RIVENDELL BICYCLE WORKS • EVER SINCE 1994

THE RIVENDELL READER • ISSUE 7

WHEN ATHLETES ATE WONDERBREAD (RR-7)

People who like statistics say each written opinion speaks for 15 thousand others, and if that's the case there are **75** thousand of you who would like to read something in the RR about riding technique. In this column I'll address the only two things I think I believe.

PEDALING CADENCE: One argument you hear in favor of more rear gears and **convenient-as-all-get-out** shifting is "now I shift *so* much more," the implication being that it's more efficient, faster, less tiring to maintain pretty much exactly the same pedaling cadence on all but the steepest climbs. (They let you off the hook for them.)

I don't think constant shifting *is* all it's cracked up to be. I'll bet if you stop changing gears every time your cadence falls out of your "ideal" range, that ideal range will expand to include anything from 70 rpm to **95** rpm. Racers don't do well at 70 rpms, but that's mostly because it's harder to change speed quickly at slower rpms. I always recommend higher rpms for any non-racer who wants to, say, draft the milk truck driven by the fast young hoodlum.

Even if I'm wrong, it's a good bet that dropping your cadence down to 70 or even 65 rpms isn't going to hurt you, and if you suffer from tendonitis, it may even help. There's little chance of you pedaling too long in too big of a gear, because that's just counterintuitive, and your body will say ***stop.***

DESCENDING AND CORNERING: Michael King, ex-Bridgestone sales rep and road racer, told **me** something that, upon just hearing it, instantly improved my cornering ability 40 percent (I increased my speed and security by **20** percent each). It helps to have reasonable technique **to** begin with—keep the inside pedal up, weight the outside pedal, keep your nose over your inside hand; but once those things are in place, Michael's tip will catapult you to a new level of cornering skill, and may save your life: Point your hips in the direction you want to go. Steer with your hips. You won't believe the difference, and that's all you have to do. **END**

Not Inside the RR-7:

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- MICROBREWS FOR MOUNTAINBIKERS
- HELMET VISOR SHOOTOUT
- BENEFITS OF WINTER CROSS-TRAINING
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1561-B Third Avenue
Walnut Creek, CA 94596
Phone: (510)933-7304
Fax: (510) 933-7305
Email: Rivbici@aol.com
The web thing:
http://www.veloworks.com/rivendell/

Editor:
Grant Petersen

Staff:
Spencer Chan
Mary Anderson
Gary Boulanger
Peter Kelley

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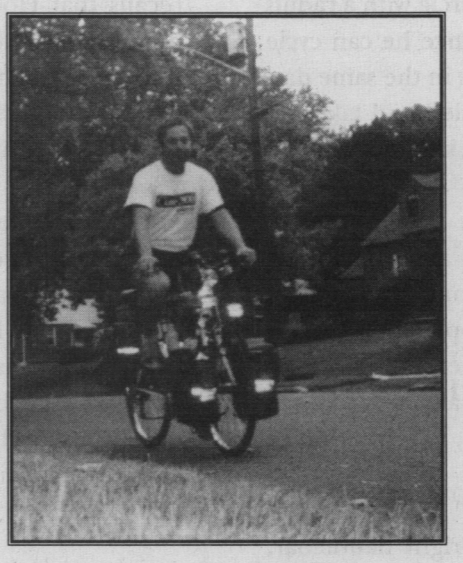
BY SCOTT MARTIN

'50,000-MILE-A-YEAR' FREDDIE

REPRINTED WITH PERMISSION FROM BICYCLING MAGAZINE, APRIL, 1989.

Freddie Hoffman is a friendly, voluble man with short, dark hair, powerful legs and weathered hands. He speaks with a slight stutter that diminishes as he talks with price about his cycling accomplishments. Diagnosed as having a mild brain dysfunction, he's worked hard to overcome a condition that - in his words - forced him to think more slowly than others.



"It was mild," says Hoffman, "just enough to make my life a little miserable." The taunts from schoolmates started early. "A lot of them thought I was a freak," he recalls. "The world is mean to a child who's different. It's very frustrating when people put you down for something you can't help."

Cycling was his salvation. He began riding his tricycle at age 5 and started tracking his mileage when he got an odometer for his seventh birthday. The kids at school didn't believe how far he was pedaling until he brought in pictures he took on a ride miles from home. "When I showed these pictures around, the kids were awed," he says. "Then it was no longer important that I couldn't catch a ball."

Single and unattached, he lives at home with his father and works part-time as a church caretaker, a job whose flexible hours give him plenty of time to ride. Indeed, he doesn't even have a driver's license. "I'm probably one of the few 30-year-olds who's never driven a car," he says.

Hoffman claims not to mind his lack of a social life. "A lot of what others guys do - chase girls, watch TV - I don't do," he says. "I have no interest in that. I do nothing but ride, eat, and sleep." Speaking of sleep, can someone with such a schedule ever get enough? "If I sleep five-and-a-half hours a night," he says. "I recover from all but super-hard rides."

To make his mileage log complete, Hoffman even computed totals for the two years before he began keeping records. He used to ride his tricycle on a 1/3-mile circuit around his home, and since he had kept track of the number of laps he did each day, it was easy to approximate his annual mileage. (For the record, Hoffman rode about 1,800 miles his first year - not bad for a 5-year-old. He might have gone farther, but his mother wouldn't let him out on cold winter days.)

Slowly, the miles began to accumulate. At first he wrote the totals on calendars, but eventually he recorded them in a grade school composition book. Over a lunch of bologna sandwiches (1-1/2 for me, 3-1/2 for Hoffman), he shows me its yellowing pages full of meticulous charts with daily, weekly, monthly, and yearly totals. "You can see my whole life right here," he says.

"I'm very much an individualist," adds Hoffman. "I've lived pretty much a solitary life, but I'm comfortable with it."

The log also notes milestones in Hoffman's career. At age 8, for instance, he rode his first century - in 10 hours on a Stingray with a high-rise handlebar and 20-inch wheels. In '74, he got his first derailleur-equipped bike - a 5-speed Sears Free Spirit. "It wasn't meant for people who ride a lot," says Hoffman, who went on to break about a half dozen Sears frames. 'Their stuff isn't great, but if it breaks, they'll give you a new one. Hell, I wasn't tell 'em I was riding 700 miles a week. As far as they knew, they had a batch of bad frames.

"Every year was basically the same." he continues. "The numbers just kept getting bigger and bigger." But disaster struck in '79, which Hoffman calls his "catastrophic period." He tore a tendon in his left knee and could barely ride for a month. "I felt very bad," he recalls. "My unused energy kept backing up. I couldn't sleep at night." But by removing the left crankarm and resting his left foot on the chainstay, he found he could ride pretty well on the flats. His first one-legged ride was 115 miles. Within a few weeks, he knee had healed.

Since they, Hoffman has remained in virtually perfect health. Oh, except for March 31, 1985. He caught a bad cold and couldn't ride, ending a streak of 778 consecutive days of cycling.

In addition to his mileage log, Hoffman also keeps a hand-drawn map of the area in which he regularly rides. Using his home as the center, he's inscribed a circle with a radius of 120 miles. This is the maximum distance he can cycle before turning around and hearing home in the same day. Hoffman claims that if he were blindfolded and taken to virtually anywhere within the circle, he'd know how to get home.

These days, Hoffman logs his miles on a gray Schwinn Super Le Tour. Like all his bikes, this one has a name. Spelled out in yellow letters on the top tube is "Ruth Hoffman." It's in memory of his mother, who died of leukemia. "That way," he says, "when anybody does a story on me or my bike, she gets in there, too. It's kind of a memorial."

Hoffman's bike is equipped with an upright handlebar, front and rear racks, 3 chainrings, fenders "Schwinn-approved" spring saddle, radio, 5-digit odometer (for obvious reasons), thermometer, generator lights, brake light, kickstand, and a couple of impressive-sounding horns activated by blowing through rubber hoses. I could barely lift the thing - never mind riding it. But in a way, this setup makes sense. Hoffman's bike is his home, and he's furnished it for maximum comfort and convenience. Remember, he spends more time each day in the saddle than in bed.

Hoffman's "retro" approach to technology also extends to clothing. His long concession to cycle apparel is a pair of touring shorts. He favors running shoes (partly because he needs orthotics, he can't fit into cleated shoes, T-shirts, and sweat pants. He also doesn't wear a helmet and claims to have a "sixth sense" that keeps him out of danger.

(Time spent with Hoffman can change your perspective. Preparing for our ride, I felt faintly ridiculous pulling a 21-pound aluminum bike from my car and donning tights, neoprene booties, polypro jersey, with jacket, and Gore-Tex gloves. Why do I need all this stuff when I'm riding about 45,000 fewer miles per year than this guy? And why did I drive to his house when I could have cycled? After all, it was only 120 miles away.)

"If Freddie wasn't so involved with doing all those miles, he could have been an excellent racer," says Mike Fraysse, founder and president of the North Jersey Bike Club, to which Hoffman belongs. Fraysse, a veteran cycling coach and former president of the U.S. Cycling Federation, recalls that Hoffman once took an ergometer test commonly given to top racers. Stars such as Greg LeMond and Davis Phinney typically last 20 minutes or *so.* Hoffman's time was about 33 minutes. Freddie has also done a 25-mile time trial in a national-class 55:53.

A more graphic example of Hoffman's strength occurred several years ago. Fraysse says Hoffman asked to ride with the women's national team, which was in the area preparing for a trip to Europe. When Hoffman arrived, he said he felt tired because he'd gotten a call at 3 a.m. from his sister, whose car battery had died. Hoffman had strapped a new battery to his bike, ridden 23 miles to his sister's car, changed batteries, put the old one on his bike, and pedaled home.

Nevertheless, Hoffman went for a 50-mile ride with the team, which included such stars as past world champion Rebecca Twigg. "Freddie killed them," says Fraysse.

But competition isn't the reason Hoffman rides. He's set a goal in life - riding one million miles - and is more than 2/3 of the way to achieving it. You might contend that he's missing out on some things, but his quest makes him happy and gives his life meaning. Who can argue with that?

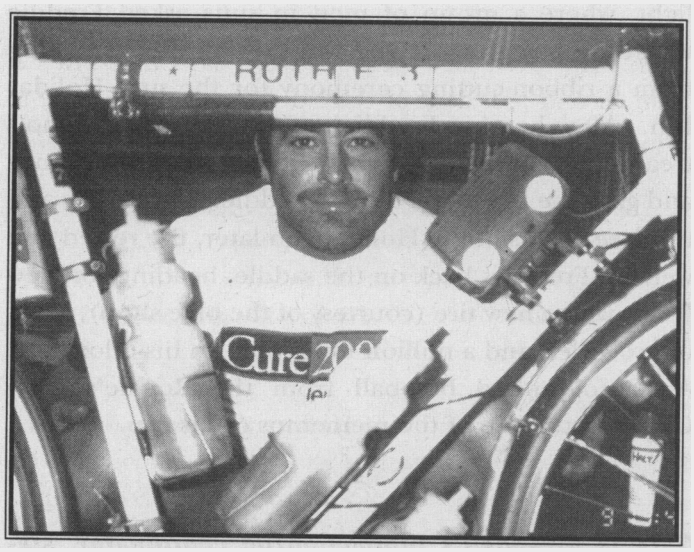
END

FOR MORE ON FREDDIE, SEE THE NEXT PAGE.

FREDDIE HOFFMAN NOW

BY GARY BOULANGER

IN THE LAST 8 1/2 YEARS, Freddie has ridden more than **300,000** miles, raising money for the Leukemia Foundation. In late July, Freddie stopped



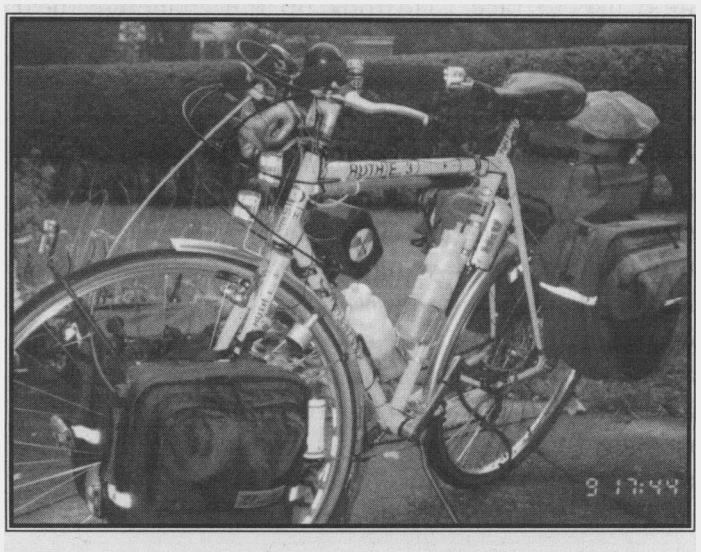
by the Waterford Precision Cycles factory in Wisconsin for some frame repair, on his way to Colorado. His right rear dropout cracked in Iowa, and he needed some assistance. Less than **two** weeks later, he logged his one-millionth mile on a lone stretch of **US** Hwy **36** in Yuma County, Colorado. And like the majority of his miles before, he was alone.

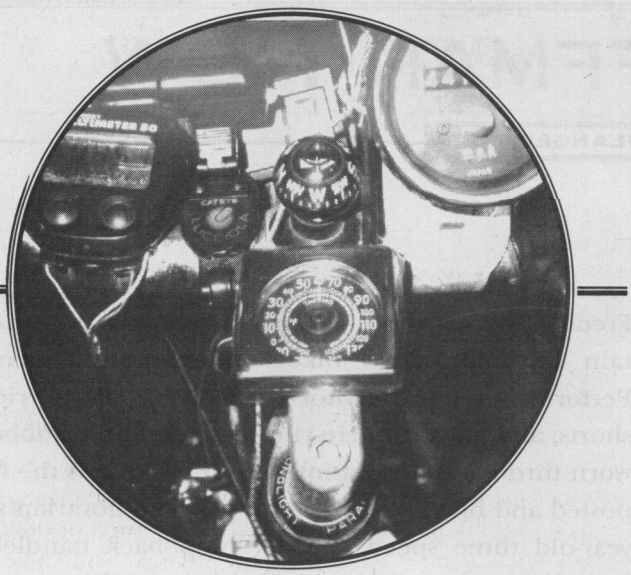
Freddie is an accomplished mechanic, and rides unsupported. He builds his own wheels **(36** spokes), and takes careful notes regarding his equipment - what works and when it fails. **His** rear rim blew out in Iowa, and he got a replacement from Mavic, rebuilt the wheel and was back on the road **two** days later. His previous bike, a Schwinn LeTour, lasted nearly 250,000 miles.

Freddie carries almost everything necessary to maintain his fully-loaded bike He wears inexpensive Performance touring shoes, simple baggy-type riding shorts, and a T-shirt. He rides tires until the rubber is worn through to the casing, and his saddle is the thin-posted and bracketed type you see on a librarian's **25**-year-old three speed. Wide, swept-back handlebars with foam grips are crammed with speedometers, an altimeter, with an air-horn, various lights, SunTour Power-Ratchet bar-end shifters, a compass, and simple brake levers also taken from the **3** speed..

Before logging his millionth mile, Freddie attended a baseball game, courtesy of the Colorado Rockies, which provided him with a luxury box behind home plate. **A** member of the Rockies organization is a board member of the Leukemia Foundation, and introduced Freddie to the team, and Freddie's name and cycling accomplishments were displayed on the gigantic scoreboard during the game.

Talking to Freddie is inspiring. He's risen above his delayed learning comprehension, and with the loving support of his parents, he has consistently ridden more





than 50,000 miles annually, alone and unsupported. His mother died of cancer in 1986, and Freddie has named his third long-distance bicycle Ruth E. 3 in her memory. Since the spring of 1995 he's been riding a custom Waterford 1250, loaded with 70 pounds of gear, at an average of 18 miles an hour. He doesn't wear a helmet, and uses a credit card to stay in hotels.

When Freddie was 5, his parents taught him how to ride a bike safely in his River Edge neighborhood. By the time he was 13, he logged more than 100,000 miles, averaging about 12,500 miles a year (presumably he rode considerably more than this when he was in double digits). A local cycling club director saw Freddie riding his bike all over town and asked him if he'd like to race. He took up the challenge, beat many local hotshots, and set several local time trialing records.

Freddie is a non-stop talker, and uses his experiences to talk to kid's groups when he stops at Leukemia Foundation speaking engagements, which he organizes before he rolls into town. In his travels, he has visited 46 states, the lower six provinces of Canada, and 18 national parks. Along the way, he stays in motels and eats eight to 10 times a day. He estimates that on a 5,000 mile trip, like the one he just finished to Colorado and back, he drinks 1,300 gallons of liquid, including 550 gallons of water, 450 gallons of Gatorade, and 300 gallons of orange juice. According to Freddie, "that could almost fill a swimming pool." Depending on the size of the pool, that could be an understatement.

About his latest road trip, Freddie noted that his only major headaches were road construction and detours resulting from forest fires in the west. On his way home, Freddie's front tire blew out in the middle Missouri. After a quick-fix roadside patch, Freddie was on his way. A few minutes after crossing a bridge into Quincy, IL, Freddie and Ruth E. 3 stopped at a red light, where a group of men in suits asked Freddie where he was going. One was the mayor, returning from a ribbon-cutting ceremony for the new Holiday Inn. After hearing Freddie's story, the mayor (who's treasurer's son has Leukemia) held a press conference and gave the key to the city to Freddie. Three days and two free nights in the Holiday Inn later, the rested and well-fed Fred was back on the saddle, heading for New Jersey with a new tire (courtesy of the bike shop), a bag of groceries, and a million miles-plus on his odometer. An autographed baseball from the Rockie's Gary Carter is just one of the mementos of his trip.

Gary is Rivendell's production/qc coordinator, stationed at the Waterford factory. Freddie stopped by a few months ago, and that lead to this.

FREDDIE'S GEAR

AND OTHER NOTES

2 HOURS OF PHONE CONVERSATION IS THE CLOSEST I'VE GOTTEN TO FREDDIE. AND I FOUND MYSELF FASCINATED WITH ALL HE SAID. WITH THE EQUIVALENT OF A CENTURY OF 10 THOUSAND MILE YEARS, IT HAS TO BE GOSPEL.

I ASKED FREDDIE WHAT PARTS HE RIDES, BECAUSE BIKE PEOPLE WANT TO KNOW THOSE DETAILS, DON'T WE? USUALLY. WE'RE IN THIS HARDWARE-INTENSIVE SPORT, AND WE CAN BE INTERESTED IN THOSE DETAILS WITHOUT TAKING ANY CREDIT AWAY FROM THE PEDALER. SO HERE'S WHAT FREDDIE RIDES, AND IN SOME CASES, WHY:

Stem: SR stem, around 9cm or 10cm. "I think short stems are stronger." (This SR stem, while decent, but well below the quality that I feel comfortable selling here at Rivendell.)

Handlebar: Steel "roadster" style, not completely unlike Moustache H'bars. They're steel, probably because he can't get aluminum bars that have both a 22.2mm outer diameter and a large enough inner diameter to accept the shifters.

Shifters: SunTour old-style bar-end shifters.

"With the shifters on the roadster bar, I can reach the brake levers and shifters with both hands, and I can even have one hand off the bar signalling while I brake and shift with the other. In my opinion, it's the best way."

Wheels: Mavic threaded hubs (he referred to them by model number) with Mavic Mod. 3 rims (same as offered in the last Reader). He said he likes the full ferrrules. It didn't occur to me to tell him this is a discontinued model. His wheels are 40H rear x 36H front, 3x, 14 ga. DT spokes.

Cark Campy Centaur (mountain) with 48 x 36 x 26

Freewheel: Shimano 6 speed 13 x 28. "I have 19-inch chainstays and with a 6 speed that gives me a chain that doesn't bow a lot between the crank and freewheel. With shorter stays and 7 and 8 speeds, you get severe 'bow'".

Brakes: Shimano XTR cantilevers. "The brake shoes last four times as long as the shoes on my other bikes, *so* the {high price} was worth it for me."

Derailleurs: Fifteen year old Shimano Deore, both.

Other: On long trips he has "a dozen or *so*" Vista lights attached to various places, as well other lights, which cumulatively require 30 batteries. His front wheel has a generator.

FREDDIE HAS NEVER RIDDEN 300 miles in a day, admires those who do, and humbly attributes his long mileage to long hours. On his latest trip, his long week was 1,204 miles on a bike that weighed 104lb. His resting pulse, when he's fit, is around 35bpm. His fit-riding weight is 180lb, and he's 6-feet tall. He told a story of going to an Eddie B. (nat'l team coach) seminar, in which Eddie "'he's set up all wrong, but he must be doing something right"'.

Freddie says "I use stuff that nobody else uses and most experts think is all wrong. I don't listen to other people's {advice on equipment} just because they ride 500 miles a week or something."

Freddie admires the astronauts and would like to meet Aldrin, Armstrong, or any of the early (or even contemporary) astronauts, and asked if I knew if any lived in California. He's baffled that most people couldn't even name a dozen astronauts, and seemed to think that was shameful. (That portion of the conversation made me nervous.) Anyway, if any of you know the whereabouts of these astronauts, pass on the word, and if they're up for a meeting with a fellow long-distance traveler, we'll come up with the funds to make it happen, up to $1,000.

Freddie's observations on bikes and cameras and people are not the stuff you expect to hear from someone with a learning disability. His vocabulary is excellent, and his phraseology often caught me off guard.

Freddie doesn't have much money, and for someone who has raised so much money for charity, it seems cock-eyed. (Apologies to those with a wandering eye.) Full-time salaried charity workers, bless them all, make a good living.One of Freddie's heroes, if that's the word, is Richard Schwinn, who (along with the other Wford contingent) built him his bike for free. He has great reverence for Schwinn's place in the history of US cycling, and is proud to call Richard his friend. He visited the Wford factory once and was thrilled to get a full tour and watch the frames being made.

If you're thinking "Freddie's story would make a great book," you're probably right, and Freddie sort of knows it. He realizes that others could write about him, and people would buy the book, but he says "I'm 38 now, and I haven't made much money because I'm (unskilled). I want to write my own story, but I can't type, and that's frustrating. I'd need some help writing the book, but I want to be more than just the subject of it; I want to make some money from it, too." — G

FLASH

To help Freddie fund his life and rides, we're now selling Freddie Hoffman signature long-sleeve mock T-shirts: His signature on the front left breast area in dark blue ink. We'd considered having it huge, across the chest, but then everybody would think you, if you are male were Freddie.

100 percent of the gross profits from these shirts go to Freddie, helping him live and continue raising money to fight leukemia.

Price: $25, and all cotton.

THE HAPPY HUMAN

If you've found something you love unequivocally, write it up and send it in so the rest of us know about it, too. It needn't be a "Rivendellian" sort of thing, either. If you've discovered the best pedal in the world and it happens to be a new Thermoplastic clipless model with digital somethingorother, that's just fine, we'll put it in here. When possible and not obvious, try to list a source and approximate price. Send by fax 510 933-1305, email Rivbici@aol.com or send by regular mail.

SHIMANO SPD SANDALS

These are the most fun of anything relating to bicycles since cruisers, I swear. They're great for rides around town, you know, when you're just out cruising, window shopping, riding through the parks (and maybe a few yards) and you want to stop at the local coffee shop for espresso and bagels. These are the rides with baggy shorts and a t-shirt, when you don't want to look like a bike geek. Of course, I also ride in these on some of the local trails, the smooth ones with lots of dips and curves. I probably wouldn't ride them on some of the rocky, technical ones. There's just something about having my toes jiggling free on a 95-degree day that makes me giggle.

—Sarah Gibson

BELLWETHER DOUBLE SHORTS

A few seconds lost to wind drag won't ruin my ride, and unlike many touring type shorts, these have a real pad. They're lightweight and comfortable and have deep pockets things won't fall out of. Where I live it can be 90-degrees and 80 percent humidity most summer days and I appreciated the way these shorts are made. You can toss the bike and swim in them and they're dry in five minutes. You can wear them on those cruiser pub crawls where bike clothes are frowned upon and no one will notice. They're *so* comfortable that many of the folks I work with at the shop wear them all day.

—Sarah Gibson

QUICK STIX TIRE LEVERS

These are the strongest, beefiest, most dependable tire levers I've used, and the only ones I'd choose when faced with Continental tires on Trek Matrix rims with cloth tape. Ninety-five percent of the time you only need one, unlike the two or three you need with the wimpy levers. When they finally die you can use a dremel to cut a new notch, and you've got a new lever. As for all you who brush off the notion of tire levers in the first place, bully for you; but I like to keep my thumbnails attached to my thumbs, thank you very much.

—Dave F.

SHARK LEASH

The Shark Leash is the best casual watch band ever. The band is a webbed strap of nylon with a piece of fuzzy loop material at one end, with two pieces of hook material at the other end. The two hook pieces close like a set of jaws over the loop piece, closing the band. Leather may be more beautious, but it soaks up Sweat and develops a stench. The Shark Leash, though, can be washed, the colors fade beautifully, the band is always firmly closed and very comfortable, and the fit is infinitely adjustable.

Shark Leash, by Freestyle **USA,** 161 Plaza La Vista, Camarillo, CA **93010,** about **$6**

— Skip Schwarzman

MATERIAL WORLD (A BOOK)

Every ***so*** often a book comes along that can change how you see the world, and Material World, by Peter Menzel, is such a book. Take 30 statistically average families from 30 countries and photograph them in front of their home with all their possessions. The results are surprising, saddening, uplifting. What the priorities are for many people are not what you might expect from the news, but it's also surprising how many concerns are common to us all. In Ulaanbaata, Mongolia, the Regzen family of **6** resides in a yurt at the edge of town. The father works 50 to **60** hours a week driving a truck and doing construction work; the mother works **40** hours a week at a hospital, and another 24 doing housework. The father's most valuable possession is the TV; the mother's is a statue of the Buddha.

Two pages of pictures of Toilets of the World and another **two** pages of Meals of the World are particularly interesting. This book is an antidote to "magpie consciousness," magpies: being known for their propensity to steal bright, shiny things. Get this book. There's a bike in almost every picture.

—Les Priest

CONTINENTAL SEMI-SLICK 26 x 1.6 TIRE

They look fatter than what you expect to see on a **1.6** tire, and they're my favorite all-around on and off road tire. The center section is smooth, ***so*** it rolls quietly on the street (good for getting to the trails), and the knobs on the side help traction in turns, at least theoretically. Sometimes I lose traction up loose climbs, but that happens with knobbies, too. They're around 530g and cost $35 or ***so.***

—Andrew Harris, ***TX***

CINELLI CORK TAPE

It's about the most expensive handlebar tape I've found, but nothing cushions my hands and soaks up the sweat and looks as good as Cinelli cork tape. I like the natural color, but if that's too drab for you, it comes in an array. Most good bike shops have it, Rivendell should carry it, and it costs around **$18.**

—S. Hanson, Utica, *NY.*

COLGATE TOTAL TOOTHBRUSH

No matter what anybody tells you, you can't have healthy teeth without healthy gums, and the best way to obtain optimal gum health is to go at said pink things at a 45-degree (or ***so)*** angle with a soft-bristled brush. I know what you're thinking—*any soft* toothbrush in the *world will do the job, Barbara*—and in theory it will. But the Colgate Total model is ***so*** much better it's pitiful. You see, since the bristles flare out all's you have to do is move the brush sideways and the natural angle of the bristles does the job for you. It also has separated tufts, ***so*** you can get in tight spots better than you can with a tightly packed head. Face it, sometime in the next **60** days you're going to buy a new toothbrush, and since this one isn't any more expensive than any of the other non-house brands, you might as well try it. I'm buying a dozen of them because this one's ***so*** good they're bound to discontinue it. It's the finest toothbrush I've ever had the pleasure—nay—the honor to use, and if I had more money I'd buy a lifetime supply.

—Susan *T., **Mesa,*** AZ

Have You Seen RR6 or the Catalogue?

As 98 pecent of you know by now, we had a mailing problem with the last RR. What happened is this: We told the printer to mail it First Class, and he mailed it bulk. For whatever reason, at least 40 percent of you never received his mailing. Anyway, it's a mess, a mental pain, an expensive flub-up, and I just wish it didn't happen, but it did. So: If you didn't get the catalogue, please let me know and I'll get one to you. I'd hoped to have a surplus to give out freely, but that surplus probably won't happen now, and so we're working on another catalogue (and with another printer), which we hope to have out by Feb 1, and that, actually, is reasonable. The point here is: If you didn't get either the catalogue or the RR6 and should have, let us know right away. We'll try to have a RR8 in the mail by the end of December. That's going to be tough!

BY PETER PASSELL

WHY THE BEST DOESN'T ALWAYS WIN

IN BASIC ECONOMIC THEORY, ONLY SUPERIOR PRODUCTS SURVIVE IN THE COMPETITIVE MARKETPLACE. SO WHY IS APPLE'S MACINTOSH A LOSER?

(REPRINTED WITH PERMISSION FROM THE NEW YORK TIMES MAGAZINE)

Apple Computer, the company that brought you the idiot-friendly Macintosh, is staring at bankruptcy. Meanwhile, the great army of technocrats at Microsoft, which only last year managed to reproduce the look and feel of a 1980's Mac, lumbers on, invincible.

A bad break for Apple? A rare exception to the Darwinian rules in which the best products win the hearts and dollars of consumers? No. Economists are finally beginning to acknowledge what others have long suspected: the best doesn't always win. Just as biologists are challenging the idea that natural selection drives evolution along "efficient" and predictable paths, economists are discovering the disorder that lurks in the shadows of their simple, elegant models of capitalist progress. Adam Smith's invisible hand, it seems, does not always assure that superior technology will survive the rough-and-tumble of the free market. .

Recent wisdom on this subject dates back to 1985. That's the year, Paul David, an economic historian at Stanford University, published an article about QWERTY in The American Economic Review. Q-W-E-R-T-Y, of course, are the first six letters on the upper left of the typewriter keyboard - the universal standard since the 1890's. But why these? Why not one of half a dozen other keyboard layouts that are said to permit faster typing?

David's answer is that QWERTY was the solution to a fleeting technological problem, an arrangement that would minimize the jamming of keys in primitive typewriters. While this explanation has since been challenged, what matters is that one keyboard, chosen for reasons long irrelevant, remains the standard. For all their ingenuity, competing designs have made about as much headway against QWERTY as Esperanto has made against English. That's because a standardized layout allows typists to learn just one keyboard in order to use all. Once thousands of people had learned to type using QWERTY's merely adequate layout, the technology was effectively locked in. Keyboard design is thus the classic example of "path dependence," the idea that small, random events at critical moments can determine choices in technology that are extremely difficult and expensive to change.

In the typical pathdependence scenario, producers or consumers see one technology as slightly superior. This edge quickly snowballs into clear economic advantage: production costs fall with greater experience in manufacturing, and consumer acceptance grows with greater familiarity. And along the way, the weight of numbers makes the leading product more valuable than one based on competing technologies. With more MS-DOS computers around, it pays to write software to the Microsoft standard, which in turn makes it more useful to own an MSDOS computer.

The most familiar example of path dependence is the triumph of Matsushita's VHS standard for videocassette recorders over Sony's Betamax. Betamax was first and, by most accounts, better. But Sony made two strategic marketing errors. To get the product out the door faster, it initially sold Betamax machines that played one-hour tapes - too short for an entire movie. And to sell more Sony machines, the company chose not to license Betamax to competitors.

VHS, introduced a year later, in **1976,** played two-hour tapes. And since Matsushita freely licensed the technology, half a dozen other brand-name VHS players hit the stores in a matter of months. Sony soon countered with a two-hour machine, but it was too late.

While VHS versus Betamax makes great fodder for business school seminars, the outcome hardly made the earth move. The stakes have been much higher in technologies that are now so entrenched it's hard imagine the world without them. Take the automobile engine. At the turn of the century, gasoline was locked in a three-way race with steam and electric power. The Stanley Steamer was a technological marvel, setting a world speed record of **122** miles an hour in 1909. But the manufacturer priced the car as a luxury, never trying to achieve the economies of mass production and of "learning by doing" that might have made it the people's car.

Moreover, steam's economic problems were compounded by an outbreak of hoof-and-mouth disease in **1914** that briefly closed public horse troughs and denied steam cars a convenient source of water for their perpetually thirsty boilers. With better technology or simply many more steam cars on the road, this liability would have evaporated. But car buyers had little incentive to make a leap of faith when plausible alternatives were available. One of those alternatives was the electric car, whose weakness was a driving range limited by the storage capacity of its batteries. That problem seemed well on its way to solution around **1915.** But innovators in the battery industry were distracted by the more immediate need to perfect a high-amperage battery to crank the new electric starters in cars with gasoline engines.

Apparently all the gasoline engine needed to triumph was a brief period in which its technological and price edge led to rapidly expanding sales. This cut production costs, which expanded sales even more - and made it more convenient to fuel and service gasoline vehicles.

Today, of course, dependence on gasoline engines is a fact of life. While electric or steam vehicles would reduce air pollution and dependence on imported oil, it would take an investment of tens or even hundreds of billions of dollars to leap the technological chasm. Indeed, California, which has mandated the use of electric cars, is just now facing the reality that the existing technology is wretchedly inadequate to the task.

Robin Cowan of the University of Western Ontario offers a second cautionary tale of path dependence. The world is stuck with another functional, but environmentally problematic, technology: the "light water" nuclear reactor, whose momentary superiority over reactors that use inert gases led to the virtual abandonment of alternatives.

In the mid-1950's, there was no particular reason to believe that light-water reactors were the cheapest to build and operate. But the Navy invested heavily in light water, which was seen as the most compact and reliable design for **sub**marines and aircraft carriers. When Washington pressed for a quick scale-up to commercial nuclear power after the Soviet Union exploded a nuclear weapon, American manufacturers took the route **of** least technological resistance.

Later, Washington used subsidies for design and manufacturing to persuade the Europeans to switch to a light-water standard. And once light-water reactors were produced in quantity, the manufacturers learned-by-doing, cutting costs well below those of competing designs.

Perhaps light-water reactors would have prevailed in any event. But there is little doubt that **a** competing gas-graphite system was safer because it offered greater protection against catastrophic loss of coolant. With global warming now looming, the "lock-in" to atmospherically benign - but widely feared - light-water nuclear technology must count as an opportunity lost.

If path dependence is such a big deal, why are college freshmen unlikely **to** encounter the idea in Econ. 101? Brian†Arthur, a pioneer in the field at Stanford in the early 1980's who now does research at the Santa Fe Institute, blames tradition-bound economists. Put it another way: the "technology" of modern economics is itself path dependent, because economists have so much invested elsewhere.

More important, free marketers fear that path dependence

will become a rationale for bigger government- and is thus the Devil's work. If competitive markets do not guarantee that the best technologies survive, the thinking goes, surely sometime-liberalslike Bill Clinton will be more tempted to **try** to pick winners.

The twist here is that the perspective of path dependence offers no succor to industrial-policy enthusiasts. It **was** Washington, after' all, that locked in light-water nuclear reactor technology. And it was Tokyo that cursed its manufacturers with a highdefinition television that was obsolete before the first receiver was sold.

But a world haunted by path dependence does cry out for a different sort of intervention. Government as the referee who makes everyone play by the same impartial rules is not quite enough.

The first goal is to get government to slow down and think twice before setting hard-to-reverse technological standards. The Federal Communications Commission **was** criticized for dragging its feet on setting standards for the new highdefinition television. Because it dawdled, however, digital technology had a chance to prove itself before the F.C.C. got around to writing the final rules. But the lesson also applies to cases that everyone would rather forget, like Washington's premature decision to back recyclable space shuttles over throwaway rocket launchers.

The more controversial issue is antitrust - think Microsoft. It often pays an individual company to set a standard by flexing its own marketing muscle long before a clear winner has emerged. And the risks of path dependence suggest that Washington would do well to slow such private standard-setting until competitors had a chance to strut their stuff.

The Government will no doubt be called on to take a stand on some looming pathdependence battles: all-purpose personal computers versus cheaper, appliance-like "network computers" that do one thing well; wireless personal communications versus high-capacity cable; Internet software built around Netscape's browser versus software that piggy-backs on the Microsoft Network.

Would Adam Smith approve of venturing where the invisible hand doesn't have a clue? Perhaps not. But then the old guy never had to worry about Microsoft's clumsy software chewing **up** a chapter of 'The Wealth of Nations." **END**

How Specs Live Forever

The US Standard railroad gauge (distance between the rails) is 4 feet, 8.5 inches. That's an exceedingly odd number. Why was that gauge used? Because that's the way they built them in England, and the US railroads were built by English expatriates. Why did the English people build them like that? Because the first rail lines were built by the same people who built the pre-railroad tramways, and that's the gauge they used.Why did "they" use that gauge then? Because the people who built the tramways used the same jigs and tools that they used for building wagons, which used that wheel spacing. Okay! Why did the wagons use that odd wheel spacing? Well, if they tried to use any other spacing the wagons would break on some of the old, long distance roads, because that's the spacing of the old wheel ruts. So who built these old rutted roads? The first long distance roads in Europe were built by Imperial Rome for the benefit of their legions. The roads have been used ever since. And the ruts? The initial ruts, which everyone else had to match for fear of destroying their wagons, were first made by Roman war chariots. Since the they were all alike in the matter of wheel spacing. Thus, we have the answer to the original questions. The United State standard railroad gauge of 4 feet, 8.5 inches derives from the original specification for an Imperial Roman army war chariot. Specs and Bureaucracies live forever. So, the next time you are handed a specification and wonder what horse's ass came up with it, you may be exactly right. Because the Imperial Roman chariots were made to be just wide enough to accommodate the back-ends of two war horses.

—author anon., passed on by Professor Tom O'Hare Germanic Lanuages University of Texas at Austin

BAR TAPE THE HARD OLD FRENCH WAY

AND PAL JEFF'S MORE ACCESSIBLE AMERICAN METHOD

HAVE YOU EVER SEEN A PROPERLY DRESSED ALEX SINGER TOURING BIKE? (IT'S FRENCH.) THE HANDLEBAR TAPE IS THE COLOR OF YOUR FAVORITE ROOT BEER, AND THE TAPE LASTS LONGER THAN THE BARS IT COVERS. GRANT HANDLEY, EX-PROPRIETOR OF SAN FRANCISCO'S WORLD-RENOWNED PLANE-TARY GEAR BIKE SHOP, BICYCLE HIGH STYLIST, FORMER NATIONAL CHAMPION ON THE TRACK, EVERYDAY RIDER, INFLUENCER AND FRIEND—HE TOLD ME ALL ABOUT IT SO I COULD WRITE WHAT FOLLOWS.

—THE OTHER GRANT

Before the epoch-making advent of adhesive-backed handlebar tape, bike builders used lacquer to keep the tape in place. They'd wrap the bar with white cloth, then, over a period of several days, brush several layers of root beer-colored lacquer ("gumlac," it's called) on the tape, letting each layer dry before applying the next. Two to three days and five to nine coats later, the tape has a nice shellac, good for 30 years even if the bars under it aren't.

The lacquer comes in various shades of root beer, matching nicely the brown of a honey-colored Brooks saddle. The more concentrated the lacquer, the darker the root beer; and the more layers you apply, the smoother it gets.

In the 1940s, racers seemed to prefer a reddish tinge to their lacquer; tourists preferred the classic rootbeer. Grant (Handley, for those of you who haven't read the introduction) says he's seen blueish lacquers, too, but these are rare and beyond the scope of our discussion here.

You can still lacquer your bars, but you need to get the stuff. Grant is in France now, and among the missions he's decided to accept is finding us the right lacquer. He says it's available in "kit" form, or ready to go. The "kit" is nothing more than chips of dried lacquer, which needs to be thinned with the proper solvent—some kind of denatured alcohol that may be a special mix unavailable here. He's not sure what it is exactly, but at one time he tried to bring some over on his flight back, and it was confiscated. The ready to go lacquer may be easier, and he's getting us prices on this, as well. I figure that anybody whacky enough to want to lacquer handlebars in the 1990s might want the kit form so they can suffer the real experience, but we'll have both in any case.

PAL JEFF'S AMERICAN METHOD

FOLLOW THE SAME PROCEDURE BUT USE TRUE-OIL, MADE FOR GUNSTOCKS (APOLOGIES TO WHOMEVER, BUT YOU CAN BUY IT AT BIG 5 OR OTHER MULTIPURPOSE SPORTING GOODS STORES). JEFF PUT HIS OVER BLUE TRESSOSTAR, AND IT'S BEEN SMOOTH, PRETTY, UNCHANGED FOR MORE THAN A YEAR. "POUR A LINE OF TRUE OIL ON THE TAPE, THEN SMEAR IT AROUND WITH YOUR HANDS. I DID ONE SLATHERING A DAY, AND LET IT DRY BETWEEN COATS. THE FIRST LAYER OR TWO JUST KIND OF SOAKED IN, AND I DIDN'T THINK IT WOULD WORK, BUT AFTER FIVE OR SIX LAYERS, I NEW I REALLY HAD SOMETHING. WEAR LATEX GLOVES." I (GRANT P.) PUT 4 LAYERS OF IT OVER WHITE TRESSOSTAR, AND THE COLOR IS A GORGEOUS BUTTERY BUCKSKIN. WE'RE DOING A SMALL FRAME BROCHURE IN FULL COLOR (FEB.) AND YOU CAN SEE IT IN THAT. TRUE-OIL IS CHEAP, THOUGH, SO IF YOU'RE AT ALL CURIOUS, JUST DO IT YOURSELF.

PROGRESS REPORT

IF YOU HAVEN'T READ THIS BEFORE: THE PROGRESS REPORT IS MY PERSONAL JOURNAL OF STARTING AND MAINTAINING THIS BUSINESS. I'M NOT A GOOD BUSINESSMAN, I GET FRUSTRATED, THINGS DON'T ALWAYS WORK OUT THE WAY I'D LIKE THEM TO, THERE ARE UGLY SURPRISES, AND SOMETIMES I JUST NEED TO VENT. YOU DON'T HAVE TO READ IT, BUT I HAVE TO WRITE IT, AND ENOUGH OF YOU HAVE TOLD ME YOU ENJOY READING IT (MANY OF YOU HAVE SMALL BUSINESSES OF YOUR OWN, AND CAN RELATE), THAT I'VE DECIDED TO KEEP IT PUBLIC. —GRANT

AUG 11, 1996
We laterallled the layout **of** RR6 to Peter's sister today, and she'll teach Quark to Mary *so* Mary can do the next ones. The catalogue is at the printer, RR6 will be there next week as well, and somehow we'll try to cram in at least five RRs this year.
I'm learning stuff about bike handling, and it's pretty exciting. I wish I had the academic background to quantify it. I'm sure it's been done before, but I've never read anything like this. I'm not discovering anything, except for myself, but I like it.
I hope we can hire Peter. Somehow we've got to start putting money away and doing stuff that's profitable. The Heron bikes might be it. Bicycling is going to review an A/R, and if they like it that'll help things, too.

AUG 29. It's been slow, everyone wants to know where RR6 is, and the catalogue, and a good customer is really mad at me for—well, he was a little late in paying off his frame, I couldn't get ahold **of** him, and in trying to track him down I—oh, forget it. I know this is going to be read by lotsa people, and this is one of those times when it's affecting what I say. Anyway, it'll be fixed in time.
The accountant gave us a new first quarter report, an accurate one, *so* instead of losing $16K, we actually made **$532.** That's good, and it feels about right.

SEPT 2. We did less than $18K in business last month, the worst *so* far, I think—this year, at least. Cash flow was okay, thoogh, and I think the low score was partly because of how we're attributing invoices. The thing that helped us **was** getting frame payments. Parts sales were off a lot, but that's because we need to get the catalogue out. The catalogue used to say "Spring 1996" on it. Then I changed it to "Summer", and here it is September and no catalogue yet. The printer said he'd come by Friday for the disc with the addresses, and that he was going to work on it this weekend. He didn't come and hasn't been available, *so* that's another few days it's delayed. I jost want it out there. Everyone's calling about RR6, wondering if they just missed it or what, and it makes me feel terrible, that they haven't gotten it yet. RR7 is coming along. I think it'll be smaller, maybe **32** pages, and I want it out, in the mail. by late September.

SEPT 5. What a day this has been. Finally we're getting RR6 and the catalogue out, about a month **or two** late. The catalogue says Summer 1996 on it, and here it is Sept. Technically, we're covered. Three out of five phone calls have been about the Reader or catalogue, and I understand that. I'm glad people care, I just wish I'd delivered on time. They're being mailed this weekend and maybe we won't have a crummy September then.
The Outside story is out now, and I'm pretty bummed. The author, I think, tried to do well, but you never know how something'll be edited, and my number one hate in life-as-it-pertains-to-Rivendell just exploded on that page. I can't even talk about it. I quit reading about halfway down, when I came to the word "flock," and it just turns my stomach. Everything has to be sensationalized, exaggerated, hyped, colorized, magnified and made-over, or else what—it's boring? Well if it's boring don't bother in the first place. I couldn't even wear my own freaking shirt and pants in that photo. The photographer said "bring stuff in blue," *so* I did, but my blue jeans were too dark (not stonewashed), and my shirts weren't right. All that's mine is the belt. Then the lead in: "Lead us not into titanium....." Man, I don't want people who don't know me speaking for me, telling the whole freaking world that "this is grant petersen, he's exactly like this, he can fit in this box; you can count on him to do this is that situation, he loves this, he hates that, what a colorful character in the mosaic of life, and his pajamas are...."
I feel pressured to be public, it's good for business to some degree I guess, and it's free, and Outside has a circulation **of** around half a million, but man, I look like a turkey posing in the damn sunset holding up a frame I didn't even make myself, and the text has me some kind of damn leader of the *$#@$!#@$#$ "flock," and that's *so* insulting and misdirected and man, it makes me mad. Damn! No more blind interviews. Maybe it'll pass, maybe it'll be okay, but right now it feels embarrassing. I'm too ashamed to look in the mirror. *Flock? Lead us not into titanium?* Who and what's that about? This is bike stuff here, not a freaking weirdo pit! If we got a couple thousand new members out of it I could handle it better, but I didn't even finish reading it to find out if they put **our** address, or anything about the Reader in it. Well—they might as well have said "pay $15, follow a freaking @#(&(#??!!@leader!"
Then they went to Lightspeed for a "dissenting voice," and Mark **L.,** whom I don't even know and vice versa, said something pretty harmless to the effect of "cutting edge technology is the way...," (I haven't read that myself. someone told me) **...**and that has nothing to do with anything. I don't hate titanium! It's good material! It's pretty! No rusto! Bravo! Whatever! Damn!
Sept **9.** The mag is on the stands now, bot I still haven't seen it. I looked, it wasn't there. I'm pretty mad about that. I just feel lied to and betrayed and foolish and like a fool, and it makes me think "I will never give an interview again," but that puts me in the category of people who even have a right to say something like that, and I'm not one **of** those. I probably won't be interviewed again anyway—this'll be it, this'll do me and Rivendell in. Shoot. What kind of sleazy exploitive dishonest crap is that? It makes me sick. The author, I think, was sincere, and I don't blame him. I mean, I don't know exactly what it is he wrote, but in **our** 90 minate or *so* conversation nothing like Luddite and messiah came up. I've got to get over this.
I had a tiff with Marc the other day, but I think things are okay now. It doesn't matter what it was about. He sent me a pile of old mags with Bob Dylan stories in them, and one of them, a Sat Eve Post, also had a Willie Mays story. The two biggest nonfamily influences in my life. I know why Bob Dylan doesn't really give straight interviews. Man, they twist things. But Ontside freaking made stuff right up.

The catalogue and RR6 are in the mail now. and I hope something happens. Now only one in seven phone calls is an order, maybe eight, maybe nine. It's okay. All we can do *is* be here. have this, offer it, hope, and hang in. What are the options? None. Peter can get work someplace else, but he's a good fit here and he likes it. Spencer wants to go back to school anyway. but in the meantime this is good for him, I think. He knows a lot about bikes, and there aren't many places he can use that information. that knowledge. I don't know if he knows facts, but I'm not sure facts are the issue. Spencer can look at a bike and tell a lot about it, about how the rider fits it, how the rider feels. and what remedies could remedy it. He can look at a bike part and knows what to look **for.** It's tremendously helpful here, but in the real world it doesn't matter. Pino sent a fax today telling about his newrevolutionary bicycle design. and asking me to send his 5-hour tape to the Italian Trade Commission. Okay. Ted's MIT can-

tilevers look just about right. The trade show is in a couple weeks, and I want to go in and out of it as fast as possible, just meet with Nitto and see some tires and friends, yipes, and come on home.

SEPT 11. Payroll tomorrow and we're $1,500 short, and that's without paying bills this week, or Waterford. The catalogue hasn't hit yet, so we haven't picked up again, and we're all counting on that to help. It's deadly slow, but it's been slower, and I think we'll get out of it. A Carradice order came in today. Nitto is late. We got more boomerangs and have sold a few already.

SEPT 12. We just got in a sample of some really neat woven wooden baskets. actually made in this country, We're going to carry them. I don't think they'll go on drop bars or Monstache, but for those other kinds of bikes they'll be perfect. We got some red bandanas, too, and SunTour A5000 rear touring derailleurs, and a sample Army wool sweater that seems perfect for cold weather cycling. It's brownish olive drab, though, so if visibility's an issue you'd have to deal with that some other way.

A quiet day, the catalogues still haven't landed in the mailboxes. I can work on the Reader. Maybe a story on the basket company.

SEPT 16. Sunday, tomorrow's Monday and I sure hope the catalogue gets delivered somewhere soon. We've got that contest in it, too, and it'll be a bad joke if people get the RR two days before the deadline. We'll have to extend the deadline. We've got to get the RR's out. They've been mailed, all we can do is wait. Peter's in tomorrow, more volunteer work between looking for real work. Pineapple Karen got married yesterday.

SEPT 17. Spencer and I are just sitting around talking about why the mailing hasn't landed. It's dead here, and there's nothing we can do about it. I'm tempted to start from scratch with the mailing, but now we can't even afford to mail it—we've been spending a lot more than we've been taking in the past month, and we're up a creek now. Dang. It makes me want to scream. I'll ask the printer how long it would take to do up 3,000 Readers and catalogues so we can mail them ourselves. He faxed receipts proving that they've gone out, but nobody's received them. The ONLY ones anybody has gotten are the ones we mailed from here, and I think that's how we're gonna do it from now on. Damn! I gotta call the printer.

5:30. Masa got here from Japan about five hours ago. He just said "No calls in the past two hours," and I guess that's true. The printer says to give it another few days, things'll start showing up. He'll deliver 500 more packets tomorrow, and I think we should mail them first class, but I can think that all I want, but we don't have any postage left, and.....aaghghhhhhh. Forget it. I owe Phil Wood a thankyou note, I'll write that.

7:00 and not a call. I've been assembling a bike, talking to Jeff on the phone. Man, those things have to hit soon—this is a nightmare. I'm seeing the end again. Crap.

SEPT 19. Well, the catalogue mailing is so messed up. I asked for all first class and agreed to doing California only bulk. Later he told me "the whole west coast is bulk." Then "from Colorado west," and today "from Chicago west." We asked for first class and even said "just bring them here, we'll mail them," but he insisted, and I think I know why. He expected bulk to go out fast, and he was going to charge us for first class. He still says "the Eastern seaboard went out first class," but has no first class mailing receipts to prove it and it's been two weeks, so what I want to know, what I'm just curious about, is why he'd tell me that when it's so easy to verify otherwise. We should be having $1700 days, as we usually do following a mailing, but our days are $190 and stuff like that. He's costing us tons of money, and all I want now is for him to print up more cats and RRs so we can mail them from here. He's printing them, but not fast enough, and me and Spencer and Peter and Masa are furiously stuffing and stamping and trying to get them out. The bulk mailed ones won't be forwarded if the members have moved, and there's no way he put return addresses on the envelope (he didn't have a Rivendell rubber stamp to do it with), so they'll end up in a dead letters bin somewhere. Lotsa people will end up with two or three catalogues, too. The whole thing is a waste, fiasco, and threatening. I don't know how we're going to square up with the printer—he's miserable now, he must be, but o what a tangled web etc. I was putting together a bike today and discovered a Shimano 6sp freewheel with a SunTour A5000 rear der and a Superbe Pro NoLAT dowtube shifter indexes perfectly if you put the index setting on Ultra, which is supposed to be for ultra six freewheels only, which the Shimano isn't.

Marc called and said our new fork mandrel is almost ready and looking good. TF paid off his frame balance today, so we'll bring in at least $1200. I also got a call from someone who saw the Outside story, and he wants a frame, maybe. I don't know how he got the number, since they didn't list it. I bought the mag two nights ago and noticed that I was referred to as a "frame builder" in the contents.

SEPT 20. This weekend I was at the trade show, and maybe I'll write about it for RR7. Everybody does show reports, though, and the RRs are always late, so maybe not. We had a good meeting with Nitto and Panaracer, and we're getting some neat stuff. The racks are nearly perfect—and may actually be perfect, but I have to try them with the Carradice bags. They go together and on the A/R just right, at least. We also met with Panaracer, and they said they could do the Pasela for us in both 32 and 35c with a K-bead. They'll send two samples of each next month. SOPWAMTOS gave out the Golden Toity awards, and we got one for the industry's best refrigerator magnets. We showed our frames in the Wford and Reynolds booths, and Shimano had a Nexus A/R for people to try out. Everybody has a Nexus bike.

We've been sending out RR6 and the catalogue from here, and these are the ones that people are getting. We had a great day today, almost $2,680 in sales, which lead to a $2,500 batch. We have enough to cover payroll in four days, and if we have another good day tomorrow, and we should, since more people will have the catalogue, then we'll have enough for the week's bills. I'm so happy and relieved, still frustrated that most people haven't received them yet, and here we are spending $300 per day on postage trying to get them mailed to people who would have received them two weeks ago had they gone out first class as requested. Some people will probably get two on the same day—what a waste and a mess, but there's no way around it. The English shoes will be here tomorrow or the next day. Cyrus said he handpicked the leather himself, and that these are "top class in every way." He also mentioned that he could send us a sample of riding "Plus Twos," which are sort of like knickers. I've heard of Plus Fours, which I always thought were knickers, but Plus Twos are new to me. Anyway, they're wool and nylon and he said the "traditional riders here insist on them."

Meghan will lay out this one again, if we're going to get it out soon. I'll call her tomorrow. I'm looking forward to the days again, now that we're getting some orders, and the phones are ringing. Yay.

SEPT 24. The Nitto racks go on the A/R fine but we have to make sure the Carradice bags work on them. Masa and I were dickering around, it's getting close, and at worst we'll just send some bags to Nitto, so they can figure it out. My preference is for security rather than convenience, but it can't be a hassle to take the bags on and off. The French way is the most secure, but the biggest hassle, and we should at least split the difference. Bruce Gordon saw the racks at the show; I wonder if it'll cause some tension, and I sure hope it won't. We could sell his, too. I don't care about exclusivity and house brands as much as just having nice racks that we understand. I definitely don't want it to turn into an us versus them thing, but I realize that anybody willing to pay a lotta money for the best racks will be eager to compare. Bruce's racks are great; we're getting these so we know they work with our frames, and because Nitto is so willing to built to suit.

We need a good day today again. Our Wford bill is up to $16K, not all of it due now, but most of the bikes going out this week are all paid off (or contest winners), and I hate it when we're up to $20K.

SEPT 25. Three good days in a row! We got 12 orders in the mail today, including one for $523, another for $300. Masa, who's usually

reluctant to answer the phone, took the big order, and I noticed he was unusually quick to pick up the phone after that. And the English shoes came in today, 8 months after we ordered. Nice shoes, bnt the sole isn't as ridgey as I'd expected. It'll be fine. Gary called today and said he spoke to Freddie, H. and Freddie reported he'd ridden his one millionth mile, and is now up to 1,002,000. He's riding Michelin Tracers, which are the doggiest tires in their class. (Like I should give Freddie tire advice!). Peter is working so hard, he should be president. I'm looking forward to going in tomorrow and cranking out more orders. RR7 is coming along okay, too. Bicycling gave us permission to reprint the 1989 or so Freddie column, so that'll go well with Gary's update.

A member put us in contact with someone who conld arrange an SBA loan for us, maybe between $50K and $70K. It makes me nervous to think about owing that much, but it would sure let us do some good things.

SEPT 27. Another good day, lots of orders, the RRs and catalogues are on the west coast now, still not many elsewhere, so we're going to remail them. We're sending Bike Gnide a cyclo-cross frame to test, and some kind of city bike, too.

OCT 1. This is great, orders are coming in, we're sort of catching up. If think we need to hire e Peter, and I also think we'll be able to in a month or so, if this continues. I'm concerned about payroll and increasing our overhead, but he can help us survive and get healthy, so I think that'll have to happen. The Nitto orders are late, late, but we still have plenty to ship.

OCT 7. What a great day this has been, a great afternoon, hot and sweaty, but terrific. I wish I conld clone this day and relive it over and over. Work is hard but this is the way it's supposed to be, and we're actually making money. We sent Wford about $6K a couple days ago, and that'll bring our bill down to $13K or so. They're patient, they know we pay when we have.

People seem to like the RR, and I'm glad about that, and I'd really like them to sort of write themselves, with regular columns and stuff like that. I'm starting to think that in a couple months we'll be able to get the stem lugs. other good day, lots of orders, the RRs and catalogues are on the west coast now, still not many elsewhere, so we'll remail them.

OCT 17. We've been swamped with messages from people who haven't received the RR6 or catalogue, and we're spending tons of time and money getting them to them, and it's pretty frustrating because they should have had them already. I don't know how we'll reconcile this with the printer/mailer, and I don't want it to get ugly.

Internally, I think we're not doing so well. Our backorders are way up, deliveries are late, I'm trying to work on RR7 but there's no time, but overall the problems now are happy problems related to overwork, not underwork. so I won't complain. It's a good job and a good life, and I just want it to continue and get better. Peter thinks we ought to be able to be more efficient and more profitable (or profitable period) without hiring more people, but I'm applying for an SBA loan anyway–about $60K over 10 years, I hope. A customer suggested it and gave me some leads which so far haven't amounted to anything, bot still may, and in the meanwhile I went to our regular bank. The thing that makes me nervous is that I've got to put the house up as collateral, and I'd rather just put up our inventory; but I think it would be easier for the bank to sell the house than the bar-end shifters, so I can understand. I started filling out the forms last night and will turn them in next week.

The Inside Dope

Or: We bad.

In the areas of taking your orders, maintaining stock, filling back orders, prompt shipping—in other words, in virtually all the ways a mail order business is supposed to function—we've been bad, but it's not for lack of good intentions.

The work load has just been too much for two people (Spencer and me), and with Spencer working about 29 hours a week instead of 35 to 40—he's taking more classes, a good thing—we've done a really bad job.

Back orders are our weakest suit. If someone orders 6 things and we're out of one of them, we've been holding the order up, hoping we can get the part soon. The days turn to weeks, and sometimes even to a month or so, and outa sight/outa mind takes over, and the next thing we know we've got 35 back orders that'd take two days to straighten out if we did nothing else. Our order-entry program, a custom FileMaker Pro program, doesn't keep track of inventory, and that's too bad. We're working on it, and by April it'll be fixed. (Right, Nate?) The computer's not the problem, though—people were competent before computers, and one of our vendors (EuroAsia) is still computerless, and nobody in the industry is faster than they are at turning orders around. Without a computer I'd be up to my neck in paper in a week—it's just the way I am, it's not a good thing, it gets in the way a lot, but that's. So the computers stay.

We've recently hired Peter, (see p. 17.) I'll still do all the stuff I can, but just because I'm the guy who started Rivendell doesn't mean I'm the guy who can make it work, and I think Peter is.

If you haven't ordered from us before, don't get the impression that we're complete boobs—90 percent of the orders go smoothly; but that's still an F-minus on the bell curve of mail-order. We've reached a low and somehow managed to hang out there for a while without really any of you scolding us, but that's just because you're charitable—thanks. No more taking advantage of that, though.—*Grant*

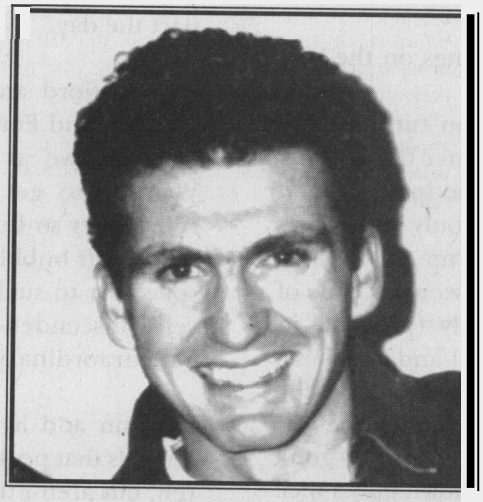
HERE'S THE PLAN

If you order something that's in the catalogue (not on a flyer in the RR, but the real catalogue) and it's still available and not back-ordered from our suppliers, and we're still out of stock, we'll ship the rest of your order, and ship you the missing part postpaid as soon as it comes in—and give you a Gift Certificate worth 25 percent of the cost of the late items. For instance, if you order a Moustache H'bar ($50) and we don't have it, we'll send it to you as soon as we get it, along with a Gift Certificate for $12.50. If the item is unavailable to us, we're off the hook, and you'll have to trust us on that. In any case, we'll try hard to ship within 24 hours, and if it's going to be more than 3 days, we'll call you. We have a long way to go, but we'll get there. Your suggestions are always welcome. —*Peter, Grant, Spencer*

MEET PETE, THE NEW GUY

Peter Kelley is our new employee. He's **30,** I've known him half his life, and he's known all about Rivendell from the start. Until July he was a rep for Service Cycle (Mongoose, etc).

Peter brings us desperately needed organizational skills. Now the tires and rims are hung **up,** we have shelves, bike hooks, and the waste basket gets emptied whenever it starts to overflow. On the other end of the spectrum (not that there's anything wrong with that end), Peter has helped **us** computerize our bookkeeping, which makes paying bills easier. He understands things that affect cash flow way better than I do, he isn't intimidated by computers like I am, and even has one on his bike, which I don't. We used to have a terrible, pretty much nonexistent non-system for dealing with back orders, but Peter said "fie on that!" and now it's good. All this and he knows bikes completely and he's genuinely, sincerely nice *and* good on the phone. We don't have titles around here, but Peter will be in charge of just about everything. Besides all that, I'll be coming into work an hour later several mornings a week, which will give me more time to ride, and I like that a lot.—*Grant*



As you *can* see, he's happy *to* help.

WHAT'S "RIVENDELL?" WE'RE ASKED ALL THE TIME, AND SO...

"Rivendell" is from English author J.R.R. Tolkien's series of fantasy books (the Trilogy), which were best-sellers in the '70s. The setting was Middle Earth, whose inhabitants included hobbits, elves, dwarves, talking trees called Ents, people, and a villain named Gollum. Rivendell was primarily an elfin sanctuary where good beings could go to get healed, or stay safe from evil. The elves in Rivendell made nice things, including rope whose strength belied its beautiful appearance, slimness, and light weight; and suits of armor that you could actually move gracefully in. We don't dress funny around here, we don't have hobbit meetings. There are more than 200 unaffiliated "Rivendell" businesses in the US alone, and twice that worldwide—all with the same inspiration. I didn't know that when I named us, but I did know of and was strongly influenced by Rivendell Mountain Works, a maker of mountaineering equipment, back in the '70s. Rivendell Mountain Works made gear that meshed with the mainstream mountaineering goods industry about as well as the stuff we sell fits in with mainstream bike stuff: In the age of dome tents that didn't require any stakes to set up and offered lots of head room, RMW came out with its "Bombshelter," a tiny A-frame that required 13 stakes. During a mid-September windstorm on Mt. Shasta that saw 19 of 20 hifalutin' mountaineering tents blown down or apart (100 mph winds for more than 8 hours), the Bombshelter didn't even flap in the wind—it just hummed. At a time when external frame packs were the norm for all big-load duties, Rivendell came out with the first completely frameless and padless Don Jensen design called the Jensen pack (the fact that Don Jensen was later killed by a car while riding his bike has nothing to do with anything). You could load it up and do cartwheels with it, but it required a modicum of thought to pack correctly, and the mainstream market wanted to just dump stuff in and go. Rivendell Mountain Works's owner, Larry Horton, is now a doctor of Chinese medicine in Albukirky, NM.

LETTERS

HEY YOURSELF

Hey,
Whose idea was it to use split cable housings on the rear derailleur in the first place??
It's rather obvious that the more places you cut the housing, the more places mud and gunk can enter the housing and foul your shifting. If you used just one long piece of housing from shifter to derailleur there'd only be 2 places mud could enter and one of them is way up on the handlebars out of the way (more or less). I've seen a couple of custombuilders using this technique lately (probably in response to Grip Shifts intolerance of mud) and it makes a lot of sense for the rear derailleur. I especially don't get the idea of running the rear shifter cable exposed all the way from the seat lug to the drop out via the seatstay. Any gunk landing on the exposed cable slides right down into a nice OPEN piece of housing pointed upwards. My guess is that this one little piece of housing (running from the bottom of the seatstay to the rear of the derailleur) accounts for most of the problems with rear shifting.

- Chris Lowe

Chris, I don't know who did it, but it wasn't me or us or anybody who is in any way connected with Rivendell (or Bstone, for that matter). — Grant

A DAY IN THE LIFE OF AN ADVENTURE ATHLETE

Standing on the corner, daypack on my shoulder. Roads in four directions, which way do I go? Left, right, forward, backward? I choose none of the above, foregoing the obvious, and veer off at a non-right angle in no particular direction. With light dayhikers covering my feet, I head down the path less traveled, destination unknown. Whatever I'll need today is surely in my bag of tricks, packed naturally but carefully after three decades of outdoor adventuring.

Bipedal locomotive options abound: walking, hiking, skipping, running, jogging, tippie-toeing, it's cross-training of every leg-powered, foot-bearing variety as I tread lightly forward. Ever onward and upward I go. And go. Over hill and dale, along streams, I smell the air, gaze at the clouds, sing like the birdies sing. It's a beautiful day and I just breathe it in, blending with the 'scape, engaging in nothing but the moment, which is everything, after all. No better way to start the day.

I spy a fjord and change my togs into speedo, mask, snorkel, and Force Fins to let me swim like a dolphin. I gaze in awe as killer whales carousel some herring. Wanting to get closer, but not touch, I pull out my rebreather so I can stay down for hours on end without letting off bubbles to give my location away. Ah, to be a spectator to such life... I am a seeker of the ephemeral yet transcendent, the ordinary that is so ordinary as to be extraordinary.

Hot sun and light breeze dries me as I mountain bike towards that peak on the horizon. Sweat replaces salt water (eh, but aren't they the same???) as I blend with machine and trail. Luka Bloom in my ears: "I work my legs, I pump my thighs, take in the scenery passing me by..." Wind whooshes through my hair, a rush of senses to my ears, nose, and eyes. My body is calm, not tense, for there is no fear, only appreciation of another pleasant experience.

The air thins as I hug the mountainside, switchbacking my way back and forth, back and forth, towards the summit. Dust turns to mud, mud turns to slop, and slops turns to snow. I trade knobby tyres for snowshoes, making the transition back from pedals to bipedalism and begin my walk on water. Snow is felt, heard, seen, ever-changing like the colors of the rainbow. Temperature drops, my breath like a whistle quite known.

Summit arrives, or is it arrival at the summit? A warm slab of granite in the sun beckons, "come hither, my adventure athlete, soulmate, friend." Skin soaks up sun, solar wind filling my sails. I smile.

Descent follows ascent. I don snowskates and swish-swoosh south, seeking solitude in the snow. My body and mind and spirit and breath and posture and intention all blend and bend, spend and expend, but never end. And so it goes, one more day in the life of an adventure athlete.

—Chris Kostman

Chris Kostman is the founder of Chris Kostman Adventure Group, an L.A.-based adventure race and expedition organizing firm which specializes in cycling, snowshoeing, scuba diving, and wilderness adventures. He can be reached at 800-388-6497 or by e-mail at kostman@adventuwgmup.com. And just for the record, he is more downtoearth than he sometimes seems.

FENDER DE FENDER

When we were children we all had bicycles with fenders. New bicycles could not be found without them, and consequently one of our first acts of independence, individuality, and prototypical mechanical dexterity was to remove them, exposing the machinery, uncovering its raw power, lending it the capability of getting splattered. Next, off came the chainguard, the kickstand, superfluous reflectors, any suggestion of mechanical accretion, and suddenly what had been a cumbrous and ungainly thing was now a sleek 30 pounds or so of low-carbon steel.

It is difficult to defend the fender on nostalgic grounds, and admittedly, it does not require fenders to race Milan-San Remo. The Europeans used to train with fenders, but in those days Europeans were notoriously polite to the point of strain. They used to make tires with silk, too, and ride the same bike in the road stages and time trials. These days have seen the ascendency of bicycle minimalism abetted by the design—each bicycle can be an exercise in minimalism because it only has to serve a single function.

The fender is also technologically minimalist, but I would rather praise the fender on social grounds: it follows that it permits a safe and hygienic paceline. Splatter the rider behind for long enough and you'll soon find yourself strung out, a discrete social unit in a disconnected thread along the mucky shoulder of some (suddenly) lonely road. You may as well be out for a solitary ride, and while solitude has its own advantages and is by itself praiseworthy on other grounds, today's sermon happens to be in praise of fenders.

The bicycle without fenders must be a sad affair. No matter how lustrous its paint, how subtle those shadings and transitions of hue along the tubes, when its economy is considered in profile it is still, well—minimalist. Add the slender arcs of the fenders, and those colors are immediately enhanced. That severity evaporates. In some odd Cartesian moment you have added substance without adding weight. The soul of the machine is enlarged without adding any extension to the thing itself. Moreover, the harsh geometry of the frame is softened and made supple.

It is preeminently the fender which adds to the spare beauty of the bicycle what the dome adds to the rectlinearities of the mosque. It is the rose window in the rhomboid of the cathedral.

May God keep you clean and dry.
—Robert Hill

Dear Friends,
Ijust got RR6 and I've got a few ideas and thoughts for for future issues:

- An article called Mano A (Shi)Mano. I'm not sure what it would be about; Ijust like the title.
- I'm not a new cyclist, but I'm not one who really cares about indexing compatibility and the like. I ride from home to work, mostly, and can't really think of a reason I'd want to get most of the cool parts in your catalogue. What I'd like is for you to profile projects where a casual cyclist might use your parts.

Two examples: I bought a Raleigh Grand Prix when I was in Junior High, and it's been in storage a lot since. Would it be worth it to put the $5 Simplex and the $30 Sachs on it? Could I get replacements for the rusted Weinmann brakes? Could I retrofit the $28 SunTour Cyclone brakes, and should I switch to bar-end shifters? Can I put 700c wheels on in place of the 27-inchers? Or would I be silly to spend that much on that bike? How, why, and when would I want to replace parts on it? If I wanted to add the third ring up front, would a Willow fit? Would any of the derailleurs you have work well with this? Could I use the Phil BB? Would I want to switch to the Dia-Compe #983 cantilevers for better clearance over my fenders?

I'm sure there are other folk out there who would also like some advice, and it might help you move more parts!

- Get your own Home Page. With your AOL account it won't cost you a thing, and you could link it to your web site.
- Proofread! Or better yet, get someone to do it for you, someone who's not as close to it.
- If you think Shimano wants to rule the world, let's talk about Microsoft! ClarisWorks is easier for most of the writing you do, and it can be moved into Word later.

That's all for the moment. Please keep going

— Charles S.
San Francisco

Charles, thanks for the tips. Good idea about the new cyclist column, we'll work on that. Now, about your bike: If it's running right, leave it alone. It's not always necessary or desirable to give nice old bikes (in any price range) a modern makeover. There have been advancements since your bike was new, most of the parts on it could be replaced, and the madeover bike would weigh less and work better, but you could easily throw $250 ut

this bike but that's not money well-spent if all you want is a safe and decent getarounder. I'd say have a bike shop check it out, maybe give it an overhaul, and leave it at that. On a related note, Jim Cunningham at CyclArt—a custom frame painter/restorer in Vista, CA.—refused to modernize a perfectly paying customer's old Legnano (1950s/'60s Italian classic). He'd have made a few hundred dollars on the deal, but he'd have gone to his grave having mutilated a fine old bike, and he didn't want to. There is a difference between your bike and that one, but the theme is the same. Your Huret Allvit won't wear out, and it shifts just fine. What's more, it has its place in bike history as the derailleur that graced more Schwinn Varsities than any other. De-rust the Weinmanns and replace the cables and pads. Willow chainrings won't work *on your cottered crank (the style of the day; now gone). Cantilever brakes need cantilever brake mounts, and your bike has none. The only parts I'd seriously consider replacing are* the *wheels, and then* only *if the rims are steel and you want to ride the bike in the rain (wet steel is very low friction).*

I didn't know that about a home page. I need to look into it, but it seems so self-indulgent (apologies to all who have one; don't listen to me).

Proofread: Yes, I know. I had several people proof RR6 and the catalogue, but I always manage to comb through it during the eleventh hour and rewrite a lot and screw up all over again. It's my nature!—G

Mo' SPO WITH A TCO

The **SPO** (seat post offset) story a couple issues ago confirmed my suspicions and explained why I still felt scrunched **up** with my saddle all the way back. A quick check of all my bike catalogues revealed that few current models offer much in the way of rear offset, and most of the really expensive ones (made in America) offer none. I then found what may be the **SPO** champ in the humble **SR** "TCO2" model. It's inexpensive—I paid $15—and it's the uncontested winner in the offset per dollar (OP$) category. If the black TCO logo offends, wipe it off with a solvent. I didn't need the 350mm length, so, as an urban dweller with no shop space, I took my TC02 to the nearest pack bench, secured it to same with a few wraps of an inner tube, and the next thing you know I was in **SPO** heaven. I don't know how many grams I saved by cutting it off, but leftover piece could make a trick guitar slide.

—Mark Martinez

Another cheap, good, high SPO post is UNO. It's around $20. In a future issue we'll publish SPO on various posts. —G

About a year ago I decided to buy a custom frame, but quickly became very confused with what size to order. Depending on who I talked to I was told to get frames ranging from 21 to 24 inches! I have an 84 centimeter inseem. What frame size would you recommend if I were to buy a Rivendell frame?

— Simon G.
Canada

There are lots of different ways to size bikes, but we sort of base it on bar height relative to the saddle, and try to put you on a bike that you can comfortably straddle, but without a whole lot of extra air. Assuming we're talking about road bikes, twenty-one is absurd. Twenty-four may not be ridiculous. There are other things to consider—bb drop, seat tube angle, how much you value comfort. In a Rivendell we'd start the discussion at 57.5cm (about 22.4") and go up from there. — G

STORE IT OR RIDE IT?

I have a couple of Schwinn Varsity 10 speeds in excellent condition. I read the article about the Varsity on your sight. **So,** I'm wondering, are these bikes worth anything? Who can I sell them to?

— Jeff H.

Maybe in 7 to 13 years a Varsity in original and minty mint condition will sell for $500+, but in the meantime, it's a good getaround bike. —G

As a custom steel framebuilder of some 20 yrs experience, I am very aware of the issues you raise in your various publications. I don't know what will become of the traditional lugged steel frame in the future— it looks pretty bleak in some ways. Many's the time I've set down my torch in disgust after trying to explain for the umpteenth time to some techno-weenie why the latest gee-whiz plastic and cardboard wonder is not better than one of my bikes— or one of yours, or Richard Sachs or... Anyway, send the sample issue, and I'll return the favor with some photos of some of my bikes— I think you'll appreciate them. I'll send a pic of my 1968 W.B. Hurlow, too, with the Initial Lugset...I'm the original & only owner. Oh and just for the record, my current shop is Art Stump's old shop...

Sam Cotton
Santa Monica, CA

Hi Guys
At my desk early in the morning, the shop's still quiet, but my head's still buzzing from four days in Anaheim looking at a city block sized hunk of worthless. I love bikes, I love this business, but please don't waste my time showing me how you "improved" the V-brake by CNC machining it, tripling the price, doubling the set-up time and offering seven colors. Why was the most useful bike in the Nexus

display a damn Huffy? Don't get me wrong, I'm not jaded, burnt, or cynical. It's just that my definition of cool is changing. Please—no more $300 derailleurs! On the other hand, I'm not forswearing clipless, indexing, Ergopower, or my sus fork. Guess I'm just lost in the ozone 'twixt retrogrouch and technogeek. (I'm sick of that R-G term, too).—*M.C., in Michigan*

Rivendell,
Do you realize that your catalogue and newsletter with coupons for August does not arrive here until Sept. 20th? When do people on the East Coast get theirs? They probably aren't even eligible for the Oct. 1st contest deadline? The postal system can be slow. Would it be possible to get more members by having sign-up sheets at bicycle trade shows? I really like the newsletter; better late than never. I like the catalogue. I like the (no-E) contest. I like the pine tar soap. I like my Nitto dirtdrop stem.

—Tim B.

Tim, you got your catalogue and RR6 early! The RR was finished in July (early), the first coupon on the list originally said July, then I changed it to August when it became clear that it wouldn't go out until early Aug. Then delays and more delays. As for the contest, attention all who didn't get the RR6 until too late: Send us your best effort for this seventh verse of The Raven, and we'll give you until December 20 to enter. Rather than take three more whole pages for entries in the next issue, though, we'll notify you (all) personally. I want the Reader to be left of mainstream, but still in the right solar system.

FIRST PRIZE: $100 GIFT CERT; SECOND: $50 GSC THIRD, $30 GC.

Open then I flung the shutter, when, with many a flit and flutter,
In there stepped a stately Raven of the saintly days of yore.
Not the least obeisance made he; not an instant stopped or stayed he;
But, with mien of lord or lady, perched above my chamber door,—
Perched upon a bust of Pallas, just above my chamber door,—
Perched, and sat, and nothing more.

—G.

D' Bird Will Not Go Way

Grant, My Good Man,
It was with joy that I saw your communication in RR #6. By way of submission to this rivalry, I humbly submit for your study a ballad, a mutation void of any vocalic shadow. To wit:

(Continues top of next column}

'Twas upon a midnight tristful I sat poring, wan and wistful,
Through many a quaint and curious list full of consorts slain —
I sat nodding, almost napping, till I caught a sound of tapping,
As of spirits softly rapping, rapping at my door in vain.
"'Tis a visitor," I murmur'd, "tapping at my door in vain—
Tapping soft as falling rain."

To adapt a bit of popular locution, your orphic tug-of-war is too adroit by half, for first publication of this, my own labor, was broadcast back a full 27 annum past. This tract was put forth as "A Void," originating from a Gallic author, notorious for ambiguity in his day, but sadly having sprung from this mortal coil in 1982. For you to sponsor such a thing is hubris, and to boost this is to court a plagiaristic cataclysm. You walk along a path that is fraught with both hazard to a full body of writing and risk to your own firm; ours is a litigious world.

But I wish not to augur ill will. I turn up not to bury a roman rubric, nor to bring ruiniation to a cycling czar, but to aid you in your inquisition into writing's odd cul-de-sac. And so, to that goal:

Upon that midnight, grim and dour, faint and worn, did I scour,
Through many tracts, droll and odd, myths unknown but daunt—
As I slid, and soon was drifting, a dozing auditor of a small shifting,
As if a nocturnal doorknock lifting, drifting, it's sound a taunt.
"'Tis a vagabond," said I, "drifting toward my forlorn haunt;
"'Tis just a hobo's twightlight jaunt."

As you may know, I am but a fictitional apparition, a product of a brilliant mind furiously burnt, so that any award you grant, I cannot hold. If you will, forward my plum from this trial to my amigo, an aficionado of this singular fashion: Jim. K, and inhabitant of that distant San Joaquim burg. You may contact him at his work.

In closing, I found a distinct form of gratificatio, for I do not ink composition as a custom nowadays. Thank you for affording this opportunity.

—Anton Vowl

Anton, I think you're saying a similar contest was done 27 years ago; I didn't know. I don't want to get into a too-many-fish-in-this-fishbowl kind of thing, and it's pretty much out of my system by now anyway; but if you ask me, "murmur'd" is a sort of a crow hop. Thanks for writing. -Grant

RAVEN CONTEST RESULTS

IN RR6 WE CHALLENGED READERS TO REWRITE THE FIRST VERSE OF EDGAR ALLEN POE'S THE RAVEN WITHOUT USING THE LETTER E. MANY RESPONDED (MORE THAN EXPECTED, BY FAR), AND SOME OF THE ENTRIES ARE BELOW. IF YOU'RE NOT INTO THIS CONTEST AND CARE LITTLE ABOUT IT, I APOLOGIZE FOR TAKING THIS SPACE, AND I ASSURE YOU IT DIDN'T BUMP OUT ANYTHING CYCLING-RELATED. MAGGI, FRIEND AND FORMER RIVENDELL EMPLOYEE-TURNED TEACHER, WAS THE JUDGE. THE WINNER, DONNA LANGDON, WON A $100 GIFT CERTIFICATE. THANKS TO ALL WHO ENTERED, AND NOTE: A DISPROPORTIONATELY HIGH NUMBER OF WOMEN ENTERED.—GRANT

ALMIGHTY BIG BLACK BIRD

Way back in my young days on a midnight dismal, whilst I thought,
flabby, frail, and worn out
Aloft many a quaint and curious mass of missing historical wisdom,-
Whilst I shook my cranium up and down, almost catching **"Z's",** napping of **sorts,**
Without any warning a tapping was within "auditory apparatus-shot,
As of a man softly rapping, rapping at my study door.
'"Tis an in-law, **or** visitor," I said unhappily without much sound,
"tapping at my study door;
Only this, and nothing in addition, not this, that, **or."**

Scott Livingston
Vernon, CT

A BIG, BLACK, CARRION-CONSUMING, CROAKING BIRD

Long ago upon a midnight dismal, as I was having thoughts not shallow, lacking stamina and faint,
About many a quaint and curious book of facts that folks today don't know,
My cranium dipping, almost napping, abruptly at that point was a tapping,
As of an unknown visitor softly rapping, rapping at my **own** room's door;
"'Tis a visitor," I said indistinctly, "tapping at my own room's door;
Only this and nothing additional."

Andrew Gordon

VAR. 1

During a dull midnight as I thought *so* unviviciously,
On many a quaint and curious book of information not worth much nowadays,
As I was groggy, with my brain box a-bob, abruptly: hark!—a "tapping";
Similar to that of a sickly human lightly rapping, rapping (I think, with an artificial bird-schnoz tool) at my main night door;
"'Tis a plain, drab, and most probably boring visitor," I said clumsily,
"and anything such as an amorous, happy widow-clad woman (with whom I could look at my many old books.)

VAR. 2

During a dull midnight as I, sans vim and vigor, thought
About many a quaint and curious book of information mostly forgot
With my drowsy skull a-bobbing, start, I did, at a "tapping",
Similar to laughably piddly rapping, rapping at my night room's door;
"'Tis a visitor," I said *so* softly, "rapping at my night room's door;
"Only this, and not amour."

Keven Cowins

'Round about a humdrum night, I was flipping through, limp and out of gas
Far out and fanciful works of hoary myths and sagas,-
But just as soon as I was taking a nap, I caught a sound <<tip-tap, tip-tap>>
As if a **soul** was softly knocking, knocking at my front door.
"Probably company," I thought, "now thumping on my hollow door;
Just Avon calling. Gosh, what for?"

Dave Fischer
College Park, MD

On a prior midnight dragging, as I thought, limp and lagging
on many a quaint and curious book of wisdom lost to memory's call—
My noggin drooping, almost napping, abruptly had shown up a tapping
As of an unkown **soul** lightly rapping, rapping at my lodging wall
It is a visitor, I said inaudibly, rapping at my lodging wall
Only this, and that is all.

—Dan Bloomingdale

Long ago upon a midnight dismal, whilst I brood vapid and faint
Aloft many a quaint and curions printing of lost wis dom
Whilst I fall in all but napping, without warning in the distant air, was a tapping as of Grant subtly rapping, rapping at my manor door
'Tis a visitor," I did murmur, "tapping at my manor door;
Only this, and not a howling boar."

—Kerry Jones (#2876)

"THAT GUY WITH THAT DROOLING SANITY SITUATION" THE BIRD

On an unparticular midnight of drab quality, during this span I thought, frail and drained of stamina
Lofting oar abundant and curious group of lost accounts
During this passing I would nod, about to stay napping, abruptly I am a spectator to a tapping
As of some individual gently rapping, rapping at my studio door
"Tis some visitor," I complain aloud, "tapping at my studio door;
only this, and nothing of any significant worth.

—Mike Geerts

I am mailing you my submission to an award-winning opportunity which RR6 was proclaiming. I pray you will look upon this draft with arousal, and not with disdain, as I would thrill in obtaining a gift coupon from you. It is as follows:

A distant clock struck upon a foggy midnight, as I
was studying, frail and rundown,

An old, shabby book brimming with charming accounts...
As I was nodding, almost napping, instantly a tapping was occurring,
Which had a sound similar to that of an individual softly rapping at my parlor door.
"'Tis a visitor," I said softly, "tapping at my parlor door;
Only this, and nothing additionally."

St_v_ Wall_n

A PARTICULAR BIG GLOSSY BLACK BIRD

On half of two occasions upon a midnight gloomy, during which I thought again, not strong and worn out, about many a quaint and curious amount of long not brought to mind information; during that occasion I did nod, almost napping, without warning at that point did occur a tapping of of an unknown thing lightly rapping, rapping at my room in which I sit and may go unconscious door. "'Tisan unknown visitor," I said indistinctly and not loud, "rapping at my room in which I sit and may go unconscious door; that it is, and nothing in addition."

Barbara Hale
Millbrae, CA

DA BIG BLACK BIRD

by A Long Past Rabid Drunk
(not that there's anything wrong with that, and simultaneouslynot meaning to condone it—Ed.)

Back upon a midnight foggy, whilst mulling, frail and groggy
On many a quaint and curious album of mythos past,-
Whilst bobbing, almost napping, abruptly rang a tapping,
As in a hand was lightly rapping, rapping at my lodging door.
"'Tis an unknown visitor," I grunt, "tapping at my lodging door;
Only this, and nothing for."

—Chris Lowe

On a past midnight sad and dark, thinking, thinking worn and stark
About many quaint and curious amounts of lost traditions,-
Oh I nod almost napping, quick was a tap tapping
As of a soft rapping, rapping at my room's door
"'Tisa visitor," I said, "tap tapping at my room's door;
Only this and nothing to abhor."

—Timothy Broer

A BLACK BIRD'S WORDS

Upon a midnight, damp and dark, my thoughts a flint without a spark
On journals quaint and odd, forgot and poor
My noggin nods as Sandman calls. A sound upon my sturdy walls!
Sound of whom? as digits fall, fall upon my dormitory
"What folk?"say I, "call upon my dormitory door?
'tis naught but this: a visitor."

Vic Figueiredo

THE ELACK BIRD

Long ago upon a midnight gloomy, during an occasion I wistfully thought, lacking in vigor and spirit
From an abundant supply a quaint and curious quantity of lost tutorials,-
Whilst I shook up and down in nocturnal bobbing, almost napping, abruptly at that location brought forth a tapping,
As of a sould mildly rapping, rapping at my door of nightfall surroundings.
"It is a visitor," I said indistinctly, "tapping at my door of dusk habitat;
Only this and nothing additional."

—Curtis Cam
Long Beach

Winner

THE BIRD THAT'S KNOWN FOR ITS BLACK TUFTS

Long ago on a midnight dank and gloomy, during which I was frail and worn out but sort of haphazardly thinking,
About many a quaint and curious scrawling from outlandish and fanciful, though archaic albums,—
During which I hung out slumping, almost dozing, abruptly and instantly I was brought to a start with a sound of tapping,
As of a human thing softly rapping, tapping at my combination library-parlor-TV room-workshop door.
"'Tis only a visitor," I found my mind assuming in a complaining kind of way, "tapping at my multi-duty family room door;
Only this and nothing in addition."

—Donna Langdon
Oakland, CA

First stanza of Po's rhythmic composition that is known by its particular I.D. A Particular Big, Black, Lustrous Bird
(In a form not using or including a particularly arbitrary symbol (fifth arbitrary symbol) of our lingua franca.

In an instant upon a dull and monotonous midnight past, whilst I was musing, so flaccid, frail, and drooping
Through many a quaint and curious chunk of cognitions and insights not thought of at all in this day,—
Whilst I was nodding, almost napping, occurring quickly without warning at that point was a tapping,
As of an individual softly rapping, rapping at my boudoir door;
"'Tisavisitor," I said croaking indistinctly, "tapping at my sanctum's door;
Only this, and nothing upwards of this solitary visitor.'

—Scott Berthel
Southfield, Michigan

THAT BIRD

Hark! Upon a midnight rainy, during which I thought, down and out
Around many a quaint and curious bit of lost myth,—
Whilst I was just about dormant, almost napping, abruptly from my door was a tapping,
As if a body softly rapping, rapping at my study door.
"'Tisa visitor," 1 thought, "tapping at my study door."
Only this and nothing additional."

—Amy Hopp

... my stanza sans that kind of symbol so popular in our communication:

During a night of fog and black, as I lay flaccid and worn, digging into my books of history's quaint scorn
As sandman calls, out of dark jumps a tapping, a light rapping, rapping at my front door;
"'Tis a visitor," I slur into my abyss, "tapping at my front door;
Only this, and what for?"

OR

At night, to wrap up a day's hard work
I find a way to avoid my boss by pulling a cork.
As I am as sandman's door, a ring from my horn—
Ring, ring, must I talk to you?
"Don't annoy," I slur from my pinot;
"Probably MCI to attract my communication dough."

—Scott Graham

FIRST STANZA OF DA CROW

An awful midnight old and stuffy, as I thought, hot and huffy
About plans of a quaint and curious bicycling tour,—
I sat drowsily, almost napping, abruptly a sound sprung a tapping.
As of a human kindly rapping, rapping at my building's door.
"'Tis a visitor," I spat, "tapping at my building's door;
"Only this, and I want to tour."

— Ryan Lathouwers
San Francisco

Just upon a midnight gloomy, during which I thought, unstrong and languid
through many a quaint and curious book of writings of bypast mythicism,–
Whilst I was woozy, almost napping, abruptly forthcoming was a tapping, as
of a living soul softly rapping, rapping at my boudoir door.
"'Tis a visitor," I did murmur, "tapping at my boudoir door;
Only this and nothing ancillary."

—Eric Larson
Maryland

Not long ago, upon a dark night hour with bad natural outdoor conditions,
as I saw and thought about, worn-out and lacking gumption
Many tidy, thought-provoking bound groups of ground wood slabs with
ink marks about story lost to most folk's minds,-
As my round brain shroud slid downward and my vision organ lids shut,
almost going into a subconscious condition, an abrupt tapping rang out,
As if a living thing was softly rapping, rapping at my indoor unit's
wood doorway blocking apparatus.
"This sign must show arrival of a visitor" I said in a groggy way,
"making sound upon my indoor unit's wood doorway blocking apparatus;
only this, and nothing in addition."

-Andrew McCarthy

During a foggy midnight, as I thought, worn out and nappy,
On many a quaint and curious book about dimly known myths,
And as I thought, almost crapping, shockingly, sounds shook my door,
As of my child, lightly rapping, rapping at my bathroom door,
Tis a visitor, I said, tapping at my bathroom door,
Only this, and not a thing for my **soul.**

—Tom Hayes
Chagrin Falls, OH

Singularly upon a longpast uninspiring midnight, during my cogitations, in
a condition both vapid and worn out;
On many a quaint and curious volume of information known in old days but
not now,—
During my cranial vacillations not far from napping, without warning did
finish an approach of tapping,
As of a particular but unknown conscious unit unbrutishly rapping, rapping
at my room's door.
"'Tis a particular but unknown visitor," I said with an undistinct laryngo-oral
vibration, "tapping at my room's door;
Only this, and nothing of import unsmall by comparison."

—Richard Risemberg
Los Angeles, CA

At a dark dispiriting six hours and six, as I sat ruminating haggard and sick,
Canvassing myriad unusual and idiosyncratic publications of archaic
myth,—
With skull a tilt, just short of napping, abruptly did occur a tapping,
As of a mortal rapping, rapping at my shanty hatch.
"'Tis company," I did murmur, "tapping at my shanty hatch;
Pray it this, and not old scratch."

—Frank DiDomenico
Selkirk, NY

In an instant upon a midnight horrid, I thought strongly, worn and torrid,
On many a quaint and curious bulk of old paragraphs in books,—
I was nodding, almost napping, surprisingly quickly a sound of tapping,
As of a kindly visitor rapping, rapping at my door with no hooks,
"'Tis a visitor," I softly said, "tapping at my door with no hooks,
Only this, and that is how it looks."

—Deb Butzow
Minneapolis

An icky midnight a day or so ago, I thought about stuff faint and sick,
About many old books nobody thinks is any good,—
My noggin did drop, I almost saw Mr. Sandman, as a quick sound came
tapping, as of a human softly rapping, rapping at my boudoir door;
"I gots a visitor," I did murmur, "tapping at my boudoir door,
Only this and nothing additional to add."

—Nancy Nieman
Reseda, CA

On a past midnight yucky, drinking, frail, and not so plucky,
Looking at many a quaint and curious old book most boring—
Slumping forward, almost snoozing, did a tapping stop my boozing,
As of an unknown soul, softly rapping, rapping at my boudoir door.
"'Tis a visitor," I said, slurring, "tapping at my boudoir door;
Only this and not the **Coors."**

—Carol Stauffer
West Chester, PA

Twas upon a midnight gloomy, as I thought, worn and swoony,
About many a quaint and curious book of lost wisdom,
As I sat, almost napping, without warning slid in a tapping,
As of a body softly rapping, rapping on my door to my room.
"'Tis a visitor", I softly said, "rapping on my door to my room;
Only this disturbs my gloom".

—Jon Poppele
Minneapolis, MN

Just upon a midnight stark, lost was I in gloom so dark,
Around many a quaint and curions book of hazy story **sort.**
My mind was nodding, almost napping, abruptly there was a tapping,
As of human light-touch rapping, rapping at my salon port.
"'Tis a visitor," 1 said, "tapping at my salon port";
Only this, a vacant court.

—Matthew Gorski
Belmont Shore, CA

Singularly during a midnight murky, as I brood, flaccid and flimsy,
On many a quaint and curious album of archaic inklings—
With my kopf a-bobbing, almost napping, startlingly, sounds a tapping,
As of a hand lightly rapping, rapping at my boudoir door,
"'Tis a visitor," I croak, "tapping at my boudoir door:
only this and nothing florrid."

— Heidi Wordhouse-Dykema

So upon a midnight gloomy, lost in thought, worn and drowsy.
With many a quaint and curious manual of insight past—
As I was nodding, almost napping, in a flurry was a tapping
As of a hand lightly rapping, rapping at my lodging door,
'Tis a visitor", did I murmur, "tapping at my lodging door;
only this, and that is all."

— Greg Dykema

EDWARD SCOTT ON BRAKES

EDWARD SCOTT ("SCOTTY") IS THE BRAINS BEHIND MATHAUSER BRAKES AND BRAKE SHOES. HE'S 35 YEARS OLD, SMARTER THAN MOST PEOPLE, CLAIMS TO NOT BE AN ALL-AROUND BIKE EXPERT, BUT DOES CLAIM TO KNOW A LOT ABOUT BRAKES, AND THE 3,000+ WORDS (WRITTEN IN 1985) COVER SOME OF HIS BELIEFS, AND THEY ARE STRONG ONES MY OWN TAKE ON BRAKES, FOR WHAT IT'S WORTH, IS THAT THERE'S NO QUESTIONING HIS CRITICISMS OF BRAKE DESIGN THEORY, BUT WHEN I GO DOWN MARTINO ROAD IN LAFAYETTE, MY TWISTOFLEX™ BRAKES STILL STOP ME WITHOUT FAIL OR FADE. (BUT ONLY IF I USE MATHAUSER PADS, AND THAT'S THE TRUTH). SCOTTY INTRODUCED SCOTT SUPERBRAKES AROUND 1986 OR SO, AND AFTER A YEAR OR TWO OF SALES, THEY SEEMED TO *GO* INTO HIBERNATION. HE'S RECENTLY REINTRODUCED THEM, VIRTUALLY UNCHANGED, AND THEY'VE RECEIVED RAVE REVIEWS IN THE GONE ***ROAD BIKE ACTION*** AND THE STILL-WITH-US ***BICYCLE GUIDE***. WE RECENTLY BOUGHT A SET, WE'LL PUT THEM ON A BIKE AND TRY THEM, AND I'M CONFIDENT THEY'LL PERFORM AS CLAIMED. THEY COST ABOUT $220 FOR THE CALIPERS ALONE, ABOUT ***$300*** FOR THE WHOLE SHEBANG, AND COME IN BLACK ONLY (NOT THAT THERE'S ANYTHING WRONG WITH THAT).—GRANT

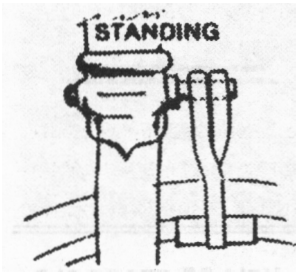
Bicycle brakes have been less than satisfactory ever since bicycles assumed their modern form around the beginning of this century: the transmission and the brakes.

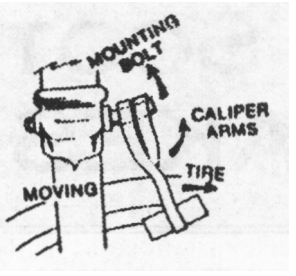
In relatively flat country and in dry weather, they are satisfactory; but in wet weather or down long steep hills, especially with a loaded touring bike, they are not, which explains why cyclists have been complaining for **80** years about inadequate brakes. It makes little difference whether they are center-pulls or side-pulls, and whether they cost under **$15** retail or over **$150.** The latter can be beautifully polished, meticulously machined, and stamped with a near holy name, but experienced cyclists have said of them "In the rain I can stop faster by dragging my feet."

If an intelligent engineer (there are other kinds), or even someone with just good mechanical sense, sat and looked at examples of the beat of present sidepull and centerpull brakes, he or she would have to conclude that they were designed by idiots, and that a succession of other idiots, working for other manufacturers, then copied these basically bad designs, ***so*** that today most caliper brakes are more or less alike (and all bad). The most obvious mistakes are: Why do sidepulls use a lopsided mechanism to do a symmetrical job; and why would anybody choose a half-round arm cross-section to resist the various forces involved? These are only the most obvious mistakes.

Why is this ***so?*** **A** bike isn't a high-performance machine. Its basic purpose is to provide simple, economical transportation, not excitement, Thus its appeal is mostly to an undemanding clientele. The automobile went from **2** wheel external-band brakes that were all-but-useless, to internal-shoes, servo-shoes, 4-wheel brakes, power brakes, disc brakes, and finally to powerboosted discs that will stop from any speed in any weather. In that same period, all that bike calipers have done is to undergo slow refinement of a basically bad design. With a light vehicle, slow speeds and a two-foot disc (the wheel rim), stopping a bike ought to be a picnic. But look at how they **try** to do it. They start with a **6** millimeter mounting bolt. Under braking stress the front bolt flexes upward and the rear one downward. They don't use a larger, stiffer bolt because at the front it would require a larger hole in the fork crown, one of the most highly-stressed parts of a bike, and thus weaken it. At the rear, a larger bolt would just about sever the skimpy brake bridge.

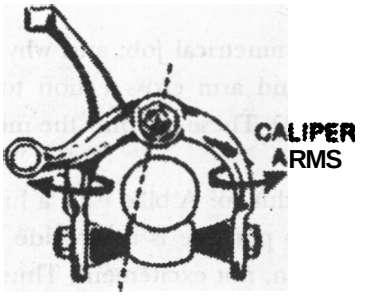
These **6** mm. bolts also serve as pivot-bearings on side-pull brakes, a pretty inadequate size. Shimano has gone to a





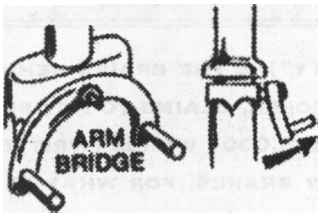
1/411 (.014" larger) section outboard of the *6* mm. part that fits in the bike frame, and Universal, Modolo, Galli, etc., use *8* mm. (.31511). But the bolt is still *6* mm. where it leaves the bike frame, and that is where it starts bending.

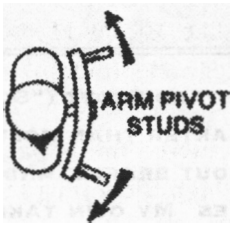
The caliper arms of a side-pull (the preferred type by racers and performance-minded cyclists) have a cross-section that is approximately a 1/2", half-round, a very inefficient shape. Even back before engineering was understood, no ancient builder would have used floor, ceiling or roof beams with *so* asinine a cross section. A caliper arm is a beam, however inefficiently-shaped it may be for that job.



When you apply the brake standing still, the arms are stressed only in the plane of cable pull. The half-round section is stiffest in this direction (though not really very stiff). But brakes are for moving bikes, and when you brake while moving, the rim drags the caliper arms forward very hard. Their cross section is hopelessly weak and inefficient when stressed in this direction. But that's only the beginning. In order to clear an occasional fender, or an extremely fat tire, the arms sweep far outward and then back in toward the rims. And for some unknown reason they use brake pads that are far too thick (you replace them as soon as the grooves or slots are worn off, and there's still 50% of the pad thickness left!) which increases the very strong twisting force on the arms because they are *so* far from a line drawn from arm pivot to rim side.

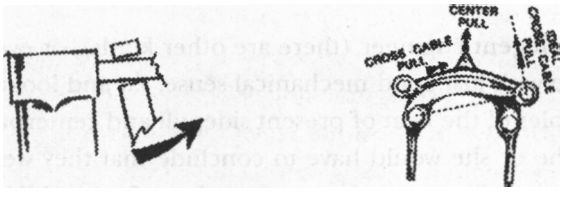
This multidirectional flexing is even worse on center-pulls. The mounting bolt still flexes where it exits the bike frame. Then the arm bridge or U-bracket flexes in the same direction. When the shoes touch the rim, the two caliper arm pivot studs flex outward and upward. While the lower portion of the arms is short, it is also usually slender so that it flexes and twists. A "booster" was marketed that improved center-pulls considerably by tying the unsupported ends of the pivot studs together, but you don't see them in use, and center-pull manufactures aren't alert enough to have adopted the idea.





There's been a myth that center-pulls have twice the leverage of side pulls, based on the 2:1 leverage of the arms. But "there is no free lunch." A given pressure on the hand lever cannot deliver more pressure on the brake shoes unless you increase the distance through which the lever travels. Since the whole mechanism is already *so* soggy and flexible, you run a serious risk of having the lever "bottom-out" on the handlebar in wet weather when you must squeeze harder.

Some "experts" have published claims that by shortening the cross-cable you can magically improve the leverage. If you made it as short as possible, *so* that it was almost horizontal when the brake pads touched the rim, you'd put an enormous stress on the crosscable (perhaps enough to break it) but the pull would be almost parallel to the arms instead of at right angles to them, and therefore hopelessly inefficient. And it would require a large increase in lever travel, perhaps *so* much that the lever would bottom out on the handle-bar. Remember: No free lunch



To compensate (at least slightly) for twisting, knowledgeable bike mechanics twist the caliper arms permanently

with a wrench, so that the forward ends of the brake pads contact the rim first. Then when the arms are twisted by wheel motion, the pads rotate and contact the rim flatly. Most brake manufacturers have totally ignored the need for this "toe-in" adjustment. If the whole system seems to you like Mickey Mouse designed it, you owe Mickey an apology. He would have done better.

We entered the brake shoe business in Feb. 1976 with a very high friction pad that offered more braking with less hand effort. We promptly discovered that a higher friction pad brought out the inherent weaknesses and drawbacks of all caliper brakes. *So* bad is the flexing and twisting that the writer sets up test brakes with a full 1/16-inch gap between the rim and the rear end of the brake pad. I 'then get up to full speed down a steep hill, slide back off the saddle and lay flat on it with my belly (to avoid pitch over). I then apply the front brake quite firmly. The bike stops like I'd thrown out an anchor, and a brand new set of pads show uniform rim-marking from end to end. They've rotated 1/16" over a length of 2-1/8", or almost 2† degree of rotation, due to the twisting of the caliper arms.

WHY HAVE A QUICK-RELEASE AT ALL? IT JUST ADDS A LITTLE WEIGHT AND COST. WHY NOT RIDE WITH GENEROUS RIM CLEARANCE, SO THAT TIRES WILL FIT THROUGH BETWEEN THE BRAKE PADS, RELYING ON A PROPERLY DESIGNED BRAKE THAT DOESN'T NEED A LOT OF RESERVE LEVER TRAVEL?

That's not all that is wrong with the caliper arms. They have *so* short a bearing bore length at their pivot that the hole actually stretches during braking, allowing further arm movement. The upper arm, which isn't stressed any way except in line with cable pull, is about twice as heavy as intelligent design could have made it. The half-round shape is about as inefficient as could have been devised for the upper arms.

Then there's the cable attaching hardware. In order to manufacture the arms more cheaply and easily, their upper arms are more or less flat, and the cable hardware projects sideways out of the arm ends, and the cable pull (and push) tilts and jams the hardware pieces. Some brakes use an incredible nine pieces of hardware for cable-anchoring!

Both the arms should have rotatable hardware, so that on wide or narrow rims, with new or worn pads, the cable core and casing will always be nicely aligned. But how many brakes have rotating hardware on each arm?

Because brakes work *so* poorly and have such weak, flexible parts, it is necessary to ride with the pads quite close to the rims, *so* that there will be plenty of lever travel available and no matter how hard you squeeze and how much the whole system flexes, stretches, "sponges," etc., the lever hopefully will not bottom out on the handlebar, A clever device called a "quick release" was devised *so* that if you break a spoke or bend a wheel you can quickly open up the pad/rim clearance and keep on riding (albeit with dangerously inadequate lever travel). The other uses for a quick-release are to allow fast wheel changes during a race or wheel removal when parking your bike, without having to readjust the brake after re-installing a wheel. Why have a quick release at all? It just adds a little weight and cost. Why not ride with generous rim clearance, *so* that tires will fit through between the brake pads, relying on a properly-designed brake that doesn't need a lot of reserve lever travel?

Logically, there should be as little lost motion or "sponge" in the system as possible and, once the pads contact the rim firmly, the braking effect should be controlled by how hard you squeeze, not by how far you move a spongy lever. This is how the brakes on a good sports car work, as opposed to the power brakes on some of Detroit's rolling living rooms.

Going to the brake pads, the parts that really stop the bike: Why are they patterned, notched, slotted, interrupted, etc,

when Fred De Long's big book stated as far back as **1974** that such patterns are less effective in wet conditions than smooth pads? **Is** it blind stupidity that keeps almost every manufacturer turning out such pads? Does each one think that he must do it "because the others do"? Or, do they look at automobile tires and think that they should imitate them? Don't they understand that tires have a rolling motion that presses downward onto the wet road and the water exits through the voids in the tread, while a brake pad has a sliding contact and the water is scraped off by the pad's leading edge? Neither disc brake pads nor drum brake linings on automobiles are grooved or patterned. They want to preserve as much friction material as possible. Yet dumb bike brake manufacturers waste up to **50** percent of the available, pad area on useless voids!! Worse yet, the small free-standing studs or buttons bulge sideways and compress when you apply the brakes, ***so*** that lever travel is wasted and the feel becomes "spongy." In the rain, these gaps simply provide openings for water to enter. Quoting Fred De Long: "block compressibility, especially when pads are severely slotted, can be ***so*** great that the lever may bottom (on the handlebars) when the extra force needed for wet stops is used."

IF THE WHOLE SYSTEM SEEMS TO YOU LIKE MICKEY MOUSE DESIGNED IT, YOU OWE MICKEY AN APOLOGY. HE'D HAVE DONE BETTER.

One of the least obvious problems is the forward-reaching caliper arm configuration. This effect is reversed for the rear brake, if mounted behind the stays, but you cannot brake very hard on the rear without locking a wheel, ***so*** it is the front brake that demands optimum design. Because of the thin, flexible ***6*** mm. mounting bolt, manufacturers keep the caliper arm pivot point as close to the bike frame as possible. Then, to make sure that brake shoes clear the fork or seat stays, they offset the brake shoes outward from the plane of the pivot bearings and outward from the ends of the caliper arms. Thus, a hard application of the front brake causes greater pressure to be applied on the rearward ends of the brake shoes (the exact opposite of what you would want), and this causes squealing, chattering and grabbing. Ideally the center of each brake shoe should be in line with each arm's center and each arm's pivot bearing. The arms should be very resistant to any flexing or twisting, ***so*** as to provide uniform pressure along each brake shoe's length.

While the rear brake cannot do any real work in a hard stop on a regular bike, it certainly can and does on a tandem, where weight transfer onto the front wheel is nowhere near as great. Here's what happens: the rim's motion pulls the caliper arms forward and the mounting bolt downward; this causes the thin brake bridge to twist slightly, which, in turn, causes the thin seat stays to bend backward above the brake bridge and forward below it, forming a slight Sshape.

The above applies to side-pulls. On a center-pull the upward pull of the cable core partly cancels the downward-and-forward movement of the caliper assembly. This is a rare exception to the no free lunch dictum.

Even the descriptive terms for brakes are mixed-up and misleading. The key feature of a conventional caliper is NOT where or how the cable pull is APPLIED; but rather where the arms are PIVOTED. This is the essential difference between side-and centerpulls. The so-called "sidepulls" would be better termed "center-pivots," because the cable "pull" can be arranged at the side, the top, or half-way between, simply by orienting the primary arms differently. For an example of "halfway between," look at the new Dia-compe Aero. Some Taiwanese brakes have these arms pointing directly upward rather than sideways.

Likewise, the so-called "centerpulls" should really be called "side pivot," since this feature is what differentiates them from sidepulls (and what makes them ***so*** hopelessly "spongy," rubbery and inefficient). The only location

where a centerpull is acceptable is on the rear, and then only if it is behind the seat or chain stays. Reason: The upward pull of the cable core cancels or counteracts the downward flexing or rotation of the whole caliper assembly from rim motion. **A** sidepull used on the rear has no such effect because the push of the cable casing exactly cancels the pull of the cable core. Note that it is utterly unthinkable to use a centerpull on the front wheel, because the upward pull of the cable core adds greatly to the already-severe upward flexing of the whole caliper assembly, and makes a horribly inefficient situation at the wheel that has to do most of the work when you brake hard.

Ask any supposed "expert" on bike mechanisms (whose main "expertise" may be just a blind insistence that "Campy'sway is the best") about using a sidepull at the front and.a centerpull at the rear, and he would ask 'What on earth for?"But he would only be proving that he had some things about brakes still to learn.

Bicycles, themselves, tend to be ***so*** much alike that only an expert can find much different about them. Caliper brakes have. suffered from the same lack **of** imagination. It is as if all the designers had sat in a giant circle, each looking over the shoulder of the one in front of him, copying all major features and most of the minor details.

Today's top brands of conventional. calipers are really a highly polished collection of very bad ideas. {In 1983} cyclists were offered a major "improvement,"aerodynamics. If you threw away your brakes entirely, thus reducing your wind resistance to zero, your bike wouldn't go **1/4** of a mile an hour faster. ***So*** how on earth could you either measure or feel any improvement from rounding off the brake parts? To achieve this rounded look they have made the shoes totally non-adjustable, which forces the use of tiny boat-shaped friction pads that wear out very rapidly, and not stop very well.

TODAY'S TOP BRANDS OF CONVENTIONAL CALIPERS ARE REALLY A HIGHLY POLISHED COLLECTION OF VERY BAD IDEAS

Cyclists aren't being very well served. They should be able to find much stiffer, better-working brakes that weigh even less than the lightest now available. Apparently most brakes were designed by ex-racers who were long on muscle but short on mechanical sense.

Some of the attempts to improve braking have been ludicrous: Brake shoes that slide against a wedge or ramp ***so*** that slight hand effort can create great pressure on the rim; compound or variable-leverage caliper arms that are touchy to adjust and can overact and jam-in dry weather; hydraulic brakes that add cost and complication while offering no real advantages at all (on an automobile, because the springs allow the wheels a vertical movement of up to one foot, a rubber hydraulic tube is the most practical way to transmit pressure from your foot to the four wheels; and because of a car's much lower center of gravity and longer wheelbase you don't need to vary the front/rear proportioning of braking effort. Lastly, on a car it is vitally important to keep braking equalized between left and right wheels, to avoid skidding or pulling to one side. None of these factors apply in any way to a bicycle. The complication, servicing, and leakage problems wouldn't be offset by any benefits); toggle-action linkages that create too much shoe pressure and can jam or go overcenter, etc., etc. . . . Collectively, they are like curing leaky fountain pens by " They all attack the problem at the wrong end, offering solutions no better than squeezing harder.

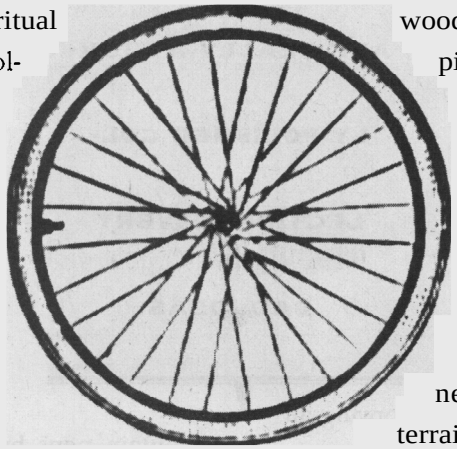
All of these problems, drawbacks and mistakes should be correctable, with just a little thought, effort and ingenuity. It has been said that those who criticize should also offer solutions. We are working on them. Let others do the same. At least we have spelled out the problems for them.

END

"...THE BICYCLE IS MECHANICAL PERFECTION. WHEN MAN INVENTED THE BICYCLE HE REACHED THE PEAK OF HIS ATTAINMENTS." — ELIZABETH WEST QUOTING HER HUSBAND ALAN IN HER BOOK *HOVEL IN THE HILLS.*

A simply amazing device, the wheel. Rim, spokes, hub - able to withstand the rigors of around **400** times its own weight and the common factor of all bicycles from their inception through today. But for all its ingenuity and importance, nobody really knows how the wheel originated. And while the true answer may be lost to the mysteries of time, we can, at least, narrow it down a bit.

There's been some talk of the spiritual essence of the wheel. The wheel symbolizing the cycle, no pun intended, of life and the universe's continuum; the Buddha as "Wheel King" and his wheel of law, truth and life. But this is neither here nor there because the invention of the wheel was most certainly of utilitarian inspiration rather than spiritual.



The main method of transport for stones, monuments, and other heavy loads, by most early civilizations, including the Egyptians, was the sledge-runner. These sleds, pulled by either men or harnessed animals, slid along the ground on their fat bottoms or, at times, were rolled on logs to reduce friction. These logs were more that likely the inspiration for the wheel, an invention that came relatively late in the technology of the ancients. After all, what good are wheels without roads. Rolling vehicles were impossible to pull along.in the snow and mountains and difficult to navigate through jungle and sands.

The wheel, and subsequent wheeled vehicles, seems to have been simultaneously created in Southern Russia and lower Mesopotamia, where drawings and pottery models of two-wheel carts and four-wheel wagons have been unearthed, in around **3,500** B.C. Early picture writings from Sumer in Southern Iraq show various vehicles with sledge and wheel bases around **3,200** B.C.

The first wheels were not made of a single slab of wood, as commonly thought, but of three pieces. **A** flat, rectangular piece of wood was sectioned from a log and from it cut two Semicircles and a center piece that were connected with wooden fasteners. This design was preferable over bulky, single-piece wheel designs because it could be easily disassembled into small, lightweight segments to load in the vehicle if it needed to be pulled or pushed over difficult terrain. Wheel diameters varied depending on local wood sources, vehicle size, and the degree of rough road.

When roads began to be developed, usually within walled cities or long paths to monument sites, most civilizations began to lighten their wheels with the use **of** spokes. Vehicles of the Assyrians and Egyptians used to have **six,** eight, or more spokes - the better constructed Greek wheel used only four. To better run the hard, rough roads, talented builders'used different woods to construct a strong, light wheel. Typically elm, hard and dense to prevent cracking, for the hub, straight inflexible oak for the spokes, and easily bent, straight-gauge ash

for the rim. While some evidence of solid bronze wheels has been discovered, most only used tacked-on bronze strips, and later iron, as tires. Around 100 B.C. the Chinese adopted the wheeled chariot design and used as many as 18 spokes!

Around 500 B.C. the Persians, occupying land from the Punjab to the Mediterranean, developed an impressive system of roads that covered the entirety of their territory. The roads were used by all and radiated from the capitol city. With the efficiency of these roads, and the Persian's influence, the use of wheeled vehicles blossomed.

One interesting, though short lived, development in the wheel was the work of a Northern European barbarian around 100 B.C. This barbarian, as the folk who were not part of the great civilizations of the Mediterranean were called, and who was probably an illiterate carpenter, designed and built a wheel that ran on roller bearings. Though this design was well ahead of its time, the invention died along with its creator, probably due to the poor material choices of wood and bronze.

Over the course of over two thousand years, from around 500 B.C. to the late 1700's, the wheel remained basically unchanged

But to me, the really amazing thing about the wheel is not its relatively late invention, its strength to weight ratio, or how light it has become of late. But how, over the course of over **two** thousand years, the wheel remained basically unchanged from around **500** B.C. to the late 1700s.

Arguably the first relative of the bicycle **was** Comte de Sivrac's animal-headed walking machine of 1771. The celerifere, renamed the velocifere in 1773, was almost entirely made of wood and featured carved heads of alligators, horses, and the like. They usually rolled about on heavy, tireless eight-spoke wooden wheels identical to those of thousands of years earlier. While some carriage makers were experimenting with more resilient rims and thin wooden spokes, it wasn't until nearly a century later when the wheel would undergo a dramatic change. Around 1860 strip tires made of India rubber and the popular red Paraguay rubber came into vogue, but 1869 saw the first of the modern metal rim/spoke/hub combos. Steel rims with threaded spokes, not much fatter that today's, and roller bearing hubs became the norm These wheels could be perfectly tensioned, would cut the weight of a cycle by a third, and last for years. Only the patent of John Boyd Dunlop's pneumatic tire of 1888 had as dramatic an effect on the cycle.

Over a hundred years have passed since those inventive days, and, aside from the advent of disc and tri-spoke wheels, only new materials and construction refinement have changed in this most perfect part of the perfect machine. **END**

Gabe Konrad, at 29, is the country's youngest bicycle historian—not to imply that he makes a living being a "'bicycle historian." His newsletter, Aeoleus Butterfly, is one of cycling's best kept secrets. If you like bicycles and history, send him $12/$15 overseas for a year's worth (6 issues):

Aeoleus Butterfly
13028 Cypress Ave.
Sand Lake, MI 49343

GENERALLY GOOD ADVICE ON BIKE MECHANICS

IN EACH ISSUE WE'LL TRY TO HAVE SOME KIND OF TIP-SECTION. FOR LACK OF A REALLY GOOD IDEA FOR THE FIRST ONE, WE OFFER A DOZEN OR SO SUGGESTIONS BELOW. IF YOU DON'T AGREE WITH NUMBER EIGHT, IT'S OKAY—LOTS OF SMART PEOPLE DON'T. IF YOU'RE AGAINST RUBBER MALLETS, IGNORE NUMBER ELEVEN.

1. COAT ALL UNPAINTED FRAME SURFACES WITH SOME KIND OF RUST PREVENTATIVE: FRAMESAVER, GREASE, SPRAYWAX, SOMETHING. UNLESS YOU HAVE A NON-FERROUS BIKE.

2. OWN AT LEAST FIVE 5MM AND 6MM ALLEN WRENCHES. UNLESS YOU NEVER MISPLACE THINGS. OWN A FEW 4MM ALLENS, TOO. OWN **TWO 8-9-10** Y-WRENCHES UNLESS YOU'RE BETTER AT NOT MISPLACING THINGS THAN I AM.

3. BEESWAX CABLES BEFORE CUTTING THEM, TO PREVENT FRAYING. (EVEN GOOD CABLE CUTTERS SOMETIMES SEPARATE THE CABLE.) NO BEESWAX, USE TAPE.

4. PUT TALC ON INNER TUBES SO THEY WON'T STICK TO THE INSIDE OF THE TIRE WHEN IT GETS HOT OUT. THIS IS NOT EXTREMELY IMPORTANT.

5. LEAVE BRAKE AND DERAILLEUR CABLES AN INCH LONGER THAN YOU THINK IS PROPER. NOBODY HAS EVER REGRETTED DOING THIS.

6. USE CABLE HOUSING END CAPS WHEREVER THEY FIT. BEESWAX WORKS.

7. PRETAPE ROAD HANDLEBARS WITH THE CLAMPS ON, THE LEVER BODIES OFF. A HIGH LEVER POSITION (AS ESPOUSED BY THE BELGIAN MERCKX) GIVES A NICE PLATFORM FOR ON THE HOODS RIDING, BUT MAKES IT HARDER TO REACH THE BRAKE LEVERS. SMALL-HANDED PEOPLE SHOULD NOT RIDE DEEP DROPS.

8. DON'T GREASE CRANK SPINDLE TAPERS.

9. ALWAYS GREASE OR BEESWAX CHAINRING BOLTS. YOU MAY ASSUME THAT IT IS DONE AT THE FACTORY, BUT IT NEVER IS. AND GREASE OR PHIL OIL THE CRANKBOLT WASHERS.

10. RUB BEESWAX INTO THE UPPER THREADS OF YOUR STEERING TUBE BEFORE SCREWING DOWN THE LOCKNUT, AND YOUR HEADSET WILL KEEP ITS ADJUSTMENT FOREVER. BLUE LOCTITE WORKS OKAY, TOO.

11. WHEN INSTALLING CRANK ARMS, PRESS THE ARMS ONTO THE SPINDLE, THEN GET A RUBBER MALLET AND GENTLY TAP AROUND THE CENTER OF THE CRANK TO SEAT THE ARM. TRY TO VIBRATE IT ON. ***THEN*** THE WRENCH.

12. THERE ARE FIVE GOOD WAYS TO GET A GOOD CHAIN LENGTH FOR A DOUBLE-CHAINRING BIKE; HERE IS ONE: WITH THE CHAIN ON THE SMALL CHAINRING AND SMALL REAR COG, HOLD THE CHAIN SO THAT IT ALMOST DOUBLES BACK ON ITSELF BY THE REAR DERAILLEUR. THEN REMOVE TWO LINKS.

13. IF, WHEN YOU'VE SHIFTED TO THE LARGE REAR COG, THE UPPER DERAILLEUR PULLY AND THE FREEWHEEL TEETH ARE HITTING EACH OTHER, SHORTEN THE CHAIN.

THE STILTSTEP FACTOR

HOW BOTTOM BRACKET HEIGHT AFFECTS BIKE TILT, AND A GUESS AS TO WHY

About seven weeks ago I was test riding a prototype cyclo-cross bike, and it felt as though it didn't want to fall from side to side in response to my body english. It felt as if the wheels were in a trough halfway to the hubs. I told myself "it's not a road bike, it can't ride like a road bike"; but I didn't want any Rivendell to ride like that.

I rode only that bike for a week, hoping the feeling would go away or I'd get used to it. I *did* get used to it, too, and when I got on my road bike again it felt extra floppy side-to-side, almost as if it were falling about 60 degrees to the left, then 60 degrees to the right—the 'opposite of the trough-bike. If I hadn't already had good rides on this bike, I wouldn't have given it a second chance.

After about 20 minutes it felt good, provided I stayed seated; after an hour it felt okay off the saddle; and after a couple of days it finally felt good sprinting. Then I got on the cyclo-cross prototype again and I thought "If that's what a cyclo-cross bike feels like, we aren't going to do one. I don't care."

I called Marc (at Waterford) and told him about this. He said "it's probably the high bottom bracket," and then started to talk about leverage relative to something, I forget, but it made me think of stilts.

With stilts, if you put the step down low the tops wobble all over—something to do with a longer lever—but once you get your balance you can thread a needle with the stilts. When you raise the footpegs, the tops stablilize (the lever shortens) but the feet are harder to direct. The bottom of the stilts are the bottoms of the tire; the step height is the bottom bracket height; the top tube and saddle (area) represent the handholds on the stilts. I know it sounds wacky and unscientific, but it seems to work exactly like that, and that's why bottom bracket height has such a huge affect on how a bike feels.

Another thing that affects how stiff or floppy a bike is side-to-side is where the weight is on it. About five years ago in *Bicycle Guide*, Doug Roosa, the technical editor back then, wrote a column about how saddle weight affects bike handling. Take your own familiar bike out for a ride, sans seat post and saddle, and you'll be surprised at how squirrelly the bike feels (apologies to squirrels, who do pretty well in the balance and control department).

I think it feels that way because the bicycle-as-a-lever is tossing its lightweight top around like a baby shaking a rattle. If you weight the rattle (put on a saddle), it's not as easy to shake. This may explain why, on bikes of **two** different sizes but identical saddle and bar heights, the smaller one feels "quicker." I can ride either a **56** or **575** frame, and tell the different in a pedal stroke, and I'm not Mister Sensitive. The Olympic Superbikes had no top tube at all.

I also think many riders misinterpret the smaller bike's side-to-side floppiness as quicker accelerating—it feels more lively when the stomp on it, even if "lively" is a bad word to describe lateral floppiness—and then also misinterpret a larger bike's reduced side-to-side floppiness as frame flex (which misinformed bike riders think slows them down).

For a long time, something like seven years, I've been interested in balance, stability, and control as they relate to bikes, but I never go anywhere with them, except for test riding lots of bikes and the occasional experiment using blobs of beeswax on straightened coat hangers. On the latter, I am a true expert: an 18-inch coathanger with a heavy blob of beeswax on it is easier to balance with the blob on top than it is either with no blob, or with the blob on the bottom. I just wish I could bridge the gap between bikes and beeswax blobs.

What I think A high bottom bracket increases a bike's stability to the point where it becomes harder to control. A bike with a low bottom bracket feels squirrelly (continued apologies) if you're used to the stiffness or stability that comes from a high bottom bracket, but is a cinch to get used to, and once you are used to it, you'll be sold for life. (The Consumer Products Safety Commission has rules regarding pedal clearance when the bike is leaned, and the upshot is that a frame sold as a complete bike has a higher lower limit on bottom bracket height than a frame sold separately.)

Somewhere there's a science article waiting to be written on this (not the CPSC thing; the bb height thing) but someone with a physics background should write it, and I'll be happy to print it here provided I can understand it myself. (Not that there's anything wrong with rising to the occasion.)—G

END

BY FRANK J. BERTO

REAR DERAILLEUR DEVELOPMENT SINCE D-DAY

PAPER FOR THE 7TH INTERNATIONAL CYCLE HISTORY CONFERENCE IN BUFFALO
[OCTOBER 14 1996]

DERAILLEURS ARE ONE OF THE MOST INTERESTING FEATURES OF MODERN BICYCLES. TODAY, DERAILLEURS ARE WHAT SEPARATES ENTHUSIASTS' BICYCLES FROM UTILITY BICYCLES. THIS PAPER COVERS REAR DERAILLEUR DEVELOPMENT SINCE THE END OF W W II BY CHRONOLOGICALLY DESCRIBING TWELVE DERAILLEURS THAT WERE EITHER TECHNICAL OR MARKETING BREAKTHROUGHS.

EARLY POST WAR DERAILLEURS

First, let's set the scene to **1946** when bicycle production started in Europe after World War **11.** Derailleur manufacture and usage was concentrated in France and Italy. The early derailleurs were reissues of prewar models. The French builders of derailleur bicycles usually chose one of four rear derailleurs: the Cyclo Standard, the Nivex, the Simplex Champion de Monde **46,** or the Osgear Super Champion. The Italian builders usually chose either the Campagnolo Corsa or the Vittoria Margherita There were thirty or *so* competing designs but these six were the most important, both technically and in terms of market share.

The Cyclo Standard (Fig. **1)** was the tourist's and randonneur's choice. It was invented by Albert Raimond in **1924** and it changed little over its long life. The jockey pulley was moved in and out by rotating a helicoid with a double cable. The jockey pulley was coaxial with the cage pivot *so* that wide-range chainwheels did not affect rear shifting. The two pulleys and the long cage handled wide-range touring gearing. The Cyclo was powerful and reliable and it looks quite modern today. It could be clamped to the chain stay, but most frame builders brazed the mounting.

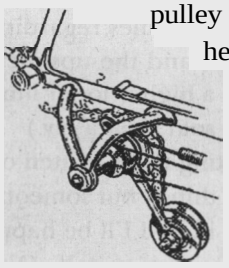
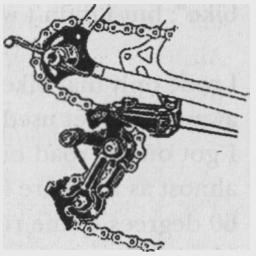


Fig. 1 - 1946 CYCLO Standard



2 - 1946 NIVEX

The Nivex (Fig. **2)** was the alternate for tourists and randonneurs. Its **1938** design looks even more up-to-date. It was the first successful parallelogram rear derailleur. Like the Cyclo, it had two pulleys, a long cage, and a jockey pulley coaxial with the cage. pivot. The mounting was usually brazed to the rear chainstay and combined with Nivex's quick-release fork end and rear hub.

The post war rear derailleurs had to cope with "stiff 1/8-inch wide chains and with sprockets designed for one-speeds. Nevertheless, the Cyclo and Nivex touring derailleurs shifted well because they had **two** key design features that are still used on today's indexed shifting models. The upper jockey pulley and the lower tension pulley were separated by a cage. The derailleurs were designed *so* that the jockey pulley maintained a fairly constant chain gap.

Fifty years ago, the gap between racing cyclists and touring cyclists was even wider than it is today. The racers believed that looping the chain around **two** pulleys caused **a** serious friction loss. They were wrong in this belief, but all of the postwar racing rear derailleurs were designed to avoid this passive resistance.

Fig. 3 - 1946 SIMPLEX Champion de Monde 46

The Simplex Champion du Monde Model **46** (Fig. **3)** moved the cage hor-

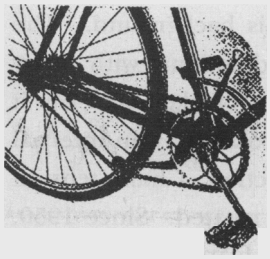


Fig. 4 - 1946 VITTORIA Margherita

izontally on a sliding rod. A cable and pull-chain pulled the cage outwards and a spring pushed the cage inwards. Although it had two pulleys, it worked like a single pulley derailleur. The bottom pulley performed both jockey and tension functions. The cage swung the top pulley backwards to push the chain against the freewheel sprockets. Simplex advertised this awkward design as a "single chain bend." At the end of the war, Simplex dominated the derailleur business as much as Shimano does today. Although the Model 46 was fragile and limited in capacity, it was cheap. Simplex sold more derailleurs than evervone else combined.

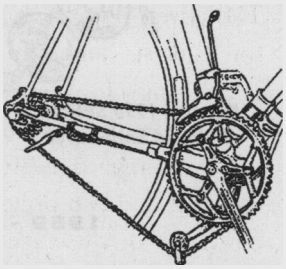


Fig. 5 - 1948 VITTORIA Cervino

The Vittoria Margherita (Fig. 4) was made in Italy by the Nieddu brothers. A cable-operated shifting fork moved the chain from sprocket to sprocket. The Margherita was soon supplanted by the Cervino (Fig. 5) which moved the shifting fork below the chain stay so the rider pedaled forwards when shifting. Excess chain was taken up by a tension pulley on the end of a spring-loaded arm under the bottom bracket. The Cervino was an improved copy of the Osgear Super Champ ion, which was an improved copy of the Margherita. This kind of copying was typical of derailleur development.

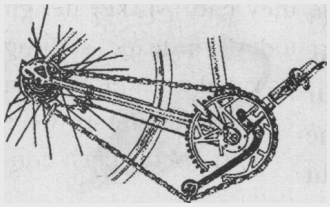


Fig. 6 - 1946 OSGEAR Super Champion

The Osgear Super Champion (Fig. 6) was marketed by Oscar Egg, a former racing champion. The chain was derailed by a fork under the chain stay. A spring-loaded tension pulley on an arm under the bottom bracket pushed down on the chain to take up the slack.

The Campagnolo Corsa (Fig. 7) didn't have any pulleys but it wasn't user-friendly. The shifting fork was above the chainstay and the real wheel moved back and forth to take up the excess chain. Shifting was slow and awkward. The rider had to unlock the quick release, move the shifting fork while pedaling backwards, and then lock the quick release. It required precision frame building to align the two toothed dropouts that kept the rear wheel parallel.

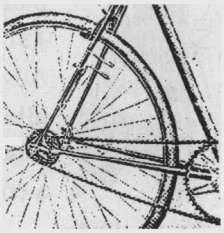


Fig. 7 - 1946 CAMPAGNOLO Corsa

By today's standards, all four of the racing derailleurs had serious design defects which limited their performance, even on narrow-range three- and four-speed gear trains. They shifted poorly and they had limited capacity. Front derailleurs were rarely used. Single-pulley rear derailleurs are prone to chain jump because the chain doesn't wrap around enough teeth on the small sprockets. Fork derailleurs require a knack to make the shift. Velocio's aversion to pulley friction was still being felt fifty years later.

1949 - CAMPAGNOLO GRAN SPORT

The 1949 Tour de France profoundly influenced rear derailleur design. The finest racers in the world were the two Italians: Fausto Coppi with Bianchi, and Gino Bartali with Legnano. Bartali won the 1948 Tour de France with (or perhaps in spite of) a Campagnolo Corsa rear derailleur. In 1949, Bartali became enamored with the Vittoria Cervino rear derailleur and he bought an interest in the Vittoria company. He finished second in the 1949 Tour de France on a Legnano with a Cervino rear derailleur.

In 1949, Lucien Juy paid Fausto Coppi handsomely to use Simplex equipment in the Tour de France. Coppi won the 1949 Tour de France on a Bianchi with Simplex derailleurs.

Tullio Campagnolo had strongly supported both the Bianchi and Legnano teams. Coppi and Bartali were near saints to the Italian racing fans and their defection was a blow to Tullio's pride. He decided to make a rear derailleur with fewer disadvantages. In less than three months, he developed the Gran Sport, a parallelogram

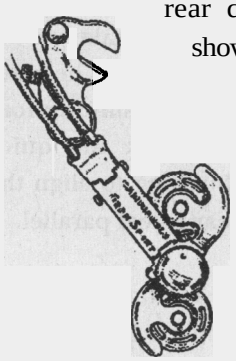


Fig. 8 - 1949 CAMPAGNOLO Gran Sport

rear derailleur with **two** pulleys. It was shown at the October, **1949** Paris Show.

The **1949** prototype Gran Sport (Fig. 8) used two cables. In **1950,** Campagnolo introduced the definitive single-cable Gran Sport (Fig. **9).** The Gran Sport was the archetype for Campagnolo's superlative series of single-pivot, parallelogram rear derail-leurs (Record, Nuovo Record and Super Record) for the next **30** years. It was copied by twenty or *so* different companies.

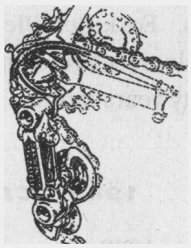


Fig. 9 - 1950 CAMPAGNOLO Gmn *Sport*

The Gran Sport is often called the first parallelogram rear derailleur, but that distinction belongs to Nivex. Tulio Campagnolo purchased two Nivex rear derailleurs at the **1948** Paris Salon and he copied many Gran Sport features from Nivex. Campagnolo located the cage pivot between the pulleys *so* that the jockey pulley moved down on the larger sprockets. The jockey pulley also moved down on the large chainwheel. This was not a problem for half-step racing gearing with a small difference between chainwheels. The Gran Sport mounted on the rear dropout or the rear axle, making life easier for the frame builders.

Bartali and Coppi did Tullio Campagnolo a huge favor. The Campagnolo Corsa was a dead end design. The Gran Sport **was** more rugged and reliable than any competing derailleur. It shifted well on the racing gearing of the day. It became the foundation of the Campagnolo mystique.

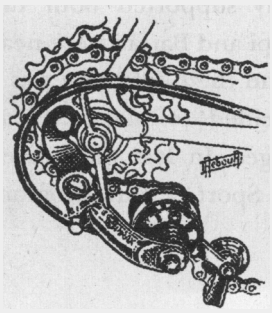


Fig. 10 - 1950 SPIRAX

1950 • SPIRAX

R. Bon had been a pre-war racer and after the war he was an active randonneur and tourist. His **1950** Spirax (Fig. **10)** rear derailleur reflected this background. The Spirax was the ultimate rod-guided' derailleur with many unique features It had a helicoid operator like Cyclo, but it used a single cable and the cage was rotated by an internal coil spring with a large flat cross-section. Chain tension remained nearly constant as the cage rotated. Since **1950,** no other derailleur has offered that feature. The Spirax could handle six sprockets and either racing or touring gearing. The mechanism was enclosed and protected. Spirax even made an indexed shift lever in **1951** (Fig. **11)** and it probably indexed quite well. In spite of its technical superiority, Spirax was a small company and it did not survive the shakeout **of** the **1950s.**

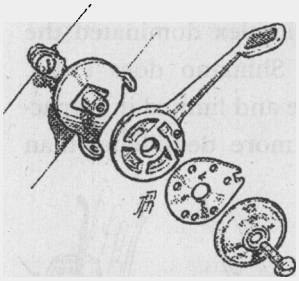


Fig. 11 - 1950 SPIRAX
Indexed Shift Lever

1959 • HURET ALLVIT

Most of the small derailleur makers went out of business in the **1950s,** leaving Simplex, Huret, Campagnolo, and Cyclo. Simplex and Huret made similar pullchain, rod-guided, rear derailleurs. Simplex had a spring-loaded top-pivot but, Huret's cage design was better with the jockey pulley on top and the tension pulley below. In **1954,** Simplex introduced the **543** rear derailleur (Fig. 12) with great fanfare. The cage design copied Huret, but the **543** was still rod guided. Today, it is the rarest and most collectable Simplex.

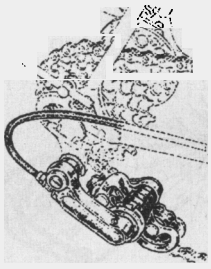


Fig. 12 - 1954 SIMPLEX 543

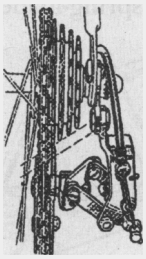


Fig. 13 - 1959 HURET Allvit

The next major innovation was the brilliantly designed **1959** Huret Allvit (Fig. **13).** Huret had a good patent and the Allvit design was never copied. The parallelogram moved the jockey pulley down as it moved inwards. This provided a constant chain gap and full chain wrap-

around on all sprockets. The jockey pulley was coaxial with the top cage pivot *so* that front changes had no effect on the rear. In **1961,** Huret introduced the definitive Allvit (Fig. **14)** with a housing that protected the derailleur if the bike fell over. The Allvit was rugged and reliable. Huret kept making Allvits until the **1980s.** Because it was designed for "stiff chains, the chain gap was a bit long, *so* it shifted "late" on most gears.

Fig. 14 - 1961 HURET Allvit

In **1960,** Schwinn introduced the Varsity, the derailleur bicycle for the American youth market. The first Varsity was an 8-speed with Simplex Tour de France derailleurs. In **1961,** Schwinn adopted the Allvit, which was a much better choice. Schwinn made Varsitys until **1986.** It was the largest selling derailleur bicycle.

1962 - SIMPLEX PRESTIGE

In the early 1960s, the European racers switched from Half-Step gearing (something like a **5248** crankset with a **14** to **24** freewheel) to Crossover gearing (something like a **52-44** crankset with a **13** to **19** freewheel). The overall gear range was about the same but the shifting sequence was simpler. Crossover gearing overloaded all of the **1950s** racing rear derailleurs except the Huret Allvit. **A** new generation of front and rear racing derailleurs was developed to cope with the wider chainwheel differences.

In **1961,** Simplex switched from rod-guided to parallelogram rear derailleurs. The JuyExport **61** was an excellent design that continued Simplex's use of two spring-loaded pivots The combination **of** a parallelogram and two spring-loaded pivots provides light quiet shifting and is found on almost all of today's derailleurs. The JuyExport **61** was made of steel and aluminum alloy.

In **1962,** Simplex converted their entire production to Industrial Resin (Delrin) and named their flagship rear derailleur Prestige (Fig. **15).** Simplex advertisements stressed that the plastic Prestige could bend without breaking. How-ever, flexibility works against crisp shifting. The Prestige was flimsy and it didn't wear well. It might well have been called the "no-prestige.''

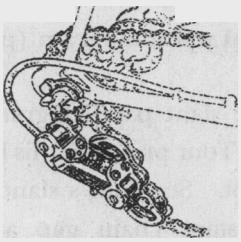


Fig 15 - 1962 SIMPLEX Prestige

With **20-20** hindsight, Lucien Juy's decision to make derailleurs from Delrin doomed Simplex. Over the next decade, Simplex added alloy side plates **and** covers to stiffen the Prestige but no matter what they did, Simplex's name became synonymous for "cheap plastic."

In **1963,** the Campagnolo Record rear derailleur replaced the Gran Sport. The cage was revised to move the pivot further forward and closer to the jockey pulley. Front shifts had less effect on chain gap. The change from the Gran Sport to the Record was minor, but Campagnolo now had a complete Record gruppo, consisting of front and rear derailleurs, shift levers, hubs, cranksets, brakes, pedals, and seat posts. 'Tout Campagnolo" became the hallmark of a top-quality bicycle.

A gruppo, or group, **was** a matched set of components from a single maker. This was **an** effective marketing tool. In later years, Shimano and Suntour offered complete gruppos at a number of price levels. The French makers formed marketing associations, like Frexa, which offered components from different makers that were supposed to work together. This **was** a less effective marketing tool.

1964 - SUNTOUR GRAND PRIX

In **1964,** Nobuo Ozaki of Maeda Iron Works invented the slant pantograph (Fig. **17).** Maeda patented the design and for the next twenty years, SunTour vigorously defended the patent. When the patent expired in the early 1980s, almost all of the competitors copied it. Today's indexed shifting rear derailleurs combine

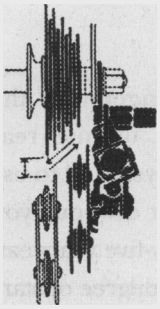


Fig. 17 - 1964 SUNTOUR Slant Parallelogram

Simplex's two spring-loaded pivots with SunTour's slant parallelogram (pantograph).

The slant parallelogram needs to be nearly horizontal. SunTour provided this by lowering the rear parallelogram pivot. SunTour's slant parallelogram provided a nearly constant chain gap and this was why SunTour rear derailleurs shifted *so* well.

Fig. 16 - 1964 **SUNTOUR** *Gran Prix*

The **1964** Grand Prix (Fig. **16) was** the first SunTour derailleur to use this feature. For more than a decade, SunTour made the best shifting derailleurs available. Until about **1969,** SunTour was limited by the small size of the Japanese derailleur market. The Grand Prix models were rarely exported. SunTour had to wait for the export market to develop.

1972 - HURET JUBILEE

In **1972,** Huret introduced the elegant Jubilee front and rear derailleurs (Fig. **18).** This was the lightness decade when everything was drilled except water bottles. Jubilees were the lightest front and rear derailleurs available. The rear Jubilee **was** a conventional two-pulley, parallelogram, design. It shifted quite well within its capacity limit, which was about a 24-tooth sprocket. Huret made a long-cage touring version of the Jubilee for a few years but it was really too delicate. The final versions of the Jubilee had drilled cages and were even lighter. Today, Jubilees are prized by collectors.

- 1972 HURET Jubile

Quality bicycles include the derailleur hanger with the rear dropout. Huret and Simplex used unique rear dropouts. If you had a Huret rear dropout, you had to use a Huret derailleur. If you had a Simplex rear dropout, you had to use a Simplex rear derailleur. Twenty-five years earlier, the French bicycle industry had a high degree of **standardization.** By the middle 1970s, the French were known for lack of interchangeability.

1973 - SHIMANO LARK

1972 was the first year of the Bike Boom. Between **1970** and **1972,** the **U.S.** market for lightweight (derailleur and 3-speed) bicycles grew forty-fold, from *200,000* to **8,000,000.** In **1972, 1973,** and **1974,** more bicycles than automobiles were sold in the U.S. The center of the lightweight bicycle market shifted from Europe to America.

The boom has never been properly explained. It wasn't the oil shortage. The Arab-Israel war began in October **1973,** and the lines at the gas stations didn't happen until the end of **1973.** The best that can be said about the tie between the boom and the energy crunch was that public concern over the oil crisis kept the boom going for an extra year.

Campagnolo, Huret, and Simplex had added capacity, but they were unable to meet the demand. Low priced bikes were advertised with either Allvit or Prestige derailleurs. The makers used whatever was available. The boom provided the market opening for' Japanese bicycles and Japanese components. When the boom ended in **1975,** Japanese derailleurs had established a reputation for quality and value in the low and middle priced market.

Shimano, with **1200** employees in **1973,** boasted that they were the "world's biggest maker of derailleurs.'' Their advertising emphasized the expensive Dura Ace and Crane derailleurs but the model that established Shimano's reputation was the Lark (Fig. **19).** The Lark and the similar Eagle were copied from the Simplex Prestige, but they had a better cage design, more capacity, and they were made of steel.

Fig. 19 - 1973 SHIMANO Lark

1973 - SUNTOUR VGT

SunTour was always smaller than Shimano. By **1972,** SunTour's rear derailleurs came in two quality levels and

three cage designs for racing, mid-range, and touring. SunTour's rear derailleurs featured slant parallelograms and an "open" cage that made it easy to remove the chain. The classic SunTour rear derailleur **of** the boom era was the wide range VGT (Fig. 20), which sold for about $8.00. In my first derailleur article in **1973,** I reported that the VGT shifted much better than the Campagnolo Gran Turismo, which cost three times as much.

Fig. 20 - 1973 SUNTOUR VGT

1975 - HURET DUOPAR

The industry slumped after the boom. The major derailleur manufacturers made cosmetic changes every year or two, but there was little real innovation. A new generation of copy cat derailleur makers entered the marketplace. Most of the European newcomers (Galli, Mavic, Roto, Triplex, and Zeus) copied Campagnolo. Ofmega copied Simplex. The Taiwanese newcomers (Falcon, Joytech, Long-Yi, and SunRace) copied Shimano.

The Huret Duopar (Fig. **21)** was the standout touring rear derailleur of the **1970's.** It featured a free-floating second parallelogram that allowed the cage to move up or down more than an inch. It had more capacity than any other touring derailleur.. It shifted smoothly and reliably over the widest range freewheels and triple cranksets. Huret's patent of the second parallelogram prevented immediate copies.

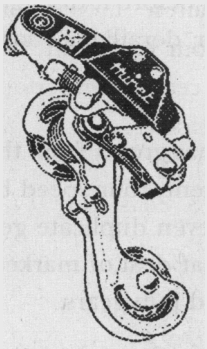


Fig. 21 - 1975 UURET Duopar

The Duopar shifted so well that Shimano established a "Beat Duopar" design team. The **1984** Shimano Deore Superplate rear derailleur had a second parallelogram like the Duopar. It got around Huret's patents by spring loading the second parallelogram.

1983 - SUNTOUR MOUNTECH

In the early 1980's, mountain bikes started to take a significant share of the bicycle market. Marin County's Gary Fisher fitted a SunTour VGT to a Repack clunker in late **1974.** Latet 15-speed Fisher Mountainbikes used Huret Duopars on the back and Simplex up front. The **1981** Specialized Stumpjumper was the first mass-produced mountain bike and it used SunTour AR derailleurs.

In **1982,** Junzo Kawai, the President of SunTour, sponsored a Fat Tire Seminar at the Crested Butte Pearl Pass Tour. That fall, SunTour introduced the first mountain bike group.

The SunTour Mountech (Fig. **22)** was the first rear derailleur designed specifically for mountain bike use. It combined SunTour's slant parallelogram with Duopar's floating jockey pulley. A second spring-loaded pivot raised the jockey pulley and held it against the small sprockets.

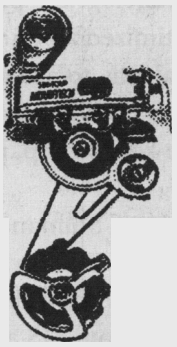


Fig. 22 - 1983 SUNTOUR Mountech

It shifted measurably better than Shimano's mountain bike derailleur, the Deore XT. The Mountech's problem was that the jockey pulley enclosed the cage spring and the large diameter pulley bearing quickly wore out in dirty mountain bike service.

1985 - SHIMANO SIS DURA-ACE

Through the 1980's, ,mountain bike market share continued to grow. Shimano and SunTour had the market to themselves. Campagnolo, Huret, and Simplex assumed that mountain bikes would be another short lived American fad. To make things worse, the three European companies were losing their share of the shrinking market for road bikes. French labor laws made it difficult for a company to cut costs by laying off employees. When sales and profits 'declined, Huret was absorbed by Sachs. Simplex limped on until **1992** and then they just disappeared.

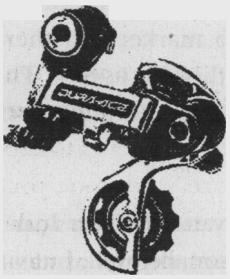


Fig. 23 - 1985 SHIMANO SIS Dum-Ace

Shimano showed the Dura-Ace rear derailleur (Fig. **23)** with the Shimano Indexed System **(SIS)** at the **1985** Anaheim bike show. It

didn't seem like a big deal at the time. After all, Shimano had promoted indexed Positron derailleurs in 1977 and indexed Aero AX derailleurs in 1981 and neither had gone anywhere. SunTour had offered indexed Mighty Click derailleurs since 1980.

Looking at the SIS Dura-Ace rear derailleur, it was obvious that SunTour's slant parallelogram patent had expired and that Shimano had quietly added a slant parallelogram to their basic derailleur with two spring loaded pivots. It was less obvious that the SIS Dura-Ace was the first computer-optimized rear derailleur. The dimensions of the parallelogram pivots and the cage geometry had been optimized along with the tensions of the two springs. The goal was to maintain a nearly constant chain gap in all gears. SIS Dura-Ace shifted early on all gears and that was the key to crisp, positive indexed shifting.

In 1986, Shimano supplied SIS on all three of its road bike groups. SIS worked well and it was a huge marketing success. Indexed shifting was "hot." It was hard to sell a bicycle without SIS and Biopace chain rings. Shimano began to dominate the component market.

1987 • SHIMANO SIS DEORE XT

For 1987, Shimano used the same computer-optimized design to provide indexed shifting on their Deore XT, Deore, and LX Series mountain bike rear derailleurs. The combination of a horizontal slant parallelogram, optimum cage geometry and optimum spring rates provided the same precise predictable shifting. The Deore XT with Super Plate was dropped. It was a more complicated and expensive design.

By 1987, SunTour was providing indexed shifting derailleurs and shift levers for both road and mountain bikes. Accushift had been rushed to market and there were problems. It did not shift as predictably as SIS. The American buyers were developing an overwhelming preference for Shimano.

In 1987, Huret introduced ARIS (Advanced Rider Index System). ARIS derailleurs shifted reasonably well, but virtually no bike maker specified them. Campagnolo introduced Syncro indexed shift levers in 1987. They did not understand that their rear derailleurs were not designed for indexed shifting.

By 1992, Suntour's Accushift indexed shifting derailleurs were almost as good as Shimano's SIS. However, the cost of annual model changes had used up SunTour's resources. SunTour merged with Sakae, and two years later, both companies ceased to be a factor in the marketplace.

1990s • GEAR SHIFTING SYSTEMS

Shimano has dominated bicycle gear trains for the last decade. They have used their outstanding research and development strength to upgrade the entire gear train package of shift levers, cables, casings, rear derailleurs, sprockets, chainwheels, and chains. Derailleurs are now a part of integrated shifting systems. There have been no significant technical changes in rear derailleur design in the last five years.

The improvements in freewheel sprockets and chainwheels are significant. Shimano's Hyperglide sprockets include ramps and cutaway teeth. During shifts, the chain flows from sprocket to sprocket without climbing on top. The chain engages the next sprocket before it disengages from the initial sprocket. The rear derailleur's task is much easier.

The number of freewheel sprockets has grown from three or four in 1946 to nine in 1997. Twenty-four speed bicycles are common but with ten or eleven duplicate gears. Shimano is currently spending a great deal of marketing effort on three-, five-, and seven-speed hub gears.

Sachs continues the French Huret derailleur tradition. Their strength in internal geared hubs and small motors allows them to take a long view of the derailleur market. Campagnolo continues the Italian tradition by supplying top quality gruppos for road bicycles.

I don't know exactly when the derailleur was invented but I'm reasonably certain that 1996 is within a few years of the 100th anniversary. As the derailleur moves into its second century, I feel sure that it will continue to evolve and improve. **END**

BY SHELDON BROWN

V BRAKES?

V brakes look like the one in the picture: The cable housing runs to the top of one **of** the arms, then the inner cable runs across the top of the tire to the other. This geometry requires a lot of cable pull to work, and since normal levers will bottom out against the handlebars before the brake shoes squeeze hard on the rim, we now have special V-brake specific brake levers.

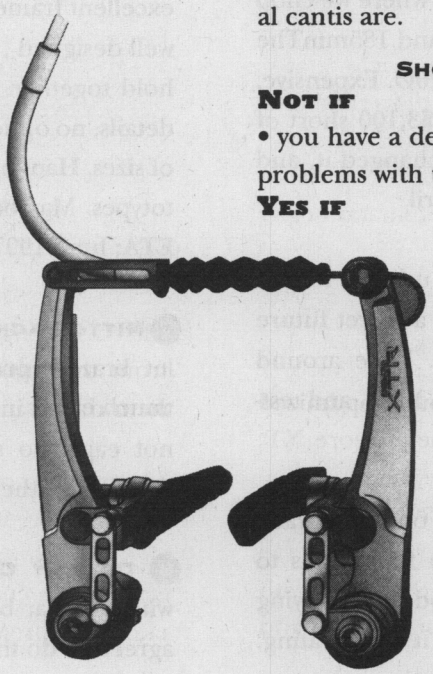
CABLE-ROUTING ADVANTAGES OF THE "V"

The side cable routing avoids common problems in cable routing that occur with bikes that have cantilevers and rear suspensions.

POWER/MECHANICAL ADVANTAGE?

V-brakes can indeed be more powerful than regular cantis, but there is a fairly narrow range of usable power (mechanical advantage, MA) that works well in practice, and you don't get something for nothing. If you have too little MA, you will have to squeeze too hard on the levers to get the bike to stop, and may not be able to stop in the rain. If you have too much MA, the levers will bump into the handlebars before the brake has been fully applied; and if you adjust the brake extra tight to prevent that, the brake shoes won't retract far enough from the rim when the brake is released, so they'll drag unless the wheel is perfectly true.

Since the "V" brake has more mechanical advantage than normal cantilevers, it needs a lever with less mechanical advantage to bring the total leverage of the system into the useful range.



With conventional cantilevers, the mechanical advantage may be dialed in to suit your preference, just by varying the length of the transverse cable.

ALL "V" BRAKES ARE NOT CREATED EQUAL.

Much of the original favorable reaction to "V" brakes was inspired by Shimano's top-of-the-line models, but for '97 there are lots of cheaper knock-offs, most of which lack Shimano's desirable parallelogram shoe linkage.

With cantilevers and the worst of the non-Shimano V-brakes, the brake shoe travels in an downward arc, rather than straight toward the rim. A little downward movement won't kill you, but if you aren't careful setting them up, the shoes can rub on the bulging sidewall of the tire, or even dive into the spokes. Theoretically, that *could* kill you.

The better "V" brakes use a parallelogram linkage which eliminates the arc-ing travel as the shoes approach the **rim.**

THE DOWNSIDE OF "V" BRAKES

1. "V" brakes reduce fender clearance.
2. Many more moving parts than any other type of brake, with the attendant reliability concerns. The first generation of parallelogram "V" brakes has been prone to squeal problems and general sloppiness.
3. They seem more easily fouled by mud than conventional cantis are.

SHOULD YOU BUY "V" BRAKES?

NOT IF

- you have a decent set of cantilevers, and are not having problems with them that a V-brake will solve.

YES IF

- you live for long, fast, bumpy descents during which you need to keep all but one of your fingers on the bars, and have a dual-suspension bike with poor rear braking due to poor cable routing with cantilevers.
- you use very wide tires on very skinny rims. A parallelogram-type "V" brake will make set-up easier, and may prevent damage to the tire sidewalls.

Most '97 mountain bikes have some sort of "V" brake, but since cantilevers and V-brakes fit on the same brake studs, you aren't locked in to them forever if you decide to switch to cantilevers later, or vice versa.

Sheldon is a full time bike mechanic and bike expert. Years ago he corrected me for using the term "track dropouts" when referring to those things that everybody except Sheldon calls "track dropouts." Sheldon says they're "fork-ends," not "dropouts," because, unlike real dropouts, a rear wheel won't drop out of them when it is loose. So he's a wiseacre as well.

Sheldon's computer page/site is at:
http://www.sheldonbrown.com/bizlhubl.

END

IN THE WORKS

THINGS WE'RE THINKING ABOUT OR ACTUALLY WORKING TOWARD. (AS NOTED ABOVE—IN THE WORKS!).

1 **LUGGED STEMS.** Steel, and most likely finished in electrodeless nickel, like a Ritchey stem. Quill lengths can vary all over the globe, since it's just a matter of where we chop it off. We'll offer at least 140mm, 160mm, and 185mmThe angle will be 73.5°, and the clamp will be 26Ø. Expensive, around $185. **Hangups:** 1) Money. We're $3,100 short of the tooling costs; 2) Design. We recently changed it, and the new drawings aren't finished. **ETA:** April

2 **FILLET-BRAZED STEMS.** Nitto-made, using a forged steel track stem clamp modified to accept a secret future handlebar bag rack. Electrodeless nickel. Price around $80? **Hangup:** We're awaiting samples from Nitto, and testing. **ETA:** February.

3 **WILLOW CANTILEVER BRAKES.** Based on the Mafacs. We have version two of the prototypes, a few details to work on. They're looking and working good. We're trying hard to get them made in the U.S., but it's frustrating. Everyone wants 10,000 minimums for stampings, no wonder US manufacturing is going extinct. **Hangup**: Final design, more prototypes, production. Ted D. is funding it, so Rivendollars aren't an issue. **ETA:** June

4 **NEW SIZES OF WILLOW RINGS** 135bcd (new Campy) x 51T, 130 x 49T, 74 x 30T or 32T. 130 (standard road) bcd x 49T They're about 3 months away (maybe January. **Hangup:** None. **ETA:** February

5 **NEW WOOL JERSEYS** . Striped ones, from Sergal, probably longsleeve. We're asking for a prison-striped jersey with some interesting colors–maybe olive and light blue. Something you'd never pick, but looks good. Mustard and Navy? Maybe. Sizes 3-4-5-6. Price, around **$90.**
Hangup: Italy moves slowly. **ETA:** Late January.

6 **HERON FRAMES.** Rivendell-designed, Waterford-built, Ted Durant-funded road and 700c touring frames made from Reynolds 531 tubing, for about $650. These will be excellent frames, not as fancy as Rivendells, but every bit as well designed , and built by Waterford, so you know they'll hold together. Three colors (blue, green, red) and fixed details, no options, don't even think about it. A good range of sizes. **Hangup:** The tooling takes time, and then the prototypes. May be offered through selected dealers, as well. **ETA:** June 1997.

7 **NITTO RACKS.** Tubular chrome-moly and steel racks, fillet brazed, pretty, stiff, rigid, reliable. **Hangup:** Getting them dialed in to our frames is taking too long,but we're not eager to send out racks you have to wrestle with. They'll fit other bikes, too. **ETA:** February.

8 **DREAMY CLINCHER.** Pretty much a Panaracer Pasela with a kevlar bead to take off 60g per tire. Panaracer has agreed to do this. **Hangup:** Getting them to make the samples, testing the samples, then production. I hope we can afford the minimums. Cost, about the same as our other tires. **ETA:** April if we're lucky.

9 **SUMMER GLOVES.** It's impossible to get a US-made crochet-backed glove, unless Cannondale will tell us where they had theirs made ten years or so ago (but they were $25 then); so we're looking eastward ho for them. **Hangup:** A source. **ETA:** None, but we'd like them for the spring.

10 **BROOKS LEATHER BRAKE HOODS** for old Campy and Superbe Pro non-aero levers. We've used several prototypes. Tim Zowada made by far the best ones, and with his blessing we're (Ted at Willow) sending them to Brooks to copy. Wouldn't it be nice to get hoods made with the same leather as your saddle? It's recycling scraps, too. If these don't come through—that is, if Brooks says NO ***CAN*** DO—then we'll buy direct from Tim. Hangup: Brooks hasn't agreed to make them. ETA: None, but we hope to have samples by December 15.

11 **BROOKS TI-RAILED B.17. PRO.** We've registered our request. If they do them, they'll cost twice as much as the current steelers.

12 **THOSE FANCY SCHMANCY ENGLISH TOURING SHOES.** Our last order was fraught with glitches and delays, and ultimately the shoes arrived **8** months late. Was that fun? Nope. Did we expect to **EVER** order again? Nope. But the shoes are beautiful enough to knock your soxoff, and our man Cyrus says "next time, much faster, I promise." ***So:*** If you can put down $140 and wait forever (just in case it's NOT faster) and include a tracing of your shoe as well as your American size; and you're willing to be disappointed in the fit (we'll take them back, but the next go-round may take as long), then we can get you some fine shoes with heels. All leather, black, handmade by a single cobbler. Tend to fit wide feet well, but these are not custom shoes, ***so*** if you know yourself to be hard to fit, forget it. Get your order in by December 15 for delivery sometime after that. The only promise: We'll refund your money if the shoes don't fit.

13 **RIDING KNICKERS.** I know what you're thinking—*this is* going too ***far.*** What's the point, and what's *next—deerstalkers* and bent pipes?

Oh, listen up: When we last spoke to Cyrus about those shoes, he mentioned that the old guys in England insist on "traditional trousers," and went on to describe some wool/nylon riding knickers. The ones he described closed below the knee with velcro, and you know how we feel about that (we'd much prefer actual burrs, stuck to the wool over a base of beeswax, perhaps). Anyway, he's sending a sample, we'll get it soon (like the shoes!) and Spencer will try them out, since they're his size.

On the domestic front, Ibis has some knickers, which they call Riderhosen, and they look pretty interesting. The current models have seams in el crotch, but round **2** will be seam-free. At first I just wanted to find out who mademforem, but you know—they've gone to the trouble to get them made and designed, and I don't want to just horn in on that. Scot's a good friend, Ibis is a good company, ***so*** we gonna buy from them. With some luck we'll get a decent deal. If Scot likes them, they're good.

14 **WOOL SHORT SLEEVE JERSEYS.** Maybe through Willow/Ted, maybe Kucharik, maybe Swobo. Swobo's minimum orders are kind of high for **us** right now, and they don't offer payment terms, ***so*** that's tough. But again, Swobo is a local company, a small company, and Tim Paar deserves credit and support and success, and we'd like to buy them. I prefer logo-free stuff, though (also an issue with the Ibis knickers), but I don't want to offend either Scot or Tim by making a special request. We'll see. In any case, we ought to have wool short sleevers in by Spring.

15 **CYCLING CAPS.** By the time you read this we should have them. Nice colors, good fit, acceptable looks. Specify dull or bright colors, but please accept either. These cost **us** a lot.

16 **NITTO TRACK STUFF.** We're going to attempt to sell and even distribute this. We'll have both aluminum and CrMo bars in **39** & 40cm widths, as well as 58" aluminum stems and 65" CrMo ones.

17 **CLOTH BAR TAPE LACQUER.** I know what you're thinking—what the ***heck*** is *that,* '*what* have *I gotten* myself into here, this is another world and do Z *really* want to ***be a*** part ***of*** it? Well, it may not even happen, but Grant Handley is in France and he said he'd get this **for us.** See the story in this issue.

IF YOU HAVE OTHER IDEAS, LET US KNOW. WE WANT TO KNOW WHAT YOU WANT.

One Q & One A; both long

Q: I'M UNDECIDED AS TO WHICH PARTS, AND EVEN WHICH DIRECTION TO GO, AS I COLLECT COMPONENTS FOR MY NEW BIKE. I'M PARTIAL TO AERO BRAKE LEVERS, BECAUSE I'VE RIDDEN THEM SINCE 1984. I AM LESS BUDGET-MINDED THAN I AM QUALITY-MINDED, AND AM CONSIDERING BOTH THE PARTS YOU OFFER AND SOMETHING LIKE SHIMANO 105. I WANT TO INVEST IN THIS BIKE FOR THE LONG HAUL, WITH PARTS THAT'LL LAST A LONG TIME. I HEAR THAT TECHNOLOGY HAS TRICKLED DOWN TO LOWER PRICE LEVELS, SO IT SEEMS GETTING (RIVENDELL-APPROVED) STUFF MIGHT NOT TAKE ADVANTAGE OF THAT, AND WOULD DEFINITELY COST MORE MONEY. I'D LIKE TO SAVE MONEY, BUT NOT AT THE EXPENSE OF A LONG-TERM INVESTMENT, AND I'M FINDING IT HARD TO GET AN UNBIASED ANSWER. EVERYONE HAS SOME INVESTMENT IN SUGGESTING THIS APPROACH OR THAT, AND I'M WARY OF DOING SOMETHING I'LL REGRET. SO—SHIMANO 105, OR SUPERBE, SIMPLEX, CYCLONE, RITCHEY, ETC?
—TWE, SF, CA

A T, Shimano 105works great and by most definitions outperforms the proquality stuff from the '70's and '80s, including the parts we still offer today as our top of the line. If pure performance is your main concern, you can't beat Shimano, and I don't mean that in a disparaging way, either to you (for not considering something other than "performance") or Shimano, or anybody else who is after point n' pedal bicycle riding These parts serve the great good of getting more people on bikes, blah blah blah.

Midpriced Shimano parts are a terrific value, too. They cost half or less of what the top end parts cost, and work 90 to **100** percent as well. The smart shopper buys inexpensive Shimano and never regrets it. That's a fact, and it's good!

But if you want parts that are made to look good and last long and age well (look as good with scratches and wear as they do brand new), then you bite the bullet and buy the shiny, satinny, slender, generally cold-forged pretty stuff, whether it was made last month or **two** decades ago.

One attraction many people have to the older parts is that they generally had a long career, and some years down the road it'll be nice to look at the parts and think, in whatever words you like, that the maker believed in the design and appearance and quality of this particular part to stick with it for more than a season or two. **A** brain problem facing new parts buyers is that they spend their inheritance or lawn-mowing money on the latest modern parts, then the next year those same parts are gone or given a major makeover. It happens to the best parts and the best people. None of this has any bearing on performance, though.

'Trickledown": Pro racers aren't the market, they're the marketers—of whatever their sponsors pay them to ride. That doesn't make them whores,just normal people trying to make a living. Pros are paid to ride the latest technology that, a year or ***so*** later after sufficient lust has built up, is introduced to the masses. And amateur racers are too small a group to be any large manufacturer's target market. I personally don't like this approach, not because **I** don't think racers should be paid for racing (I do), but because it elevates racers to a glorified role, and sends a wrong message. **I** think the everyday rider who commutes and maintains his-her own gear and keeps it ten years or ***so*** is more worthy of emulation. Of course, if everyone kept parts ten years, a lot of good people, a lot of good friends of mine, including myself, would be out of work. That doesn't change anything.

So, Shimano **105** or the other stuff? You can't go wrong either way. PAP bike parts make a lot of people happy, but they aren't the stuff long term relationships are made of, because they look like heck when the paint wears off, the plastic dustcover snaps, and the screened logo rubs off on your shoe. Then you buy more, and the industry stays healthy, and there's nothing wrong with that. If you want a long term relationship, buy the pretty, slender, silver parts that, depending on the part, may ask a bit more of you as a rider, but age ***so*** much better. —G

NOVEMBER SPECIALES

SEE BELOW

SunTour Alpha 5000 GT rear derailleur — $35
A long-cage touring derailleur from about 1987/88. Nice silver finish, no paint, long cage to take up tons of slack, and it shifts great. We have just 40 of them, and they're no longer made. They're indexable if you have the right shifters, frictionable with any. You want a nice-looking long-cage rear derailleur for very little money? This is it. Just 300g.

Helmet reflectors — $3
A half-inch wide band of white Reflexite, and you put it around your helmet so you don't get smacked in the head.

Velox handlebar plugs — $4
If these don't take you back, nothing will. Rubber, with a screw-expander. Assorted colors, state your preference: White or black. More colors later.

Red Bandanas — $2
The classic, pre-gang red bandana. All cotton. Great for noses, foreheads, and in a pinch, on your morning run in the hills..... Spencer said: "Red and Blue are gang colors, you should've gotten something neutral." (Not that there's anything wrong with gangs, as long as they're the friendly, wholesome type.)

Boomerangs are back! — $18
Right hand or left. Made in California or Colorado. We've selected a few favorites, and they work great. If you still haven't thrown a boomerang, what are you waiting for? Instructions included, satisfaction guaranteed: If you don't have tons of fun with this, return it for a full refund, no questions asked. Don't go your whole life without experiencing these. Specify RIGHT or LEFT hand model, SHORT or MEDIUM return range. (Medium requires a good chuck.)

Infant/Toddler's Helmets — $20
Made in Florida, Snell and A.N.S.I. and ASTM approved, so you know they're safe. Fits heads from 18 1/2" to 19 1/2" around. Pink for girls, blue for boys, yellow for any toddler who can pronounce "yellow." With balloons all over the helmets.

Nice, Light, Touring and commuting tires, 700 x 32 — $15
Made by IRC in Japan. They weigh just 311g and measure 27.5mm on an MA2 rim . File tread with a very slightly raised center-rib, testimony to their early-'80s design. Don't let that scare you: This rim is not high at all, the tires corner fine, though not as good as a Ritchey-Avocet-Specialized; and what you're left with in any case is a fat, lightish, long-wearing tire perfect for almost anything.

Rivendell Cycling Caps (order after 12/6)— $6
All cotton, non-protective, nice colors (as yet undetermined, so you'll have to trust us). Plus plain white, so you or your children can decorate it with fabric paint.

Bridgestone Posters— $7
The "road" poster has a rider and some horses. The "mountain" poster has rider + sheep + church. As bike posters go, these are as nice as any. Printed in linoleum woodblock style by English artist Peter Wormell. Rich colors, cheap.

ALE Water bottle cages — $12
Thin, chromed stee, Italian. 100g, and they won't blacken your bottle. Freddie should use them.

Silca Frame Pumps — $20
Thin chromed plastic, , Italian. They're light, they've been around in some form or other for a long, long time, and even if they don't work as well as a Zefal HP, they still work well enough to get you through about 50 or 60 flats over the next 7 or 8 years. Removable head. Sizing:
If the air space between the frame tubes is 40 - 44cm, get a 390mm pump; if it's 44 - 49cm, get a 430cm pump; if it's 48 - 53, get a 470; if it's 52 - 56, get a 510; and if it's 56 - 60, big boy, get a 550. Presta only, about 5 1/2 oz for a medium size.

White Lightening — $6 for 4oz.
I know what you're thinking—*blasphemy!* Well, sort of, but it's great for touching up beeswaxed chains.

Ritchey Triple Bottom Brackets — $40
We have 35 of these. Logic Pro model, 120mm, English, perfect for Ritchey cranks and a few others. Lip-seal, ball-and-cup (not cartridge) style. Smart, cheap, absolutely top quality, intelligent

Ritchey design with wider-than-normal bearings. You need the green Park cheapy adjustable cup tool to hold the adjustable cup, and even that doesn't fit so well, but patience will get you through it.

First Forging Paperweights — $15
To forge a dropout, you smash metal. It takes a couple good smashes, because after just one smash the shape is 'distinguishable but not complete. These things are dropouts after the first smash. They're Tecnociclo road dropouts, in fact, similar or identical to the ones we (and most of the Italian steel frames) use. Good desktop stuff to remind you of bikes all day long, and nobody else in your office, and probably nobody else in this country has one.

Dark Green Sunglasses — $12
Optically correct, 100 percent UV and 90 percent IR protection combined with bendable temples for a custom fit. Good for riding, anything. If the screws unscrew, they're fixable either with the Morris (brand) eyeglass repair kit, or a small paperclip or safety pin.

Big Chainrings—$20ea, 3/$15, okay to mix
Mavic 144 bcd. 44% 49t, 53t, 54t. Old Campy size, not much selection, but they're great quality and cheap. Mavic and SunTour Superbe 53t x 130 bcd. Modern road standard. Lots of people buy these cranks from us and want smaller rings, so we end up with stacks-0-these.

Carradice Spats — $27
Waxed cotton shoe, shin, calf, and knee covers. Same lightweight, dark green fabric as the other Carradice rainwear. I've used them only once, they work fine; Spencer swears by them and was miffed that they didn't make it into the catalogue. A poncho and one of these covers you pretty well, particularly if you have an upright position. One size fits most

SunTour XC *9000* 32H front hub, with QIR — $27
Sealed cartridge bearing with a dustcap to boot, same bearing size and quality as Phil, Bullseye. There used to be a bearing puller tool around, I haven't seen it for a while, but we'll do our best to get them. In the meantime you'll get 5 years of everyday, all-weather use out of these ($5.40 per year).

Triplize your Mavic 631 road crank — $40
The best deal anywhere. Made by Stronglight for its Mavic copy crank. Machined from 7075 T651 aluminum, and it works perfectly. If you've been morose over the unavailability of the Mavic triplizer, this'll have you tap dancing in no time. Won't work with regular road doubles, just the Mavic 631 and imitators. Adds a 74mm bcd to let you fit a granny. Sizes 38, 40, 42t. Spotty availability, but we have them now.

Avocet 700x32 road slicks—$25
A phenomenal tire, but make sure it fits your frame. If you have short reach brakes and the blocks are well up in the calipers, forget it. A super tire for Rivendells, older road frames, RB-1s and 2s. Wire bead and just 300g.

Freddie Hoffman signature Mock T-shirts — $25
All cotton Fruit of the Loom T with Freddie's signature in front in Navy. At this moment, the design is still up in the air, but it'll look nice, and 100 percent of the proceeds go to Freddie. Sizes M-L-XL-XXL. Don't use coupons on this, okay?

Back Issues of the Rivendell Reader — $2 each
I have mixed feelings about selling these, but we do have them and we do get a lot of requests, and someone (a customer) pointed out that if we continued to give them away upon request, then we'd be devalueing memberships. I'm not sure I completely agree, but the point's well taken anyway. So, $2 each, or a set of five for $9--is that okay? We're out of #1.

Sox, vat-dyed olive green, 50-cotton, 50-wool, surplus new — $4
Size 10 - 12 only, which fits men's sizes 8 to 12 1/2 or so. They're long, but roll down nicely so even those of us with stocky legs can achieve that lean, gazelle-like, young Masai warrior look.

BIG BOTTLES — $5
Clear or white or as available. We usually throw in something else, or an extra bottle, or just charge less than the stated price on any Rivendell water bottle. It isn't a policy or a promise; just a trend.

GOOF!

In RR6 there was a profile of Graham Bergh and Resource Revival [recycles bike parts into tables, belts, candlestick holders, etc.] Forgot to include this — SORRY!

RESOURCE REVIVAL
2130 NW 29th Ave.
Portland, OR 97210
[503]226-6001
Tubeties@aol.com

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QTY	SIZE	ITEM. DON'T FORGET COLORS, SIZES	EACH	TOTAL
BACK ISSUES OF THE RR, $2 EA. #0, 2, 3, 4, 5, 6 (CIRCLE WHAT YOU WANT)				

First Subtotal:	
Minus any Rivendollars or GC:	
Second, possibly lower subtotal:	
Tax (CA only):	
Shipping (see below left):	
TOTAL:	

SHIPPING	Ground	X
UPS	$5	
CANADA	$15	522
INT'L	$25	545

Amount: _____

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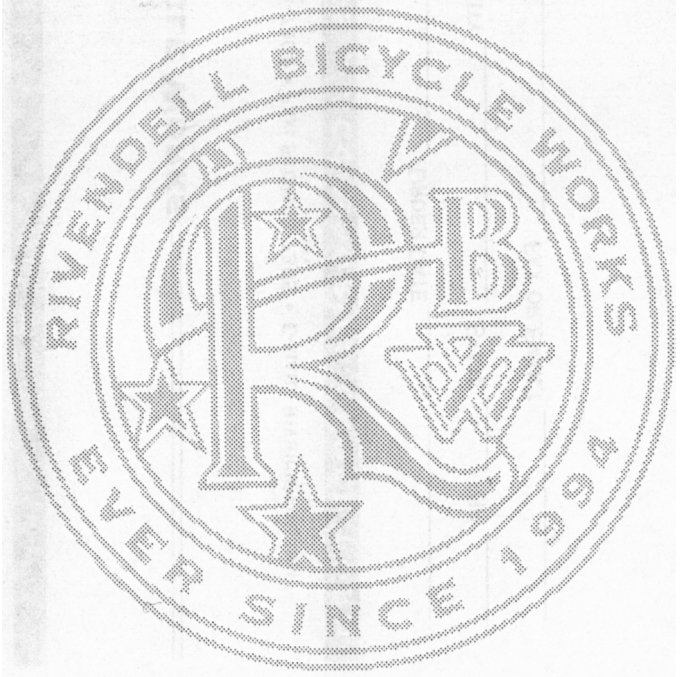

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