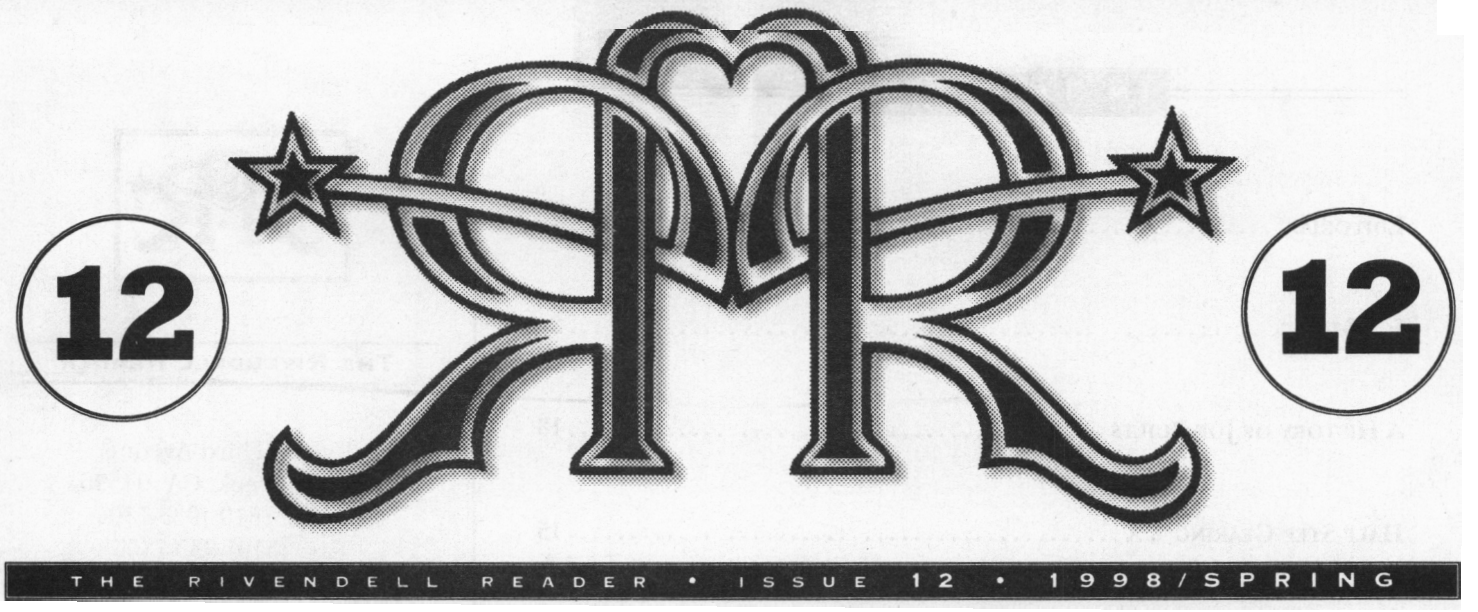
A BICYCLE PAPER FROM RIVENDELL BICYCLE WORKS



THE RIVENDELL READER • ISSUE 12 • 1998/SPRING

WHEN GERMAN SHEPHERDS

(NOT THE TYPE FOR WHOM A NEW STAFF MIGHT MAKE A GRAND GIFT) WERE CALLED POLICE DOGS

In business there's a notion that you grow big or die, but we want to stay small, anyway. It's hard to imagine Rivendell with more than ten employees, which is five and a half more than we have now. Payroll weeks are already nervous-making. Maybe in ten years I'll re-read this and cackle, but I don't think so. Can a company stay small and alive? Maybe.

Sales last year were about $600 thousand. We lost between $5,000 and $7,000, up from $23,000 in 1996.

Before Rivendell, I'd read something like that and think "How can they **go** on? Who's bankrolling that money pit, anyway, and how long are they gonna put up with it?"

It's a loss on paper, sometimes called a paper loss, and comes from spreading certain expenses over several years, even though the money **was** spent in one year only.

What keeps us going is decent cash flow, meaning money is coming in just slightly faster than it's going out. It's one advantage we have over regular bike manufacturers who send bikes to dealers in November and hope to collect payment for them in April. If you compare us to most bike retailers, we have a much bigger phone bill, and much much higher mailing costs. And. since so much of our menu is stuff that's no longer made, when we find caches of it here and there we have to buy it all, even if it's a 3-year supply. It's the opposite ofjust-in-time inventorying. That, and tooling. is **why** we lose money. This year we'll spend another $30 thousand on tooling. That's an advantage most bike shops have over us.

We don't worry about competition. Most manufacturers are too busy designing the future and copying Trek and Cannondale to care about the past and contradict their bread-and-butter. That's good for us. Stay the course, comrades, and full speed ahead!

I worry that we have just **3,150** subscriber/members, and have sold more than 750 Brooks saddles. What concerns me is that one of these weeks everybody **who** wants one will have already bought one, and I have the same worries about frames and Velox bar plugs.

Last year our bank offered us a line of credit for **$35,000,** and we used it all to pay off credit cards; ***so*** now we owe the bank, but at a better interest rate (11.5%). We've been trying to pay it down, but still owe $23,000.

There are ***so*** many projects we'd like to **do,** and we will do them all when it's the right time. The quixotic lugged stem (as one of you described it) is moving along and is first in line. The lug designs are being finished. and as soon as we're done there, the caster will lunge ahead. We should have one by winter.

DEADLINE, SCHMEADLINE: This **RR** is late. as usual. We'll shoot with a slingshot for four this vear, and we might have to squeeze in a compact version late in the year. We're trying to get the next catalogue out by June 25. That's the target, not a promise or deadline. *Deadline* sounds ominous and adds stress, ***so*** no more deadlines. just *targets.*

Email note: For urgent matters, a fax or phone call is best.

—Grant

IN THIS ISSUE

THE RIVENDELL READER

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We welcome contributions, but pay little to nothing, even for feature stories. Send nonreturnable manuscripts to the address above, or email to Rivbici@aol.com. No travel, recipes, or personal growth stories, unless satirical.

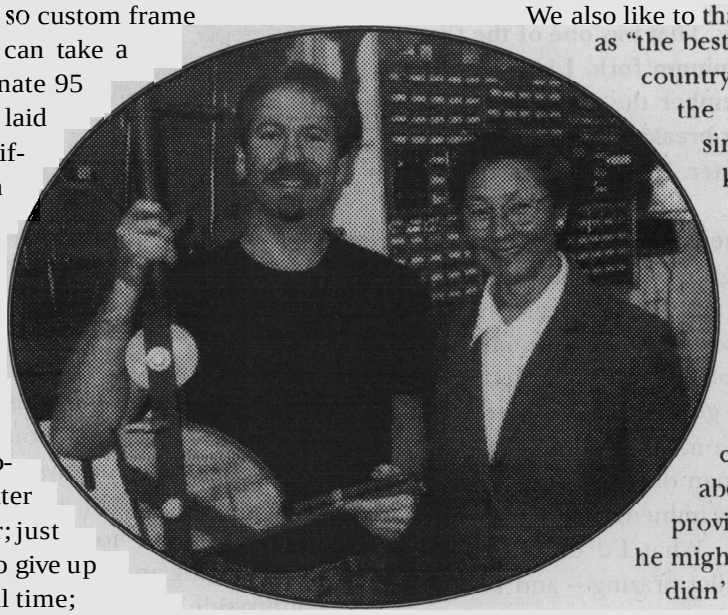
JOE STARCK

TEN THOUSAND FRAMES LATER, AND NOW HE WANTS A FEW BACK

Joe Starck builds our frames, and here he talks about them.

Last winter when we decided to revamp our frame program in a custom-sort-of-way, we had to find a new builder, someone who could meet our quality standards, and also deliver frames–if not in droves–at least consistently. These people don't hang out on streetcorners.

While there are a hundred or so custom frame builders in the country, you can take a really broad brush and eliminate 95 of them right off the bat: Too laid back; not ***good*** enough; has different values; has his own brand of bike and ours would threaten it; probably fine, but not enough experience; is **too** set in his own ways and it'd he like pulling teeth to get him to **add** this touch or that; is arrogant, and would never admit a boo-boo; is burned out and bitter and unenthusiastic and dour; just doesn't want to; is reluctant to give up his day job to build frames full time; does ***good*** work, but in order to make 150 frames a year, would need to buy about 320,000 worth **of** machinery. and can we front him the money? All good reasons not to strike up a deal.



Joe with Connie Nierodzinski, mirror maker, jelly maker, and wife of another Joe, the fellow who make the end-grain maple blocks over which Joe S. bends our fork blades. That's our block there in the bending device. Note: Joe has since shaved off his goatee.

I was talking to Richard Sachs about this one day, and he told me to call Joe Bell, the guy who paints Richard's frames, and talk to him about Joe Starck, who worked in the same building, doing frame repairs and building some custom steel hikes for Bill Holland. I'd never heard of Joe Starck, but when Richard recommends someone as a frame builder, that's sort of like Yo-Yo Ma recommending someone as a violin player, or Paul Bunyan recommending another lumberjack. It was a more than just good tip—it was a kind, generous gesture, and given our new direction, nearly a lifesaver. Thanks, Richard.

We also like to thank Joe Bell, who described Joe as "the best unknown frame builder in the country," a compliment that we took at the time and know to this day, as sincere and unrelated to JB's knowing that if we did hire Joe, he (JB) would get the paint business. Since they're in the same building.

One more thank you:

Bill Holland, Joe's employer at the time. Think about this: A representative from another company calls up, inquiring about pour employee, the guy you provide a working area for, and now he might build bikes for someone else. I didn't know Bill, he didn't know me. and we landed on his turf with plenty of fuel there for a nasty reaction. Bill never even made things awkward for either Joe or Rivendell—maybe he figured it would be a good match—and I still feel too embarassed to thank him one-to-one. I'd be remiss in not pointing out that from what I've seen, and from who I've spoken to, and from the feeling I get, nobody is more conscientious, or builds a titanium frame any better than Bill Holland does. If that's your metal, do yourself a favor by dialing (619) 469-1772.

RR: What was your childhood like?

JS: What!

RR: We can get this part over quickly, but a brief synopsis-type thing on your childhood is requested, maybe with some comment about riding bikes back then, if you did that.

JS: Okay. I was born in Madison, Wisconsin, but after kindergarten my family moved to Sun Prarie, and I grew up there until I moved out of the house when I was nineteen. Then I went back to Madison. When I was a kid, I rode Stingrays everywhere, and took them apart and painted them and made them into choppers. Later, I got a Sears Free Spirit IO-speed and I rode that a lot. I didn't know about custom bikes—my main concern was getting somewhere without getting a flat. But a guy in high school had a Viscount, and for some reason he bragged about it all the time, I'm not sure why.

RR: He believed the ads, is why. That was one of the first bikes to use an aerospace aluminum fork. I know it was aluminum, and I think I remember the aerospace part. Anyway, it was most famous for breaking, and there was a highly publicized recall years later. How old are you?

JS: I'll be 38 July 5th.

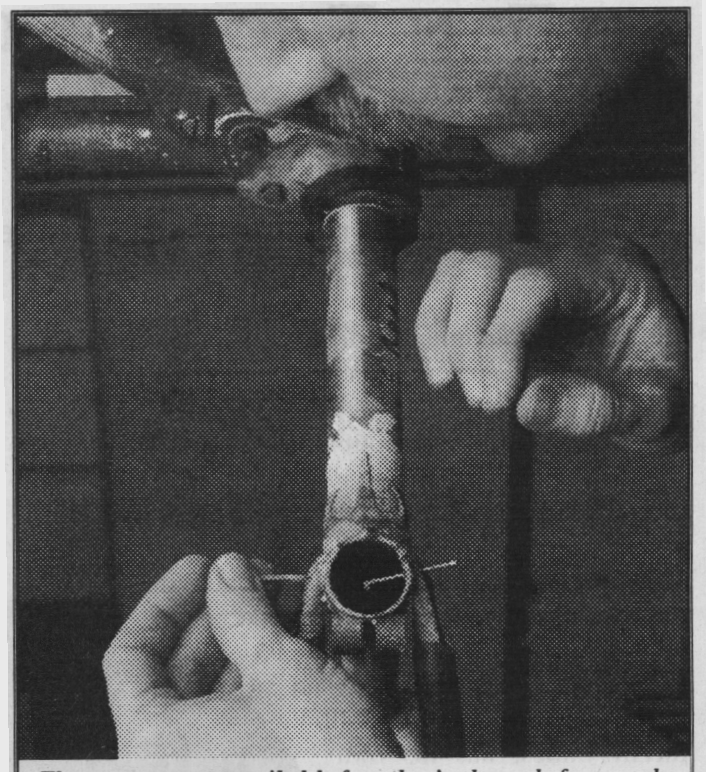
RR: How did you get into frame building?

JS: When I graduated from high school, I didn't plan to go into the military or college, and I was in between jobs. Trek advertised for brazers, assemblers and painters, and since I'd brazed quarter inch plates of metal together in high school, I thought I'd be good at it. **So** I drove to Waterloo, filled out **an** application, and 20 minutes later I **was** out in the shop. The foreman demonstrated brazing a steerer into a fork crown, and immediately my concept of brazing went out the door. What I'd done in high school was bronze welding – fillet brazing – and I could see from what the foreman was doing, you're supposed get the brass to penetrate in between the 0.002-inch gap between the steer and the crown. I failed, and I remember the foreman saying I was "too spastic for brazing." **So** the next day I was putting decals on freshly painted bikes, tapping all the threads, and boxing and shipping.

After a while I progressed to Finish and Alignment, which is where I learned to use air files and grinders, and make sure a frame is straight.

RR: What was it like to work for Trek in those days?

JS: What **was** it like ... it was an old, rented carpet warehouse, always cold in the wintertime and hot in the summer time. I was 18 in 1979, and had no understanding of high-end bikes or custom framebuilding or silver brazed lugs. I'm pretty sure I didn't even know about Campagnolo. When the foreman gave me a tour of the factory, he kept repeating that "these ain't no John Deere tractors ya know." That description pretty much summed up my understanding about what they were making.



The seat stays are nailed before they're brazed, for a rock-solid connection that won't ever fail.

A lot of the guys who worked there were **also** just plucked off the farm, as ignorant as me when they started out. **A** few were hooligans, guys with no direction other than partying and racing cars and motorcycles around the countryside. Normal stuff, I think. Later on, Trek moved to a new building, and hired more older people, and more women.

Trek Christmas parties were **always** memorable. Usually they were held at swanky supper clubs, hut one year's party was held inside the factory because the company couldn't afford to splurge. It turned out **to** he one **of** the best. We had a live band with dancing. One guy got on stage and belted out "House of the Rising Sun." Another guy, Juan—a Cuban refugee—he wanted to take a photo with his new Polaroid camera. *So* we formed a ten-person human pyramid, topped off by the president of the **company**, Bevil Hogg. So everybody's grunting and giggling and yelping one-liners, waiting for Juan to get his picture.

It turned out Juan didn't have any film in the camera so the boss got toppled real quick.

We had two guys who worked at Trek under a work-release program from prison. One guy, Tex, was in for multiple counts of armed robbery. We made forks together. There was a time where I felt he wasn't pulling his share of the load, doing only the easy jobs. And so, even though he was a huge, mean-looking felon, I finally lit into him one day. He walked away in silence, and for a few minutes my anger turned to fear, not sure what his reaction wonld be. So what he did was tell me he respected the fact that I spoke my mind and had the guts to chew him out. So, he put more effort into his job, not as much as I expected, but we .became pals anyway and I was relieved that he didn't squish me. Another guy was in prison for fencing stolen goods. He was a hard worker, wanting as many hours as you'd give him. When he was finally released from prison, Trek threw him **a** party, with his wife and kids in attendance. With his earnings from Trek he was able to buy **a** new car. We were all real proud of him. Then, within a month, he was back in the slammer for the same crime that put him in prison the first time around. Most of us felt let down.

One of our brazers, a **guy** named Tony Brown, had only one arm. He lost his right arm in an auto accident when he was a passenger in a car, and fell asleep with his arm out the car window, went into a ditch, and the impact scraped right arm off, and he was right-handed, so he had to relearn everything with his left. So he'd heat the joint with the torch held in his one hand and then with a brazing rod held in his mouth he'd feed brass into the joint. Then **he** took up kung-fu and became a black-belt and instructor. His bicycle was equipped with both shift levers and both brake levers on the left drop of the handle bar. 'Round about the same time Tony was working there, Trek started an annual summertime bike race and picnic for employees. The event coincided with the City of Waterloo's Weiner and Kraut Festival. Tony Brown won the inaugural race. I came in second to last. Then there was the time the local police suspected Trek of trafficking drugs, somehow through the sale **of** bicycles.

RR: Why did they think that?

JS: Well, the management—Bevel Hogg and Tom French—they were young guys, probably in their thirties. and most of the crew were guys right ***out*** of high school. Some had their skirmishes with the law, and in general, it was a wild bunch. ***So*** here's this new operation with **a** bunch **of** young guys making $1,000 bikes, so right there you've got to be suspect–who would pay $1,000 for a bicycle? There was an investigation and, of course, it was ridiculous because it couldn't have been further from the truth. **I** mean Trek was just a young start-up that had a good thing going and knew where it was going.

RR: After you failed your first test, how did you get another crack at brazing?

JS: Well, when Trek built the new place in Waterloo, everybody was sort of in transit, and it wasn't really decided what Joe here was going to do. So, **I** wasjust sort. of helping out in the dip tank area, and the shop engineer at the time, Tim Isaac, approached me and said, "Come here, Joe, we need your expertise." I followed him, wondering what **I** was good at. He must have seen me with **a** torch in my hand one time when I was fixing a motor mount for my dad's fishing boat, and so figured I knew how to braze. Anyway, Tim demonstrated on a couple of bottom brackets, and I picked it up and within a couple weeks I was pretty good.

Brazing was the most coveted job in the factory–it paid more money, and I think everybody knew it could lead to becoming your own frame builder, because there was a guy there, Mike Appel, who was also building frames under his **own** label.

RR: How many brazers were there, and how many frames were you turning out?

JS: There were mayhe six or seven guys brazing main triangles—the front half of the frame, no fork—and **ahout** the same number brazingchain stays and seat stays onto the main triangles. Our quota was about twenty mains a day, and above that there were honnses. So I and a few other guys went all gung ho and ended up brazing forty

Joe brazing. The crud-like substance on theframe is flux, a brush-on paste which prepares thejointfor brazing and protects the metalfrom heat.

mains a day. We made more money than a lot of the more brazers who'd been there longer, but weren't as efficient. They would have been content with twenty a day. Eventually, management raised the quota. **So** if you figure on a good day I'd braze forty and on a bad day I'd braze twenty, an average of thirty a day, five days a week…that's 600 a month…more than 7,000 main triangles a year. I figure I brazed the equivalent of 5,000 frames because I was a mains brazer for about a year, and I also brazed complete forks for the high end frames, the Trek **950** and 750, with Cinelli full-sloping crowns and reinforcements.

RR: Do you still have one of those frames you brazed?

JS: No.

RR: If you brazed 7,000 main triangles, wouldn't you like to have one of those frames that you . . . .

JS: No, not at all.

RR: You wouldn't?

JS: Well, sure, but I don't want to announce to the world that I'm looking for a particular frame with a particular stamp on it cause I don't want to drive the price up, Grant, you know.

RR: This is the Rivendell Reader—you won't "announce it to the world." Anyway, could you tell one of yours?

JS: Sure.

RR: How?

JS: Well, this topic makes me a little nervous. I want to find the ones that I made just sort of naturally, on my own. I don't want people calling me, or you, with a serial number, and saying "It's yours for $500."

RR: Would you take $475 and change?

JS: Thanks a lot, Grant.

RR: Okay, it is duly noted that you want to kick over a rock and find one. Why did you leave Trek?

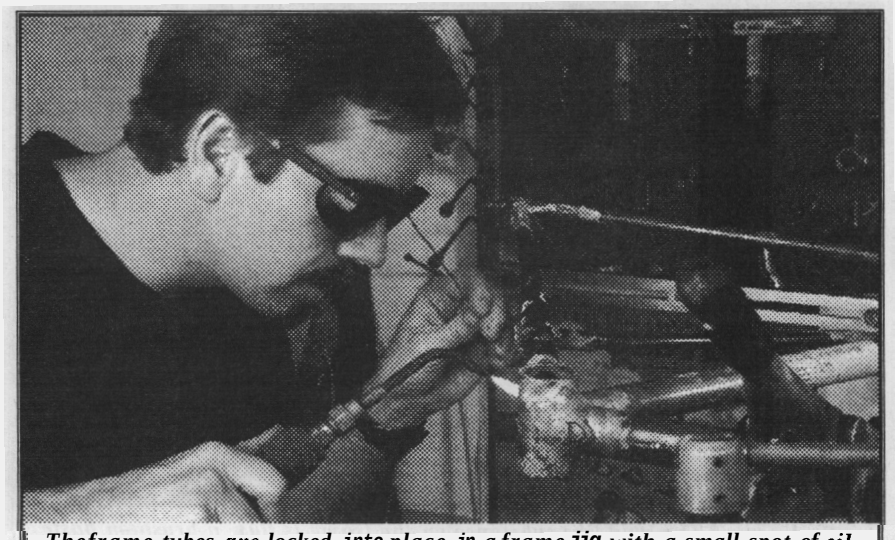
JS: Well, I never planned to make it my career, and the fact that some of the guys had been working there for several years, at the same job, was shocking to me. I had other aspirations and figured college and a career path would just present itself to me real soon, and so I could only see working in a factory for a year, tops. After three and a half years at Trek, I still couldn't afford school, and I didn't have a school plan, anyway. But I felt I'd done my share of factory work for the world, and wanted to get out. And yet I couldn't get myself to quit. Eventually times got lean and Trek had to lay off about 25 workers, and asked us, "Do you want to volunteer to be laid off?" I replied "maybe," but that maybe sounded like a yes to my supervisor, *so* that was it for me and Trek, and I enrolled at the University of Wisconsin that year.

RR: They asked for volunteers?

JS: Yes, but there weren't enough volunteers. **So** there was one woman who was laid off who had two or three children, and she was crying in the break room when she got her pink slip. That same day she went and picked up her kids, drove back to Trek, marched into, you know, the office, and said, "Hey, what am I to do? I need this job." So she was rehired.

RR: Well, good for her and Trek. So how did you end up at Masi?

JS: I got a call from Dave Tesch, a friend from Trek who'd left earlier to build the California Masis, and I couldn't pass up the opportunity **to** build a hot Italian race frame in Southern California. I was proud to do it, and I was content for several years. Building complete frames in small batches of 10 or 20 presented a new learning curve at a higher level than what Trek required. I became an expert brazer at Trek, but at Masi I learned framebuilding. I'm grateful to Ted Kirkbride for giving me that opportunity and for exposing me to bicycle racing through Masi's ongoing sponsorship **of** national and Olympic-caliber riders. I enjoyed making Masi Gran Criteriums, 3Vs, team road and track frames. Had a few circumstances been different, I could still he there. Rut the pride I had in my **own** building sort of made me discontented there. Often, I'd meet **a** rider on a new Masi custom track bike I'd built a few weeks ago, only to be told by that same rider that somebody else personally built it special for him. In magazine articles about California Masis, I was referred to as Ted Kirkbritle's assistant. I owe Ted a lot, for hiring me and paying me a good salary for those years, but lots of times, in the middle of building a Masi, I'd stop and ask myself, "If I'm an assistant, where's the



The frame tubes are locked into place in a frame jig with a small spot of silver braze. This keeps the tubes in securely place, ready for brazing.

builder I'm assisting with this frame right now?" Ted Kirkbride "made" more than 1000 Masis in the managing, owning, and employing sense of the word, but I actually built them, and only real insiders knew that. I'm not bitter, and I liked my Masi years, but this thing kind of gnawed at me.

RR: Well, that's understandable. Anyway, how did the California Masis compare with the Italian ones? Did you have guidelines?

JS: Yeah, of course we had guidelines. For a few years we were building Gran Criteriums only, and the geometry and so forth was all set, and Masi-Italy supplied the machinery. But lots of what they supplied was old, and we just put it aside and used newer brazing fixtures and so forth. Our lugs were better, too. Up to that time, the Italian Masis were built with cruder sand castings, and Dave Tesch and I wanted everything to be clean and crisp, so that when you painted the frame, it still looked clean and crisp. And the finish work of our frames, Masis built in the '80s–in my opinion, nothing rivals it. Three guys from Mexico–Raul and Gregorio and Tony-did it.

Brazing a fork crown. The wire is a silver-based brazing ***rod that turns*** *molten and gets sucked into the small gap between the crown and fork blade.*

RR: Italian Masis were brass brazed. Were these brass brazed or silvered?

JS: All the Grand Criteriums were brass brazed. That's how Masi wanted it.

RR: Lots of the Italian Masis were built with Reynolds 531. What tubing did you use?

JS: Mostly Columbus SLX tubing, for the Grand Criteriums. And we also changed the chainstay bridge and the seatstay treatment, from a cap to a plug, with Masi cast into it.

RR: How long did you work at Masi, and how many frames did you make there?

JS: I was there about five or six years, and I built a little over 700 Gran Criteriums, and a few hundred Volumetricas. I left because I wanted to move on, and go back to school. So, in '90 or '91 I was attending Palomar Community College in San Marcos, and I was working for Dave Moulton. Then Moulton's sales were down, so I was laid off, and soon after that, I met Bill Holland at a trade show, and he offered me a job. Bill was mostly into titanium, but he needed someone to build some steel bikes, also, and he was willing to hire me part-time while I went to school full-time, which is what I really wanted to do. I continued going to school at San Diego State, and chose a journalism major.

RR: Why journalism?

JS: Well, as a reporter, you're always discovering something new, covering various topics, talking to different people, so it seemed interesting. I worked for the school newspaper for a semester and I was able to meet a lot of people. I even met Jimmy Carter. I'm not doing anything with journalism, at this point. I don't want to start all over, competing for jobs with youngsters who are willing to work for minimum wage...

RR: OK. Let's talk about frames again, then. Over the years you must have repaired lots of frames, too–it's something all builders do. What's the most common repair, and what's the most difficult, or involved?

JS: The most common is replacing the right rear drop out, and it is always a Campagnolo dropout. I don't know if that's because Campy dropouts are spec'd on race bikes that get ridden hard, and therefore are going to break sooner. But a Shimano has more metal in at the place they break. The next most common repair is what we call a "front clip," meaning the rider got into a head-on crash or hit a deep pothole or drove his bike into his garage when the bike was still on the roof of his car. It buckles the top tube and the down tube, so you have to replace them. and that means a new head tube, also. All you really save is the rear triangle and the seat tube.

RR: Name some other builders whose work you like. . . .

JS: Hmm ... it's hard to give a good answer. How do you know a builder's work? It's best if you can see the work as it's being done, and that's usually not possible. Sometimes you see only painted bikes, and you can tell some things. but not all things, from that. Unpainted frames reveal more, and since I work in the same building as Joe Bell, I see lots of them, from all over. I've seen hundreds of Richard Sachs frames unpainted, and I know they're right up there, one of the tops. Brian Baylis is another guy. . .

his frames have more cutouts to them and the paint jobs tend to be fancier. Mike Appel frames are great. I've seen a lot of Appels. So I certainly would throw Appel, Baylis and Richard Sachs in the same group as, you know. There is one guy in particular–I don't even know if he even builds frames anymore, but his name is Brian Spitz. I've seen at least 10 or 20 of his frames, before JB painted them. He is one of the few builders that sort of sends a shiver up my spine. I recall his frames being 'super clean, everything square 'and perfect, consistently. So I'd, say of the lesser-known frame builders, he's phenomenal.

(RR note: I passed the compliment on to Brian. He no longer builds, but was grateful to get it.)

RR: How do you judge a frame's quality, from a builder's perspective?

JS: First, I look at the weight of the frame relative to its size. If it's too heavy for a small frame, the bike may be too stiff, and feel dead. If it's too light for a big one, it may be skittish. Then, I look over the braze-ons, and bridges, and bridge reinforcements too see if they're square with the frame. The lugs should be filed and sanded to get rid of casting lines, dips and bumps. The edge of the lug should be uniform all around, and the amount of silver or brass should be even all around the edge. I look for evidence of excessive filing or grinding near the lug edges and throughout the frame. When you're using capillary action and gravity to fill the joint, you shouldn't leave behind blobs on the tube–it should be a thin layer you can sand-blast off. I look to see if there are file marks well away from the lug, which suggests the builder left blobs of brazing material on the tube, then had to file it away. Then I sight across the rear dropouts to see if the slots are parallel to each other. Also, how the stays meet the dropouts says a lot about the builder, and the details in here distinguish the builder's skills. Lastly, I note the overall aesthetic feel of the frame. I like frames with unique parts, as opposed to generic ones.

RR: If we gave an identical frame kit and instructions to another builder to build up into a Rivendell frame, could you tell yours from that one?

JS: Fifty bucks says I can. The point isn't that mine would be better, just that I know my work. Still, I pride myself on the details, and just for sport, I'd probably argue my methods above someone else's.

RR: What difference does it make whether a frame is lugged, silvered, brassed, fiieted, TIGed –in its ride or value or whatever?

JS: None of those is a bad way to make a frame. They have different consequences, economically. TIG-ing is the cheapest way, and silver brazing with lugs costs the most. Structurally, they're all fine, and ride qualities are kind of subjective, and so are the way they look. As a builder and frame repairman, I prefer lugged, silver-brazed frames, because I can replace the same tube a number of times on a low-temperature silver-brazed lugged frame with no apparent damage to the frame. In determining value to the owner, so much depends on the frame's tube diameters, tube thicknesses, and the grade and quality of lugs, dropouts and tubing—if it's the right bike for the rider, it'll be a good value.

RR: So a cheap price on a finely made famous frame isn't a good deal...

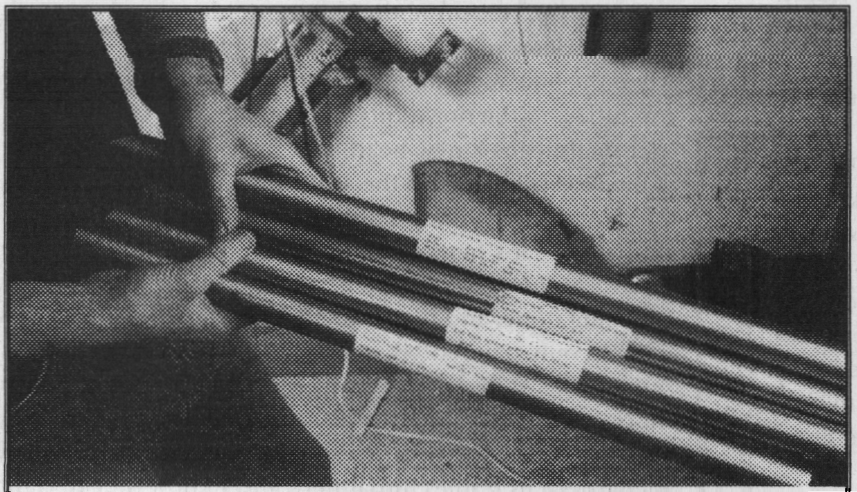
JS: I'd say not. But you know, each building method has its own personality, so as a buyer, you just find one that seems like a good fit with you.

RR: Okay, talk more about the different methods, from Joe Starck's point of view.

JS: Well, each method has its pluses and minuses. Lugless is appropriate when the frame has aero or multi-shaped tubing or because the tube placements are unique. I like to see good beads, but the bike needs more than that. Fillet-brazing gives a frame a sleek, luxurious look, but shoddy fillet-brazing makes my stomach curl even more than shoddy tig-welding. In fillet-brazing, I like a particular radius of the fillet, which varies depending on the tube diameter and fillet position around the circumference of the tube. The best fillets look so sexy you just can't keep from stroking them with the tip of your fingers. Lugs limit the size of tubes and frame geometries but I think they're unrivaled as artistic pallet.

RR: Do you know how to TIG-weld?

JS: I learned the basics, but I don't practice. In the past, when Holland built TIG-welded frames,

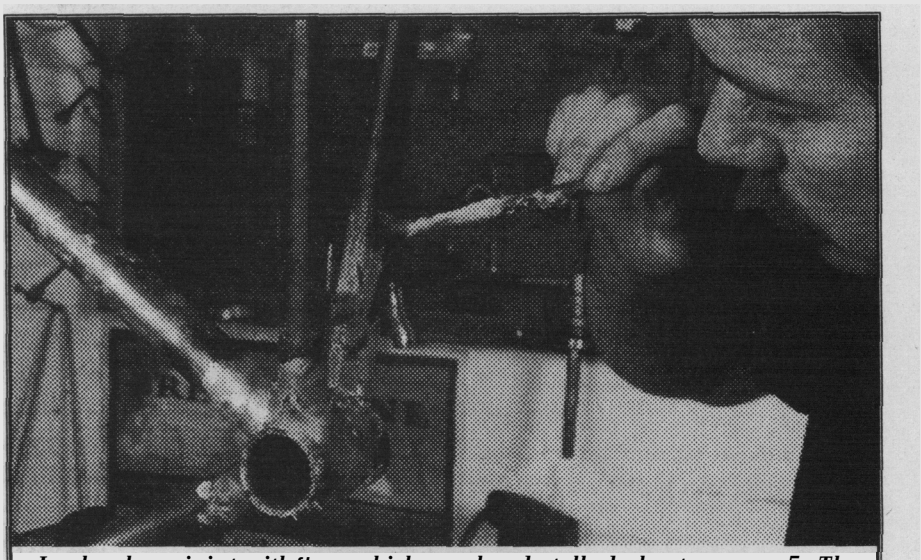


Every tube is labeled with the customer's name, its place on the frame, and mitering specs. Each customer's tube selection is unique.

I'd call Shannon Wimberly. I'd pit his talents against any and all TIG-welders. He's really good.

RR: We know how you learned to braze. How did you learn the other processes, and where did you learn the most about building?

JS: At Trek, I learned how to braze, align, and use power **tools.** At Masi I learned how to build complete frames. At first, Masi's owner, Ted Kirkbride, briefed me on the established Masi procedures, but when I became the main Masi builder, my methods evolved through practice and from gleaning where I could from my Trek days. Hanging out **with** other builders, especially with Dave Tesch and Brian Baylis, helped to percolate ideas. At Trek I used a #4 tip to braze, which is huge for lugs, but it was also the means to earn bonus money beyond the daily quota—in those days, a few of us could braze a main triangle in seven minutes, including the shifter stops. When I went to work for Dave Moulton, he used a #0 tip, with a brazing style motion like welding, where he sort of pushed the brass in from one side of the lug and then pushedmore again from the other side. He didn't really use capillary action in the way most others do. **So** I compromised the best I could and backed off to a #3 tip. I realized a large tip may be fast, but it wastes a lot of gas. **So,** because of Moulton's influence, I learned to braze more efficiently. I refined my skills working for Bill Holland. At Holland Cycles, I learned to fillet braze and to build frames efficiently one at a time, building fillet brazed tandems and singles complete with internal cable guides. I learned more throagh brainstorming with Bill Holland and Jason Lilly than from any other shop or individuals. And then there are the Saturday afternoons just tinkering around.



Joe brushes a joint with flux, which we already talked about on page 5. The flux forms sort of a glassy shield, protecting the joint until it is fully brazed.

RR: What constitutes good frame prep?

JS: Essentially. it'sjust the proper use of abrasives, power tools, and elbow grease, sometimes with a little sandblasting. Silver brazing requires more prep than brass brazing does. I can brass-braze anything—rusty, dirty, whatever—by relying on the cleaning action of the flux and the effect of the high temperature's ability to burn out impurities. I'm not saying brass brazers don't do good prep, just that it's not as necessary as it is with silver. With silver brazing—the cleaner the better. I'm fanatical about it, because it means better tinning action.

RR: What's that?

JS: It's how the silver sticks to the metal. If the metal isn't clean, the silver doesn't stick well.

RR: What's your favorite part of building a frame?

JS: Well, beginning a new frame **is a** high point. A new name, unwrapping the tubes, checking and verifying specs, mitering and tacking up the frames. Until the tubes are a complete frame, there's a thrill in the challenge of not making a mistake. I thrive on being 'on' through this process, being ultra quality conscious while turning a set of tubes into as perfect a frame as I can. Once all the parts are brazed together, there's little chance for error. The next high point is admiring the painted frame before I box it up and send it off, usually to Walnut Creek.

RR: What other things help brazing?

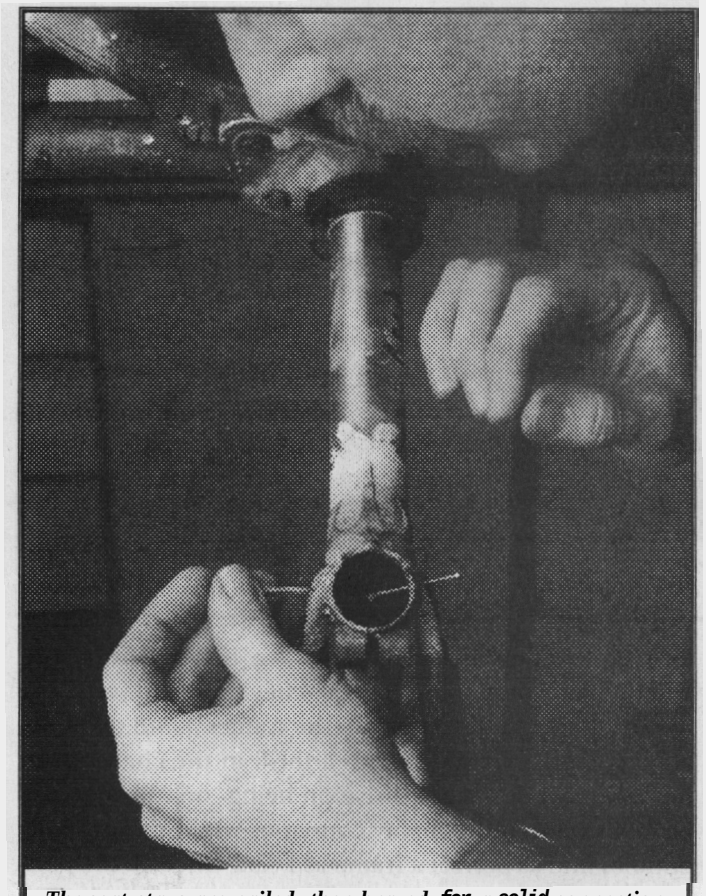
JS: Clean metal and clean flux. Gas **flux** helps. It's a liquid flux that's fed into the flame by a separate tank connected to the acetylene line. *Also,* it's easier for me ***to*** braze when I'm sitting upright and relaxed, rather than standing hunched over and tense. Good brazing starts and stops at a point in the lug so that you don't have to back-track and re-braze an area. The fit of the lug is important, and through experience you develop a feel for the importance of fit to heat conduction and capillary action.

RR: What was it like to repair a frame you built yourself?

JS: I'm still a virgin.

RR: One would only assume, since you've never been married, and I understand your wanting to talk about it, but—

JS: —*What I mean* ***is,*** as far as **I know,** none of my frames has broken. I crashed on the San Diego Velodrome and dented my top tube, so I eventually replaced the tube. When I moved to San Diego in 1983 I took **my** only Trek with me on the flight out. The airline company said "just turn down the handlebars and everything will be fine." My frame was mangled beyond repair, so Dave Tesch *and* I did some destructive testing. With a silver brazed frame.



The seat stays are nailed, then brazed, for a solid connection.

you can clamp part of it in a vise and then heave and ho and muscle and wrench the frame about *so* as to loosen and peel the tubes away from the lugs. With the exception of a few spots in the bottom bracket, I had complete penetration elsewhere. Now that was fun!

RR: Do you like to ride?

JS: When I'm out of shape, like I am now, at 165 lbs, I hate to ride. When I'm in shape, like I was last summer, at 150 lb. it's exhilarating. With two side bets going as incentive, I'll be back to having fun riding by the end of the summer, and about a hundred and fifty dollars richer.

RR: When framebuilders get together, like at a trade show or something, what do they talk about?

JS: We **mostly** bad-mouth and back-stab other builders while simultaneously never giving up any framebuilding secrets.

RR: It sounds like a tightly knit clan. Have you ever built a titanium or aluminum frame?

JS: No, but I used to do a lot of the (non-welding) work on Bill Holland's titanium frames, and I do have a steel frame with a titanium tube as suspension—a beam bike I refined from a few other designs. The top tube telescopes and can be replaced with beams of varying stiffness. It was displayed at the trade show in **1983.** Richard Bryne of SpeedPlay said I "had the Softride suits running scared," and Jim Blackburn said it had "excellent design elements." One of the editors of Triathlete photoed it for their upcoming issue. Tom Piszkin shepherded the concept through evolving designs with help from me and others.

RR: Clearly, the material itself doesn't make the frame, but ....

JS: I'm not sure what you mean–"the material doesn't make the frame–"

RR: Well, then, let me ask it differently: I know, as a craftsman, you appreciate the different qualities that other materials provide, and the skills of the builders who build with them. Yet your framebuilding life is all steel. Is it a trap you stepped into early at Trek and now can't get out of, or has your growing experience with steel strengthened your convictions about it as a frame material?

JS: Well, the phrase "simple but perfect" comes to mind. I like steel because it's strong, yet ductile and resilient. Steel is reliable and relatively easy to repair. Steel offers *so* many options in tubing, lugs and dropouts, it's easy to create, and to be creative, with it. And especially with lugs, steel can be handwrought into something exquisite and beautiful. It allows you to do more, with less compromise, than any other material.

RR: What are your strengths as a frame builder, and do you have any weaknesses? If you have any weaknesses, I know our readers will understand that a conscientious fellow such as you will have resolved them by the time this goes to print.

JS: My strong point. I guess it's that I'm well rounded in the various construction methods, and types of frames, and production processes. I can look at a design or concept, whether it's a one-of-a-kind or a production run. and know how to best do it. As for weaknesses, well, I've had a lot of time to get any bugs out. I don't want that to sound cocky, but I'm pretty comfortable with what I do.

RR: Do you think your frames are as good as any?

JS: I think they are, but I also know you cannot expect perfection on every frame from every frame builder. Everybody makes mistakes. I'll build a frame and think it's the best in the world, you know, and the next morning and I notice the brake bridge is slightly off, or there's a pinhole here and there. Or, you know, as soon as the painter puts the primer on it, things I didn't see before show up. I'm not talking about structural problems, or alignment, or anything that affects the ride or fit or life of the frame, and these are things probably only a framebuilder would notice, and maybe only the one who built it would. And, I think these things are issues only on the highest of the high end of frames. On the other hand,

there are a lot of guys who have built one or two frames or ten or twenty. and there are severe problems with them. Whether its heavy file marks or gouges or incomplete brazing or braze-ons that are really crooked or really bad or, you know, it is really, really apparent. You won't find any of those problems on a frame I built, or on frames built by other builders I respect.

RR: Can I tell a story about Richard Sachs, even though it's not exactly what we're talkiig about here?

JS: Sure.

RR: Well, he told me a story once about *a* frame he was building, and–I don't know if I have this all exactly right—but he said he got bad vibes or something from the way the joint was sucking up the silver, but it wasn't anything he could really nail down. But anyway, as he was working on this frame, it just seemed like it wasn't going smoothly, *so,* after he'd finished, he didn't feel good about the frame. *So,* before he had time to reason it out—because he didn't want to rationalize saving it–he sawed it in half.

JS: Sawed it in half?

RR: Well, he sawed it and wrecked it, at least. I'm not sure he actually cut it in half, but, you know, he might as well have. You're only 38 now–how long can you go on building frames? Do you enjoy the work or do you feel pressured?

JS: No, I don't feel pressured. I think now that I've made the leap to buying some major equipment like a mill and frame jig and renting 900+ square feet, I plan on building frames until I lose my eyesight. I have more drive building frames as an independent frame builder than I had as an employee of Trek or Masi. When you are an employee of anywhere you tire of the routine and not having control of your own destiny. I got restless, working for other people. I think as frame builders go, I probably got...without ever building a frame under my own name, I've probably got the longest apprenticeship of anybody in the world.

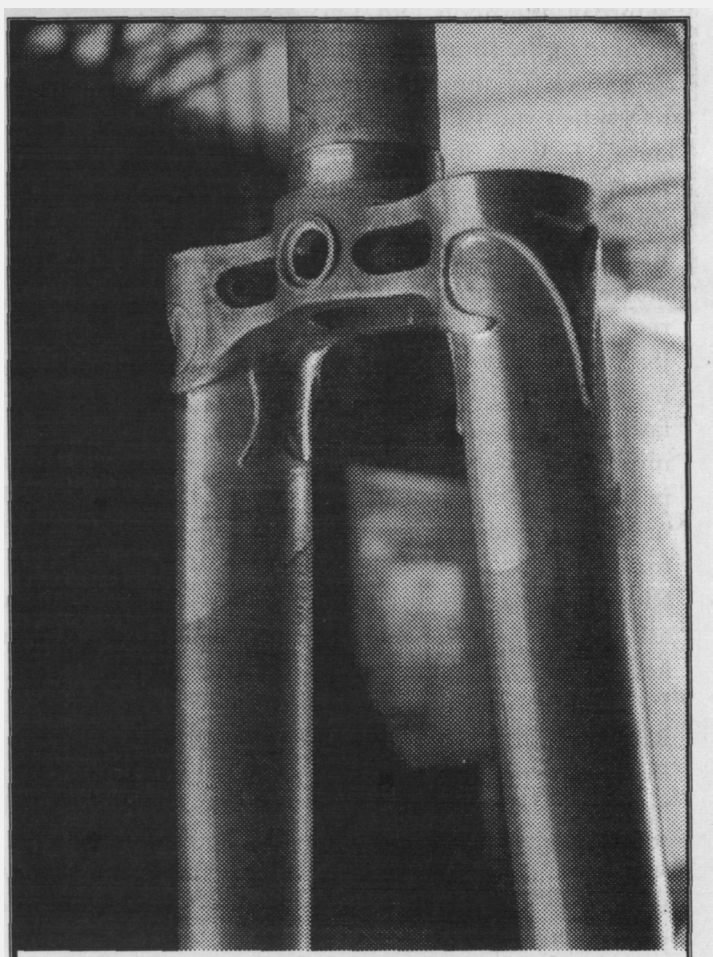
RR: What famous people have you built bikes for?–Not that it matters–

JS: I built frames for the 1988 Russian Olympic Team that included Ekimov, Ken Carpenter, Steve Hegg, Leonard Nitz, Connie Young. I built a fork for Rebecca Twigg. Is that enough?

RR: Plenty. Talk about frame tubing, your experiences, preferences. Old tubing versus new tubing, things like that. When you're building, can you feel a difference?

JS: Well, I think about tubing from a craftsman's perspective—how the tubing responds to braising, and attempts to align it, tells you a lot. My early days at Trek there were times when I would align frames all day, and at that time we used Columbus, Reynolds and Ishiwata. Reynolds 531 was the easiest to align. to bend, and Columbus and Ishiwata were the hardest. But also, when I compare the tubing and the alloy of those days to the same brand today, Columbus and Reynolds, the tubing has gotten so much better that it doesn't... it doesn't cold-set easily, so it forces a you to braze frames straighter.

The newer tubes are definitely better. New tubing is straighter and the finish is smoother, so it's easier to braze. In the old days, tubing had a rough grainy surface, and it came all greasy, so it could sit in the warehouse for years without rusting. In those days most frames were brazed with brass, and with brass brazing yon don't have to be as concerned about the cleanliness of the tube. You still want a clean tube, but the high temperature lets you bulldoze through minor dirtiness or an imperfect surface finish. With silver brazing, because you are not heating it up to a high temperature, it really, really helps *to* have a smooth surface both on the tube and on the lug so that it



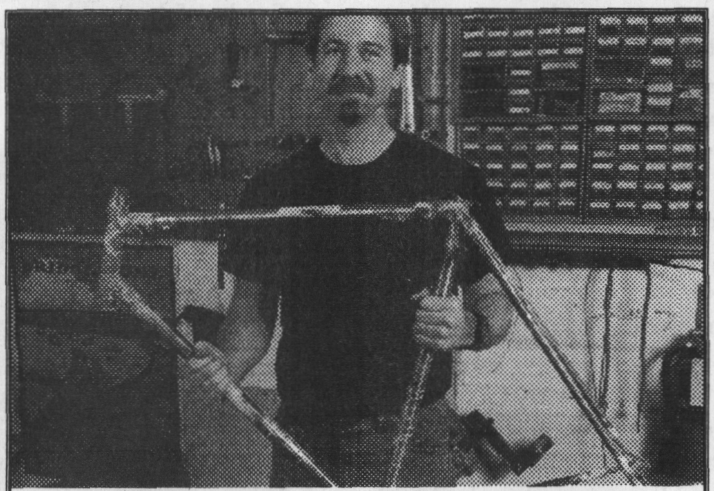
Here's a fully brazed fork, cleaned of flux, before sandblasting, primer, sanding, paint. That tiny hole in the left window is a brazing vent hole. Some makers fill them in. We leave them there as a FrameSavering aid, and after that, you can plug them with beeswax or tape over them, or just leave them. It's up to you.

flows quickly and doesn't have a chance for the **flux** to dissipate and turn black and then you don't get any penetration at **all.**

As far as the new, super strong steels go, the other day, JB asked me to align a frame someone had sent to him for painting, and **I** actually lifted that head tube off the surface plate by about **7** inches and it sprung back to the same position. It was a heat-treated tube from True Temper, and Reynolds **725** and some of the other new steels feel the same way. If I put the same amount of force into, say, a standard-diameter Columbus tube back in the '70s, you know, **the** thing would be bent at a right angle.

RR: What's your social life like? You aren't married and your job—you don't get much chance to meet people, **really. It's not like working the shoe department at REI, or something. . . .**

JS: There you have it. It's a Saturday afternoon and I'm in here in the shop. I think it goes back to the drive you have when you run your own show. I work harder, not because of the money, but because it's all mine.



That's a finished frame, except for the paint.

RR: Do you like to go to movies, read books, listen to records?

JS: Yes, but don't ask me to name any. If I mentioned a favorite movie or a book or music it would sort of pigeon hole me into that, like these profiles of racers–they name their favorite music, artwork or book, and they're defined by it forever. It doesn't work for me.

RR: Well, I hate to disappoint you, but I wasn't going to ask, but now you've got me curious, like the famous monkey. Anyway, do you have a social conscience?

JS: I definitely do.

RR: When you get your journalism degree...any plans?

JS: I won't change when I finally complete third- semester Spanish, the one class separating me from my diploma. I'll shop around for a nice frame to display it, though.

RR: Do you see a way to blend your building and whatever interest you may have in journalism? What would be your ideal job?

JS: I've got two bicycling-related projects I'd like to see published some day, but no career in journalism. Writing is hard work and there's never enough time for rewriting. At least with building frames, I have the time to do it right. I'd like to dazzle the world someday with a spark of genius about something, but those are lottery odds, and so the real purpose in writing is to make me think. But if fate some day brings me an assignment to interview, say, Rebecca Twigg, I'll be wanting to ask her more than 'What's your favorite Beatles song?"

RR: If you were limited to **one** question—what?

JS: What?

RR: One question **for** Rebecca **Twigg.** What is it?

JS: One question? You're putting me on the spot here. Okay, let's see. **I** think I'd be interested in some of the psychological affects **of** sports, or bicycle riding. I think–well, in the movie "Downhill Racer," there's a father and a son, played by Robert Redford, and the son is a champion skier who's been away for a while, skiing, and he comes home to visit his dad, and his dad just goes about his daily chores, and you get the feeling there's not much communication there, not much of a relationship. Then later on, they're sitting inside, and Robert Redford's character is describing with enthusiasm his skiing accomplishments, and the father rudely interupts him, and says, "Well, why do you do it?" So Redford gives him a blank look, like he's suprised anbyody would even ask him that, and says, "To be a champion." And his dad's reply is, "Well, the world's full of champions." So that scene would be a good backdrop to what I'd like to ask her, about the fragility of being number one, and how that fits in with or even interferes with other aspects her life.

RR: That sounds like dinner conversation, to me, and now we know what your favorite movie, by far, of all time is. I hope our readers go out and buy you copies of it, like Dom Delouise saying he likes peanut butter, and in a week he has a few hundred jars of it. It may have been Jonathan Winters. On another topic, I hear you wear a black T-shirt every day, and that's all I've seen you wear. Is that an artistic statement, or a practical decision?

JS: Actually, I think I'm getting out of that phase. I'm growing, I think. But it was a practical decision, having to do with not knowing how to deal with oil-stained laundry. I used to wear white and they got splattered, so one day I just said, "That's enough, I'm wearing black from now on." I have sixteen of them. Now if I show up in anything other than black, it's a topic of conversation.

END

A HISTORY OF JOE-BUILTS

BILL HOLLAND CYCLES, SPRING VALLEY, CA
(1997-1990, 7+ YEARS)

Built about 300 custom frames, lugged or fillet brazed. Built about 20 tandems, some with complete stainless steel internal cable routing, one with S&S couplings. Made track frames for Ken Carpenter to compete in keirin racing in Japan. Performed all braze-on and repair work on various brands for JB Paint. Some common repairs: replace right dropout, replace down tube, sometimes top tube(front-end collisions), replace right chainstay, replace fork blades, replace steerers. Worked out bike-handling problem for Rebecca Twigg. Designed and built beam bike.

MASI, SAN MARCOS, CA
(1990-1984, 5+ YRS)

Made all Gran Criterium forks for about one year and then became Masi's chief framebuilder for four years. Built 700 Gran Criteriums. Hundreds of 3Vs. Also, made about 100 sprint and pursuit frames for the following competitive track racers: Ken Carpenter, sprint, Nationals, Pan Am games and 1988 Olympics; Viatcheslav Ekimov & Russian National team, team pursuit, 1988 Olympics; Junior World pursuit team in Morroco(year?); Eddie B's Subaru-Montgomery team, team pursuit, (Hegg, Nitz); Connie Young, Karen Bliss, sprints;...Janie Eickhoff. Bobby Livingston, Les Barceski, Rory O'Reilly...

During my five years at Masi, Dave Tesch, Rob Roberson and Dave Gramont each built frames for about a year or less and did good work. All frames were hand-filed by Gregorio, Raul and Antonio, three cousins from Mexico, whose finish work outclassed any Masis I've ever seen, American or Italian. Gran Criteriums were brass-brazed, lugs were proprietary Masi by Henry James, tubing was Columbus SLX, SPX. 3Vs were silver brazed, Alberto Masi designed internal lugs via Henry James, tubing was True Temper, Masi specs.

In 1986 I toured a segment of Italy's bicycle industry on a trip with Masi owner Ted Kirkbride and Tom Eason's IO-Speed Drive sales crew (Masi's distributor). Toured Campy, Rossin, Billato(a subcontractor frameshop), and Alberto Masi's shop at the Vigorelli velodrome.

DAVE MOULTON, CALIFORNIA
(1990and 1985, 1 yr)

Brazer. Mains, forks, rear triangles.

TREK BICYCLE CORP., WATERLOO, WI,
(1982-1979,3+ YRS)

First year: Shipping, assembly, applied decals and badges, put small parts in small plastic bags, boxed 'em up.

Finish and Alignment: Aligned several thousand frames and forks that were silver brazed with Reynolds SL, Columbus SL and Ishiwata 022 tubing. The Ishiwata-tubed frames were the stiffest, most resistant to cold-setting, followed by Columbus. Reynolds took a set much, much easier. The rule of thumb at the time was that Reynolds was the resilient, forgiving, comfortable ride most suited for touring; Columbus for sprinters. The difference was definitely noted on the alignment table. The alignment procedure evolved through several systems, depending on who was the production manager. (Visits by potential stockholders unveiled the laser-light version.) Finished several thousand frames and forks. Finishing frames required the deft use of two air-powered tools, the right-angled die grinder and the dynafile. The die grinder used a three-quarter inch abrasive disc, the dynafile a 24 inch x one-quarter inch abrasive belt, both used to remove excess brass, silver, burrs, etc. Like most beginners with air-tools, I butchered a few frames at the start. In due time though, I mastered the techniques—balance, pressure, speed—I'm still a Samurai with the tools today.

Second year: Mains Brazer. Brazed about 5000 main triangles, 25 to 45 per day. Chasing the daily quota raised Joe's pay 50 per cent. Quota was raised. Joe's pay went down a bit. The quota remained at a reasonable rate and my output was one of the highest in quantity and quality. Brazing a main in seven minutes required a large torch tip, conservation of motion, and 'no-look' brazing. 'No-look' means one did not look up inside the joint of the bottom bracket, for instance, to see if brass had penetrated fully; one knew the brass was there.

Third year: Fork builder. Built a few thousand complete forks using Haden-type crowns and the top-of-the-line Cinelli fully sloping with reinforcement tangs.

RIVENDELL FRAME ORDER FORM

INDICATE THE MODEL YOU WANT

Road Standard • LongLow • All-Rounder • Unsure
TOP TUBE: ___ Std ___ Short ___ Unsure

FOR A COMPLETE RUNDOWN OF THE DETAILS, PLEASE SEE OUR CATALOGUE OR CALL FOR A FRAME INFORMATION PACKAGE. OR, JUST CHECK "UNSURE" AND WE'LL SEND YOU THE INFORMATION.

PRICE: FRAME & FORK: $1,375

for orders received thru October. **Price now includes a painted head tube painted** (PHT)—**a cream head tube, as opposed to the same color as the tubes; and matching cream lug windows.** The former base price was $1,225, with these options adding $150, but virtually all frames go out this way, so now it's standard. If **you** don't want this deluxe treatment, deduct the **$150.**

Note: Our cost on a frame exceeds $800 in material and labor alone, and we typically spend between three and ten hours hashing out the details. Deposits lock in the price at the time of the deposit, but please don't "lock in the price" unless you're serious about a frame, as the increasingly long lines tend to discourage others from ordering.

Thank **you!**

SIZES AND SIZING

ROAD OR LONGLOW (CM): 52 through 65cm
ALL ROUNDER (CM): 46 through 61cm

My height and weight
Saddle height (center of bb to top of saddle)
Pubic bone height (floor to bone, bare feet 10" apart)

FRAME SPECS

REAR SPACING: Road & LongLow: 130mm; All-Rounder: 135mm
BRAKES: Road Std—short-reach sidepulls.
LongLow—cantilevers or Standard reach sidepulls
All-Rounder—cantilevers.
HEAD TUBE EXTENSION: All frames get and 15mm head tube extension (HTX), to allow a higher handlebar position and more comfort.

COLORS

When we get a deposit, we'll send snapshots of the colors. By July 4 we'll show samples on our website, too (www.rivendellbicycles.com).

Silver • Burnt Orange • Burnt Tangerine Pearl (+$60)
Solid Green • Pearl Green • Lt. Green Metallic •
Smokey Blue • Deep Blue Metallic • Red *Painter's Choice

note: Painter's choice *is* Joe Bell's choice. He'll pick a color that is in keeping with our style, but is not on our color palette. It won't be a neon or fade, in other words, and he won't duplicate it, so you'll have a one-of-a-kind.

EXTRAS

HEADSET, ISAIE **$40.** Made by Tange-Sekei of Japan. Excellent headset, you won't beat it. I want it

BOTTOM BRACKETS: We can install any bottom bracket we list in our catalogue. We need to know which crank you'll use. Prices vary from **$30 to $135,** with not much in between. Call for details.

FRAME PUMP. Chrome plastic Silca, to fit. frame, **$15**
Chrome goes with all our colors.

FRAME SAVERING **$25** (we do it, and give you the rest of the can)

We consider this essential. If we install headset or bottom bracket, have us do this, too. If you take the frame bare, you're better of (financially) doing it yourself. It takes 20 minutes and 5 rags to clean up after.

TOUCH-UP PAINT $10. The paint we use is meant to be sprayed on by a pro, so don't expect seamless results. If we change colors next year, there's no guarantee that we'll still have your 1998 available (it may be a special mix requiring us to buy gallons of two different colors at $30/gallon) Pearls are harder to touch-up than solids. Shelf life, about 6 months. Our advice? Get it while you can, and if it dries up before you need it, make do with a close approximation.

FREIGHT: UPS Ground to the lower 48, **$35**

DELIVERY: THE BIG HURDLE

As of June 1998, it's six to seven months. When we get your order and deposit (minimum $100, maximum whatever you can stand), you get the next place in line, and we'll tell you our target delivery date, barring unforseen delays. You can pay the balance the week before Joe cuts your tubes, or chip away at it with payments along the way. Each time we get a payment, we send you a receipt showing the progress and balance due.

Signature Date

DEPOSIT

MINIMUM $100 DEPOSIT: BALANCE BEFORE SHIPPING.

Check enclosed. Check number
MasterCard/Visa #:
Expiration: /
Ship to:
City St. Zip
Day Phone:

Send by mail or fax to:

RIVENDELL BICYCLE WORKS
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PIAW NA'S HALF-STEP STORY IN RR11 STIRRED UP MORE INTEREST THAN I EXPECTED, AND AT LEAST FORTY OR FIFTY RIDERS WHO HADN'T BEFORE CONSIDERED IT ARE GIVING IT A SHOT. WE WON'T CONTINUE FOREVER PROMOTING HALF-STEP GEARING AS THE ANSWER TO ALL PROBLEMS, BUT I DARE YOU TO UNDERSTAND IT AND NOT BE INTRIGUED. ANYWAY, READING PIAW'S PIECE PROMPTED FRANK BERTO, FORMER TECHNICAL EDITOR OF BICYCLING! FOR MANY YEARS (INCLUDING THE TOURING YEARS IN THE LATE '70S) TO WRITE THIS FOLLOW-UP. —GP

HALF STEP GEARING

BY FRANK J. BERTO

I consider myself the Gran Turismo Master of the Ancient and Honorable Fraternity of Gear Freaks. In the Age of Shimano, gear freaking is dead. It's still possible, but it isn't fun anymore, kind of like kissing your sister.

Gear freaking is about optimum combinations of chainwheels and freewheel sprockets. Say "50-45-24 x 11-13-16-20-26-34" to an old male gear freak, and he knows you're talking about an 18-speed, half-step plus granny, gear train with 50-, 45-, and 24-tooth chainwheels, a freewheel with 11-13-16-20-26-34tooth cogs, giving a high gear of 123-inches and a low one of 19-inches.

HALF-STEP GEARING HISTORY

Half-step gearing has been around for at least fifty years. A 1948 Le Cycle article on gear selection suggested 50 47 x 14-16-18-20. That's a half-step, although 1416-18-21 would have been better.

Half-Step was popular with pro racers until 1960. Rebour's drawings of Tour de France bicycles showed half-steps (something like 52-48 x 14-16-18-20-23) until 1959. After 1961, all of the racers used crossovers (something like 52-44 x 14-15-16-17-19).

The racers switched to crossover, and components were redesigned to accommodate the bigger chainwheel differences. That was the difference between Campagnolo's 1961 Gran Sport and 1962 Record rear derailleurs. Front derailleurs got better. Campagnolo changed the chainwheel bolt circle from 151 mm to 144 mm. Six-sprocket freewheels became common, which allowed an extra one-tooth step.

Half-steps gradually fell into disuse. However, touring cyclists learned to set up the outer and middle chainwheels with a half-step difference and add a tiny granny inner chainwheel to haul up the hills. The 11 to 34 half-step plus granny in the first paragraph has a 6 to 1 gear spread, 15 useful gears and 11% steps between the high gears. I've ridden that bike for ten years. My three other bikes, with Shimano eight-cog cassettes 24-speed gear trains, can't match this 18-speed.

SETTING UP A HALF-STEP

The steps between the freewheel sprockets should be mathematically even, and the step between the chainwheels should be half of the average freewheel step.

For example: The classic 1970s ten-speed used a 14-17-20-2428 freewheel. The steps are 17/14 = 1.214, 20/17 = 1.176, 24/20 = 1.200, 28/24 = 1.166. The average step is about 19%. Half of that is 9.5%. 52/48 chainwheels = **1.083,** = 8.5 %. A 52/47 = 1.106 = 10.5%. Four or five teeth is the right chainwheel difference.

There are a few dozen five- and six-cog freewheels with nice even steps. I used to plot gearing on logarithmic paper and you could see the exact chainwheel difference There are several examples on the next page.

The perfect five-speed freewheel is 13-16-20-25-31. It is perfect because the *3-, 4,* 5-, and 6-tooth differences give steps of 23%, 25%, 25%, and 24%. A 48-43 crankset gives a perfect 12% difference.

WHY HALF-STEPS ARE DEAD

I'm writing about half-steps in the past tense for two reasons. One reason is mathematical. Perfect half-stepping doesn't work with 7, 8, or 9 rear cogs. You can't divide the 20-tooth difference of a 12 to 32 cassette into 7, 8, or 9 equal percent steps. The two-tooth step is twice as wide as the one-tooth step. I show some seven-speed combinations hut they are not very good. **You** end up with near-duplicate gears, which ruins the predictability of **half-step** shifting. If you like the idea of a half-step, think five- or six-speed freewheels, and good luck finding the fives.

The second reason half-stepping dead is Shimano & mountain biking. Half-step plus granny is clearly not for mountain bikers. They need the simplicity of big ring for roads, middle ring for trails, and granny for hills. Shimano developed indexed shifting, Hyperglide sprockets, Superglide chainrings, and 7- and 8-speed cassettes to give the mountain bikers idiot-proof shifting. The racers are quite happy with their narrow-range 14-, 16-, or 18-speed crossovers.. Heck, they were happy with 10-speed crossovers. The best candidates for half-stepping are tourists and road riders who want or need wide range gearing with small steps between gears. That market is not large enough to support the correct hardware.

Hyperglide sprockets have 'gates' between adjacent sprockets so that the chain slides smoothly between gears. The sprockets have to be keyed in precise positions. There are two **or** three gates **so** all 18-tooth sprockets are not alike. That's the reason for cassettes. Rivet everything together so the gear freaks can't screw it up.

Superglide chainrings are more of the same. The hooks and pins on the chainrings that make indexed front shifting **so** bulletproof are designed for a 10-tooth difference. Period.

HALF-STEP IRONMONGERY IN THE AGE OF SHIMANO

Okay, you say, *I still want a* ***12-speed half-step or half-step plus granny. Go*** for it! **You** need an appropriate freewheel. There are plenty of old Shimano freehubs and twist tooth sprockets about. They never wear out. Use appropriate chainrings—Willow makes some, and there are others out there, too. If you want index shifting, find shifters with **six** clicks. That may be a problem.

Front derailleurs aren't a problem, though. You can use a road front derailleur. Road front derailleurs aren't deep in the back so you can't use the granny with anything hut the largest sprockets, but the unavailable gears are duplicates, anyway. Or take a grinder to the inner cage of a mountain bike front derailleur until the lower edge of the inner cage clears the middle chain ring.

Note: Frank is currently working on a book about the history of derailleurs, but will still answer questions. Send on SASE to

Frank Berto
70 Crane Drive, San Anselmo, CA 94960.
or
Email:fberto@x.netcom.com.

Good six-speed, half-step combos

Cogs	Chainwheels
13-15-17-20-23-26	50/46
13-15-18-21-25-30	50/46
13-16-19-23-28-34	50/45
14-16-18-21-24-27	52/49
14-16-19-22-26-30	52/48
14-17-20-24-28-34	52/48

Acceptable seven-speed, half-step combos

Cogs	Chainwheels
12-14-16-18-21-24-28	48/45
12-14-16-19-22-26-30	48/44
12-14-17-20-24-28-34	48/44
13-15-17-20-23-27-31	50/47
13-15-18-21-24-28-34	50/46
14-16-18-21-25-29-34	52/49

RR Note

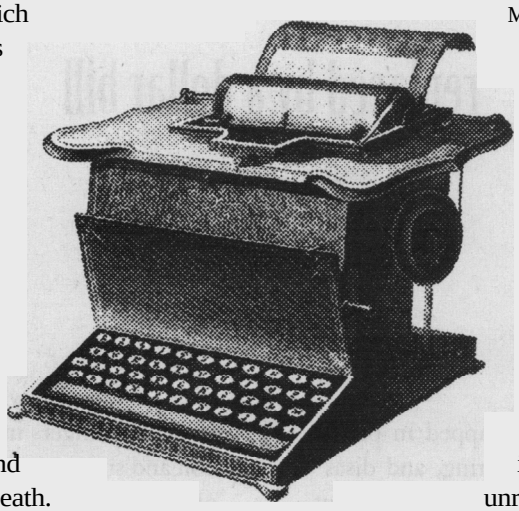
Frank submitted more combinations than this, including about thirteen different five-speeds, but we didn't see the purpose in listing too many currently unavailable combinations, a large number of which included 34t cogs, which are largely unavailable these days. Fifteen years ago, customizing was easier. Elsewhere in this issue there's a note about Marchisio, a freewheel maker in Italy who may be able to make custom ratios. Good freewheels are always expensive, but we'll do what we can to get some good combinations. Sachs has been chopping its selection lately, and that'll probably continue at a faster rate, now that SRAM owns Sachs. It seems like, when companies buy other companies, they usually jettison some good stuff. We recently came upon the last of Sachs's 13 x 32 six-speed freewheels. They're listed in the Flyer. Plop one of those guys on, run it with a **50** x 46 or a 46 x 42 plus the granny of your choice, and you'll do o-kay. Or reference page ***30*** of this issue for Sach's still-in-production ratios.

BY IAN FRAZIER

Typewriter Man

The need for a new letter on a manual typewriter leads the author to the shop of Martin Tytell, now in his seventh decade as repairman, historian, and high priest of typewriters.

I WRITE ON A MANUAL TYF'EWRITER, BUT DON'T bug me about it, okay? I know that recently certain machines have been developed that produce manuscripts more efficiently than a manual typewriter ever could. When these machines began to take over, people constantly asked if I used one; for a while that was the fact about me people seemed most interested to know. When I replied that I didn't, people usually became vexed, or in some cases nearly enraged. The arguments that followed were of a pattern. Those in favor of the new machines described their many advantages, never failing to include the ease with which the new machines could move paragraphs around. I defended myself with explanations that started out mild and reasonable and quickly descended to a whiny *I just don't like them!* None of this got anybody anywhere. Then one day a champion of the new machines pinned me down on the subject, extolling them, as usual, and finally confronting me with the inevitable question: Did I use one? My panic began to mount as I saw what lay ahead — the arguments, the rebuttals, and the recriminations. I took a deep breath. "No...I mean, yes!" I replied. Satisfied, the prosecutor moved on to other topics, as my heart rate returned to normal.



Then suddenly that question was not around anymore. No one has asked me it in years. I guess the victory of the new machines has been so complete that there's no longer a need to hunt down resisters. Why bother? Time will take care of us. Meanwhile, I continued to write on the same Olympia portable manual I had bought with my first paycheck from Oui magazine, in Chicago in **1973.** I liked it so much that when I got a little money, I bought other Olympia manuals, fancier models, but all of them used, of course. They are perhaps not the best manual typewriters ever made — experts often give that distinction to Underwoods or Hermes — but they suit me, and I've stuck by them. The hell of it is, though, that after about twenty years they start to break. One afternoon in **1994** the e key on my favorite Olympia stopped working. E is not a rarity, like @ or %, that you can mostly do without. I was living in Brooklyn at the time. I called around and found a guy there who claimed to be able to fix anything, typewriters included. When he returned the typewriter to me, all the keys were at different heights, like notes in a lilting tune, and the e bar hit the ribbon hard enough to make a mark only if you helped it with your finger.

THE MANHATTAN YELLOW PAGES HAS SO MANY LISTINGS under "Typewriters" that you might think getting someone to fix a manual would not be hard. The repair places I called were agreeable enough at first, but as I described the problem (Fixing an e, for Pete's sake! How tough can that me?), they began to hedge and temporize. They mentioned a scarcity of spare parts, and the difficulty of welding forged steel, and other problems, all apparently my own fault for not having foreseen. I took my typewriter various places to have it looked at, and brought it home again unrepaired. This went on for awhile. Finally, approaching the end of the Yellow Pages listing, I found an entry for "TYTELL TYPWRTR CO." It advertised restorations of antiques, an on-premises machine shop, a huge inventory of manuals, and sixty-five years of experience and accumulated parts. The address was in lower Manhattan. I called the number, and a voice answered, "Martin Tytell." I told Mr. Tytell my problem, and he told me he certainly could fix it. I said I would bring the typewriter in next week. "You should bring it in as soon as possible," he advised. "I'm an old man."

I got on the subway to Fulton Street right away and carried my typewriter up the stairs to his second-floor shop at **116** Fulton. I saw that he was indeed an old man, standing on a teetering stepladder and moving a heavy typewriter onto a

high shelf while a woman's voice offstage told him to be careful and reminded him of his recent heart surgery. He climbed down and shook my hand. He was wearing a clean white lab coat over a light-blue shirt and a dark-blue bowtie. His head was almost bald on top, and fringed with white professor-style side hairs that matched the white of his small moustache. His blue eyes were slitted and wary and humorous, and all his features had a sharpness produced by a lifetime of focusing concentration down to pica size. He examined the typewriter and gave me a claim check and told me I could pick it up in a few days. His shop fixed the e and completely overhauled the machine and got it running better than it ever had.

I ended up going back to see Mr. Tytell many times. I moved from New York to a distant part of the country, but when I returned for visits, I brought typewriters for him to repair. I met his wife, Pearl, and their son, Peter, who's fifty-two. Both Pearl and Peter are handwriting and document experts who often testify in court cases where written evidence is involved. Mr. and Mrs. Tytell have been married for fifty-four years. Pearl Tytell is handsome and petite, with unwavering blue eyes and long, silver-blonde hair, which she wears in a braid wrapped carefully on top of her head. For clothes she favors suits in subdued colors or pleated skirts in dark plaid, and neat white blouses with a cameo brooch at the throat. She looks like someone you would believe on the witness stand. Her habit of accuracy provides running footnotes to the autobiography her husband likes to tell. The shop is mostly floor-to-ceiling shelves of typewriters in cases or wrapped in plastic sheets, boxes of typewriter parts past numbering, and disassembled typewriters on benches, all in a labyrinthine layout beneath fluorescent lights. Mr. Tytell works in one part of the shop and his wife in another, invisible but nearby among the shelves.

When we woke in the morning, the tooth would have been replaced by a dollar bill and a letter from the tooth fairy.

WHEN MY FATHER WAS A COMMUNICATIONS OFFICER ON AIRCRAFT CARRIERS in the Second World War, he sent his family letters typewritten on flyweight airmail stationery. He single-spaced and made almost no mistakes. To his younger brother in the hospital he described everything about the ship Boxer — the war had ended by then, and censorship had eased — that caught his eye, from the shadow of the bridge moving through the clear depths to the formations of the fighter planes above. His ship was the flagship of a convoy, and so carried both "a captain and an admiral. He described how the one would send the other a message via the communications room, to be typed up in many copies and passed along in a procedure that took a long time, especially considering that the two men were at command posts separated by just a flight of stairs. He brought home sheaves of Navy documents in his sea chest. Many were stamped TOP SECRET in red ink and had holes punched in them and signatures affixed. They had to do with maneuvers and requests obscure to me, and the capture of a German submarine. They were on paper so light you could almost see through it, and their carbon-copy typescript was fuzzy and thick.

My father used a stand-up Royal typewriter, green with a tortoiseshell finish, and its type was small and clear. I remember him sitting with his hands poised over it, little fingers out to the sides, typing what I now know was a description of one of his patents or a letter of complaint to the Ford Motor Company. If one of my sisters or brothers or I lost a baby tooth, we always put it in an envelope under our pillow. When we woke in the morning, the tooth would have been replaced by a dollar bill and a letter from the tooth fairy. Generally these letters discussed some bureaucratic problem the tooth fairy was having with his lost-tooth filing system or with a secretary who had recently gotten pregnant and quit. The letters were neatly typed in the same clear print as on my father's Royal. He did not like me to fool with the typewriter, but I tried to use it when I barely knew how to write by hand. It always surprised me what a bad job I did and what a mess I made. Somehow I always had to get my fingers into the works, tangling the typewriter ribbon and smearing ink and detaching the spool. Like the sound of a typewriter bell, that smell of an inked silk typewriter ribbon, a smell combining sootiness with a medicinal volatility, has almost vanished today.

In Mr. Tytell's shop, of course, it is in good supply. I can't say that when I breathe it there, impressions of the past come to me in a conscious or orderly way. It's deeper than that — as if I had opened my father's sea chest again and stuck my head into its stored-up aura of 1940s wartime. Mr. Tytell understands that his trade involves more than just some possibly out-of-date office machines. "We don't get normal people here," he says with a certain pride. Coincidentally or not, the second time I saw him he made a point of showing me a small typewriter in a steel case as smooth and silvery as a gun mount on an airplane wing. He told me it was an uncrushable typewriter case designed during the Second World War to survive

being run over by a tank. Then he began to tell me his experiences working on typewriters for the government during the war.

THE SECOND WORLD WAR WAS A MANUAL-TYPEWRITER WAR. One would be tempted to say that never will typewriters be nearly so important in a war again, were it not for the many manual typewriters in the Serbian and Croatian alphabets that Mr. Tytell has sold for use in Bosnia in recent years. Armies in the Second World War took typewriters with them into battle and typed with them in the field on little tripod stands. In the United States, typewriters were classified as wartime materiel, under the control of the War Production Board and unavailable for purchase by civilians without special authorization. Among the ships sunk off Normandy during the D-Day invasion was a cargo ship carrying 20,000 Royal and Underwood typewriters intended for the use of the Allies. Mr. Tytell says that as far as he knows, all 20,000 are still down there. More than other veterans, a man whose life has been typewriters is likely to divide his history into short summaries covering before the war and after the war, and volumes in between.

Martin Tytell was born to Russian Jewish parents in New York in **1913,** and he grew up on Rutgers Street, on the Lower East Side. He was the ninth of ten children, seven of whom survived. His father had come to America from Argentina, where he manufactured wheels for the Argentine government. In New York he worked as a machinist. Martin always loved tools and screws, and he began working in a hardware store when he was still a boy. He carried a screwdriver wherever he went. One day in gym class at Thomas Jefferson High School, the assignment was rope climbing, which Martin thought was for monkeys, so he got the teacher to let him spend the period in a nearby office answering the phone. The office had an Underwood No. 5 typewriter, which Martin began to examine and take apart. That kind of Underwood was designed so that just a single screw disconnected the carriage, to allow for basic cleaning and maintenance without disturbing the rest of the machine. The screw was hard to put back in, however, so Martin had to leave the typewriter in pieces. This happened several times. Finally, the repairman who came to fix the Underwood went looking for the kid who was taking it apart. He ended up offering to teach Martin how to work on Underwoods at his apartment in Canarsie. Martin went there for six Sundays in a row. Soon he could take an Underwood apart and put it together blindfolded, a trick that won him the account for maintenance of all the typewriters at Columbia-Presbyterian hospital when he went there one day cold-canvassing for a job. Before he was out of high school, he had several other accounts to maintain typewriters around the city, and his own office at 206 Broadway.

He found that by adding an idler gear he bought for forty-five cents on Canal Street, he could make a typewriter go from right to left

The records of his present business go back to 1935. By then he had moved to an office at 87 Nassau Street, which he left a few years later for **123** Fulton Street, which he left in 1964 for where he is now. As well as fixing typewriters, he had them for rent and sold them new and used. Pearl came to work for him in **1938.** At about that time he added a new service to his business — converting American-made typewriters to foreign alphabets for the stationery department at Macy's department store. He did these jobs on short notice and fast. Macy's would tell a customer that they could provide a typewriter in the customer's language before he left town; then Martin would remove the type from an American typewriter, solder on new type for the alphabet desired, and put new lettering on the keyboard. Usually he converted to Spanish or French, not difficult jobs, but he did Russian, Greek, and German, too. He found that by adding an idler gear he bought for forty-five cents on Canal Street, he could make a typewriter go from right to left. That enabled him to do Arabic and other right-left languages such as Hebrew and Farsi.

Nights he took courses in business administration at St. John's University. When a recruiter came and made a pitch about the Marine Corps to the students there, Martin decided to join the Marine Corps Reserve, hoping to go on to flight school and become a Navy pilot. He did his basic training at Quantico and then served part-time at bases in the New York area. On his own he took flying lessons at an airfield on Staten Island. Pearl took lessons too; they courted while learning to fly. Pearl briefly considered becoming a ferry pilot for the military. Martin earned high marks on the entrance tests for flight school, but in the end didn't get in. The official reason was his flat feet. He thinks he would have made a good pilot, and that the real reason was cultural — that the Navy preferred Waspy Ivy League types. The officer who signed his honorable-discharge papers in November 1940 told him privately that "night-college guys" like him generally do not do well in flight school.

Factories that make typewriters use the same equipment and methods as factories that make guns. By the time the United States had entered the war, most American type-

writer manufacturers had changed over to the production of things like bombsights and rifle barrels. As much as the war needed typewriters, it needed guns more. The lack of new typewriters sent the War Department scrambling for whatever machines it could find, in whatever shape; this led naturally to the shop of Martin Tytell. His sales business was nonexistent and his income from rentals slim, and he began to do more and more work for the government, fixing up used machines. In **1943** the War Department got a windfall of Remington typewriters designed originally to be sold in Siam. By then Martin was back in the service, in the Army this time, so Pearl (by then Mrs. Tytell) went down to the Pentagon and examined the machines and saw that they could be converted from Siamese to what the military required. An official of the .War Production Board who had been an executive for a big typewriter wholesaler in the Midwest got Martin transferred from Fort Jay, on Governors Island, to a detached-duty unit called the Enlisted Reserve *Corps* for ninety days' service. Martin did the work on the Remingtons in his shop on Fulton Street while spending his nights at home.

From the kinds of typewriter jobs he was asked to do, and especially from the alphabets involved, Martin could make good guesses about upcoming strategy in the war. He predicted to the day the landing at Normandy. For a private first class, he saw the war effort on an unusually big screen, as he kept the typewriters working at Fort Jay and at the Manhattan offices of Yank magazine and at recruiting stations in the city and upstate. He spent much of his time assigned to the Army's Morale Services Division, at 165 Broadway, which dealt in information and propaganda. There he received his hardest job of the war — a rush request to convert typewriters to twenty-one different languages of Asia and the South Pacific. Many of the languages he had never heard of before. The War Department wanted to provide airmen, in case they were shot down, with survival kits that included messages on silk in the languages of people that they were likely to meet on the ground. Morale Services found native speakers and scholars to help with the languages. Martin obtained the type and did the soldering and the keyboards. The implications of the work and its difficulty brought him to near collapse, but he completed it with only one mistake: on the Burmese typewriter he put a letter on upside down. Years later, after he had discovered his error, he told the language professor he had worked with that he would fix that letter on the professor's Burmese typewriter. The professor said not to bother; in the intervening years, as a result of typewriters copied from Martin's original, that upside-down letter had been accepted in Burma as proper typewriter style.

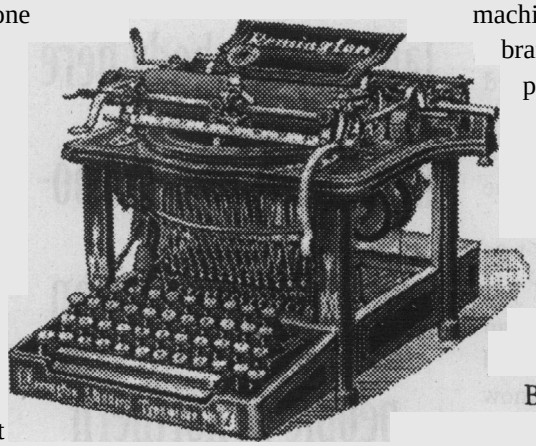
When Martin received his honorable discharge, in November of **1945,** the colonel of his unit gave him a testimonial dinner and a typewriter ribbon done up in the style of a military decoration. Being a civilian made little change in what Martin did every day. He still worked on typewriters for the government, and since manufacture had not yet resumed, he scared up serviceable used ones just as before. For a while he was running an assembly line by car, carrying parts in his trunk to mechanics all over New York who had worked in typewriter factories and knew certain steps of the process. He hired more assistants at his shop, including some displaced people recently arrived from Europe. One of them had escaped from a concentration camp and hidden in the house of a farmer; he worked for Martin for years and sent the farmer a package of food and clothes every month for as long as Martin knew him. Another had learned typewriter repair in Germany before the war, a skill that kept him alive at Auschwitz, where he was given the job of converting to German a large number of Russian typewriters looted by the Germans along the Eastern Front. After the Soviet army liberated the camp, the Russians had him convert the typewriters back to Russian again.

The history of the typewriter from its invention to the present is complicated, but not that complicated. Where you can get lost is in discussions about who made the first writing machine — there are a lot of candidates, in Europe and in the early United States — and in lists of the many typewriters patented and manufactured in the years after the machines caught on. It's easier to say who made the first typewriter that led eventually to commercial success: in **1873** E. Remington & Sons, gun makers of Ilion, New York, began production of an up-strike typewriter with a four-bank keyboard based on a machine developed a few years before by the Wisconsin inventors Carlos Glidden and Christopher Latham Sholes. The company made 550 typewriters the first year, Mark Twain bought one. People said the typewriter would never replace the pen, but in offices it soon did. Its popularity gave women a way to enter the work force in large numbers for the first time. For a while their name, "type writers," was the same as the machines." The typewriter gets some credit for contributing to the movement for women's suffrage and emancipation at the turn of the century. By that time more than thirty companies were making typewriters in the United States, and the typewriter bell had become a commonplace business sound. Remington & Sons sold its typewriter division in 1886, but its name appeared on manual typewriters for almost a hundred years.

The Remington and other early machines were sometimes called "blind writers," because the paper disappeared down into the works and the type struck the paper where it couldn't be seen. A German-born inventor named Franz Xavier Wagner thought that an upright machine whose type hit the paper in sight would be a better idea. He invented one and took his "visible writer" to Remington, but the company wasn't interested. Wagner founded a company and began

making the machines himself in the mid-1890s. Their obvious superiority to the blind writers won the market in a few years, and every typewriter company began to make variations on Wagner's design. With that the basic technology of the manual typewriter was in place, and would remain unchanged. The company Wagner founded soon became the Underwood Typewriter Company, of New York and Connecticut. America produced many other fine makes of typewriter — Royal, Hammond, Corona — but the Underwood would remain the industry standard for the rest of the manual typewriter's reign.

By the 1920s about half of all typewriters sold in the world were Underwoods. Typewriter technology moved on to refinements, with machines that were quieter or lighter or easier on the fingertips. Oddly, no typewriter manufacturer succeeded in improving on one of the most inefficient features of the original machines —the arrangement of the keyboard. Almost all typewriters used the Universal keyboard, also called the QWERTY keyboard, which dated from the experimental machines of Glidden and Sholes. Remington had copied its keyboard from their model, and other manufacturers copied Remington. Today no one can say for sure why Glidden and Sholes arranged the keys that way. Their three-tier layout of letters, with an apparently random selection on the top line, a quasi-alphabetical-order segment,as part of the middle line, and more randomness on the bottom, resists persuasive explanation. As the machinery improved and typing speeds increased, the awkwardness of the keyboard became plain. An industry conference met in 1905 and considered ideas for better keyboards, without result. In 1932 a professor at the University of Washington named August Dvorak introduced a statistics-based keyboard arrangement that improved typing speed over the Universal by 35 percent. He spent decades trying to get his keyboard accepted, but finally concluded that it would be as easy to change the Golden Rule. There just never was a moment when enough people who knew how to type were willing to learn all over again. The QWERTY layout survived on manual typewriters, and slid effortlessly onto electric typewriters and beyond. Today, no matter what kind of machine you write on, the QWERTY, a "primitive torture board" according to Dvorak, is probably the keyboard you use.



As a maker of manual typewriters, America declined after the Second World War. Production' never returned to what it had been; from being the world's largest exporter of typewriters, the United States became the largest importer. The postwar years brought the rise of typewriter companies in countries where peaceful manufacturing was encouraged while we continued to make guns — Nippon in Japan, Olympia in West Germany, and Olivetti in Italy. Olympia and Olivetti quickly grew to multinational giants. Olympia built typewriter factories in Yugoslavia, Canada, Mexico, and Chile. Olivetti, which had been making typewriters since 1911, expanded into England and the United States. In 1959 it bought Underwood, and eventually phased out that famous name. By the mid-1960s manual typewriters had begun to disappear owing to the success of the electric typewriter, an invention that would have its own saga of rise and decline. No one has made manual typewriters in America for decades. The European companies have mostly discontinued their manual lines and moved into various electronic machines. For someone interested in buying a brand-new manual typewriter, a hundred-plus years of typewriter history comes down to this: Olympia still makes a small portable, Olivetti makes two portables and a heavier office machine, and the largest manufacturer of English-language manual typewriters in the world seems to be the Godrej & Boyce Manufacturing Company of India, located on the outskirts of Bombay.

Mr. Tytell goes to his shop **two** or three days a week, depending on how he's feeling. Customers who want to see him call his answering machine, and he calls back and sets up appointments. A sign on the wall that says

PSYCHOANALYSIS FOR YOUR TYF'EWRITER-
WHETHER **IT'S** FRUSTRATED, INHIBITED,
SCHIZOID OR WHAT HAVE YOU

contributes to the doctor-patient quality of the visits. Plus he's wearing a white lab coat and you're not. Some customers arrive in limousines, which wait nearby until the sessions are through. Mr. Tytell has fixed typewriters for such people as Perle Mesta and the Archbishop of Lebanon and Charles Kuralt. Some customers climb sweating from the subway station and stop for a moment in the daylight of Fulton Street to switch the case containing the heavy machine from one hand to the other. Because of a mishap involving a romance novelist, a treasured typewriter, and the wreck of a parcel-service truck, Mr. Tytell now refuses to ship typewriters under any circumstances. Getting a typewriter repaired by him is a hands-on, person-to-person deal.

Several afternoons last spring I sat on a swiveling typ-

ing chair by the clear space on the table where Mr. Tytell lets people test their typewriters before taking them home, and he and Mrs. Tytell and I talked. "People get very emotionally involved with their typewriters," Mr. Tytell said. "I understand it — I talk to typewriters myself sometimes. On the one hand, you have people who love a machine for whatever reason. On the other, sometimes you find a person with an extreme dislike, almost a hatred, for a particular machine. It's funny how the two go together. Recently I got a call from a lady and she had a portable typewriter, like new, and she wanted it out of her apartment right away. It's from a divorce or something; I didn't ask. She's not selling it, she says she'll pay me if I'll just come and take it away. Well, three hours earlier I had gotten a call from another lady her husband had just lost a typewriter he loved, somebody stole it, and it was the exact same make and model this other lady described. So I went and picked up the machine, and when I got back, I called the other lady, and she rushed right down and bought it and carried it out the door. She was overjoyed.

"People hug and kiss me when I fix their typewriters sometimes. That call just now was from a lady that I did a Latvian typewriter for — she was so happy I could hardly get her off the phone. I don't know why, a typewriter touches something inside. A couple — she's the secretary to the Episcopal Church in Manhattan — brought in an old Underwood for an overhaul, and I made it sing, and they came by the shop with coffee and cake to thank me, and the husband wrote me a poem in iambic pentameter. It's called "Tytell, the Wizard King of Fulton Street." You see, people get carried away. They write me letters, they send me fruit baskets, they give me miniature typewriters made out of porcelain. Almost everybody I deal with is an interesting person of some kind. Here's an invoice for a job I did for the only harp mechanic in the New York area, a guy who tunes and repairs harps, and he's decided he wants to translate Homer from the original Greek, and he wants me to make a typewriter in Homeric Greek for him. That's no problem — I've done ancient-Greek typewriters before. I even did a typewriter in hieroglyphics one time, for a curator at the Brooklyn Museum."

On a shelf across the table, just at eye level, was a typewriter bearing the Exxon logo. I looked big and black enough to spill ink all over Alaska, and I asked about it. Mr. Tytell said that the oil company manufactured its own brand of electric typewriters briefly some years ago; he keeps this one for its oddity, and for parts. Then, back among the windings of his shop, he showed me the century in typewriters: a 1910 Hammond portable, with a keyboard that folded out on hinges and hung suspended in air; a Smith Premier Monarch of the 1920s, as solid and imposing as a safe; a Remington Noiseless from 1938, on which the type bar just kisses the roller, or platen, and the keys respond to the lightest touch; a Woodstock typewriter from the 1940s or 1950s, the brand sold for many years by Sears & Roebuck, on which Godrej & Boyce modeled the first manual typewriters it made; a TelePrompTer typewriter of the kind formerly used by TV studios to type up scripts for scrolling on TV monitors. Newer technology has made TelePrompTers obsolete, but Mr. Tytell sells a few of them, usually to organizations that help the hard-of-seeing, who like the outsize type.

Then there's Hausa, a language nobody here has ever heard of, spoken by twenty million people in northern Nigeria.

We sidled through right angles into a dark and cramped part of the shop where we had to proceed by flashlight. "In these cabinets reposes the largest collection of foreign type in the world — a hundred and forty-five languages, over two million separate pieces of type," he said, sweeping the beam over banks of minutely labeled metal drawers. Sixty years of converting typewriters to different alphabets has amassed this inventory, Mr. Tytell can list man's written languages better perhaps than any non-tenured person in the world. "Over there are some languages of India — Hindi, Sindhi, Marathi, Punjabi, and Sanskrit — and next to that is Coptic, a church language of the Middle East; it's a beautiful-looking thing. Then there's Hausa, a language nobody here has ever heard of, spoken by twenty million people in northern Nigeria. Over there's Korean, and the Siamese I took off those Remingtons during the war, which I've relabeled Thai, and Aramaic script, and Hebrew, and Yiddish . . . ." He pointed out with the flashlight drawers of Malay and Armenian and Amharic, and boxes of special symbols for pharmacists and mathematicians. One drawer seemed to be mostly umlauts. He opened it and took out a small orange cardboard box and shone the light on the dozens of mint-bright rectangles of steel inside, each with its two tiny raised dots. "Nobody else in the world would even bother with this stuff," he said.

We wandered to a better-lit area of shelves filled with IBM Selectric typewriters circa 1970. The Selectric was to the electric typewriters what the Underwood was to manuals, and it also is extinct. It has an equally dedicated following; fixing Selectrics is a lively part of Mr. Tytell's business. Mrs. Tytell, who had been on the phone, joined us. I asked Mr. and Mrs.

Tytell what machine, of all the manual and electric typewriters ever made, they thought was the best. Mrs. Tytell said you couldn't really compare manuals and electrics. "I'm prejudiced," Mr. Tytell said, "because I spent so many years servicing Underwoods. Actually, I love all typewriters the same, but an Underwood manual with a serial number in the eight millions" — he climbed at risk onto a stepladder at another shelf and shakily handed one down — "which would be an Underwood made around 1959, is a beautiful machine." He pulled away the plastic that wrapped the typewriter. Its grayish-beige buffed finish, still in good shape, was pure 1959.

Mrs. Tytell tapped her clear-lacquered fingernail on a key in the upper right-hand corner of the keyboard. The key had a plus sign on top and an equal sign below. "This key on this particular kind of typewriter was the deciding piece of evidence in a multi-million-dollar fraud case I worked on a few years ago," she said. "A younger son of a wealthy man had been specifically excluded from inheriting some theaters the father had owned. An assignment document, typewritten and with the father's signature, gave the theaters to the older sons instead. The younger son was twelve when his father died, and he always felt that his father wouldn't have done that to him, because his father used to take him to these theaters all the time. The younger son grew up and became a lawyer and pursued this question, and finally he came to me with the assignment document, and I found that it was typed on an Underwood of this particular model and year. The assignment document had no plus or equal signs on it, but I was able to prove that the machine that had typed it also typed other documents that did have those signs, and that was the clincher. Underwood didn't add that particular key to their keyboard until well after the document in question was supposed to have been signed. When I explained all this to the lawyer for the older brothers, he said, "So what?" A few weeks later they settled out of court for a lot of money."

In the 1980s Mrs. Tytell provided important evidence in the income tax evasion trial of the religious leader Sun Myung Moon. To prove that more than a million dollars in bank deposits were church assets and not personal funds, Moon had produced a number of dated documents. Mrs. Tytell, who studied at the Institute of Paper Chemistry, examined the paper the documents were printed on, and eventually learned what mill had made the paper and what year it was made. Certain intricacies of the papermaking process meant she could have learned the month it was made and maybe even the day, but that wasn't necessary. The paper dated from a year after the date on the documents. "It was what you call a slam dunk," Mrs. Tytell said. Moon went to jail for about a year.

When I remarked to Mr. and Mrs. Tytell that I had seen a certain manual typewriter for sale in a pawnshop in South Dakota, they said, simultaneously, "Buy it!" They said that you never see manual typewriters in pawnshops or at flea markets anymore. Suddenly typewriters have become valuable, and they turn up in museums and antique shows and Hollywood prop-company warehouses. Collectors see typewriters disappearing over the horizon and grab for them. Collecting may become a bigger part of Tytell's business; Peter Tytell regards old typewriters as holy, and tells his parents to hang on to them, and is an avid collector himself. The thought of the typewriter's approaching antiquity reminds me of what happened to Latin, another antiquity. Once Latin was safely dead as a language, it acquired an appeal for scientists and others not only for its precision but because it would remain forever unchanged. Maybe the perfection in form and function of a 1959 Underwood manual will have a similar appeal for people who want a writing system they won't ever have to upgrade. Before I left Mr. Tytell, I asked him if he thought that the manual typewriter would survive.

"I'm eighty-three years old and I just signed a ten-year lease on this office," he said. "I'm an optimist."

"I'm eighty-three years old and I just signed a ten-year lease on this office," he said. "I'm an optimist, obviously. I hope they do survive — manual typewriters are where my heart is; they're what keep me alive. What's so intriguing about a manual typewriter is that it's **all** right there in front of you — all the thought that went into it, all these really smart guys that worked on it and gave their lives for it. The way these machines continue to function, it really is a miracle. You see some old beat-up machine in an attic or someplace and you touch the keys and it still works fine. Companies still make typewriter ribbons — the dry-goods business is as strong as ever — so obviously somebody's still using them. Like in the war, nobody was making typewriters, but people kept on using them anyway. **A** little bit of maintenance and regular use and you can keep a typewriter running a long time. These other machines, computers, and so on, even electric typewriters, they have a soul that's hooked into the wall. A manual typewriter has a soul that doesn't need anything else in order to exist — it exists in itself. People are always going to like that about a manual." **END**

THE TOURING HERON

The Heron Touring bike has been my main bike since March, and will be until I get my new Rivendell in mid-September. I've ridden it twenty times more miles and in more conditions than anybody else (big fish/small pond deal) and I've ridden tons of other bikes in the past 25 years, and have a good basis for comparison. I don't tour a lot these days, but I have ridden across country, and still manage a short tour every year. So even though I'm the *guy* who designed it, I'm also, like it or not, qualified to talk about it. For what it's worth...

The Heron Touring has long chainstays, a low bottom bracket (10 1/2-inches with a typical 700x35), a shallow seat tube angle for putting weight on your butt, a high bar position for riding all day long in a comfortable position, lots of front-end stability, good clearance, and all the braze-ons you'd want except for a low-rider (but you can clamp one on). The frame is super strong, and rigid enough for loads up to about 50 pounds. I've had 63 lbs on mine, and I still passed cars going down Mount Diablo, and I wasn't reckless.

The Heron isn't a gentleman's tourer in the way a Rene Herse or an Alex Singer is. Compared to those bikes, the Heron is a blue collar thug that gets the job done, and probably rides and carries weight better. It costs a third as much, too, and the brazing is at least as good.

A customer's 53cm Heron Touring

I'm not saying superficial beauty isn't a good thing, and I'm not saying the Heron isn't a beautiful frame. What it isn't is extensively hand-filed, with thinned and tapered lugs. But there's a lot to be said for a classically styled workhorse that costs just $700. What other $700 frame is hand-built, silver-brazed, has Reynolds 531 tubing (or its equivalent), investment cast lugs, fork crown, and bottom bracket? I don't think you can fine a better built new frame for *so* little money. Not to imply that $700 won't make your wallet shriek just a little, but in the world of top-quality, hand-built frames, that's cheap.

The "hand-built" aspect isn't that important. The fact is, if we could automate production, we'd do it in a second. Hand-built frames rise above machine-built ones only when they're ornate, superfiled, 99th percentile frames. Still, there's nothing wrong with employing craftsmen to do something that can be done by machine, and that's the case with the people-built Herons.

Silver-brazing is good, but all those fine European frames people worship are brass-brazed, and it's probably smart to say the experience of the builder has more to do with joint-integrity than the brazing material used. Still, silver flows at a lower temperature than brass does, *so* overheating will never be a problem. Waterford prefers silver, and there's no denying that a silver-brazed frame is easier to repair.

Investment cast lugs and crown and bottom bracket are generally desirable features, and in the case of Herons, they're really good ones. If you go back a long way with lugs, you'll recognize elements borrowed from Prugnat (the scalloped points that pretty-up the head tube) and Nervex (the reinforcing rims on the upper and lower head lugs). The underside of the lower head lug has a negative radius, pretty much guaranteeing no cracked downtubes, ever. Again, you can make a crummy frame with investment cast fittings, or a great one without them, but rest assured no frame is hurt by strong, accurate castings. The bb shell threads are square with the frame and clean, the joints are thoroughly brazed and strong.

I think what makes the Heron so good is a combination of things that make sense but by themselves don't make the frame, and good design that results in a frame that handles well loaded or unloaded, and won't frustrate you when you go to dress it up for touring.

It's easy to get in the habit of evaluating how a frame will ride from the geometry chart. People do it all the time. *I* do it all the time. I sit around the house thinking I know all there is to know about frame geometry (please, nobody quote me out of context here), and when I did that to the Heron Touring, before I rode it, I predicted a much more lethargic ride. Not dead, but just sort of a slow bike that you'd have to put up with when it was unloaded, to have it handle *so* well loaded.

It doesn't ride that way at all, and I think that's largely due to the low bottom bracket. Low bottom bracket have been a traditional hallmark of a touring frame, but in their quest to "hybridize" the classic touring bike—and maybe tap into the quasi-cyclocross market, many brands have raised the bottom brackets too high. What for?

The Heron's bottom bracket is as low or lower than that on any bike. It rides well loaded or unloaded. It isn't quick, it's gentle, but it turns fast, sharp corners really nicely, and feels comfortable right off the bat.

I'm still looking forward to my new Rivendell road frame, around mid September, but in the meantime I've got a bike I can dress heaw or light, and I like the way it behaves either way. —Grant

HERON

ORDER FORM

Name_____

Address _____

_____

Phone # (day)_____ (eve)_____

Road ($700) **52** **54** 56 58 60 62 Silver Blue

Touring ($710) 53 (26" wheels) 55 **57** 59 61 63 Silver Blue

Tange Roller/ball headset INSTALLED $55
Phil Bottom bracket INSTALLED: $140
Note: Installations don't include adjusting. The final adjustment should always be done with the stem and *crank* in place.
Frame Savering: $25. We start with a fresh can, do your frame, and ship you the rest of the can.

Local sales tax in California.	___
Freight to lower **48** states	$35
Overseas freight	$100
Alaska, Hawaii	$90
Additional freight for assembled bike:	
...to lower **48**	$50
....overseas	$100
Alaska or Hawaii	$90
Overseas freight	$150
Total	**$**_____

PAYMENT

Visa or Mastercard # _____expires_____

Check or money order # _____ amount _____

SIZING BY SADDLE HEIGHT

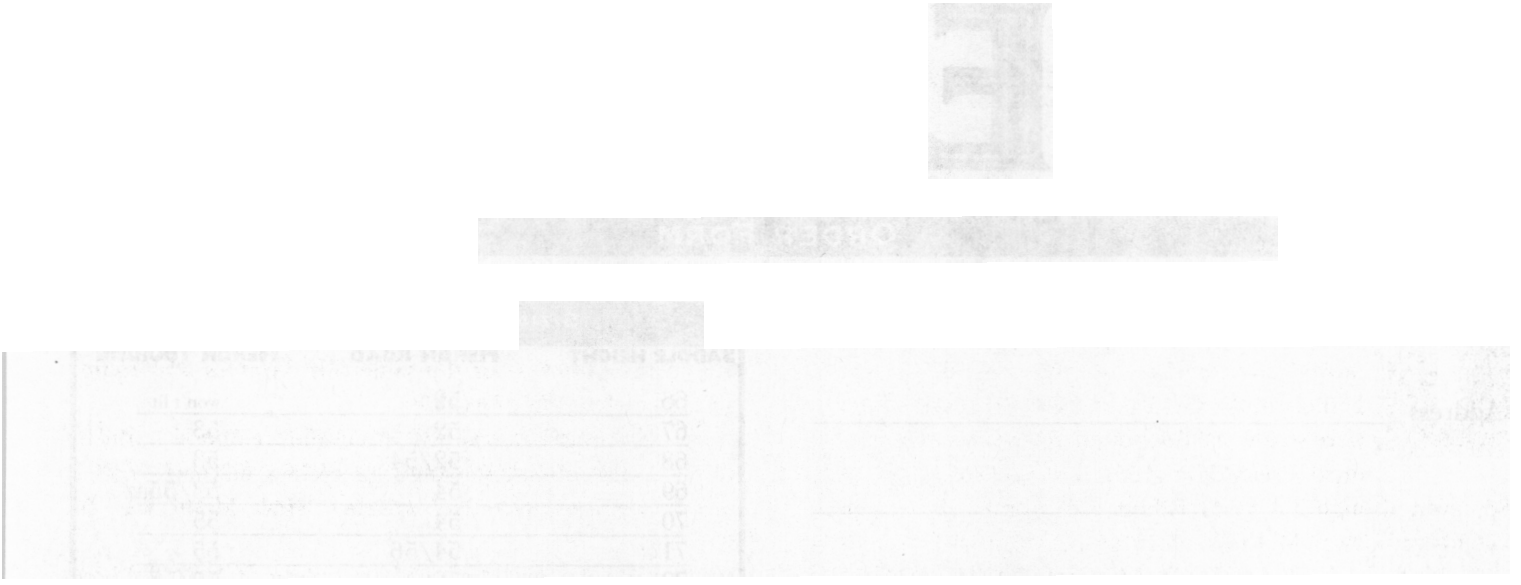
SADDLE HEIGHT	HERON ROAD	HERON TOURING
66	52	won't fit
67	52	53
68	52/54	53
69	54	53/55az
70	54	55
71	54/56	55
72	56	55/57
73	56	57
74	56/58	57
75	58	57/59
76	58	59
77	58/60	59
78	60	59/61
79	60	61
80	60/62	61
81	62	61/63
82	62	63
83	62	63
84	**wont' fit**	**63**

TOURING HERON

SIZE	HEAD	SEAT	FORK RAKE	BB DROP	C-STAY	TT
53	72	73.5	4	4.5	45.5	54.5
55	72	72.5	5	8	45.5	56.5
57	72	72	5	8	45.5	57
59	72	72	5	8	45.5	58
61	72	72	5	8	45.5	59.5
63	72	72	5	8	45.5	60.5

ROAD HERON

52	**72.5**	**73.5**	**4.5**	7.5	**42.5**	53.5
54	**73**	**73**	**4.25**	**7.5**	**42.5**	**54.5**
56	**73.5**	**72.5**	**4.25**	**7.5**	**42.5**	**56.5**
58	**73.5**	**72.5**	**4.25**	**7.5**	**42.5**	**57.5**
60	**73.5**	**72.5**	**4.25**	7.5	42.5	59.5
62	**73.5**	**72.5**	**4.25**	**7.5**	**42.5**	**61.5**



THIS IS BLANK, SO YOU DON'T
HAVE TO RIP OUT A PAGE JUST
TO USE THE HERON ORDER FORM,.
WHICH, IF YOU DO USE, MAIL IT
TO: RIVENDELL BICYCLE WORKS
1561-B THIRD AVENUE
WALNUT CREEK, CA 94596

BY MAYNARD HERSHON

WHERE ARE You, EDWARD BERRY?

Who doesn't know Maynard? He's a regular contributor to VeloNews, a columnist for City Bike (a Bay Area motorcycle newspaper), Cycle California, an occassional contributor to the RR, former columnist for Winning, and has written two books (compilations of his columns): Tales From the Bike Shop, and Half Wheel Hell. He rides a lot, writes a lot and very well, tells a good story.

IN 1975, A FEW MONTHS AFTER I STARTED RIDING, I moved to Marin County, north of San Francisco. In the 1970s, even in Marin, there were so few cyclists, you met everyone in a week or so. Pretty tight group it was, all roadies.

So, even though I'd been riding just months, I became friends with Owen Mulholland, Bicycling Magazine's famous racing editor. At that time Owen was the only American who'd followed the Tour de France in a press car.

What with covering the Tour and visiting friends in France and Italy, Owen spent a magical month or so in Europe each summer. He invited me to occupy his downtown San Anselmo apartment while he was gone. I agreed, for two reasons: One, it was fun living on San Anselmo Avenue, and Two, living there gave me access to Owen's incomparable magazine collection.

He had years of Cycling Weekly and International Cycle Sport, both from England. He had every issue of the flavorful, psychedelic-era paper Competitive Cycling. He had every VeloNews. He had years of the now-defunct Bike World, published in Mountain View, California, and years of Bicycling Magazine, then published in San Rafael, the next town over.

Over the two or three Julys I spent in Owen's place, I read nearly all those magazines, providing myself with a historical perspective I could never have formed in my few years in cycling.

All that mid-'70s reading prepared me for the column writing I began with Winning Magazine and California Bicyclist in 1983.

Of the hundreds of articles I read, one in particular struck me as original and charming. It wasn't about touring, equipment, diet or training, all boring subjects to me then and now. It wasn't a report of some event somewhere contested by people I didn't know.

It was a story about a bike ride, by the rider. It was light-hearted and self-effacing, not deadly serious, not "it was tough out there."

It was the bike rider's thoughts and feelings, the rider teasing himself for the same silly fantasies and equipment fixations most of us share.

I thought it was just wonderful, a minor miracle. Nowhere else in English-language cycling literature had I found anything like that article: "How Many Pits to Pittsburgh?"

I'm writing THIS article 22 years, two books and hundreds of columns later. Most of those columns focused on my (or some other bike rider's) thoughts and feelings. I feel I got permission, somehow, to write those pieces from Edward Berry, who wrote "How Many Pits to Pittsburgh?"

I never forgot it, and imagined for years I'd seen it in an ancient copy of Bike World. Recently a friend handed me a stack of old mags and there it was—in Bicycling, April 1975.

I read it again and liked it just as well two decades later.

So—I've found the article, but where is Edward Berry?

If you read "How Many Pits?" carefully, you could conclude that Berry lived (in the mid-'70s) in Pittsburgh or in or near Nanty Glo, Pennsylvania. That's 22 years ago, friends; he could be anywhere today.

WHERE ARE YOU, ED?

I've tried; I called folks named Berry in two area codes and turned up nothing. If you read this, Edward Berry, call or write me c/o this magazine. If you read this and know Edward Berry, please let me know where he is or ask him to get in touch with me. Hey, I owe him big time. Be fun to say thanks...**END**

Hear Y'all, Hear Y'all!

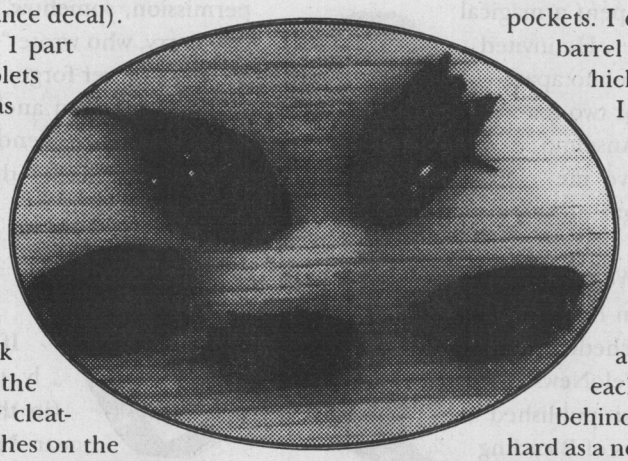
Surely one of you knows—if not Edward Berry himself—at least someone who knows someone who knows him. Snoop. The first member whose efforts get Edward to raise his hand wins a hundred Rivendollars. A follow-up report in RR13.

BY EDWARD BERRY

HOW MANY PITS TO PITTSBURG?

6 a.m., Nanty Glo, Pennsylvania. To the west lies Pittsburgh —**21,643** miles as the crow flies (we all know crows fly east in the morning). **My** just-out-of-the-carton, expensive racing bike leans against me (we all know expensive racing bikes don't have kickstands). This is a historic morning. I am going to attempt a world record time from Nanty Glo to Pittsburgh. As far as I can ascertain, the record for the 64 miles, 8 hours and 41 minutes, is held by a delinquent-dues member of the Western Pennsylvania Sprocketeers.

Deep down we all yearn to be heroes. The thrill of the champion lies just down the road. Why else would I misappropriate the rent money to buy this bike? I am so excited in my new tricolored jersey, chamois-lined shorts, perforated shoes and gloves that I forgot my water bottle (you know the kind with the Tour De France decal). It was filled with a special mixture: 1 part Gatorade, 1 part E.R.G., 2 salt tablets and 3 parts Pepsi. I call it Gulp. It was my ace in the hole.



Now the big decision. Do I cancel or go ahead without my Gulp? Time waits for no man (not even bicycle heroes). I take my pocket watch out of one of the five pockets on my red, white and blue jersey. It is 6:06. I set the watch back to 6:00 sharp. I swing my leg over the bike, proudly looking down at my cleat-soiled, drilled-out shoe. My toe catches on the upper part of the rear wheel and I fall on top of my bike (do you know what it's like to scratch an expensive just-out-of-the-carton racing bike?). I rub some saliva on the scratch. I straighten the derailleur. I spin the wheels. I carefully go over the bike. A lump forms in my throat when I spot the tear on the handlebar tape. I take my watch out. It is 6:06. I set it back to 6:00 sharp. I mount my bicycle and head down the road.

When I get to Blairsville, I know I'm in trouble. All I had for breakfast was a glass of thawed-out frozen orange juice and 600 mgs. of vitamin E (bicycle heroes are prepared for anything.) "HOLY CAMPAGNOLO!" I don't believe my eyes: a small grocery store is open. I lean my bicycle against a worm-eaten bench. The Champion at a pit stop. I throw back my shoulders. The cleats clomp on the old wood. I give the screen door a hefty shove. Unfortunately, I miss the wood and hit the screen, causing a 10-inch rent. At just that moment my cleat slips on a crumpled cigarette pack (the kind that says smoking is hazardous to your health). My arm becomes lodged between the door and the screen. I scream as the screen leaves red claw prints on my arm. **A** gentleman in overalls stands up from an old rocker and yells, "What did you do to my door?!" **I** withdraw my arm and regain my composure. The storekeeper settles down and becomes a **lot** friendlier when **I** mumble something about neglect and suing. "That's a right fancy sickle you have. What did it cost? When I tell him $500, I think I perceive a slight stagger. Then he offers me a cup of coffee. Suddenly the place becomes very oppressive. After all, I am setting a world's record. I grab a bag of dried prunes and ask how much they are. "Three dollars," is the reply. "But these are marked 89 cents," I cynically retort. "That was last year's price," is his stoic reply. I take two dollars out of my five-pocket jersey. "This is all I have," I say. "Sold!" says he. I throw the money on the counter and run out. I stuff the prunes in my back three pockets. I dispose of the package in an old oil barrel and mount the bike. "I'll show this hick some fancy riding." Unfortunately, I rode into town in a 104-inch gear and didn't bother to shift. I labor away from the store. I swear I hear him chuckle inside.

My eyes are glued to the white line on the side of the road. Dizzily, the rocks, broken bottles and dead butterflies flit past. I feel it in my bones, a world champion is performing. As each mile marker approaches, I reach behind me and extract a prune. They are as hard as a new Brooks saddle. It is hard to tell the fruit from the pit. I spit the pits on the grass on the side of the road (we all know that prune pits are biodegradable).

I'd like to tell you about the breathtaking, picturesque countryside. The glorious landscape, the wildflowers, the gently circling birds, the lakes, bridges and gurgling streams. Only, I don't see them. Cycling champions must keep their eyes glued to the road, ever ready to jump a pothole or dodge a dead possum.

I am really moving. Victory is in sight as the smog of Pittsburgh rolls out to meet me. A few more miles and I will slither through the grey veil. I reach back for my watch. As luck would have it, the only prune with an iota of moisture left in it is tenaciously clinging to the dial of my watch. Trying to free the prune from the dial, I lose control of bike and run off the road.

I sit by the side of the road, leaning against a barbed wire fence. My front wheel is hopelessly warped, and there are a few more scratches on my bike. The prune clings like a barnacle. I attempt to bite it off the watch. As I hold the watch up to my face, I realize it isn't ticking. I manage to clear the dial. It reads 6:06. **END**

MECHANIK'S CORNER

IN RR-12 I TOLD HOW A DUMB OVERSIGHT LEAD TO MY SAWING A PHIL BOTTOM BRACKET SPINDLE IN HALF, AND CHOPPING UP A NEW RITCHEY CRANK. HERE, TOO MORE EXPERIENCED MECHANICS COME FORTH. IF YOU'RE A MECHANIC BY TRADE AND NEED TO GET SOMETHING OFF YOUR CHEST, WRITE IN AND FOREVER SLEEP BETTER. — GRANT

I HAD WORKED AT WEST HILL SHOP in Putney, VT for six months when Jan VanderTuin walked in with a pair of wheels and asked to look at tubular tires. I knew who he was. He'd been in before, and my boss/mentor Neil Quinn, the owner of West Hill, had told me how VanderTuin had raced a bit in Vermont, done pretty well, then headed west and had even more success road racing in California. I didn't doubt he could ride. He was tall, lean, fit looking.

Jan (say "yawn") asked if we had Clement Campionato del Mondo Setas in stock. I led him to our aged supply of tubulars stored on rims in a corner. He studied the del Mondos a bit sort of the way Pete Sampras checks balls before a match, picked two out and asked me to mount them for him. He said he'd be back that afternoon.

Neil wouldn't be in for a while so I contemplated what to do about the wheels without his help. I knew a bit about tubular tires having installed a few on my Motobecane and Raleigh. But I was no expert. My mechanical schooling to this point had been almost exclusively Schwinn approved. I'd spent one summer working at a funky here-today-gone-tomorrow shop before landing a job in an established Schwinn shop, which had sold over 1,000 Varsities a year for a decade.

I spent five years learning the intricacies of Huret derailleurs, Ashtabula bottom brackets and forks, straightening welded-steel rims and working with hot patches. I learned how to center bolt-on wheels, the difference between EA3 and S7 26-inch tires, which indicator to use with a coaster-brake Sturmey hub, how to seat stubborn tires in a vise; how to perfect Simplex shifting. In short: I knew a bunch. But how to mount tubulars?

Neil had taught me a lot. I figured I could handle the tubular job okay. Besides, I wasn't sure when he'd be in, and Jan seemed eager for the wheels. I got a tube of Clement, jigged up the wheels and dabbed the glue between each pair of holes in the rim. Putting my finger in a baggie, I turned the wheels and spread the red goo. I waited 15 minutes or so and added a second coat.

In New England, summers can be warm and that day in 1978 it was so hot that that Clement glue had a mind of its own. When I got the sewups mounted I watched it ooze out from under the basetape and spread up the sidewalls. Panicking, I grabbed a rag and tried to wipe the spreading dollops off before they grew any more conspicuous. Like India ink on a white shirt, the stains only grew.

I thought I might be able to cut the blobs with WD40, which I hastily applied to a rag and worked into the now tainted $40 tubular. It didn't work, so I tried solvent, which just turned the sidewalls grey. I hung the wheels on a hook, filled out the repair tag and went on to the next job.

The day passed slowly. Jan finally came in. I couldn't bring myself to say anything so I just handed the wheels over. I had that black-out feeling you have when you stand up too quick and see spots. He held a wheel up studying it. He put it down, picked up the other and turned it over in the light examining my handiwork. Then he lowered the wheel, looked at me, and said, "You don't do this very often, do you?" —Jim Langley

(Jim is Technical Editor at Bicycling (The World's Largest Cycling Publication —ed.)

SEVERAL YEARS AGO I WORKED AT Corsa Cycles under the tutelage of Peter Linker, a purveyor of fine bikes and classic parts, and a master wheel builder. Peter was dedicated to building wheels well, and his shop was one of few that actually had a Phil Wood spoke cutting. I'd built several sets of wheels before I met Peter, but he taught me a lot, and I couldn't wait to try out another of his techniques on each new build. I was eager to learn, and I always hoped the next repair would involve at least a wheel truing.

One Friday afternoon, a fellow came in and wanted his rear wheel rebuilt with a new rim before the weekend's Markleeville Death Ride. I jumped at the chance. I looked his wheel over: Mavic rim, 3x lacing, nothing unusual. We had the right spokes in stock, so I went right at it. The tire, tube, and rim came off easily. I laid the wheel on its side and cut off the old spokes. When I finished, I noticed I'd left the freewheel on the hub!

I still remember Peter's look of amusement mixed with disdain. Of course, the usual method of removing the freewheel, with a freewheel remover, didn't work, because with the rim now unattached, there was no way to get enough leverage to unscrew it. So I had to undo what I'd just done. The problem was, I was unable to lace up spokes on the drive side, because the freewheel didn't give me access to the spoke holes in that side of the hub. So I relaced other side, tensioned the spokes, and finally managed enough leverage to remove the freewheel. Then I had to remove those spokes and start again. Fortunately, the rest of the build was uneventful, and the fellow was in bright and early the next day to get his wheel.

"Nice looking wheel," he said as it spun in his hands. "Any problems?"

"Piece of cake," I lied.

—Bob Rogen

NEWS & NOTES

SRAM, the GripShift people, bought Sack, the German maker of internal gears, drivetrain parts, and freewheels. Last year Sachs sold just 25,000 freewheels worldwide—down from a quarter million or *so* a decade ago. Several other companies still make freewheels, including Shimano, SunRace, Falcon, Regina, and Marchisio, who you probably haven't heard of yet, but Sachs was supplier No. 1 in this market. **SRAM** bought Sachs *so* it could be a manufacturer of drivetrain parts, just like Shimano. Anyyway, our delivery of Sachs freewheels is slower than ever, and as much as we'd like to continue to offer them at the same prices as before, we can't promise anything. FYI, the rations SACHS lists in its 1998 catalogue are:

Sack's current 6-speeds
13x 18 (14-15-16-17)
13x 21 (14-15-17-19)
13x 24 (15-17-19-21)
13x 28 (15-17-20-24)

Sachs's current 7-speeds
12x 18 (13-14-15-16-17)
12x 21 (13-14-15-17-19)
12x 24 (13-15-17-19-21)
12x 28 (13-15-17-20-24)

13x 21 (14-15-16-17-19)
13x 24 (14-15-17-19-21)
13x 26 (15-17-19-21-23)
13x 28 (15-17-19-21-24)
13x 30 (14-16-18-21-25)
13x 32 (15-17-21-25-28)

Sachs's current 8-speeds
12x 19 (13-14-15-16-17-18)
12x 21 (13-14-15-16-17-19)
12x 24 (13-14-15-17-19-21)
12x 28 (14-16-18-20-22-25)
12x 32 (14-16-18-21-24-28)

13x 20 (14-15-16-17-18-19)
13x 21 (14-15-16-17-18-19)
13x 23 (14-15-16-17-19-21)
13x 24 (14-15-16-17-19-21)
13x 26 (14-16-18-20-22-24)
13x 32 (15-17-19-21-24-28)

At the Anaheim trade show last fall we talked to Regina, the Italian chain and freewheel maker, and were happy to see they're up and running again. But now they're made in Shanghai. Regina lists a range of freewheels, from 5 to 8 speeds, in just about any ratio you could ask for. So far we're resisting Chinese bike parts, Regina or otherwise. The human rights thing. Anyway, Shimano still makes a few freewheels:

Shimano's current 7-speeds
14x 28 (16-18-20-22-24)
14x 34 (16-18-20-22-24)

Shimano's current 6-speeds
14x 28 (16-18-21-24)
14x 32 (17-20-24-28)
14x 34 (16-18-21-24)

Fiver
14 x 28 (17-20-24)

The 34t jobbers are for the new **Shimano** Nexave (robot word for Next Wave?). I think they're made in Singapore, that clean country that comes down rather hard on graffiti-perpetrators. How well these cheapies hold up under the stress of hill climbing and long miles, we can't say, but given the low price (they'd he around **$18).** it's a *good* bet **Shimano** designs them for everyday put-put use. We'll try some out and see how they last

THE MOST EXCITING FREEWHEEL NEWS is from Italy's **Marchisio,** a small company started by former Everest employees. Everest made pro-quality freewheels back in the late '70s, right there in Italy, just like Regina, now of Shanghai. We hear they'll assemble freewheels with any ratios we want, including 6-speeders with 12t top cogs, and that raises some good half-stepping possibilities. We don't know the more than that, but we hope to have all this information in time to list in our next catalogue.

NEWS FROM *ANOTHER* ITALIAN *COMPANY,* MODOLO: Its new "Morphos" lever has two triggers where the Campy Ergo lever has one, and has insertst that make it index with Campy or Shimano, plus a friction mode—which is the only reason we bring it up. I am not softening up to the "now-you-don't-gotta-move-your-hands-to-shift" way of thinking, but any time a new frictionahle lever comes *to* the market, it's newsworthy here. Reports later.

SHIMANO DOESN'T MAKE 6- OR 7-SPEED INDEXABLE BAR-END SHIFTERS ANYMORE, but the &speeders sure seem to work. Ordinarily, in cases like this, Shimano says, "Well, yes...when it's new, sure; but with accumulated grit and wear, you can expect a noticeable reduction in performance..." Whatever, this is a good time to renew your committment to friction shifting, perhaps with a small neighborhood ceremony, with close friends and family and that cute checker at the Pak-n-Go, who wears a little too much makeup and has too many earrings, and therefore doesn't fit in. Or, if there's nothing to renew, consider friction shifting for the first time. It works with all drivetrains and is stalwart.

THE NEXT CATALOGUE, **No. 4., is 98 percent fiihed,** and we expect to have it in the mail by late June. It won't have stuff like long sleeve wool jerseys, tights, and raingear. The oft-alluded to frame brochure has been put on hold once again, but our website (www.rivendellbicycles.com) has some recent photos, and we have plenty here. Eventually we'll have a poster showing many of the steps in building the frames (some of them are shown in this issue). If we have a good June, we'll have a poster in July.

IN THE NEXT ISSUE LET'S HEAR YOUR COMMENTS ABOUT NON-CLEATED CYCLING SHOES. What you use, how you like it, how they fit, how much they cost. Keep it short. My latest shoe buy was a pair of low-top white canvas U.S.-made, $30 Converse All-Stars. The cycling community tries to protect you from these shoes—with their flexible, shankless, energy-absorbing soles and lack of SPD compatibility. But for non-competitive, flat to rolling rides, they'rejust fine. The have a flat sole and no flare, so go in and out of toe clips easily. With a platform style pedal, they're fine (comfortable) on even steep hills. MKS makes a platform pedal, and we'll have it in the catalogue . On my fast rides I wear cleats—either Sidi SuperCycles or someting else. Mostly, I wear Reynolds touring shoes. They're too hard to get and cost too much, *so* we quit importing them. If you want classy, hand-made English all-leather touring shoes, go direct to another English company. They cost less than Reynolds, but sound really good:

Jeffrey's Traditional Cycling Shoes
The Bungalow
38 Edinburg Road
Kettering, Northamptonshire
NN16 8NZ
England
Tel: 01144-1536-511236

call at about 7:00 a.m. Pacific/10:00 am East coast time
Price is **E45** per pair, or 2/£80, with f12 per pair extra for shipping. Shoe plus freight comes to about $100 in **U.S.** dollars, maybe **$140** Canadian, and you have to pay in pounds. Make checks out to T. Jeffery. Tell your bank you want to make a foreign draft. The leaflet says to allow 21 days for delivery. English sizes 3 to **11,** which is roughly equivalent to **4** to **12 U.S.** Waxed black leather, small heel, roomy rounded toe, heel and toe stiffeners, steel shank. The sole is bare leather—charming but impractical for all-terrain and wet weather riding. Your local cobbler can glue on a thin rubber sole, probably another $25. Maybe you can do it yourself.

The NITTO RACK PROJECT continues to frustrate, but shows increasing promise, sort of. The rear rack bugaboos are all gone, and they'll be available in a month or so. We won't show them in the catalogue, though, because poor availability and slow delivery will continue to be issues. We've recently received from Nitto three new things.

One is A HANDLEBAR BAG AND RACK. The rack is Nitto-made and perfect; the bag is a locally made Japaneser, red nylon, not our style. **So** we sent it to Carradice *so* they could make a cotton one, compatible with the rack. A week after this goes to print we'll have our prototype. Price, around $50. If you want one (even if it's $60), order it and wait a month or **two.** If it's longer than that, we'll let you know soon and refund your money. This one, I think, will be on time.

Two is A SADDLEBAG SUPPORT. It mounts on the seat post, angles downward a bit, then skims o'er the top-o-the tire. Two adjustable stays attach via rubber-padded clamps to the seat stays, and the whole point is to keep the saddlebag, even a honkin' one, from dragging on your rear tire. The saddlebag platform looks cute even sans-a-saddlebag, and that wouldn't be true of an uplift. And, you can use it **as** a small rack, too. It'll be in the catalogue for sure, no matter how slow and hard it is to get. Price, around $50. Accepting orders now. If your saddle height is less than 71cm (center of bb to top of saddle), and you ride 700c wheels, and especially if you have a Brooks saddle with loops, this thing is terrific. Even without a saddlebag, you can lash stuff onto it. Tidy, useful, and it doesn't make the bike look junky.

Three is A BOTTLE CAGE. Stainless steel, polished till it glistens, and weighs 53g. The price is **$28,** and expect delays, *so* don't order it for your tour-de-lifetime. It seems decadent to spend that much for a bottle cage, but this one's fillet brazed by hand, which makes it the cheapest fillet-brazed by hand bicycle widget in the world, I'll bet. We'll still stock the $12 ALEs, but will try to get a couple dozen of the Nittos here by early July. This could be the jewel **of** Nitto. Order now, be patient. Include $5 for shipping.

SERGAL, THE ITALIAN WOOLIER, has gone out **of** business after more than 50 years. Too bad! We're plenty happy with the Kucharik clothing, but it's never good news when an old brand buys the farm.

If you like cycling, history, or both, subscribe to Gabe Konrad's On the Wheel, a new quarterly. It costs $17, and each of you who subscribes gets 12 Rivendollars, if you write or the key word EKIB, when you subscribe. It'll be Gabe's way of tracking how many RR readers subscribe. Subscribe to OTW, and he'll send you the Rivendollars. This offer is good through September, after which we may extend it. Gabe has an important role and is good at it. These things don't just happen. They need our support.

On the Wheel • 13028 Cypress Avenue
Sand Lake, Michigan 49343
ph or fax (616) 636-4073
email: konrad@iserv.net

CATALOGUES YOU MIGHT LIKE:

The Vermont County Store
ph (802) 362-2400 or fax (802) 362-0285

Lots of frumpy stuff, from bedroom slippers to those white floral pattern women's swim caps to the kinds of candies popular in the '50s and didn't think were still made.

David Morgan
Ph (800) 3244934 Ph (800) 364-3961 or online:
http://www.davidmorgan.com/

Family-owned business specializing in outdoor work clothes (including Filson), Australian stuff, Nova Scotian stuff, and Celtic books, tapes, CDs, and jewelry.

Dover Books
no phone or fax, so write:
Dover Publications • 31 East 2nd St. •
Mineaola, NY 11501-3582.

Ask for their latest catalogue and the complete book listing. Lots of neat books, often on hard to find, but fascinating topics. Good books for children start at $1.00, and lots of sticker books with nice stickers.

The Sportsman's Guide
a.k.a The Guys Catalogue, because all women hate it)
(800) 888-5222

This is mostly semi-scary/weird military surplus, cheap, display-style weaponry, and discontinued and over-run semifamous shoe brands that bombed, and it has the tackiest, I-wouldn't-wear-that-in-public-for-one-day-in-my-hometown-for-$500 t-shirts, but it also has chest-thumping deals on new and used French-Dutch-German-Czech-and US military shirts, wool pants, duffel-bags, and rucksacks. Things that couldn't be made here and now for $100, you can get for under $20. Every once in a while you'll get a piece of royal garbage, but usually it's as good or better than the catalogue states.

Back To Basics Toys
(800) 356-5360

A pretty good toy catalogue for kids. Lincoln Logs, Tinker Toys, tops, and balls. The pogo stick isn't good, though. There's a spring guard on it, and the guard sticks out so far, your child has to assume a dreaded high (2-factor stance just to pogo, or else the guard hits the knees.

The Astragal Press
Box 239 • Mendham, NJ • 07945-0239
ph (201) 543-3045 fax (201) 543-3044
email: astragalpress@ibm.net

Books about tools, and simple machines, and things made of metal and wood, and traditonal manufacturing methods and technologies. Reprints of old Stanley, Buck, and Sears & Roebuck catalogues from 70 to 100+ years ago.

Duluth Packs
(800) 849-4489 or email dpack@duluthpacks.com or WWW.duluthpacks.com

Traditional canoe packs, bags, clothing, blankets, and a few more mainstream items to pay the bills. Good canvas versus nylon propaganda, too. Excellent!

Lehman's Hardware and Appliances
One Lehman Circle • Box 41 • Kidron, Ohio 44636
ph (216) 857-5785
email: Getlehmans&ol.com

Amish and old-country style home furnishings and widgets—like mechanical apple pealers, butter churns, pickel barrels, cheesemaking kits. nothing electric. Even if non-electricness isn't your life's mission, the catalogue's good.

Filson
(800) 624-0201 or fax (206) 6244539

Durable outdoor wear in wool and cotton and waxed cotton. If you can look through this catalogue without wanting at least four things, you must be a fancy, big-city gal.

Velo Retro
1715 Ramona Avenue • South Pasadena, CA 91030-4425
Ph (213) 256-0815 email: schmidt@wavenet.com.

Rivendell member and graphic artist Chuck Schmidt has a side business called Velo Retro. He reprints out-of-print cycling books and catalogues from the old days, including catalogues from Singer, Hetchins, Cinelli, Zeus, Schwinn Paramount (late '30s), Legnano, Nervex Lug, and Durkopp (*who?*); and two books that are rare, elusive, and very high snoot: '83 Data Book, and The World of Daniel Rebour. He doesn't take phone orders or credit cards, and foreigners have an extra hoop or two to jump through. Chuck promises us a story for the next RR. **END**

A Case For 26-inch Touring Wheels

TWENTY-SIX INCH RIMS ARE ABOUT TWO and a half inches smaller in diameter than 700c rims, and so have an inherent strength advantage. They're just plain harder to twist, which means they're stronger laterally, and this is important, because nine times in ten, it's lateral stresses that wreck wheels.

Another advantage of the smaller size is better tire availability. This is due to road tire makers pretty much ignoring the loaded touring market, and mountain bike makers making plenty of street tires for the glut of mountain bikes that spend so much time on asphalt. Those designed-for-streets mountain bike tires are perfect for loaded touring, and widely available in the appropriate sizes between 30mm and 36mm wide (usually listed as 26x1.25 and 26 x 1.5 inches).

You want tires at least this voluminous, because you can ride them at lower pressure than skinner tires, and lower pressures create a cushion that protects the rim from the bumps and lateral loads that wreck wheels.

Another issue that should concern you is clearance. Here again, the smaller 26-inch wheel has an advantage. For the same air volume (width and height), the 26-inch wheel will pass between the chainstays at a point farther behind the bottom bracket, where the stays are wider. So you have more room for mud, or fenders, or wheel wobble. If you break a rear spoke and the tire then hits the chainstay, you may have to hitchike a hundred miles to the next town. That's a good thing if you're crossing Nevada.

So far, 26-inch wheels have clear advantages in the areas of strength, tire availability, and clearance. So if that's the case, why are 700c touring bikes far more popular?

They got a boost. In 1976, thousands of riders toured across the country on the same, mapped-out Bikecentennial route. That was before mountain bikes, so you could ride it either on a 48-pound balloner bike with 26-inch wheels, or a ten-speed type with 700c wheels (or the just slightly larger 27-inch wheels). A market was born, and the golden age of the touring bike that followed catered to these large wheels. That, not reasons of function, is why American-style touring bikes have large wheels.

If the mountain bike came along before Bikecentennial, the standard touring wheel would be 26-inches.

A Case For 700c Touring Wheels

NINETY-FIVE PERCENT OF THE RIDERS WHO HAVE crossed this country by loaded bicycle have done it on wheels that are nominally 700c. "Nominally," because in the early touring years from about 1976 through 1982, lots of the bikes had 27-inch wheels. They're about 3/5-inch larger in diameter, but close enough to fit into the same group in a discussion about 700c vs 26-inch wheels.

Anyway, the arguments that a 26-inch wheel is stronger, are misleading. A welldesigned and built 700c wheel with a proper touring tire can take take a lot of abuse, and the kinds of things that do them in are the same as do in the smaller wheels; namely, lateral stresses

If you're going loaded touring, use as many spokes as you can stand to. Thirty-six in the front, and thirty-six or forty in the rear. The argument for forty rear wheel spokes: The rear wheel is dished, and weaker for it; and the rear wheel suffers more stress than the front. A good point.. The argument for thirty-six: If you do cream a rear wheel, you'll have an easier time finding a 36-holer than you will a 40-holer. Another good point, Pick one and just go.

Eliminate as much dish (assymetry) as possible. If your frame is spaced 126mm between the rear dropouts, ride five-speed wheels or spread it to 130 (only possible with steel). If it's already 130mm, ride an almost dishless six-speed wheel. Seven speed wheels on a 130mm-spaced rear end is okay, but still worlds stronger than an 8 or 9 speed wheel. Loaded touring on highlydished 8/9 speeds is not smart. You may survive it, but it's not smart.

Tire selection. Making a strong pitch for 26-inch tires fosters paranoia. On long tours, you're supposed to carry a spare tire, anyway. Bicycle touring is all about self-sufficiency and resourcefulness. If you find yourself tire-less, you went off unprepared..

Some people, even scientists, say a larger wheel rolls more smoothly over bumps than a smaller one; and that rolling resistance is lower with the larger wheel. All things equal, both those things are true, and that would seem to give an advantage to 700c wheels. But the differences are easier to measure in a lab, than when you're riding a loaded, aerodynamic nightmare on a potholed road. Still, properly designed and well-built 700c touring wheels will last a good long time and get you though all kinds of bad conditions.

LETTERS

WE CAN'T PRINT ALL LETTERS OR ALL CONTRIBUTIONS, AND BUT IF YOU SEND IN A STORY AND IT DOESN'T FIT IN THE READER TEMPLATE, WE MAY RUN IT IN THE LETTERS COLUMN. I WANT OUR LETTERS COLUMN TO BE INTERESTING AND VARIED, AND THE LETTERS DON'T HAVE TO PERTAIN TO ANYTHING IN PARTICULAR. NOT TO IMPLY THAT NONE OF THE FOLLOWING FALL INTO A "PERFECTLY NORMAL LETTER" CATEGORY.— GRANT

ZIP-TIES: THE G, THE B, THE U

Thanks for the article on zip-tying fenders in RR-11. I concur with your preference for ESGE fenders, for the reasons you mention, but **also** because of the advice included in the English version of their instructions: "Please check **all** fixations regularly." I try to apply that motto to all aspects of my life, though I do not always succeed.

But back to zip-tying fenders. The standard transluscent kind will eventually degrade from exposure to sunlight. Black, W-resistant zip-ties are probably a good idea if you plan to leave them on in sunny weather and park your bike outdoors often. Reusable/releasable types are also available.

—Charlie Sullivan
Hanover, NH

A LETTER FROM THE EX-OFFICIAL BROOKS REPAIRMAN

A wised-up cycling friend has recently given me a copy of your Brooks saddles item, presumably traveled up from the Web. He thought it might interest me, **as** I have had a good deal of experience repairing the company's products, especially the earlier and long-obsolete models.

As a matter of interest, you may like to know that Brooks bicycle saddles were made **as** far back **as** the early 1880s. (The company began in 1866, **as** suggested by "...after 129 years..." on p. 2 of your item, rather than "...in 1886.." on p. **1)** and I am lucky enough to possess quite a few pre-1900 examples, some of which are still good enough to use.

Since 1990 I have been the company's authorised repair specialist, which involves mainly replacing broken or worn out frame components. The company says it will no longer supply replacement leather tops, but I have managed to acquire a number of these from various acquaintances in the **U.K.** cycle trade, and I can manufacture my own tops to more or less any pattern. My own tops, being individually hand-made, are quite expensive to produce, but it may be of interest to some of your customers to know that I can recover, for instance, such obsolete models **as** the B.17 Swallow, Sprinter, and Flyer. I also make a Swallow-lookalike saddle, using new B.17 framesets (chrome or black enamel) which, in the opinion of those who have seen **or** used them, are vastly superior to the "limited edition" Swallow-types marketed by Brooks a few years ago, and I usually have a number of recovered obsolete saddles for sale—not just Brooks, but also Mansfield, Lyatts, Leatherreies, etc.

I frequently get inquiries concerning saddle repairs from overseas (I have recently replace the frame on a B.72 for a customer in Tanzania, for instance) and I have a few customers in California. It seems strange to me that there is apparently nobody in the **U.S.** who is able, or willing, to offer this service, but I'm assured that this is *so.* I think a firm called Quintas represents Sturmey-Archer/ Brooks in the **U.S.A.** and they seem unable to help. But perhaps with your apparent interest in the company and its products, you might be able to suggest a source of assistance "closer to home"?

Best wishes,
Tony Colegrave

A. Colgrave Wellhouse • Northiam Rye.
East Sussex • TN31 6HY • England
(01797) 253177

Tony, thanks for writing. Persons-Majestic is Brooks's U.S. agent. I don't know anybody here who repairs Brooks saddles, but someone ought to learn (not to imply that it would be a booming business).

CYCLING IN CHEE-LAY

In March, I went to Chile to participate in geologic research, and took my Bike Friday along for training, exploring, and transportation. Chile occupies most of the Pacific coast of the South American continent, in a narrow strip that extends to the crest of the Andes mountains. In no place wider than 160 km (100 miles), Chile stretches 4500 km (2800 miles) from the tropics in the north to subpolar Tierra del Fuego. The streets are narrow and full of traffic. Numerous yellow buses. with drivers who probably get paid by the trip rather than by the hour, and they drive as fast as possible. Each **bus** holds about 50 people, **so** there must he around 100,000 buses, but it seems more. The main thoroughfare, Avenida **del** Liberatador General Bernardo O'Higgins (the main street of every town in Chile is named after this leader in the fight for independence, whose name reflects his Scottish descent), has five lanes in each direction, three of which **are** for buses, while the other two **are** for cars. microvans and trucks.

Everyone drives fast and furiously, and I was apprehensive about riding in this seeming chaos. Once on the bike, however, my fears quickly were dispelled. In the small streets, traffic rarely exceeded 15 mph, and even on the big Avenida O'Higgins, drivers gave me the space I needed. Once, trying to get into the left-turn lane across two lanes of traffic, I signalled without much hope. To my astonishment, the drivers in both lanes immediately braked hard to let me through. Try that in Seattle!

The buses are **a** different story, **as** their drivers take no prisoners. I easily outaccelerated them from the lights, but looking back, I saw them two- or three-abreast, roaring toward me, honking and emitting black fumes. Fortunately. they had to stop for passengers, antl **so** ever). so often the race would start anew. From 0 to 24 mph in a few seconds, then stop at the next light. Soon I was looking for tranquility, **so** I went to the Cerro San Christobal, **a** nearby hill.

Most people get to the summit via funicular and a cable lift, **so** the road was quiet, **as** it wound up the hill, past gardens **antl** impressive vistas. On my third trip up, a cyclistjoined me and we raced to the top. On the way down. I was enjoying the switchbacks, but my new friend Jose seemed a little timid. Until, in a wide bend, there was a patch of wet road from a water sprinkler, and my front wheel wiped out. The last rain had fallen

months ago, and the pollution and dust made the roads slippery when wet. Both I and Friday were alright. with road rash and bent bars the only damage.

Later I visited the bike shops of Santiago, which conveniently are located all on the same city block. A dozen or so shops are filled with everything from high end Shimano and Suntour parts. Rock Shox forks and Bicycling copies from years ago to steel rims and coaster hubs for utility bikes. I even found a shop dedicated exclusively to Cinelli bikes. Only these didn't look anything like Italian Cinellis, and were nothing but cheap ten-speeds. I couldn't tell whether the Cinelli handlebars were the ones we know or not. The rest of my group arrived the following day, and we took the train southward to the Lake District. The Lake District is at the corresponding latitude as the Pacific Northwest, and looks very similar, with snowcapped volcanoes overlooking large lakes and ocean bays. It usually rains, too, but it didn't then. My riding faced a problem: a lack of roads. The one main highway in Chile, is a narrow two-lane road, often without a shoulder. Traffic is heavy, mostly trucks and buses, which pass within inches, as the constant oncoming traffic does not allow them to move into the other lane. Secondary roads are poor and unsurfaced, and even my 1.5 wide tires did not make them fun. However, a road into the mountains toward the border with Argentina had little traffic, courteous drivers, a good surface and great scenery Leading through rolling hills along Lake Llanquihue, it offered great scenery, challenging hills, and villages for provisions. One morning I caught up with a large herd of cattle being driven along the road. Since they left their droppings all over the road, I wished for fenders. I met a number of North Americans bicyle tourists. We marvelled at the scenery and the friendliness of the Chileans.

—Jan Heine
Seattle

CARRADICE, NEIGHBORS, AND U-BOLTS

I was showing my Carradice Nelson Longflap to my neighbor, and he suggested I share my homemade saddlebag loops with yon. I make them from a small piece of brass and small, 1/4-inch "wire grip"—small. heavy-duty steel U-bolts you can get at most hardware stores for $3 each. These secure to the vertical or semi-vertical portion of the saddle rails, near the back, and I've used them on a Brooks Pro and a WTB SST saddle. I make loops from the brass, but other materials should work as well. Heavy nylon from an old Rubbermaid-type container works, and even plain leather works for light loads. To make the loops, just drill or cut two holes for the bolts to go through, and one slit for the strap.

—Toshihiko Murata
Eugene, OR

THEY SOUND THE SAME SPOKEN...

Just a quick note, in case you're interested. People don't "cow-tow,"but they do kowtow (or kow-tow). Your mistake in RR11.

—Benson T.
Walnut Creek, CA

Benson, usually when I'm barking at Peter, Joe or Allen, I speak the word, not write it, so that explains my not knowing. I appreciate the correction, though. But now I'll be prepared for written job evaluations, so thanks. — G

LOGICAL AND ILLOGICAL FALLACIES

Number 11 came yesterday and was much appreciated as usual. I've got comments on a couple of issues that perhaps might provoke some discussion in a future RR.

First, your syllogism — Bikes are fun, toys are fun, therefore bikes are toys — suffers from the logical fallacy of the 'undistributed middle term': the conclusion doesn't follow because "toys" doesn't necessarily include "bikes". Formal logic aside, I see your point and in fact agree with it — a bike is not a tool for grinding out Personal Bests, and doing things yourself is more fun than having gadgets do them for you — but I think a bike is much more than a toy, which word connotes something trivial; they are in fact very useful as well as very fun tools, as I have discovered as a commuter. Having a tight schedule to the point where I would sometimes even resent having to take time to just "go for a ride", I've done most of my riding for the last year or so as a commuter, and what fun it has been — precisely as a tool. I think bikes can indeed be fun toys, but they are also fun tools and I'm very grateful that they are.

As to Piaw Naw's contention that half step gearing is more logical than crossover gearing, I'd like to present, not a refutation, but simply another opinion that crossover makes sense within its proper limits and if properly conceived. For the last 10 years I've been experimenting with close-ratio crossover triples *(gearing with big jumps in the chainrings and small ones in the freewheel, like 50-40-30 x 12 x 24—ed)* and riding them pretty much exclusively, and I think that if you understand their peculiar limitations and advantages you might well find that they are a viable alternative with their own peculiar benefits. The key to good crossover gearing is. (1) knowing your "ordinary"range of gears — those you use most often — and (2) building the system around a very close ratio cluster that gives you your "ordinary"range on the middle ring. I tend to spin, so my favorite gears on level to rolling ground are in the 80" to 55"range; six gears separated by 4 or 5 gear inches. With these I can handle most hills in my area, and not spin out when a New Mexico headwind graciously becomes a tailwind.

For example, my Rivendell (with 26-inch Turbos) has 28/38/50 rings and a 12-19 seven speed clusters, giving me on the middle ring a range from about 80 down to about 50. (Stronger riders could use a 42 or 43 for a slightly higher range and bump the big ring up accordingly.) This allows me to shift with the right lever alone for most conditions, and when I get to the top of a hill I simply shift onto the big ring and up two or three cogs in the back to get the higher range I need for the new downhill conditions. The 50x16 (I don't go beyond the fifth cog with the big ring) duplicates the 38x12, but for me this is a benefit rather than a liability because it allows a favorite gear without the trouble of going back to the middle ring; the duplicate gear is like a link between the two rings. There's a similar beneficial overlap between the middle and the granny. Overall, this setup gives me a range from 105 down to 37 with close steps; no doubt not wide enough for touring, but certainly wide enough for commuting; and this can easily be accomplished with a six-speed cluster. I agree that the halfstep setup gives a wider range for a given number of cogs and rings.

Getting back to the bike as tool idea: one of the most gratifying things about using the bike to commute is the feeling of self sufficiency, not to mention the pleasure of being able to go for a ride with a free conscience in the middle of a workday.

—Patrick Moore
TX

BETTER SEEN THAN CREAMED

Driving to work on a dark Seattle morning, I nearly creamed a fellow cyclist. Not because either of us did anything really dumb, but just because I couldn't see him. Like most of us, he had removed the wheel reflectors from the bike. He did put "blinkies"on the rear of his bike, but I approached from his left, and couldn't see him or them. He wore dark clothing. Reflective bands on his helmet or ankles, or tabs on his jacket, or shoes, or anything to say "Hey! I am here!" would have helped. A light front marker or light would have been even better.

—Bob Mills
Seattle

TWO POEMS BY JOHN ANNING

first spring ride, full moon
tracing bay's hem out to sea
breakers at Rodeo Beach

dark hill obscures moon
lesser stars emerge bright
wind pulling sea scent

a gated road calls
young rider, come follow me
I crave it, take it

ribbon twists up bluff
pampas grass whispering
welcome evening guest

2.

THE RIDER IN THE WINDOW

Don't let me see myslef reflected in the
coffee shop window.
Not right now when I'm a thoroghbred,
with the relaxed, supple posture of a
champion,
my compass set for the Tour de France

I glance down and enjoy
tan arms and legs,
and thew ay my elbows are bent just **so.**
My gloves glistening with sweat,
my street **a** country road
leading toward Paris.
I push the bigger gear,
my gaze possessed, almost sinister
a eurodog ready to bite

Don't let me see myself as **a** Twilight
Zone episode
about a boy waking up old beyond
redemption.
Let me be this ageless combination:
Wisdom and earger virile youth

Let me love myself for one more day.

—John Anning
CA

MORE TECHNOLOGY & RECREATION

A couple of months ago I resumed my winter habit (since I started coaching the crew at the U. of Chicago) of "playing" squash **solo** a couple of times a week, which becomes convenient when the team's training moves indoors and I start going to the campus regularly to supervise their workouts.

As usual I started my season by going to a local squash shop to buy a new ball, and when I told the man I needed a squash ball he said, "Soft or hard?" I said, "Um, dunno, how hard is hard and how soft is soft?" He got out examples. His "hard" ball was the one I'd considered standard since about 1978, and his "soft" was what we used to call "the English ball," a very squishy thing that moves slower and makes you run more.

Turns out no one uses the hard ball anymore, and the racquets have become ugly teardrop-shaped oversize things with huge sweet spots. My old racquet, with its long shaft and businesslike little round head, which looks exactly like an instrument designed for whacking the heck out of a small object with great precision and making it go very fast—which is exactly how a racquet should look, this being a game of speed—now is a laughable antique, even though it's made of graphite fiber.

In my closet I have an old wooden racquet, a Garcia-Cragin Whipstroke, a.k.a "the power bat," and designed for the really hard ball that went out of fashion after my first three years **or** so in the game. **It's** a great tool, heavier than my 10+-year-old "new" racquet, really formidable, beautifully laminated. **You** could repel burglars with it.

So...technology has made recreation worse again. I still want to finish that piece about the disappearance of wood from competitive rowing.

I think it's cool that you're doing frames in California now. I had one of those California Masis, a fabulous frame. I sold it in 1980, and that's one of the very few acts in my life that I regret. I like Vitus steel tubing, too. On my big French tour in 1978 I had to have the top tube of my FW Evans 531 tourer replaced after a botched attempt to steal the bike, and Monsieur Passieu, in Nimes, brazed a piece of Super Vitus 973, **or** something, in there. It's held up beatifully. Super Vitus was used in a lot of the Ron Kitching frames back in the old days.

Have to go. Hope all's well with you and yours. I hope Gary **B's** feeling okay.

—Howard Runyon
Ill.

DERAILLEUR CABLE TRAVEL

In RR10, Scott Main asked for the technical details which affect rear derailleur design and shift lever design, and make interchangeability **a** headache.

In the 1950's, derailleur cable travel was pretty much standardized and you could mix and match shift levers.. The old rod-guided pull-chain rear derailleurs were direct-connected. One inch of cable travel gave one inch of jockey pulley movement. Old bicycle collectors will recall that the old Simplex and Huret shift levers had large diameter "drums."

In the early 1960s, Campagnolo, Simplex, and Huret developed the Gran Sport, Prestige, and Allvit parallelogram **rear** derailleurs. The derailleur designers determined the cable travel when they selected the location of the cable anchor. If the cable anchor point was close to the casing anchor point, there **was** less cable travel. If the cable anchor point **was at** the far end of the parallelogram, there was more cable travel.

Most shift levers were designed for about 90 degrees of lever travel. **By** locating the cable anchor point to provide a short cable movement, the maker could use a smaller drum on the shift lever. The newer Campagnolo and Simplex shift levers were smaller and lighter than their predecessors. The Huret Allvit shift lever had **.a** larger diameter drum because the Allvit required more cable travel. Simplex was weird. The lever had a small drum but the rear derailleur needed a longer cable movement, so Simplex **provided a** Demultiplicator.

I measured cable travel in my 1980's Bicycling magazine derailleur tests. **A** five-speed freewheel requires about 7/8 inch of jockey pulley movement. The measured cable movement for the various rear derailleurs was in the range of 0.4 to 0.6 inches.

There were minor trade-offs. Shorter cable travel required higher cable tension, **so** the cable stretched more ant1 the casing compressed more. The Campagnolo-Simplex cable travel was adopted by Shimano and SunTour and became the de facto standard in the **1970s.**

When Shimano introduced Indexed Shifting (SIS) in 1985, it opened up **a** new can of worms. There was more to an indexed shifting system than providing an indexed shift lever with detents to position thejockey pulley in front of the appropriate sprocket.

It turned out that we had used friction shifting to compensate for the shifting deficiencies of the rear derailleur. Many rear derailleurs were late shifting. They would not shift unless the jockey pulley was pushed beyond the centered position. This was the classic overshift antl recenter drill that Campagnolo Record users picked **up** from their mother's milk. Shimano's competitors tried to provide indexed shift levers with built-in overshift. Shimano understood that indexed shifting required an **early** shifting rear derailleur. By the time the competitors sorted things out antl redesigned their rear derailleurs, Shimano dominated the gear train market.

- 2 -

The answer to Scott Main's letter about interchangeability between vendors'

indexed shifting systems has two parts. In the late 1980s, you had to have an all-Shimano system because the competitors' rear derailleurs were not suitable for indexed shifting. By 1990, Sachs and Campagnolo were making "early shifting" rear derailleurs.

In 1990, Shimano introduced Hyperglide sprockets with ramps and cutaway teeth to make rear shifting easier. This was a genuine improvement, and the competition soon copied it. It was much easier to design an early shifting derailleur.

By the early 1990s it was possible to mix and match shift levers and rear derailleurs from different vendors if the total stroke length matched and if the sprocket spacing matched.

At this point, Shimano played two dirty tricks on the users. First, in the process of going from six and seven to eight and nine sprockets, they used different sprocket spacing between the smallest two sprockets and between the larger sprockets. There was no de-facto standard sprocket spacing.

Second, Shimano provided different total cable travel for the different Shimano groups. Dura-Ace levers won't work with 105 derailleurs. Shimano road bike shift levers won't work with Shimano mountain bike derailleurs. Shimano's lack of internal standardization is both sloppy design and anti-user.

There is a fair bit of interchangeability. You can mix and match Sachs and Campagnolo shift levers and derailleurs. There seem to be three (perhaps four) Shimano standards. **For** example, I'm using Shimano STI brake-shift levers with Nexave derailleurs and they work fine. It is hard to find information on what interchanges from the catalogs.

Gears to You!
-Frank Berto
CA

Frank Berto is an experienced and knowledgeable gear freak, and a regular contributor. —G

BLACK-CAP

He's in my French class. One of the traditional, seventies-style cyclists, with incredibly long hair, capped by the black Campagnolo cap, bill turned up, worn high on the head, towards the back. Red jersey, blank except for some racy stripes; wool. He **also** sports the first-generation lycra cycling shorts. They're dull, lackluster, and somewhat threadbare. His bare feet are shockingly white beneath his barely tan, shaven legs; his black Detto Pietro cleats, which had hung over his shoulders by their **laces** on the trip up to the classroom, are now on display on the floor where books normally go. Of course, he waited until he got to class to remove the old knit cycling gloves. During class he will frequently nurse off of his La Vie Claire water bottle, to wash down the banana and bran muffin.

He brought the bike into class with him—a daring feat since we're on the second floor, and the stairs are a zoo between classes. The guy's got guts. The last fellow I saw who showed that kind of effrontery was my brother Max, whose only shoes seemed to be his wretched cleats whose toes actually curled up in front, perhaps from walking on tip-toe everywhere. The rest of his wardrobe was a red wool jersey that came down to his knees—they didn't make jerseys for kids back then. I used to sport a cap of the Campagnolo **or** Cinelli persuasion, bill up, myself, but that was the extent of my indoor cycling regalia—just enough to get some recognition without risking the brutal gibe of my peers.

My classmate's bike is as old as his uniform. No stickers—an obvious sign of weak heritage. I suppose I could ask him about the make, but I can guess his response: "She was built by an Italian framebuilder. I can't tell you more than that, except to say that she's very fast." In other words, a Univega. Perhaps the affordable Viva Sport, as Max had. (He, too, expounded on its rich Italian origin with little provocation.) All the same, only a heartless jerk would leave his mighty steed outside, to brave the fierce elements **or** the jeopardy of theft. I dare anybody to challenge this hard-core cyclophile about bringing the bike to class. I almost feel irresponsible in this era of sleek, trendy apparel which has no respect for tradition. My shoes fasten with Velcro, of all things, and are made in Korea, not Italy. There's not a fiber of wool left in my cycling wardrobe, and my shorts and jerseys alike are billboards for sponsorship, forsaking the simplicity of blankjerseys that said no more than "I am a cyclist." No longer is the bike a constant companion; in today's cycling world, it's a mere fitness tool, with no more personality than a Nautilus machine. Most importantly, even the best riders of today refuse to tie up their identity in the sport. They not only look like everybody else, but they are everybody else. They just happen to ride a bike, that's all.

I have an urge to turn to this old world cyclist and say, "Power, brother!" But I would be out of place. I'm not one of him, and never again could be. I belong to the new generation of racers, who attend clinics and belong to clubs. It's become trendy to be a noveau-cyclist, to ride a quick, sporty bike with a "cream and teal" paint job, and to wear sleek, fashionable pastel clothing and a lavender helmet with a name like "Brava."

We attempt to keep training diaries, recording pulse rate, diet, and **our** performance during today's "training session." We throw around terms like "paceline," "repetitions," and "technique." and combine our riding with circuit training to maximize our "fitness potential." Gone are the days of aimless, carefree riding for riding's sake. The technology has raged out of control, too; many new-generation riders never knew life before step in pedals **or** shifters that clicked, or brakes with a "light, snappy" feel.

Most of all, the perpetrators of this stylish new breed of cycling aren't rebels. Their conduct is met with complete acceptance, even admiration, from the layman. They need not explain their shaven legs. They have never known the scorn and mockery that cyclists received, and even accepted. To them, cycling is just another way to fill in the time. Only the guy in my French class deserves to call himself a cyclist.

The rest of us gave up that right when we left our cleats at home and started dressing like everybody else.

—Dana Albert
CA

CONFUSING, THOSE A-COUNTRIES

Thank you for sending your El Nino Sale-O-Rama flyer. I felt that I should send you this letter since you might be wondering what, if any, reaction you are getting from that possible broad section of customers who are on the list, current, and have not yet written or bought anything.

I would like to buy quite a range of items from you. And not because it appeals to some old polished-steel, burnished-leather aesthetic that I might have; but because I think bicycling is a simple activity best done in a simple, elegant manner. I believe the elegance is bound within the simplicity. Plus I could **do** with a few replacements.

I haven't bought because I can't afford to at the moment. I would like to buy a frame, but my bank manager would be unimpressed. I would like to have those SunTour Superbe Pro gear levers and non-aero brake levers, but my credit card spends its life maxed out, at its limit. A saddlebag would have gone well also, although I don't really feel like making brackets for my old Brooks, which doesn't have the eyelets.

So the point is, I still want to maintain **a** subscription, and maybe business will improve enough for me to get some things. I haven't not bought because I think that either you people **are** cute and anachronistic and I just wanted to have a good laugh at the RRs. I haven't not bought because I haven't been able to,

not because I didn't like what you had on offer or because I thought it was too expensive.

So at least when sales are slow or disappointing, you can take some comfort in knowing it's not due to some looming lack in your business strategy (if you have one), or because nobody cares about what you're doing. It'sjust that the world seems to manufacture problems, and these problems seem to kick their heels around us.

—*Tyrone Stapleton*
South Australia

p.s. Could you please note that my address is in South AUSTRALIA, and not South Africa. This problem alone adds two months to the delivery of my mail.

Noted, oops, sorry, and we don't actually have a business strategy.—ed.

TO SAVE A FANNY

Some thoughts on the Mechanik's Corner in RR11: Fortunately I have never had to remove a stripped crank arm, but I think there must have been a better way. The thought of sawing through a Phil Wood BB brought tears to my eyes. I have done some automotive restoration over the last few years and have found a die grinder (electric or pneumatic) with a small fiber "cut-off' wheel has saved my fanny more times than I care to admit. With a small amout of skill (my level) and a steady hand, it allows some delicate surgery on metal.

I think that a crank arm could be approached from a relatively safe angle with such a tool. I suspect one would only have to cut a strategic relief crack into the side of the crank arm at the spindle hole, to loosen it. And even if you didn't have the angle (or nerve) to cut all the way through to the spindle, a significant cut could be finished with a couple well-placed blows from a sharp chisel.

It's nice to see Frank Berto in print again.

—*Ray Fontaine*
Westhampton, MA

Ray, good tip. I hied your method with a hacksaw, and couldn't get the angle I needed. Also, many readers asked "Why didn't youjust ride the bike and have it loosen naturally?" or some variation of that. Well, it was pouring rain, evening, and a virgin bike that was way too bigfor me. Besides, it was really cranked on there hard.

There are tools madejustfor extracting cranks with stripped threads. The best one I've seen is the VAR. It costs about $85, and I've ordered it. VAR is ignoring thefaxes for some reason. Probably the order is too small, I don't knowfor sure. —G

¿HUH?

(The following letter was addressed to me c/o an industry trade magazine. Background:A few issues ago, Bicycle Retailer & Industry News included a snippet about our move to Joe Starck for frames. But it got one key fact wrong, so I wrote a letter correcting that. Then. I got the following letter, addressed to me c/o The Bicycle Retailer. —Grant)

Dear Grant,

On behalf of Mad Dogg Athletics, Inc. we would like to thank you for the "Rivendell Clarifies its Move To New Builder, Joe Starck"article in the March 15, 1998 issue of Bicycle Retailer and Industry News on the Spinning@Program, the original and most comprehensive indoor cycling program of its kind. In its 10th anniversary, the Spinning program has been responsible for getting thousands of people worldwide in shape, both mentally and physically. We are pleased you have found the Spinning program—and its creator, Johnny G.—the right fit for your publication.

We have noticed in many articles that references to the Spinning program are not cited as registered trademarks, or that Spinning has been used in a generic sense, i.e., as the name of an activity rather than the brand name of our particular program. The word Spinning was coined by Mad Dogg Athletics, Inc. and is an arbitrary word we created for its indoor cycling program. In addition, the Spinning indoor cycle should be referred to as the Johnny G. Spinner Pro® or Spinner@. These terms have also been trademarked by Mad Dogg Athletics, Inc. We would very much appreciate that in the future, each time youuse the mark Spinning or Spinner, you use the marks solely to refer to our program. Capitalize the first letter of the mark, and refrain from using "Spinning" or "Spin" to describe a physical activity or an exercise program offered by any other person or entity.

We look forward to a lasting relationship with you and appreciate your support of the Spinning program. Please feel free to contact me if you have any questions regarding Mad Dogg Athletics trademarks, programs or products.

— *K. Comley*
Creative Media Marketing

ANOTHER USE FOR BEESWAX

I am a Lead Engineer at AlliedSignal Turbocharging Systems in Torrance California. The Garrett turbochargers we manufacture rotate at very high speed and must be accurately balanced. To calibrate the balance machines in our prototype shop, a small weight (typically a 1 gram lump of clay or wax) is attached to the part being balanced, then the part is spun. The trick is getting the right wax... too hard and it can not be molded to grip the parts, too soft and it comes off when the part is spun. Last week thev ran short of wax and sent many one gram lumps of modeling clay flying though the shop! I donated a chunk of my beeswax to the cause, and it worked! The balancing guys love it. I'm not sure bow many one gram lumps you can get from Dixie cup full of beeswax, but I imagine it will keep our balance machines spinning for years.

—*Angus Lemon*
CA

WHOSE BACK STABBED?

You spend too much time, effort. and expense on the RR. and there is a theme of self-destruct front to hack—hut most of all in the Progress Report. We've all come too far with yon to sit quietly as yon hack-stab Rivendell. Parting with Waterford is had enongh, hut reading your thoughts of patchwork tubing, mix-match paint. and how to (gloss it over}with the members is the road to an ending. Yon can do better.

—*R.M.*
Fort Collins, CO

R, thanksfor taking the time to write. Maybe I can say something so you won't won?, so much about us. The Prog Report is a Rivendell diary I make public. Usually it's therapeutic, but it's always a record of how things are going, and some of the highlights. Sometimes it's ugly, I know. Mixing tubes can make a frame better if you know what you're doing, worse if you don't. In our case, it allows us to use tubes appropriate for short heavy riders and tall light ones, and everybody in between. Small as we are, we have—right there in room no. 3—a tubing selection that must be unrivalled in all of bikedom. Not in quantity, but in variety, and every tube is premium quality. We'd be no better off with all Reynolds, all Columbus, all Dedaccia, or Vitus. A good mix is hard to beat. Waterford was our supplier until we decided to change the way we do bikes, at which point we were no longer a good fit. The Waterford-built frames were and are superb, and so are the ones Joe Starck builds for us. The new frames cost us about $250 more, so it wasn't a cost-cutting move. It's hard to assess a situation from the outside, but from the inside, I think it was a good move. The "mix/match "paint:I'm not sure what that means. We have 9 stock colors,and if you can't decide,Joe Bell (painter) will do itfor you. Not so bad! The Readers actually don't get enough time, and that's why they're such toe-stubbing efforts. I think they're getting better, and one day they'll even have decent photos. Most of the comments we get arefavorable, but there's always room to improve. and that's the plan. Anyway, you seem concerned about Rivendell, and I thank youfor that.

—Grant

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

Jan **20.** It's inventory week and I'm answering the phones while Peter. Allen. and Joe count stuff. I count the frame tubes and dropouts and lugs and crowns later. **We** can't ship while inventory's heing counted, and it's heing counted most of the week, **so** we ought to do badly this week. We have four frames, and **maybe** we can ship them Friday—Nick M,. Milton. John Pappas, and John Szaho. I've been shooting them for the Web-thing, and I hope the pics come out fine. **We** received **28** Herons today, **all** road.

Jan 21. More inventory, still no shipping. but the hig news came at the end of the day. when Peter discovered the Herons don't have **a** bb cable guide. and the shells aren't drilled. either. **So** we'll have to send them back.

Jan **22.** Jeff reacted' the hest possible **way** to the Heron thing. He said "My fault, send them hack," but I don't think it was his fault. It wasn't anybody's, and it's **a** quirk fix. We shipped Milton's frame today. and got some more frame orders. One's **a** conundrum: A very nice lady has **a** 25-year old Fuji she rides every day. It cost $450 back then. Her saddle height is 63.6cm, she's **5-2,** and by most standards she can't really fit **a** 700-c hike. **so** I suggested an A/R. But her Fuji is **a** 21. way too big, and she's used to it. She rides it daily. even in ice storms and on gravel roads. "I've never had **a** small-wheel hike and I don't see why I nerd one now. **I'll** never put fat tires on my hike. I just want **a** new hike." She needs nothing larger than **a** 50. and **a 48** would he hetter, and she wants 700c wheels. I can get her on **a** frame that'll fit murh better than **a** 27-inch wheeled 21-inch Fuji, hut it doesn't seem ideal. We've turned down many frames hefore this, but I don't want to turn this one down. I like her **a** lot, and I'm glad she wants **a** Rivendell. hut **I** don't know exactly what to do. **I'll** work out some design that makes the most of it. Shr won't **be** showing much seat post. that's for sure. She **says** the top tuhe hits her when she straddles it. hut it's been like that for **25** years and she's fine with it. The sale doesn't make any difference. **I** just don't want to get **sloppy** and think I can design **a** 700c frame to fit anybody, and I don't want to get in the habit of not saying **No.**

As Rivendell gets slightly bigger and **way** more complicated. it's just **as** much fun and satisfying and **all** that. but **I** feel **less** and **less** able to do it myself, more and more grateful to have good help. Still. I feel **a** little insecure ahout the fart that what **I** ran do—frame stuff. the Reatlrr—is **a** smaller and smaller part of the everyday work. I'm not well-organized, and I need **a** hetter system for not letting frame orders fall through the cracks. Joe has about 6 "super hot-ASAP" frames in his lap now, because I forgot to send him the tubes and the order. It's not a complete flake-out. The order goes into the computer and into a hard paper file with the customer's name, but if we have every tube except a chainstay or something, I order that up and hold the rest of the tubes until it gets here. Then it gets here, I put it in stock, not with the order. What I've got to do is keep back-orders. I'll ship Joe partial orders, then when he gets ready to build that frame, if he needs a tube he'll call me up and that'll ring the bell, if I haven't already taken care of it. Anyway, I feel like I've never been better at some things, and never been worse at others.

The RR/11 is 72 pages, and I hope people like it. Frank's story is awfully long, but I liked it. We didn't send the photos to lino, so the quality might be terrible. It's at the printer now, and will be mailed next week.

We have an opportunity to buy 7,000 bikesworth of Dia-Compe 986 cantilevers, for $14,000. I'm concerned that cantilevers will stop being made, and these are good ones (with CODA pads), and it would sure be nice to worry about the continued existence **of** one **less** widget, but that's too much money, and the window of opportunity is shrinking fast. They'll probably get sold to the Phillipines **or** South America, like **lots** of good stuff that's no longer fashionable does.

I'm looking at digital cameras to help cut costs with the RR, and **so** we can update the web-thing more often. The Sony Mavica seems like **a** good one, and mayhe even an extra-appropriate choice for us. I don't want to drag **on** forever, waiting for the perfect model to fall in my lap for free. The Nom Scotia wool catalogue will arrive next week. Probably we'll get some black wool underwear for outerwear, and see how it goes. I like mine.

Feb 10. RR11 is going out this week at last, and it will help, but **as usual** we don't even have enough for postage. It costs $1.24 to mail because it's too big. We're having good days, $1,600 to $2,100 or **so,** but we've got these whopping bills, too. Nitto, Carradice, Columbus, Reynolds, Vitus, another Dedacciai—all good stuff, hut it hurts the cash flow to huy tons of tubes now, for frames that will **he** built months from now. **The** Columbus bill is **$3,800,** and looking at it now, it seems we could have done without **a** third of it. I felt sick and guilty when I saw it, because **tuhe** ordering is my deal, but making **sure** we have money to buy stuff is Peter's deal **and a** main concern, **so I** felt **as** though I sabotaged him. He's frustrated that we never have any money, and I am too, but he's more in tune with the cash flow and the purchases and the ever-increasing inventory than I am, and I feel as though I'm blowing it. I just hate not having enough tubes for any one bike, and the way we're doing the bikes now pretty much requires that we have lots of tubes on hand. But still. we can't pretend we have money. We sold off most of the prototypes and demos, and that brought in some money, about $10,000, which was swallowed up immediately, and so our plan to put $5K in the bank never materialized. We're going to the Seattle show this weekend, and all told that'll cost $2,500. I hope we get something good from it. Lots of frames will go out this month, maybe 20, and most of them aren't paid for yet, and if half the buyers also get lots of parts from us, and if we can sell that UPS-damaged Joe frame that he had to replace the rear dropout on...then maybe we'll be able to get the Columbus tubes.

I'm working hard on the next catalogue, and I'm also looking at the stuff we have in terms of how it affects our money on hand at any moment. The Kucharik jerseys are killers, since we have two colors and five sizes and that's 10 sku's, and every time we order them it's another $500 or so, and then we don't even get a full run of anvthing. Sergals don't fit as well, but they cost less, and they're from Italy! But they take four months to get, and it's impossible these days to communicate with Sergal.

Last week we were on **a** buying moratorium again. and I think we'll try to do that twice **a** month. just not order anything. "Butit doesn't work if it's hinge and purge," Peter **says, so** we have to be careful there, too. I'm starting to get the idea of seasonal catalogues. It sure would he nice not to have to keep everything in stock **all** year long. Mayhe no raingear in the summer. **Mayhe** ONE color jersey, and just **sell** them in flyers and Readers. and **say, even.** that we'll order them once **a** month, and if you want **one** next month, get your order in this month. It seems not good service, but we may have to do it to keep alive.

Frame sales are okay, actually pretty good right now. hut the profits are too slim on them. and it changes what should be **a** happy thing into **a** neutral thingN-**so** we've just got to raise the prices. I wonder what people think we make on **a** frame. anyway. $375+$225+185+3+30=$818+10+3+$831 **plus** TIME. **If** we use **a** Dedaccia baseball hat there's another **$25.** and **a** HJ hh is another $30. It's good when they go out with parts on them, too. **Once** these next tubing orders come in. no more buying.

Feh. 12. Well. sales have been okay, hut the cost of stocking **up** on tuhing is really dragging us down. We sold **a** bunch of demo frames, hut the money just got sucked up, and the monster wants more. We

won't make payroll this week unless we have a $4.000 day today, and that's pretty unlikely unless it turns out we still have to ship maybe 8 of those frames, and we can do that today. and we get some more deposits. I talked to Mark H. the Columbus connection, and he said we could pay half the big bill now, and half at the end of the month. That'll help. We didn't buy anything last week, so in three weeks we should he able to get money in without immediately filling up holes, since we get 30-day terms on most stuff.

We got the dropouts in yesterday. and the bulk of them were double-cranked (angled to accommodate the seat and rhainstay angles) rather severely, and I don't want to use them. We got maybe 20 usable ones. It's kind of a shame, since if we'd ordered them un-cranked, Joe could easily crank them with a mallet, and they wouldn't look so pounded. There's no gentle bend, it's more like a stomped-in angle that got gouged in there. Anyway, we'll eat those and do I don't know what with them—sell them as desk-top doodle toys? They work for me that way.

Yesterday we saw the new Mens Journal with the Rivendell story. It was positive-but-embarassing, and I think there's a tendency, all the time and everywhere, to overhlow things. Still, at least the writer is a rider, and it was good. Peter said "they make it sound as tho all we rare ahout are appearances!" and I guess I can see what he means. It makes me seem like I think I'm the arbiter of good taste or something, and that's not how I see it. I have so many influences in that way, but it's not good taste, it'sjust a certain kind of taste, and I can see how it wouldn't appeal to everyone. Then there was the ''Guru''word again, and that makes me squirm. The headbadge looked good and the bike looked good and we got some calls from it. Overall I'm relieved that it came out good. A bunch of photos got squozen out at the last minute, I think. Richard (Sachs) drove a hike down there for them to photograph, and that didn't make it in, and he must be disappointed. The bike-with-seamless white backdrop photo didn't make it, either. The photographer came to my house and we set the bike up with a big roll of paper, and held it up with monofilament, and it was quite a proress, hut none of those made it. There were some riding shots. too, up there on the mountain. hut it's prohably a good thing they didn't make it, because I forgot my helmet, and I'd hate to catch the grief from heing helmetless. Peter got a bunch of letters from his RR story ahout not wearing gloves or sunglasses.

I'm sick of this rain, that's for sure. The raingear works, the fenders are great, but it's hard to beat no water falling down on you.

The next catalogue is coming along. We have to chop things. The rash-flow killers, that's all. Well, Nitto is a cash-flow killer and we can't chop them, but the other ones, yes. I don't know—jerseys and freewheels are so expensive and we don't make enough money on them. and there are so many variants in ratios and sizes and rolors—it's just so hard to do all that. I wonder how companies like QBP and Performance and REI do it. We've got to get a good photo for the catalogue rover. Jeff on a ride, or Kim at Biras. or Karen. or the Resurgence photo from 1930. if I could get it. the coal miner on a bike.

Feb.17. We went to the Seattle bike show, a consumer show, this weekend and just got hark. It went well. We showed Chris Henderson's new LongLow and didn't even srratrh it. and we had the Herons there, too, and the Heron poster. The poster is kind of a bummer for me. It came out perfect, hut doesn't list Wford as the builders (or anything else), and I think Wford is bummed about that. I can understand that, hut it wasn't intentional, and I don't think it'll hurt anything. They'd like to have had a decal in the window , but the decals were a last-second addition, and Ijust grabbed what I could round up in a few minutes, and we didn't have Wford decals. Besides, Nokona decal aside, it was supposed to look like a bike shop window, with parts-makers decals and stuff. Ritcheywas on it for the cranks and tires, not the frames. I didn't put a Rivendell logo on it either, and just put us down on the piece of paper on the ground, not as designers of the frames. but as a source for them, and that helps the entire joint venture. Anyway, maybe we can get a rubber stamp with Wford on it, or the next run we can add them. I'm upset about it, because I thought they'd be happy to see it, and we sent them a hunch, and now I feel as though we're rubbing their noses in the fact that they're absent. Oops. Definitely my goof.

Tomorrow I go down to Joe's with Bob S. to shoot some photos for a frame brochure/website-thing/poster.

The Seattle show was pretty interesting. It seems like everyone is diversifying, with lug AND tig, steel AND aluminum AND titanium. Well-known, established brands are following trends. Megatube Marinonis with straight forks and megatubes, and stuff like that. I'm glad we're sticking to the lugs and normal looks.

We're getting calls from the Men's Journal article, kind of a surprise. I just read the whole thing through for the first time last night, and noticed it said "...developed a cult around a building philosophy he called 'stalwart cycles for the modern wayfarer.'" There's no cult, and I've never tried to develop one, and the "stalwart.." thing was just a slogan we used on the cover of the Bstone catalogue one year, in keeping with the ancient look of it, and trying to sound sort of charmingly corny. It wasn't a building philosophy. I've never even said the word "stalwart" in a normal sentence, and I'd never describe a hike like that, I mean, seriously and out loud. Greg, the catalogue designer, got into the spirit of the thing and suggested another slogan for the cover: "Begone, ye gadgets of new...Arise! o tried and true!" . It cracked me up, hut I never convinced myself people would take it in the right spirit, or whether someone out there would actually think we thought new stuff was evil and must be gotten rid of with any means possible, even witchcraft or something...so I chickened out on that one and went with the Stalwart/wayfarer one, and even that's come back to nibble. I think I'm taking it too seriously. Overall it was a good piece, although my face looks fat in it. Mayhe I do need to exercise more, hut El Nino and all...

Richard got hardly a mention in that story, and I know he was counting on more, and I was counting on a lot less, and I feel sort of embarassed ahout that. I mean, it's an honor to be listed with him. hut he's been such an inspiration, and he continues to be, and I don't think we'd he here if without Richard's strong convictions and influence. I'm pretty sure we wouldn't, in fart.

We had a good day yesterday, and it'll be a good day today if the Reynolds chainstays come in.

Later that day. The chainstays still haven't shipped, so maybe next week. Frame orders are piling up, and the 4-5-6 week turnaround is now at 8-9. It's not like a factory, where if one worker is sirk another fills in, and it's not like a factory where one guy miters the tubes, another tacks the frame. one guy builds forks, someone else builds rear triangles. one guy brazes the main and puts the other pieces on. and someone finally files. Joe does all of it. and the flurry of orders (two per day is a flurry) has him scared, and us scared because of it. Joe's concerned ahout building All-Rounders, too—not technically, hut the added volume thev add. We have a couple possible solutions, hoth great ones, hut none will happen immediately. Mayhe Rob ran build those. Roh's another ex-Masi builder who works at JB's, and Joe says he's really good. Then Steve, if he actually does move hark to Santa Rosa, as he sort of wants to. He's still at Wford. hut he wants to move hack to California, and if that happens we'd have some work for him. It would be good, a huge help. and he's talked ahout a Spring return, so we'll see. He'd still need a full shop to make the frames. and that won't come instantly. I'm stressing out over this, and over our tax return. Our inventory is 30 percent higher than it was last year, and rhat counts as an asset. so we're taxed on it, and we don't have the money—or, I don't have the money to pay the taxes. We're an S-Corp, so the taxes fall onto the shareholders. and I own 59 percent or so.

Feb 20. We sold two frames today hut may have lost something bigger. The fellow I was hoping would build our All-Rounders sounds unlikely now. and that's fine, but it's a preth big turnaround. so we're on the hunt again. Joe ran handle all the Roads and LongLows and a few of the A/Rs, but it would be best to get someone else to do most of them. In California would he hest. The accountain told Marv and Peter that we may have made money this year. but we don't have money. so how does that work? Anyway, it's a sign that we're doing something right. It's going to he neat to see the Joe pictures, and some will make it in this issue. Then we have the interview and stuff like that. I hope it doesn't cause any hard feelings anywhere else.

I got an idea for rarks today. and it seems so obvious that there must be a flaw. Mini lugs in mavbe three or four different angles. then glue them together with a cold-weld goop of some kind. They rould he brazed. too, hut at that point they're $200 racks. Glue-your-own sounds good. kits for $50, including tuhing (straight) and the lugs and glue, and you end up with a good strong weird rack that's pretty fixable if it ever breaks. Maybe not. hut thr concept intrigues me.

I'm really happy with work these days, especially with the guys I'm working with. They all need raises. but we don't actually have the money to do that. yet. The medical plan was something. and the Sarrep.

I got a nire note from Marr @ Wford last week, ahout the Heron poster. Even though it doesn't have a Wford logo on it, he likes it a whole lot. I want to get a Wford ruhher stamp made. and then stamp them. I sure wish I could have that day over again.

The new wool underwear seems good. Peter's against adding new stuff to the new catalogue, but I really like this. so maybe something else will haw to get the ax to make room. The Men's Journal thing is really kicking in. "hat a surprise that is.

Feb 25. A frame customer called today to cancel his order because it was late. His frame was shipped out today. and it's 2 UPS davs from us, so we'll get it the day after tomorrow. and I asked him if that mattered. and he said NO. He had $300 down on it.

with $1.100 or so due (with headset and all), and I think he can afford it. hut he just got to feeling that we were never going to deliver it, and got frustrated, and that's understandable. hut a hummer here. The money's not the issue. because we'll sell it for what he'd have bought it for. so in that way it's a temporary setback. Meanwhile we can use it as a sample frame to show people who come by and want to see one. so it's useful right now that way. but man, this bike is perfect for him. and he can't buy anything like it custom or off the rack. and if he couldjust see it. I wish we hadn't blown it by being late. It's hard. It's always been a problem delivering hand-built frames on time. You shoot for 3 weeks, and it takes 8. We've got to prepare people for that. Things just happen. and this is not a speedy process. There are tons of derent frames you ran buy right now, hut these frames are special and they just take longer. I wish he'd take the frame.

Feh 27. The frame got here today. and it is perfect. I don't know what to do ahout it. I think we'll send him a short note. and some pictures we took of the unboxing of it. and then tell him that if he still wants the frame, and after reading the letter he still can't forgive us for the delay. then he can have it free, hut he's got to come pick it up. He's local enough, anyway. Peter's okay with that. It's a gamble, hut it's not a trick. I think he has the money. hut I wonder if he got something else instead. in the meantime. Mayhe he got a Litespeed or some other really nice fancy frame. On one hand. I think that if he did stray from steel, he'd never appreciate this frame the way it ought to he. anyway. He might look at it and wonder "how much does it weigh?" (4.9lb, and it's a 65). Anyway. I'm sending the note to him, with the photos, and we'll see what happens. We've already refunded his deposit antl his membership money. since he did both on the same day, and if he hates us now, we don't need to send him any reminders.
Work in general is happy and good. and we're busy with good things,and frame orders have been coming in pretty good. I think we have orders for ahout 45 Joe frames. Many will he late. hut we're mailing out a letter telling people that, and giving them a chance to hail, and a more realistic delivery date if they don't.
I heard today that Cannondale's yearly sales are $173 million, and now they're getting into motorcycles. Jet-skis will follow. then Hovercrafts. Then they'll get a U.S. gov't contract for some space shuttle project. while we're still delivering frames late.

We got the photos hack from the Joe & JB photo trip, and they're really great. I've got to pick 30 or so of them and make a poster/frame brochure. I don't know how we'll do it. exartly, hut there are lots of good pictures and I want to use as many as possible. and a poster's the only cheap way to do that.
I'm Rivendell-less now that we told all the demos. No—I still have my singlespeed that Steve made. I got my deposit in for a new one yesterday, hefore the price went up. and now I'm on the 9-week program. I'm going to experiment with my frame's tubing. I think the 1-7 seat tubes that we never use as seat tubes but often ute as top tubes would make good downtubes. We chop the butt end when they're top tubes. so most of the top tuhe is 0.7. hut we'll keep the 120mm 1.0 butt when it goes as a downtube. It makes tons of sense in theory. hut I wonder why nobody's done it hefore. The 0.7 is good dent-prevention for the top tuhe. and the 1.0 hutt pretty much guarantees no fatigue cracks or buckles on the downtube. and the 0.7 belly resists torsion really good. In both cases the 0.7 tail end is plenty thick for silver brazing.

March 4. Today I wrote a letter to all the frame buyers, telling them when their frame was going to he finished, I think. Peter merged it, and together we set the dates based on Joe's hest guess of how many he can build a week—3 to 4. About 50 letters are going out, and I wonder how many cancellations we'll get. At least now we can set realistic dates. Before it was "6 to 8 weeks" and that grew to "8 or 9 weeks," and now the latest orders are being scheduled for August—TWENTY WEEKS away. I'll bet we lose at least ten orders, and we'll have to repay $4.500 to $8,000 in deposits. That'll leave a mark.
We need $9,000 more this week to pay the hills, and I can't imagine how that'll happen. At least five frames are due next week or the week after, and that will help.

Mar 10. We, or I should say I, got a nasty cancellation today. His frame is the very first to he delivered in the next batch, too—it's in paint right now and we'll have it in five days. He faxed back the copy of the note we sent out and wrote "hullshit, bullshit, hullshit" across it, and after one paragraph he wrote "blah, blah,blah." Then at the end he said "I don't helieve anything you say anymore,and I am not at all excited ahout the frame," and he cancelled. Two weeks ago we called to confirm color, and he faxed back a note (confirming the color) and even said Thanks, I guess for heing careful to confirm the color. He owed about $835 on it, and I guess this will he our first sample frame, for display. I started to write another note saying he could have it free, but was overruled, and I'm glad. We're all paying full pop for these, and it's had for morale to just give them away. But man, did he have to call me a liar? Late deliveries are not good, hut they're so common with handhuilt frames that they're almost part of the tradition. Anyway, we got ahout eleven YES I STILL WANT IT responses today, and some really nice ones, too. We're lucky to have such nice customers. The canceller has always been a great guy, too, though, and it hums me out to think I stretched him too thin and ruined it for him. The order-your-frame-and-you-get-your-slot way will work out hetter, and mayhe we ought to have a date afterwhich, if they cancel, we don't eat every last cent. Certainly, once tubes are cut.
Peter's concerned, and so am I, but Peter more, that we'll he stuck at 120 frames or 150 frames for eternity. Mayhe Serotta could do the All-Rounders. and mayhe we could limit sizes and tube specs and sell them a little cheaper, like around $1000.
I'm almost done with the catalogue copy,just need some pictures and to rewrite a little of the hike stuff. I wish Karen could be on the cover, but she's too far away these days, and so mayhe we'll have to do it with Jeff. Or we could use a picture of Joe building, hut we'll have enough of those in the frame section, or in the poster. It should be a riding, or an off-the-hike picture with the hike in it. Kim at Bicas would he great, hut she's down there.
I can't stop thinking about the cancellation. I sure hope he just had a had day or week, and will reconsider. I left a couple rambling messages on his answering machine, and if I call again I'm afraid he'll think I'm harrassing him or something. From now on we should try to scare people off with unrealistically long deliveries,and if they can't he scared. we'll relax a little.

Mar 18. We need another builder because Joe's getting ovenvhelmed and lead time has stretched to 6 months and will only get longer. So we need someone to build All-Rounders. I have a few good leads. and one is really good. Match Bicycle Co., a funny name if you ask me. is up in Washington. It's run by Tim Isaac, who used to run the Trek steel-hike fartory in the '70s. and now builds Schwinn Paramounts. He has 7 employees, and the hikes look really good. Mayhe it would he hest to cut A/R sizes down to seven, and limit colors to 5, and actually stock one color, and not have the super-Joe finish level on them. They'll still he super. hut maybe this way we could get the price down to $1.000 or so. and lead time to a month. Joe will still build the Road Standards and LongLows and the A/Rs already in his schedule. Anyway, nothing's set, we're still looking and hoping. An obvious question this will arouse is "why not Waterford?", hut I hope it just doesn't come up. Wford is doing Herons. and that may he plenty.
Mar 24. We got lots of stuff in today. Four frames. tons of Panaracer tires, prototype low-rider racks that coincidentally look so much like Bruce Gordon's that he'll blow up of we offer them in that form, but I have a good idea on how to even improve them. Nitto wants to know how much load. then they'll do some vibration testing. It's good to have them hacking this up.
Ted and I go to the Taiwan trade show in a couple of days. I'm going just to meet with the casters. We may modify the lugs, and we need to get stem lugs. Mr. Yoshikawa from Nitto will he there. too, and we're supposed to meet at the entrance at 10:00 am the first day. He'll have the prototype saddle-hag carrier that mounts to a seat post (provided I communicated this clearly). Sky from Bianrhi gave me. coupons for half price hotel, and that'll save us a couple hundred dollars.
Herons are selling okay, pretty good. actually. We got another frame cancellation todav. hut it was a nice one. and wasn't hecause of the late delivery. Actually, her frame was going to he ready in a month.
Finally got through to Mario at Tecnociclo. antl he's modifying a mold for us, and in 2 months we should have douhle-eyelet, tab-tab dropouts, based on the 1020, sort of like the 1010 Campy, hut I think stronger.
Today I got a quote from another frame huilder on All-Rounders. They're going to he built by someone other than Joe, since Joe's overworked already. and it's hest for him not to have to switch gears too often or too murh—so he'll do just the Road Standards and LongLows. I also spoke with. and have been speaking with yet another really good source. Today he said "now's not the right time—mayhe in 5 to 6 months." He said that, assuming it would wreck the deal, and I said "5 to 6 months is the earliest we could do it anyway," so he was glad to hear that. and we're flying down to see him in a couple weeks. Too much flying lately. we should save our money. but this is important stuff.
I don't know what we'll say about the All-Rounders in the frame brochure—about where thev come from. or whatever. We'll go with someone good. no matter who it is. hut it would be good to know who it is. I think people will think we're desperate. if we don't know who it is, and we aren't. We could put them on hold for a year if we had to. hut I don't think we'll have to.

March 29. Ted and 1were all set to go to Taipei to

meet with lug casters and so forth, and an hour before the shuttle was scheduled to come, I felt a familiar headache and went to the doctor, and ended up spending the weekend in the hospital (meningitis) and Ted stayed at my house. The cat-scan terrified me—I nearly sprang up and ran out of there. Dang—tons of stuff to talk about at Taipei, mostly stem lugs, and now it's phhhhhht! We can go later, but there was a trade show, so a good chance to meet with lots of people in a short time. I was going to meet Mr. Yoshikawa from Nitto, and he has the Carradice saddlebag uplift/adapter he was going to give to me to try. Now I've got to write apology notes saying "sorry I missed you, but..."
I'm home from work a couple day, and maybe I can wind up RR12 and/or the catalogue.

April 17. It's Friday and we've been getting lots of renewals from the postcard we sent out. Almost 25 a day, so we spend lots of time creating $15 invoices, and the daily totals work out okay.
Mostly we think about frames these day. The ones on order are coming in a little to a ton late, and but they're coming in perfect, and the riders are really happy. But we're backed up through late September, so we need another source, and tomorrow Peter and I go to investigate one.
Peter had a good idea today. We were out riding and talking about lugs and stuff, and what to do, and he suggested the LongLows get their own lugs. I've been working on something for a while, not knowing where it would go, and I've finally got it pretty good. The new set has swoopy sides and nice points and curves and balance to it, and I think they'll be good to braze, but I'll ask Joe about that.
Anyway, we're hoping to find someone to build the All-Rounders, and some stock, not Made To Order, Roads and LongLows, so we can deliver in a month or so. And Joe will still build the Made To Orders. So it's up to Washington to talk to Tim Isaac, and if it doesn't work out there, maybe Simonetti, down in Chino.
D.B. sent me an email he received from RS., who just got his frame and rode it, and it was such a nice letter about the way the bike behaves, so I sent it to Joe, and he was happy to get it, too.
If the frame program is in transition now, what do we do about the frames in the catalogue? Maybe not even put them in it, maybe just have a separate frame brochure. That will make mailing them out worse, but it's probably the smart thing to do.
The fellow who got the "free frame" because we were late in delivering it still hasn't built it up and ridden it, and it's been a month and a half now. At least he called, a couple weeks ago, to tell us. Maybe it's built now. We could sure use the money, but I think we'll never get it. It was a bad deal, I never should have made that offer. We have good, loyal customers who pay full price and keep coming back, and then I betray them by offering up this ballsy deal, and we lose a lot. But never in my wildest dreams did I actually think he'd actually take it, and when he did, I was sure that once he rode it he'd pay for the whole thing. But the longer it goes, the less likely we are to see anything. I think it's a cheap lesson in come kind of weird combo human behavior/business. I think it would make a good topic for an ethics class: You order something special. It comes in late. The company offers it to you for nothing. What do you do? Does it matter whether the company is, say, MicroSoft or Rivendell Bicycle Works? I think, if MicroSoft offered me a $1,500 widget for free because it was late, I'd take it. I'd figure they spend that much every hour on some kind of unnecessary advertising or image-building hoo-ha thing. So I guess I'm just a schmuck for offering the frame. I'm not mad at him, and I might have done the *same*, I'm not sure. It's tempting, it has to be. He had friends and family telling him no way should he pay full pop. Well, that $1,400 or so would buy half a lug tool, and we need five lug tools right now—two for the stem and three new ones. I'm going to get over it and forget about it and not hold anything against anybody, and I'm even going to forgive myself, eventually. Nobody got hurt, nobody got paralyzed, nobody got anything bad, he just got a good bike, and he deserves it, and I feel bad for gambling and losing that money, and I deserve to. It's an interesting thing, though. That's kind of neat.

April 2. Today, man I wish I could have it back. I wrote a letter, a short note, to the fellow who got the free frame, who said maybe he'd pay something for it, and it was an okay letter, not an angry one, but I just wanted to know if he'd built it up yet and how he liked it and if he'd planned to pay anything, and I even offered to buy it back from him for $250, so we could recoup something from it...all this, if he didn't like it. And I mailed the letter, and then opened yesterday's mail, and there was such a nice, great letter from him, and now I feel like an idiot, and I'd give anything to get that letter back. I think the post office should allow everybody three letter-call-backs per lifetime. Yeeesh. Grrrrrr. I need a major distraction in my life.

May 6. We've got to get the catalogue and this Reader out. Way too late. No time to do it at work, it's just answering phone calls all day and inputting orden—all good stuff, but it leaves no time for this. What are we going to do for the cover? What about the inside, how will we talk about frames? What are we going to do with All-Rounders? Who and when?
Last week we paid off one $4,500 credit card, and paid another $3,500 on our line of credit. It's the first week in almost a year we had any extra left over at all. and it was $8K. A year's worth of surplus. This week isn't so good. Big Brooks bills. We still owe $30,000 on our line of credit. We have to get it down, so if we do start up a program with Match, we at least have money to get it going.
Joe's frames continue to be perfect, and the Herons are doing okay. Peter gets married in a week and a half and will be in France for the last part of May. It'll be hard not to run the business into the ground without him. Spencer will work then, shipping stuff, and that'll get us through. I'm looking forward to June, though.

May 19. This is the second day of the first week that Peter's in France on his and Ann's honeymoon. We have to not wreck things. Today was one of the five most emotionally taxing day I've had here. Frames are behind schedule, people are mad or furious or distraught or extremely disappointed, and there's nothing we can do about it. I feel like we should make a really fine filter before we even accept any more orders: If you have an event coming up, or a vacation you want the bike for, or the only time you can ride a lot is in the Springtime, or it's a gift for someone, or ANYTHING like that, then you'd best buy a Serotta, because they can deliver it in a few weeks, and we're up to 7 months right now. The bottleneck is in paint, but we're working on it, and should be back on schedule by late June or early July. Anyway, tomorrow I send yet another letter out, telling people "sorry, and if you want a refund, we can do that now." And hope they don't blast us on the internet, or say "you've ruined my whole Spring Plan." I feel terrible. We've got to work something out. I don't know what, but something. Anyway, the frames are coming out perfect, and they're worth the wait. Still, no fun being a bad guy.

May 20. I sent out a letter today, giving the frame buyers another chance to bail. If they all do, we refund $5,000 or so in deposits, which we don't have, so I hope we keep a lot of them. I predict three of the eighteen letters I sent will quit. Anyway, at least it's out there. B.S. will get her bike on time, it appears. Joe built it in three day, with S & S couplings, no less, and it goes to paint tomorrow. Neil Lacey will build it up down there in Spring Valley. It'll be the only Joe-built we won't see, but times the thing here. She goes on vacation June 2, and needs some time to practice packing it in the suitcase. I found 250 left front singleeyelet dropouts, left over from the Bstone quick-release training devices. They're perfect, brand new, and so I ordered 100 rights to mate with them, but Everest said they could sell in pairs only, so I'll never have mates to these. Our Tecnociclo order will be here in a week and a half or two. Carradice sent a sketch of the new handlebar bag that'll go with the Nitto rack. It seems strange, maybe kind of neat, that this super-duper handlebar bag & rack will be made half in Japan by Nitto and half in England by Carradice. I get this issue back from layout tomorrow. I'll add a couple pages, think of a page one headline, and then it's off to the printer. Number 13 is well on its way, too.

May 26. It's a holiday and Jeff and I will ride to the top. We had a good riding day yesterday. Somehow I've got to finish this up and hand it off to Meghan for final layout so we can get it off to the printer by Thursday, and today's Monday. I need to take the keys back to the key place, because they don't work. I've got to shoot pictures of prune pits for the Edward Berry story. I was hoping to plant another tree to replace the one El Nino killed. It'll be four more days without Peter, but we'll make it. Sometime in the next month I want to go fishing.

SPRUNG FLYER

NEW, NORMAL, AND LTD. QTY

Kucharik SS wool jerseys-$70 (S-M-L-XL-XXL); size 50, $82
Made to our spec by Kucharik. The wool is the softest, coziest we've ever felt, the stitching is flawless, and they're cut one size larger than normal, so they don't cling to you like plastic. They all have medium grey bodies with blue cuff trim. Some of the collars are red, some are blue, no choice, they all look good. Peter here is 5-11 x 160 and a shrunken large fits him perfectly. The size 50 is a chest size.

Longsleeve jerseys: We're phasing these out until October. If you must have one and we don't have your size, we'll order it for you and it'll take a week. Here's what we have in stock, approximately:
Kucharik: Royal blue with grey trim or Red with grey trim.
S-M-L-XL-XXL; ($75)
Sergal: Striped in all sizes, green or maroon in 3 (m), 4(m/l) only. ($77) Stripes are two different shades of blue, and limey olive.

Raingear: Same story as long-sleeve wool, but in this case if you want something, you might have to wait a month. Sorry.

Selcof straddle wire catchers/paralysis preventers-$4
It prevents the cantilever brake straddle wire from falling onto the tire if a cable brakes. Forged in Italy, looks good. Your fork needs a hole in the crown. If you have a Rivendell frame with cantilever brakes, note that on your order and we'll throw one in for free. But you have to buy something, so we're not out the cost of the piece plus the postage and the time it takes to process the order, okay?

Modolo black hoods-$12/pair
These Italian rubber hoods fit older Campy, SunTour, and Modolo brake levers, and maybe some others. These are not the anatomic ones, but they're good. Black only.

700x35 Paselas- $27 ea.(wire bead) or $35 ea. (kevlar bead)
It's hard to imagine a better 700c long-distance touring or fast, roughroad commuting tire than this. The casing is light, supple, and really strong, being 1/3 nylon & 2/3 kevlar and all. The tread has a wide ridge in the middle, not the Taj Mahal tread for snaky hairpins, but it gives more wear and flat-protection than a round casing, so it's better for touring. (Longer wear, and eventually it becomes round). Actual diameter, 700mm. Width, 32mm. Max pressure: 75 psi, but we've ridden them at 90 no problem. A super high quality, wonderful cushy and touring tire. Made by Panaracer in Japan, super straight. The special casing version of this is just for Rivendell. Two bead options: Wire (412g) or Kevlar (folding, 369g). Fits most Rivendells and any frame with good clearance. Great-smart-safe tandem tire.

Panaracer Category Pro/Special 700x28
$22 ea. (wire bead) or $30 ea. (kevlar bead)
The same nylon/kevlar casing as the aforementioned jumbo, but smaller volume (diameter 680mm, width 25mm) and with a ridgeless tread for great cornering. Like all Panaracers, it runs true and perfect. We think this is the best-quality tire of its size. Extra kevlar in the casing, which increases cut- and blow-out resistance.

Double-cranked dropouts-$5/pr
Made by Tecnociclo in Italy. I ordered them "double-cranked" which I took to mean that the upper and lower tabs were gently angled inward, to facilitate easy parallel-izing the dropouts on the finished frame. But in this case "double-cranked" seems to have meant "really whomped on at the factory by some loud-sounding machine that you don't want to stick your finger into," because they arrived just a hair more brutalized than I'd expected. They're strong and functional and capable of multiple world records and blue ribbons in the local bike rodeos, but they aren't right for snooty Rivendells.

Shimano Dura-Ace front derailleur-$35
New old stock from 1977. Looks good, light, shifts great, and they're a bargain at this price. For 14t maximum chainwheel difference. Fits a normal 28.6mm seat tube.

Carnpagnolo Nuovo Record downtube shifters-$24
A faerie-like 39g per pair, compatible with all drivetrains, and the perfect shifters for bikes that you want to keep old-Italian. Beeswax the wingbolts to reduce slipping. When you look at what else $24 buys these days, these are a deal, but SunTour Sprints, at $7 more, work better. These are better-looking.

Nitto Touring bars-$12
Perfect for petite adults and most children, no matter how large. The 25.4 clamp area is the common non-road bike size, and the 22.2 grip is also the common non-road bike size.

Priest bars-$20
For short-distance casual rides, shopping, and any bike you want to sit upright on. Clamp area is 25.4mm, grip area is 22.2mm, so it fits all 'mountain bike and three-speed levers, shifters, grips, and stems. Perfect for that old cruddy mountain bike you've stripped parts from and now want to turn into a practical town bike.

Gipiemme braze-on front derailleurs-TWO for $5
As listed in the last flyer, these came to us cheap and are going to you cheap, and you can't have less of a need for them than we do. Gipiemme is an Italian company, and one explanation is that it's a phonetic spelling of GPM, which in turn is an abbreviation for Grand Premio de Montana, which loosely translated means "great prize of the mountains," and has its origins in racing, not treasure hunting. The same source of that rumor, also-but-later told me GPM is derived from Gianni Pappalardo, founder of the company, with the "emme" standing for M, his home town, Milano. These are unboxed, unwrapped, high grade-to-pro-quality front derailleurs.

Cool Tool-$21
This is about as mainstream as we get, and you can probably find this cheaper at REI or Nashbar or Performance (haven't checked). Besides the usual array of allens and screwdrivers and barely usable spoke wrenches a chain tool, an adjustable wrench, and both 14 and 15mm socket heads, for crank bolts or track/bolt-on rear wheels. Well made in the U.S. 7.5oz.

Clarks Cable Sets-$4
Clarks, a British company, gained what little fame it has on this side of the Atlantic, in the late 1970s. as a maker of the world's lightest brake cable sets of respectable, even high quality. These seem to be them. In assorted colors: brown, blue, pink, some clear. Please list a second choice, or we'll assume our second choice is yours as well. Includes brakes and derailleur cables and housing.

VAR spoke wrench-$10
This fits normal DT or Wheelsmith spoke nipples, even though Park makes a special DT model. Really comfortable, makes it simple to measure quarter-turns consistently all around the wheel, fits into Weinmann concave rim channels better than any other, and always ranks among the top three favorites among builders who have used it. All that aside, we like it as much for its looks. Cast iron, will last forever, and somewhere down the line it'll have your descendents scratching their collection of heads wondering what it was. Then someone will say "bicycle wheels used to have spokes, and ..." Hard to find, we brought them in from France.

VISTA lights-$9 front; $14 rear
In the last flyer we said something to the effect of "Bell cut us off because we were too wimpy to meet their huge minimum orders." Well, we either discovered a big box of VISTA lights or otherwise found a perfectly legal and moral and ethical though sneaky way around that, and here they are again. For a more normal price, and for how long we can't say. Specify front or rear. Our supply may not last through June, but you can pretty much get these anywhere.

Roads To Ride-South (a book)-$10
A topographic guide, with short descriptions of the roads of Santa Cruz, Santa Clara, and San Mateo counties. Out of print, a few left. I wrote it with John K. Good road profiles, with percent grades listed.

Touring Bikes (a book)-$40
If you're interested in steel bicycle frames, and are interested in the design process of a smart builde (Englishman Tony Oliver), you'll like this book and learn lots from it. Good gift for someone who likes bikes and books. Get it for yourself if you just want to learn stuff.

SunTour Sprint downtube shifters-$28
You'll not find fault with these. They have SunTour's patented PowerRatchet mechanism, the Japanese answer to retrofriction, and the best thing to happen to shifting ever, maybe.

ACME saddlebag-back in stock June 28. .....$27
Khaki-colored waxed cotton, made from Filson Tin Cloth seconds. Big enough to hold a pair of squished sneakers, with two side pockets for tools, tubes, keys, whatever. As is the case with Carradice bags, these go easily on saddles with integral loops (B.17, B.72, others) and reluctantly on all others. If a Carradice is too big and black for you, but you still the nice frumpy styling and practicality of a wood-leather-cotton saddlebag, here's your salvation.

ACME Leather saddlepouch-$40
Handmade by leatherworker and Rivendell member Steve Jackson. Thick pale hide that darkens with use and treatment with a leather goop (anything you like, doesn't have to be Proofide). Waterproof, and just big enough for a spare tube, tools, wallet, and a few walnuts. And there are four holes on the outside, which you can use to tie on a rain cape or sweater. Also, a slot on the side is for a red flasher light (if you got an early model, cut a slit yourself, and the holes too, for that matter. It's easy!). Held together with big copper rivets.

Short-sleeve and sleeveless wooly undershirts
short-sleeve: $23; sleeveless: $16 and they're Nova Scotian!
First the bad news: Ninety percent wool, ten percent nylon. We can get 100% wool, but it costs twice as much, and nobody has fun buying $42 t-shirts. These feel more like 97/3, anyway. and like 100 percent wool, they don't stink when they're sweaty. Made in Nova Scotia, so you know they're good. These are so nice it'll be hard to be without once you've worn one. If you wear a loud plastic jersey to fit in with your clubmates or to be visible to motorists, now you can at least wear wooly underneath. If you carry your stuff in a saddlebag, you may not need a real jersey pockets at all. In sub-50 degree weather, there's no reason not to wear one every day. You can wear one for your morning ride, keep it on all day long. sleep in it that night—that's how good it feels. They shrink a little, but also seem to be cut oversized. The sleeveless model is a little more conservatively than the classic old man t-shirt (the armpit holes aren't quite as deep). Wash before wearing, to make it furry. Cream.
Sizes: S-M-L-XL

VAR Saponified Grease, 100g tub-$9
Snow white, which makes it easy to see how dirty it is, but not at first. It may also be the only saponified grease out there, depending on what saponification is. Peter's favorite, and if you think you can find this locally, you are morosely mistaken.

Yellow Book is back! (Le Petite Livre Jaune)-$13
Daniel Rebour's rare and classic advertorial mini-tome for VAR explains bike fundamentals from the point of view of a French expert (that would be Rebour) up through the mid '70s. Topics include sizing, set-up, choosing a bike, and adjusting most of the non-indexing components on it. Just 42 pages, but well-written, informative, worth thirteen smackers for the illustrations alone.

Chimiplast tape, many colors! -$3 per roll
Chimiplast and Tressostar come off the same huge rolls in the same French factories. Chimiplast was a popular brand in this country up through about 1974, and some of the colors are definitely richer than the corresponding Tressostars. If that seems to contradict the first sentence, so be it. I just know what I'm told. Anyway, it's the best tape around. It's stiff, tightly woven, with a nice, raised texture. Please list a second color, especially if your first color is sky blue.
Black, White, Red, Orange, Yellow, Green, Blue, Sky blue.

ACME martyr bottles-$1 each
When we ordered these, Specialized said "minimum is 500....set up time for the artwork, you know." We said "B-b-but we used to buy in 250s..we can't afford that many at once..." They said "we can do 300, but you'll pay more per bottle and you won't get the 60 day terms," at which point it seemed like negotiating, so we backed off. I'll bet when Specialized was shrimpy nobody told them "your minimums are too low." We ordered the 250 logo-free bottles hoping they'd take pity and offer us the same deal we used to get. The logo-less (and thus ACME) bottles arrived looking plain as day.

42T x 110 chainrings-$21
If you have a 110 bolt-circle diameter crank (a standard, non-compact mountain triple) and you have a 46t outer ring, and you're intrigued enough with the concept of half-step gearing to want to try it, then this 42T inner is just what you need. Keep your current granny, just mate it with a freewheel with as few cogs and as wide a range as you can find, and you'll do 0-Kay. Or just run it as a regular 42t, forget the half-stepping.

Shimano RX100 aero brake levers-$23/pair
These are midlevel Shimano brake levers, a perfect choice if you prefer aero levers and don't want to pop for the $65 Dia Compes. These have a longer body, slightly more comfortable than the Dia Compes, especially for, you know, big hands. They pull enough cable for cantilever brakes. A great deal. Attn weightnuts: 263g/pr. No cables, just the levers. Black hoods, silver levers.

Shimano Mod. 105 7-speed bar-end shifters—$65
Shimano quit making these. Two days before this goes to the printer, we found fifty more. and once we're down to ffteen, we're saving them for complete bike customers. This is the last you'll see them listed, and if you're reading this after about October, we're probably out of them.

Sachs 13 x 32 six-speed freewheels—$45
A discontinued model, ideal for halfstepping, and we have a couple dozen of them. 13-15-18-21-26-32 (we think). Our most expensive 6-speed freewheel! The last of the good half-steppers!

SmartWool wool Sox —$9
Low, whitish. If you want comfy, wear-like-iron, absorbent sox, get these. The best we've used, by a mile.

ACME Goathide glove+$ 13
Simple, traditional cotton-crocheted mesh gloves with leather palms and no mayhem-inspiring colors or logos. They fit great, seem to last well, and smell good when you wipe your sweat with them and they pass your nose. Made to our cosmetic specs in pre-nuclear Pakistan, where most of the cycling gloves in the world are made.

Nitto Mod. 176—$38
A new h'bar, a Rivendell exclusive, since it was made to our spec. Basically, it has the large radius of a deep drop, but isn't a deep drop; and it has the flat behind-the-lever part of a long-reach bar, but isn't long. Internally we call it the Dream Bar, sort of as a dumb joke, because when I originally submitted the specs to Nitto, I said "this would be my dream bar," and the blueprint came back with that name on it. Dumb as that sounds, if you call it the Dream Bar you're less likely to get it mixed up with a mod. 175, but do as you like. It'll be in our catalogue, too, but we have them now, so here's your first chance. It looks like a regular old road bar, nothing odd. Expect it to be good, but not life-changing. **40cm or 44cm. The 42s will be here around late June.**

Heron Poster —$7
You'd have to hate bikes and birds to not like this poster. Spectacular colored-pencil art by a local artist, Andrew Denman, who is just 19 years old, if you can believe it. The quality of art here suggests someone who's at least sixty or seventy. The picture is 18' x 24", and there's a healthy border around it.

Ritchey Logic Comp bottom bracket 425
Fits the Ritchey crank perfectly, and outlasts 98 percent of all cartridge bearing bottom brackets out there. The cup-and-cone design is falling out of fashion these days, but it's such a fundamentally simple, sound design, that even B+ grade models (which this is) can easily last 10,000 miles. Repack it and adjust it properly, and you'll get your moneys worth out of this one in a year. The adjustable cup is best handled with a green Park pin tool, which you may have to file a little. Exactly where will be obvious immediately. Hold the file still, rub the pin too. That's the easy way.

Sun DW-6000 26-inch rim+$ 16
Triple box construction with sanded sidewalls for smooth braking without the thinning caused by machining. 21.3mm wide, 398g. Marketed as a mountain bike rim, but we think it's best for light trail and any road use, with tires up to 1.75. Excellent rim, cheap price.

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