

THE RIVENDELL READER • ISSUE 3 VOLUME 1

## THE RIVENDELL READER, NUMBER THREE

It used to be that if you wanted to buy a new part you picked from eight or nine brands from Italy, France, Japan, Switzerland, Spain, and sometimes the United States. Campagnolo, Shimano, Zeus, and Edco supplied whole groups, and there were dozens of smaller parts makers specializing in their own widgets. Sometimes the specialists would band together and offer complete groups under one of their names or a new name altogether. SunTour, for example, had D.I.D. chains, MKS pedals, Dia-Compe or Polygon brakes, Sugino cranks, and Hatta headsets. The Spidel group from France was a cooperative effort of Maillard, Stronglight, Simplex, and maybe somebody else I can't think of this minute. There were even companies who made only one or two parts, but very good ones.

Diversity in the bike parts business is good for the same reason it's good in an ecosystem or any community. Different companies contribute different things, each has its specialties, some go after the masses, some go after the pickies, and the whole shebang is healthier as a result. Small companies can do some things better than big companies, and more important than that, they can do some things that big companies (which have a huge empire to support and therefore work with economies of scale) can't do, or won't do.

It's not easy to be big. You invest millions into machinery that must run fourteen hours a day six days a week so it will pay for itself in five years, not ten, when a whole new technology can make whatever it is you're making obsolete. Your production projections have to be dead on, because a 5 percent miss either way costs too much. In order to ensure sales of those parts you've got to eliminate competition, and one way to do that is to make your parts incompatible with your competitors' parts.

Indexing is an example. On one hand, it does make brainless shifts easier, and that makes the whole act of riding a bike democratic. That is good for the sport as a whole, and good for a whole lot of people.

But indexing opened the door to dedicated parts—parts which are designed to work only with certain other parts, generally in the same group, by the same maker, and things haven't been the same since. You can say "That's for sure, things have improved tremendously!" and that is the safe, common, politically correct response.

Such a response ignores a whole lot of details, though, and if you're going to ignore details, then just go away and stay away. Details are everything, all the time, in anything, no exceptions. This is going to be a grumpy editorial, I can just feel it.

When shifting and braking are integrated into the same bike part, the maker is assured of selling just as many shifters as brake levers. Shifting and braking are two separate functions, and a good case can be made for keeping the parts separate. STI and ERGO brake shifting work so well, but neither came about by user demand. Users may have muttered something to the effect of "we like & we want good shifting" and bike dealers may have noted, on occasion, that "some of my customers who are accustomed to keeping their hands on the bars when shifting a mountain bike...well, I think I can sell them a road bike just maybe if they didn't have to move their hands to shift." But nobody directly asked for "heavy, unattractive brake lever/shifter combinations that lock you in to a system, and are vulnerable in a crash, and cannot easily or quickly or affordably be replaced independently if you only break one of them," but that is what we have, and I think we have it because it streamlines production.

When you're big, it's harder to deal with details, and small cost increases are magnified by volume to a much more disastrous effect than is the case with a small company.

Let's say you're the buyer for a bike company that sells 5,000 bike per year, and as you're looking over the cost of parts, you notice that 11-ball bottom brackets cost \$0.20 more than 9-ballers. Going to the 9-ball, you can save one thousand dollars. You know that bottom brackets with 11 balls wear better than those with 9, and you suspect

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## THE RIVENDELL READER

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*Sometimes I accept freelance work, but the pay is minimal and I generally edit it like a madman. Thick-skinned writers may submit manuscripts on Mac disk (Word 5 pref) or double-spaced and typed. If you have to handwrite, that's okay, too.*



that informed shoppers **will** gladly pay the **\$0.75** retail difference, so you go for the 11-ballers and make a note to point out this feature-benefit thing. Even if you don't, what's a thousand bucks spread over five thousand bikes?

Now suppose you're buying bottom brackets for 500,000 bicycles, and this time the \$0.20 difference gets multiplied by half a million. Your 2-ball upspec costs the company \$100 thousand. The same scenario presents itself with every part on the bike, and at the manufacturing level, is magnified even more.

Smaller companies aren't as dependent on economies of scale, so they can better afford to address markets too small for the huge companies to bother with. And yet if the company is too small, it can't afford to do the groovy things.

That's sort of where the bike industry is now. There are a couple giants (although Shimano has **95** percent of the derailleur market, so it's not quite a Coke-and-Pepsi situation) and tons of tiny ones, with one to twenty people, and **annual** net profits of not enough to do much of anything with.

There aren't any medium sized companies anymore, parts makers don't cooperate with each other anymore, and except on the very smallest and inconsequential scale, nobody can afford to specialize, because the really large companies could put them out of business overnight by taking production of that part in house. If there's interbrand compatibility at all, it's rare, accidental, and temporary.

Remember Regina, SunTour, Shimano, Everest, Cyclo, Maillard, Zeus, Atom, Normandy...? You used to be able to buy any of these brands, even in different grades, and as long as you didn't **mix** threads, they were compatible with hubs, shifters, and derailleurs made by any of twenty or **so** manufacturers.

**Popularity.** How does a sport or pastime become popular? The sequence of events is **usually** something like this: One person or a small group invents or pioneers something. A tool or toy used for an outdoor activity. Word spreads among like-minded friends, then to like-minded outsiders, and an industry develops to satisfy the demands. If the manufacturing takes place **in** thatch-roofed homes, this is called a "cottage industry." Up to now the growth has been natural. Paul Hawken would say "released, not forced," or something like that. It's a healthy way to grow, but it's slow, and it offers some measure of safety and health in any industry, just as it does in a biological system. (Cancer, remember, is an example of unrestrained growth.)

As word spreads, the industry gets bigger. By now everybody has heard of this new activity, and those who are so inclined (in our case, that would be "athletic, mechanical, non grease-fearing") and have had ample opportunity to **try** it

out. Many of them stay. Some give up because they've got other things going on in their life, and just can't do everything.

Then somebody spurred on by the initial success or a pushy spouse or an out of control ego buys a too-big house and now has an expensive lifestyle to support. Or if that doesn't happen, a natural paranoia about sales coming to an abrupt halt because everybody has already seen the stuff and bought it if they want it, creates an obsession to expand the selection and reach out to new audiences. If **you** sell brown pants, you add blue and green ones; if you sell T-shirts, you add turtle-necks and hats. Stuff for boomers, X-ers, midlifers, crossover athletes, the new rich and formerly nonathletic (NRFNA, pronounced "nerfna"), and the "over fifty/well-off-ers" which share another demographic acronym which I can't think of at the moment. You don't make stuff for people like you and your friends anymore, you target markets, and if you run out of markets to target, you create them. I don't know whether it is better to be a member of a targeted market or a created one.

Maybe that paranoia and lust for growth is just natural, the price you pay for being in business. Here at Rivendell I'm terrified that everyone who has ordered already has everything we offer that they want. I'm afraid you're going to open up this issue's catalogue and think "hey, what's up? Wasn't this in the last issue? What kind of a repetition thing is going on here?" I don't see how Rivendell can exist on 25 esoteric items, yet I don't want to go mainstream. (Have you seen a big mail order bike catalogue lately? Pages of hi-tec sunglasses, computers, plastic shoes, helmets, brake boosters, shock forks, shock fork maintenance kits, clipless pedals from twelve different makers, cantilever brakes that sell for three figures "per wheel", hero-worship videos—and I can't relate to any of it. So we're getting into tools and a small bit of clothing. I don't know who our competition is. Performance and Nashbar? I hope not. We'd have to carry ten different brands of tire levers plus our **own**. We will sell more clothing, and that's not a bad thing (apologies to naturists). Do we use Orvis and L.L. Bean as successful mail order role models, and start targeting wives of hunters and golfers?)

Another thing that spurs explosive growth is when some large outsider, either a venture capitalist or another company, buys a small and promising company to see how big how fast they can make it grow (this would be your "forced **growth**," not unlike making a young tree grow by pulling on it). The new owner sets unnaturally high yearly percentage increase goals, and trying to make the numbers happen by whatever means possible. In many leisure-time activities that require a certain amount of **skill**, this is usually done by shortening learning

curves, which in turn is done by changing details in the toys played with. You have to appeal to people who haven't had time to learn to hit the ball over the net or in the hole, or tie the fly, or climb the rock, or ski or shift the gear. So tennis rackets and golf club heads get bigger, fly tying materials become synthetic, rock climbers protect themselves with camming devices, XC skis go waxless. The newer products come with a new message that says, in effect, you were right to wait, but now it's time!

And now in bicycles, the gauge of shifting seems to be how well the shifter, derailleur, cogs, and chain work while you're standing on the pedals and pedaling **full** force through Belgian gunk, or how **skillful** it makes a new rider feel on a test ride in the parking lot. If mastery isn't instantaneous, there goes the sale. I'm not saying that easy riding isn't a good thing, because I think anything that gets more people on bikes is a good thing. I just wish the new stuff could coexist with the old stuff, because the old stuff was highly evolved and had several advantages. That the top racers **in** the world endorse the new stuff shouldn't come as a surprise or make it any more credible. Who wouldn't ride it for money, especially when spares come free? Don Cuerdoon of *Mountain Bike* magazine wrote a terrific column a few months ago about how the average rider would be better served if bike parts were designed for big strong heavy poor guys with bad technique who have to repair things instead of lightweight pros who toss parts at the first sign of wear and get new ones whenever they want.

I don't think we should have to hoard free-wheels and friction shifters, gum hooded, non-integrated road brake levers, non-indexed shifters, metal toe clips, and decent quality quill pedals, and pay collectors prices once we find them. I especially hate it when those parts are called "retro," as though they have a certain charm that techno parts don't, but aren't really suitable for the serious modern rider.

Anyway, the big companies can do things like forging and casting that the little comps can't afford to do; and the little comps can do things like machining and customizing that the big companies can't afford to do; and there isn't much inter-company cooperation these days; and parts are dedicated, functionally segregated, so you just can't mix stuff around like you used to be able to; and all you ever read about are the benefits of brainlessness and shorter learning curves and convenience, not the tradeoffs; and there are no more medium-sized specialists; and **lots** of good, functional gear is being sold at collectors prices, now that it's no longer made. I don't know where this is going. A better editorial next time! —Grant

# PLEASE JOIN AND SUPPORT RIVENDELL

**Y**ou get 6 issues per year of advertising-free bike noise and access to hard-to-find and some normal bike parts at fair prices. As a member, you can use the coupons in this issue (and future issues), and if you buy enough, they'll more than pay for your membership. We try hard to ship everything within 24 hours, and are constantly trying to improve our on-hand inventory and service. We do very little advertising, we sponsor nobody, Grant's take home averages less than \$2,250 per month, and we keep our overhead as low as possible to bring you the best goods at the best prices. Also, when we buy something ourselves, whether it's an inner tube or a frame, we pay the same price you do. Even Pal Jeff pays full pop. (The prototype frames will be sold cheap so that we don't roll them over into our personal collection.)

As a mail order business, we are totally dependent on the support of those whom we will probably never meet. You'll notice, in this issue, that we're starting to carry a few normal things, too—tools, tubes, tires; and in the fall we'll have a few other normal things. If you're strictly price shopping you may be able to find some of these things cheaper at Nashbar, Performance, and other places that buy by the container load or source things from Shanghai. But they won't beat us by much, and we can guarantee they won't appreciate your patronage as much as we do. And finally, if you'd like extra Readers to give to friends, or if you know of anybody who might like to receive a copy, please tell us. This will not work without you. —Maggi, Spencer, Grant

## POETRY CORNER

This is as culturalish as we get. In each issue we'll publish poems you write. And if there are no submissions, Spencer and Maggi write them. This poem is by Ali Aslam, of Plainsboro, New Jersey.

### AN INTERSECTION OF PARALLEL LINES

Lucid dreams of Euclid haunt me,  
I see his bearded visage  
as slumber surrounds me.  
He calls to me,  
by name and number,  
asking for theorems and postulates  
among us,  
proselytizing our young and weak.  
They follow and obey  
Embracing his fellowship and thought  
beneath the neon streetlights of  
Digitopolis.

# THE PROGRESS REPORT

When I read the RR progress reports it sounds to me as if I'm whining. There are hurdles and setbacks and dead-slow mail days if it's been a while since a mailing, but I didn't expect this job to be easy. So aside from all that, life here is pretty good. I've met more friends in the past six months than I deserve. People I've never met care about Rivendell and say generally nice things about it. One in four orders comes with a note of encouragement. Greg S. from WA., who I don't even know, sent \$75 as a gift. Steve S. from Nevada sends money...another Steven S. from San Francisco put Rivendell on the World Wide Web. We've pre-sold 40 frames so far, are late with delivery, and the prevailing attitude is "take your time. I want my bike, but I know it's tough, and I can wait. Go back to work and relax." If that's not a blessing I don't know what is. There's a lot to be grateful for and happy about. Meanwhile, the progress reports will continue pretty much as they've been. It's good therapy for me—it would be harder to keep it bottled up.

Mayday. The Carradice bags went out, along with the new system and instructions that I hope are easy to follow. I called Brooks-USA and they said they had ten saddles, but no word on the other ninety—they'll get back to me. Bob is laying out RR-2, fitting it around his real job, and I need it fast, since it's been 75 or so days since the last mailing and orders are pathetically low. I need those Brooks saddles, I need the second RR out, I need fork crowns, paint colors finalized, decals finalized, I need to figure out the wheel stuff and decide on a spacing, and most of all I need a vacation. I know it's supposed to be hard, I just need some kind of minor victory, and soon.

May 2. I just bought 480 Dura Ace and Shimano 600 48t and 49t chainrings. Great sizes! They'd never sell in the mainstream, though. It makes me nervous. If I had to answer to anybody, I wouldn't have done it, but man, the price was right and I can sell them for \$12 and do okay...

May 10. One order today. Spencer and I retrofitted a bunch of Carradice bags with straps. Sample wheels came in from Winkel (rears), and I discovered what I

suspected, that you really do need 38mm of shoulder to accommodate 7 speeds. I wish it were a 6-speed world, but no big deal. RR-2 is still in layout, and if it doesn't go out soon things will look pretty bad around here. Whine, whine. One order. I can't stand it.

May 18. A few weeks ago I submitted about 6 dropouts for metal testing and I got the results back today. I'm going with Tecnociclo and Shimano—both high scorers. I like the longer slots of the Shimano, and may use them for some bikes or until I run out, then Tecnociclo. It's a tossup between them, but Shimano is not interested in making dropouts anymore, at least not horizontals, and Tecnociclo is dedicated.

I decided to add a red and pink color, and my next sample will be red. I need to sell these samples, so maybe a Samples Sale Sometime would be a good idea. Sold 26 frames so far, with R.O. getting both a road and an all-rounder. Very little interest in the mountain frames, but I'm not concerned, and I won't change it to stay in step. I'll build mine with light wheels and fat, poofy tires. This week has been okay. A typical day brings in \$400 in orders, but my bills are still piling up, and billpaying day is always a tough one. Down to \$20K. We got a sample small seat bag, and we'll get version 2 soon. I found some great winter gloves, bought some and used them on a long wet cold rain ride, and they're perfect. I contacted the distributor and we can get them cheap, so next September we'll have a glove-o-rama, our first. Happy Birthday Kim.

May 22. Well, of the \$20K in the bank, \$11K is frame deposits, so that means we really have \$9K, a bummer. But I'd rather have \$9K plus frame deposits than \$20K without frame deposits, so that's not so bad.

May 25. I go to Waterford on 6/1 for the first production. Road fork crowns are in and look fine, and Waterford will build sample forks for testing, so we could ship out the first road frames in mid-June. I just want everything settled—decals, head badges, paint, dropouts. The first road frames will have Shimano dropouts, and when those run out we'll go to Tecnociclo. No quality difference, both

excellent—we had them tested (metalurgically), and I'm finally confident.

My next sample frame will be here next week, and based on the changes from the first one, I'll decide on a fork length. 380mm is too short, 384mm is too long, so this one will be 382mm, and that should provide clearance for 35c with fenders and short reach brakes. Had a good week last week, but a bad (money) day yesterday, paid the bills, made the deposit, and are now at \$20,000 in the bank—plus X's additional investment of \$10K, so it's up to \$30k, but one third of that still goes to tooling. I don't know why Everest hasn't billed me for it yet—it should be any day now. We need to have a Samples Sale.

May 26. Got the actual production road lugs and crowns in, and they sure look perfect. The crowns are thick in the plates, and weigh just 108g. I have one reservation, but testing will tell the story on that. After filing and cleaning up it'll be 100g. A set of three road lugs weighs exactly the same—which is 28g (slightly less than an ounce) less than the All-Rounder and Mtn lugs. I've been thinking about the Mtn frame. So far, only one order. I don't know what the deal is—maybe people realize that the A/R can do almost anything the Mtn frame can. Anyway, I may either change something on the design, or add a Ballooner design to the line. A "Ballooner" will be sized different. Bigger, with a shorter top tube, longer head tube, less relative distance between the saddle and bars.

.....My XO-4 was stolen from a Bart station last night as I was at the Bob Dylan concert. Priest bars, fenders, a rack, what a nice bike. I fake locked it because the lock I had kept on the chains there was removed during construction, so I had no way....how depressing.

May 30. One order today, and the first mail day after Memorial day. It's quiet in here, and getting hot. The printer called and said if we sent a check for the balance—\$1600 or so—they'd mail RR-2 tomorrow, so we did. One order today for a custom frame. I'm feeling sick, and it's not stress-induced or psychosomatic. I'm going from hoarse to sick, that's all.

I spoke to Marc at Waterford today, and my trip there has been postponed until



next week. They're building forks to test now, and shipping out my second 56 prototype today, as well. I've decided I do like the dark brownish orange after all, in fact I love it. With a dark blue head tube, it looks like a hunk of leather (apologies to...). Not many people would call it orange, but there is orange in it. Caramel is a far more accurate description.

The brass-buckled Carradice bags went back to England today without Carradice and us having come to any sort of specific agreement about credit. I'm just leaving it up to them, and I think they'll be fair.

June 5. I went to a bike swap meet yesterday and some people there said they'd received RR2, which means I should be getting orders this week. I got another sample 56 road frame with slightly different geometry, and I'll make final geometry decisions (and fork length) based on this one. It has the real fork crown, which looks great but needs filing to soften the lines. Wford can do this, not a problem, and the most it can cost is more money. Even investment cast parts get filed.

June 7. Yesterday I assembled the second sample 56 road, this one with the real fork, and rode it. I wanted to see the effect of a longer front center, slightly shallower head tube, and less trail. I didn't like it, and I could tell in less than five seconds. It's not bad, but it's not like my first sample. I was thinking "a 47mm rake with a 73 head gives less trail than a 45/73, so maybe that will compensate for the longer front center, and the bike will still ride right." It rides alright, but not like the first one. So now the 56 will have a 57tt with 45/73.5, a lot like an RB-1. I rode with HH from Ann Arbor, who was out on a road trip. He rode the 59.5 frame, it's first ride, and said it felt just like his 59 RB-1...a good sign. A good order day—a few Brooks saddles, four Carradice bags, and two frame orders. RR-2 is clearly out, at least to some people.

June 9. I'm at Waterford for the first production, which happens to be 54cm road frames. I'm here because I want to see them and need to go over some details like decal placement, cable stop placement, joinery detail, filing, things like that. I'd planned to put the cable stops at 12:00, because that way wouldn't favor sidepulls over centerpulls or left-front braking over right—but then I noticed how the cable would obscure the nice point on the upper head lug, and I didn't want that. So they're

on the lower side in the new standard position anyway.

The Waterfords (people) are great to work with, they know better than I, they complete my sentences, they understand. EJ showed me a different way to finish off the inside of the right chainstay, a way that looks great and adds clearance. He said he loves building frames. John is the other main builder—he worked at Schwinn, building Paramounts, for twelve years or so. The frames are tacked in a jig, then free-brazed. Most builders assemble the main triangle separately from the rear triangle, then braze the stays onto it. Waterford brazes the main triangle and the chainstays (into the BB shell) in the same operation, so the BB shell gets heated only once. Then the seat stays go on. They showed me so other differences, things they do that are not the usual way. Everything they showed me made sense, didn't save time, just made the bike more accurate or better. I went through color books with Roger, and now there will be no doubt, The Brit Race green is not quite BRG anymore, but it's still nice looking. The pink is pinker, the red is darker, the orange is not quite as caramelly, I added a blue, and everything else is fine.

Dinner at the Schwinn's, with Marc's family, too. Anna Rose (11) and I volunteered to get asparagus, so we headed off towards the railroad tracks. It grows under the telephone wires and along the fence line, solitary stalks hidden in the 30-inch tall grass. We sweep the grass aside and most of the time come up empty, but persevered and managed to fill a small bag. Asparagus grows right up out of the ground like a pencil, point up. It's like getting a spear from Safeway (apologies to organic farmers) and sticking it butt first into the ground, as a child would draw it, and it grows along the fence line and under the wires because birds poop out the seeds. I missed a fishing excursion with Tucker, but there's always next time.

June 11. Back from Waterford. I'm sending forks out for testing. To Specialized. Mark Deger is the testing engineer there, very good, very experienced (used to work for the OLD Schwinn), and I'm nervous about the whole thing. I'm not sure why—the forks look strong, and I know they're well made of the best materials. There are no stress risers in the crown. But I'm still nervous, it being a test, and all. If the crown fails, whatever might constitute

that, I'll go with a Henry James, then back to the drawing board after \$4,000 in tooling (thanks for the contributions!) are down the drain. Way better than a broken neck, though, so I should be happy even if it does fail. It won't fail.

A good order day today—\$1,790, including a couple of frame deposits. The average margin was 53%—frame deposits throw off the average, so it's a bit misleading, but all in all a terrific day. There are still about 20 orders to fill. Surprises: We're selling the SunTour freewheels, the Shimano chainrings, the Campy shifter covers, and tons of Brooks saddles—maybe 25 so far.

I ordered 50 Nitto seat posts from Specialized; they're blowing them out for less than I can buy them from direct from Nitto. Nice posts, lots of SPO, and I can offer them to frame buyers cheap, maybe \$40. Out of waxed chains, but the new price on chains is not quite twice what I paid for the first batch, so I'm going to have to raise the price again. The DM is beating up the dollar, too. Not as much as the ¥, but pretty bad, which is bad news for Sachs, good news for Campy. I ordered the B&B Simplexes today, a hundred of them, and I ought to be able to sell them for \$5 each. It's the ultimate in trashy-looking front derailleurs, but it's honest-trashy, not Vegas-trashy, and Sky says it shifts just great (as all front derailleurs do).

FORK TESTING is all I can think about. I've done my own impact test, and it passed that. Pal Jeff says we can build a jiggle machine with a motor and a concrete block. Jerry F. is working on a test machine for this, but he's a busy guy, and I don't know if he'll get around to it. UC Davis has some kind of a bike lab, and those guys test stuff and then submit articles to *Cycling Science*; they're supposed to be quoting on a test, but they haven't done any fork tests yet, and I don't want to pay to be part of their learning curve. I think what they're doing is good, but they also said I'd have to submit about 15 of my forks, plus any others I'd want to compare it to (since they have no history with testing forks), and it should be fifteen of those, too (I suppose), and each test takes a day. So we're looking at more than a month and I don't know how much money. And I buy the machine. PJ's concrete block and motor idea sounds better all the time. R has a stem tester he rigged up himself. He doesn't count cycles or measure deflection

or use strain gauges or conduct acoustic emission testing, but he can count hours, minutes, and seconds, and when one well-known Ti stem lasts an average of 5 seconds and another well-known steel stem lasts roughly 50 hours, and the results are repeatable, well....it says something, even if what it does say wouldn't be admissible in court.

I've decided to include three bottle brazons and a low-rider braze-on for the All-Rounder. A customer hinted that he'd want that, and I guess it makes sense. I may go back on this.

June 18. Bad news about the cloisonné badges—they'll be either late or on time, depending on who's point of view. Later than I'd expected, anyway, which means the first frame orderers will either not get a choice of badges (they'll get the cast pewter ones) or they'll have to wait. Five 54's have been built, but I need to (1) get the forks tested still, (2) get the last five color samples and send them out and hope the buyers can decide rather soon, and (3) get the badges. The 52 road will probably need a round badge without antlers, so I'm arranging those, too.

Orders are coming in, our bank account is growing, a good thing, since I just received a tooling bill for \$6,209.80 plus freight.

I'm thinking about a lugged crank. Investment cast CrMo or stainless at the pedal and spider area (not the spider). Tubular or rectangular crank arm, silver brazed. The arm could be 531 or 753, but mostly it just has to look good, be an acceptable weight, and have a low *l*-factor. No more than 140 for a double or 152 for a triple. The left arm could use the same tooling for the pedal area, and a modified tool for the crank bolt place, but anyway it would be at least \$10,000 for tooling, but THEN we'd really have something good. Later. The stem is next.

June 20. What a day. Nothing small happened. I talked to Marc at Waterford about the frames and decided to go with 0.8mm left chainstays, not the 0.6mm as originally planned. This seems small, maybe, but it's sort of the last step over the line to thumbing our noses at weight. The top tubes are light, still, but all the other tubes are just smart, and that means, well, not superlight. I can't for the life of me feel good about taking any weight away from any of the tubes, and yet I know that when these bikes get reviewed, if that ever happens, they'll get criticized for weighing too

much. Even bringing it up here will plant the seed that Rivendells are heavy, but heavy is so relative. A 3.2 lb steel frame doesn't even exist (I don't think); and yet the current thinking is that a 4.2 lb steel frame is too heavy. I want that extra pound of steel—in the downtube, to protect against impacts and fatigue; in the chainstays to protect against chain gouges and fatigue. I don't want to have to get defensive about it, but I am defensive about it already. The thing is, people will say "nice frame, but it ought to be half a pound lighter" without having any clue as to how that might be accomplished without hurting the frame. Shorter butts? Maybe. But it's nice to get the transition zone away from the zone of stress, and that means a long butt. Lighter seat stays? They're already 0.6mm. A lighter top tube? I don't think so—a 28.6 x 0.65 x 0.5 x 0.65 is light enough, and acceptable only in something heat treated, like the 753. A lighter seat tube? 0.8 at the bottom is as light as I feel comfortable with, and 0.6 at the top yields a 27.2 post. I feel fine with 0.5 at the top, but wanted the 27.2 rather than a 27.4....The road lugs themselves weigh 100g (3.5oz) before filing, and so does the crown. After filing, their combined weight is about 190g, and that's okay.

Today was our biggest money day ever—\$3,060! About \$900 of that was frame deposits, but that's not a bad thing. One customer ordered \$400+ worth of stuff, including wheels, and that helped. Maggi and Spencer and I input orders while Spencer's friend James shipped. Late month we went two and a half weeks with less than \$3000 in orders, so we're happy. I'm trying not to spend, so we can save for stem tooling and bar-end shifter tooling. I think our account is up to \$14,000 now, but that's after separating the \$12,000 in frame deposits out into their own account, and making almost the final lug and crown tooling payment. Three thousand. That's good. When the Nitto order comes we'll need about \$4,000.

Adventure Cycling plans a pannier review and wants to know if we want Carradice included. I don't know. On one hand, I believe these are the best panniers made, but on the other hand, they will not score well in those charts with the dots, because they don't have features. These are not your '90s panniers, and it's not fair to rate them by '90s standards. The do not have zip away compartments, mesh outer bags,

quick-release buckles, compression straps, and have those Hollywood good looks and a DuPont hang tag stuck on it. Sending a Carradice in for review is like entering a workdog mutt in a dog show. What's there to gain? And yet I don't want to refuse, because that would look bad as well, and they still might grab the mutt and enter him (apologies to bit—I mean female dogs) anyway.

John Segal is doing art for a T-shirt and other stuff. I'm driving him nuts with nit-picks and am afraid he's reaching his limit, though there are no outward signs. His finals are going to be the size of large postage stamps, and I'm telling him things like "the bottom bracket on the road bike looks too high; the chainstays aren't headed exactly towards the bottom bracket center; lower the saddle, this ain't a mountain bike." I'm eager to see the finished work. The story we did on him didn't do it justice.

June 21. I have a new way of thinking about the fork crown testing: There can be no bad news. If it passes as I keep telling myself it will because there's plenty of metal and no apparent stress risers, then all's good. If it doesn't, then I sure do want to know about it, and I can still bail out with a Henry James. I just wish I hadn't told people the bikes would be ready in June, when it actually might be July. There needs to be a reliable bike test lab here, somewhere. There needs to be a database of forks and other parts, so you can test something and know how it stacks up. In a good fatigue test, something will break, eventually. What does that mean without a basis for comparison? Today's invoices: \$1,488.

June 23. Men's Journal is going to do a story on Rivendell and the photo shoot was to be today, but the bike didn't get here so it's been postponed until next week. I'm going to have to go to San Francisco, which at least will be cooler in a temperature sort of way than this heckhole. It was Spencer's birthday today—he's 22. Slow order day, just about \$200 and it's 3:00 in the afternoon. I hope that's not a trend, but it has to worry me, that's for sure. I'll work on the RR and hope the phones start ringing.

June 27. Oh man, the \$6,500 or so invoice I just paid a few days ago was not for tooling as I thought, but for the actual pieces. So IWe still owe \$8,500 or so, in addition to that. I've got to put some things on



hold, but I don't know what. Stem lugs, probably. I just ordered more BOBshades in a darker tint, shouldn't have done that. And about \$600 in not really necessary parts, including lots of inexpensive front derailleurs, so by next August we'll be the cheap front derailleur champs, after those Simplexes come in from the Philippines. I upped the Carradice order this morning—and I was going to go to the T-Shirt place and order Pino and Reynolds 753 shirts, but that would be kind of dumb now. Well we've been having good days, and we're still better off than we were in April and May. What do I do with these bills, though? Maggi can pay them tomorrow. The preliminary test results for the fork crown will be in this week, maybe Saturday or Sunday. I've got 750 crowns ordered, so I hope they pass. I've been thinking it might be a good idea to offer crowns and lug sets for sale to frame buyers, with the agreement that they don't use them for anything except desktop toys. I know that's kind of pitiful and not what the designer intended, but crowns and lugs are nice to have around, and at \$40 per set-of-four, maybe they'd sell and help pay some tooling bills. Is this any way to run a business?

June 27. I got the first production bike from Waterford, measured it, want to change the shape of the downtube shifter braze-on base from a square with sharp corners to a squarish thing with rounded corners, to eliminate stress risers. Kind of a pain, since the first five frames have been made already. I don't want to drive myself crazy or put Rivendell out of business, but I don't want to sell these this way, not to the first 54cm road frame customers (Masa, Steven, Simon, and Chris). The base of the boss is within the butt, and it's an 0.8mm butt, and I don't think it would break in 30 years, but I know rounded is better, so I've got to sell these as Field Grades or something. Also, the fork rake is changing a little. Little things, but I hope I can get most of my money out of them. The next batch will be perfect. The rest of the frames are beyond belief. The seat stays are pretty, the lugs and crown, fantastic. Marc said he and Jim P. could come up with a good fork tester there at Waterford. Man, I hope the forks pass, because the crowns are so pretty it's a shame to put a brake on and cover them.

June 30. Damn, the fork crown broke. I picked up my mail today and there was a

box from M. Deger at Specialized. I knew the forks were being tested this weekend, but today's Saturday, and here they are. I opened the box and say test dates and some other code marked on the forks. Number of cycles until failure? No, it looks like seconds lasted. At first the forks looked fine. I put them in the car and continued with Kate and Anna to the bookstore, where Kate wanted to spend the afternoon. At a signal I picked up a fork to look at it, and asked Kate to tell me when the light turned. I saw the crack at the same time the green came, then continued on to the store. As soon as I parked I saw Ariadne and her husband walking by, so I hailed them and said hi and I told them. I still don't know the significance of the break—in a fatigue test, you test until something does fail, and if it doesn't fail, I suppose the test loads were too low. Anyway, the thing that bothers me is that the first crack occurred at a spot that I was suspicious of from a few weeks ago. A corner. And the All-Rounder crown has the same design there, another corner. I've already got 750 road crowns coming to me, and I've approved the final wax of the All-Rounder crown—but I may be able to stop the casters before they go to work on that one. I don't care—I mean I care about the money, several thousand dollars—but at least I haven't sent any bikes out yet. I don't have to do a recall, I don't have to worry about somebody getting hurt. So I'm doing what I do when I'm tense: Wolfing down black licorice vines and milk. Someday I'll discover the secret of the licorice-milk-artichoke thing, but so far I've figured out this: If you eat artichokes and drink milk, the milk tastes like black licorice.

What now? Monday I'll talk to Mark D. from Specialized. It's possible he'll say "Yes, it broke, but it was supposed to, and it lasted longer than most crowns," but the thing is, the crowns still broke where I predicted they would (if they did), and that bugs me. Meanwhile I've got 25 people waiting for road frames, and they've been plenty patient so far. Do I ship bikes with Henry James crowns? I've already told people I don't want the first buyers to be part of an evolution. But I could do that, then offer to replace the forks with the Rivendell-crowned ones when they finally get here all correct. But I've got a photo shoot with Men's Journal this week, and I was hoping to show the crown. Shoot.

At times like this I have to think: I've got a wonderful family and I haven't killed or wounded any nice people, and I don't have to do a recall, because none of the forks have been shipped. It's just a drag, but I tried to tell myself that any news would be good news in a case like this. That's the point of testing—I wasn't testing just to be able to say "these were tested."

The solution is easy. All Everest has to do is take away wax so the metal can flow and fill up the corners, and maybe even add a wall there. Forget about the plates. I can sell the 750 crowns I have coming as desk ornaments. I was going to offer them to frame buyers anyway, even if they were good. Anyway, it would be better to go out of business because nothing was delivered on time than to hurt someone. Obviously.

At the bookstore I was looking for a particular book on Stone Age Technology, and next to it on the same table was another book I ended up buying: *To Engineer Is Human: The Role of Failure In Successful Design*. I know, for sure, where to add the metal.

Independence Day. Marc sent word to the casters about the crowns, and I've got to come up with something for the road frame buyers. If the crowns will cause another delay and they want their bikes, I can sell the frames with Henry James crown forks, and offer to switch them when the final Rivendell crowns are in. It's always better to paint the frame and fork together, since that eliminates the possibility of different paint batches not matching perfectly, but I don't know what else to do. I like the Henry James crown a lot, but I want these bikes to be all-Rivendell, and so do the buyers.

July 5. A fax from Everest (the crown makers): "1. To make the front and back windows smaller. This modification can be modified from the existing molds. 2. To eliminate the front and back windows but remain a hollow crown. This modification will need to make new molds for the fork crown and new mold for the soluble wax core and the unit will be increased to double."

That's verbatim. I think the first option will solve the problem, but the resulting crown will weigh more than a hollow-core crown, I think. Right now the road crown weighs 100g, and the old XO-1 crown, a hollow-core/windowless style,

weighs 140g. That one is wider than the road crown and not an option here, but I need to know it. A solid A/R crown may weigh too much. I could offer A/R buyers their choice, to start with, of a fork with a road crown, if they won't be needing clearance for tires larger than 1.4, or the mountain crown if they want the fat tire clearance. Then, when the A/R crowns come in, we could replace the forks. Meanwhile I look stupid, and this fouls up magazine road tests, and people who had enough faith to order bikes without seeing them are bound to get angry...I didn't want to come to work today.

July 13. I think we've got the final idea for the road and A/R crowns—just shrinking the windows and rounding some corners, and they ought to do fine. They already have more metal than other crowns that we know are fine, but the tests will continue, anyway. Everest understands, and I think we can have new crowns in a month.

I'm starting to get nervous about cash flow. I sure understand the concept, at least. I'd like another \$15,000 cushion, but I get we'll have to work for it. The main thing now is getting this RR off, shipping out bikes, getting in the Nitto stuff, and filling back orders.

July 18. Orders are slowing down a lot, down to \$\$539 today, but that included a \$300 frame deposit. I'm trying to buy a lot of Mavic cranks, and yet I still need to get the accounts up a lot higher, just to breathe easy. We're ordering tools and normal stuff, maybe that'll help. I get the prototype A/R and Mountain frames next week. The new drop-bar style mountain frame is exciting to me, but I wonder how it'll go. I'll send one in to a magazine; I wonder how they'll react? JL would like it. The cloisonné head badges are late, but so are the frames. I haven't heard from the casters again, so I assume things are going okay, but I'd feel a lot better if they'd, like, communicate. By the time this (RR4) is out, I think we'll have shipped frames, real ones. We have \$23,000 in the account, not including deposits. I owe \$9,000 on my personal Visa card, and that's all Rivendell stuff. The Nitto order is around \$5,000, another order is \$3,000, printing and mailing will be \$3,600. Spencer's been here six months and I'd like to give him a raise so he can afford to move. Maggi is hoping there's enough work in the fall for her to stay on. We're trying to develop some nice

clothes, and they may help a lot. It just seems like a treadmill, and if we stop running—well, we can't stop running. Our first advertisements will run in VeloNews and Adventure Cycling.

July 19. Maggi did the bank reconciliation today, and it turns out we have \$6,000 less than we thought. We're down to \$14,000 again. And I've just ordered several thousand dollars of parts, and these invoices are due in September. Today's sales were \$252, and that included a set of wheels for \$220. Panic time. Bob needs the files for this issue (RR3) in a day or so if he's going to have time to lay it out before he gets busy with his real job. Spencer's drawing some pictures. I'm writing blurbs about stuff we don't have in stock, but will have to order soon. I can't order it now, since the timing will be all wrong. I am understanding cash flow. Some good news—the stainless bottle cage guy is going to make some samples, and I'm optimistic. I think we'll have something by late September, unless we're broke by then—but we ought to be selling frames soon, so that'll help a lot. The crown makers faxed a message today that they'd send a new wax mold on 7/31, and so if that's a goody, we'll order up crowns, braze them and test them, and then go to production, finally. It's just never ending, the work. I'd heard that first-year businesses were supposed to be this way, so it's about what I expected. But man, I'm going to need a break one of these weeks. I haven't checked my email for three days, so there should be only about 65 messages on it. That'll take four hours to clean up, and while I'm on line the fax doesn't work. When do I do it? Anyway, getting 20+ email messages a day is a blessing, I shouldn't complain. Dropouts arrived today. They look good, just as I'd expected, and how wonderful it is to have no surprises. I measured the critical areas, and they're thick where I want them to be. I'll ship them off to Waterford tomorrow. Tomorrow I get my braces worked on and have a photo shoot in San Francisco for Men's Journal. It won't show up until October, so why do I have to shoot it now? I don't even have final bikes. They'll zero in on the fork crown, and it won't be the final one. I have to bring a rideable bike and a frame. Spencer will be here alone, but he can handle it. I hope we have a good mail day.

July 20. What a lousy day, sorry. I called up the photographer for Men's Journal and

told her I didn't want to shoot today, because the correct frames and crowns aren't in, and I didn't want to fake it, or have the story come out and have to wince when I saw it, or have to explain why the production frames aren't like the ones in the article. She blew up and had me call the magazine and explain it to them, and they blew up and said I'd cancelled twice now, and that cost them \$650 each time. It's true that I have cancelled twice, but it was only because the frames weren't in and you can't shoot nothing. Anyway, so now MJ is mad at me and maybe the story will be killed. I can't help it. I hope the author isn't mad at me. I offered to pay the mag's costs for the photography, and I'll hear from them in the next few days, but \$650 seems like a lot for what was to be a couple hours of work. She did say "we'll get you in and out of here in a hurry." I understand her predicament, but I just couldn't do it.

I also went to the orthodontist and got a crown and a filling and a mouth full of needles and numbness for \$802. It's 3:30 p.m. and we haven't picked up today's mail, but the phones have been dead so I hope we've got a good batch. I'm trying to get this together so we can mail it out by August 5.

The mail's here. We got nine orders! I think the postal service just likes to mess with me.

July 21. We blew it on an order. We sent the wrong J. S. an order, and what's worse is that it was for his birthday, ordered by his wife. We sent it Next Day, too. That was a week ago, and we found out today, and we still haven't heard from the wrong fellow. It was a \$150 order... We just bought a whopping lot of Mavic cranks and unless we sell them before late September, we're in a fix. The price will not drop. We're sending earlier notice to all members. Spencer came in today, Saturday, and we got a lot done. Then Peter and I rode up the mountain. I experimented with a bunch of Phil spindle lengths with the Mavic cranks, and learned that a double works well with a 113mm spindle, and the resulting Q-factor is a wonderful 135 or so mm—same as an old Campy on a 120. On a road frame, I'm pretty sure a triple will work with a 116mm spindle, giving a Q of 138, which is the same as a Ritchey road on a 107mm. Too bad Mavic doesn't make the cranks anymore. I wish we could have bought all of them.



July 26. I sort of came close to a breakdown today, and had to spend the morning in bed. I didn't do much work, but Spencer and Maggi and Zac took care of it all. Ninety nine percent of it is stress due to fork crown things and late deliveries. Marc from Waterford sensed something was wrong and called up to be nice and assure me that things were normal, delays happen, and even though they're going on with their daily business, that they are concerned and they care, and one of these weeks everything will fall into place and we'll be shipping frames. His talk worked, I feel better. And every frame orderer is so patient. Some are taking road frames with Henry James crowns, some are waiting, everyone says "don't worry, be happy," and despite the pathetic tone of this last entry, I am very happy. Rivendell customers are really nice, we're really lucky, and before this gets maudlin, see you next time... Grant

#### POST SCRIPT:

August 8. A big day, good and bad. The Nitto/MKS order came in finally, and almost everything about it is right. The DirtDrop stem with the hole was supposed to be hand-buffed, but it came polished instead. I can live with that. Everything else is great. It'll be interesting to see how the MKS touring pedals do. I think you have to look at them from a pretty experienced and jaded perspective to appreciate them, but in light of what's available in the world of pedals, I think they're super. The only completely unpretentious pedal I know of, and perfect for all kinds of noncompetitive riding. The bad news is almost too bad to blurt: The road and all-rounder fork crown waxes came back, and they're still wrong. Damn. Marc is sending a NastyGram to them, and we (Marc or I, not both) may have to go there. These guys (Everest, in Taiwan) are as good as anybody, maybe better, and the lugs (which were harder) they nailed the first time. *The frame customers are incredibly patient and understanding—I mean, I have put them off for months now, and summer's nearly over. I feel stressed but grateful, and I sure am looking forward to October—things have to be fixed by then.*

## DEATH IN THE FAMILY

By Jim Langley

**A**nother cyclist died today. A mountain biker. Female. Blonde. Twenty-five-years old. Paper said she wasn't wearing a helmet.

She crossed the path of an oncoming car. An import. Woman was going 65 in a 45 zone. Straightaway stretch. Lovely sunny day. Driver wasn't injured.

Paper called the dead biker a free spirit. Said she was active in the community. Worked with kids. Had lots of friends. Said she wore no helmet.

Paper pointed out that 50 or so cyclists ride down that stretch of road on nice days. Explained there's a park with trails on the other side. Said local bike shop people called getting there dangerous.

Woman's ride partner couldn't understand why his deceased friend had turned into the car's path. Couldn't fathom why she died. Said she wore no helmet.

Cops said the collision occurred in the second lane. Wide open road. Big shoulders. Two lanes over.

Imagine that: Wanting to cross that road. Trusting your instincts. Not hearing that 2000-pound battering ram. Figuring one lane is clear; the other must be too. Enjoying riding. No helmet.

Makes you wonder. Broadsided by 2 tons of steel and plastic hurtling at 65 MPH. Would a helmet have helped?

Who cares about the blasted helmet?

Why the hell was the killer behind the wheel driving so damn fast? How could she have not slowed? With 2 cyclists clearly visible inches away on the road's edge, how could any sane human continue at breakneck speed?

If it was a dog, a bird, a tractor for Christ's sake, would any driver with a lick of sense not slow? On a stretch of scenic roadway? On a strip frequented by pedestrians and cyclists? What was the imbecile behind the wheel thinking?

But it's easy to blame the victim. The living have to go on living. The dead can't defend themselves.

A helmet would have made no difference. Had the driver been paying attention she'd probably have been able to miss the cyclist. Had she not been speeding she'd have been able to stop. Had the police patrolled the road the cars might have been traveling slower. Had the county installed signs, lights, speed bumps — something — the cyclist would be alive. If anyone had had the courage to stand up to America's cars-are-king mindset, this cyclist and a lot of others would be alive today.

Do you suppose it will happen? Will the killer even get a citation? Doubtful. It's easier to blame the dead.

*Jim is an editor at Bicycling.*



## LETTERS

## THE CARPETBAGGER

Dear Rivendells,

I have no carpet, never did. When I was young I hated the noise of a vacuum cleaner, still haunts me today, it is an awful noise! A broom is a wonderful and peaceful tool. Easy to use, kind of a pleasure. I imagine it something like raking a Zen garden, or whatever they are called.

One warm sprint day I was in my back yard reading and the noise of neighborhood weed whackers was too much. I made up my mind to no longer add to those noise. I left my backyard of native shrubs and native weeds alone this year. People said "Yeah, it looks good now, but what about summer—it's going to be terrible back there!" Summer is here and I have a golden back yard with little paths where we walk most often. **Try** it and you will have more time to walk, read, ride....

David Letterman? I used to tape his show (back in the days when I was a weed eater) and watch the next day. After 33 years of TV I got up one Saturday and said to my wife, "Let's get rid of the TV today." She said okay. It was a great feeling of having something new when I got rid of the TV and VCR. After a few months it is not new anymore, but I have no regrets. It has been all positive, especially for the local used book store.

Here is a list of things to not have for a better life: TV, vacuum, answering machine, lawn mower, bread machine, computer, wall-to-wall carpet, pager, cellular phone.

I woke up one Saturday morning and asked my wife if we could get rid of the car. She said "No!"

John Gonzales  
Florida

## THE SKIP-O-PHOBIA

Editor:

Rcvd the Reader #2 today. I'll be placing an order separately, but I had a request. It is mildly annoying to have an article continued **two** or more pages later in the issue. If you consider your readers, most are going to read the entire issue. It would be easier to follow an article until it has ended, then **start** a new one, instead of **skipping** around. This is something **all** magazines do, but I never knew who to write. Maybe you could **start** a trend, one I'd like to see put into place by Outside, Bike, and the others.

Mike Sliger

*It's bugged me, too. One of the reasons normal magazines do that is because preferred ad placements are up front in the mags, and the idea of skipping to the back pages is to assure advertisers that readers will indeed flip to them, that it's not a dead zone, so the advertisers shouldn't squawk about having ads on page 123. Since the RR has no ads, this unseemly practice is less justified. From a layout perspective, though, it's very handy to be able to flow one story to another page. The alternative is making SUE each column is exactly the same number of words each time, and so far I'm not that organized or strict. Your point is well taken, though, and we'll try to minimize the jumps.*

## SEPARATED AT BIRTH?

Dear Rivendell:

Can't tell you how much we have in common. I started working

in bike shops in 1973. Own a 531 MKM English-made **frame** with Campy dropouts (no eyelets, alas), SunTour end shifters, Campy **Tipo** hubs, Nuovo Record crank and ders. Got dropout adapters and installed a Pletscher rack. It's now painted Derusto flat black. Forgot to add the Cinelli 65's, Campy steel track pedals. I still own the Campy clamp-on downtube shifters. All purchased new and working fine. I worked for Mel Pinto.

In 1986 I bought a Specialized Allez frame. Had I known about RB-1's I definitely would have bought one of those instead. Had the Allez professionally painted Ferrari red this winter. Had bottle bosses and pump peg brazed on. Fits me great, rides great, seems to have some cult popularity. Using Ultegra downtube indexing, **Looks**, Mavic hubs w/freewheel, Campy N. Record brakes, TTT stem, Scot (non drop-in) bars. Consider myself a retro-grouch anyway. Been meaning to write since my first BOB Gaz. (Forgot to mention my stock **MB-4**) Wanted to urge you to carry cloth tape. Voila! I have a RONA t-shirt. I have been contributing to ITDP since before the ad appeared in VeloNews. I don't think I'll ever need another frame, but if I do it'll be one of yours. What's your opinion of high-flange hubs like my Tipos?

L.L.

Townsend, Maryland

*Large flange Tipo hubs are very nice. I always liked the way they looked even more than Records. As Pal Jeff might say, "Ya gotta like circular flange holes!" Your Allez is a great bike, as is your MKM. GP*

## ACRONYMIOUS

Editor:

I got RR-2 today and enjoyed it. I read the **frame** stuff with particular interest because it seems we look at things in much the same way. I was surprised to see that the frames that I make for myself are almost identical to yours. Low brackets, long chainstays, long top tubes. **Yours** look much nicer than mine, though. I just use standard fittings. Here are some comments on RR-2.

ACME is also a thread form, used mostly on machine tools.

**MA-40** rims are hard anodized versions of **MA-2s**, not the other way around.

The old Italian C.O.N.I Manual has three methods of sizing a frame, each of which results in a different size.

If you are going to run want ads, here's one: Mondia Super frame, 63cm, 531, bronze w/white and black pin striping, chrome forks and stays, French threads, w/headset. \$250. Phil @ (818) 753-9900.

I found your comments about gearing quite interesting. Lately I've been riding my Raleigh with 50 x 39 x 30 and a 13 x 21 7-speed freewheel, and find that I end up riding on the 39 most of the time. The crank is a double, converted to a triple with the TA ring. It's a nice (ring to have), but costs about \$70. Stronglight makes one as well.

Keep up the good work.

Phil B.

North Hollywood, CA

Editor:

I am pleased to see that RR2 has been completed. I was concerned about Rivendell's success over the past couple of months because the newsletter was so late. Please understand, this is not a criticism, but selfishness on my part. Not only do I enjoy the newsletter, but also the prospect that there will be a source for functional, straightforward bicycle parts and accessories. It is increasingly difficult to find replacement parts.

The latest technology is interesting and clearly more debatable than Columbus versus Reynolds. Cyclists are not well-served by this escalating technology war. I think STI and Ergo are too expensive, and suspensions are too complicated. What made bicycles fun was the fact that a person could actually re-pack hubs, bb's, repair tubulars, etc. I feel there is a market for high quality, regular tech bicycles.

I want to support Rivendell, but I do not have the disposable income right now. In the long run the bicycle industry should have a Rivendell to offer some sensibility. I will try to carve out something in the next few weeks as a token of my appreciation. Meanwhile, some opinions on what your plans are: Bar-ends (great); head badge (cool, but not critical); Fork crown (way cool, but are there alternatives?); Frames (great); Dropouts (do it right), and as far as small chainrings go, you are right on! **53 x 11** is not useful for most of us. Hang in there.

Jim N.

SanJose, CA

Editor:

I recently bought a compact disk player, the latest addition to a not inexpensive stereo system that would do any amateur audiophile proud. Does this mean I am now spending a greater portion of my time listening to music? No. This system does not get nearly the usage of the crappy \$100 system I had in high school (you know, where you had to put nickels on the tone-arm to get through the skips—wasn't it weird to hear the non-skipped version on the radio?) when music was a major part of my life.

My new 27-inch TV is certainly a marvel of modern technology and cost what I would have paid for a 19-inch set several years ago. But does an exploded view of Jerry Seinfeld's head make his show any funnier? **Am** I watching more TV as a result? No, and I didn't expect to.

I used to drive a rusted, manual-steering/braking, FM-mono, no a/c Toyota Celica, but have since replaced it with a Honda Accord equipped with every modern gadget designed to help you forget that you are actually driving a car. The Toyota was simple, always worked, never appealed to thieves and provided the more genuine driving experience. I could also drive over potholes without thinking about the going rate on wheel alignments.

And now to bikes. My carbon fiber road bike is light, fast, and fun, and I look forward to my fast weekend rides. But my current passion for riding started six years ago years ago (at **35**) when I bought my first bike since childhood—a \$250 L. L. Bean hybrid. That bike was a veritable rolling shrine to gravity and friction, and yet my fondest cycling memories come from these earliest rides. What made these rides so memorable and enjoyable? No doubt it was the experience of riding—the wind, sun, sounds of nature, and the passing of scenery. Maybe it stimulated memories of when I first experienced the joy of riding a bike. Whatever, the quality of bike

was a minor contributed little to the my enjoyment.

Many of our recent advances in technology are what Thoreau described as "improved means to an unimproved end." When technology is perceived as the message, (manufacturers and their marketing people would have us think this way) rather than the medium, we set ourselves up for disappointment and wonder why we feel this way.

Technology should remain the medium, its chief role to improve delivery of the message. Bikes are a medium and the pleasure of riding is the message.

Bill Nugent

Editor:

I had a grimly amusing experience yesterday. I had put on a new chain, which started skipping when I was in my **two** favorite gears, so I got on the phone to find a couple of cogs. The Local Big Store of course didn't have them, but could order them; but I needed them right away, so I called the Smaller Friendly Store, where the Person Answering the Phone told me to come right on over, he was sure they had them. **So** I went right over, only to discover that the Person Answering the Phone didn't know fecal matter from famous brand shoe polish. The Obliging Mechanic put in time looking for but not finding the needed cogs, and the Harried Owner called Shimano, which had difficulty understanding the request. Finally I bought an entire cassette that had the **two** cogs I needed, borrowed some tools, and switched them over on the counter by the back door. I think Shimano just wants you to buy the cassettes they've decided you should use, and not bother them otherwise. Odd since I think part of the reason for cassettes in the first place was to facilitate gearing changes for different riding conditions. I hear that Sachs is much more accommodating, and I think that my next set of wheels will have freewheel hubs, if only for political reasons. Freehubs probably are stronger. Less unsupported axle length and all that.

Of course, if I had not let the chain go so long, the cogs might not have worn so much. And if I'd bought my cogs ahead of time and held them as spares, I would have gotten off more cheaply and with less running around. But Shimano and the stores are at fault as well: Even if I were to have a standard cassette, why should I be forced to buy a whole new one if only the one or two most-used cogs are worn? Especially as it takes only about five minutes to switch cogs on a freehub, start to finish.

With a little luck I should be working again next week, either back in the dying field of photochemical imaging, or in the bike biz. **As** soon as I am, I will order some small stuff from you for sure, and then **I'll** start counting my pennies to see whether I can get that damn frame and the attachments to make it go. I really could use a second bike, and it may as well be a sporty one, since I've got my RB-T set up as a utility and touring bike. I'm certain your road frame is what I want: a fast and stable bike that will last me twenty years, and carry a rack if it has to.

Richard R.

Dear Folks:

I knew of you several months ago, but didn't get to read the Rivendell Reader, Issue 1, until just a few days ago. I enjoyed it thoroughly, but after reading it I was left with the sinking feeling that

there may be no more to come. Please send some kind of an update.

If I were fortunate enough to get a remaining issue or **two**, it (or they) would occupy an honored space.. .

I didn't get my Bridgestone MB-3 until after Bridgestone had gone under, so I never heard back on any of the BOB stuff, which I had, actually, mailed in. I'd be interested in owning an R head badge as a gift to my bicycle mentor, Bill Port, owner of The Bikesmith, Inc., a Bridgestone dealer to the end. Out of the question? I won't be offended. I'd also be interested in photos of Rivendell frames, ordering in the future (if you're still there) and recommending your handbuilt frames.

Peace and Prosperity,  
Stephen Smith


*Stephen, chin up, cheer up, whatever! We're hanging in there!, although we're living in dread of September. Glad you like the RR—here's another issue. Re:BOB—I hope Bstone didn't cash the check. In those last days, and even later, Bstone received a lot of mail about BOB, and many membership checks. Many were sent back with a note, none were cashed. After a point we were all gone and some-not-all of the mail was forwarded to Rivendell. Anyway, we never cashed a check! Photos: I'd hoped and expected to have a nice brochure by now, but it's too much work, can't handle or afford it. I'll shoot for January.*

Grant,

I recently found a copy of a 1984/85 Palo Alto Bicycles catalog (the forerunner of today's mail order catalogs) in my basement, and I thought that you may enjoy a review. So here goes:

This catalog serves as a time machine to the past. Not just to 1984, but to another era when function was paramount and manufacturers were more concerned with good design than clever marketing.

Looking through the brand names in this catalog, you will find Campy, Avocet, Sergal, Descente, Vittore Gianni, Giordana, Duegi, Detto Pietro, SR, Mavic, Super Champion (wow, remember those?), Cinelli, Vitus, Eddy Merckx, Ritchey, Dia Compe, Sun Tour, Sugino, TA, Regina, Huret, Specialized, Clement, Vittoria, Silca (floor AND frame pumps), and Kirtland among others. The big surprise is the near absence of Shimano. The only Shimano parts available were for those new-fangled mountain bikes.

Wool clothing was still prevalent, but the new "skin" jerseys and shorts were making headway. Most of the racing shoes were the old perforated leather and look like they could have been worn by Gimondi. You could even buy some wooden-soled Duegis. On the down side, the hard-shell helmets  remind you why we wore the leather hairnets or, more often, nothing but a cap.

In 1984, there were choices that are long gone today. Low or high flange hubs. Tressoplast cotton or Benotto cello tape. There were four different kinds of toe straps and five different kinds of toe clips. When you ordered your Silca Impero frame pump, you could choose from 4 different heads (plastic Silca, plastic Primus, plastic Campagnolo, or steel Campagnolo).

There wasn't the same degree of choice among the framesets as Columbus tubing carried the day while Vitus quietly offered the aluminum alternative. The Palo Alto house-brand frames were made of Columbus SL tubing and were available as a racing frame or touring tiame. Eddy Merckx had his De Rosa-built SL frames, and Vitus promoted the 979 as ridden by Sean Kelly and Jonathon Boyer. For mountain bike frames, you could choose the Ritchey Team Comp (fillet-brazed Columbus SP) or Ritchey-Palo Alto (fillet-brazed 4130

cro-mo).

One surprise to newer cyclists may be the extent of Avocet's product line. Avocet offered not only saddles, shoes, and computers, but they had clothing, hubs, headsets, tools, pedals, toe clips/straps, cranks/chainwheels, and bottom brackets. No derailleurs or brakes, but they seemed to be on their way.

Palo Alto also carried TA bottle cages for \$4.50. Campagnolo alloy toe clips at \$12.50 a pair. They list the weight at 25g (versus 29g in the Rivendell Reader). Genuine Alfredo Binda Extra toe straps for \$11.50 a pair. The Campy Nuovo Record shifters in the RR are shown in the Palo Alto catalog as Super Record shifters when sold without the clamp. With the clamp they are Nuovo Record. Cost in 1984 for the Super Record \$16.50.

It's interesting also to note some of the component weights. Paul Components is currently bragging that their new \$325 rear derailleur only weighs 169g and is far lighter than anything else out there. With the Dura Ace at 209g and the Campy Record at 249g, they're right. However, in 1984, you could get a Campy Nuovo Record at 205g (\$50), a Campy Super Record at 190g (\$74), a Sun Tour Superbe Pro at 175g (\$40), or a Sun Tour Cyclone II at 162g (\$27).

Gee, I wish I could find those older catalogs. Maybe some from my first days in cycling (the late 70s - not THAT long ago). Those parts, clothing, and bicycles offer a rare simplicity, functionality, and innocence that is mighty rare today.

Todd K.

Editor:

I was very please to read the articles written by Ted Costantino and Keith Mills. I know you were in contact with Doug Roosa so it **looks** like you've almost reunited the crew from the old Bicycle Guide. Chris Koch, too. I **also** enjoy Mike Ferrentino in Bike. Maynard Hershon is always excellent, and the interview with Roger Durham **was** great.

I remember Doug Roosa's work in particular. His article about small-wheeled bicycles in the September 1991 Bicycle Guide inspired me to buy my **XO-1**. I even obtained a second 26-inch road (650C) set of wheels for it. Doug was right about the effect smaller wheels have on acceleration. I'm not a racer, but I feel like a sprinter on this bike. Two sets of wheels and bars make it even more versatile, and I hope to keep **this** bike forever, or at least until I can afford a Riv.

Regarding my order, I was very pleased with the SunTour bar-end shifters. These are just like the ones on my first 10-speed, a 1974 International Mark 12. Even back then I recognized the value of being able to shift while keeping my hands on the bars and near the brakes. I endured a great deal of ridicule back in those days, but I stuck with it. **You** cannot imagine the joy I felt when I say the RB-1 with bar-ends—vindicated at last! I have bar-ends on three of my four bicycles, and I'm looking forward to your bar-end design.

Best wishes to you and all and I look forward to the next RR.

Steven T.

Kaneohe, HI

*Steven, you're one of the few who spells Ted's name properly, with only one N. Or did I fix it in the editing? Iforget.— Grant*

Editor:

I'm a sales rep for a large bike company, and I recently bought a new bike because I felt it was good to ride what I was selling. I already have two road bikes and a mountain bike. Since my other

two road bikes are old, steel, and Italian, I thought it would be neat to have some variety. The new frame is carbon fiber, with an aluminum fork. I checked out the specs before I bought it, and the geometry looked in line with my other bikes.

My favorite bike has a 74 degree seat tube and the saddle is jammed all the way back, so I can get my knee over the pedal. Over the years I've lengthened the stem to 130mm. I ride Cinelli #66 bars, 40cm wide, and use 172.5mm Super Record cranks. The saddle is an Avocet, made by Selle Italia, and identical to a Turbo. I haven't changed my seat height in years, nor anything else that affects position. In fact, a few months ago, when a friend of mine asked to take it for a ride, he couldn't get the seat post to move. Everything fits me perfectly.

So naturally I tried to duplicate this position as much as possible on the new bike. I used the same saddle, stem, bars, and measured everything carefully. I was excited to see how a carbon fiber bike would ride, and a few weeks ago I rode it for the first time. It cornered well, but so does my steel bike. It seemed stiff enough, but so is my steel bike. I couldn't tell a difference in the way it rode.

What I did notice, however, was that the cranks felt oddly wide and the stem felt too short. The bike wasn't very comfortable, and it took away from the ride. Rather letting me pay attention to the scenery or how hard I was breathing trying to keep up with my friends, the bike distracted me.

The problem, as it turned out, was the Superbe Pro cranks. Now, I know they're beautiful and well made, and that's why I bought them. And of course I know that SunTour is gone, and I don't mean to kick a dead horse. There's nothing inherently wrong with these cranks, and if they work for you, terrific—but they didn't work for me. My feet felt too far apart, and that's when I discovered the high Q-factor on the Superbe Pro's. ("High" is relative here. In fact it is about 145mm, or 10mm wider than what I am accustomed to. But among currently available pro quality road cranks, I believe the Superbe Pros are still low.)

I also realized that even though the top tube was identical in length, the seat had to be farther back on my old bike because it had a steeper seat tube angle. The saddle position had the effect of stretching me out more, and as a result I was not as comfortable on my new bike.

A couple of weeks later I was invited on a ride, a 50-der through the local hills. There was only one bike I could go for that morning, my old and trusted steel Italian bike.

Soon I will work out the bugs in the new bike. I'll replace the cranks with Mavics, which have a much lower Q-factor. I'll put on a 135 stem, which is longer than I like (the looks of), but position is king.

Carbon fiber, steel, titanium, aluminum. The debate rages on in magazines and bike shops everywhere, but how well the bike fits and the rider's position are usually forgotten or ignored. Why is it that fit and position are so often ignored?

R. G.

*Because they aren't CNC machined out of, you know, billet... —Ed.*

Dear Grant,

Having read through RR #2 I'd like to make a few suggestions and offer a few opinions. First, abandon the tubing decals! Richard Sachs doesn't need them and neither do you. I've always believed tubing decals are a bad idea because they give people a false sense of

value. They see the decal that says Columbus SLX and automatically think the frame is better than one with a decal that says Columbus SL! There are far more important details to sweat over on a frame than the decal and wouldn't you rather have people buy your frames and enjoy them because of the way they look and ride as opposed to having a decal proclaim their worth? Finally, frame decals have given rise to their own ugly form of elitism. Ride with certain people on a Tange frameset and they look at you like a heretic in a temple.

In the catalogue you say you're concerned about spending money on items that overlap existing inventory. I agree with your concern but I don't think this has happened yet. I would like to see you offer a crankset, and I'm definitely interested in the bar-end shifters as the bolt on my Campy bar ends seems to be stripped and the expanding plugs are cracking and falling apart which has forced me to use a Campy bar end for the rear derailleur and a Campy downtube lever for the front. Very strange looking and people keep asking me if I'm doing it to save a few grams (Annoying).

What's up with the seatpost? I want one to replace the ugly SR Sakae I'm currently using.

I read that you're looking into making a 4X5X9, made in California faux-Carradice. That would be perfect for me provided it would fit my Brooks Professional saddle (I can't justify purchasing a new saddle). What about pedals?

Why have so many of the aftermarket seatpost makers eliminated the set-back clamp? Placing the clamp directly on top of the post forces you to slide the saddle all the way back which can't be very good for the saddle rails. Doesn't this also shorten the top tube? Are there any advantages to this design that I'm missing?

Best Wishes

Chris Lowe

*I understand what you're saying about tubing decals, and agree it's crazy that now, because of sticker-wan, people look down at mere Columbus SL as "entry level" tubing. I don't know what to do about the 753 decals, but there's more to the derision than meets the eye. First, I've always held Reynolds in the highest esteem, and I personally have regarded 753 as, well, my personal first choice in tubing. That gets its toe in the door. Next, I like the people at Reynolds, and they've gone overboard accommodating my requests. In ten of volume and out-and-out potential, Rivendell is a pip-squeak, yet they've never treated me like that. Putting the decal on the jame, or at least not ruling it out, is a small way to pay them back. Third, I like the color purple, but I didn't want to make it a jame color. Many of the Rivendell colons are tastefully bland, and a show of El Purp adds something. Fourth, I've spent a couple thousand dollars, I'm ashamed to say, getting custom 753 decals made, and I don't want to hiss it all away. They're the old, slanted 531 style, with the French writing, in old 753 colors and sans the newer lower yellow border. I like them. Another dilemma is where to put them. High on the seat tube, the modern position, is too obvious a place for a jame with such understated graphics. And purple high up would stand out too much. So I've been thinking about the base of the seat tube, the older position. In the end I think I'll just include the decal with the jame and let the owner make the derision. True, it won't be clear-coated over this way, but it solves a lot of other problems.*

*Rivendell cranks? I've thought of it. I'd like a low-Q crank made of tubular steel (753? 531?) brazed to investment cast ends. Not painted, plated. That's another \$8,000 in tooling, so it'll wait. In the meantime I really do like the Ritchey cranks, and I hear World Class cranks are going to be pretty nice.*

*The mini-Carradice-style bag should be in this catalogue somewhere. We like it. Rivendell seatpost will be a while. So long as we can still find decent ones, it's not urgent. The Rivendell is designed, though, and it's a lot like an old Simplex, with lots of setback. I suspect the no SPO posts are that way to — well, I don't know. I don't like them, but nobody will ever go broke by not getting Rivendell's business. Now there's a quote! — Grant*

# HOW CHILDREN LEARN TO RIDE

by Dr. Richard Klein

On a spring-like Saturday in Stratford, Connecticut, my father and I, then 7 years old, walked down our quiet street to acquire a somewhat forgotten 24-inch wheel bicycle from a neighbor's dark garage. The bike was too big; I could barely reach the pedals, and I recall my father putting me on the bike, and pushing me down the street. Of course I tried to steer and crashed.

In the forty-eight years since, I've earned my doctorate in systems engineering and have accumulated a quarter century of university research and teaching. I've always been fascinated with bicycles and the forces that act upon them, so as much as possible I use the bicycle to teach mechanical engineering principles in class. My department has accumulated a ton of research and studies, and in the course of all this, I have hit upon a better way to learn to ride a bike. Not just better than the way I was taught, but better than the way you were, too. The bike is the key, and the best bike for learning is wackier than you think.

Most well-intended adults just scale bikes down to size kids (using what I call "draftsman's mentality"). It seems to make sense—kids are small so give them small bikes. The problem is that small bikes fall faster, and so require quicker reaction times. It's just like when you try to balance a pencil and a yardstick, the pencil falls faster. So a child's bike is harder to ride than an adult's bike!

In studying possible bike trainers, I rejected traditional rigid training wheels because the child doesn't counter-steer, that is, steer initially opposite or "counter" to the direction of desired travel. Additionally, bikes with training wheels are so stable, they teach bad habits and don't let the child learn good ones. Anybody who has watched his or her child ride a training wheel bike will confirm this. The child gets up lots of speed on the straight-away, turns by turning the handlebar instead of by leaning, and flops over to the outside of the turn. Or the child pedals on uneven ground, and the training wheels stay in contact with the ground, but the rear wheel lifts off and the child spins air. In any case, the transition to a two-wheeler requires a whole lot of learning and unlearning, usually accomplished by raising the offending training wheels little by little until the unlearning of bad habits is near complete, at which point the training wheels are removed for good. Millions of success stories can't be wrong, but even a billion wouldn't convince me that this is the best way to learn to ride a



bike. Let me explain.

By studying kids on regular bikes, I've discovered that most lads go through five distinct stages in the learning process. (1) They steer the wrong way and crash; (2) they hesitantly but then erratically steer the opposite way and thus counter-steer, but they do it too much, and too late, and wobble and crash; (3) they steer with a persistent wobble, (4) they gain competence and confidence, and (5) they finally acquire control, at which point they are truly "riding a bike."

A child can adapt and modify actions so long as the bike is upright, so the best bike to learn on is one that stays upright easily, while still behaving like a two-wheeler. The best bike for this, the one I mentioned earlier, has a step-through frame and the small, wide, very heavy, air-filled wheels. My students and I have used wheels from a big John Deere lawnmower, the kind you drive, but anything similar will work. The idea is to bypass or drastically shorten the first several stages by making the bike initially so slow acting and so stable—even when it's not moving—that the child learns to ride a "real" bike that behaves the way your two-wheeler behaves, but isn't so quick to fall.

It's like learning to hit a baseball from a slow pitch, then progressively faster pitching. The fat-tired training bike does the same thing by slowing down the speed of the bike's action so that the child is able to learn the required movements at a natural pace. The bike's inherent stability can then be gradually lessened by inflating the tires more (which makes the bike less stable and decreases the contact patch). In the language of laboratory learning, this is called successive approximations, and whether in the lab or in the real world, it is an effective way to learn a complex behavior. Once the child is finally steering and balancing, the final "navigation" stage generally comes about naturally.

The fat-tired bike, along with special tech-

niques for using it, circumvent the unusual problem that children experience while learning with conventional bikes, namely; too much speed, too much height, and too quick to fall. With the action of the gently shaped wide tires, the bike acts a lot like a rocking chair when the bike leans sideways, in that the contact point shifts sideways as the bike leans thus slowing or even preventing the fall. But, unlike bikes with training wheels, the fat-tired bike responds in lean to steering inputs and teaches counter-steering. It's not just a child's scale in physical size, but in reaction time, too.

**Dr. Klein is a Professor of Mechanical Engineering at the University of Illinois in Champagne. He has experimented with bicycle designs extensively, and knows more about bicycles than most people.**

Dr. Klein is quick to point out that as important as the bike is to the process, the best results will be achieved only with good instruction. He claims to have taught a good many children to ride bikes, without falling once, without fear, and in less than ten minutes. I (Grant) have seen the bike, I've ridden the bike (too small, but quite stable), and I've watched a video of a young girl learning to ride on it. I don't think any sleight-of-anything was going on, and the results are as impressive as Dr. Klein claims. It seems to me this would be a great tool for community centers—children could learn to ride a bike the same way they learn to swim—by trained instructors. True, it might take the joy of teaching your child yourself, but it's never the teacher that teaches, anyway; it's generally a matter of children overcoming the bike and their fears; learning what not to do as often as what to do, and often falling and fearing the bike in the process. If you or anybody you know is interested in taking this another step, maybe even commercially, you may contact Dr. Klein at (give number).

One final note that didn't make it in the story: Dr. Klein believes that no matter what bike is used, it's best to learn to ride a bike in cold weather, so the child can be dressed warmly, feel more secure, and be protected in case of a fall. It should be obvious that this isn't mandatory, just a suggestion.

# THE HAPPY RIDER

IF YOU LIKE SOMETHING WITHOUT RESERVATION, TELL US AND WE'LL PRINT IT.

## MAVIC REFLEX RIMS

According to Mavic, "the Reflex rim is designed for road racing, harnessing all of Mavic's state-of-the-art technologies." What they really mean is the Reflex rim is the best made, bar none. The "SUP" and "U.B. Control" labels signify the rim's rigidity and seamless braking surface. Using a diamond tool, the rims are milled after anodization, creating an extremely effective braking surface for wet and dry riding. No other rim has stayed as true or has ridden so well as the Mavic Reflex.

I've been riding on a set of wheels built with Reflex rims since August '94, and nary a tweak have they required. The 217 rim is also available for 26-inch wheels. Rims are about \$50 a piece. Mavic, Inc. 207 Carter Dr. West Chester, PA 19382. (800)548-2945.

Gary Boulanger

(Gary also wrote the RR-1 review of the Sachs group. I accidentally cut his name off, but it was him.)

## THE SILCA TRACK PUMP

Simple, unpretentious and effective, it just does the job without complaining or attracting attention to itself. Subtly sophisticated with a Columbus tubing body and a beautiful machined brass head. It packs well in the trunk of an overstuffed car but is durable with (mostly) all metal parts. Even the plastic handle has good lines and provides a decent surface for pressure application. Not only have I never regretted buying mine, I've always gotten supreme satisfaction from using it, which of course I frequently do. Now the smallest of a trio of pumps, but still the original and the finest!

Paul Webb

## STRONGLIGHT HEADSETS

If you curse indexing headsets, look no further. The roller bearings inside these have a much larger surface area, so they'll never wear out—and the races come out easily and are replaceable, anyway. I bought two Stronglight headsets in 1990, used. I didn't know they had French threads, just wondered why they were so hard to force onto

my Italian and English bikes. But ever since, they've been working fine. I have one on a touring bike that I rode for 300 loaded miles slightly loose, before finding a wrench. The other has at least 25,000 miles on it—no problems yet. I'd like to get one of the newer models, sealed, with an allen-key adjustment, but the old one isn't wearing out. Light, reasonably priced, easily serviced, available in all threadings, and most good bike shops have them.

Jan Heine

## TIMBUK2 MESSENGER BAGS

Hands down the best. Available in four sizes: the Dee Dog is the one I use, and is all the bag any mortal will ever need. I get compliments on it everywhere I go, and have the feeling it will be the last bag I ever buy. Comfortable on and off the bike; no zippers, only buckles for overstuffability. The bags are made of DuPont Cordura and waterproofed with a black DuPont tarmac material. They come with three color panel possibilities and a choice of twenty colors, yielding 14,000 distinct patterns to go crazy from. The bags have the most ingenious stabilizing system—an easily adjustable cross-strap which can be manipulated while riding to handle changing package sizes, and an anti-sway strap connecting to the cross strap which cinches down the load. Made in the Bay Area (SF bay), by courteous folks for cyclists. Call 800 334 8501.

Ali Aslam

## CLEMENT FUTURA TUBULAR TIRE

Anyone who has ridden a bike for any period of time can tell you that tubulars ride better than clinchers. The problem for most people is that tubulars are expensive to buy and time consuming to repair (Not difficult mind you, just time consuming). This problem is compounded by the fact that most inexpensive tubulars prove to be less than durable. The Clement Futura is an exception to this rule. The cost of the Futura is kept under the \$15 mark by manufacturing it in Taiwan instead of Italy.

The best feature of the Futura is the Kevlar belt used to ward off punctures. I have

yet to get a flat on these tires which is truly saying something since I used to routinely ride them on the dirt roads lining the canals that criss-cross the Phoenix area (thorn capital of the country!). While the Futura lacks the feel of more expensive tubulars it compensates for this in its price and durability which make it a great choice for daily use.

Reviewed by Chris Lowe

## STRONGLIGHT X-14 HEADSET

A good headset just sits there unobtrusively and the less attention it attracts the better because the only time a headset seems to get noticed is when it comes out of adjustment. That's exactly what I like about the Stronglight Direction X-14 headset. This headset combines the holy trinity of all great components: 1) It works, 2) It's light, and 3) It's easily worked on.

The X-14 is adjusted by a single allen bolt. Just snug it down by hand and tighten. That's it. I've used the same headset for both on and off-road cycling and it has never come loose. Inside the Stronglight relies on needle bearings rolling on replaceable steel races. This is a very smart design. I've never pitted a needle bearing headset and the fact that the bearings roll on steel instead of the softer aluminum used in the rest of the headset is very reassuring.

Overall this is one of the nicest headsets going. At only 50 bucks it's about half the price of many of the fancy boutique offerings and you get Stronglight's excellent reputation.

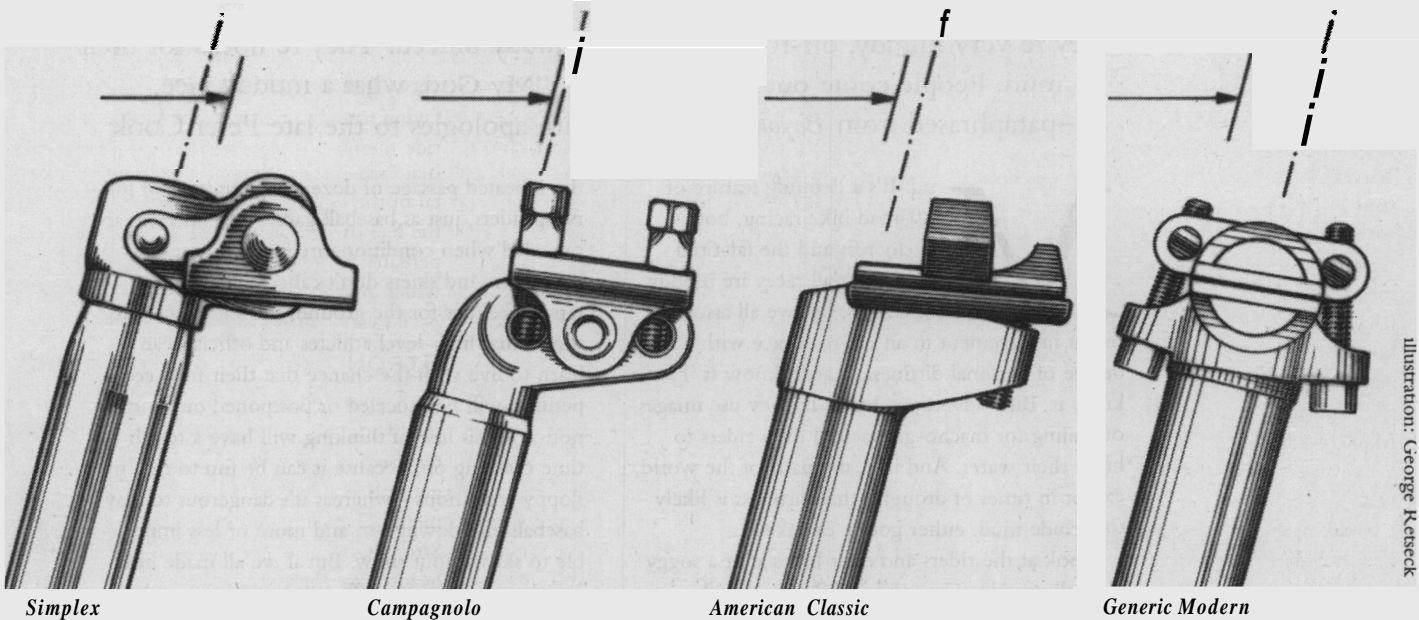
Chalk up another for Chris Lowe.

## WELLS LAMONT HOB-KNOBS

These are cotton yard work gloves with rubber dots on the palms and fingers. Perfect for cool morning rides, trail rides in prickly country, just about anything except for hot hot weather or cold wet weather. I use them to keep the poison oak off, too. Cheap! Available! They're around \$4 in any variety or grocery or hardware store. I think I bought my last pair at Safeway.

Craig Strauss

# THE SPO FACTOR



In 1980 or so a friend of mine had a 59cm Choach (rhymes with Piocc) and he said the only way he could get his Turbo where he wanted it was to use a Campy seat post, because it held the saddle farther back than any other. The offset is sometimes called setback, but since the latter has long been a frame design term, I'm going with seat post offset, or SPO. I'm not trying to coin a phrase here, and you can call it whatever you want, but here and now it's SPO.

Measure SPO from the front of the seat post to the forward edge of the rail clamp. This doesn't quite account for different diameters, but close enough. See George's illustration showing SPOs of Simplex, Campagnolo, American Classic, and a generic composite of many American and Taiwanese posts. These are not presented as Best-to-Worst, just Lots-to-Little.

It used to be that most SPOs were between 12mm and 14mm, which meant that the forward edge of the rail clamp was near the centerline of the seat post. There were a few posts with higher SPOs, such as

the Rushmore-worthy Simplex, but most were between 12mm and 14mm, and SPO by any name wasn't even an issue. Then several years ago mountain bike posts started showing up with low single-digit SPOs, and still nobody talked about it, and that's pretty much where it stands today.

That's interesting, because all smart bike people agree that body position is important, and SPO affects that. Seat post angle affects body position, and SPO affects the effective seat tube angle. If a manufacturer designs a mountain bike with a 75 degree seat tube angle and a high-SPO post, the squeakers would certainly squawk. But if someone makes a 74-degree seat tube angle and a no-SPO post, nobody even squeaks, even though you can't get the saddle back as far with this combo. Most riders I know shove the saddle all the way back on the rails. Not all saddles have the same length of usable rail, and in the same place, so some go back farther than others, but that's another story.

SPO works with seat tube angle to determine where you sit. How much difference

does a degree make? On a 56cm road bike, the difference at the seat cluster between a shallow 72-degree seat tube and a steep 74-degree one is about 18mm. But Most 56cm frame riders I know sit about 17cm above that, or 73cm above the bottom bracket. By the time you're up there, the two degree difference between 72 and 74 degrees amounts to 20mm, and a sensitive chimp can notice that. If the 74-degree rider also has a No-SPO post, and the 72-degree rider has a 2.7cm SPO-er; then the difference is 47mm—an inch and three quarters.

I personally prefer seat posts with lots of SPO, but that would be the worst reason in the world for anybody else to. If you like sitting forward and don't mind the extra weight on your hands and arms, or if you're a tight-hamstringed triathlete, go for the no-SPO post!

*If you semi-enjoyed this column, you'll genuinely enjoy Shrieking About Stems, coming up in RR-4.*



# Off-Road Racing: Keep It Local

by Howard Runyon

They're very muddy, off-road races; very muddy indeed. They're noted for their mud. People come out of them saying, "My God, what a muddy race."

—paraphrased from *Beyond the Fringe*, with apologies to the late Peter Cook

**M**ud: It's a defining feature of off-road bike racing, both cyclocross and the fat-tired kind. Not all races are muddy, of course, but we all associate recent involvement in an off-road race with a high degree of personal dirtiness. Racers know it. Fans know it. Bike advertisers know it; they use images of smiling (or macho-grimacing) dirty riders to hawk their wares. And in many parts of the world, except in times of drought, that dirtiness is likely to include mud, either goopy or cakey.

Look at the riders and their bikes after a *soggy* race: all muddy. The mud is *soil* mixed with water. That *soil* used to belong to the ground of the race course. Where is it headed now? Into drainage ditches, shower drains, laundry drains, carwash drains. It's not going back where it came from.

*Soil* erosion is a fact of life; there's practically no way to enjoy the outdoors without helping it along. But a muddy bike race that's well attended can displace a lot of *soil*. **This** may seem unimportant, given the present geography of off-road racing—namely, that most races take place at commercial ski areas and other privately held spots where the damaging of the landscape isn't a crime against a larger community of taxpaying outdoors-users. (Besides, ski areas seem already to be some of the most horribly damaged landscapes—maybe because, despite clear-cut "trails" and concrete-and-steel lift towers and ugly systems of hydraulic snowmaking equipment and vast parking lots, they cling paradoxically to some idea of "wildness" for a large part of their commercial appeal.) But that rationalization doesn't work for me. Damage is damage, and I want my share in it to be small.

*So* I've tended not to race off-road in wet conditions. When a race was coming up I'd watch the weather for a week or *so* before; if we had a *dry* spell I'd do the off-road race, and if not I'd stay home or race on the road or track. In a smart universe, off-road races would be canceled whenever the ground was wet enough to suffer much from

the repeated passage of dozens or hundreds of hurrying riders, just *as* baseball games and ski races are canceled when conditions are bad. (Granted, ballplayers and skiers don't cancel events out of tender feelings for the ground; but their example shows that high-level athletes and officials can learn to *live* with the chance that their next competition *would* be canceled or postponed on short notice.) This line of thinking *would* have a tough time catching on, because it can be fun to ride in sloppy conditions—whereas it's dangerous to play baseball in a downpour, and more or less impossible to ski without snow. But if we all made little consciousness-raising efforts here and there, the change might come. It might.

There's another problem—a bigger one. Off-road racing has grown from a counterculture into a prodigious commercial engine. That growth has produced a calendar full of "big" races that draw riders hundreds and thousands of miles. What athlete would enter a high-priced event like a NORBA national or a Specialized Cactus Cup weeks in advance, book a motel room, and then travel five or ten or twenty hours if there were any doubt that there'd be a race on the appointed day? What company would sign on *as* a sponsor?

*All* of which leads me to this: Off-road racing, for everybody but pros and truly elite amateurs, should be a grass-roots thing. Races should be promoted and contested locally, so that a cancellation-on-account-of-mud won't create a mob of angry, frustrated people who've planned for weeks, traveled far, and spent big bucks to get their adrenaline fixes. Maybe the big show-biz events need to run as scheduled no matter what the conditions; but they shouldn't include races for the countless classes and categories of citizen athletes that now put *so* many rider-laps on the beleaguered big-time courses. Let's do our own racing in our own back yards, and let's leave our bikes at home—but take our umbrellas—when we go road-tripping to watch the pros. Would that hurt *so* much? I don't think *so*. I think we should *try* it.



# A PICTORIAL HISTORY OF BICYCLE SUSPENSION.

by Frank Berto

If you've only been watching the bike scene for ten years or so, you might assume that full-suspension mountain bikes are a brand new idea. If you go back to the 1960s, you'll recall the top-of-the-line Schwinn roadsters and Stingrays with sprung front forks, but they were only for rich kids.

It goes back much further than that. The 1860s velocipedes had to cope with rough roads using wood spoked wheels with steel rims. Most velocipedes were built by carriage makers, who used the same springs that they used in quality carriages. Their choices were the same then as they are now. You could suspend the front wheel, the rear

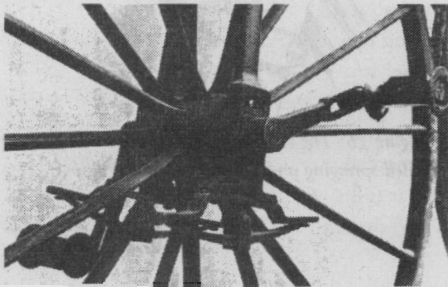


Figure 1: Front suspension on an early French velocipede made by Bouchage et Cie. & Lyon.

wheel, the rider, or any combination thereof.

By the 1880s, we had progressed to the "ordinary" or "high" bicycle with wire spoked wheels and solid rubber tires. The large diameter front wheel could go faster and it could cope with poor roads. Ordinary bicycles were truly unsafe at any speed and there was a demand for something less life-threatening.

By the 1890s, the safety bicycle had taken over. Many Victorian safeties had some form of front or rear suspension and most of them had suspended saddles.

The Frenchman, Jules Truffalt, is considered the founder of the full-suspension bicycle.

John Dunlop invented the pneumatic tire in 1888. This was such an improvement that work on bicycle suspensions nearly ceased. There were also much better roads thanks to the efforts of the League of American

Wheelmen. For the next half century, bicycle suspensions consisted mainly of spring forks, which were primarily a sales gimmick. There was activity but it was outside of the main stream.

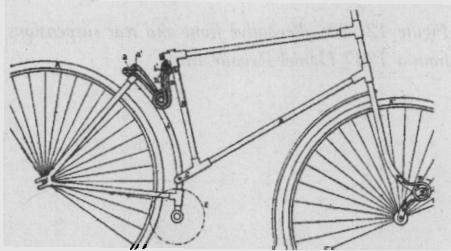


Figure 2: 1875 Truffalt full-suspension bicycle. Note that the entire rear triangle is suspended. I wonder if he encountered "bio-pacing" on an earlier prototype?

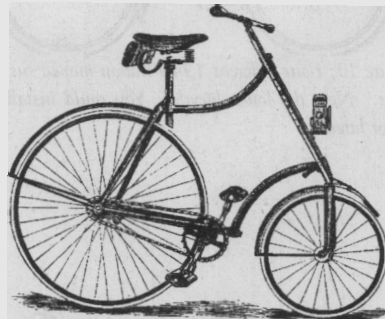


Figure 3: 1885 Humber with suspension saddle and front forks.

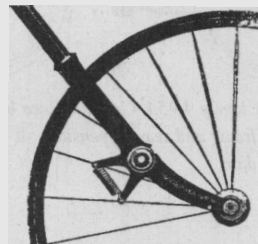


Figure 4: 1889 Rudge non-vibrating front fork.

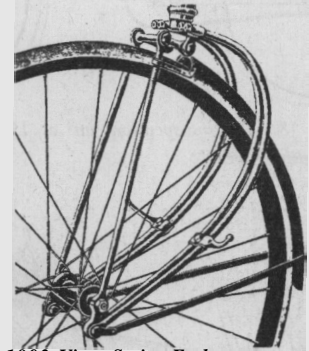


Figure 5: 1892 Victor Spring Fork.

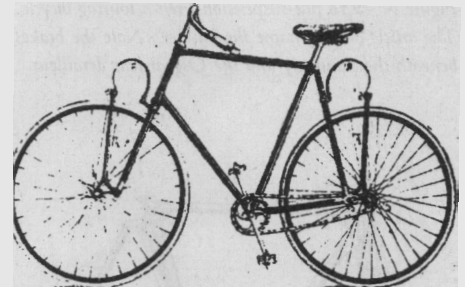


Figure 6: 1899 French Farjas bicycle with front and rear suspension.

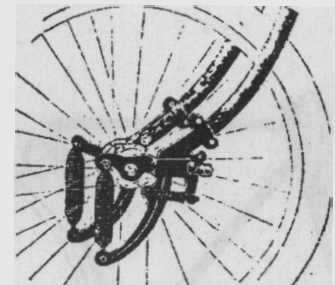


Figure 7: Two French "Fourches Elastiques" from a 1902 catalog.

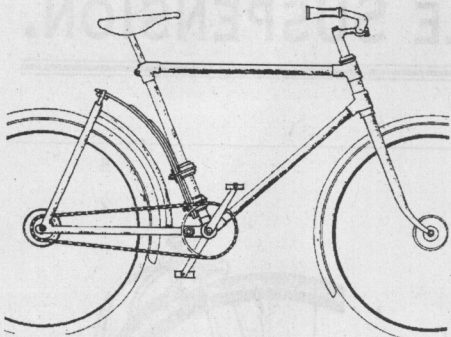


Figure 8: Rear suspension on a 1919 French Carpentier bicycle.

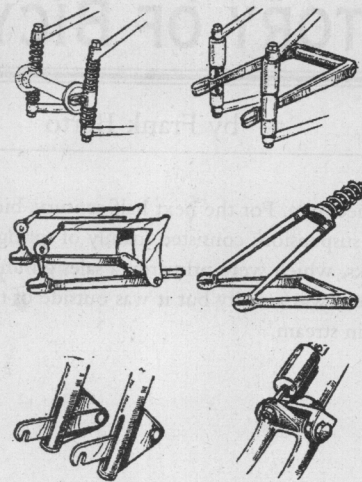


Figure 12: Six alternative front and rear suspensions from a 1947 Daniel Rebour article.

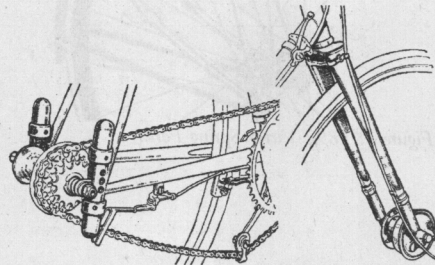


Figure 9: 1938 full-suspension French touring bicycle. The article doesn't name the builder. Note the brakes beneath the chainstay and the Osgear rear derailleur.

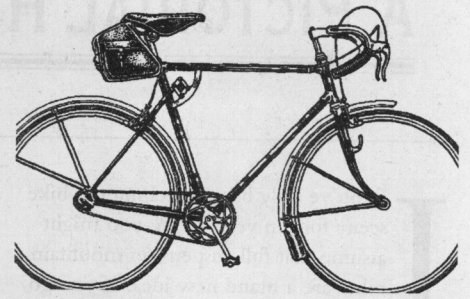


Figure 15: Classic 1951 Phillips British touring bicycle with rear suspension.

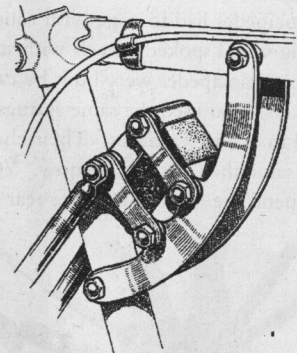


Figure 16: The block of rubber-in-shear that provided springing and damping on the Phillips.

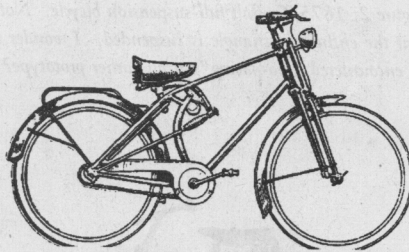


Figure 13: Four different 1948 Italian moped suspensions. Note the lower bicycle. You could install the motor later.

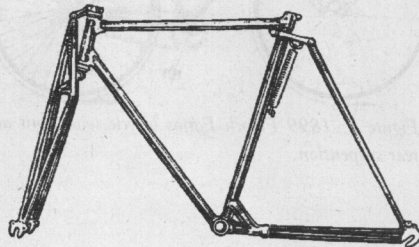


Figure 10: 1945 Le Suspendu full-suspension bicycle.

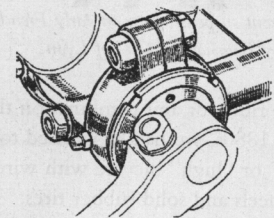


Figure 17: The pivot for the chainstays on the Phillips.

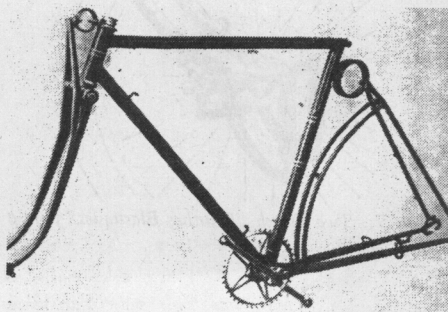


Figure 11: 1947 Omnium full-suspension bicycle.

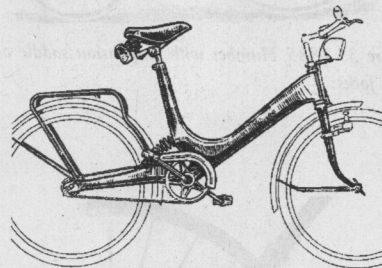


Figure 14: A lovely 1951 German Raco bicycle with a monocoque frame and rear suspension. It looks completely up to date.

After WW-II, there was major activity in suspension design but it was mostly for mopeds.

Gears to you! Frank Berto.

Frank Berto is the former Engineering Editor of *Bicycling*. He's now retired and writing for the fun of it. He's currently working on a book on the history of the derailleur bicycle. Fred DeLong loaned Frank his file of *Le Cycle* magazines from 1945 to 1974 to help with the research. This article is mainly based on Daniel Rebour drawings from *Le Cycle*.

# THE BIOGRAPHY OF FRED DELONG, A BICYCLING ENGINEER.

By Frank Berto Revised March -1995.

**I**t's no more incongruous to swing a bat and not know who Willie Mays or get cured of scurvy and not know who Linus Pauling is, than it is to throw your leg over a top tube and not know who Fred

DeLong is. During the past fifty years nobody has personified cycling in America, or contributed more to our understanding of it than this man. Here, Frank Berto, known to many of you as the guy who wrote all those early-'80s Bicycling columns on derailleurs and gearing—tackles the impossible task of summing up Fred's history with bikes in just 3,500 words. This article is based on a two-day conversation between Fred DeLong, John Schubert and Frank Berto, and twenty years of cowespionage.

## GROWING UP.

Arthur Fred DeLong was born in Philadelphia in 1915, the youngest of two boys. His father was an architect and the president of a small family business which made church furniture and interiors. The high point was the interior of the National Cathedral in Washington, DC. Business was cyclic because contributions to church projects dried up in recessions. The business went bankrupt in the early 30s.

The DeLong family was always interested in Boy Scouts. Father was a Troop Committee chairman. Fred joined Scouts when he was old enough. During school vacations, Dad took the boys on long tours in their Maxwell touring car.

## THE TWENTIETH CENTURY BICYCLE CLUB.

When he was twelve, Fred got his first bicycle to help with his paper route. It was a cheap Sears Roebuck model with 1-1/2-inch wide single-tube tires. Fred streamlined the head tube and seat tube with balsa and linen

and dope.

When he was in high school, he left his bike next to the curb and a car ran over the wheels. The bike store across the street which turned out to be the headquarters of

go hiss - hiss as it touched the rear tire of the bike in front. He subscribed to the English magazine, "Cycling."

For several years, he was the club champion and finished second or third in the three-day Pennsylvania state championship. On the longer races, he used a three-speed bike with a French Cyclo rear derailleur. His later bikes used Super Champion front and rear derailleurs with the shift levers under the seat.

Fred wanted to take aeronautical engineering but the family could not afford it. In 1933, he enrolled in

Mechanical Engineering at nearby Drexel Institute, where the tuition was only \$325 per year.

Drexel had a five-year cooperative work-study program. Fred spent his work semesters taking the engineer's apprentice program at nearby SKF ball bearing factory at 40 cents an hour. He started as a machinist helper, worked through the entire manufacturing process, and finished in the laboratory that analyzed bearing failures.

While at Drexel, he bought two custom built bicycles from Claud Butler, a touring and a racing model.

He pedaled to SKF and to Drexel to save streetcar fare. As time permitted, he continued to race. He wrote his first bicycling articles for the

Quaker City Scout, the local Boy Scouting magazine.

In 1934, Fred met Pauline on the Hardly Able ride of the Century Road Club. Fred sang in the Drexel glee club and Pauline was in the glee club of the department store where she worked. Pauline was singing on the ride and Fred sang in harmony. They went together and bicycled together for four years. Pauline learned competitive bicycling from Fred. She was five years older than Fred



the Century Road Club and he saw quality racing bikes for the first time.

He soon joined the club and bought a racing bike with his paper route earnings. He recalls twenty-mile evening training rides from Philadelphia to Langhorm on fixed wheel bikes. He learned peloton tactics with the club. In those days of fixed wheels, one learned to follow the bike in front so closely and accurately that the front tire would often

and her parents didn't really approve of the skinny kid who was keeping her company.

### 1938 TRIP TO EUROPE.

He graduated in 1938 and he had a job with SKF waiting for him. He and Pauline became engaged.

He was in the ROTC at Drexel and he spent most of his meal allowance on bicycles. On graduation in June 1938, he went to ROTC summer camp for two months and completed the requirements for a Second Lieutenant's commission.

He had saved up enough money (\$200.00 plus boat fare) to go to Europe. In August 1938, he sailed on a Swedish freighter to Gothenburg with his Claud Butler touring bike and all of his gear in the panniers. In the two-week voyage, he learned rudimentary Swedish. This helped when he visited SKF's headquarters and factories in Sweden.

He found an inexpensive boarding house in Stockholm. He spent ten days in Sweden visiting SKF plants, including the steel mill that made the special steel for SKF.

He took the ferry from Malmo, Sweden to Ludwigshaven, Germany. He saw German troops everywhere as he took trains and bicycled around Germany. He communicated using his high school German. When he visited the Rixe bicycle plant, they were suspicious because the plant was doing war work.

After Berlin and Cologne, he arrived in Munich just in time for Oktoberfest. The city was decked in swastika flags. The next day was the infamous "Peace in our time" conference between Adolph Hitler, Edouard Daladier of France and Neville Chamberlain of England. Meanwhile, he passed train after train loaded with German troops heading for Czechoslovakia.

He took a train to Paris, where a telegram from his parents said to come home because of the war danger. However, the newspapers were full of the "successful" peace conference and Daladier returned to parade through the Arc de Triomphe.

He went to Saint Etienne to visit Cyclo, Vitus, and other bicycle factories. Back in Pans, he visited the Oscar Egg factory and ordered an Oscar Egg tandem (with a five-dollar down payment). This had a 52-32 double chainwheel, a 14 to 28 three-cog freewheel, and Super Champion wide-range derailleurs.

He lived cheaply in youth hostels, eating two meals a day. By the end of October, his money was running out. He took a ferry to England where he visited Hetchins, Freddie

Grubb, F. W. Evans, Holdsworth, and Claud Butler. He ordered a mixte bicycle for Pauline from Claud Butler.

In London, Fred stayed with Frank Whitt. Whitt, a chemical engineer, was very interested in bicycles and wrote articles for the CTC Journal. The two formed a lifetime friendship. Fred bought an original copy of Archibald Sharp's 1896 book, *Bicycling and Tricycling*, the best source of bicycle engineering available.

In October, 1938, he sailed from Southampton back to New York in steerage on a Dutch passenger ship.

He went to work in Philadelphia for SKF for 60 cents an hour, living at home and bicycling to work. He learned how to set up and run every machine in the SKF factory.

On Labor Day, 1940, Fred and Pauline were married.

### WORLD WAR II.

In June, 1941, he was called back into the army as a reserve officer. He joined the 1st Armored Division at Fort Knox, which was training to go to Egypt for possible action against Rommel. He was involved in maintenance training for Army vehicles. Fred and Pauline lived at Fort Knox and they bought a new Plymouth for \$900. On their way home to Philadelphia on leave, they heard the news of Pearl Harbor.

The Army expanded to four and then to eight armored divisions. He was one of the cadre of three "seasoned" officers assigned to the new 4th Armored Division.

The DeLongs bought a house trailer because housing for military people was in short supply. Their son, John, was born in Pine Camp, NY, in March 1942.

Fred was deeply involved in the preparations for Operation Torch, the invasion of North Africa, which took place in November 1942. The Ordnance Department expanded and became responsible for maintenance of all the army's vehicles and guns. The DeLongs moved to Shaw, N. C. and then to Pomona, CA. He and Pauline towed the trailer to Pomona, taking their bikes with them.

Ordnance Maintenance included supplies, spare parts, engine and drive train overhaul for everything that moved in the army. The 303rd Ordnance Regiment was located at the Pomona Racetrack. Maintenance procedures were developed to cover complete overhaul of engines and drive trains.

Fred helped to develop the concept of mobile maintenance. He was sent to the

Aberdeen Proving Ground to work up maintenance training programs for the newly formed ordnance regiments.

He was promoted to Captain in 1943. Separate ordnance battalions were set up to provide field support for the coming invasion of France. Fred was the commanding officer of the 2nd Ordnance Battalion. He sailed to England on the Queen Elizabeth with his ordnance battalion. They set up a base at Tidworth.

As part of the D-Day preparations, four ordnance companies were established in Britain. This involved a great deal of travel. He bought a 3-speed Raleigh. Officers couldn't drive vehicles but they could cycle. He was driven by Jeep on the long trips but he biked for short trips.

The 2nd Ordnance Battalion sailed from Liverpool a week after D-Day. The plans were to land at the new prefabricated harbor at Cherbourg. A big storm had destroyed the "Mulberry" floating dock so they landed on the beach and built a maintenance base from scratch.

Fred recalls flying over Le Havre in a Piper Cub spotter plane to plan a maintenance base. The Cub ran out of gas on the way back and glided into an airfield near Caen. Fortunately, the airfield had been captured the previous day.

In July, Patton's Third Army broke out and the 2nd Ordnance Battalion followed the Red Ball Route behind Patton for 80 days. They performed maintenance by leap frogging as Patton advanced. This took place as planned and mobile maintenance continued after the break-in to Germany until the German surrender.

After VE Day, Fred was sent back to the US for training for the invasion of Japan. He saw Pauline and his son for the first time in two years. Fred was discharged in September, 1945.

### THE POST-WAR YEARS.

He went back to work for SKF in Philadelphia but business was slow. In 1946, he left SKF to work for Exide Battery. He and Pauline bought a house in Oreland, PA. They rode their single bikes or the tandem with their young son. In 1947, they bought 37 acres in Hatboro to build a new house. With a surplus army truck, Pauline hauled home lumber from army barracks that were being torn down while Fred worked on the house. They built the barn first and lived there for two years while they finished the house.



Fred commuted to Exide by bicycle (36-mile round trip). As his son grew up, Fred became active in scouting. He and Keith Kingbay of Schwinn rewrote the Cycling Merit Badge Manual.

### THE 50S AND 60S, BICYCLING'S BARREN YEARS. THE REBIRTH OF LAW (LAB).

In the 1950s, bicycling development moved very slowly. The 3-speed Raleigh "English Racer" was the standard youth hostel bicycle. Fred kept up with developments by correspondence with Frank Whitt and by subscribing to British and French cycling magazines.

Through Mel Pinto, Fred imported French Gitane derailleur bicycles for fellow AYH members. When the prewar Oscar Egg tandem was damaged in an accident, they ordered a second Oscar Egg tandem. Dr. Clifford Graves on the west coast, Fred on the east coast, and several others started the program of tandeming with blind people.

Pauline joined a woman's cycling club that rode every Wednesday. The DeLongs became involved in the youth hostel cycling movement and they met Dan Henry of the New York bicycling club. The various eastern state bicycle clubs began to get together through the youth hostel movement.

Fred wrote bicycling articles for the AYH magazine, A-Way. When Keith Kingbay of Schwinn and Phyllis Harmon revived the League of American Wheelman in the Chicago area, they contacted Fred to help expand LAW to the east coast. Fred was LAW's first eastern vice president. He wrote a series of articles in the early LAW Bulletins on safe and efficient cycling, beginning of the concept that John Forester developed into LAW's present Effective Cycling program.

In 1960, Keith Kingbay convinced Schwinn to develop the Varsity and Continental, the first mass-produced American derailleur bicycles. The first Varsity was an 8-speed with Simplex derailleurs.

In the early year, bicycle racers and bicycle tourists rarely mixed. Fred learned bicycle racing in high school but he also learned to love touring with his family. From an early age, Fred was a bicycle tourist, combining these two loves.

Fred tried to interest the bicycle racing community in long distance touring. However, the racers tended to sneer at non-competitive tourists and they didn't recognize touring as a separate skill, (even as today).

In 1963, Fred began writing for the

Northern California Cycling Newsletter, which was sold to Harley Leete to become American Cycling in 1967. Occasionally Fred was paid for his early technical articles. American Cycling became Bicycling! in 1969 and was taken over by Rodale in 1978. Fred was the Technical Editor for Bicycling and its predecessors until 1980.

In the late 1960s, Fred wrote the owner's manual on bicycle repair and safe bicycling for the Bicycle Institute of America, the manufacturer's trade group. The first BIA safety manual was called Bicycle Safety Tests.

As a result of these articles, the trade magazine, American Bicyclist, approached Fred to write technical articles for them. He still writes for American Bicyclist. He has written more than 200 technical articles about bicycles.

### THE 1970S. THE BICYCLE BOOM.

The late 1960s and early 1970s saw the flowering of European bicycles and components. Fred became friends with many of the makers of French custom bicycles and components: Ernst Cjuka of Alex Singer, Rene Herse, Alain Breuil of TA, Alain and Gerard Huret. Lucien Juy of Simplex, and A. Raimond of Cyclo. Fred often visited the French factories. He tested prototypes of the Huret Duopar, his favorite rear derailleur.

In 1968, Fred got back into bicycle racing. In 1977, he broke a leg in a cycling accident. He set up one of his bicycles for one-legged pedaling. He strapped his crutch to the frame so he could walk when he got off. As soon as the cast was off, he installed a shorter crank on the weak side so that the mending break wouldn't be over-stressed.

Serious adult bicycling caught on in the early 1970s. The first bicycle boom began in 1972. 1973 was the peak year, and 1974 was good. There was an interest in health. Baby boomers had money to spend on things like bicycles. The energy crunch came after the bicycle boom had peaked.

DeLong's Guide to Bicycles and Bicycling, published in 1974, gave reader the first real at bicycle engineering since Archibald Sharp's book in the nineteenth century

### THE FIRST RALLIES.

The first rallies were put on by individual bicycle clubs. They often used youth hostels to keep costs down. They worked to emphasize safe and courteous cycling.

Dr. Clifford Graves played a major part in the early rallies. His San Diego AYH was

active in both bicycle racing and long distance touring.

In 1963, Dr. Graves and Fred organized a joint east-west, three-day, AYH rally at the Bantam Lake youth hostel which attracted 100 people. Fred persuaded executives from Huffy, Murray, and Schwinn to attend. This was the beginning of organized adult (as opposed to youth) bicycle tours.

The Bantam Lake rally cemented a long correspondence friendship between Dr. Graves and Fred. The next year, Fred organized the first Great Eastern Rally (GEAR), which attracted 150 people, and Dr. Graves organized the first Great Western Rally.

The International Bicycle Touring Society (IBTS) grew out of these rallies. Dr. Graves, Fred and Pauline DeLong, Phyllis Harmon and Dan Henry all worked on and rode in the first IBTS-LAW tour in 1971. It was called the Lincoln Heritage Tour and it ran from Elizabethtown to Jasper. In 1972, the tour ran from Jasper to Springfield. Subsequently, Fred and Pauline led or rode in fifteen IBTS tours. Fred and Pauline pedaled their tandem on the 25th and 26th GEAR rallies.

Adult bicycle touring got good publicity in the 1970's, encouraged by the tours being run by AYH, LAW, and IBTS.

In 1977, LAW established the Dr. Paul Dudley White Award. The first four recipients were Keith Kingbay, Fred DeLong, Phyllis Harmon, and Dr. Clifford Graves.

### BICYCLE SAFETY STANDARDS

When Fred was the National Safety Chairman for LAW in the 1970s, he became interested in the causes of bicycle accidents.

In 1977, the International Standards Organization (ISO) began to develop real bicycle safety standards. The Consumer Product Safety Commission (CPSC) pleaded lack of funding for U. S. representation on the ISO working groups. Later, CPSC muddied the waters on U. S. bicycle safety with questionable standards on reflectors and fork retention.

Bicycle safety is difficult in the U. S. because we have 50,000 trial lawyers filing dubious contingency lawsuits claiming that their clients were injured because of unsafe bicycles. Fred often served as an expert witness for the defense in bicycling lawsuits. He became convinced of the need for better safety standards for bicycles.

From the early 1970s to the present, Fred served on ISO working groups on lighting, wheel retention (quick releases), bicycle fork

and frame fatigue strength, brakes, tires and rims. He has done most of this work gratis and it has occupied much of his free time. Today, he still works pro bono on ISO bicycle standards. He still spends most of his vacations working on ISO standards.

He strongly believes that the present cam-operated quick release is appropriate for wheel retention and that most of the auxiliary devices are designed for trial lawyers rather than users.

He feels that ISO safety standards are so important that he has paid his own expenses for trips to Germany, India, England, and Japan. In 1988, he convinced the Bicycle Institute of America (BIA) that the US bicycle manufacturers needed to be represented on the ISO working groups on bicycle safety. Cannondale, Derby, Huff, Murray, Schwinn, and Trek now send technical representatives to the ISO meeting and there is now an American National Standards Group (ANSI) to coordinate the American participation on ISO bicycle standards.

In 1984, Fred worked with David Hon to debug the prototype Dahon folding bicycle, and he wrote the Owner's Manual for the Dahon.

#### **FULL TIME ENGINEERING JOBS.**

In 1982, he retired after 35 years with Exide at age 66. The handwriting was on the wall for the battery business. Modern car batteries last for ten years instead of two or three. Exide made replacement rather than original equipment batteries.

After five months of "retirement," he got a civilian engineering job with the US Navy at the Naval Ship Systems Engineering Station in Philadelphia. The job involved extensive travel to Navy bases around the world for sea trials of new or revised machinery.

His home in Hatboro is 10 miles from the nearest Pennsylvania RR station. Each day, if there isn't snow on the ground, he pedals to the station and takes the commuter train and the bus to the Navy Yard. He works on the train. His bike uses the latest lighting equipment because much of his pedaling is after dark.

In 1984, he had a mild heart attack and his doctor told him to slow down and retire. Fred answered that his heart would have to adapt to his work schedule. The doctor warned Pauline to be ready for a fatal heart attack. Pauline, at age 74, was still working full time as a supervising nurse. Fred just kept carefully pedaling 3000 miles per year follow-

ing Dr. Robert Bond's exercise regimen. The regular exercise rebuilt his damaged heart.

In 1988, he became interested in pedal-powered water craft and bought two catamarans for the DeLongs to pedal at their summer home near Titusville, Fl.

In 1990, Fred and Pauline celebrated their golden wedding anniversary on their tandem. They pedaled to the church where they were married and rode through historical Philadelphia. Unfortunately, by the next year, health problems prevented Pauline from bicycling.

#### **THE FOUNTAIN OF YOUTH.**

Fred is nearing his 79th birthday. He still works full time at a technically demanding job. He still spends much of his free time on ISO bicycle standards, and he still pedals 3000 miles per year. When the Navy announced that in a forthcoming force reduction, preference would be given to employees with advanced degrees, he enrolled at Kennedy Western University to complete the requirements for a Master's Degree in Mechanical Engineering. He's studying statics and dynamics and advanced mathematics.

#### **FRED'S FORMULA FOR PRODUCTIVE LONGEVITY IS:**

Work full time. Break your regular schedule and your body and brain start to atrophy.

Work with enthusiastic young people and adopt their attitudes.

Never stop learning. The brain becomes more efficient with use. Accept challenges and new ideas.

Your body needs little sleep, especially if your waking hours are spent on challenging work.

Keep physically active so that your healthy body can support your mental activity.

Be of service. Leave the world a better place by your efforts and don't worry about money.

Fred DeLong died of a heart attack on July 30. He was still in harness, working full time as he wanted to work. The industry will miss his contributions to bicycle standards.

# TIM MITOMA

## MEMBER PROFILE



**T**im is the artist who designed the Rivendell logos, the BOB logo, the Bridgestone RIP T-shirt, and he also painted the picture for the Rivendell poster that we can't afford to get printed. Most artists these days use a computer, and it's almost foolish not to, considering how easily it is to change things with one. But Tim designed the Rivendell logos by hand. It went through many, many changes. He'd come over and we'd talk about this part and that part, and every time it came back over the fax or in person it looked, well, better and better. Now he works for Sony.

RR: How did you become an artist?

TM: I'm 41, and not being an artist was never an option to me. I had no inkling of what an artist was or did, but when I drew I knew I was doing what I was supposed to be doing. No one in my family had or has an interest in art and it was never taught in school, so how I learned was a combination of dead ends, Braille, osmosis, and reading. I discovered "commercial art" while working in the Oakland Library and decided that's what I wanted to do, so after high school I took lettering and layout classes and painting. I was eighteen or nineteen the first time I went to a museum. I did some illustration, flyers, and logos and got a degree in communication graphics, but my parents wanted me to get a real job, so I worked as a meter reader for PG & E for a year three months and four days. One afternoon I was standing by a bedroom window in a thicket of prickly junipers in the rain reading a bank of forty

gas meters getting harassed by a Doberman and trying not to be seen by a woman who had come into the bedroom and started undressing. I couldn't have been more miserable. I'd become a red-neck. I drove a hot rod Mustang 100 mph at least once a week, although riding kept me civilized. I sold the Mustang and used the money to pay tuition at the Academy of Art College in the City, and got a degree in illustration.

RR: What then?

TM: I freelanced for ten years in Silicon Valley during its boom years doing pictures of monitors, drives, floppies, game cartridge cover art and had a stint with a printing company doing illustration,



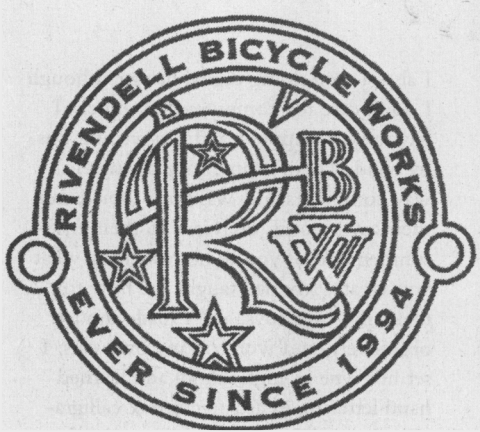
design, and art direction. When the high tech boom nose-dived I moved to a live-in loft in Emeryville and painted 5' x 6' pictures of chains and pieces exploring my ancestry, using icons from Noh theater, Samurai armor, and Zen Buddhism. To make rent I got a job with Winterland productions doing design and separation for silk-screened clothing. One week I'd be working on George Thorogood, the next, Levi's, then the Olympics, Madonna, America's Cup, Star Trek, LA Gear, or the Oakland A's.

I also started doing digital design although I don't care for computers that much. I have two computers and I'm writing this by hand. There's something about the way computers and Walkmen users enter their own world, oblivious to their environment. Also, you're not touching what you create. My dad taught me how to make my own toys, and I made models obsessively, and work on my own cars. I set hot type in high school and learned hand lettering in architecture & calligraphy classes. The computer is a great for knocking out designs, doing changes, and relieving people of tedious paste-up jobs (such as typing in handwritten manuscripts when you're on a tight deadline—G), but things done by hand can have an imperfect perfection that can never be duplicated by binary code. For mastheads, logos, headlines, and signs, you need an established matrix for x-heights, ascender and descender limit lines, stroke width, etc. But after that, you have to make all the letters in the words comfortable with each other. I think it was Herb Lubalin that said each letter must be having an affair with each other letter. You (Grant) wanted the Rivendell logo done by hand, and I wouldn't have done it any other way. I listened to a radio station that had a sketchy signal, and with an analog tuner you could tweak the knob to clean up the sound. Then I got a digital tuner and turned to 92.7. It was scratchy, so I tried 92.6 and 92.8, and the signal was gone. That's the problem I have with computer-generated type, too—sometimes the right spot is in between, but computers don't recognize in between.

RR: How was working on the Rivendell logo? We went back and forth a lot

TM: A lot of the time I was ready to push the eject button, but one of my goals has been to create a downtube logo and head badge, so I hung in there, and it was worth it. The first piece of Arches watercolor paper I bought was intimidating to me, not just because of the cost but because it was so intrinsically beautiful that it challenged me to create something

that was worthy of it. So creating graphics for a Reynolds tubing, Waterford-built 753 frame was a dual challenge and an honor.



RR: What are your tastes in bike graphics?

TM: Any sort of bike graphics should sit well on the surface, enhance the frame's craftsmanship and reflect the spirit of the builder. Putting amateurish graphics and a retina-scorching paint job on a nice frame shows a lack of respect, diminished capacity or sheer ignorance. There's a sweet spot in any design project where everything not only works but is beautiful as well. It's that way with all the bikes I like—Phoenix, Merlin, Bontrager, Sachs, Steelman, DeRosa, Breezer; and they all have really well done print material as well.

RR: How did you start to like bikes?

TM: I've always had a bicycle fetish. Always. I'm sure I'm the reincarnation of my mother's younger brother who died on a racing bike at 16 and came back to bug her by keeping it going. My older cousins would give me their cast-off J.C. Higgins touring bikes, and my first new bike was a Schwinn Orange Krate that I bought with my own money for \$69.95. It was the best bike in the world until a friend told me about racing bikes, and then my Varsity was the best. Then one day I happened upon some training rides around the local lake, I decided I was ready to race, and some nice woman told me I might need a better bike, and suggested Masi, Cinelli, Colnago... I asked about American bikes and she said Paramount, and that's what I had to have even though I didn't know what it was. I cased in my college money. My mom and

sister drove me to Stone's Cyclery telling me the whole time how stupid I was for paying \$400 for a bicycle, but that Paramount got me into a new and wonderful community. I'll probably die on a bike, but don't tell my mom.

RR: I hope you were referring to specific touring bikes made by J.C. Higgins, which I didn't know they made, and not just casting aspersions on "touring bikes." What kind of art do you like to do mostly?

TKM: The ideal job for me would be working for a bike company that made one model each of road, track, cyclocross, mountain, and touring/all-rounder kinds of bikes. The hours would be noon to eight because everyone would be riding before work. Driving or wearing long pants would be grounds for dismissal, except on Halloween, when it would be okay to wear an Armani suit. Robert K. and I would be the art department, Tim Parr, the clothing department, you and Sky would design the bikes. Customers would have to come in and assemble their own bikes. People would bring their children and dogs to work. There would be a burrito and coffee place next door, and regular arguments between Robert and Tim about cotton clothing, and you and I



about indexed shifting, because indexed shifting to you means using your index finger to move the lever. But I guess I'd settle for being a graphic designer for a bike company, especially in the clothing/graphics area.

I sometimes wonder how much research people do, because I hear other cyclists looking for things they can't buy. I wanted to make casual shorts that would be good cycling shorts years ago, and only recently have designs been showing up.. I also hear people complaining about ugly jersey designs. Not everybody wants to look like Greg Herbold on race day, nothing against Greg, but not everybody does. Many mountain bike riders like to blend in rather than stick out.



# BROOKS SADDLES AND THE BROOKS SADDLE COMPANY

by Robert H. Gordon

## *Two-Wire Sports*

### CHAMPION RANGE



#### **BI7 Standard**

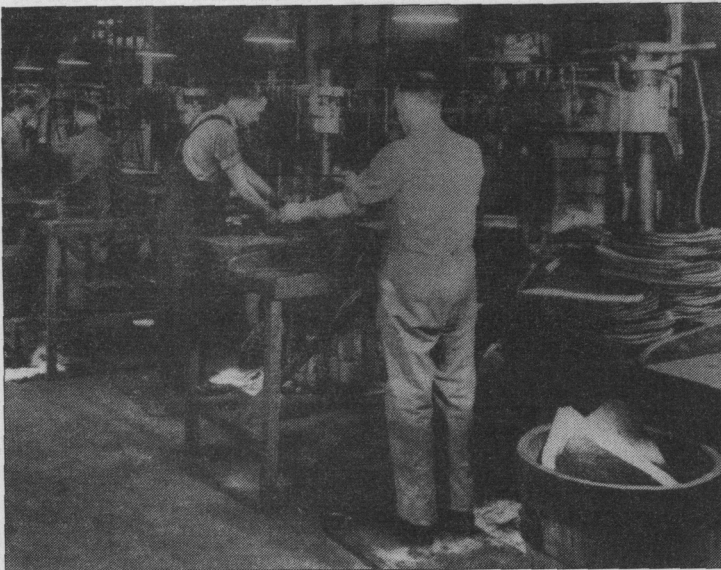
BROOKS specially selected leather top with chamfered flaps. Hand riveted. Two-wire frame and chromium plated clip.

Finish: Black enamel or chromium plated.

Size: 11" x 6 3/4" x 3 1/4". Weight: 1 lb. 12 ozs.

Price: 45/- Black enamel, 47/6 Chromium plated.

The J.B. Brooks Company began manufacturing leather strapping for horse harnesses and general leather goods in 1886. A 1919 catalogue reveals an assortment of trunks, hat cases, tool chests, cigar trays and tyre boxes, all leather bound; cycle saddles appeared as early as 1912 and possibly before. In the 1920's the company took over the Lycett Saddle Company, and in the '30s the Leatheries Cycle Saddle concern. They even owned a motorcycle factory for a while in the late '30s, named oddly enough (before



acquisition) Brookes Company. In 1958, the saddle division was purchased along with Sturmey Archer by Raleigh Industries, and in 1960 Raleigh was bought by Tube Investments (T.I.), which transferred Brooks and Sturmey Archer to its automotive division, and later to the cycle division. The company as part of the T.I. Cycle Division was taken over by Derby International in 1987, and has owned Brooks ever since.

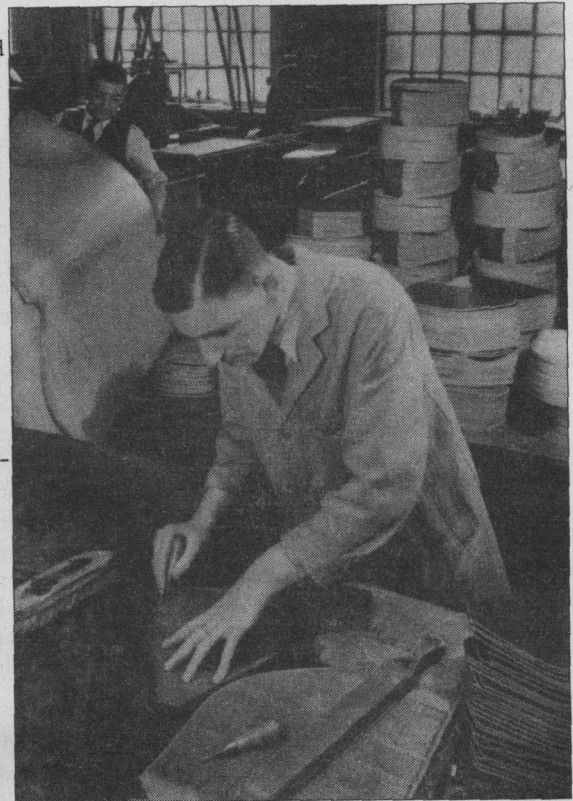
The original location of the company was on

Great Charles Street in Birmingham, where the factory remained until it moved to Smethwick (still in Birmingham) in 1962, and where it remains today. The Nottingham division, which handles Sturmey Archer hubs and saddle testing and design, has never manufactured leather goods.

Brooks's heyday was in the late 1950s and early 1960s, when 55,000 leather and 25,000 mattress saddles

were sold per week. Most of the latter going to Africa and Iran. Nigeria alone bought 15,000 B33s, a front loop design. The biggest buyer was and still is Holland; the B66 being the favorite there, in both men's and women's models. The famed copper rivets were introduced in the 1950s primarily to com-

plement the brown and honey colored leather that was being introduced at the time. Corrosion resistance was also a plus, but it wasn't the reason. And, contrary to popular belief, Brooks could not confirm the story that the large rivets of the Team Professional model came about as a result of team



mechanics ripping off the Pro model leathers to pre-soften them, and then requiring a larger size rivet to cover back over the existing holes. While this may have happened, Brooks's says the larger rivets were simply more cosmetic, and added to a high quality, hand-finished look.

Proofide, Brooks's leather dressing, was developed by an in-house chemist and has been used on their saddles for more than 50 years. The ingredients are a natural mix of waxes and oils, including the here highly revered beeswax.

The construction of a Brooks saddle is a time consuming, labor intensive process that

## Hammock

**B12**

For rough roads and tracks. The top is slung on a hammock spring frame with front and rear loops. Chromium plated clip.

Finish: Black Enamel or Chromium Plated.

Size: 11½" x 9½" x 4½". Weight: 3 lbs. 12 ozs.

Price: 47/6 Black enamel, 50/- Chromium plated.

has remained relatively unchanged for 40 years. Even the least expensive models are estimated to be 50 percent hand-finished. Only the finest full-grain leather is selected for use, and from each hide, just 35 percent is up to saddle standards. This, the thickest and most durable portion, is called the "butt." From hide to fully mimosa-tanned leather, ready for cutting, is about 13 weeks. It takes another 35 days to block, shape, trim, stamp, rivet, chamfer, buff, and polish each saddle, nearly 150 days in total, depending on the model (and including moisture re absorption time.) The standard top-end saddles (Pros, Colts, and Swifts) are 90 percent hand-made, including the distinctive hand-hammered copper riveting process. Compare this to the popular plastic saddles of today, where it is estimated that less than 10 percent of the work is done by hand.

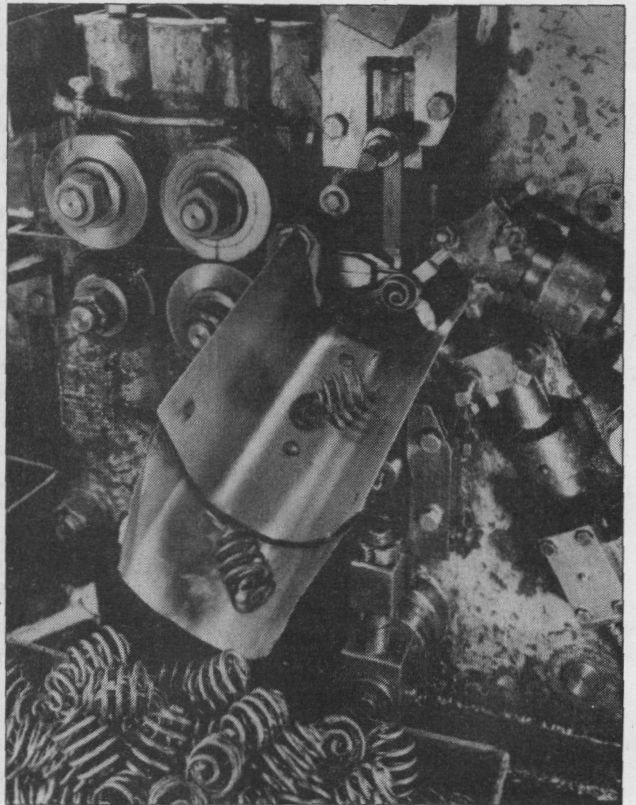
After being constructed and checked for weather resistance at the Birmingham factory, all prototype models and on-going randomly selected saddles undergo a tortuous testing at the plant in Nottingham. In the most brutal test, a 280 lb. weight is applied to the frame, and then the saddle is bumped one million times. Rejects are surprisingly rare.

In today's price-and-weight conscious market, Brooks obviously cannot crank out the volume it

was doing thirty years ago, so in 1987 it stopped making mattress saddles and bags, to concentrate exclusively on the finest, high-end saddles. There are currently 45 employees, producing from 600 to 800 saddles per day. Top sellers are the Professional, which is popular in Germany, the Conquest and Countess (rear-sprung) which are gaining popularity in the European mountain bike community, and the titanium-railed Swift, whose brisk U.S. sales have exceeded all expectations.

Vintage Brooks saddle collecting is on the rise, with condition and rarity being para-

mount. Look for early Pros, limited edition models, the ultra-thin Sprinter, and the top-of-the-line hand-stitched B.17 Swallow, which was available in the 1950s and was the most expensive saddle Brooks ever produced. The company estimates it would cost close to \$500 to make it today, due to all the hand-



work involved.

Clearly, it is uncommon for a company to be in business after 129 years, and unusual to

find it creating a product that has remained essentially unchanged, and yet is still viable in today's market. This could only come about through impeccable designs and an unflinching commitment to quality materials, both long-standing tenets of the Brooks organization. As the ads have read for many years, and arguably so, "The finest saddles in the world." The author wishes to thank George T. Flegg and the Brooks Saddle Co. for graciously providing materials for this article. Bob Gordon is a doctor in New England, a cyclist, and likes good bikes. His work has appeared in The BOB Gazette, a short-lived rag out of San Leandro, CA.





# THE GEORGE T. FLEGG STORY

by Bob Gordon

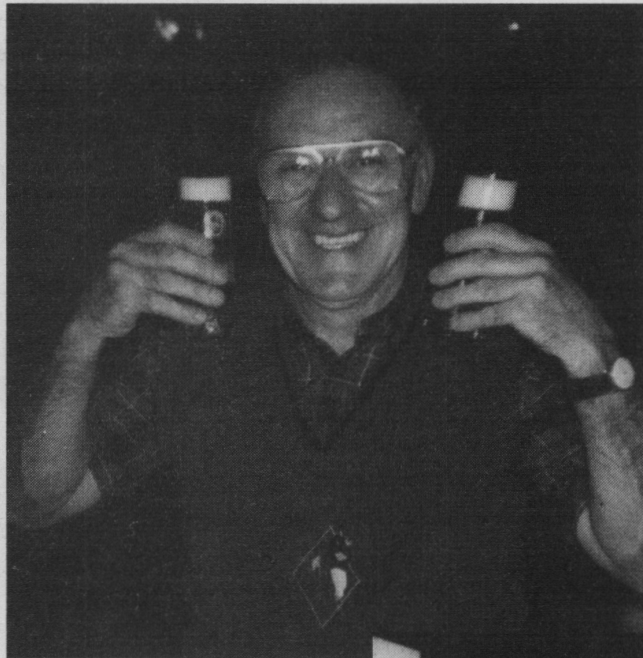
**B**efore the Schwinn Sting Ray took the country by storm, the bike on the top of every boy's wish list was the "English Racer." You remember them—the Rudes, Robin Hoods, or Raleighs, with their Sturmey Archer three-speed hubs, generator lights, and fenders. They were invariably green, black, burgundy or a peculiar metallic red, adorned with real head badges and gold pin striping. The standout of the whole package, though, was the Brooks saddle. Not only did it have a name on it that was different from the bicycle, which made it very special and exclusive, but more important, it was made of real leather. As a kid in a destruction-proof plastic world, only two other things in your life were made of leather: your baseball mitt and your best shoes. Maybe your belt. This elevated the Brooks saddle to a lofty position, and for many, including me, it's never fallen from grace.

If you've admired a Brooks saddle anytime in the past 46 years, you've admired the work of George T. Flegg, who, at various times has done every saddle-making job at the factory and is currently Production Manager, company historian, mentor to younger craftsmen, and Rock of Gibraltar to all who know and work with him. He also happens to be the eldest employee at the company, and has been there the longest. On the eve of his retirement, I asked George to sum up the 46 years of work: "I've loved every minute of it," he said. Can that be? Is making a Brooks saddle so gratifying, or are we dealing with another perennial optimist, a typical glass-half-full type of guy? Not surprisingly, it's both. In one of those rare, enviable situations, job and man start off perfectly matched and by dint of labor and time, their complementary qualities have joined to produce a fulfilled employee and a wonderful product.

It is a fact, however, that George never intended to become a saddle maker. He grew up in the small mining town of County Durham, and watched his father get sick from inhaling black dust 10 hours a day; his

mother swore that would never happen to her son, and when he was 14 1/2 the family moved 180 miles south to the industrial city of Birmingham.

Here, an uneventful childhood was followed by a stint in the British army after World War II. Then a job opening in the J.B. Brooks Company was brought to his attention by his



sister, a riveter. So in 1950, at three pounds a week earned by stamping the different name plates onto the flaps of the saddles, a life-long career was initiated. Upon reflection, George finds it ironic, since he has never owned a bicycle and doubts riding more than ten miles in his entire life.

Having learned and performed every aspect of saddle crafting, George was made Lead Hand in 1957, Charge Hand in 1969 (foreman of the leather division), Foreman in 1978 (added management responsibilities) and then Superintendent of the factory in 1983. At that time there were 187 employees and the company was also producing chainsets, hubs,

and other parts. In 1987 this division was closed, and George became Production Manager of the saddle department exclusively, a position he holds today.

The Flegg philosophies, like the man, are altruistic, efficient, and unfettered. About managing: "Lead by example. Works harder than everyone else, arrive before they do,

leave after they've gone home." On gratifying aspects of his work:

"Satisfied customers, a happy work force who feels they've earned a decent wage for their labor." On saddle making nearly half a century: "Leather is a fantastic material—I don't think I could have done this for long if it weren't." Regarding saddle care: "Treat it like a good pair of shoes. Dress it with Proofide, if it gets wet don't hasten drying, and tension the pin three to four threads when it sags — you'll get ten to twenty years."

His days are currently spent supervising production, filling customer orders, but mostly he's on the floor with his hands into something, either fitting a new frame for a 36 year old top hat that just came in, or working up a prototype model from the

design department at Sturmey Archer.

Saddle making at Brooks will likely continue for many years, but after October 1995, they won't have the Flegg touch. At that time, George will spend his days chipping away a 12 handi-cap at the local



golf course, his lifelong passion.

It's been said that you can tell something about a person by what they create. Look at a high-end Brooks saddle: It's classy, durable, dependable, and becomes a close friend as the years roll on. So who is George T. Flegg? You already know him.

# A SURVEY

We need your help. Please answer these questions and send by mail to: ANSWERS/Rivendell Bicycle Works 1547 Palos Verdes #402 Walnut Creek, CA 94596. Or fax (510) 933-7305. No e-mail (apologies to...)

1. What other cycling products should we carry?
  - tools
  - clothing
  - rain gear
  - more Carradice
  - bottle cage
  - tires, tubes, everyday stuff
  - more hardware
  - trailers
  - other (specify)
2. Any other noncycling products?
  - shorts & pants
  - sox
  - hats
  - other
3. What about—
  - a Rivendell poster
  - Rivendell
4. Frames/Forks
  - TIG mtn frames with Rivendell geometry
  - TIG A/R frames, ditto
  - separate forks
5. Odd stuff—
  - lug sets (not for use)
  - fork crowns (ditto)
6. Would you rather the Reader come out more frequently, but have fewer pages, or keep it big (40 to 50p) and get it every 70 days or so?
  - smaller, more ofien
  - bigger, less ofien
7. Other—
  - 1.
  - 2.
  - 3.
  - 4.
  - 5.

## COMMENTS.

Please either send this in with an order, or clearly label it ANSWERS on the envelope, so we don't think its an order (and get excited). Thanks.

# RIVENDELL FRAMES

## THE WEIGHT THING

No matter how well thought out and logical the frame and parts may be; no matter how much you like the aesthetic touches here and there, no matter how strong a believer you are in brazed, lugged steel bicycle frames, no matter how strongly you profess to want tried and true parts that pretty much work forever, and no matter how preposterous you think the blind pursuit of lightweight is, if you are a human being and a bicycle rider, you are at least curious about the total weight of any bike. I think it's impossible not to be.

When we first graduate from the heavy bikes of our youth to better adult bikes, the first "reason" is weight, and for better or worse and a little of both, weight never stops being an issue. Never.

I've rode Rivendell prototypes for four months without weighing one, despite having purchased Bstone's \$650 scale for \$10 on the final day. I kept telling myself things like: Weight isn't the thing. A frame or a bike weighs what it ought to. It feels light, and isn't that what counts?

I look at each frame tube and think "where could I take **off** metal without compromising the tube? Is this a bike for a weekend warrior who lives to drop his friends and rivals on hills and needs every psychological boost available to do it, or is it a bike for someone who is past that stage or circumvented it altogether, who wants a nice bike for the next 25, 30 years?" I analyze the tubes individually with that question in the back of my head.

First, the downtube. On a 54cm road frame it's 0.8 x 0.6 x 0.8. Would I rather have a 0.4 belly? No way—the fatter tube handles torsion better. What about 0.7 butts? Nope. It might not hurt at the lower end, but up top you want it thick, because that's a vulnerable spot. Classic Italian frames are 0.9 there, but 0.8 works well in 753, which is considerably stronger.

The top tube: It's 28.6mm, slightly larger than the old 25.4mm standard, and I went with Marc's suggestion of a 0.65 x 0.5 x 0.65, the same as Waterford. A featherweight tube, acceptable only because 0.5 is not super thin in the belly, and Waterford's brazers, EJ and John, are comfortable with 0.65. Can't strip

any metal from the top tube.

Seat tube: 0.8 x 0.6. I could have gone to 0.5 at the top, but that would've meant using a 27.4mm post, which limits your seat post options. When you combine the weight decrease of a 0.1mm difference in tube wall thickness with the weight decrease in the smaller 27.2 seat post, you'll see it is not that great. *So* 0.8 x 0.6 it is.

Chainstays. Standard 753 (and Prestige) stays are 0.6mm. The weight difference between that and 0.8 (standard 531 or Tange CrMo) is maybe 30g in a pair of tubes, and for that 30g you get a lot more resistance to dents, accidents, chainsuck damage...and a little more rigidity, which may be helpful in a slightly longer than normal chainstay. Seat stays: 0.6mm. That's thin, and to get any lighter would have compromised the bike's load-carrying capacity.

Forks. The Reynolds 531 standard fork blade is legendary for its good ride, strength, and relatively light weight. It has proven itself on everything from track bikes to cyclocross, and to mess with perfection here would be foolish. We've got the 753 steerer, because it's a little lighter than the 531 steerer. All Rivendell fork steerers are longer than standard, so you can get the bars a little higher—a huge comfort difference for no more than 50g. Worth it!

The fancy road **lugs** weigh 108g per set, but without them you'd have to increase the tube thickness. If you opt to go without lugs, then you have to either fillet braze or tig weld. Doing either lets you decrease the length of the butt, but longer butts make a tube more buckle-resistant, anyway.

*So* we end up with a frame that weighs what it ought to weigh given the thought behind each tube. If you weigh less than 130lbs and will never carry weight on your bike or ride it on rugged terrain AND if, when you sit down and lean forward, you need tweezers to grab any bellyfat, AND if you plan to sell the bike in five or six years anyway, then you can order a frame from here or elsewhere with lighter tubes.

It's not easy to think about weight, not if you care equally about longevity and strength. It is much easier and common to just trust the

people behind the decal to pull **off** some kind of magic that defies physics and come up with the Frame of No Compromise. It doesn't work like that though. Every frame is a compromise, and the "best" engineered frames are the ones in which the designer and you share the same values, and so you agree with the compromises.

A 54cm lt. metallic blue Rivendell road frame weighs 4 lb. 1.5oz. The fork, with an extended steerer, weighs 1lb 13oz. According to the scale. That's a good weight!

## METAL, REYNOLDS 753 TUBING, LUGS, CROWNS, OTHER

Most high quality steel bicycle tubing is chrome molybdenum steel (CrMo). Reynolds 753 is manganese-molybdenum steel, like Reynolds' famous 531. In fact, 753 is just heat-treated 531. The heat treatment dramatically increases its yield strength and tensile strength without adversely affecting its elongation.

Yield strength, tensile strength, and elongation are standard metallurgical tests, and are determined by pulling apart a two-inch solid bar of metal, as in a tug-0'-war.

**Yield strength** is the amount of force required to stretch it to the point where it doesn't spring back to its original two-inch length. Paper clip steel has low yield strength; spring steel has high yield strength.

**Tensile strength** is the amount of force required to pull apart the solid bar of metal until it breaks in half.

**Elongation** is the amount the bar stretched, relative to its original length, at the time it broke in half (at the time its tensile strength was exceeded). It is listed as a percentage: If the stretched piece measures three inches, the elongation is said **to** be 50 percent, because the one-inch difference is 50 percent of the original two-inches. Materials with low elongation are glass, ceramic, sunbaked plastic—brittle things.

Frames aren't solid and they aren't stressed that way exactly, but there are similarities. For instance, bending is like stretching. *So* knowing a material's characteristics is a good starting point, at least. In most materials, the higher the tensile strength, the lower the elongation (the

more brittle it is). Plate glass, for example, has a tensile strength is 500,000psi—about 5x that of CrMo. But it doesn't fail in tension, it fails because it isn't tough—it cracks easily, and cracks just zip right through it.

Another issue is fabricability. For a metal to be suitable for bicycle frames, you've got to be able to build a frame without the material's yield strength, tensile strength, and elongation too much. Once you've eliminated the unacceptable materials, the key is a good design, and maintaining the inherent properties of the materials throughout the building process. No less an authority than frame builder Richard Sachs has said, "In bike-making, material is the least consequential thing on the planet." An exaggeration, but it makes a good point. That's why it's *so* foolish to buy a frame for its material.

That said, it is hard to imagine a more perfect material for bicycle frames than 753. Its flex characteristics are ideal, it resists cracking, and if a crack does develop in it, it will grow slowly and offer plenty of warning. These qualities allow a builder to design in a certain amount of flex, so the bike feels alive and essential. Admittedly, "alive" and "essential" are unquantifiable terms, but—ignoring science for just a moment—a certain amount of springiness feels good.

I like frames that look plain from a distance, or at least quiet, and reveal their fanciness only upon closer inspection. The tubes should be round and nondescript, and the joints, since they suffer the most, deserve the most artistic attention. They should look interesting, attractive, smart, maybe even unique.

I *also* like the idea of a fine frame being identifiable by brand, even without its paint, decals, and head badge, if it happens to wind up in a junkyard 100 years from now. In the case of Rivendells, I like to think that in 2095, a hobo art connoisseur could saunter by, see the frame, pick it up, be drawn to the joints, and say "Oh-ho! An old Rivendell..." This is not a quest for immortality or anything strange like that; I just think there should be something there, there—something that can't be sandblasted off. In Rivendell frames, that would be the **lugs**.

Some people don't get sentimental about frames, but I do. Others go bananas over faded neon/chrome flames-from-hell paint, and the

spartan, industrial look of TIG welds and *gussets*, but I don't. I recognize that the best welders are true craftsmen, and I respect their skills, and there may be a TIG-welded Rivendell some time. Rivendell is not anti-TIG. But to me, **lugs** honor the craft of the builder and the tradition of the frame, and I see no point in apologizing for that. It is true that good frames can be built without lugs, *so* in that sense lugs are unnecessary. By the same token, *so* is every piece of artwork that's ever been created. A bicycle is not just a tool or a machine.

It used to be that even cheap bikes were lugged, and those deep-socketed, straight-cut lugs inspired, if not a second glance, at least a certain confidence. But during the past fifteen years, the push for flexibility in designs and lower costs has pushed even the most revered Italian and American names to TIG welding. The demand for lugs has fallen sharply, and now **lugs** on new bicycle frames are as scarce as arrowheads in a Yosemite campground. In the past twelve years the number of lug makers has dropped like a rock. The latest casualties are Japan's Eisho and Nikko. Maybe you haven't heard of them, but if you've ridden a lugged Nishiki, Univega, Centurion, Schwinn, Raleigh, Bridgestone or Panasonic, chances are you've ridden their lugs.

Of all the popular frame building methods, silver brazing with **lugs** takes place at the lowest temperature—1200°F, compared to 1600°F for fillet brazing or lugs with brass; 2200°F for TIG welding—*so* it leaves the metal's mechanical properties in tact.

Lugs play a structural role, too. When you think of them as external butting applied with relatively low heat, it's easier to see another function. Lug design is critical. A poorly designed lug takes too much time to heat, and concentrates stress in areas that cannot handle it. A well-designed lug supports the joint and distributes stress, and all the Rivendell lugs were designed with this in mind.

#### AIN'T LUGS HEAVY? NO

A Rivendell lug weighs within a few grams of an ounce, a bargain when you consider all it does for the joint in terms of tubing compatibility, strength, and pure aesthetics. Besides, the lug allows low-temperature brazing, which in turn allows you to use thinner tube butts, because the **lugs** themselves serve as external butting. For instance, the tube ends (butts) on most TIG welded frame tubing are 1.0mm, and even the best TIG welder is reluctant to go below 0.8mm. A skilled silver brazer can easily handle 0.7mm or even 0.6mm butts.

#### RIVENDELL LUGS: HISTORY & TRIVIA

Rivendell **lugs** are designed to form strong, stress-free joints, to braze up quickly to protect the tube from excess heat, and to **look** as pretty as possible.

The origin of the road lugs is a story in itself. I used to work at Bridgestone, and I wanted the lugs on our '95 RB-1 to have elements of certain older style French lugs (Nervex and Prugnat). So I supplied Richard Sachs with blank **lugs**, which he then carved and filed by hand into the prettiest shapes I've seen on any **lugs**. The lower head lug alone took him eight hours, and he didn't measure anything, or draw in lines to help guide the file, or use a template. **He just sawed and filed** away. Then Hank Folson, whom you may know as Henry James, translated Richard's work to paper, because the casters work from paper. (Note: These are not Henry James lugs.)

As of this writing I don't know what to do about the road and All-Rounder crowns. If you've read the Progress Report you know the story of how my dream crown didn't pass the strength test, a bit of embarrassment here but way better than having you break yours on a remote pass in the Rockies. I have an excellent bail-out for the road frame, in the Henry James crown, and it's possible that the first bikes ~~will~~ be shipped with this. In that case, buyers will be offered the chance to buy the eventual Rivendell fork at a tremendously reduced price, when it finally shows up and passes—which it will, mark my words. In the meantime, the All-Rounder crown is still up in the air. I could supply forks with the Mountain crown, and offer a similar reduced-price fork offer later on, when the All-Rounder crowns are fine and ready. (The All-Rounder crowns didn't fail any test, but I'm being cautious and practical: The original design was quite similar to the road crown.)

The Rivendell mountain crown is less

ornate, but it's not your basic TIG-welded unicrown. The fork blades are silver-brazed to a beautiful cast lug, which distributes stress better than a TIG weld. It's based on a design Waterford wanted to sell to S, after the separation, but it had the misfortune of being conceived at about the same time as suspension forks, so marketing forces snuffed it before it could ever be made. I saw the design, liked it, and added the shoulder window. No place for an epaulet!

I couldn't be happier with these designs. I had lots of help from Chris. Chris was a custom builder himself, and put in several years at the old Trek before hooking up with Schwinn's Paramount division. He's also a skilled freehand artist (he illustrates for the Rivendell Reader), and a whiz at Auto Cad. I always want his opinion.

#### FRAME WEIGHT, WALL THICKNESS, BUTTING, TUBE DIAMETERS, DENT RESISTANCE, FRAME WEIGHT AND FRAME LIFE

Rivendell frames are light, but not eye-poppingly so. Most of the tubes were drawn to my specifications, and the goal wasn't to compete with thin-walled aluminum, butted titanium, or the new paper thin supersteels. When you design with weight in mind, it's tempting to trim where you shouldn't. If you use good materials in the right places and proportions, the weight **will** be right. I wanted a reasonably light, well-designed frame that **looks** beautiful and is built to ride hard for many years without worrying about dents, fatigue, or buckled tubes, even if accidentally abused.

A 56cm Rivendell road frame weighs a bit over four pounds and satisfies all those requirements. **As** a frame of reference, the lightest aluminum and carbon fiber road frames weigh

a bit under three, and a standard high quality steel road frame weighs between four and four and a half pounds. The extra weight in the Rivendell frame comes from longer downtube butts and 0.8mm chainstays, which are 33 percent thicker than standard (0.6mm) Reynolds 753 stays. Although 0.6mm stays have a good record and are quite trusty in service, I can't imagine any situation in which I personally would rather be riding 0.6 stays, so I've gone up to 0.8. Stronger, more gouge-resistant...and just about an ounce heavier per pair. That's worth it.

Remember that during the past century steel frame tubing dimensions have been tested over millions of miles by hundreds of thousands of riders, and we've learned some things. I'm not ignoring technical advances, but it would be more foolish to ignore steel's history, to think you can just strip several ounces from a down tube without paying for it down the road. My tube thicknesses generally fall between standard Reynolds 753 and Reynolds 531. Somebody, sometime is sure to sum up the frame as simply a "retro" statement, or think I've missed the mark because I'm not pushing the limits of lightness. But that was never the goal.

A tube's diameter to wall-thickness ratio bears watching. Over the years, traditional steel tubing hasn't exceeded 50:1 (28.6/0.6=47.66), but most of today's supersteels have higher yield strengths, and can exceed that a certain amount. Oversized tubes with thin walls are stiffer and stronger, but a smaller diameter tube with a thicker wall resists dents better. High wall-thickness-to-diameter ratios are particularly scary in aluminum; yet this is the "secret" behind some of today's featherweight aluminum frames. Such tubes dent and crumple more easily.

The most highly stressed portion of a bike

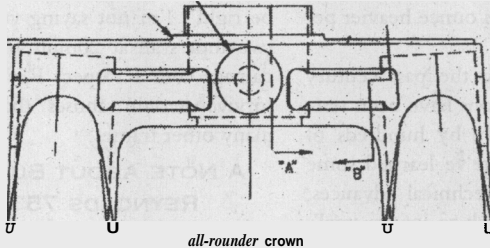
is the downtube, and the most abuse a frame can suffer is to run head on into an immovable object. **So** against today's trend, my downtubes have substantial, full-length butts. Downtubes are stressed in torsion (twisted) when you pedal hard, **so** I've kept the bellies thicker, so they twist less. (Waterford does this, too—and now is a good time to mention that I've relied heavily on Waterford's experience with all brands of frame materials. (Marc still thinks I'm too conservative, and he may be right.) I'm not saying you can pile into a two-foot wall at 20mph and not expect any damage, but I suspect Rivendell frames **will** survive certain abuses that would destroy many other frames.

#### A NOTE ABOUT BUILDING WITH REYNOLDS 753 TUBING

Most thin walled, heat-treated steels like 753 are more sensitive to heat than standard chrome-moly or Reynolds 531—even if the sales literature doesn't mention this. Since Reynolds doesn't want the reputation of this wonderful steel to suffer at the torch of a less than premium builder, it requires that frame builders pass a test in order to become certified. 753-hopefuls can buy from Reynolds a small kit consisting of a bottom bracket and four tubes, which they braze up and send to Reynolds for testing. But since 753 is so expensive, and must be brazed with silver (at \$7 per ounce, compared to brass, at \$6 per pound) most builders just opt for unrestricted tubing. Some of the best builders in the world are not 753 certified, but having passed the certification test implies a certain degree of skill. Waterford Precision Cycles has five 753 certified builders, and it's doubtful that anybody has more expertise with 753 tubing than they do. I think they are the best.

# RIVENDELL ALL-ROUNDER

This kame is modeled after the Bridgestone XO-1, which itself was modeled after the French 650B-wheeled touring and the British “rough stuff” bikes. These practical breeds go back at least 50 years. I thought the XO-1 would revolutionize the concept of “hybrid” bikes, but instead it became a cult bike and a symbol for not fitting in. I don’t understand why this style kame is so hard to sell—it’s just a light road kame dimensioned to fit the widely available 26-inch mountain bike-sized wheels, and has enough strength to handle anything short of the most abusive off-road riding.



all-rounder crown

The combination of road geometry and 26-inch mountain bike-sized wheels lets a lot of wonderful things happen. The 26-inch wheels are inherently stronger and lighter than 700C wheels, and allow you to fit a huge range of tires, from skinny ones to mountain bike size, with plenty of room left over for mudguards (with tires up to 26 x 1.5”). That’s a big deal, since tires and wheels make a bigger difference in the ride than any other component.

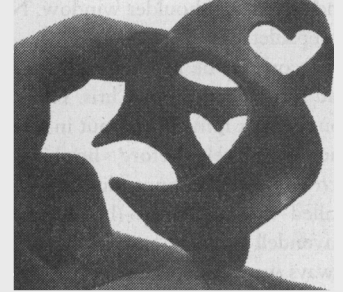
The 26-inch wheels are especially important on sub-52cm frames.

A 700c tire with enough volume to cushion big bumps and carry loads—700 x 38c and up—is much larger in diameter than a road 700c tire, and you have to design the kame so that the tire doesn’t hit the downtube. You do this by lengthening the top tube too much, raising

the bottom bracket too high, slackening the head tube angle too much, or adding too much fork rake. By going to a 26-inch wheel, you get not only all the strength and weight advantages of the smaller wheel—and increase the tire selection—but you can design the bike to fit and ride correctly.

Although the All-Rounder is not a mountain bike in the usual sense, a rider with good skill and adequate judgment can ride it all over the mountains. (The World 24-hour Off Road Record is held on this frame’s predecessor, the Bridgestone XO-1.)

The kame lets you build it up any number of practical ways, and seems made for whatever parts you put on it. With swept-back H-bars and midsize knobbies, it’s uncatchable on fire roads; with drops and Ritchey 1.1 Crossbites or Specialized Fat Boys, it’s the fastest com-



An upside-down A/K lower head lug. Find the hearts...

mute bike in town. For a pure road bike, put on either the Continental 26 x 1-inch tire or the Ritchey 26 x 28 tire, both of which should be available by December, 1995. And how can you own one and not want to load it

with baggage and take it on a tour? No matter how many bikes you own, this is the one you’ll ride most often, because it’s so fun to ride and so good at everything.

ALL-ROUNDER FRAME

size C-T	seat angle	head angle	fork rake	top tube	chain stay	bb drop	over-locknut	TT/ST $\phi$	DT $\phi$
42	74	72	42.5	49.5	42.5	45	132	28.6	31.8
48	73.5	72	42.5	52.5	42.5	45	132	28.6	31.8
52.5	72.5	73	38	55.5	42.5	45	132	28.6	31.8
54	72.5	73	38	56.5	42.5	45	132	28.6	31.8
55.5	72.5	73	38	57.5	42.5	45	132	28.6	31.8
58	72	73	38	58.5	42.5	45	132	28.6	31.8
61	72	73	38	60.5	42.5	45	132	28.6	31.8

Notes: size your bike close to your road bike size; even closer if you use drop bars. The overlocknut spacing of 132 allows easy use of either road or mountainbike hubsets. Dropouts are horizontal with double eyelets. Dimensions subject to change without notice.



# RIVENDELL ROAD FRAME

Most of the changes in road frame design during the past 20 years have been subtle, but the cumulative effect of shorter chainstays, steeper angles, loss of eyelets, and vertical dropouts has made the modern road bike less versatile than a 1970's model. **Still**, it's no more raceworthy.

It's the easily overlooked, never discussed things that make the difference—the height of the brake bridge, the length of the fork and the distance from the brake bolt hole to the underside of the crown, and the internal dimension of the crown and the chainstays just behind the bottom bracket. Those determine the tires the frame **accepts**, and tires, more than any other single specification, determine what kind of roads or trails the bike is suited for and affect comfort more than any other component. **So** even though tire clearance ought to be a huge issue, in the design and purchase and selling of most road bikes, it rarely gets a mention.

Dropout eyelets are another thing. It used to be that even racing frames had them. But now, in order to save a fraction of an ounce and to present a "clean" frame, eyelets have been eliminated, so there's no convenient way to mount racks or mudguards. When you're out shopping for a road bike, you don't imagine yourself carrying loads or riding in the rain. But eyelets weigh so little and offer so much, it seems a shame to eliminate them altogether. Ten years from now your riding habits may change, you might be living in Seattle, you might want to shop by bike, you might want to take a 3-day tour...

Don't get the impression that I want all road frames to be multi-purpose workhorses. The point I want to make is that you can have the features that increase versatility without giving up any of the qualities that make a good racing bike feel *so* fine. The Rivendell frame has **all** the zip of a racing frame, but it is so much more versatile that it's like having another frame entirely. The most "radical" dimension on the Rivendell road frame is the chainstay length, from 42 to 43cm. Those are long chainstays by modern standards, but they're the same length as the chainstays on the bike Eddy Merckx won so many races on.

The Rivendell road frame is made from Reynolds 753 steel tubing drawn to Rivendell specifications. Those specifications are generally thicker than the standard Reynolds 753 tubing (which was designed as a superlight racing frame tubset), and is built to ride hard in all conditions, and for a long time.

I designed it with a shallow seat tube angle to keep your weight back, which in turn reduces weight on your hands and strain on your shoulders. This puts you in a better position to absorb shocks, and allows a more powerful seated pedaling than you get with a more forward position. Since the shallow angle shifts your weight to the rear, I've compensated with a slightly shorter-than-normal front-center (the distance between the crank axle and the front hub axle), and used longer chainstays to shift the rear wheel slightly farther back. This combination—a slightly shorter front-center with a longer rear-center—is the opposite of most modern frames, which tend to be short in

the rear, long in the front. Those bikes feel funny to me, but that may be the curse of having paid too much attention on too many test rides over the years. In any case, the best riding bikes to me invariably tend to be shorter up front and longer in back. (Ritchey road frames have the same tendencies; and Pino frames are this way in extreme.)

Following are some other features of the Rivendell road frame:

- **Horizontal dropouts** let you slide the rear wheel far back for added fender clearance, or tire clearance at the chainstays. Or you can adjust the screws all the way forward to shorten the wheel base and make the bike turn quicker. The listed chainstay length of 42.5 cm (16.75-inches) is to the center of the dropout. You can adjust it 10mm or so, from about 42cm to 43cm.

- **Vertical dropouts** make the most sense on mountain bikes, but the main reasons they've taken over on road bikes are index shifting's requirement that the hub axle-to-derailleur relationship be limited to a short range. This has even caused the extinction of those nice, long horizontal dropouts that allow you to vary the wheelbase by almost an inch. An equally dubious reason for verticals on road bikes is that many chainstays have gotten so absurdly short that you can't slide the wheel forward to remove it,

because it hits the back of the seat tube. A vertical lets it drop straight down without moving forward.

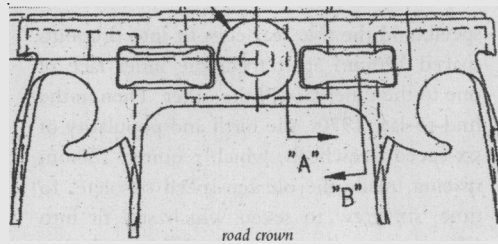
I'm using either Shimano or Tecnociclo dropouts. You know Shimano. Tecnociclo is an Italian company that makes Campy dropouts, among others. I had a metallurgist analyze six different dropouts from various makers, and these scored the highest.

- **Clearance for 35C tires, or 28C tires with fenders.** Many modern road bikes are compromised off the race course because they don't have clearance for practical street tires. Rivendell road frames fit tires up to 700C x 35, so you can ride them not only on any road, but most fire trails, too.

Even if you don't plan to ride tires that large, the added clearance makes room for fenders, or gives the wheel some wobbling room if you happen to break a spoke, and that can make the difference between riding home and walking.

The dropout eyelets make it easy to mount a rack or fenders. If you want to mount both, use a longer bolt in front (putting them both on the same bolt), and either do the same on the rear, or use a Blackburn Custom eyelet, made expressly for the purpose of fitting racks or fenders on eyeletless dropouts. They're cheap (less than \$5), light (11g per pair), and I stock them. The chainstay bridge and brake bridge are tapped for fender bolts. The seat stays have internal rack bosses. Plug them with mini corks, beeswax, or bolts when not in use.

- **Low bottom bracket.** Conventional wisdom says a lower BB makes a bike handle better and easier to control at high speed, and I believe it. In BB heights, 10.25 inches is very low, and 10.75 inches is considered high. (By the way, the term "bottom bracket height" makes sense only on a bike with tires on it, since the height of the bottom bracket **grows** and shrinks as tires get fatter or skinnier. *Still*, some



frame brochures specify bottom bracket height without a tire reference!)

Bottom bracket drop is the distance the center of the bottom bracket falls below the centerline of the front and rear dropouts. It is the first dimension I specify when I design a frame, and everything else keys off it. To determine the bottom bracket height you measure the height of the hub

(the wheel radius), and subtract the drop. In the case of a road bike with skinny 700C tires, the wheel radius is about 13.25 inches. On a typical road frame with a hanger drop of 2.5 inches, this yields a bottom bracket height of 10.75 inches. If you put a far more useful 28C tire on this bike, the BB height jumps to 11 inches—strong evidence that the typical road frame is designed for hard skinnies.



Remember, a Ritchey 700c x 28 with a kevlar bead weighs just 220g, and is faster than a skinnier tire on all but the smoothest roads.

The Rivendell road frame accepts a huge range of road tires, but I designed it with a 700c x 28 tire in mind. You can just as easily ride a skinny on it, but it makes more sense to wind up at 105 inches bb height with a nice 28c tire, than to be there with a racing tire, and have it jump up too high with the tires you ride every day. With a racing tire your bb will be about 10.3 inches—definitely on the low side—but most everyone rides clipless pedals these days, and the cornering clearance gained by cliplessness allows you to ride a lower bottom bracket. If you're still riding toe clips (as I do), then you're probably not racing, and won't be bothered by a slight reduction in cornering clearance, since you don't have to

lean the bike hard and pedal out of comers. • 128mm rear dropout spacing. Until about 1975 almost every ten-speed was a true ten-

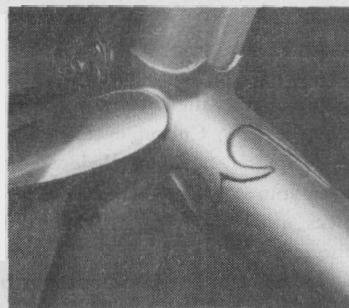
and this causes all kinds of wheel problems. Better spokes, rims and nipples have mitigated the situation a little, but an eight-speed wheel

must be built with wildly different spoke tensions on each side, so the wheel is laterally weaker, more flexible, and requires more care and attention throughout its life.

It's better to do without the problematic 12t eighth cog and stick with

seven and a top of 13t. The 128mm spacing on a Rivendell frame takes seven-speed wheels with ease. If you do spread it to 130mm, it makes sense to use the additional space to improve the wheel's symmetry and increase strength. You do this by keeping the spacing for 7-speed freewheels, just shifting everything over to the right. The chain angle problem is lessened by the longer chainstays, particularly if you pull the wheel all the way back into the dropouts. Of course, not all hubs allow this adjustment, but in any case, you can put just about any rear road wheel from the past 18 years or so into a Rivendell frame.

Combined with the shortening of chainstays, this trend has led to sharper chain angles between the front chain rings and rear cogs, which increases wear and worsens shifting. The irony of eight cogs in back is that, with the shorter chainstays and all, the chain angle is such that with most cranks and bottom brackets, you're effectively cross-chaining when you're on the small front ring and either of the two smallest rear cogs. So you don't have the full benefit of the extra cog. And, although you can get eight-speed clusters that



have a top gear of 13t, stock bikes almost always have 12t top cogs matched with 53t big

rings—a pretty tall gear for mortals. The biggest problem with eight-speed wheels is that they have virtually no dish on the right side. The spokes are nearly vertical,

seven and a top of 13t. The 128mm spacing on a Rivendell frame takes seven-speed wheels with ease. If you do spread it to 130mm, it makes sense to use the additional space to improve the wheel's symmetry and increase strength. You do this by keeping the spacing for 7-speed freewheels, just shifting everything over to the right. The chain angle problem is lessened by the longer chainstays, particularly if you pull the wheel all the way back into the dropouts. Of course, not all hubs allow this adjustment, but in any case, you can put just about any rear road wheel from the past 18 years or so into a Rivendell frame.

ROAD FRAME

size C-T	seat angle	head angle	fork rake	top tube	chain stay	bb drop	over-locknut	TT/ST ø	DT ø
50	74	72.5	45	50.5	41	45	128	28.6	28.6
52	73.5	73	45	53.5	42	75	128	28.6	28.6
54	73	73	45	55	42.5	75	128	28.6	28.6
56	72.5	73.5	42.5	57	42.5	75	128	28.6	28.6
57.5	72.5	73.5	42.5	58	42.5	75	128	28.6	28.6
59.5	72.5	73.5	42.5	59	43	75	128	28.6	28.6
62	72.5	73.5	42.5	60.5	43	75	128	28.6	31.8

Notes: the 50cm uses 26-inch wheels (mountainbike size) for uncompromised geometry as well as a wide choice of tire sizes. The 61cm road model uses the same lugs as the All-rounder, a 31.8 downtube, larger chainstays, and 27.4mm seatpost (all others use 27.2). Dropouts are horizontal with single eyelets. Dimensions subject to change without notice.

ABOUT TOE CLIP OVERLAP

On some Rivendell road frames, when your foot is at 3:00 and the wheel is turned enough, the tire will indeed touch your toe clip or shoe. Dangerous? It would be if you turned your bike by turning the front wheel, but you turn by leaning. If you turn the wheel that much when you're going faster than about 4 mph, you'll crash way before the toe hits. Adding a front fender decreases this clearance further (as will a bigger foot or tire), but it still isn't a problem at riding speeds. Occasionally having toe clip overlap is an inconvenience when starting off, or doing a track stand at a stop light, but that's a small price to pay for a better ride.

# RIVENDELL MOUNTAIN FRAMES (TWO STYLES)

Two styles, one normal, very much like the Bstone mtn frames; and a new one, designed to be used with drop or Moustache h'bars.

The difference is the height of the head tube. On the D/M style, the head tube rises up another **50mm** (two inches or so). As it rises, it also creeps back towards you, and as a result, you can better use a drop bar and more of a normal stem—a 9cm 90° stem, maybe. Or if the quill is long enough, maybe even a 10cm 73° stem. It's hard to get specific here, but the point is, your starting position is about two inches higher and a cm or so closer, and that opens the door to more possibilities. Or you can use a DirtDrop stem without maxing it out.

This D/M style isn't good only for drops and Moustache h'bars, though. If you like a higher bar position even with flat bars, it's a good way to go. Since the top tube slopes up towards the headset, standover clearance is reduced slightly, but this is not a big deal. Too many people buy based on standover height; it's smarter to buy a frame for its riding position.

Both are pure, clean-cut, non-suspension compatible mountain frames. Well, you can put a sus fork on them, but the lugs squawk and the fork you're replacing goes into a funk for life, so please reconsider. They have clearance for tires as fat as Ritchey 2.35s, lessening your need for mechanical suspension even in the bumpiest terrain.

Compared to our All-Rounder, these frames have: Thicker chain-

stays (1.0mm vs 0.8mm), a fatter, fork (**27mm** oval compared to **24mm** oval), a shallower head tube, longer top tube, and higher bottom bracket. The longer top tube and shallower head tube naturally result in a longer front-center, better for steep, bumpy descents and drop-offs.

And here's how they compare with most other mountain bikes:

- They're lugged. Lugs support the joint by serving as external butting, as well as allowing low-temperature (**1200°F**) silver brazing. TIG welding has proven its value and is an excellent way to build a strong frame economically, but a fine, lugged, silver-brazed frame is exceptionally strong, easy to replace a tube on, and beautiful to behold.
- One-inch steer tubes. Oversized steer tubes and all that go with them (1 1/8-inch headsets, fatter head tubes) are an advantage

when the **frame** is built with inferior metal or just poorly designed, but the **chrome-moly** head tubes, reinforced with chrome-moly lugs on the Rivendell mountain frame is more

MOUNTAIN FRAME

size C-T	seat angle	head angle	fork rake	top tube	chain stay	bb drop	over-locknut	TT/ST ø	DT ø
16	73	72	40	55.5	42.5	40	132	28.6	31.8
17.5	73	72	40	57	42.5	40	132	28.6	31.8
19	72.5	72	40	58.7	42.5	40	132	28.6	31.8
20.5	72.5	72	40	59.7	42.5	40	132	28.6	31.8

Notes: frame sizes are in inches. To find the metric equivalent multiply by 2.54. The 132 overlocknut spacing allows use of either older style 130mm hubs or newer 135mm ones. Dropouts are vertical with double eyelets. Dimensions subject to change without notice.

than adequate for the abuses of off-road riding. What's more, using standard diameter fittings allows you to choose from a wider variety of stems and quality headsets. The Oversize versus Standard arguments are worn out by now, good frames can be made either way, I just prefer one-inch. So do Tom Ritchey, Joe Breeze, Bianchi, Merlin..

- Three water bottle braze-ons.

## PLEASE JOIN AND SUPPORT RIVENDELL

You get 6 issues per year of advertising-free bike noise and access to hard-to-find and some normal bike parts at fair prices. As a member, you can use the coupons in this issue (and future issues), and if you buy enough, they'll more than pay for your membership. We try hard to ship everything within 24 hours, and are constantly trying to improve our on-hand inventory and service. We do very little advertising, we sponsor nobody, Grant's take home averages less than \$2,250 per month, and we keep our overhead as low as possible to bring you the best goods at the best prices. Also, when we buy something ourselves, whether it's an inner tube or a frame, we pay the same price you do. Even Pal Jeff pays full pop. (The prototype frames ~~w~~be sold cheap so that we don't roll them over into our personal collection.)

As a mail order business, we are totally dependent on the support of those whom we ~~w~~probably never meet. You'll notice, in this issue, that we're starting to carry a few normal things, too—tools, tubes, tires; and in the fall we'll have a few other normal things. If you're strictly price shopping you may be able to find some of these things cheaper at Nashbar, Performance, and other places that buy by the container load or source things from Shanghai. But they won't beat us by much, and we can guarantee they won't appreciate your patronage as much as we do. And finally, if you'd like extra Readers to give to friends, or if you know of anybody who might like to receive a copy, please tell us. This ~~w~~not work without you. —Maggi, Spencer, Grant

## BAGGAGE!

Most people I know have a fascination with things that carry other things. Nobody knows why. I like strong, simple bags. Few people I know like weak, complex ones, and when they do it's just a peer pressure thing.

**Fanny packs** work well for small loads, but are awkward off the bike. **Musettes** are good for small loads, provided they have a waist strap or some other anti-swing device. **Courier bags** are good for big loads and unpredictable shapes, but are overkill most of the time.

**Front panniers** carry weight well, but you need the eyelets and a rack; and then they'd better be secure, because they're so close to the front wheel, and you don't want them detaching and getting in the spokes, sending you headlong into—well, you get the point. **Rear panniers** are less risky than fronts, but upset the bike more, too.

And with all panniers, what do you do with the load if you have to park your bike and take your stuff out? **Saddlebags** are an English thing. I like them, but they are incompatible with most saddles.

Clearly, no one bag is perfect for everything, a fact for which those of us with bag obsessions are grateful.

**Material.** Most soft luggage and packs are made from either 6-7oz "pack cloth" or 11.5oz Cordura—both nylons. Nylon is cheap to buy, easy to sew, and has been sold on its tear strength and abrasion resistance. Tear strength and abrasion resistance are good things, but when nylon packs self-destruct, they do so at the seams. Walk around a college campus or go down to the strip mall and you'll see a fraying daypack before you can say "Will Robinson."

Another problem with nylon is that it is damaged by ultraviolet rays, more so than any other fabric. It gets weak, brittle, turns to junk. Rock climbers see 4,000 lb test nylon webbing, after prolonged exposure, weakened to the point where it breaks with a strong pull by hands alone. At high altitude, continuous sun can ruin a lightweight nylon tent in sixty days.

Cotton is a better pack fabric, plain and simple. Finely woven cotton frays a short distance, then stops as the myriad interlocking micro fibers grab on and hold; and cotton withstands UV with little damage. Imagine Cordura cut-offs after a couple of washings. You'd have an illegal hula skirt. Cotton may not have nylon's abrasion resistance or tear strength, but it is plenty strong in both regards, and it's safe to say a well made cotton pack will outlast a nylon one three times over.

Zippers are another weak point, especially if they're nylon coils. A nylon coil zipper moves smoothly around corners, but is wearing out from the first time you move it. Since coils are more difficult to replace than sliders, the zipper makers make sure the abrasion from the nylon zipper wears out the slider first. When that happens, the coils don't interlock enough to hold, and once it starts to happen, it just gets worse. For light use, coil zippers are fine, and for the amount of usage most panniers are subject too, they do well. For hard or continuous use, or whenever security is more precious than one-click accessibility, please choose a real buckle of metal.

### CARRADICE CYCLE BAGS, FROM ENGLAND.

CARRADICE BAGS ARE MADE IN ENGLAND WITH DESIGNS, FABRICS, AND METHODS THAT HAVE CHANGED LITTLE OVER 50 YEARS. THE FABRIC IS HEAVY, WAXED COTTON DUCK, THE STRAPS ARE THICK LEATHER, AND THE BUCKLES ARE ZINC-PLATED STEEL. THESE ARE EXCEPTIONAL BAGS THAT SHOULD LAST YOU THE REST OF YOUR CYCLING LIFE.

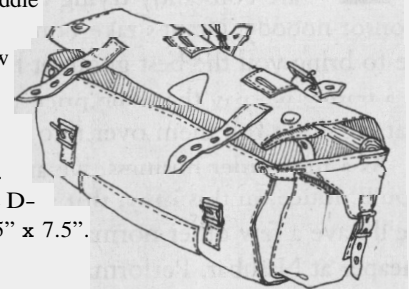
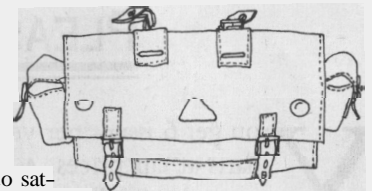
## 2 MODELS OF SADDLEBAGS

Saddlebags are English, and in the thirties through fifties virtually every saddle in England wore one. These here are the traditional "transverse" style, which means they stick out the sides. They require some method of attachment to the saddle, such as the handy loops that are built into some Brooks models (molded loops are not trustworthy for large loads). A third, lower strap buckles around the seat post. Saddlebags are my favorite way to carry medium sized loads. I once heard or read that the bicycle was designed to carry weight between the wheels, and that's what saddlebags do. I wouldn't care to argue the physics of it even if I could, but I do know that these Carradice models are the best I've seen, and I could hardly make it through a day without one.

### LOWSADDLE LONGFLAP:

A hobbit-sized version of the Nelson Longflap, designed for frames in which the saddle is closer to the rear tire (though it works fine for any sized bike). Carries spare shoes and clothing, lunch and tools, or enough bannocks to satisfy the hungriest throng. Recent discoveries have proven beyond a shadow of a doubt that the Lowsaddle Longflap was the favorite of Henry Wadsworth Longfellow, whom you all know as the author of the epic poems *Evangeline* and *The Song of Hiawatha*. One main pouch, two outside pockets, and handy D-rings on the outside of the flap (not shown). I've often lashed several large boxes to these D-rings, then rode away like a hobo. 14" x 9.5" x 7.5". Capacity: 854 cubic inches. 680g.

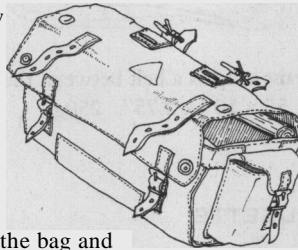
**PRICE: \$60**





IF YOU ARE ACCUSTOMED TO PACKS AND LUGGAGE MADE WITH SCIENTIFIC OUTDOOR FABRICS AND PLASTIC ONE-HAND QUICK RELEASE BUCKLES, AND MESH OUTER BAGS FOR DRYING YOUR DANK HOSIERY, THE LOOK OF A SPANKING NEW CARRADICE BAG WILL JOLT YOU. THE FABRIC IS REAL BLACK, STIFF AND STARCHY, AND THE STIFF-AS-WOOD LEATHER IS A QUEER PALE GREY. YOU DON'T WARM UP TO IT INSTANTLY, AS YOU MIGHT IF IT WERE OLIVE, BROWN, AND ANTIQUED BRASS. EVENTUALLY THE FABRIC FADES AND THE LEATHER SOFTENS TO THE POINT WHERE THE PRONG FINDS THE HOLE WITHOUT A FIGHT, BUT THIS WILL TAKE A FEW MONTHS OF STEADY USE—A SHORT BREAK-IN PERIOD CONSIDERING THE MANY YEARS OF SERVICE THAT WILL FOLLOW.

**NELSON LONGFLAP:** Carries up to 2 gallons of anything, tubes & tools, spare clothes, cantaloupes, a couple hardbacks, boomerangs, galoshes, just about anything you throw its way. In seven years I've never had a load I couldn't somehow fit into mine. Lash straps on the flap accommodate a small bedroll or extra clothing, making this a fine bag for summer overnights, three-day hostel tours, or family day trips where you have to carry everything. Carry with you a long strap or a 3-foot length of rope and you can overfill the bag and still tie the flap down—I've done this many times with boxes and bags I otherwise could never have carried. A good bag for the rackless. Requires at least 13 inches between the top of the tire and the saddle loops. One main pouch, two outside pockets. 14" x 11" x 8", 1,098 cubic inches. 760g.



PRICE: \$60

**CARRADICE SADDLEBAG ADAPTER**

This widget clamps onto the rails of your loopless saddle so you can carry a 'dice. It won't work on every saddle, but it does fine on Avocets, Turbots, and Unicanitors. Solid, simple, typical English, and it works well. Spencer likes it.

\$17

**CARRADICE UPLIFT SADDLEBAG ADAPTER**

A clever and rather large device that lifts the saddlebag up and back. It has a quick-release, too, so you can remove the bag and adapter in a second, and carry it around like a purse.

PRICE: \$25

**SUPER C FRONT AND REAR PANNIERS**

These are simple sacks unencumbered by compartments which create unfillable comers. (If you like to compartmentalize your load, do it with stuff sacks.) The top loading style guarantees security and overstuffability; you can always fit one more thing in, because you don't have to close a zipper around it! Sturdy and simple, always up to the task.

We ship you the bags with our own Rivendell Remarkable Retention System, which offers the maximum security for the roughest conditions. Basically it substitutes metal for plastic, and once you set it up, a paint shaker couldn't make the bags come off. Instructions included.

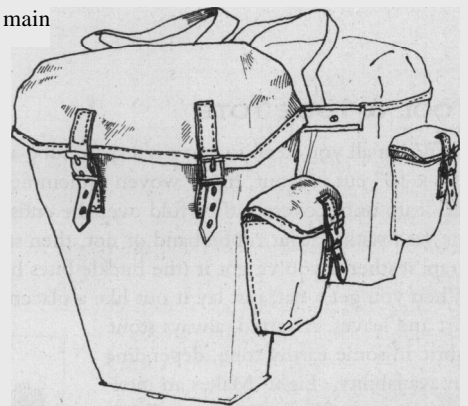
**FRONT** (works on the rear as well) 11" x 11" - 6" x 4" - 5". Each bag has one main pouch and a side pocket. Straps are longer than shown here. Capacity: 1,464 cubic inches. 1,304g. That's per pair.

PRICE: \$80/PAIR



**REAR.** Each bag has one main pouch and an outside pocket. 5" x 12" - 8" x 7" - 6". Straps longer than shown. Capacity: 2,563 cubic inches. 1,528g. Per pair.

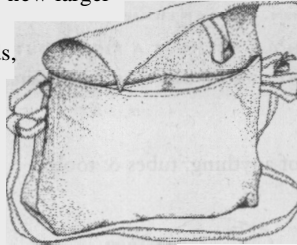
PRICE: \$105/PAIR



**ACME SR. MUSETTE—NEW, SLIGHTLY BIGGER**

In my Second Edition American Heritage dictionary, “acme” is defined as “the point of utmost attainment.” “Sr” is short for Senior, alluding to the new larger size (one-inch deeper; significant).

Two pockets inside cany **your** wallet, beeswax, postcards, pens, pencils, and erasers. The main pouch is big enough for files, maps, newspapers, the other kind of files, **maga-**zines, and some food. It has the same **waist-strap** as the simple musette. Made **from** heavy waxed cotton, **khaki**. I may run out, but you can always count on various shades of natural cotton, olives, tans, **or** khakis. There’s a sewn loop on the flap, and creative types will find it useful, if not the perfect closing solution. In the meantime, just run the waist strap as a **belt between the two** side loops, and tuck the **flap** under it. Approximately 11.5” x 10” x 2.75”. 250g.



**PRICE: \$12**

**NEW, LARGER, ORGANIC COTTON PLAIN MUSETTE**

Non-organic cotton grows on just **two** percent of our agricultural land, yet soaks up twenty-six percent of all pesticides, and it’s hard to be happy about that. What’s more, the pesticides used on cotton are particularly nasty, because cotton is not a food crop (apologies to boll weevils), so they can get away with more. But the huge users of cotton aren’t going to go organic overnight, because it does cost more, and such a switch is against corporate law (“a publicly held corporations must act in the best financial interest of its shareholders...”). **So** it’s up to the upstanding patrons of Rivendell Bicycle Works to lead the way by purchasing this organic cotton plain musette. Lets you ride with a T-shirt on a hot summer day, and still carry all you need, including a spare helmet up those hot, brutal climbs. The standard method of wearing is to sling it over your shoulder like a bandolero, but you can wear it like a fanny pack, too. Light, stuffable, always handy and good to have along in case you find something bulky on the way home. Made of strong, light 10oz organic cotton duck, reinforced at the stress points, should last 10 years. Two loops on the side allow you to cut the spare strap (provided) in half, then tie them to the side loops, then in front of your stomach, for swing-fiee riding. Ties on the mouth are for oversized load retention. Tie one into a loop, overfill the bag, then run the free end over the load, through the loop, cinch it down and tie it off. 89g.

**PRICE: \$8**

**TOOL & TUBE TOTE**

When **all you** need to carry is a spare tube and light toolage, you can’t beat this roughly 16” x 16” cut of stout, finely woven unhemmed waxed cotton. Put your gear in one corner, roll it up until covered, then fold over the ends and finish rolling. (See the pictures.) Secure the wad with a stout rubberband or not, then strap it to your seat rails or seat stays with a toe strap; leather if you’ve got it (the buckle bites better). Always put one in a Carradice pocket. When you get a flat, just lay it out like a placemat, and your small stuff won’t get lost in the dirt and leaves. Assorted, always stout fabric in some earthy tone, depending on availability. Light. Makes an inexpensive yet baffing stocking stuffer for that cyclist on your list.

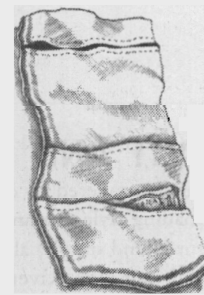


**PRICE: \$2**

**ACME WALLETS**

You’re at the register realizing you underestimated the total and may, in fact, not have enough money. The pretty girl behind you, who just fifteen minutes earlier was walking down the street singing doo-wah-diddy-diddy-dum-diddy-doo, starts rolling her eyes and drumming her fingers, and she ain’t smiling. A baby in the cart behind her starts wailing, as mom winces. Some large hirsute man in a faded blue Adidas tank top, starts getting angry, and **thinks** he’s going to be the mama’s hero by yelling at you. There’s only one wallet to have at a time like this, and that’s this one.

Modeled after the BOB Slob wallet, which were modeled after a Japanese canvas wallet, this is a fast-action wallet if there ever was one, and there was—the aforementioned Japanese one. It not only tolerates disorganization, but seems made for it. Three wide mouths are always open to swallow receipts, cash, cards, photographs, even coins. Coins



**So** in the deep pocket, and when you need them, just tilt the wallet and let them slide to the lip, which is stiff enough to catch them. Made of the same waxed cotton as the ACME musettes. Two sizes, each with three compartments. You fold

them up and stick them in your pocket or in the ACME musette.

Big. Holds checks. Roughly 6.5” x 11.5” open, 3.5” x 6.5” folded.

**PRICE: \$15**

# HANDLEBARS MATTER A LOT

**N**o bike part, not even the saddle, affects how you feel on the bike as much as the handlebars. A change of bar can compensate for a stem that's too long, too short, too high, too low. It can change your weight distribution on the bike, and suddenly your whole upper body is relaxed, where before it was tensed. It can make numb hands or a sore bottom disappear. It can make a long ride pleasant or miserable—and on and on.

And the funny thing about bars is that there is always a direct relationship between how they make the bike look and how they make the bike feel. Drop bars set low and forward make a road frame look ready for criteriums, but not as ready for a century ride or tour, and downright unsuitable for a trip to the store when you're going to be carrying the grocery back in one arm on the way back. Switching to a bend that rises up and sweeps back towards you makes the same bike perfect for that task.

Here's something about bars you don't often read. The harder you pedal, the less weight you have on your hands, so the less padding you need, and the less apt you are to get sore hands. A racer hunkering down in an all-out effort, trying to bridge a gap, barely even touches the bars (and saddle, for that matter). All the weight goes to the pedals, and the torso is so low, flat, and forward that it's most critical to get the bars out of the way. I don't know where to go with this, but it's something to think about.

"Mountain bike size" bars have 1-inch (25.4mm) clamp areas and 7/8-inch (22.2mm) grip areas. They fit rubber grips, and mountain bike brakes and shifters, but they're too skinny to just tape and ride, and the bore is always too small for handlebar-end shifters.

"Road bike size" bars are nominally 26.0 in the clamp area, although 3ttt are anywhere from 25.8mm to 26mm (which is why "nominally"); and are interchangeable with most Nitto, Scott, Specialized, and Modolo, which are 26mm on the nose. (I don't know why 3ttt's standard is 25.8mm -0, +0.2mm. They're Italy's best, and yet even crummy bar makers seem to be able to nail their bars to the nearest 0.1mm. I know there's a story, I just don't know what it is.) Cinelli is 26.4mm, and so

you have to use a Cinelli bar with a Cinelli stem. The bar portion of road bars is either 23.8 or 24mm in the grip—too fat for street and mountain fitments.

The most natural and most comfortable grip position is with your wrists pointed inward, the way they hang naturally. This allows them to bend fore-and-aft rather than the unnatural side-to-side movement that straight bars force them into. It matters mostly when you're rocking the bike side-to-side, as you do in off-the-saddle climbs and sprints. Road bars accommodate this position naturally, and straight bars don't.

Straight bars are excellent for sustained downhills on rough surfaces, in which case having all that bar in front of your palm keeps your hands from sliding forward, so you don't have to grip so hard just to keep your hands in place. On climbs, bar-ends help reduce wrist strain and increase your pulling power by giving your hands a wrist-inward grip. But bar-ends cause problems, too, with shape, and the way they hook shrunken, and the havoc they cause with some bars. I've always thought they were a temporary band-aid, an afterthought, an acknowledgement that the straight bar needs help; but they seem to have a life of their own now. If you want rainbow-anodized titanium bar-ends and are willing to spend \$150, visit your local pro shop.

Mountain bikes start out with disproportionately long top tubes and long stems partly because the flat bars that come with them make you feel cramped if they're too close. It has to do with the wrist-down position they demand. If your wrists are angled inwards, as they are on drops or Moustache Handlebars, you can grasp the bars much closer without feeling cramped.

The overextended wrist-in position that results with bar-ends (on a typical bike with a long top tube and stem) also throws your weight off. It's too far forward for climbing, since you want to weight the rear wheel enough for traction. It's not good for speed-riding, since it makes it difficult to reach the brakes, and nearly impossible to do so without taking your hands off the bar. A shorter stem combined with a bar that provides both a closer, wrist-in position and additional reach by means of a forward bend solves all these problems.

If you like what you're riding, don't change—of course.



### 3TTT MERCKX BEND ROAD H'BAR

A modern, sleeved-and-cable grooved version of the bend Eddy the Merckx rode to more than 400 victories and who knows how many first places in charity rides. Over the years this has been the favorite bend of most who have tried it: not as deep as the deep-drop Cinelli 66, but deep enough for most hands, with a nice long, straight upper so your hands can roam freely. The actual drop, for those of you who are crazy enough to actually measure your bars, is 155mm center to center, or 179mm from the bottom of the drop to the top of the top part. Actual sleeve diameter is a curious 25.8mm, which 3ttt says has always been the case with its "nominally 26mm" h'bars. I did have one returned that measured 25.5mm, so from now on each bar gets measured. Anyway, this is the same 3ttt bar you can buy everywhere else, but I bought the last of the silver ones. Everyone else has "high tech grey." One final thing, again: 3ttt measures bars outside to outside, so a 44cm 3ttt bar is really a 42cm, etc.

44cm, 299g; 45cm, 301g, 46cm, 303g.

I've dropped the price \$5.

**PRICE: \$25**

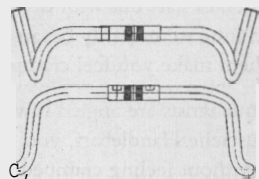
### DIRTDROPS

By popular demand. I'm sorry the price went up so much. The first ones I bought cheap from Bstone; these I had to get at new, normal prices.

Designed with the DirtDrop stem for the 1987 MB-1. The key difference between these and normal drops is a 7-degree flare which begins below the curve. The flare is not that big of a deal, really, but it does increase wrist clearance a bit when you're on the drops and throwing the bike side-to-side. It is a subtle enough flare that you can ride these on a road bike and your friends may not even notice, and unlike some flared drops, the flare begins below the brake lever, so the levers don't tilt inwards. 42CM wide at the center of the curve; 48 at the ends. Made from high strength 2014T6, a stronger alloy than regular drops, and heat-treated for flexible strength. A thicker wall adds extra security and weight. A very popular bend with everyone who tries it.

**\$48 HEAT TREATED;**

**\$25 STANDARD <ROAD ONLY>**

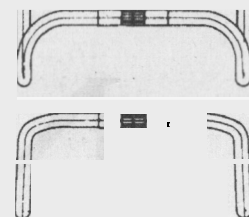


### NEW! NITTO MODEL 175 ROAD H'BAR

Few people have even seen a Nitto catalogue, and this bar isn't in it anyway. I haven't even seen it in any of the several special products fliers Nitto has barely circulated over the years. But I was asking Nitto for a bar that was "kind of like this, kind of like that" and out of my shadowfax popped a drawing of this bar. I probably should spend the Rivendollars on things that don't overlap existing inventory so much, and this bar is a lot like the 3ttt Merckx bend. There are differences, though—no cable groove, for one. Engraved logo, for another. A very slight criterium-style bend, too—not as much as a Cinelli 65 or a 3ttt Gimondi bend, and not enough to bug you if you don't like crit bends, either. Anyway, it's Nitto, so you know it's the best and most beautiful. From a foot away it looks like so many other drop bars, but I believe these are the only Mod. 175s ever to make it to America. No biggie. No weight yet—I haven't even seen one, but they're on the way based on the drawing. Probably about 310g.

42cm and 44cm (like a 3ttt 44 & 46). 26mm clamp diameter (on the nose, every bar).

**PRICE: \$37**



### NITTO MODEL 155 ROAD BAR

Criterium bend like Cinelli #65. 44cm wide with a beautiful Nitto crest engraving on the sleeve. A popular width and bend with cyclo-cross racers, and the most aesthetically pleasing bend of all. I like this bend in this wide width, because it still offers sufficient flat-bar for seated climbing. Very pretty, just a bit over 310g, 88mm reach, 150mm drop (deeper than most, but not a "deep drop"). Measures 26mm on the nose, every time.

**PRICE: \$37**

### NITTO DIRTDROP STEM

A short, tall stem with a steep rise, originally designed for the drop-handlebar 1987 Bstone MB-1, and still ideal for any off-road use with a drop or Moustache H'bar.

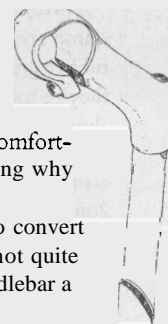
You don't want a long, low stem with these bars, because the bars provide most of the reach and drop. You need the bar high to take advantage of the bar's shape. By far my favorite off-road set up includes this stem with either drops or Moustache Handlebars—comfortable, versatile combination that have you wondering why anybody would ever ride anything else.

Listen, if you like flat bars, great—I'm not trying to convert you—ride what works for you. But if you find them not quite right or downright nasty, give this stem and a real handlebar a shot.

Also perfect for anyone who wants a higher, closer position with a road bar. Cold forged by Nitto from 2014 aluminum. Actual extension, 80mm; effective horizontal extension, 65mm. 335g.

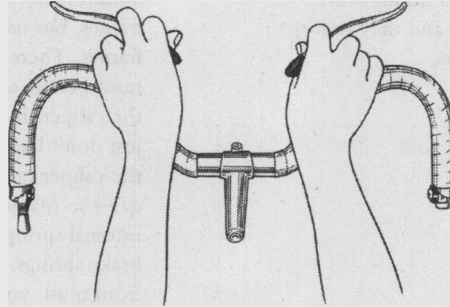
Two versions: Decent finish and no cable-stop hole, **\$42**

Fancy finish, with cable hole: **\$52**



## MOUSTACHE HANDLEBAR

This basic shape has been around for more than a century, and this specific bend went through at least five prototypes and thousands of miles of testing and refinement. It offers the quick and easy braking position of a flat bar with the multiple hand positions of a drop bar—and is better than either for a whole lot of riding. You can go fast on the road and get more aero than you can with a standard drop bar. You can ride it off-road and access the brakes instantly, just as you can with a straight bar. John Stamstad rode it to victory in two Iditabikes and two World Record 24-hour rides, and Gene Oberpriller won the Chequemahegon Fat Tire race on it. We'd never credit the bars with these accomplishments, but both riders rode them because they like them, and the bars clearly didn't hold them back. We often hear from people who have switched to Moustache H-bars and found relief from back and neck pain. On a commute bike where speed, visibility,



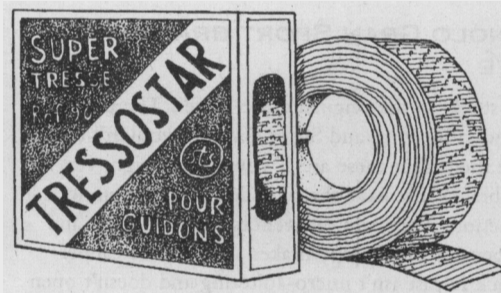
quick brake access, and multiple hand positions matter, there is no better bar. The Moustache Handlebar is, in a hyphenated word, Rushmore-bound.

Available in both 26mm and 25.4mm clamp diameters, but otherwise identical. Bar diameter in both cases is 23.8mm, so it fits **all** road fittings and bar-end shifters. Does **NOT** fit thumbshifters or normal mountainbikery stuff. If you don't know your size, measure or call, we'll figure it out. Heat-treated and made from 2014 T6 aluminum by Nitto, the premier handlebar maker in the world, if not the universe. 321g (25.4mm) 323g (26mm). A falling dollar, not corporate greed, is responsible for the increased price. Still, this is our lowest-profit item, and if this is the only thing you order, please don't use a more than a \$5 coupon, as we have to make some profit on each sale.

**PRICE: \$50**

## TRESSOSTAR CLOTH BAR TAPE

By popular demand? Of course not. But you know the real reason this fell out of favor, don't you?—because it's too hard for high volume manufacturers to wrap! But, sweating it out with some real adhesive-backed cotton bar tape is one of those rituals you've got to go through, if only for the experience. It'll make you appreciate the ease with which modern bar tapes go on. At the very least, consider it part of your bicycle education.



But now the good stuff: Good grip,

good looks, good feel, weighs just 35g per bar (2 rolls!), it's been around forever so you know it's at least quite satisfactory, fades to nice colors, and if you ever get tired of it or wear it out, you can leave it on the bar as the perfect base for any other bar-wrap—prevents slipping. Real tough guys double-wrap both sides of the bar. Another idea: Single or double wrap you bar, then add a layer of Benotto over it, just like we did in the early 80's. The French tourists used cloth tape with lacquer over. Not **all** of them, but some. The boxes are wonderful. Black or blue only.

**PRICE: \$7** for 2 (enough to do a bike), or 4 rolls for **\$13**.

## BENOTTO!

Yes, the real thing, the stuff everybody rode with from 1977 through 1979. Thin, easy-to-wrap unpadded tape for handlebar. Plastic, but surprisingly non-slippery. Tours de France were won with this. World Championships. Parigi-Roubaix. And who can forget Greg LeMond's blue Gitane with the black Modolo brakes and the yellow Benotto? Down in my ranks, after every race there was at least one crashed bike near registration with uncoiling spirals of Benotto. The instructions say: Stretch tightly around the handlebar. Heat end with flame and adhere to tape, pressing until it sticks. I gave up on that after one try, so did everybody I knew, so will you. Use Scotch™ brand adhesive tape, like everyone else (apologies to bees).

Hecho en Mexico, so you know this is the real enchilada. Benotto over Tressostar cloth is very nice. Blue only for now, but in three colors: lighter blue, darker blue, silver. Comes with bar caps. 37g per bar.

**PRICE: \$5** per pk. specify color

# BRAKES

## SUNTOUR SUPERBE PRO NON-AERO BRAKE LEVERS

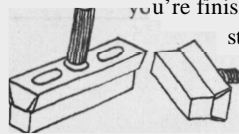
Top quality Campy copies. Perfect for Moustache handlebars or drops. These were the nicest shaped hoods ever. Nobody makes levers like these any more, and they're *way* cheaper than currently available lesser levers.

With gum hoods, **\$35.**

With black hoods, **\$25**

## MATHAUSER BRAKE SHOES

There are quintillion newcomers to the expensive, after market brake shoe world, and we encourage you to try every last one of them. When you're finished, come back to the one, the only, le originale y still la una to beat...Mathauser. Mathauser makes fancy models and plain ones. We stock mainly the latter, as they are the best deals, but generally have a few fancies around for when royalty stops by for a ride. We can sell them to you, as well. We don't list them below, but if you must have them, call or write it in on your order and we can probably accommodate. Either road or canti versions \$30 for 4, which is why we like the cheapies.



Basic road shoes in metal holders, threaded studs with washers and nuts. No fins, no aerodynamic sleekness, just good rubber in a solid holder. Most important of all, they work with the VAR Third Hand tool, the most beautiful tool of all time in a crude sort of way, and you can hold the shoe level with a Crescent wrench (apologies to Snap-On) while you tighten them up.

Price per pair (either front or rear): **\$6**

Price per set of four: **\$12.**

Slip-In pads. Fits Campagnolo and knock-off. Works better, lasts longer. The cheapest way to improve your braking.

Price per set of 4: **\$9**

Basic cantilever style. Longer pads than the road blocks, with knurled studs so they won't twist and fail and scare the daylights out of you. Stop faster in wet or dry, with no grabbiness. Contain those daylights!

Price per set of 4: **\$18**

## SUNTOUR SUPERBE BRAKE ARCH SET, FRONT AND REAR

No brake levers, no housing or cables, just the brake calipers themselves, complete with shoes and everything else. These are excellent, absolutely top-quality calipers, beautifully made in every detail, and polished the way good parts used to be polished, and Campys still are. Short reach (39mm min, **49mm** max). Fits Rivendells and virtually all other modern frames, but not long enough for most of the pre-'83 road frames. There are two things I don't love about them, but most people aren't such grumps. One is the quick-release on the caliper. It indexes. Does it work wonderfully? Of course. I just don't like gratuitous clicks, even in something so small as the caliper quick-release. (But at least the calipers have a *q/r*—so many of today's brakes don't.) The other thing is the internal spring. There is no good reason on earth for internal brake springs, and if you even start to squeak about protection from mud, you must be from another planet. Earth mud has never fouled brakes. The internal springs aren't a problem, but I see them as something SunTour designed as a selling feature, not a practical one, to make the brakes more appealing to mechanical-phobes who want everything hidden away, so tidy. I don't mean to spoil these brake calipers for you; they're honestly superb, and a bargain at this price. We don't have many and won't get more. The best SunTour component ever made.

Price, pair of SunTour Superbe brake calipers, no levers:

**\$75**

## CAMPAGNOLO GRAN SPORT BRAKES, COMPLETE

New old stock, in the original green boxes. The poor-cousin to Nuovo Record, and Super Record wouldn't even acknowledge them. But these are a wonderful design, very high quality brakes that have that wonderful Campagnolo look and function. The main differences between these and the more expensive old Campy brakes are: (1) The caliper-mounted quick release isn't micro-adjusting and doesn't open the calipers as much; (2) The finish is mediocre, not wonderful; (3) The hoods are black, not gum; (4) There ain't no tire guides, but that's not a big deal.

On the other hand, I prefer the barrel adjuster on these brakes, they still have that look, and if you put Mathauser shoes in them, you've got yourself some good, reliable stoppers. Besides, they're only \$60.

Short reach (**42mm** to 52mm) with non-allen fittings. They work on frames built for allen fittings, though. We're getting low on these, and they haven't been made for years.

**PRICE: \$60**

# CHAINRINGS

## SHIMANO CHAINRINGS

If you're riding a typical 53t or 52t x 12-13-14 combination on a 700c wheel, you're up above 100 gear inches in each of your top three gears. It's a free-ish country etc., but unless you race, you need maybe one gear above 95 inches, and you get that with a 48t or 49t ring. *Also*, it makes **all** the other rear cogs more useful as well, and it improves front shifting, since you don't have as large a jump. As I said before, I bought these rings for \$2 each, and if I took my normal margin somebody out there would buy them to use as wind chimes, or hoods would use them as throwing stars. *So* I've priced them at \$12 each for Dura Ace, \$9 each for Shimano 600—well out of the chime/hood range. Fifty-two and fifty-three toothers of the same grade sell for three to five times as much, and aren't nearly as useful. When our stock is down to maybe 50 of each, the price **✓**rise to reflect the replacement cost of the rings we'll have to buy then. Regular retail strategy says to do that now, but we'll wait.

Price: Shimano Dura-Ace 48t: **\$12**

Shimano 600 49t: **\$9**

## STRONGLIGHT 39T RING FOR 130

**BCD.** This is a good size even though it's popular. Fits Shimano road and anything else with a 130mm bolt circle diameter. If you want to know if your crank has a 130bcd, just measure from the center of one bolt to the center of another. On a 130bcd, you'll get 76.4mm. Campy road cranks have their unique bcd, and these rings won't fit. I bought these **rings** at normal wholesale prices, and am taking a normal markup on them, okay?

price: **\$20**

## SPECIAL STRONGLIGHT 38T 130 BCD RING FOR MAVIC CRANKSET.

Allows a Mavic crank to be set up as a triple with an inner ring as small as 24 teeth. (74mm bolt circle)

SPECIAL Stronglight 38t adapter middle ring.

Price: **\$42**

## 24T, 26T, 28T RINGS

With a 74mm bcd. Fits the SPECIAL 38t adapter ring, and other modern non-micro style triples. For best shifting, limit the difference between the big cookie and the granny gear to 24t or less. Various brands, whatever we can get cheap that's good. There are so many choices out there, and no clear winner.

Price: **\$16**

## NOS MAVIC CHAINRINGS

144 bolt circle (same as old Campy as in Nuovo or Super Record)—cheaper by the dozen. These are the ones Sean Kelly **rode** during his heyday, and hey, what a heyday that was. They have the nicest finish I've ever seen on a chainring, and how old Sean could get these greasy, I'll never know. We've got a range of sizes from 43 to 54. NOS Campy rings of no better quality and not as good finish sell for \$30 on up.

**CALL FOR AVAILABILITY. GOING FAST!**

**PRICE: \$20 EACH**

Buy two: **\$15** each

# CHAINS

Today's chains are designed to shift in the artificial, who asked for it? low noise/high stress, shift-under load and span eight-cogs with short chainstays environment. Such a chain has to be flexible laterally, and that requires a narrower chain, which isn't as strong. *So* to compensate, theypeen the rivets over so much that when you press out the rivet to take the chain *off* or whatever, it rips a hole in the plate, making today's chains effectively unrepairable, even with a direct-drive style chain tool (as opposed to the pliers type, which swings the pin-presser-outer through an arc and really causes trouble with the newer chain links). Some chains have master links, but in some cases the master links are the weakest links. They're only masters in that they don't get any weaker with repeated separations. Now that you're all pumped and happy about the state of chains, here's our selection.

## UNION CHAIN

This is a flash-in-the pan in the chain world, having made its debut in the high-tech/modern bike scene around 1992 or so, then disappearing just recently, as Union in Germany decided to get out of the chain business and sold the tooling to somebody in Poland.

I'd heard good things about this chain. I've never used one, and won't get a chance before this goes to layout, but people I respect—mechanic Chris, for one—have told me they like this chain. The Union representative said it was a great chain, very strong, and this is a fellow I believe. One thing I like about it is its width—about 7.5mm (I forget the exact dimension). That's wide by modern standards, but it also increases the chain's lateral stiffness, and improves shifting on some freewheels. These are **NOT** for use with eight-speed cogs, which is one reason they're no longer made. Here at Rivendell, that feature only endears us more to them. Black only, darn. We may have a few waxed ones for \$18, ask.

PRICE: \$16

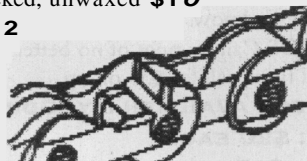
## SACHS SC-40 CHAIN

Roughly equivalent to the Sedisport. It works well under most conditions and is an excellent value. There are more expensive chains, but I can't bring myself to spend \$25 for a dang chain. I sell silver or black chains, and the silvers come either in the box or waxed.

Price: Black, bulk packed, unwaxed \$10

Silver, in the box: \$12

Silver, waxed \$16



## DID SUPERLIGHT MOUNTAIN BIKE CHAIN

D.I.D. is a Japanese chain company that, correct me if I'm wrong, went out of business about a year ago. That's a shame, because they made what many considered to be the best chains in the world. But we do not live in times when quality is any assurance of success, and ultimately the strong yen and their small size put them out of business (correct me if I'm wrong again). The old, familiar D.I.D. chain was the Lanner. Probably the name D.I.D. Lanner threw people off ("Hey Pal, what kinda chainya runnin'?" ("DID Lanner...")) But it was the chain-o'-choice for many years. I haven't heard of the Superlight until a distributor called me up and said "You'll never believe what I just got in..." They cost me \$6.40, they're black, and I'm not sure why they're "superlight," because they weigh 324g, which is 6g more than a Sachs SC-40. Being a "mountain bike chain" indicates that it is super strong, able to withstand the shift-while-standing-and-at-the-wrong-time stresses associated with the sport.

price: unwaxed and black, \$14

## ABOUT WAXING:

I hate waxing chains. First I have to degrease the chains, a labor-intensive process involving Finish Line citrus stuff, brushes, a pan, and lots of water. Then I sling them dry like a lasso, and wipe them off. I have a big pot with a 40lb mix of paraffin (77%), beeswax (19%) and vaseline (4%, at a chemist-customer's suggestion), and I have to heat the wax high for penetration, then let it sit for hours until it clings without clumping. If I wait five minutes too long, I have to reheat, and each batch of chains generally requires five or so tries. In the meantime I've dripped wax in too many places, scoured my hands raw, nearly slung a chain over the fence, and definitely spent too much time out of the office. But I like waxed chains. Everything stays clean. Try one, and it's hard to go back. I would like to get out of the business of waxing chains, so these may be the last of them.

# FREEWHEELS

We don't sell cassettes or cassette paraphernalia. There's nothing wrong with cassettes, but there's something fishy about the way they've been promoted.

Cassettes support axles better, so you don't break axles, and they make cog changes easier. Those are good things, but they're only part of the reason cassettes are popular. The other reason is that cassettes allow makers to make things that can't be used with a competitor's product.

Anyway, Bullseye, Phil, and others have proven that you can totally eliminate axle-flex and breakages with good design.

Freewheel availability has got to be a concern for anybody with freewheel hubs. Cassettes change often enough to make year-to-year compatibility an issue, so it's not as though once you've got your cassette body, you'll always be able to get the cogs. But there's little incentive for anybody who ever made freewheels to continue making them. Shimano still makes them, cheap ones, but is down to one or so model(s), and these are cheapies. SunTour is history. Regina—the-company still exists, but I hear they're making conveyor belts or something. Sachs, the great German hope, still offers a full line of freewheels (although its selection is not what it was even a year ago). But there are no guarantees for the future.

I think Sachs deserves all kinds of praise for keeping freewheels alive as long as they have; and I know the American-based Sachs people are rooting for continued production. Maybe you can help, too. Sometime between now and November 10, send Sachs a note or a fachs thanking them for hanging in there, and asking for a few more years of freewheels. If you can't think of what to say, just a simple Save The Freewheel!!!! will do. They can show your notes to the parent company in Germany, and if they get a few thousand memos, we may make it to the year 2000. Sachs Bicycle Components 22445 East La Palma, #J, Yorba Linda, CA 92687 FAX 714 692-2638.

## SUNTOUR ULTRA 6-SPEED 14 X 24 PRO COMPE NON-INDEXABLE FREEWHEEL

These are the brown ones, not the gold ones. I ordered them as standard, not ultras, but ultras they are. If you bought one earlier and want a refund, just ask. On the other hand, if you've got an old 5-speed hub that you either can't find five speed freewheels for or just gotta have number six, then here you are. 14-15-17-19-21-24

**PRICE: \$20**

## SACHS MODERN, INDEXABLE FREEWHEELS

Six and seven speeders, all with 13t top gears, because 14teethers aren't made. Great splined removal system—no notches to wreck, and the tool won't slip. I'm kind of nervous about offering almost \$40 freewheels for sale, but the German DM is beating up on the dollar almost as bad as the ¥ is, and Sachs has had to raise prices. On the other hand, compare the complexity of a freewheel with that of an after market CNC-machined cantilever brake booster arch—whatever those things are called—then compare the prices. Freewheels are a bargain! In any case, I'm keeping my price down as much as possible, and please don't coupon these, as my markup is minimal. Availability is sketchy, but we'll try to keep them all in stock. **Z expect freewheel prices to skyrocket during the next two years.**

### SIX:

13 x 21 (14-15-17-19)

13 x 24 (15-17-19-21)

13 x 26 (15-17-20-23)

13 x 28 (15-17-20-24)

**PRICE: \$37**

### SEVEN:

13 x 21 (14-15-16-17-19)

13 x 24 (14-15-17-19-21)

13 x 26 (15-17-19-21-23)

13 x 28 (15-17-19-21-24)

**PRICE: \$39**



## CLOTHING

Our clothing section has got to grow. Rivendell ~~will~~ never go the way of L.L. Bean, **Orvis**, or any of those other successful companies that start out supplying sturdy outdoor wear, and end up selling week-end golf wear to duck hunter's wives, but a few more things might be nice. High on the list are shorts and pants. Along the lines of Goatherd shorts and pants, with some lighter weight options, as well. Coming this Winter, maybe November.

The T-shirt selection will grow, too. Expect to see Reynolds **753** T's, Pino T's, RONA T's, and more Rivendell T's, in different colors, too.

### RIVENDELL T SHIRT

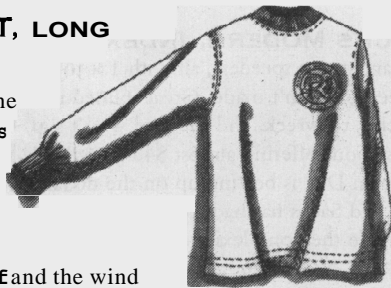
Unbleached all cotton, Fruit of the Loom. They feel heavier and softer than most T-shirts. Rivendell circle logo on the front, with Rivendell and a handwritten inscription on the back. M, L, XL, XXL.

PRICE: \$13

### RIVENDELL MOCK-T, LONG SLEEVE

This one mocks both the traditional T-shirt as well as turtlenecks and actual turtles, a shameful thing. The fully ribbed neck is too short to roll over, but tall enough to keep the sun off and the wind out. The fabric feels heavier than the T-shirt fabric, and it's really comfortable. M, L, XL, XXL

PRICE: \$20



### COMING SOON LEG WARMERS

Leg warmers are great for days when you can't decide to go for shorts or tights, and for days when it starts out chilly but warms up, and for days it starts out warm but cools down...and you can't make your own out of socks, as you can with arm warmers.

These are black wool

PRICE: \$27  
COMING SOON

## COMING SOONER OR LATER

Waxed cotton cycle clothing by Carradice. Ponchos, trousers, rain jackets...they even make helmet covers and spats, but we shan't stock the whole line. Our samples are beautifully made of lightweight, dark green waxed cotton. With reflectorized strips, so you don't get smacked. It rains a lot in England, and waxed cotton is the preferred wet weather fabric there.

**Sox.** Organic cotton, and some kind of wool. Cycling and non cycling, but our experience proves you can ride in the non cycling models and not ride in the cycling ones. These are some versatile *sox!*

Faux goatherd shorts, and pants, too. We're working on patterns, and the fabric will be organic cotton, maybe even some hemp.

Sweatshirts. We're trying to find organic cotton ones, but may have to settle for normals. Sweatshirts cost too much, but we'll see what we can do.

Cycling caps. I used to like only the Italian Apis brand, even though they never fit my fat American head. But that was because all the American attempt to improve on the hat made you look like a cycling fan concerned about sunburn, more than a cyclist. Anyway, we found a good source, but lead times are 8 weeks. We'll try to get our order in by August 15, so we can have them in stock by Halloween.

## GLOVES

We're in a part of California that rarely gets below 25°, so we don't need big puffy things. The styles below are the best I've used for temperatures down to about 35°. Good grip, acceptable looks, they do the job and they're cheap because the Carolina Glove Company keeps a low profile.

Sorry about the size selection, but they come in large only. It's a big large, but Spencer has a smallish hand, and he says they fit fine. The fingertipless ones cover most of the fingers, just not the tips.

80 percent wool, some plastics. Rushmore-bound as soon as word gets out.

Full finger gloves

PRICE: \$11

Fingertipless gloves:

PRICE: \$9

**WOOL SHORTS? WOOL SHORTS!**

*Maynard once wrote a column slamming wool shorts which, blessed tho he be, was sort of like kicking a dying dog, if you ask me. But he never rode with Kuchariks. Kucharik has been making cycling clothing since 1934, and you know they had shorts back then, and you know they weren't spandex. So they've figured out a few things about them. Kucharik woolies are the best-fitting ones I've tried, and I like them, but was afraid to carry them—they cost a lot and nobody asks for them. Pal Jeff insisted. He even said "I'll buy the first batch of them for you." I said "Okay, and why don't you tell people about them, too?" He said okay.*

"About sixteen years ago my buddy Brian and I were packing our **guts** outside the local eatery after a long training ride, when up rode the local junior hot rod wearing a new pair of shiny, skintight shorts. We razzed him about it and both agreed we'd never slide our butts into a pair of those things.

Shortly after that I lost my Black Bottom woolies and, well, I bought some skintights. They all leave a ring around my thigh from the tight elastic at the hem, and they seem to smother rather than breathe. I got them because that's what the pros rode in, and that's what the shops were selling. I've probably had twenty pair since then.

About five months ago I began to beg Grant to carry wool shorts. Just to get me off his back, he gave me a pair of Kuchariks he bought as samples. It says on the label "since 1934," and these shorts reflect those **60+** years of experience. They're 100% wool with a fake chamois, a drawstring made of some kind of spandexy stuff, and the back pocket—now there's a concept—fits my Bobshades perfectly. The stitching is tight and accurate. I've had bad luck with seams on shiny shorts, but in five months of wearing these and no others for all of my riding and some of my yard work, there are no signs of wear, no stressed seams, not a loose end to be found. They look like new.

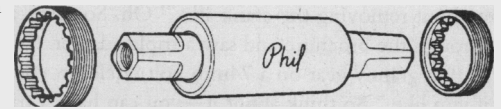
The best part about these shorts is the fit and feel. Snug, but not tight and grabby. You can ride them low thigh or pull them up high in the classic position, and they stay there without elastic strangulation (since there is no elastic in these shorts). No, they're not too hot in the summer, either. I've worn them on 100<sup>0</sup>+ days, and they're as comfortable as any. There are few garments that can match the feel of these shorts fresh out of a low-heat dryer; maybe an old pair of Red Wings with a new crepe sole. When I put them on I just feel like they're going to do my quads right.

I've been pushing Grant to carry these. He's told me "They're too expensive, you can get shiny shorts for half as much!" That may be true, but you don't wear the cheapest clothing in your off the bike, why wear it on the bike? These shorts are worth every dime (easy for him to say, since I gave him his. —Ed). There's no way you're going to buy these shorts and put them on and ride in them and say 'paid too much.' You're more likely to say "I better get another pair." —Jeff

**PRICE: \$55**

**CRANKS AND BOTTOM BRACKETS****PHIL WOOD BOTTOM BRACKET**

Who doesn't love and trust a Phil? This is the only cartridge bottom bracket I'm totally at ease with. It's been around for 25 years, and over the years has been lightened, strengthened and refined to its current state of perfection. This bottom bracket is good, under most conditions including rain, for at least 30,000 miles, and Phil will repack it for less than \$15. By the time yours needs repacking the price may be up to \$25, but then it'll be good for another 30,000 miles. A Phil with a 116mm spindle and stainless steel retaining rings weighs about 290g—less than a 350g Deore XT from a few years ago, and less even than a



Campagnolo, but almost a hundred grams more than some of the new lightweight cartridge bearing models that fail early.

You need special tools to install Phils, but you need special tools to install any bottom bracket. The difference is that these special tools cost less, make installation much easier, and are small enough to take with you anywhere (yes, you still need an adjustable wrench, but you can find those on the side of the road). Phil bottom brackets allow you to adjust your chainline, and to set your cranks **up** absolutely symmetrically, if symmetry is your thing. There are three parts to the bottom bracket—the cartridge/spindle unit, and the left and right retaining rings, which hold it in the frame. Most places sell the Cartridge separately, then hit you up for the required rings, which can be had in aluminum or stainless steel. Our price includes the rings, since the cartridge will flop all over without them; and we stock only the stainless steel ones, which are totally reliable under all conditions, forever. In general I'm opposed to unserviceable sealed bearings, but I bow to the altar of Rushmore-bound Phil. You can put this one on your bike and forget about it. Available in 108, 111, **113**, 116, 119 spindles. With stainless steel retainer rings.

**PRICE: \$125** (specify size or ask us)

Note to Rivendell frame customers: If you order your frame with a bottom bracket installed, we will supply the correct spindle length. Just tell us which crank you are using.

**PHIL BB TOOLS**

**PRICE: \$9 EACH.** You can get by with one but **two** work really well.

## MAVIC CRANKS

When these first came out I felt let down by the webby starfish look. What the heck is going on here? What are they trying to be? Stop! Let's roll things back a year and start over!

It was never about the cranks, just about my history and expectations. *So* this is the new, fancy Mavic. I looked at one off the bike and thought it looked heavy and wide, so I put it on the scale and took out the Q-calipers and found it was light (760g with 53 x 38) and narrow (135mm Q-Factor with a Phil 113mm bb). Off the bike, you can see a lot of other things, too. There's no stress riser at the junction of the arm and spider; that's unusual. The arm is straight; I liked that, and asked about it, in light of all the curved arms you see today: "Pro mechanics like straight arms, because if a rider crashes, it's easier to tell if it's bent." You've gotta like that logic.

What about the chainring attachment? Why are the bolts on the inside? That's dumb. Well, no: "It lets you change outer chainrings without removing the crank arm." Oh. *So sorry*, again. I looked through the brochure and saw a triple adapter. "Yes—that allows you to fit a granny gear on a 74mm bolt circle, so you can go down to 24t if you like." *So* think about it—you can have a triple with a Q-factor of less than 150, easy. Because of the funny spider, the smallest big ring you can use is a 48. No problems there, I assume.

I have to say I still prefer a more traditional looking crank, but there aren't any "traditional looking cranks" anymore, anyway. Mavic has discontinued this crank, along with all its other nonwheel goods, and it's doubtful anybody will copy it. *So* in 15 years, and you will be riding this same crank that long, people who know bikes will look at

yours in envy and say "You luck-out! **You** got one of those! But why are you riding it? You should save it!" At which point you tell them about the Q-Factor and remind them that good bike parts are made to be ridden. I think this is the best road crank ever made.

Trivia: This is the crank Greg LeMond rode in 1989, his best year ever. The year he won the Tour in the final TT. The quality, finish, design, features—this is it, and these are the last of them. The 53T big ring is on the large side for me and everyone I know, but that's how it comes. If it's too big for you, take it off unridden and trade it at a bike shop for something. The 812 Dura-Ace 49t and 48t rings I've got will plop right on there, and you can keep the 38t inner. If you want to triple-ize it, I have a few of the special Mavic triple adapter widgets for \$24—call and let's talk. This adapter is a neat thing, and you'll be the only clubby in your club to have one. However, you may also buy a 38t conversion ring, a Stronglight, and bolt the ring onto that. You still need to get the inner ring (I have some) and bolts. If you get this crank for a Rivendell frame, get a 113 Phil or 112 Superbe bb for a road double; a 116 Phil for an A/R or Mtn double; and a 119 Phil for an Ar/Mtn triple.

I have a limited supply, order soon, this is the buy of the year. In 170 and 172.5 arm lengths. Silver. If the information above is a little beyond you but you're interested, don't hesitate to call and ask questions. Sometimes my descriptions get a little tedious and off the point, and I can sometimes do better on the phone.

Price, Mavic road crank with 53 x 39 rings: **\$170**.  
Specify length.

## A WORD ABOUT Q-FACTOR

It's the distance between the outside of the cranks at the pedal hole, and determines, how far apart your pedals are. We are fans of low Q-factors (below 142 on double; below 153 on a triple), but acknowledge that personal preference plays a big role, and some people may be better suited to wide stances.

**Still**, you should be aware that a low Q-factor (1) stresses the frame less; (2) increases cornering clearance; (3) increases pedal clearance in deep singletracks and around rocks; and (4) improves aerodynamics. Of the current cranks, the lowest Q-factors belong to Ritchey—a wonderful crank in every regard. The just-discontinued Mavics were super, we bought a bunch, but once they're gone, that's it. Although we don't list Ritchey cranks in this edition, we *are* happy to get them for you, and plan to have some on hand at all times. Ask.

It seems everytime I (Grant) squeek about Q-Factor, it angers some modern crank maker, and lots of these people are my friends. I'm not stating that low is better, only that I (and most of my fiends) prefer low Q-factors, more for pedaling feel than for any of the four unassailable reasons stated above. The fact is that Q-factor took a quantum leap upwards several years ago, for reasons related to production and materials and compatibility with poorly designed frames and front derailleurs, not to rider benefit; and there was no fanfare about it. Short people are affected proportionately more by Q than long leggers, and might want to at least examine this dimension for a few minutes, at least, before buying the first CNC purple haze Big Ballooka crank that somebody tells them is the hottest thing in cool.

## SUNTOUR SUPERBE PRO BOTTOM BRACKET

English threading, 112mm spindle, ball-and-cone style. This is a top quality, traditional style bottom bracket. Easy to service, rarely in need of it, and properly maintained it will last a decade easy. I want to say a word in defense of ball-and-cone bottom brackets. They may be "old technology," but so many of the new cartridge bearing bottom brackets—and I'm talking about models that weigh nothing, impress on paper, and cost the world—don't last a year. I know many people who won't go near them anymore, I've seen theoretically superior designs disintegrate, and if you ask any experienced bike mechanic the same question, you'll get a similar story.

The Superbe Pro was SunTour's best bottom bracket ever, one of the last true pro quality, totally serviceable bottom brackets available. If you've never owned this style bottom bracket, and you aren't afraid of bicycle guts, you owe it to yourself to experience the satisfaction of installing, adjusting, and overhauling this beautiful, simple mechanism. It's easy, and good for you. The 112mm spindle is too short for most triples, but works fine for a lot of doubles, particularly if the inner ring is less than 40t. A good match with the Mavic or Ritchey double.

**PRICE: \$30**

115mm spindle—fits Mavic double: **\$18**

122.5mm spindle—fits pre-'95 Japanese triples: **\$18**

125.5mm spindle—fits certain others: **\$18**

## DERAILLEURS

The rear derailleur is as complicated a mechanism as I can understand. Over the years there have been so many brands from so many countries, and such a variety of designs, but they all have a parallelogram that pivots inward and outward. You pull the cable and it moves in, against a spring; you relax the cable and the spring moves it out.

How the parallelogram is designed determines how it moves. The traditional style is a drop parallelogram, which appears vertical (think of old Campy N.Record style). In a drop parallelogram design, the upper pulley (jockey pulley) maintains a constant height as it moves in and out.

The modern style is the slant parallelogram, developed by SunTour in the early seventies, I think. In a slant parallelogram style, as the parallelogram moves inwards, it

moves downwards as well. The advantage to this—and let me say that in my experience this advantage has always been overplayed—is that the jockey pulley can be set closer to the small cog initially, and follows the line of the cogs more closely, as it moves in and out. When the jockey pulley is close to the cog, shifting tends to be faster, but as I've said, I can't tell a difference. The main thing about slant paras is that they are a requirement for indexing. The irony here is that SunTour, which came up with the idea (no doubt inspired by the old Huret Allvit from France, but that's another story) is no longer with us. Shimano adopted the SunTour design, and the rest is history. I think all currently manufactured derailleur are slant paras.

Two of the Simplexes I carry, the 6600s, look like slants at first, but when you look

closer (as I didn't do until member Jeremy Bunn pointed it out to me), they move like drops. The parallelogram is horizontal, so the pulleys move straight in and out, just like a drop. I'm getting a little out of my small area of expertise here, but I think the advantage to this horizontal para design is that the chain wraps around more of the cogs, and so wear is reduced. If anybody knows differently, step forward.

It used to be that you could tell the country a rear derailleur was from by its shape, and you could name brands from twenty yards. Designers cared as much about how the derailleur looked as how it works. Modern derailleur all look alike—variants of the early '70s SunTours, spiffed up with a '90s luster. What a shame! These older styles shift wonderfully and make a bike special. Put them to use!

**SIMPLEX #5500 REAR DERAILLEUR**

The classic drop-parallelogram style, and one of the most sought after semi-modern derailleur in the world; just not in this country. Non-indexing, so naturally the mainstream has no use for it. **Shifts** great, of course—what would you expect from a French company with more than 50 years of derailleur-making experience? Spencer has one on his bike, and it's my personal favorite. Comes with Bullseye pulleys, classic red or tasteful silver, no choice, installed free of charge on request; otherwise you do it, and it's easy. 26T capacity, 180g.



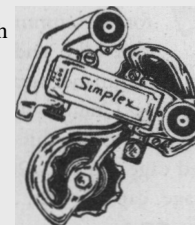
**PRICE: \$85**

Simplex trivia: The most sought-after derailleur in the world is an old Simplex #543. If you have one laying around, perhaps with your 1804 silver dollars and George Washington's wooden teeth, we can direct you to people who can use it to restore vintage bicycles to their original form.

**SIMPLEX #6600 REAR DERAILLEUR (SHORT CAGE)**

A non-classic horizontal-parallelogram style, a curious design by French standards, in that it looks Japanese. Not a big seller here at Rivendell, but listen, this is a fine derailleur that looks good on a bike, and weighs only 199g. If you don't need anything larger than 24t in back, and you don't have to index, and you can afford \$75 but not \$85, this is the one to get. Same Bullseye pulley arrangement as the #5500. 24T capacity, 199g.

**PRICE: \$75**

**SIMPLEX #6600GT REAR DERAILLEUR (LONG CAGE)**

Remember the old days when GT meant "grand turismo"? Anyway, this is my latest favorite everyday derailleur. I put it on a bike to test capacity and shifting and so forth, and halfway expected it to be sluggish—a carryover from when the scuttlebutt said long cages shifted slower. No way. This shifts as fast as any derailleur, and I like the long cage. I use it with a Logic triple, still have a low Q-Factor, and when I veer **off** the road and find some really steep trail, I just plop it into gear and go. Beautiful and light. Same Bullseye pulley arrangement as the others. 32T capacity, 210g.

**PRICE: \$80**



**PHONE: (510) 933-7304 FAX: (510) 933-7305**

A front derailleur has such a simple task that it's hard to make a bad one. So unless you're trying to keep your bike all Yugoslavian or something, there is good sense in going cheap on the front derailleur. Some modern chainrings have ramps and hooks that allow you to shift without skill or thought, as though a slow or missed front shift will kill you, but here at Rivendell that's not the measure of a front derailleur. And Shimano has a new front derailleur with moving cages. I haven't seen it, but it cannot possibly be a quantum leap better than the \$5 Simplex B & B model below. And besides, it violently violates the Antoine de Sainte Exupery's (an

TWAUN deh Saint ExoopeRAY's) universal design ethic:

In anything at all, perfection is finally achieved not when there is no longer anything else to add, but when there is no longer anything to take away...when a body is stripped down to its nakedness.

If you didn't make it through that, just remember—simple things break down less often and are easier to fix, and generally look nicer to boot.

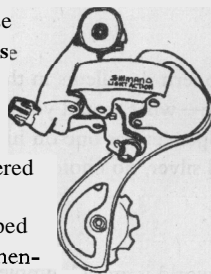
Only four things matter to me in a front derailleur: (1) Fit. It's got to fit between the chainwheel and the crankarm of any crank I might want to use. (2) Weight. If it's more

than 128g, I'd just as soon use my finger. (3) Smart design. You should be able to identify the inner and outer adjusting screws. (4) Looks. I prefer straight, simple cages to fancy contorted ones, and I don't need my derailleur to look like they're moving when they aren't.

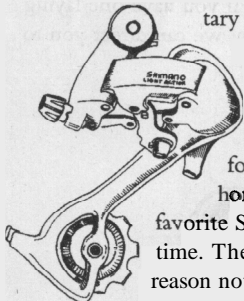
So—since front derailleur all work fine, you might as well use something interesting, unusual, discontinued, or shockingly cheap. Will it shift as fast in a lab test as a Shimano? Nothing ever will. Will it shift fast enough on the trail and road? Of corsa!

### SHIMANO L SERIES REAR DERAILLEURS

These rock solid, frills-free, fast-shifting Shimano slant parallelograms were conceived in 1983/4, when a dollar was worth ¥250, and Japanese makers could afford to use labor- and material-intensive methods. I think of them as Shimano before it sauntered into Las Vegas, took that first free drink and dropped that first complimen-



tary token into the one-armed bandit. Plain finish, all metal, kind of heavy, but tough and reliable. The perfect derailleur for any commuter or work-horse bike, and my second favorite Shimano derailleur of all time. The Crane is first. The only reason not to use this derailleur is vanity. Med cage, capacity 28t, 288g Long cage, capacity 32t, 311g



PRICE: \$24

### SUNTOUR COMPE-V FRONT DERAILLEUR

Twenty or so years ago this was considered the best tandem front derailleur you could buy—and it cost about \$9. Seven from Nashbar. I have it on my tandem, and it works great. It works in reverse, which means the spring holds it outer, and you pull the lever to move it inward, so it takes a ride to get used to. All front derailleur ought to work this way (just as all typewriters should use a Dvorak keyboard). It's too late to change keyboards, but it's easy enough to get the hang of the reverse movement front derailleur—you just pull either lever towards you to get a higher gear, very intuitive. This derailleur is narrow enough to fit TA cranks. We have what we believe to be the last 35 or so of them on planet Earth. Pronounced Compe-Vee, not Comp-Roman Numeral Five. On the heavy side, at 134.5g. Perfect for half-step gearing, but works okay on normal.

PRICE: \$20

### SUNTOUR TRIPLE FRONT DERAILLEUR

Top-of-the line but unmarked model, like an XC Pro, made for Bridgestone and narrow enough to fit between the big ring and arm on a Ritchey crank, which means it'll fit any other modern crank, as well. 111g, so it should be called the Mark III.

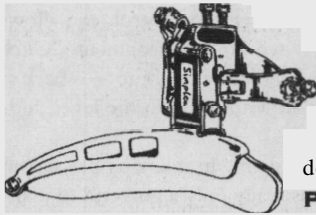
PRICE: \$14

### SUNTOUR CYCLONE FRONT DERAILLEUR

Back in the mid-to-late eighties Cyclone was SunTour's middleweight equivalent to Shimano's middleweight 600, which was always beating up on it. Shimano 600 got a makeover and changed its name to Ultegra, and Cyclone, well, went down just before SunTour did. But the thing is, Cyclone was generally better made and nicer looking, a fact not lost on most product managers who were under the gun to spec the better-selling Shimano anyway. One group below Superbe. Nice finish, superlight (94g), fast shifting (as all front derailleur are), and with the band clamp, so it'll fit larger than normal seat tubes, if you must. This is one of the Mark II Cyclones. There never was a Mark I and there ne'er will be a Mark hundred and eleven.

PRICE: \$22



**SIMPLEX SLJ TRIPLE FRONT DERAILEUR**

A rare, beautiful-in-a-Frenchway touring/triple front derailleur for bikes with chainlines 47.5mm or less. Measure from the center of the seat tube to the middle chainring. If you get 47.5 or less, this **✓** work. If it's up around **fifty**, save yourself **\$16** and go with the SunTour. Any pre-1987 triple ought to do fine with this. 127g.

**PRICE: \$32**

**SIMPLEX SLJ DOUBLE/RACING FRONT DERAILEUR**

Same as above, but for double chainrings, and you can ignore the chainline warnings. This is a wonderful derailleur. I have it on the bike I ride everyday, and I sing its praises with every **shift**. I still plan to switch to the B & B model, but not because this one isn't perfect. I just like the idea of a \$5 front derailleur on a \$1700 bike.

**PRICE: \$32**

**SIMPLEX B&B FRONT RACING DERAILEUR**

This is the one referred to in RR2. Made in France, but their last home was in the Philippines. I bought them for **\$1** plus freight and import duty, and they're yours for **\$5**—the cheapest front derailleur on the planet, if not in the universe. The cage is chromed steel, so you can ride with it mal-adjusted for years and still not wear it out. The front part of the clamp is steel painted white, for strength and easy dirt detection; the less-stressed rear half is red plastic for lightweight pizzazz. It shifts **as** well as . you've a right to **expect**—our sample was tested by one of the top bicycle product managers in the industry, and she gives her approval. Yes, it looks tacky, but it's an honest tackiness, no attempts to hide anything. Neither Rushmore-bound nor worthy, but I'm putting this on my bike, anyway. Five bucks, shifts fine, why not?

**PRICE: \$5**

## PLEASE JOIN AND SUPPORT RIVENDELL

**Y**ou get 6 issues per year of advertising-free bike noise and access to hard-to-find and some normal bike parts at fair prices. **As** a member, you can use the coupons in this issue (and future issues), and if you buy enough, they'll more than pay for your membership. We **try** hard to ship everything within **24** hours, and are constantly trying to improve our on-hand inventory and service. We do very little advertising, we sponsor nobody, Grant's take home averages less than \$2,250 per month, and we keep our overhead as low as possible to bring you the best goods at the best prices. Also, when we buy something ourselves, whether it's an inner tube or a frame, we pay the same price you do. Even Pal Jeff pays full pop. (The prototype frames **✓** be sold cheap **so** that we don't roll them over into our personal collection.)

**As** a mail order business, we are totally dependent on the support of those whom we **will** probably never meet. You'll notice, in this issue, that we're starting to carry a few normal things, too—tools, tubes, tires; **and** in the fall we'll have a few other normal things. If you're strictly price shopping you may be able to find some of these things cheaper at Nashbar, Performance, and other places that buy by the container load or source things from Shanghai. But they won't beat us by much, and we can guarantee they won't appreciate your patronage as much **as** we do. And finally, if you'd like extra Readers to give to fiends, or if you know of anybody who might like to receive a copy, please tell us. This will not work without you. —Maggi, Spencer, Grant

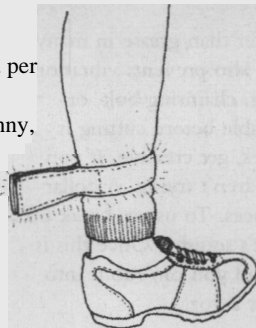
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**RAR**

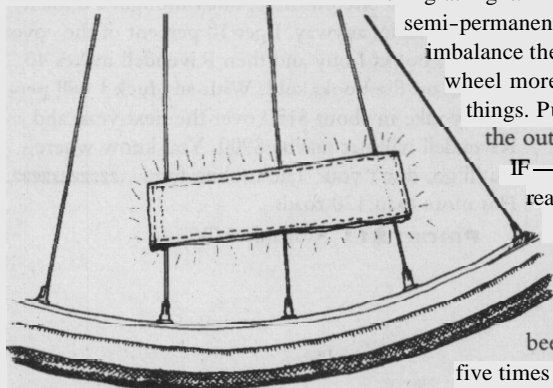
Rivendell Ankle Reflector. More reflective surface area per penny than any reflector. Made from Reflexite, which, you already know by sight, if not by name, Adjustable to fit skinny, bare ankles or fat ankles with thick socks and jeans over them. Stick the tab outward towards traffic, or tuck it behind you for aerodynamic safety through intersections. Stay unbruised this winter. Amberish yellow. 14g.

PRICE: \$5 EA.

**WHEEL REFLECTORS**

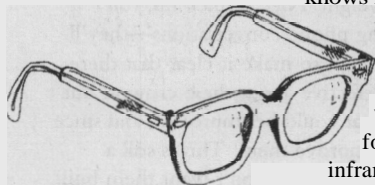
I think John Forester, who is a smart guy when it comes to bikes, thinks wheel reflectors are stupid. Something about them not warning soon enough—I forget exactly his argument. But I'm a fan of them, because they identify you as a cyclist, not just another shiny thing at night. Most wheel reflectors are heavy, semi-permanent, interfere with spoke tension, imbalance the wheel, and make truing the wheel more difficult. These do none of those things. Put the cut corner (not shown) on the outer, trailing edge. IF—and it's a big IF—the reflector ticks the brake shoe at really high speeds, chop it shorter and it won't. Weighs about 11g, mounts and removes in 3 seconds. I've used this style for more than 15 years, and haven't been hit once in that time. I was hit five times before that.

PRICE: \$5 PER WHEEL.

**NEWER DARKER SUNGLASSES**

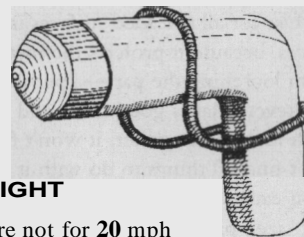
These are the same brand (Bouton) and model (#590020548) as BOBshades, which we've run out of, but they're darker than BOBshades and cost more money. BOBshades were light—even the green ones, which were darker than the greys. I liked them, and lord knows PalJeff loved his (apologies to—). But I figured that since my cost increased from less than \$4 to almost \$7 per each, I'd better get darker lenses so it wouldn't be an apples-to-apples comparison from old to new. That's how retail works. Still OSHA- and ANSI-approved, optically correct for a distortion-free earth, and nearly total blockage of infrared and ultraviolet rays. Even at the new, higher price they're the best deal around. Makes straw-brown hills look green, makes green hills look even greener. Excellent glasses, not cheap junk, not these. The temple wired bend to fit your ears. You can repair them with either a paperclip or a safety pin. Could sell in Hollywood for \$120.

PRICE: \$12

**TESS HEADLIGHT**

They're not for 20 mph singletracking on new trails, but they'll satisfy the law on streets and let you see most of the potholes. They go on and off in a second. The instructions say to use F14 batteries, but that must be Danish for C cells, because that's what I use. Takes two. Be the only person you know with something Danish on your bike. 201g with the not-included batteries.

PRICE: \$11

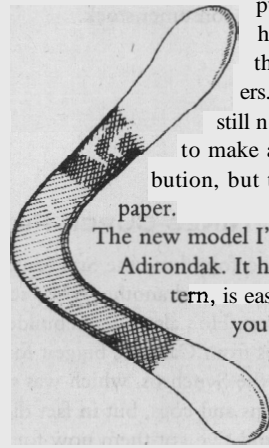
**BOOMERANG**

How's this for trivia?: Rivendell Bicycle Works is one of the largest boomerang dealers in the United States. We sell about 25 to 35 per month, and our supplier says that


puts us up there on his list, as he's one of the few manufacturers. Anyway, they're still not profitable enough to make a significant contribution, but they keep us in copy paper.

The new model I'm selling is called an Adirondak. It has a nice flight pattern, is easy to throw, and you'll never regret owning one. If the makers run out of these, we'll sub another, comparable model. All booms are hand made one at a time in Colorado, boomerang capital of the Rockies.

PRICE: \$18  
Specify R or L.



**BEESWAX IN A DIXIE CUP**

Use for all threaded surfaces in place of grease. It's better than grease in many places, because it protects the metal as well, lubricates, yet also prevents vibration from loosening the part—a pedal dustcap, headset lockring, chainring bolt, or whatever. Makes good cable end caps, and if you wax a cable before cutting it with lousy cable cutter, it won't fray. Plug frame vent holes, get creative. If you can't find 50 things to do with it in and out of doors you aren't trying. A dollar from each sale is donated to charity. Made by free-range bees. To use it, break off a Kix-sized piece, soften it in your hands, and knead it till it's squishy. Once this is done, the wax  rub on anything without crumbling, and you can rub it into threads or mold it to any shape needed. About 70g, almost 2.5oz.

**PRICE: \$3**

**BRIDGESTONE POSTERS—BACK AGAIN!**

Gorgeous reprints of the linoleum block prints made by English artist Peter Wormell. The 1993 poster is of a road rider (P. Bob, actually) riding amongst horses. The 1994 poster is of Masa (ex Bstone employee) riding a mountain bike on a bucolic path with some sleeping sheep and a church in the background. We have 100 of each, a new batch I found at a dealer and bought, so the price has gone up a dollar. Still a deal for these 24" x 36" posters, printed on heavy, 100 percent post-consumer stock.

**PRICE: \$6**

**GENUINE KRYS HINES SUPER FOPS**

Krys is the guy who found me the SunTour bar-end shifters, non-aero Dura Ace levers, and another 60 or so pair of Campy N.R. downtube shifters. He's also a framebuilder, phone-friend, and maker of key fops from Campy's biggest foible in the downtube shifter market—the Synchrons, which was supposed to work with everybody's chains and cogs, but in fact didn't. So onto keyrings they went, and I've got them now for \$10, which includes a BOB coin purse and a water bottle. This is the key fop I use, and I've had nothing but success with it. A Rivendell exclusive. Lefts or rights. The good thing about the lefts is they aren't greasy. The good thing about the greasy rights is that the grease comes out easy, and they have two pieces. State a preference or take your chances. Makes a baffling gift for elderly noncycling relatives, and then you can put the whole clan ill-at-ease with an historical explanation.

**PRICE: \$10.** Comes with a coin purse, too.

**RBW H2O BOTTLE**

These are made by Specialized, screened with a blue RBW logo, so I can sell them cheap. Specialized water bottle are the best.


White or Clear. State a preference, but please be flexible. One dollar from each sale goes to charity. This is the standard, 21oz size.

**PRICE: \$4 EACH.**

**ROADS TO RIDE AND ROADS TO RIDE/SOUTH**

*Roads To Ride* is a book about paved roads in Alameda, Contra Costa, and Marin counties. All of those counties are in California, the county capital of the U.S., if not the world. I wrote it in 1982, updated it in 1984 or so, and most of the information is still good enough. Sparse text, absolutely no local color or suggestions on where to buy the best foreign beer, capuchino, or Mexican food. Just where to go and what to expect. Has more than a hundred roads.

**PRICE: \$10** Available 2/96.

*Roads To Ride - South* is the same story, but covers Santa Cruz, Santa Clara, and San Mateo counties. This was co-written by John Kluge, who later worked at Bstone, and still does, in Tennessee. We did it in 1988, I believe. I don't expect many non-local riders to bite on these, but I thought I'd make them available, anyway. I get 10 percent of the cover price on books I buy and then Rivendell makes 40 percent on the books sold. With any luck I will personally rake in about \$150 over the next year, and Rivendell  net maybe \$900. You know where that'll go, don't you? The tooling fund...zzzzzzzzzzzz. Has more than 120 roads.

**PRICE: \$11** Available 2/96.

**FORK CROWN-LIKE PAPERWEIGHTS**

After we're over the huge hump of tooling I'll quit whining about tooling costs; until then it requires a constant effort to not get dragged down by it. So, in order to defray the costs we are selling pre-production fork crowns, as cast, as paperweights. The final crowns are slightly different, improved, strengthened, and are not for sale. These, though, are quite beautiful and you can keep them around as medieval desktop ornaments, paperweight. Nice to pick up, roll around, feel, hold, gaze at during long phone conversations—they'll never know. Chrome-moly steel. I want to make it clear that there is nothing inherently dangerous or defective about these crowns; but the fatigue test revealed some areas that could be improved, and since they could be improved, we had to improve them. This is still a unique Rivendell design, and for that reason, I don't want them built up into forks. These are paperweights, and very nice ones. You're on the honor system.

**PRICE: \$12**

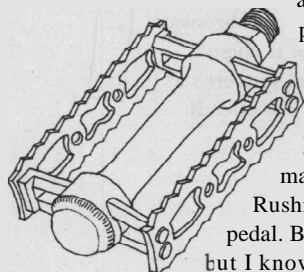
## PEDALS

MADE BY MIKASHIMA, AKA MKS.

IT'S A JAPANESE PEDAL MAKER, THE BEST. MKS MAKES A FULL RANGE OF PEDALS FROM BASIC LOW-ENDERS TO ABSOLUTE TOP QUALITY. YOU'VE SEEN THEM MASQUERADING AS SUNTOUR AND SPECIALIZED PEDALS, MAYBE OTHERS. OF ALL THE PEDALS IN THE LINE, ONLY A FEW INTEREST ME, AND WE CARRY TWO OF THEM. EXCELLENT PEDALS, NO NONSENSE, NOT TRENDY, VERY TRUSTY.

### MKS SYLVAN TOURING + CYCLO-CROSS!

Out-and-out copies of the French Lyotard 460D (or whatever it was), the cyclo-cross racer's standard for decades, if not scores. But made better! Good for big feet or sneakers, any kind of shoes. Hop on and go. They give a non-cyclocross road bike a "what's with the pedals?" look, but I can't imagine a better



pedal for a utility, commuter, messenger, get-around town bike. Or cyclo-cross, for that matter. About 410g per pair. These have a "cheap pedal" look about them, but they're very well made. Rushmore-bound? I wish.

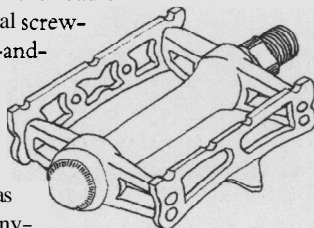
Rushmore-worthy? **You** bet! A low-profit pedal. By all rights they ought to sell for \$45, but I know they haven't a chance at that price, so I'm offering them at a low, introductory price.

When you compare them to what "high tech" pedals cost, the value is obvious. Toe-clip compatible!

**PRICE: \$30**

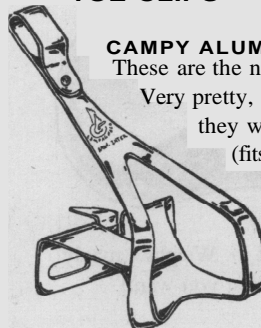
### MKS SYLVAN TRACK PEDALS

Stock on the Bstone RB-1 and XO-1 for a few years. Classic track-style cages (equally good on the road or *off*), with flip-tab, alloy cages, real screw-on dustcaps, and serviceable ball-and-cone bearings. Not as high quality as, say, a Campy, Zeus, or TA pedal, but I've ridden them thousand of trouble-free miles, many of my fiends have as well, and I don't recall hearing anybody ever squawk about them. They look nice enough to go on any bike. About 315g per pair.



**PRICE: \$48**

### TOE CLIPS



#### CAMPY ALUMINUM

These are the neat ones with the funny cleat-guide. Very pretty, only 29g in a medium (fits to 43), and they won't break unless you abuse them. *S* (fits to 39), *M* (fits to 43)

**PRICE: \$15**

#### CHRISTOPHE STEEL

In the old days these were the cheapies that poor people rode, which is how I came to like them so much. Now they're on the list of endangered bike parts that have served generations proudly but don't have enough commercial sizzle to cut it in the '90s. I wish I had a thousand pair, but I have just about 50, only medium (but if you need a *S* or *L*, ask privately).

**PRICE: \$10.**

(tip: ask around at bike shops and you can probably find them for a dollar; but I bought these for more than that, and can't match blow-out prices)

#### GPM STEEL

Large only, functional but ugly, gotta sell them anyway, perfect for a city bike. Someone told me "they look like they're made from those funky gold coat hangers," and it's true. But it's strong spring steel!

**PRICE: \$3.50**

### CHRISTOPHE CHEAP LEATHER TOE STRAPS

Everyone wants the old Binda Extras, and everyone wants Rivendell to have them for \$12. We don't, but we do have the poor farmer's version, all leather, not laminated, but very nice indeed. Mostly white, but we may have some Bianchi celeste ones. Perfect for pedals or Tool and Toob Totes.

Price: **\$5** per pair. White, unless you state *ANY COLOR*, in which case you have an outside chance of celeste or something else.

## SADDLES AND SEATPOSTS

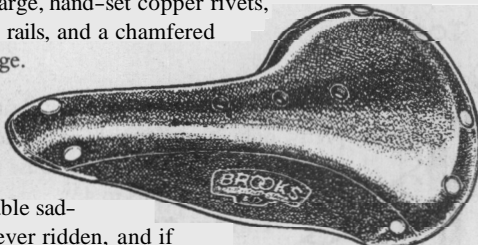
**RIVENDELL SPECIAL BROOKS B.17 SADDLE**

A spiffed up B.17 with Brooks Pro-thick honey brown leather, large, hand-set copper rivets, chromed rails, and a chamfered lower edge.

This is without question the most comfortable saddle I've ever ridden, and if

that weren't enough, it comes with Carradice-compatible loops built right in. Weighs a manly 513g. As PalJeff would say, "That's what you want!"

**PRICE: \$65**

**PROOFIDE**

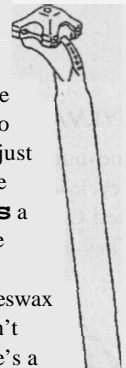
Brooks's pink proprietary blend of beeswax, candle wax (presumably paraffin), citronella oil, tallow (apologies to vegans who somehow made it past the leather and are now faced with this), and "cod oil" —presumably from the liver. Further apologies! A treatment or two per year will help that leather saddle.

**PRICE: \$6**

**NITTO SEAT POST, 27.2 X 330MM**

Nitto is the world champ at strong, light, beautiful stems and handlebars, and this is their seat post, which is right up there, too. It looks like a Ritchey, which should come as no surprise, since the Ritchey is a Nitto post tweaked here and there for Tom. This post is the pure Nitto post in a ridiculous 330mm length. It weighs just 235g, but if you chop it down to a reasonable length you can probably lose another 18g. It's a pretty fair amount of setback, holds the saddle tight, and is smooth to a fault. (No joking: Sometimes it's so smooth you have to rub beeswax on it or roughen it with sandpaper so it doesn't slip.) I bought these from Specialized, so there's a small logo on the throat, removable if it offends. (No offense to Specialized).

**PRICE: \$50**

**BROOKS TENSION TOOL**

Grabs the nut at the nose, so if you bounce on your saddle for five hours in the soaking rain and it starts to sag, you can snug it up again. Brooks intentionally makes the process awkward and slow at best, since in the past when they've made it easy (with a hex wrench), people have gone to town, down to the wreck center, and wrecked their saddles. What were they thinking? You can also just use any old open-end 13mm wrench, but it's a little easier with this one. That may not be good thing.

**PRICE: \$5**



## TOOLS

### HOZAN 8-9-10 Y WRENCH.

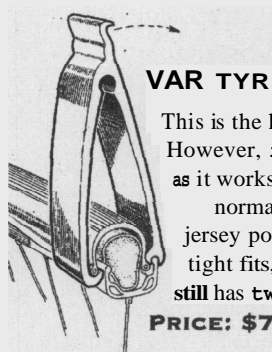
Everybody needs a Y wrench, and this is the best one I've used. Hozan is Japanese, and it never got any respect in the '70s and '80s, when the cool tools were either VAR or Campy or Zeus. But I've never seen a VAR Y-wrench, Campy and Zeus don't make them, so today it's usually either Park, Taiwanese models, or this HOZAN. Most shops sell Taiwanese ones, because they cost so little. Parks cost a bit more, and you've got to like the Made In the USA-ness. But Parks have plastic handles, and you don't have to like that. I don't want to get into price wars on cheap tools, so the only Y-wrench we sell is the HOZAN. I've used one for years, the comers are still sharp, and it shows no signs of wear. Don't expect a super finish as you'd get with a Campy, or the "medieval smithy"-look of a fi-og-in-the-mud-colored paint on the old metal VAR tools. The finish is chrome-over crude, but it's accurately made where it counts, and you won't wear it out. Eleven bucks is a whopping lot, but it'll last you forever. Rushmore-worthy, but probably not Rushmore-bound. Unless we do it at night.

PRICE: \$11 ■

### PARK TIRE LEVERS

Traditional levers, pack of three.

PRICE: \$3



### VAR TYRE LEVERS

This is the highest-tech tool VAR makes, and completely out of character with the rest of the tool line. However, in typical VAR fashion, it's a smart design and works so well. Far superior for tire mounting, as it works on a completely different principle which doesn't put your tube at risk. It is bulkier than a normal tire lever, but does that matter? Not to a Carradice, not to a Tool & Toob Tote, not to a jersey pocket, not to a musette, plain or ACME. Developed for skinny, high-pressure clinchers with tight fits, but works on easier tires, too. You can't take advantage of the neat design on fat tires, but it still has two conventional priers, so no problem.

PRICE: \$7

### MORNINGSTAR HUB & PEDAL GREASE INJECTION CONVERSION KIT

This is a simple and clever design which allows you to turn your regular hubs and pedals into grease-injectable ones. There's nothing gimmicky about it; it just works, and as PalJeff would say, "Ya gotta like that.."

PRICE: \$15

### PARK FOLDING HEX/SCREWDRIVER COMBO

This weighty little bugger is always handy. Not as light as the featherweights, but it costs less, every tool on it works well, and it is easier to use. Has 4-5-6mm hex keys, plus Phillips and a flat blade screwdriver.

PRICE: \$8

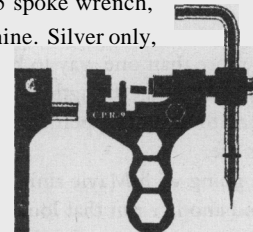
### RITCHEY CPR-9 TOOL

4-5-6mm hex keys. 8-9-10 sockets. flathead screwdriver, 14/15 spoke wrench, chain tool, that's nine. Silver only, unless we run out and have to reorder one of the colors. Be flexible, it's a dang tool!

Just 46c.

Cover the sharp edge of the flathead screwdriver with a ball of beeswax.

PRICE: \$19



### 5MM AND 6MM HEX KEYS

"Hex keys" is the PC term for non-Allen brand six-siders. These are as generic as they get, and you can probably find them for less somewhere else, because our policy is everything priced to the even dollar, and I couldn't see clear to rounding down to nothing.

PRICE: \$1 specify which size

### REMA PATCH KITS

The Caddy of patch kits, if there is such a thing. I know the trend is to glueless patches, and I'm all for quick patch jobs, but the thing about glueless patches is that you still have to abrade the tire, and that's the worst part of the repair, anyway. Also, I've had less than 75 percent retention rate with the glueless patches, compared to 99 percent with Remas, and I hear similar reports from down South. Carry both, and if your glue's dried up, use the glueless. I read a tip in a magazine, I forget which one: Keep a glueless patch between the tube and tire, so you always have something that will at least slow the leak until you can get a new tube or Rema. Rema patch kits come in a couple sizes, all of which are Rushmore-worthy. These are the small ones.

PRICE: \$3

## RIVENDELL WHEELS

Everyone argues about wheels, everyone has a favorite theory, rim, spoke pattern, you name it. After sufficient experience you figure out there's more than one way to build a good one; that high, even spoke tension is paramount; that hard anodizing doesn't make a whole lot of sense; that **rims** get strength **from** width, height, cross-section, material, and eyelets; and that **everything** about wheels is a compromise. One of the worst things to happen to wheels lately is the narrow, high-pressure tire. Going to a larger section tire and lower pressure **add** years to a wheel's life.

I'm going with Mavic rims because I've used them enough, and nobody ever squawks about them. On a model-by-model comparison, you may find another rim that looks better on paper or in theory, but through the years Mavic has maintained an enviable consistency to the quality of its rims, and I'm comfortable with that. These are middleweight wheels made with proven hubs, rims, and spokes, and built to survive hard use for many years. In time we may add special models—I'd like to do a mountain bike wheel with a 25mm wide rim, a 36-spoke, 6-speed spaced rear road wheel, and some featherweight wheels for lightweight riders, for instance—but things take time, you know!

### MTN/AR WHEELS

Hubs: Bullseye, silver, 28° f, 32' r, 133mm overlocknut (fits from 130mm to 135mm frames), 37.5mm freewheel spacing (accommodates 7-speed Sachs free-wheels, probably others, as well).

Rims: Mavic 217 silver. A single eyelet rim with a semi-aero box section. A new rim, and it seems to have everything going for it—tall braking surface, not too skinny, the eyelets...MS/MD types will be glad to know Tomac rides it.

Spokes: DT. Front wheels use 2x 15ga; rears are 14db on the left side, 14ga unbutted on the drive side. Wheels are built by Winkel, and the rears are "race-laced," a 4x pattern with all the spoke heads on the inside of the hub. This increases the lateral strength of the wheel. All nipples are brass. Note: By popular demand we will, sometime later, introduce a 32' front wheel. However, I am conservative when it comes to wheels, and I know 28° is plenty strong for the front. The nipple-to-nipple distance on a 28° 26-inch wheel is just one millimeter greater (56 vs 55) than on a 700c 32° wheel. Combined with the inherently stronger rim, the fatter tire, and Winkel's building, well, no problem, even for 200-pounders. But the 32° fronts are coming...call for a report.

Weights: Front: 11b, 11oz. Rear: 11b, 15oz.

**PRICE PER PAIR: \$235** (These rims cost more.)

**FRONT ONLY: \$110**

**REAR ONLY: \$125**

**NOW AVAILABLE: 32° FRONTS.**

**SPECIFY: 32/28 OR 32/32.**

### ROAD WHEELS

Hubs: Bullseye, silver, 32° f/r, 128mm overlocknut (fits 126, 128, 130 rear spacings), 37.5mm free-wheel spacing (accommodates 7-speed Sachs free-wheels, probably others, as well).

Rims: Mavic MA-2. A ferruled rim with a simple box section. An old standard, the best value going, about 460g. The non-anodized version of Mavic's venerable MA-40. Heavier than the newer models (Reflex, O4CD), but none of the metal is misplaced!

Spokes: DT. Front wheels use 2x 15ga; rears are 14db on the left side, 14ga unbutted on the drive side. Wheels are built by Winkel, and the rears are "race-laced," a 4x pattern with all the spoke heads on the inside of the hub. This increases the lateral strength of the wheel, and it was either this or 36-spoke rears. All nipples are brass.

Weights: Front: 11b 15oz Rear: 21b 2.5oz  
Weights are of actual samples, but rim weights vary even among identical models, even in Mavics!

**PRICE PER PAIR: \$220**

**FRONT ONLY: \$105**

**REAR ONLY: \$120**

**FLASH!** We have a dozen or so six-speed road rear wheels built with the same hubs (Bullseye) and spokes (DT) as above, on Mavic Open 4CD silvers, 36-hole, 2X left, 3X right. Almost no dish, very nice.

**PRICE: \$125**

## INTRODUCING.....RUBBER!

Rivendell has no plans or dreams of becoming big time, but survival is definitely one of our top ten goals, and with that in mind we present what is **known** in the bike industry as our "Rubber Program." There are too many tires to even think of carrying something for everybody, so we carry a small selection of inner tubes that will satisfy practically all your needs, and all your practical needs; and the tires we personally ride every day which coincidentally and with maybe one exception, are the very same tires most bike shops and mail order places don't stock. Kevlar beads only, to reduce weight and make shipping easier. If you have a favorite tire that you think we ought to stock, please let us know.

### MICHELIN HILITE TOUR 700 X 35

Too fat for most road frames, but fits a Rivendell nicely. Most tire makers, when they go to fat tires, use poor-tire technology, figuring, I suppose, that only fat slow slobby commuters ride tires larger than 700 x 28. This Michelin is the exception. It has Michelin best casing and a kevlar bead, so even though it weighs 360g (listed at 320g), you can rest easy knowing you aren't dealing around unhelpful weight, and the more you ride it, the lighter it'll become. If they made this with a pure road tread, I'd be even happier. Requires 353mm between the center of the dropouts and the underside of the fork crown or brake bridge, and that rules out 98% of all modern forks.

**PRICE: \$25** Discontinued

### RITCHEY ROAD FORCE 700 X 28, KEVLAR BEAD

The perfect road tire for 98 percent of your unloaded (not touring) riding. It weighs just 220g or so, is fat enough to protect the rim, grips like Dickens, and doesn't seem any more prone to punctures or cutting than anything else out there. Tom Ritchey rides this for much of his off-road riding.

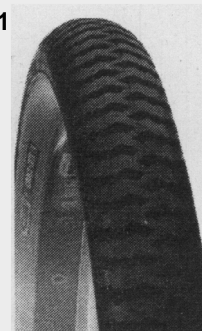
**PRICE: \$22**



### RITCHEY CROSSBITE-K 26 X 1.1

My favorite all-round tire, and curiously impossible to find in bike shops. I guess they do look silly on suspension bikes, but put these on an XO-1, an All-Rounder, or a normal mountain bike. Fast, tough, grippy enough in dirt, not too noisy on the street, and quite light. The best fast commute tire in the world. 400g. with kevlar bead.

**PRICE: \$26**



### PNEUMATIQUE TUBES

The original suspension, and still the lightest, cheapest, most versatile, and least likely to leak or require periodic maintenance. Presta only. Presta valves pump easier and hold air better, so they're the best. The tubes below are a good combination of very light weight, no history of valve problems, and reasonable cost. You can probably buy tubes cheaper through Nashbar, but the prices below are competitive with most others, and I can't afford to go any lower. These are Specialized brand tubes. Weights are approximate.

700c

Black. 97g. Fits tires from 700 x 23 to 700 x 35.

**PRICE: \$3**

26-Skinny

Black. 105g. The perfect tube for tires up to 26 x 1.25.

**PRICE: \$4**

26-Medium

Black. 145g. Good for tires between 1.26" and 1.9-inches.

**PRICE: \$5**

26-Fat

Black. 160g. Your basique mountain bike tire tube. Fits the biggies.

**PRICE: \$5**

**INTRODUCING... RUBBER!**

Rivendell is a place of dramatic beauty, but it's also a technically one in our opinion. And with this in mind we present what is known as the "Rivendell" rubber. It's not just a rubber, it's a solution for every problem you can think of. We have a small selection of items that will solve your problems, and all your practical needs. And the price is right. We have a small selection of items that will solve your problems, and all your practical needs. And the price is right. We have a small selection of items that will solve your problems, and all your practical needs. And the price is right.

**PNEUMATIC TUBES**

The original suspension and all the rubber... most vehicles, and best likely to leak oil or water... maintenance. It's not only... it's better to have the best... maintenance in very light weight... low and reasonable cost. You can... depend on them when... these are specialized tubes. We offer the appropriate...

- 30-25mm  
Black 105x The better tube for cars up to 2000 lbs  
Price: \$4
- 30-Medium  
Black 145x Good for cars between 1500 and 1800 lbs  
Price: \$5
- 30-Large  
Black 180x Your rugged mountain bike the tube...  
the biggest  
Price: \$5

**MICHELIN HILITE TOUR 700 X 35**

Too far in the past history... when they go to the... I suppose that only... 700 x 35. The Michelin... you can... we have... made this... 15 inch between... for crown or... for...

Price: \$22 (uninflated)

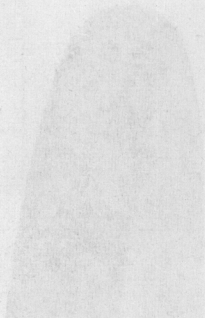
**RITCHIEY ROAD FORCE 700 X 58 KEV-FAR BEAD**

The better road... cost of your... think it's... tough to... (Rivendell... price to... thing is... but for... Price: \$22



**RITCHIEY CROSSBITEK 28 X 1.1**

At Rivendell... impossible to... do feel... these are... normal... enough... and... in the... Price: \$22





# RIVENDELL BICYCLE WORKS

(A GROWING CONCERN)

**1547 PALOS VERDES #402, WALNUT CREEK, CA 94596**

**PHONE: 510/933-7304 • FAX: 510/933-7305 • EMAIL: RIVBICI@AOL.COM**

## MAILABLE, FAXABLE, COPYABLE PARTS & ACCESSORIES ORDER FORM

**NAME** \_\_\_\_\_ **ORDER DATE** \_\_\_\_\_  
**ADDRESS** \_\_\_\_\_ **CITY** \_\_\_\_\_ **STATE** \_\_\_\_\_ **ZIP** \_\_\_\_\_  
**DAY PHONE:** ( ) \_\_\_\_\_ **EVE. PHONE:** ( ) \_\_\_\_\_ **FAX OR EMAIL?** \_\_\_\_\_

QTY	SIZE	ITEM AND NECESSARY DETAIL	EACH	TOTAL

Name & address of a friend who might like the RR: \_\_\_\_\_

First Subtotal:	
Minus any Rivendollars or GC:	
Second, possibly lower subtotal:	
<b>Tax (CA only):</b>	
Shipping (see below left):	
Tooling contribution (buys coupon worth 10% more):	
Membership (\$20; or NOW, JUST \$15 with order):	
<b>Total:</b>	

<p><b>SHIPPING</b></p> <table style="width: 100%;"> <tr> <td style="width: 30%;">GROUND</td> <td style="width: 30%;">AIR</td> <td style="width: 40%;"></td> </tr> <tr> <td>US</td> <td>\$5</td> <td>\$12</td> </tr> <tr> <td>CANADA</td> <td>\$15</td> <td>\$22</td> </tr> <tr> <td>INT'L</td> <td>\$25</td> <td>\$45</td> </tr> </table>	GROUND	AIR		US	\$5	\$12	CANADA	\$15	\$22	INT'L	\$25	\$45	<p>Amount:</p> <p><input type="checkbox"/> Check <input type="checkbox"/> Money Order <input type="checkbox"/> Visa <input type="checkbox"/> MasterCard <input type="checkbox"/> American Express</p> <p>Card number: _____</p> <p>Signature: _____</p> <p>Exp. Date (month/year): _____ / _____</p> <p>Check or Money Order number: _____</p>
GROUND	AIR												
US	\$5	\$12											
CANADA	\$15	\$22											
INT'L	\$25	\$45											

1547 PALOS VERDES #402, WALNUT CREEK, CA 94596  
PHONE: 916-933-7504 • FAX: 916-933-7305 • EMAIL: RIVENDELL@AOL.COM

MAILABLE, FAXABLE, COPYABLE PARTS & ACCESSORIES ORDER FORM

NAME: \_\_\_\_\_ ORDER DATE: \_\_\_\_\_  
ADDRESS: \_\_\_\_\_ CITY: \_\_\_\_\_ STATE: \_\_\_\_\_ ZIP: \_\_\_\_\_  
DAY PHONE: \_\_\_\_\_ EVE PHONE: \_\_\_\_\_ FAX OR EMAIL: \_\_\_\_\_

QTY	SIZE	ITEM AND NECESSARY DETAIL	EACH	TOTAL

Name & address of a friend who will be the RFR  
Name my responsibility or CR  
second party's responsibility  
Tx (CA only)  
Shipping fee below  
Shipping container (plus coupon worth 10% off)  
Membership \$20.00 NOW (JUST \$15 with order)  
Total

SHIPPING  
AR  
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FL  
OR  
WA  
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NV  
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MS  
TN  
KY  
VA  
NC

# RIVENDELL BICYCLE WORKS

(A GROWING CONCERN)

1547 PALOS VERDES #402, WALNUT CREEK, CA 94596

PHONE: 510/933-7304 • FAX: 510/933-7305 • EMAIL: RIVBICI@AOL.COM

## FRAME ORDER FORM

NAME \_\_\_\_\_ ORDER DATE \_\_\_\_\_

ADDRESS \_\_\_\_\_ CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

DAY PHONE: ( ) \_\_\_\_\_ EVE. PHONE: ( ) \_\_\_\_\_ FAX OR EMAIL? \_\_\_\_\_

LATEST ACCEPTABLE DELIVERY DATE: \_\_\_\_\_

### SIZE

ROAD:

50CM  52CM  54CM  56CM  57.5CM  59.5CM  62CM

ALL ROUNDER:

42CM  48CM  52.5CM  54CM  55.5CM  58CM  61CM

MOUNTAIN BIKE:

DROP BAR STYLE  REGULAR

16IN  17.5IN  19IN  20.5IN

### COLOR

GREY-BLUE

TUSK

LIGHT METALLIC BLUE

CARAMEL ORANGE

SHERWOOD FOREST

BEACHFRONT PINK

SILVER

BRICK RED

GOLDEN OLIVE

CHAMELEON

### SPECIAL OPTIONS

PAINTED HEAD TUBE

HEADBADGE:  PEWTER  CLOISONNE

NON-STANDARD REAR SPACING: \_\_\_\_\_

BOTTOM BRACKET:  PHIL WOOD

OTHER: \_\_\_\_\_

HEADSET:  X-12  X-13

### SHIPPING

UPS GROUND \$25

SECOND DAY AIR \$50

NEXT DAY AIR \$75

TO ORDER: SEND A \$300 DEPOSIT BY CHECK OR CHARGE. WHEN WE RECEIVE IT YOU GO ONTO A LIST FOR FRAMES OF THAT SIZE AND TYPE. THERE ARE FIVE OR SIX OF EACH SIZE AND MODEL AVAILABLE EACH MONTH, AND WHEN ONE MONTH'S ALLOCATION IS SPOKEN FOR, WE PUT YOU DOWN FOR THE NEXT MONTH. EXPECT TO WAIT 45 TO 60 DAYS. THERE IS A LAYAWAY PLAN, ALSO. IF THIS INTERESTS YOU, PLEASE CALL OR WRITE FOR DETAILS. THANK YOU, GRANT, SPENCER AND MAGGI



(A GROWING CONCERN)  
1547 PALO VERDE WOOD, WALNUT CREEK, CA 94598  
PHONE: 510-933-7304 • FAX: 510-933-7305 • EMAIL: RIVERDELL.COM

### FRAME ORDER FORM

NAME \_\_\_\_\_ ORDER DATE \_\_\_\_\_

ADDRESS \_\_\_\_\_ CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

DAY PHONE ( ) \_\_\_\_\_ EVE PHONE ( ) \_\_\_\_\_ FAX OR EMAIL \_\_\_\_\_

LATEST ACCEPTABLE DELIVERY DATE \_\_\_\_\_

#### SIZE

ROAD

1.50CM 1.52CM 1.54CM 1.56CM 1.57CM 1.59CM 1.62CM

ALL ROUNDERS:

1.43CM 1.46CM 1.51CM 1.54CM 1.55CM 1.56CM 1.61CM

MOUNTAIN BIKE:

1. DROP BAR STYLE 1. REGULAR

1. 18IN 1.17.5IN 1.17IN 1.20.5IN

#### COLOR

1. TRUCK

1. GREY BLUE

1. CARAMEL ORANGE

1. LIGHT METALLIC BLUE

1. BEACHTHROAT PINK

1. SHERWOOD FOREST

1. BRICK RED

1. SILVER

1. CHAMELEON

1. GOLDEN OLIVE

#### SPECIAL OPTIONS

PAINTED HEAD TUBE 0

HEADBIDGE 1. FANTASY 1. CLOISONE

NON-STANDARD REAR SPACING \_\_\_\_\_

BOTTOM BRACKET 1. PHIL WOOD

1. OTHER \_\_\_\_\_

HEADSET: 1. X-12 1. X-13

#### SHIPPING

USPS GROUND \$22

SECOND DAY AIR \$30

NEXT DAY AIR \$75

TO ORDER, SEND A \$200 DEPOSIT BY CHECK OR CREDIT CARD. WHEN WE RECEIVE IT, YOU GO ONTO A LIST FOR FRAMES OF THAT SIZE AND TYPE. THERE ARE FIVE OR SIX OF EACH SIZE AND MODEL AVAILABLE EACH MONTH, AND WHEN ONE MONTH'S ALLOCATION IS BROKEN FOR, WE PUT YOU DOWN FOR THE NEXT MONTH. EXPECT TO WAIT 45 TO 60 DAYS. THERE IS ALWAYS A PLAN, ALSO. IF THIS INTERESTS YOU, PLEASE CALL OR WRITE FOR DETAILS. THANK YOU, GRANT SPENCER AND MARGI