on the front, showing a bolt, washer, and nut that fit easily into the slot in the rack's adjusting tab. The bag slides over the tongue shown to the left. You drill a hole for the protruding bolt, then...



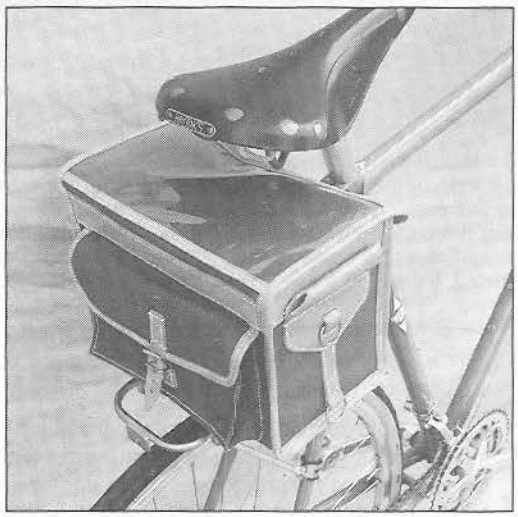
...yes, as we were saying, THEN you add a washer and another nut on the inside of the bag, like this. The bottom of the bag is stiffened with some kind of plasticky thing, and the bolt-washer-nut assembly grips it all nice and tight.

Here's the rear rack shown with the same bolt arrangement. This is what it should look like before mounting the bag onto a Mark's rear rack. No metal drilling needed, it all goes on easy.

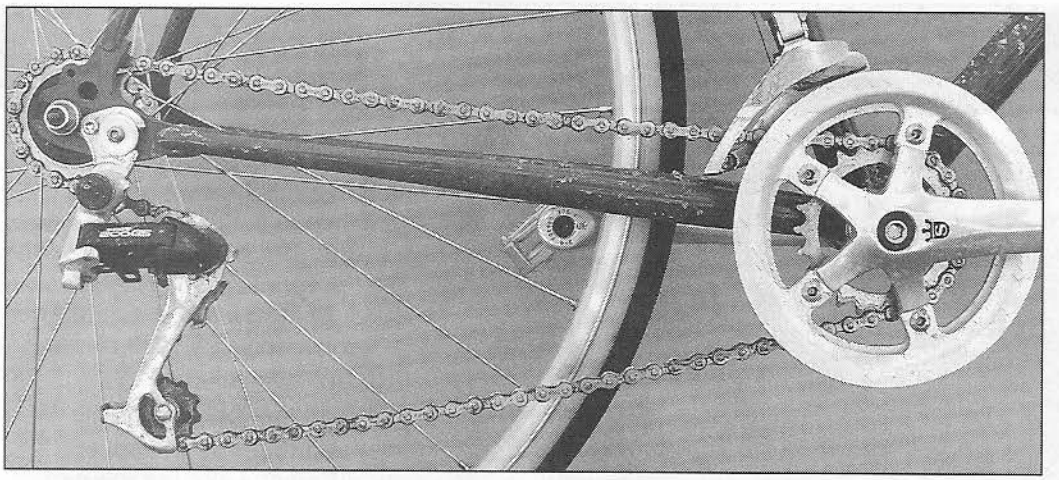
You don't use the handlebar bracket. As you can see, the bag rides lower, and leaves more room for the interrupter brake levers, or a bar-mounted light. It's not far-and-away the best way to mount it, but it works great.



A leather loop on the back side of the bag slips over the rack's metal tongue. And, you drill and bolt the bag (as shown below) for extra security. It won't move.

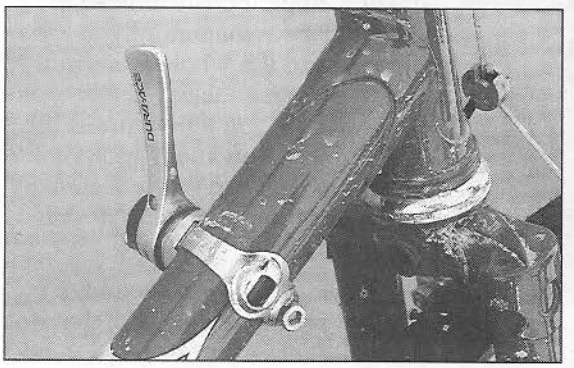


It works the same way on the rear. It doesn't interfere with anything. The top opens from the rider side, but that's not such a big deal; the fact is, it works just fine on the front or back. On the back, your thighs may or may not rub it, it depends.

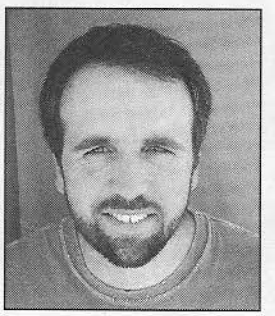


Steve Bowen of the Palos Verdes Bike Center put this together for Jim. It's pretty simple. Key was getting a cheap, bolt-on style rear derailleur, in this case, a Shimano 200. The bolt-on style is needed because there's no derailleur tab.

The Quickbeam's long dropout slot allowed this, with plenty of room left over for the wheel. Having the derailleur there doesn't the least bit complicate wheel removal or installation. Works great.

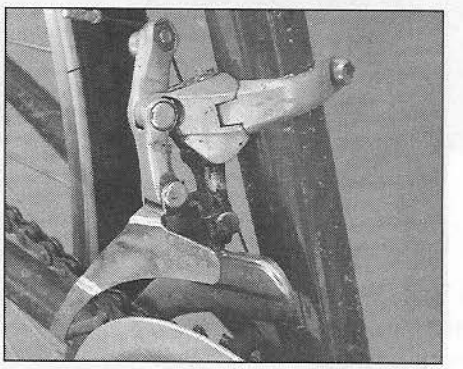


A clamp-on downtube shifter. You don't see many clamp-on Dura-Ace downtube shifters these days. The right was removed. A bar-end shifter would do fine, too.



Jim Warren:

Pushing the limits of the Quickbeam



The 40x24 ring combination worked best with a triple front der, because the chainguard requires a high mounting point.

Quickbeamodified

by Jim Warren

I love the simplicity of the Quickbeam, but I live in an area (Rancho Palos Verdes, CA) where the riding I like to do always involves long steep climbs. So I wanted to increase the gear range of the bike to allow for a 24x18 low gear and still allow a 40+ large ring. The "able to shift while pedaling part" wasn't the main reason, just a secondary motivation.

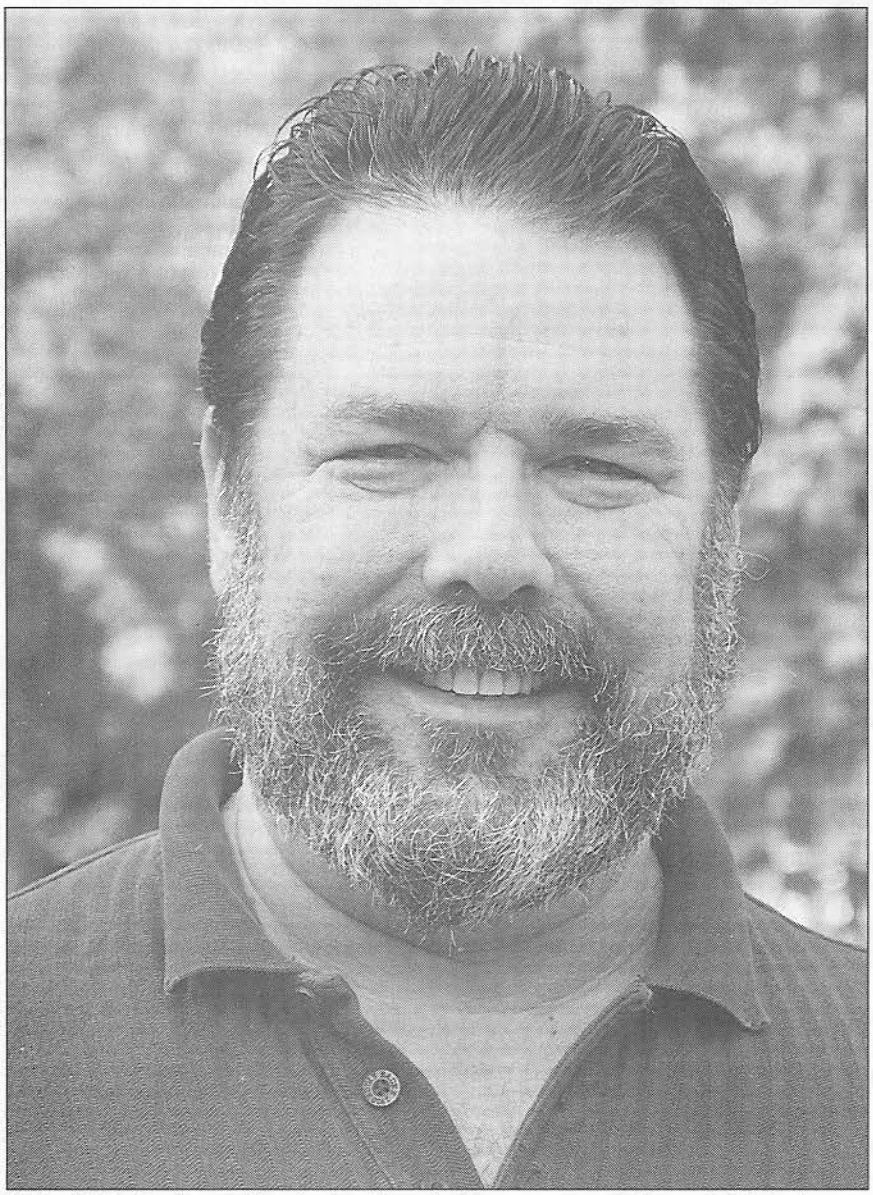
I know there are those who'll say, "What's the point? You've wrecked the concept. Why not just ride a road bike?" But for me, the QB concept is intact. All I've done is given it two distinct single-speed modes. When I need the really low gear, I definitely benefit from it; I climb hard and don't think about shifting. Additionally, I do a 20 mile flattish ride every Saturday where the riding is single-speed in the large gear and I just pedal and talk to my riding buddies.

This modification makes me want to take the QB on any type of ride in my area without worrying about getting stuck on a steep climb. I enjoy the single-speed experience over the rolling terrain (no thoughts of shifting!) Then when I do the monster climb home, again I am single-speeding, just in a lower gear. If I need an even lower gear still, there's always the other side of the hub to use. I could put a 22t freewheel on that, I suppose.

I have two sets of wheels for my Quickbeam; one for roads and one for trails. I know I could just switch tires, and switch cogs every time I want to ride terrain that requires something other than what's on it, but two sets of wheels just makes it easier.

Approx cost for the modifications shown here? $60 plus shop labor, if you have a shop set it up. I did. It could be done for less than that, if you have some of the parts around already.

Waterford's Richard Schwinn (an interview)



Richard Schwinn is one friendly guy. There isn't a mean or weird bone in his body. That is not meant to imply that there IS weird and/or mean bones in the bodies of former interviewees about whom I did not declare the same.

The surname "Schwinn" is right up there with Rockefeller, Gabor, Simon (& Schuster and Carley Simon), Buffet (Warren and Jimmy) and Walton (Sam and John-boy). Show me a person over 25 who hasn't heard of Schwinn, and I'll show you an illiterate, blind & deaf recluse, or a long-time drug addict. That's what it would take, sorry if it sounds harsh.

The Schwinn family that I know is Richard and Shoe Schwinn (Debra Shoemaker, married Richard) and their children Anna, 21,and Tucker, 18). I know them only because when Bstone closed and Rivendell began, I needed somebody to make frames for us, and Waterford had the goods to do it, so I proposed it and they agreed. That was in 1994, and for the next three years, Waterford made Rivendells.

Ultimately our needs as a customer and theirs as a supplier went different ways, but the parting was stupendously amicable. and I attribute that entirely to Richard and the whole Waterford crew—the best, nicest, easiest-going people you'll find anywhere. You cannot know them and not like them. You can't have a conversation with them that you'd wish would end.

I think we all know somebody, about whom it can be said, that if you call them a jerk or think them a jerk, you must be such a miscreant that you should probably be clubbed in the knee. That sums up Richard for me. He is a terrific guy.

The most memorable Schwinn experience I've had wasn't about bicycles and didn't involve Richard. There was a feast at the Schwinn's there, and Richard or Shoe sent Anna (then about 13) and me out to get the asparagus. We walked along the small road by the fields and looked under the telephone wires for it.

The birds eat the seeds and poop them out as they sit on the wires, so under the wires, that's where you find it. Asparagus grows like a kid would draw it, straight up out of the ground, with no distracting branches or anything. I'm sure there's a plant sometime, but the stalks we got were stuck right in the ground, surrounded by the grass or weeds or whatever else happened to grow along with it.

Anna was better at finding it than I was, but I caught on quick enough, and ended up picking more than I ate, which was the plan from the get-go. Always pick more than you eat, because others have to eat, too.

1. How old are you, where did you grow up, and at what point in your life did you realize that Schwinn is a household name?

I hit 52 this year. I was the third of five kids in the north shore suburbs of Chicago. Schwinn's fame vastly exceeded its fortune, so we lived in comfort but certainly not luxury. Schwinn was always a household name to us, so its fame didn't really hit me until about third grade—mostly because of the teasing of my classmates.

2. What did they say? The idea here isn't to relive bad memories, I'm just curious. What's to tease about?

It was all kid stuff. In retrospect it was pretty harmless, but it was painful at the time. I just wanted to be a normal kid, and they may have meant it in good fun, but it was sometimes pure torture for me. I didn't get over it until high school. Once I figured out how big the Schwinn name was, it was hard to have a sense of humor about it and myself. That didn't happen until I actually started working out in the factory and accomplishing things for myself.

The Waterfords. left to right: Joanna, Marc, Roger, Brian W, Brian B., Dave W., Eric H., John, Eric B., Dave H., Sean, Diane, Jim, Matt, E.J. Gunnar the dog is the one just below the Christmas wreath. He's the only one who gets to put his name on a frame.

On the other hand, I did have some pretty cool bikes as a kid. Dad brought home the prototype Sting Ray. For Christmas he gave me a Schwinn Corvette, modified to have 15 speeds, and I got my first Paramount right after high school.

3. And, do you think your children experienced the same?

No, thank God! The corporate Schwinn was out of their lives before they figured it out. Marc and I started Waterford, which was really good for them, because they could see it grow from the start. I have two children, Anna (21) and Tucker (19), and they grew up as normal kids and have both flowered. Both of them ride and like bikes, in their own way.

4. Did you feel obligated to go into bicycles?

Not obligated, but maybe "hormonally compelled." I won't say it's necessarily healthy, either.

5. If you hadn't been a bike person, what else might you have been? What are your other interests now, besides bikes?

Actually, I was a computer geek in the late '70s and early '80s during my self-exile from the bicycle industry. I like what technology can do for us and I enjoy the problem solving. Marc Muller's son Kevin is just out of college now and a real techie, and he and I have been working on internet based information systems for Waterford, our dealers and our riders. I love playing music, too.

6. Tell us some of what you know about the early years at Schwinn. Talk about Ignaz Schwinn—he was your grandfather? Great grandfather? And, how did you learn this stuff?

Ignaz died half a decade before I joined the human race, so everything I know about him is second hand or through the relics we've saved. Ignaz was an engineer-turned-entrepreneur. I'm not sure he ever built a Schwinn bike. They were either called World or one of many other private labels. He made a small fortune in bicycles in the 1890's but a much bigger one making motorcycles up until 1930. He lost almost everything in the '29 crash.

I did know his son, Frank, who died when I was nine. Even with this limited experience I felt his power. Frank was a perfectionist with a tremendous capacity for work, and had a lot of rage, too. He led Schwinn out of the Great Depression, through WWII and into the cold war. He had left a lasting stamp on the company by the time I worked in the factory in the early '70s.

7. Do you have brothers or sisters? Are they now or have they ever been in bikes?

Yes, as I've already said, I have four siblings, none of whom ride regularly. I've pedaled more miles than the rest of the family from Ignaz on down put together (and that's not all that much)—about what Freddie Hoffman rides in a year.

8. Well I forgot you'd already answered that, sorry. Have you ever owned a non-Schwinn/Waterford bicycle? And how about your Anna and Tucker?

Sure. I started with an Evans tricycle, and over the years I've also owned a Kestrel, though that was about the time Schwinn was buying them, so maybe that doesn't count. It was interesting to try a carbon fiber bike. We also bought a Burley tandem to ride with the kids.

9. Have your children owned unrelated bikes?

They've had more exposure to other bikes. After Schwinn was

sold, Anna, who was then 12, demanded a non-Schwinn mountain bike, so we got her a Trek at the local shop.

10. Did your children get bikes for Christmas, or were bikes so normal around the Schwinn compound that they weren't gift-type things?

As little kids we did give them bikes (or had our painter Roger do a cool paint job like the Ninja Turtles theme for our son).

11. College?

I went to Colorado University, of Denver, and got an undergrad degree in economics and a graduate degree in business.

12. What was your first job in your family's company?

I worked as a mechanic's assistant while in high school. During college, I worked in the maintenance department, to start out at the bottom—sweeping floors as it were. I made myself useful as I could, if not actually by sweeping, at least by doing the closest things to it—general clean-up and building maintenance. Sweeping was not the ugliest job to have in that factory, for sure.

I also worked as a mechanic on the assembly line. We made minor repairs as the bikes headed down to the shipping department. I also worked in the brazing department, brazing tandems and Paramounts.

13. How did the other employees treat you? Did they resent you for your birthright's advantage?

Most employees treated me with a deference that made me uncomfortable, since it could be a great way to hide their resentment. I think most people felt a genuine loyalty to the company. I found two kinds of people at Schwinn, people who told me what they thought I wanted to hear and those who told me what they thought was the truth. I gravitated to the latter. By the end of my factory days I think I earned respect from most of the people there.

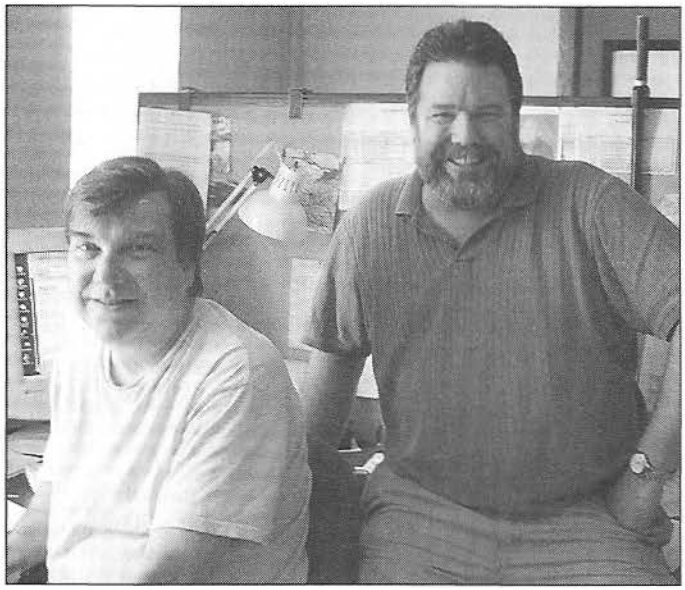
14. Keith Kingbay was a key figure at Schwinn for many years. Say a bit about him, just for the benefit of people who've never heard of him.

Well, there's not a lot I can say. I'd encountered Keith through the years, but I didn't really have close contact with him until after high school. By then he was in semi-retirement. His importance didn't hit me until long after he retired. After all, he more than anybody else there was responsible for the 10-speed boom of the '60s and '70s. He brought Paramounts permanently back to Schwinn in the late '50s, as a world-class race bike, too. He rode his bike until the day he died, literally. He rode 20 miles one morning, and died the same day during his afternoon nap.

Keith used to drag me into his office and wax on about the past. He passed on all the lore about my grandfather, like the time Frank W. (as he was known) found the one bad part in a pallet of 5000 piece parts.

Keith was a company man, and did whatever was needed, and had unwavering loyalty to Schwinn. Visiting him became an increasing chore because he just never stopped talking—as old people tend to do.

One thing he did do was to turn me on to John Forrester and the LAW. He had convinced me that the problem with the bike market was that people had bought all these 10-speeds and most of them ended up hanging in the garage. He turned me into a life-long bicycle advocate.



Marc Muller, may be the best all-around bicycle frame designer dead or alive; and Richard.

15. When were Schwinn's best years, and how come?

Things were best in the late '60s, when business was growing and Schwinn was in the right spot, with the Sting Rays and Varsities. The dealers were the best in the country and loyal.

Even though the flash welded frames were heavy, the headsets, cable guides, cables, stems and other details were miles ahead of other boxed bikes, and they were easy to sell.

16. When were things hard? And why?

Aside from the 1890s and the late '60s, it was pretty much always hard in the business. After the turn of the century, bikes fell out of favor until the Great Depression hit. Schwinn turned its business around in the early '30s by injecting the bike biz with the Excelsior motorcycle engineers.

By the late '30s, we were back to a situation where there were too many bikes for the country, and then WWII put a lot of companies out of their misery. Only a handful started up after the war. Business boomed for three years after the war, but collapsed in '48. The Korean War kept interest in bikes low. Basically, sales were awful until 1963, when the Sting-Rays hit, followed by growth in derailleur bikes like the Varsity.

By the '70s Schwinn was making lots of bikes but got crunched between inflation and price controls. Schwinn's dealer network was a good deal for all concerned, but it rested on Schwinn's ability to set retail prices, which let Schwinn do the advertising and keep the retail price low enough to make the company's products look good compared to the Huffy's and Murray's of the world.

16.5 What were the dealer margins back then?

A typical margin was about 32 percent, which of course is low by today's standards. But it was really good for the shops that followed the Schwinn plan.

These dealers sold pretty much nothing but Schwinn. They could keep their inventories low. Selling was extremely efficient, assembly was easy—you could assemble a Varsity in 25 minutes. Even the biggest shops didn't need a dedicated buyer like today's shops do. The big shops created millionaires,. and the small shops still provided a solid income for the owner.

Then in 1976, price controls finally ended, but so did the fair trade laws, and aggressive dealers quickly raised the price of a Schwinn through pricey add-ons, charging for assembly and so on. That opened the door to cheap Asian bikes on which the dealers could get a better margin while proudly showing the Schwinn banner. I remember talking to someone waxing on about their Schwinn, telling me it was a Diamond Back model they got from their Schwinn shop.

The '80s started out bad for Schwinn, with unionizing, plant closings and farming out work to Asia. I was in another industry then, but could feel the pain.

17. In 1992 when Schwinn filed for bankruptcy and was eventually sold to Sam Zell's fund, lots of Monday morning quarterbacking journalists went public with their analysis, and I know that was a stressful time for all the Schwinns. What lies or misrepresentations would you like to erase or clarify?

Contrary to what you hear in the so-called history books, Schwinn was the leading mountain bike maker of the 1980s. In '88, if you combined all the non-Schwinn mountain bike sales, multiplied them by three, you still wouldn't have matched Schwinn's sales that year. Nobody caught up to Schwinn's mountain bike sales until the financial crash of '91-'92.

The mountain bike boom of the late '80s could not cover up the reality that the road bike market was deteriorating. As a result, the Asian bike makers had to fill their factories, so they partnered with companies like Trek, Giant, Cannondale and Diamond Back, to enter the mountain bike market. These brands all flooded the US market in '90 and they almost all fell into deep financial trouble in '91.

17.5 Schwinn was part of that shift, too, though. National/Panasonic made bikes for Schwinn, and I think Bridgestone did for a year or so, too. Right?

Yes. Al Fritz and Ray Burch developed this relationship in the 1970's as a by-product of their visits to Japan to negotiate with Shimano. They wanted to supplement Schwinn's production during the bike boom of the 1970s. Both were good builders, though Schwinn narrowed the supply to National after the end of the boom. National supplied a handful of bikes through most of the '80s and built the high-end PDG (Paramount Design Group) bikes during the early '90s. It was a pure prostitution of the name to create products Schwinn lacked confidence to sell under its own name.

It wasn't that Schwinn was behind the times so much as that the times had caught up with Schwinn. As more bikes were being built in Asia, it got harder to create the unique advantages Schwinn had developed in the Chicago factory.

To put Schwinn as a brand in perspective, let me tell you about some research conducted as Schwinn was trying to resolve its money problems. Schwinn commissioned some market researchers to evaluate the value of the Schwinn name. They discovered that consumers viewed Schwinn quite favorably and as being completely up to date, but that everybody else was, too. Bikes had become generic.

Waterford's top builders are capable of custom work equal to any. This one has stainless steel lugs, carved from Kirk Pacenti's blanks.

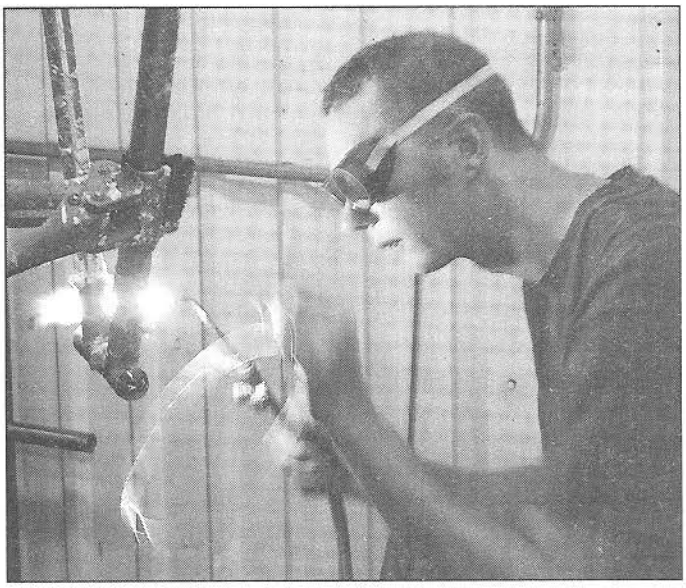
The Schwinn buyers didn't pay attention to this research. They listened to scuttlebutt which kept saying Schwinn was "behind the times." That's why they thought it would be easy to turn the company around. Four owners and at least a second bankruptcy later, it is only now starting to show some signs of life.

17.75. Isn't that inevitable, though? Schwinn was the family bike, which is a good thing to be, and certainly the only way to achieve that huge market share. Then as the adult bike market grew and people started getting snobby, Schwinn's family-bike reputation worked against it in a new, adult, specialized market. Grownups re-entering the sport didn't want to buy for themselves what their parents bought for them when they were eleven. The quality of the bike had nothing to do with it, just the perception. I can't think of a company in any field that is able to bridge from one distinct market to another.

No, it's not inevitable. Shimano sells components from family bikes to Tour de France winners and nobody questions the brand.

17.85. Some would say that Shimano is still selling components, and not bikes, though. There's a difference, maybe. But anyway...

Well, Schwinn just needed to use its name and build the right bikes and supply them at the right time. Consumers didn't consider the Schwinn name a handicap. It was dealers and Schwinn employees who had the attitude. Actually, dealers who stuck with Schwinn as their main high-end line did well



Dave, one of Waterford's fine brazers.

with Schwinn's high-end bikes. It was the dealers who wanted to have many lines who had the biggest problem. They wanted to "cherry pick" the product lines— choosing a bike here and a bike there.

The Schwinn Paramounts competed extremely well in the '80s. The problem with Schwinn's high-end bike sales wasn't the bikes, but how Schwinn conducted business between its domestic and foreign vendors.

For instance, by 1984, Schwinn had moved over 80 percent of its production oversees. To get supplies on time, Schwinn's product managers had to start planning in the summer to get the specs down and to place the orders. Since this was 80 percent of the business, they worked hard on it. When they were done, they started working on the specs for the Greenville, Mississippi factory, which made Schwinn's high-end bikes.

Unfortunately, this sequence of work was out of sync with market realities. Often, specs for high-end bikes wouldn't be completed until the middle of winter. These are the fashion-driven bikes for which certain specs are very important – like Modolo bars in '87. By winter, all the cool components were being shipped to the likes of Trek, Cannondale and so on, and we didn't get ours until May. By then, the bulk of the high-end sales had already happened, so we got stuck with a lot of inventory.

Schwinn used this inventory up through the beginning of the following year, because the same cycle happened again: the Asian bikes were spec'd first and the American bikes—the fashion bikes—were spec'd last. To fill the pipeline, the next season's bikes would start out with last season's parts. The dealers had a problem with this.

18. Supply continues to be the biggest pain for bike makers and sellers, isn't it? Well, let's go on. Tell us how Waterford began.

Okay. Schwinn's Paramount factory was being ignored and yet was actually making a small amount of money. Marc and I had been working together—he in charge of Paramount, and me running the Greenville plant—and we both wanted to rejuvenate the Paramount factory. When the Greenville factory closed, we moved some nice equipment up there in the hopes of growing the factory. At the time, Schwinn had been put up for sale, but the buyers didn't want anything to do with running a little factory, so Marc and I put a plan together to buy the factory equipment.

Since Schwinn had begun *importing* many Paramounts, they started calling the bikes from our factory the "Waterford Paramounts". After a careful search, that's the name we picked when we started our new company in 1993.

19. Well, good luck to you. I remember contacting you, or maybe it was Marc, and asking you to build Rivendells. The first ones came out in late 1995, and you built them through late 1997. What would you say led to the split? If it's any different than my story, I'll say my side of it, too.

I'd say there were two reasons for our split-up. First, from our standpoint, we found that the Rivendells were becoming increasingly custom and unprofitable. What had started out as an "everyman's" bike was becoming a true connoisseur's custom, combining almost endless variety with a level of finish work higher than what we were offering on the Waterfords. We saw an explosion of new models without enough demand to justify the design time. We proposed raising the prices to justify the extra work and you thought the bikes wouldn't sell at the higher prices.

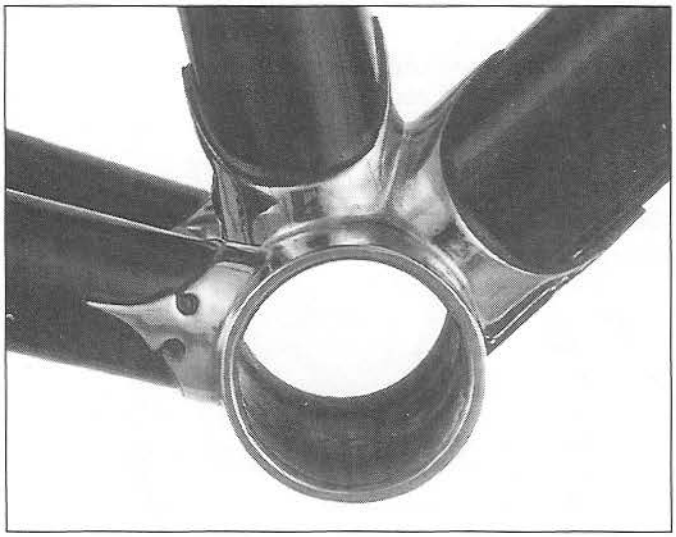
Second, we argued over tubing specs. We wanted to build from our stock of tubes, many of which were made to your specs, and you started requesting special tubes here and there, for certain bikes. You wanted tubes we didn't have. We wanted to have the last word, and so did you.

We had other issues going on as well – bends on fork blades, processing of custom specs and a variety of paint issues. Minor but irritating problems.

20. That's about the size of it, yep. When you say "everyman's bike," I should clarify that. When you and I went for that initial meeting walk in the Marin headlands and we were talking, at that time the idea was to have about nine stock sizes and geometries, and a limited pallet of colors. Then, over the next few years it became harder and harder to say No when somebody wanted a slight variant that made sense, or a different color, or now and then a different geometry or size. So what started off as a locked-in program with no variations grew into something that became sort of a headache, from an efficiency point of view. Then there was the fork bend issue. But that's about the same thing you said.

When you were building for us, you were strongly pro-lug, and I think you, or Marc, or somebody there said you'd never tig a frame under the Waterford label. But you started doing that about five years ago, right? It must have been a difficult decision. I mean, it must have been emotionally difficult at the time, but you obviously felt it was necessary. Talk about that.

The decision to add TIG-welded Waterfords was easier than you might think. We start TIG welding bikes—BMX bikes for Standard Byke Company, our very first year in business. In '98



The bb shell from the same custom frame on page 31. Details on the chainstay socket get lost once you mount a crank, but at least they're there.

we added the Gunnar bikes—all of which were TIG-welded. When superlight, strong, air-hardening tubes became available, the case for a TIG-welded Waterford was compelling.

For our top of the line Waterford bikes, we started out pro-lug because of the metallurgy of tubing available at the time. Low-temperature lug brazing was clearly the superior way to join Reynolds 753, the best tubing around. The embrittlement at the joints and the lack of repairability made it unsuitable for Waterfords.

Air hardening steels have changed everything. We got our first experimental tubes in '94 and built our first production bikes in '96. I don't think many people appreciate how revolutionary this advance is for frame design. This is the first major alloy change since the introduction of high-alloy steels like chrome moly and Reynolds 531 in the 1930s.

The performance of the base tubes isn't hugely different than for traditional high alloy steels. The big difference is that air-hardening steels get harder and stronger when they're TIG-welded. They no longer suffer from the embrittlement problem of the older generation.

The durability of these new steels has far exceeded our expectations. TIG welding avoids the angle limitations of lugs and the extensive tooling costs to buy new lug molds. This gives us considerable design freedom and flexibility not available through lug designs. We can even replace tubes like we can on silver-brazed frames.

Over the years, we've also developed a high standard of virtuosity in the quality of our welding. The tight, consistent TIG weld is just as hard to achieve as a beautifully finished lug. Since there's no polishing, flaws are difficult to hide. It requires the same mentality as fine calligraphy—especially when welding the 0.5mm walls on our current tubing.

Not that we've forgotten about lugs: Contrary to some of the early reports, air-hardening steels work just fine with low-temperature brazing and lugged frames are still the biggest category of frames we make. Since the strength of the base air-hardening steel is still stronger than Reynolds 753—even the lugged bikes have gotten a performance boost.

We still build Herons. They've replaced the entry-level Waterfords—our model 1100, RS-11 and RST-11. We still make our classic lugged designs, but a lot of the lugged bikes we do now use stainless steel lugs.

Stainless steel lugs avoid the need to chrome plate the lug areas. Chrome plating is not good for our new high-tech steels. Henry James had a good starting stainless lugset, but Kirk Pacenti and Richard Sachs have done some very fine work in this area. We're having a lot of fun using Richard's Newvex™ lugset, making bikes that look like the classic Paramounts but with today's tubes. Just a couple of weeks ago we built a 58cm frame that weighed in at 3.75 pounds—nearly a pound lighter than the older generation frames, but looking just as pretty. We've also gotten into hand-carved lugs, which has transformed our brazing into true artistry.

21. The "angle limitations" of lugs can be eliminated by new lugs. That's why we have so many. I just wanted to point that out, so nobody reading this thinks we're designing our frames around the lugs. We design the frames, and if we need new lugs for them, we have them made, and yes, it's expensive. Anyway, 3.75 pounds is light for a 58cm frame. How many Waterford frames do you make a year now, and how many are lugged?

We don't release those numbers, but I can say that lugs are about half of our current Waterford-label production (and, of course, none of the Gunnars).

22. What percentage of your business is private label? You make the Standard BMX bikes, and Herons. Anything else?

It varies. Right now it's about a third of our business. Last year we started making a recumbent for Volae, a company based out of a fine shop in central Wisconsin. We've been bringing custom bike quality standards to the recumbent world and it's been a really good business.

23. About ten years ago you introduced a modern lugged steel mixte frame, the Diva. Talk about that, and talk about sales of it, and plans for it in the future. You know, I wanted a sample to review, and I asked for one a year and a half or two ago and never got it. We could still do it, you know. Anyway, talk about the Diva.

The Diva is a ladies bike, not a women's bike. As a make-to-measure bike, we can make it as woman's specific as necessary. We look at it more as just another way to serve our many different kinds of customers. It's based on Road Sport handling—itself very much like your classic Riv Road handling.

24. You should send us one to show in the Reader. Anyway, you've made bikes for some famous people. Howard Stern, for one. Who else?

Yao Ming, Robin Williams and Howard Stern are the names that stick out. Most celebrities appreciate discretion. We found out that Howard had ordered a bike when we started getting calls from his fans saying how he was talking about his bike on the air, complaining that it was taking too long. But it wasn't entirely fair, because at the time, we hadn't even received the order from the bike shop.

The Waterford Diva, a "step through" frame for women. It uses sidepulls front and rear.

25. How locked into American-made bikes are you? Can you imagine a set of circumstances or a change in the environment that would have you seriously considering "making" Chinese carbon fiber bikes, for instance?

We're locked in. My roots in American bike building go back 110 years. I want to make bikes, not import them. I think America should make more things, not just farm them out. The last twenty years have been rough for American manufacturers. For decades, America took manufacturing for granted and now we don't make much anymore. Experts say our contribution to the world economy should come from our "intellectual property". I don't discount the value in that, but there's a lot you can learn from building it here rather than there. Manufacturing creates jobs, increases average pay and strengthens our national defense. People of every political stripe have a reason to increase our nation's manufacturing base.

26. What is Waterfords biggest frustration these days? What's holding you back or keeping things from running as smoothly as you'd like them to? I don't mean to imply that there are problems, but if somebody asked me the same, I'd have an answer, and I imagine every business owner can answer that question. So, what's your answer?

I'm not satisfied with anything about our business. You name it, we're not where we should be, but at least we're making progress. Every day has its small problems, and they make it hard to focus on the big ones. This year has been the supply of carbon forks, which, for the most part, are moving to China from the US.

27. Then why don't you make them here, and help the country as you go?

It's one thing to work in steel, but carbon is different entirely. It takes money to set it up initially, and it's not out of the question, but it won't happen overnight, or even in the next few years. We've got a full plate as it is.

Back to your question about frustrations, though, my biggest frustration has been poor information—whether orders, specs or statistics. Most of the time, our quality and delivery issues come from not having the right information to the right person at the right time. This year, we've placed a special focus on getting good information, and on time. That's the key to achieving everything else we need to accomplish.

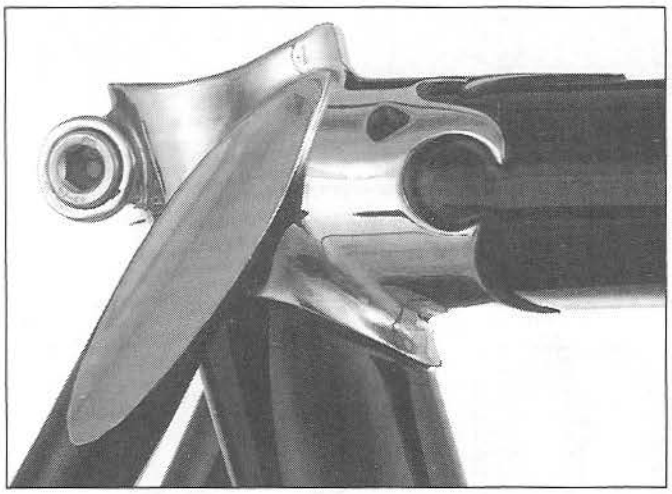
28. What's Waterford's strong point? Be as specific and concrete as you've ever been.

The best thing we have going for us is a really good, flexible and stable team with some of the best bike building talent in the world. Most people can work in most parts of the shop. We have three people who can TIG weld, but two of them can braze. We can shift painters to machinists, machinists to brazing and so on. What's more, everybody's been through their learning curve. We grew very quickly in the late '90s and brought in people more quickly than we could really train them. Now we're settled and committed.

29. How do you hire or recruit for blue-collar factory jobs in these times, when people in their early to mid-20s figure the world owes them a $45K starting salary and a killer benefits package?

We have a constant stream of people interested in joining our company, but it's hard to find the right combination. While it's great to have bike people, it's rare to find a cyclist who's committed to productivity and wants to live here, near Waterford. Every so often, we get a talented person who wants to join us and stay. As a strategy, growing from within remains the best way to develop the quality, long-term productive employees we need to serve our riders.

30. If somebody gave your business $500 thousand, what would you do with it?



A custom stainless lug, started out as a Pacenti. Nicely polished, beautifully carved. Good work.

That's a lot of money for a business our size. I'd be worried about the pressure to change what we are. If left to my own devices, I'd want to use it for better tools, more training, more testing, better information systems.

31. How many brazers do you have now? Will you tell us their names and histories?

Everyone in our fabrication shop performs at least some brazing. We have five people who can braze from start to finish. All but one were developed from within. They've all been working for us for at least four years, and we "divide and conquer" most of our production, so on any given frame, at least 8 people will have a direct hand in getting everything right. On most frames, the number is 10 or 11.

32. Is that an inherited approach from Schwinn? On high-end frames, it would seem to be a better idea to have each builder sign his or her frame, for the personal touch and the perception, at least, that if one person's responsible for it, they're going to be careful. On the other hand, I can see the benefits of this guy does this, that guy does that, too. Comment on that, and also on any fears you might have that if a builder developed a name for himself there, he might hang out his own shingle later, having learned the craft on your dollar. So, it's sort of a long multi-part question, but I think it's a good question, so please, please answer it.

There are lots of ways to build bikes. If I was a one man shop, I'd sign my frames. But we aren't a one person shop. When I say that we have many hands on the frame, I'm talking about hands that make a tremendous difference in the rider's satisfaction. Did we give you all the specs you asked for? Did we give you a good design? Did we cut and prep the tubes properly? Did we paint it right? Did it get packed right? In the case of a TIG-welded frame, the person who welds the frame is not typically the person who adds seat stays and the braze-ons. That's why it's Waterford or Gunnar whose name is on the frame. That being said, we do keep records on who builds what frames if we need to. I have thought about having everybody who worked on an order sign it but we could just as easily lose the impact of doing it when it's only one of 14 signatures on a card. Everybody takes a lot of pride in their work and pride in being part of Waterford, and the results speak for themselves.

Last year we built last year for Dennis Pontius, owner of Two Wheel Tango, a really nice shop in Ann Arbor, Michigan. I showed it to you at the trade show last year. To build it, we actually fabricated the lugs from stainless steel, then carved them to spec and then brazed them into the bike. We called on the virtuosity of Sean the welder as much as that of Dave the builder. Another Dave polishes like nobody else—and, I assure you, they've all tried. In the paint shop, the look depended almost more on Brian, who masked and unmasked the stainless work, as it did with the work of Eric, who actually painted it. Way too many people had to go over the top to make this project a success.

Yes, I have an occasional Walter Croll nightmare. Walter was the famous Minneapolis builder whose ex-apprentices spawned several custom brands in the twin cities area. Even going all the way back to the Paramount days, we've only had two people who ever built frames after they left us and even then only a couple frames a year at most.

33: Why do you think that is?

Well, nothing about the way we build bikes prepares people for what they need to do to build them by themselves. Our tooling is too industrial. We've developed hundreds of specialized fixtures and small piece parts through the years. Though a good frame builder doesn't need all this, we don't show people how to build without our tools.

Then there's all the not-frame-building work frame builders need to do to stay in business. Most builders don't like to paint bikes. They like even less to sell them, and nobody likes trying to collect money and pay bills. At Waterford they're spoiled by having comrades to talk to and a regular paycheck —things they lose quickly when they start their own business. We also hire people who like working on a team. I'm not even sure they can interbreed with the kind of people who like to work alone.

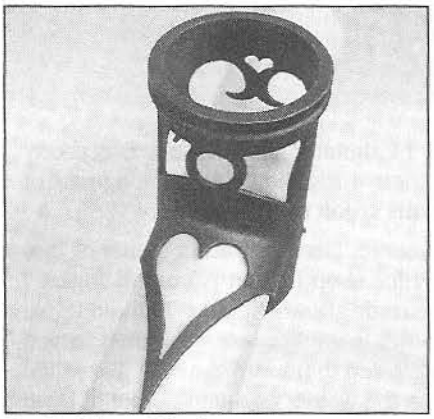
34: They might try now and then, though. Your bikes are so nice, why don't you put head badges on them?

It's been on the burner for some time. One of these days we'll get around to it.

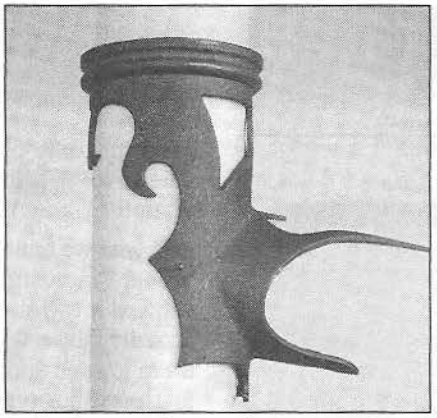
35: It's not so hard or expensive, and I'll bet you have 2,000 Waterford owners out there who'd be happy to spend $20 for a badge they could mount right over their decal. That would pay for the tooling. Just make them a hair larger, so the decal doesn't show.

That's a good point. I like your badges, not to mention the bikes and the culture you've developed around them. Thanks for the interview and best wishes for you, your family and Rivendell.

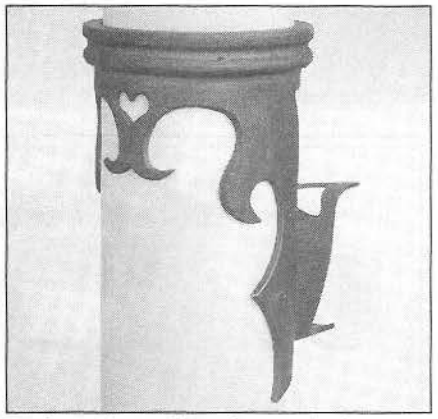
36: I get your drift and I'll drop the badges. Thanks for the talk, Richard. GP



Not bad from this view.

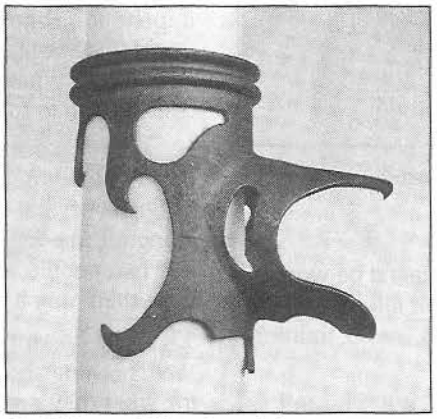


Bad. The top & bottom don't go together.

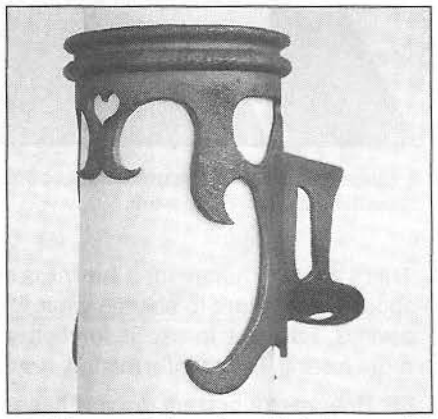


We kept the top front heart and wings.

Better, and I like the asymmetry.



Much better. Still awkward, but not *as*.



Much better, & the other side is better still.

The original top mixte lug, and then the actual one

One fellow described our mixte lugs as looking "like a pile of worms," due to the curly arms and general swirls. Oddly, he meant it as a compliment, which is how I took it.

Designing them wasn't easy, and there were a few false starts. The bottom head lug was the easiest.

The seat lug was easy, too. It's the most obviously different, because there's no top tube socket, and it has the seat post and binder. Seat lugs are two feet from head lugs, so they can get away with different details, which is good, because different details are inevitable.

The top head lug was the bugger. Extended head lugs have been a signature of our frames ever since 1995, and I didn't even consider not doing it on this lug. But most of our top head lugs have angles of 74 to 75-degrees, which combine with top tubes that slope up 1.5 to 2.5 degrees, and result in normal head tube angles of between 71 and 73.5 degrees. On the mixte there's no top tube, but there is a down-sloping diagonal tube ("lateral" tube, sometimes). The angle between it and the head tube is about 100 degrees, which give a whole new look to the lug. What it does is make the 15mm head tube extension look even taller, and ten times more awkward and disproportioned.

Since I wanted these lugs to be fancy, and the bottom head lug already was, it had to be fancied up. On paper, it didn't look so bad, but it's hard to get the full effect in two dimension. Over about 5 months, I approved the paper drawing, paid for the mold, and eventually received six samples, for final approval. I've never looked forward to any lugs more than this, and when I opened the box, I was aghast at how horrible it looked, and it was all my fault.

There are too many different things going on with it. The back of the extension looks nice, but it has a look that doesn't go with the worms in the other lugs. The side of the lug, just below the top, had a familiar look, but it's another detail that didn't go with the worms. With the 15mm extension, the top of the lug was way up there, and it was just too far down to the lower portion, and all that space had to be used well. You can't just not do anything, and yet, I couldn't come up with anything that looked good with the worms. I tried wormy fingers, but it was too much.

Then the obvious occurred to me, that the purpose of the extension wasn't necessary on a top-tube-less bike, since we could put the top head lug higher, without fear of a crotch-crowding top tube. So instead of a 15mm extension, I made it five, which squeezed out the trouble area, letting me just mimic the bottom head lug, and that was that. Since the new design was so radically different from the sample, Long Shen (the lugmaker) couldn't just modify the mold, but had to make a whole new one.

I like the new one. It's wormy and fancy, but compact and a good match with the bottom head lug.

Christopher Hoffer and the Bison: Update

Christopher Hoffer used to weigh 422 pounds, and he wanted to ride a bike. He's one of many bigger riders among our readership, and it got us thinking about the lack of bikes suitable for big riders. To make a long story short, so as not to repeat it for those who already know, we designed and had built (tig-welded) a bike based on the requirements of riders who weigh more than 350 pounds. It's shown here. We talked to Dwan Shepard at Co-Motion, and he recognized the need, and agreed to make a production model. Our original name was Buffalo, but in the Pacific NW that has other connotations, so Dwan suggested Bison. But then some folks are saying "bison" is derogatory to big riders, because it has fat connotations. We surveyed more than 100 people, asking them to list the three adjectives that best describe a bison, and lo & behold, we got things like "fast," "powerful," "brown," and "hairy," but nothing close to fat. So Co-Motion is reconsidering "Bison," but has yet to decide once and for all. Chris Hoffer, meanwhile, has lost more than 150 pounds, and now hardly even needs a special bike. He's written two columns in recent *Rivendell Readers*, and here is a third. For more information on the Bison—or whatever ultra-safe name it ends up being, email dwan@co-motion.com.

Chris Hoffer's Third Report

I had been riding a friend's bike around one of Minneapolis' lakes. Minneapolis is blessed with a chain of lakes in its urban core with dedicated bike and walking paths which permit one to ride for miles amidst the pulse of the city. It is lovely. During summer, the lakes become the center of life, and it is a rare occasion when one doesn't come across friends and acquaintances. This day was no different, as I spied an old pal I hadn't seen for over a year cruising by in a convertible on the adjacent street. I yelled out a greeting and gave a wave.

Nothing.

It occurred to me that maybe my sunglasses obscured who I was, so I gave what passes for me as a burst of speed, and caught him at a nearby stop sign. After pulling off the sunglasses, I renewed my greeting, and received a flicker of recognition, followed by a smile when full identification occurred. "Hey man, I didn't recognize you, you look great! I thought you were just some guy on a bike".

When I was discharged thirteen months ago from the cardiac center weighing 422 pounds, there was no way I could have just been some guy on a bike. At 422 pounds one *never* blends into the scene, one *never* fails to be noticed. Second looks often gave way to third looks. But the important thing was that I was on a bike, specifically the prototype Buffalo/Bison - and that made the difference. These days, at 6'2" and 264 pounds, I am still hardly a typical cyclist, but I can go riding and not get any looks. I love that.

"I thought you were just some guy on a bike." It was one of the nicest things anyone had ever said to me. I love being just some guy on a bike. —Christopher Hoffer

A Running Shoe Story

by Christopher McDougall

UNTIL he met a reclusive tribe of near-mythical athletes at the bottom of a Mexican canyon, Micah True could never figure out why his running injuries got worse as his running shoes got better. Then, the Tarahumara Indians taught him a lesson that even Nike is now starting to embrace: the best shoe may be no shoe at all.

Mr. True, 53, from Nederland, Colo., wasn't the only one baffled by the injury mystery. For years kinesiology professors, physical therapists and athletic-shoe designers have been puzzling over the same paradox: if running shoe protection and cushioning have improved, why haven't injuries among joggers decreased?

"The technological advancements over the past 30 years have been amazing," said Dr. Irene Davis, the director of the Running Injury Clinic at the University of Delaware. "We've seen tremendous innovations in motion control and cushioning. And yet the remedies don't seem to defeat the ailments."

Since the running boom of the '70s, giants like Nike, Adidas and New Balance have rivaled Silicon Valley for speed of R. & D. rollout, releasing improved products nearly every six months. One shoe, the Adidas 1, even has microprocessors that analyze foot impact and adjust cushioning with each stride. New Balance has a motion-control shoe so finely engineered it costs $199.99.

Still, 65 percent to 80 percent of all runners — joggers and elite marathoners alike — are injured in an average year, according to Dr. Davis. Aching Achilles tendons, sore knees, inflamed arches and hobbling plantar fascia pain are as common today as they were when boot camp grunts were jogging in canvas Converse "Chuckies."

"Since the first real studies were done in the late 70's, Achilles complaints have actually increased by about 10 percent, while plantar fasciitis has remained the same," said Dr. Stephen Pribut, the president of the American Academy of Podiatric Sports Medicine.

And so Mr. True began to wonder, does it even matter what footwear runners use? Or could protective shoes be contributing to the problems they're meant to prevent?

Mr. True had been hampered by repeated injuries while competing in ultramarathons in the early 90's. While fighting for first place in the Leadville Trail 100 Ultramarathon, a grueling 100-mile course over steep, rocky trails, he suffered a stress fracture in his tibia. It was there that Mr. True met the Tarahumara runners, who had traveled from Mexico to win four of the top five places while wearing homemade huaraches fashioned from strips of old tires.

Hoping to discover their secret, Mr. True followed the Tarahumara back to their canyon-bottom home. There they taught him to run lightly on the front of his foot instead of heavily on his heel. He experimented with running on his own homemade huaraches before trying the Bite running sandal, with its deft mix of ancient sparseness and modern cushioning. Eleven years have passed since Mr. True changed his technique and footwear, and even though he now regularly runs 40 miles over hazardous terrain, he has not had an injury since.

"If my gringo feet could handle it, going barefoot would be even better," he said.

During the past decade two barefoot-style training methods for runners have been developed based on the same principle: that legs, not shoes, are the best shock absorbers. That is, you land on your forefoot, instead of your heel, and paw back.

Dr. Nicholas Romanov, a sports physiologist in Naples, Fla., created what he calls the Pose Method, and Danny Dreyer, a running coach in San Francisco, started a program known as ChiRunning, both of which have already won legions of disciples among joggers, trainers and triathletes. Essentially these programs teach runners something they thought they knew: how to run.

"The problem is, the fancy running shoes have allowed us to develop lazy feet," Dr. Romanov said. Pose runners, consequently, prefer the thin-soled Puma H. Street, which is actually a casual shoe.

Surprisingly, even Nike now sees the sense of running "shoeless." Just one year after releasing its most structured shoe ever — the Air Max 2004, with airbags and a motion-control footbridge — the company has switched tack by offering the Nike Free 5.0, a shoe it claims will "re-evolutionize" running by enabling people to run as if they were barefoot. With its gauzy heel, stockinglike upper, and thin sole, the Free 5.0 looks more like a slipper than a sneaker.

"We found pockets of people all over the globe who are still running barefoot, and what you find is that during propulsion and landing they have far more range of motion in the foot and engage more of the toe," said Jeff Pisciotta, the senior researcher at the

Nike Sports Research Lab in Beaverton, Ore., who headed the Nike Free project. "Their feet flex, spread, splay and grip the surface, meaning they pronate less and distribute the pressure over more of the foot."

Their feet, in other words, get a workout with every step.

Nike tested the theory by having a group of students at the German Sports University in Cologne run warm-ups for six months in the Frees. These students showed a significant increase in foot strength and flexibility compared with those who ran in their regular shoes, Mr. Pisciotta said. Presumably, he said, "a stronger, healthier foot means less chance of injury."

During the past decade two barefoot-style training methods for runners have been developed based on the same principle: that legs, not shoes, are the best shock absorbers.

The idea for the Free was born after two Nike researchers, visiting the Stanford track team, found that their sponsored runners ran sprints barefoot. Vin Lananna, their coach, had encouraged them to take off their shoes. "I felt that as shoes became more elaborate and intricate, the feet were getting weaker," said Mr. Lananna, who is now director of athletics at Oberlin College in Ohio. Mr. Lananna had always outfitted his team in Nike's cheapest and least structured shoe. The one time he experimented with Nike's best, his team was plagued by plantar fasciitis and Achilles problems. He now likes his runners to use the Frees.

Paula Radcliffe, the world record holder in the women's marathon, also has converted to the bare-is-best philosophy. Even though the Free 4.0 will not reach the market for six months, Ms. Radcliffe, of London, has secured a few prototypes and is wearing them for one third of her 130 weekly miles.

"The deconditioned musculature of the foot is the greatest issue leading to injury," said Dr. Gerard Hartmann, an exercise physiologist in Limerick, Ireland, who works with Ms. Radcliffe and who was consulted by Nike on the Free's design. "Only 2 to 3 percent of the population has real biomechanical problems, so we're basically creating new problems by treating ones that don't exist," he said.

But the key to successful barefoot-style running, Dr. Hartmann stressed, is learning how. Nike, he said, has had an obligation to re-educate runners, since its technology may have contributed to sloppy mechanics.

"We have discussed expanding the instructional role," said Mr. Pisciotta from Nike. "But biomechanics are so personal." All runners must find people who can tell them "what can help and what can hurt."

Dr. Davis agreed that "just slapping special shoes on your feet won't help." She demonstrated by using me as a guinea pig for a series of diagnostic tests. At 43, I have five marathons to my credit and do about 40 average weekly miles. I know how to run — or I thought I did.

First I ran in bare feet, then in the Nike Free 5.0 and finally in Nike's most popular cushioned shoe, the Pegasus. The amount of impact, Dr. Davis found, was significantly higher during the Free and barefoot sessions. But slow-motion video replay revealed that I was landing on my heel then slapping down my forefoot. My right foot was twisting outward, while my left knee was dipping to the right. These irregularities were nearly invisible, but severe enough to aggravate my twingey Achilles.

By learning to land on my midfoot, I could correct these problems, Dr. Davis said. But I should be careful, she warned, because tinkering with a new gait can suddenly load the heel and Achilles with unaccustomed stress and cause a whole new set of injuries.

The Nike Free "should be the first shoe sold with an instructional DVD," Dr. Hartmann said. "You have to respect that this shoe can revolutionize the way people run, and no revolution comes without its casualties."

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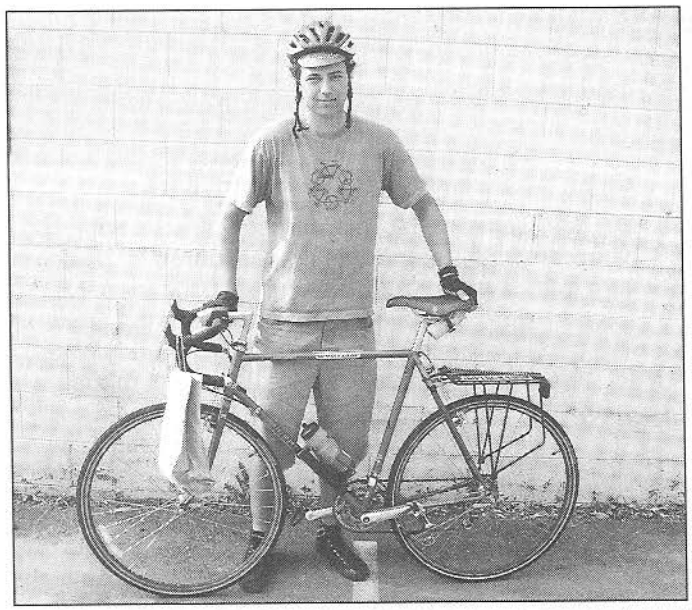
Comments & Resources

If you were to jump off a 3-foot rock and land on the street, would you land on your heel? Even if you had the fanciest running shoes out there? Not if you're sane, yet that's how people run. Lighties can get away with it, but if you're not a gangly flyweight, and you'd like to run and not absolutely hate it, check out these sites:

Posetech.com Chirunning.com



Julian Glasser, youngest member

When we see a high-schooler here, we suspect somebody's parent is nearby. But recently it was Julian, who came alone, and on a lugged steel bike. Naturally we had to interrogate.

1. How old are you? What grade are you going into? And how long have you been a member here?

I am 14, I'll be a freshman this September, and I've been a Rivendell member for about two weeks.

2. How did you find out about Rivendell?

I Googled "lugged steel" or something like that.

3. Are you out of touch with normal teenager things?

In terms of the bikes I ride I am out of touch with other teenagers however I enjoy hanging out, listening to music and going to movies as much any other teenager would.

4. What other kinds of things do you like that are typical for somebody your age? Hip-hop, rap, text messaging, cell phones that take pictures, video games, cars, Hilary Duff, low baggy pants with huge pockets and dangling chains? Brand new, flat-brimmed ball caps worn sideways with the price tag left on? Baggy sweatshirts in hot weather? Oversized basketball shoes laced loosely and not tied?

Well, I'm not very much into any of those commercial trends, most people I know aren't.

5. You have seen Napoleon Dynamite, haven't you? I loved that movie. Did you like it?

Yeah, that film was hilarious, it supplied much of my vocabulary for the two or so months after it came out.

6. What attracted you to this way of bicycles?

A good lugged steel bike just feels so much more solid and it lasts longer than you'll ever need it too. It is also ideal for the somewhat rough roads where I live.

7. Tell us about your bike.

I bought an early 80's Miyata "Gran Touring" frameset from The Recyclery in San Rafael. I assembled it with appropriate parts. It has old Dia-Compe cantilevers and Dia-Compe 204Q brake levers recently purchased from Rivendell, a Shimano drive with Sugino XD cranks, a Nitto stem, front and rear racks and although I'm not traveling with them, I have Honjo polished Aluminum fenders. Many of the parts are recycled.

8. What bikes have you owned in your life, so far?

I grew up riding various aluminum framed bikes. My first nice lugged steel bike was a Bianchi road bike that I found at the Alemany Flea Market in SF. I've been for the most part riding Lugged steel road/touring bikes ever since.

9. How did you learn to work on bikes?

I learned while tinkering with my own bikes. Then, after I moved up to Orcas Island, I got a job at Wildlife Cycles, the local bike shop, where they really helped me hone my skills. The only thing I haven't done is wheel building.

10. You're about 6 feet already. How tall will you get?

I get this question a lot, I'm not sure, maybe 6-2.

11. What subjects and books do you like?

My favorites are social studies and art. I am reading *The Hobbit* as a summer reading assignment, next is *A People's History of the United States.*

12. What would be a dream vacation for you?

I always wanted to go somewhere in Africa.

13. Brothers and sisters?

I have one sister, Gemma. We get along and both like art.

14. Do your parents ride? Do they like that you do?

My parents are good people. They support my cycling interests but are not interested in bikes themselves.

15. How far are you from school, and do you ride there?

My school is 8 miles away and I ride there most of the time.

16. If you could have any job in the world and had the education and background for it, what and where would it be?

It's an interesting question but I haven't thought about it.

17. Now, if you had to bet on what you'll end up doing when you're 30, what would you bet on?

I just take things as they come, It's hard to predict how I will evolve.

18. Well, I guess I keep forgetting you're only 14, but at some point you'll be wanting to think about that. Maybe later, when you're 6-2. Do you think it's possible for Rivendell to appeal to a younger audience without selling our soul to the devil?

Absolutely, however I keep getting the impression that cycling as a whole appeals to a slightly more mature crowd.

19. You mean "old."

The Green Cinelli Makeover

As I understand it, Cino Cinelli made bikes in the same sense that we do; he designed them and had utter control down to the last and tiniest detail, but other people did the brazing. I'm not saying he never brazed a frame; I'm just saying that other people built frames for him more often than he did it himself. That falls into the "neither here nor there" category.

Cinelli frames have always been sought after and rare, although never more rare than they are now, and never more sought after than they were in the '70s, when the Bike Boom hit America, and enthusiasts and racers of a certain means sought out the best from Europe, and Cinelli was on top of the heap. There were other exotic Italian bikes—Masi, Colnago, and DeRosa—but right or wrong, Cinelli always seemed a hair more special, at least to me. And, from what I've heard from builders who've repaired many of the old Italian frames, Cinelli frames were at or near the top. I remember Tom Ritchey saying that, and when Tom Ritchey pays a compliment to another builder, you can bet it's real.

Member Jeremy Johnstone came by the shop and brang his Cinelli with him, and although by now, at this stage in the game, I've seen too many Cinelli bikes to be impressed or even more than mildly interested, I'd never seen one like this, and was much more than mildly interested in it, because it wasn't what I'd expected.

The classic Cinelli road bike is known for its signature forged, fully sloping fork crown, and the crown on this bike wasn't that one. It was a Fisher sand-cast, semi-sloping crown (almost flat), which came before the fully sloping one. It was chromed, and chroming a sand-cast crown means probably at least 3 hours prepping the crown alone, and that's after you've done several and have it down.

The decal on the seat tube identifies this as a "Model B," which sounds not as good as Cinelli's best ("Super Corsa"), but to my eyes I saw nothing "B" about it. I didn't check it for alignment or measure it out to see if it met the spec (which I didn't have, anyway); but there were no outward signs of short-cuts in the frame, and I've seen lots of famous Italian frames that were way sloppier.

The green on this bike is the best green I've seen in a long time, maybe ever. I don't like what chrome does to metal, so we don't allow it on our bikes, but the chromed crown on the green fork looks great, at least to me. Nobody could not like it, at least.

One issue not addressed, and it's something to think about if you're the guy riding the bike (Jeremy), is how much the rust has eaten away the steel. There's no telling, but a shot of FrameSaver or Boeshield wouldn't hurt, and I think we did that before messing with the bike. We did mess with it, but only according to Jeremy's wishes. Personally, I'd have taken it further, but it's a whole lot more rideable now than it was before the makeover.

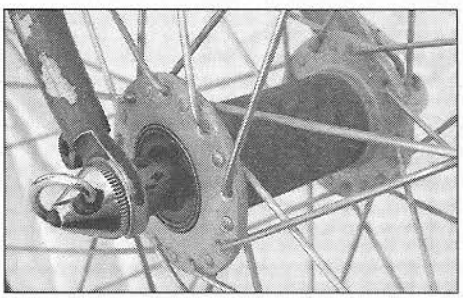
Photos on the next two pages.

What Curt Goodrich says

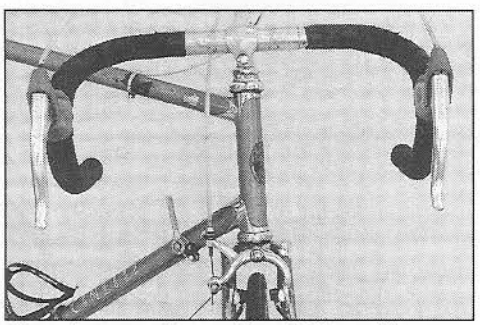
I want customers to ride the bikes I build for them. It doesn't matter if they abuse them or polish them after every ride, so long as they ride them. I don't know how long the bike should be ridden—probably until you no longer can or want to ride it. No bike should be retired, at least not completely. I have friends who have collections of old bikes they've restored, and after they restored them, they never rode them again. I also have friends who have perfectly good old bikes that they ride only on sunny days. Both ways are valid, but I relate more to the "ride it if you've got it" group. As for Jeremy's Cinelli, I say do whatever it takes to get it back on the road. I'm not advocating a full restoration, or the other extreme—chopping it up and turning it into a recumbent. Just put on some parts that'll make it fun to ride and work right. Keep the original parts in a box if someday you want to restore it.—Curt Goodrich (Curt is Rivendell's custom frame builder)

Here's how the bike came to us. It wasn't totally original (Phil hubs, for instance), but the set-up was pretty much for roads only, and not too hilly ones at that. The low handlebars and forward saddle put too much weight on Jeremy's hands and arms. Note the steep bar ramp.

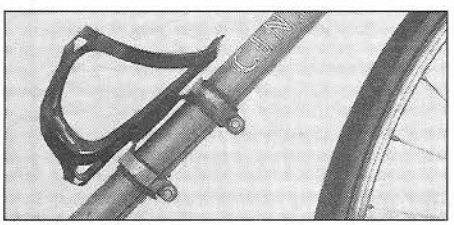
The Green Cinelli Before



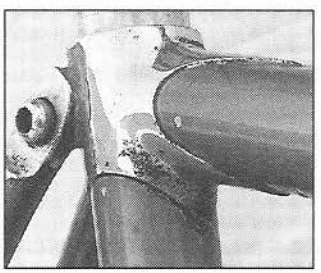
Older Phil hubs had stainless steel centers that weren't all that stainless. That's okay. We actually like this look, the beausage and all. The hub is still smooth as the dickens.



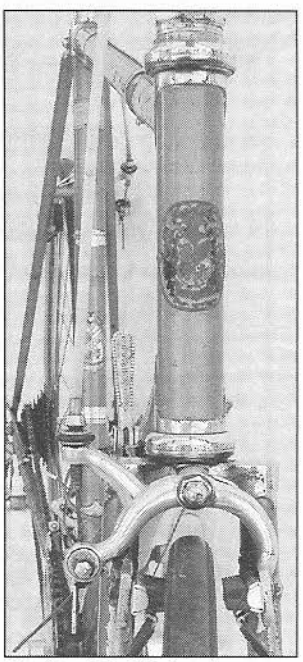
These bars are 40cm wide, which...well, we replaced them with 46s. Also, the Noodle bars have a flatter, more comfortable ramp.



You'll see in the next-page photo that we replaced this jet-setter with a more classic cage. The downtube was wrapped in leather to protect it from the metal clamp. The leather held water & caused a lotta rust.



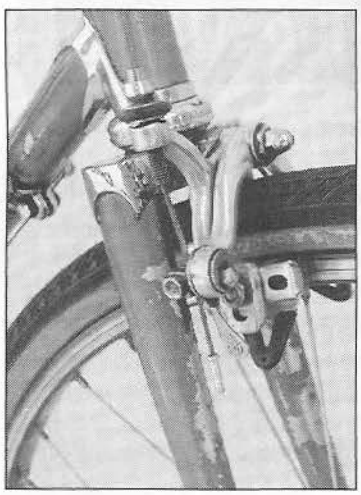
We didn't change this. This is just a close-up of Cinelli's original seat lug, with the binder bolt going through the seat stays. Even without decals and head badge, this would identify the bike as a Cinelli. (Or a Windsor, the famous Cinelli copy from south o-th'-border.



The head badge has tarnished over the years, no big deal. Good tire clearance made fitting fatter tires easy.

The madeover bike. We put on a Technomic stem and 46cm wide Noodle bars, and that made a huge difference in comfort. See how the new bars are about the same height as the saddle. We also scooched the saddle back. Note the flat ramp behind the brake levers.

The Green Cinelli After



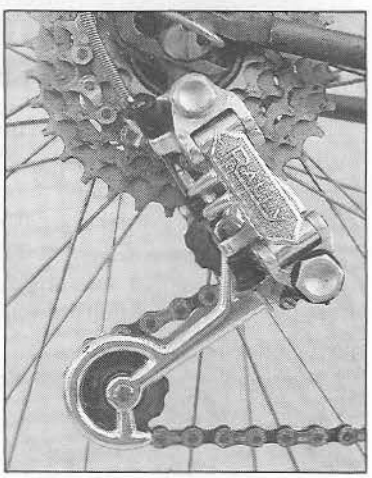
Fatter, cushier tires

Typical of older road frames, it had clearance for fat road tires, and fat road tires are more comfortable and versatile and made sense for Jeremy's riding, so we put them on.

Note also the chipped paint. In those days, a chromed fork crown meant a whole chromed fork. The whole frame is chromed beneath the paint. It's easier than spot-chroming.

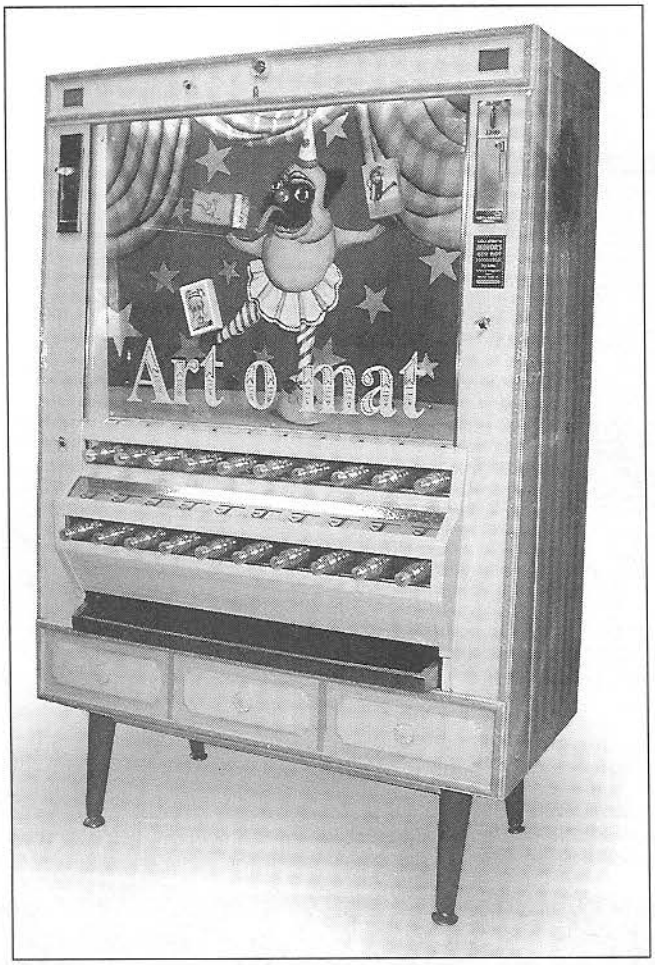
Lower Gears

Originally it was a racing bike, but Jeremy doesn't race and rides it in hilly country, so a 32t freewheel made sense. He got the Campy Rally rear derailleur on eBay or something, because the original won't shift to 32t. It doesn't shift as well as a Shimano, but it shifts plenty good enough.

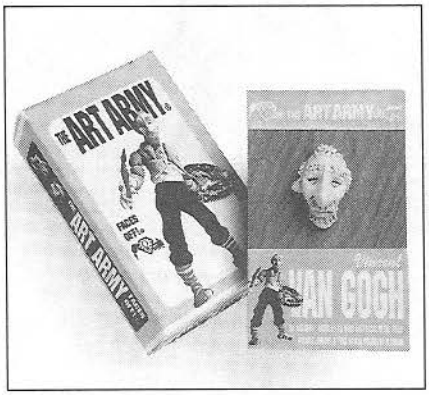


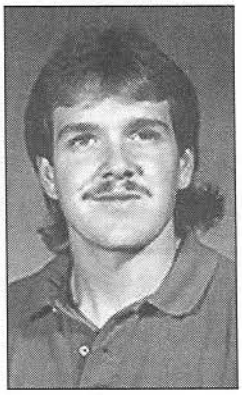
What Jeremy says

The difference is incredible. Every time I get on it I notice what a great riding position I have now, with the wider arm stance and higher bars. I can climb a lot better in the steep hills and canyons around here, and the larger volume tires soften the ride to a Rolls-Royce smoothness. I ride it a lot more than I did before. Next for me is to take it on an S24O soon!



In *Mind Your Own Business* we profile a member's small business. This time, it's Art-o-Mat, owned and operated by member Clark Whittington. Art-o-Mat recycles and makes over cigarette machines, fills them with art that fits in a compatibly sized box, then sells the art at various sites around the country. It's kind of neat.





Left: This machine is in Lambertville, New Jersey.

Above: Some kind of Van Gogh clay puppet mask, by Mike Leavitt, of Seattle. It's yours for $5. The artist gets half. The other goes to the machine leaser.

Above right: Clark of Art-o-Mat, a few years back.

MYOB: Clark Whittington's *Art-o-Mat*

1. Where do you get the machines?

When cigarette machines were banned in 1997, many vending companies pulled them from their route quickly. One vending company in North Carolina gave me a machine and said "I have 100 more, when you're ready". I think they got a tax credit if their machines were "retired" within a certain window of time. Many were sold as scrap metal.

2. How many machines do you have?

We are up to about 81 right now. But more are coming.

3. How much work refurbishing? And who does it?

It's a lot of work, since each machine is customized for the leaser. They're dismantled, rewired, modified, and most are painted locally by Phil Webster, a local fellow who generally paints cars, but understands my vision and goes along. Sometimes, active Art-o-Mat artists help create machines.

4. Who leases the machines? Where are they?

Museums and art galleries, food shops, music shops, cafes, children's hospitals—anybody with a place to put it who wants a unique vending machine. There's one in a bike shop, too.

5. Where do you get the art?

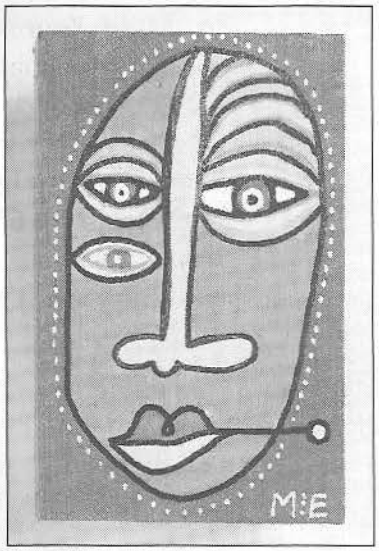
Mostly by word of mouth, but, once we posted our website, artists stepped up from around the world. Right now, we have about 400 artists from 10 countries.

6. Can a machine-leaser request certain art?

Sure. But since all of the art is limited edition, the art can cycle through the project fairly quickly and we need to substitute their requested artists. Our hosts (as I call them) usually understand the nature of limited- edition or one-of-a-kind art, and like the variety.

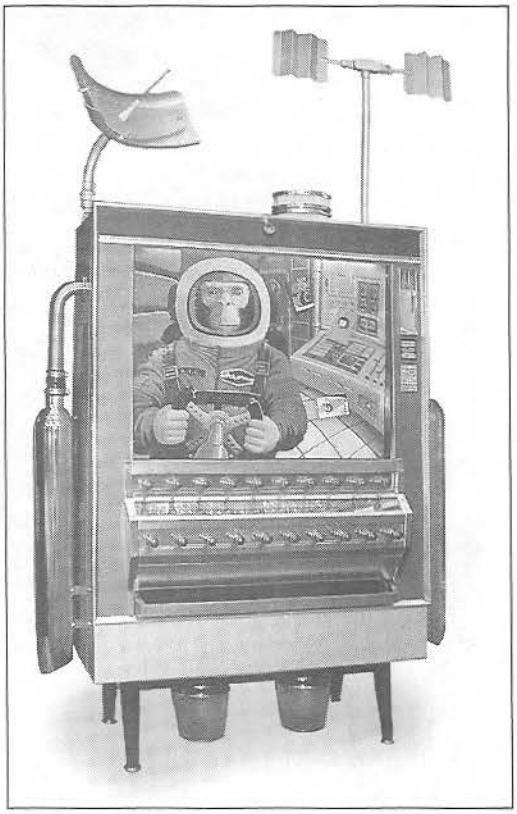
7. How many pieces of art sell per machine per month, typically?

Anywhere from 0-200, depending on the venue and time of year. One of our hosts sold 3000 works in 2003. our New York and Chicago machines do the best. but, our machine at the Crocker Art Museum in Sacramento has been a pleasant surprise. I didn't understand why, until I saw people waiting for the doors of the museum to open



Left: This machine is in San Francisco. Specifically, in the RayKo Photoworks.

Top: Picasso-type voodoo mask wards off evil spirits. By Melissa Earley.



Right: Space Monkey machine, in Portland, ME.

one saturday morning. Foot traffic helps.

8. How does an artist get to do this?

See the guidelines section posted on www.artomat.org. We need art!

9. Do you ever reject work?

It usually doesn't come to that. We have standards, but the results from an afternoon at Kinko's won't fly here. The art pieces cost $5, and I know that's not much, but for $5, we expect a serious, resolved approach and a valid effort. It's art, not junk.

10. Do your artists follow through, or are they flakes?

In the last few years, some artists have been getting commissions and solo shows through their Art-o-Mat exposure, and that helps with artist retention. But part of the joy of working with artists is the flake factor.

11. You're making a living at this? Since when?

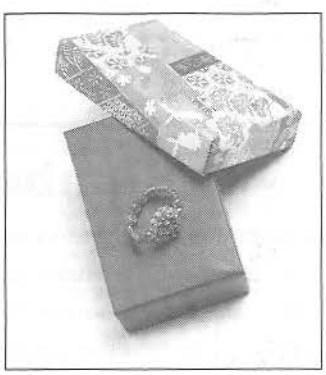
I made a small profit in 2004. Maybe seven years to get in the black is not so bad.

12. Do you approach venues or do they approach you? For placing the machines...

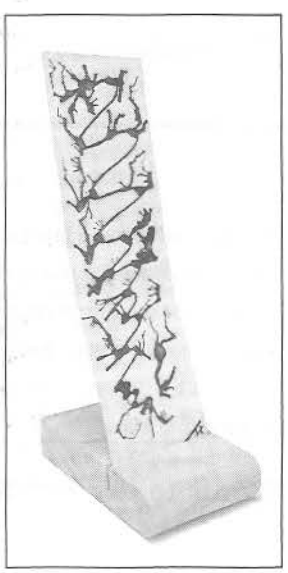
When I approach potential venues, they resist. But, when potential hosts find out about Art-o-Mat and inquire, they usually understand the community outreach benefits of our project and it is not a hard sell.

13. What's your personal/professional work history? How did you end up doing this?

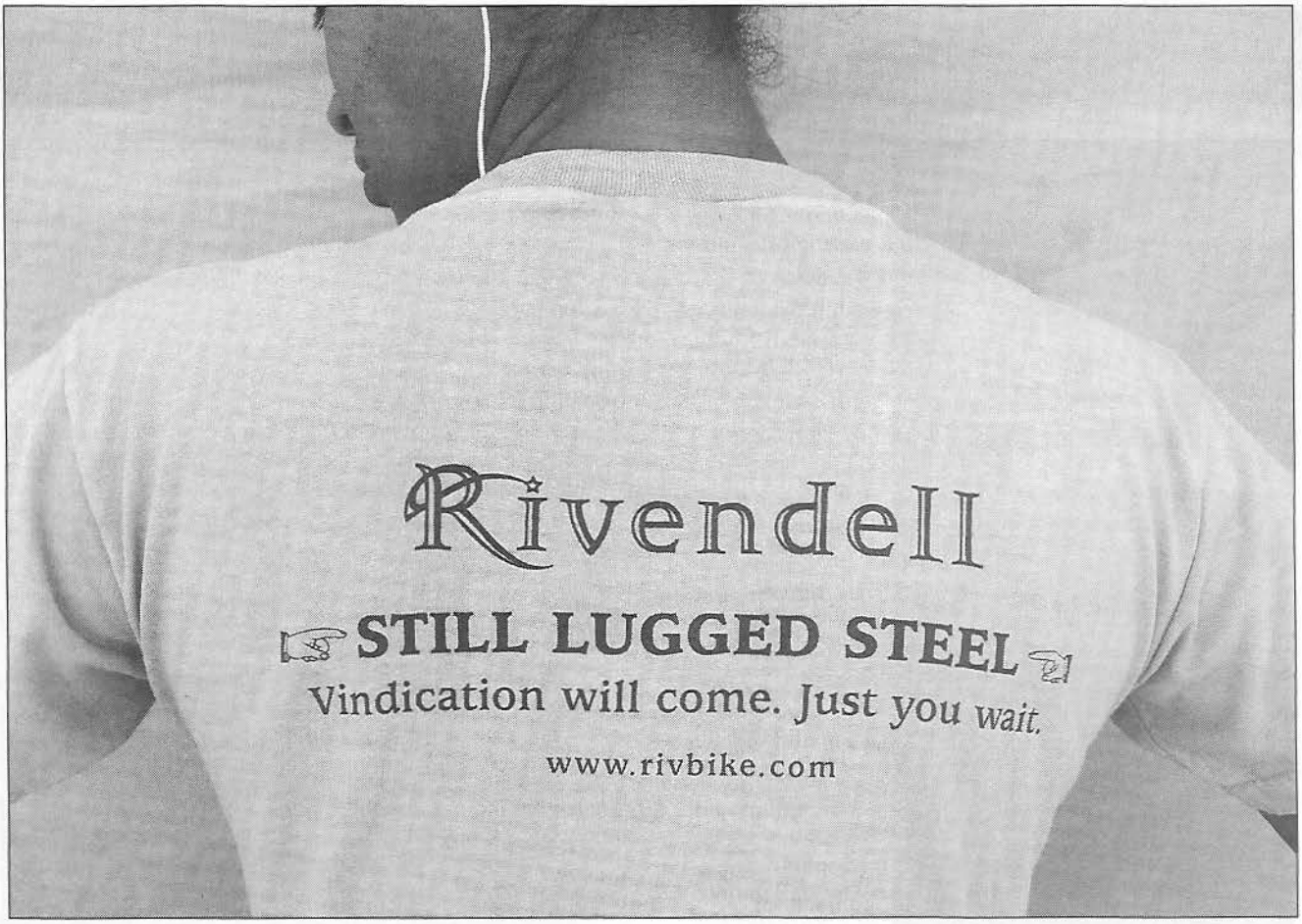
I went to school for graphic design with a minor in marketing and worked as a production artist in various ad agencies. But I was always more interested in painting and spent all of my time making art after 5:00 pm. This was in the late '80s and early '90s, and it was not common for people to do both. So my worlds remained separate until Art-o-Mat came along and merged art, design and marketing for me. I went into freelancing, but went full-time with Art-o-Mat in 2003.



Top: Art-o-Mat's top-seller, a ring. made by Naoko Higashi of Nara, Japan. Five bucks for a hand-made ring, not bad.



Right: Fold-out inky art with genuine wooden base, made by Steve Upton, of Pickering, OH.



It's not mean, it's just kind of fun. But it *is* true.

We still offer the monkey shirt, and it's been a huge seller, so we got cocky and came out with this one. Both shirts are made in the U.S. and are dyed with clay and/or root & herb squeezin's down in Louisiana territory. They're washed and pre-shrunk, but as always, buy big if you likem loose. Price is $20 each. Color is light, faded greyish green with blue ink. Part numbers are below. Short sleeves.

Order by mail, phone (1-800-345-3918) or online at rivbike.com

Vindication will come SS T-shirt: S 22-571 M: 22-572 L: 22-573 XL: 22-574 XXL: 22-575

Member Coupon

This is worth $10 on any faxed-in order of $100 or more, not including an SS Superlight T for $30. You can order one of those, but without it, the order still has to come to $100. If faxing is a hassle and you'd rather order online, you can do that by putting your customer number in the comments box, with your order. You can use this coupon by phone, but then it's worth only $5, which is still not nothing, just not as much. You can't apply it to an order that was sent out yesterday or last week. We already got that money.

Name _____ Member No. _____

Words to live by? We're all ears, figuratively speaking. Keep it short, write below:

_____

In Velo Veritas

by Maynard Hershon

In the late '80s or thereabouts I wrote a piece for California Bicyclist, a free monthly magazine, about waving or saying hi to fellow cyclists you encountered on the road.

I can't understand, I wrote, why some folks don't say hi. Are they so absorbed in their workout or so intent on avoiding glass or potholes that they just don't see other riders? Does their cycling sound like fun?

Or are they, I asked, so status-conscious they won't wave at anyone but Greg LeMond or Lon Haldeman?

It's pretty much a sure thing, by the way, that when you wave at Greg or Lon, you're responding to a wave and greeting from one of them. Those guys say hi.

I was not merely trying to write provocatively. Sincere in my puzzlement, I couldn't imagine why one rider wouldn't acknowledge another, especially on a lonely road where he or she might only see one other cyclist for miles. Why not say hi?

At the time I wondered if anyone cared but me. Is anyone else concerned about cyclists saying hi? California Bicyclist's editors said they got record amounts of mail about that piece, so people did after all care.

A column about waving wouldn't elicit much mail these days, would it? Waving is a non-issue. Does anyone notice or wonder or write about cyclists saying hi? I don't think so. No one cares. I'm sure we did care, back when.

We still felt we were a fraternity. There were not quite so many of us. More of us had suffered through the old days of primitive bikes, equipment and clothing. There was no bike racing on TV and not much coverage in Bicycling Magazine.

Non-riders still reacted in shock to hearing that a bicycle could cost over $200.

We wore lycra and Oakleys and had Avocet cyclometers and more rear cogs than ever, but we were still misfits and freaks hanging out or working part-time in poorly lit bike shops. We were cycling true-believers, not just athletes who'd chosen the bicycle.

We felt that the world would be an incomparably better place if everyone rode a bike. I feel good about writing that sentence, even knowing how dated and utopian it sounds.

We were leftist in our politics, environmentalist in our sympathies and mostly useless in ball sports or team sports. Few of us had any money; those who did were self-conscious about it, never ostentatious. People who could afford to do so bought nice bikes and cool cycling clothing, but cyclists did not covet Cadillacs.

No one drove to local rides. We drove to out-of-town centuries or races in our VWs and Hondas, not in wasteful vehicles like the ones that crowded us on our suburban rides.

We scorned emblems of square success. Until Greg LeMond revealed that he loved golf, I'd never met a golfer-cyclist. We belonged to bike clubs not country clubs. Mainstreamers wondered about us just as Dave Stoller's parents wondered about him in Breaking Away a decade earlier.

Obviously, the above observations are generalizations. There were exceptions but they were few. We were a pretty homogenous bunch. Collectively, we were cycling culture in the closing years of a golden age.

We flocked together or at least greeted our fellow freaks in passing, with a hello or wave. Not waving was a violation, or so it seemed to many of us.

I see more cyclists now than ever. Usually they're coming in the other direction; I pass fewer and fewer as the years go by. When I do roll by someone even slower than me, I give 'em a little wave or greeting. Passing another rider in silence has always seemed rude to me. I wave or say hi.

More and more often, they don't respond. I mean cyclists with clothing like mine, bikes like mine, helmets like mine and riding positions like mine. Despite all that, despite everything we evidently have in common, they elect not to wave.

Always gives me a stab of sadness. I think: Another nail in the coffin of cycling culture.

I'm not saying it's all bad, y'know, cycling becoming mainstream. It's different but it's not all bad. Then again, it's not all good.

There are lots of us now, and our generation has sent a hero or two up the pop charts. So we see hours of cycling on TV. We see reams of print coverage in papers and magazines from the US, UK and Australia. We choose from hundreds of cycling web sites.

We're making it possible for Trek, Specialized, Cannondale and a host of other outfits including Rivendell to thrive making bikes. We're supporting big-box bike shops and hundreds of smaller shops at levels they would never have imagined. There are more craftsman frame-builders and painters than ever before.

Lots of cool people, many with the same impossibly utopian ideals they had years ago, can make a living in the bike business. Cycling – as seen on TV.

Cycling is huge in the age of Lance Armstrong and Phil Liggett and twenty companies taking cycle-touring groups to Tuscany. Merlin, Seven, Litespeed and IF all survive, all serving the same consumers: a guy and his wife who're on tour in Tuscany.

They love cycling, that guy and his lovely wife. They both signed up with Carmichael Training Systems. They bought Dura-Ace triple groups for the two carbon solos and the tandem. There's a Thule rack on the Audi roof. They record the Tour and catch up when they can on their wall-size TV. They support their bike shop and three online catalogs.

Look around. Those folks are cycling. Theirs is the dollar that matters. Their consumer preferences are the ones that count. Their choices make or break bike-biz heavies.

They buy Colnagos and Rivendells and Assos clothing. They pay the wages of first-rate bike shop mechanics. Thank God for them, they are the YES answer to all of cycling's questions, except one – one that probably matters only to me.

Do they say hi?

Cycling culture, our culture, is dead. Long live what we have. Wave when you see me on the road. Or not.

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