

THE RIVENDELL READER • ISSUE 1 VOLUME 1

SORRY ABOUT THE COLOR. NEVER AGAIN!

If I knew then, what I know now...

I recently read something in a brochure of some kind that I got somehow from Adventure Cycling, that Montana-based touring organization that used to be called BikeCentennial. There was no author, and my contact there didn't **know** where it came from.

I photocopied it and sent it to a lot of friends, and Kim, who sits next to Robert on the cover of the '94 Bstone cat, said "I've seen this. I think it was written by a guy named Shawn Gosieski." I wish she'd added "—he's an English bloke," but what she really said was that she thought it first appeared in **Fall** '88 issue of *New Cyclist*, which she thought came from England.

If you know Shawn and you are sure he won't be angry, ask him to get in touch. What he wrote, if he did write it, describes the approach to bicycle riding I've

wanted Rivendell to take all along. I wish I wrote it. I would have made the riders heart-rate and bodyfat obsessed instead of noble potato haulers etc, but that's just a sign of the times, you know?

It is called *Zen and the Art of Bicycle Riding*, and here it is:

A zen teacher saw five of his students return from the market, riding their bicycles. When they had dismounted, the teacher asked the students, "Why are you riding your bicycles?"

The first student replied, "The bicycle is carrying this sack of potatoes. I am glad that I do not have to carry them on my back!" The teacher praised the student, saying, "You are a smart boy. When you grow old, you will not walk hunched over, as I do."

CONTINUED ON PAGE 3

UPDATE

Dec. 18. I've got 5,000 first mailings, but no way to process an order. I'm converting over to a Mac system (a customized FileMaker program), and I don't know how to use it.

Dec. 22. Big victory—Union Bank said I was accepted as a merchant Visa/Mastercard account, almost unheard of for a startup mail order company. What swung it was the history with BOB, and the letters of support I got (which I included). Many, many thanks to all who wrote. I'll start accepting plastic in February, if I can get someone to answer the phone.

Dec. 31. The Carradice bags and 3ttt bars are scheduled to arrive Tuesday the

3rd, Nitto stuff on the 10th. I need more training on this software. The first RR is coming up soon and I don't have all my stories and artwork together. Just like the old days with the Bcats. The first issue will be a shakedown issue. Yes, that sounds good.

Jan 6. Received the first orders this week—13 the first day, 16 yesterday. Mostly subscriptions, but beeswax and posters seem to be popular, too. Total receipts of about \$1,000. Boomerangs arrived today. I wonder how they'll do.

Jan 11. The Nitto order arrived.

Jan 14. Orders are going okay. I hired Spencer part time to ship, and Mary puts in 3 hours a day. Ariadne and Ernie come here from one to three days a week.

I ordered T-shirts and water bottles, and I want another Mac and a faster printer. We're averageing 27 orders a day. The orders are small, but good practice and very encouraging. People are starting to be interested in frames, so I'm sending out information.

Jan 24. Only four orders today. Ouch. I got a new PowerMac 6100 and a 360 printer, and now I feel dumb for jumping the gun (apologies to sedate pacifists).

Jan 25. Ten orders, but two asked for frame information, so that's good. The ten orders came to about \$310. That's gross. T-shirts are coming in later this week, water bottles by the end of the month—that should help, but I can't survive on T-shirts and water bottles. The stem design

is coming along, and I really want to have that made, but now I'm starting to wonder if I'll have the money. I should add up tooling contributions. I want a water bottle cage, too, but nobody in America wants to make it. I've got to get the RR out. I'm panicking. I'm making a few mistakes, too. I've already priced chains (waxed, silver) in print at \$12, but I calculated that price based on bulk-packed black chains. The silvers come boxed only, and cost almost twice as much. The chains cost me nearly 2/3 of that unwaxed.

Andy came by last week and ran a balance sheet and a P/L statement through the end of 1994. Rivendell lost \$38,000, most of which is due to tooling, which is only about half paid for. There's about \$45,000 in the bank. I've been spending a lot of money lately on computers and toe clips, and my personal VISA is up to \$7,000. Printing the RR costs \$4,876, and mailing each one (3.25oz.) costs \$1.01, unless I can get a bulk permit number. It will slow delivery, but mailing goes down to \$0.26 or something.

Jan 30. I got email: rivbici@aol.com I'm behind on correspondence and feeling bad about that. I got some sample Carnac shoes yesterday, some models this country has never seen before—wonderful, all-leather uppers, black, perfect for touring, commuting, general noncompetitive riding. Is it dumb to try to sell shoes by mail? I think so. But the shoes are so nice. John from Bstone in Tennessee is sending me 92 of the 1994 Mtn posters which I thought I had before but didn't. Five dollars each, like the other—I need to remember to add it to the order form.

I found a new source for musettes—a

family in Paradise, CA is making them in their garage. The price will increase, but it's good labor and great quality.

Feb 1. The lugs arrived at Waterford today and I'll see them tomorrow. Marc and Chris are raving about them. I got the Reynolds 753 decals today (so did Waterford), and I'm sick about them. They were supposed to be the 753 colors with the old 531 style, but they came with gold instead of yellow, and the contrast is not good. I was thinking "how could Reynolds do this?" until I discovered I screwed up. I said "use the old 753 colors" (which are yellow), but then on the decal sample I drew, I labeled "gold" what should have been "yellow." The gold is from a 531 decal, and we used that as a design, but the colors were supposed to be 753. That's going to cost me \$900, but the worst part is that they made these decals for Waterford, too—so my foul-up didn't just affect me. Nice guys, the Waterfords didn't make me feel bad.

Feb 2. I got sample lugs today, and they're so pretty. I sent the road lugs to Richard Sachs for his approval, since he carved the samples they were designed from. I got 100 copies of the *Data Book* today, finally. Photocopies, that's all—like BOB sold. I will not get any more printed for at least a year and probably forever. It's too stressful.

Feb 2. The printer says the RR will be finished printing on Monday Feb 13. Bummer! The bulk mail is coming together. Richard got the lugs today, and likes them, but suggested two or three tweaks that only he'd notice. He told Marc, and Marc was thinking the same. How come I didn't notice?

Feb 3. Ernie assembled shelves, did a

great job. He's worked off his frame a long time ago. (I wonder if he knows that). I need 4 x 6 postcards for correspondence. Lots of projects, not enough hours in the day. Tom Ritchey rides 10,000 miles a year and runs a bigger business than this. Makes me mad. I still don't have in Brooks saddles, a seat post, steel toe clips, wool clothing, a fanny pack, more goatherd shorts, goatherd pants, the stem, and lots of other things. I wish I could get ALE stainless toe clips, but the distrib. won't sell to me because I ain't got a store.

The bank account is down to \$46,000, which sounds like a lot, but I owe about half of it, and I have to sign a contract to buy all the custom tubing even if the bikes don't sell, and that could wipe it out fast. Lot of money going out next week, and tons next month, for lug and crown tooling. Got only seven orders today. Being able to accept Visa and MC by mid Feb will help, I hope. Maybe I can get orders by Email. Would that work? I think so. Let's try it...

There are two knife stories in this issue—completely coincidental, so don't think anything. Errett's story was intended for the Bstone catalogue, and is a personal favorite; and I always had planned to include a story on members, and I found out about Tim Zowada later.

Don't fret: It was never going to be Riv Rat.. It'll be *Rivendell Rider*, if anything, and you don't have to be on a Rivendell frame to be one. You join, you're one. The logo is the same double-R used for the Reader. Ex-BOB Tim Mitoma did it, not even on a computer. He also did the headbadge and Rivendell Reader logo and frame downtube and seat tube art.

SUSPENSION & SET-UP

The early mountain bikes had 18 3/4-inch chainstays, 68-degree parallel angles, short top tubes, high-rise stems, raised handlebars, and they weighed 30 pounds. Their road-sized, tapered fork blades flexed when you hit a bump, absorbing shocks, because the bend was down where the blades were narrow and could flex.

Over the years forks got fatter and straighter and stiffer, and at the same time mountain bike racing was evolving, and the race bike became the model for the recreational bike. Racers like long top tubes on short frames, and long stems with low, flat bars. This arrangement allows them to lean forward, cocked and ready to sprint. But it has its drawbacks.

One of the problems is the low bars. In order to be comfortable with low bars, you need the strength and flexibility to hold your torso nearly horizontal without help from your arms. But most people, when they lean forward, topple like towers, catching themselves with their shoulders, arms, and hands. That's the problem—you can't absorb shocks if you're doing a push-up. Your joints have to be loose and ready to react.

All this means is that if you don't want to hate bumps, but also don't want to buy extra suspension, stretch your back and hamstrings. If that fails, get back to the original mountain bike riding position. Get the weight off your arms, so you can ride loose at the joints.

THE CHEAPSKATE

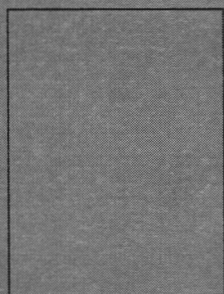
THIS COLUMN WILL HAVE TIPS ON MAKING SOMETHING GOOD FOR ALMOST NOTHING.

A CHEAP WINDBREAKER

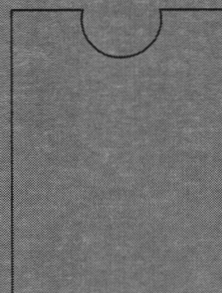
This really works. I've used it for years, never a problem, never wished for anything more.

MATERIAL: Anything light, compressable, strong, and wind resistant. If you can't find 40Z beeswaxed organic cotton, go with coated nylon taffeta or some other fabric used in the backpacking industry. You can get it at some outdoor shops; REI for sure.

1. Cut it into a rectangle that'll cover you from the waist up, including your head. The flaps will go over your shoulders. What flaps? You'll see.



2. Cut a hole for your head



3. *Fanatical?* Sew a piece of elastic onto it, to loop around your neck as a security measure. It doesn't have to be elastic, but if you're going to the trouble, go to a little more and make it easier to pull on over a helmet. I've never used a neckloop myself, but if you use this on a group ride and something made it slip off you and get tangled in someone's wheel, so for that reason I strongly urge you to USE THE LOOP.

APPROXIMATE COST TO MAKE: \$5.00.

It's easy to put it on and take it off. The wind holds it in place. It compacts to nothing. It works.

CONTINUED FROM FRONT PAGE

The second student replied, "I love to watch the trees and fields pass by as I roll down the path." The teacher commended the student, "Your eyes are open and you see the world."

The third student replied, "When I ride my bicycle, I am content to chant, *nam myoho renge kyo.*"

The teacher gave praise to the third student, "Your mind will roll with the ease of a newly trued wheel."

The fourth student answered, "Riding my bicycle, I live in harmony with all beings."

The teacher was pleased, and said, "You are riding on the golden path of non-harming." The fifth student replied, "I ride my bicycle to ride my bicycle."

The teacher went and sat at the feet of the fifth student, and said, "I am your disciple."

NEWS UPDATE:

NO MORE CHEAP BIKES FROM CHINA.

This is going to be old news by the time you read this, but it is brand new today, February 5, and it is absolutely HUGE news in the bicycle industry, so pay attention: The Clinton administration is imposing 100 percent tariffs on Chinese things because China copies a lot of **U.S.** products and sells them cheap in China. Oh, there's probably more to it than that, but that seems to be the main point. The thing is, most of the big and well-known U.S. bike companies have left Japan and are leaving Taiwan (where the \$4.00 per hour labor is proving too costly). In China, the workers live in dorms and make \$0.39 per hour. This is the biggest news to hit the bike industry in many years, I think. *All* these companies have been looking for cheap labor, thought they found it, and now *this*.

A COLUMN REPRINTED FROM SOMEWHERE ELSE

JUST KEEP A-ROLLIN', WAGON WHEELS

by Helen Kelley

A FRIEND ASKED ME, NOT LONG AGO, IF I HAVE A COMPUTER.

"Yes," I told her. "I use it to write. I happen to be the World's Worst Typist, second only to being the World's Worst Hand Writer. My computer lets me write easily and corrects my mistakes without scrubbing eraser holes in my paper. Why do you ask?"

"Everybody says I should get one."

"Do you want one?" I asked her.

"No."

"Then why in heaven's name should you get one?"

It seems that her family and friends have been pushing her to buy a computer because they think she should use it to design her quilts.

The magazine ads for quilt-design programs are enticing and the demonstrations at quilt affairs are intriguing. Colors and shapes twist and whirl and dance on the computer screens. Many people have gone made over computer-generated quilt-making. For them, computer designing has been liberating and challenging. It has made it possible for them to conceptualize their quilts quickly and easily.

I spent an evening with another one of my friends. She was playing with her computer quilt programs, making the blocks to flip-flops and handstands. She was frustrated, though, because she couldn't get the kind of star she wanted to display on her screen. It seemed impossible for her to conjure up the particular diamond shape she needed.

She worked feverishly, poking and prodding her computer keys. She made jiggly, clicking noises and touched her ENTER key. Lights flashed, things moved and danced and

spun. She perspired. She poked more keys. She perspired some more. She simply could not manipulate it to give her what she needed.

I said, "Here. Give me a pencil." I drafted the star and sent her to the copy store to print it a few times. We laid the copies out on the floor and played with the big, full-sized patterns. I, myself, function better with a concrete approach, touching and manipulating my designs rather than working with abstract ideas traced out on a screen. I enjoy the activity and the feel of working directly with my fabric and patterns. Some people do.

When my husband, the computer man, heard about our design session, he said "Helen, you're a wagon-wheel maker." He waited long enough for me to wonder what obscure point he was trying to make.

"When the automobile came along, all the old wagon-wheel makers were left sitting out in the field watching the sunset."

Bill is one of those people who like to see patterns gyrate across a computer screen. He enjoys moving and altering shadowy electronic ideas. All I need from my computer is the ability to type out words quickly and neatly. One night while I was quilting in my workroom, Bill passed me, headed for my desk. He had a look of anticipation, as if he were itching to make my computer do something new and exciting. I astonished myself. I roared at him, "Don't touch my computer."

Every time I have turned on my machine to write a letter, I have found new things leering at me from the screen, clever surprises like personalized messages and hand-jim-dandy

new charts and tables. As I said before, some people like to play with computers.

Bill is right. I **am** a wagon-wheel maker. I love to tinker with my **hands**. I like to pinch and pin and whittle and scribble, clip and stitch and dabble. That, for me, is part of the fun of quilting. Though computers are liberators for some people, others find satisfaction in the challenge of tinkering and shaping and assembling.

A CASE IN POINT: When my antique cuckoo clock died, I took it from one clock store to another. The clock repairmen only know how to insert new batteries or chips or other space-age gimcracks. I finally found an older man who unscrewed the back of my cuckoo clock and went deep inside the chains and wheels and put it in order.

When he returned it to me, he had lovingly oiled the carved pheasants on the front so that their dyed feathers gleamed against the ancient wood. He was a craftsman of the old school who found a deep satisfaction in the gentle and touch of his materials. We understood each other.

So, all of you out there on the road, roaring off to someplace in your glorious computerized limousines, wave as you go by. I'll be sitting out in my field, leaning against my wagon wheel, watching the sunset. ☼

HELEN KELLEY IS A QUILTMAKER, LECTURER, AND TEACHER WHO LIVES IN MINNEAPOLIS. THIS FIRST APPEARED IN THE DECEMBER, 1994 ISSUE OF *QUILTER'S NEWSLETTER* MAGAZINE, AND WAS REPRINTED WITH PERMISSION.

HOMELESS NOTES

SR SunTour has closed its U.S. office, and I think they did the same in Japan. There may be some business still in Taiwan, but that's a pathetic ending for the company that invented the rear derailleur design that virtually everyone copies these days...**Glueless patches** are the rage, with at least three companies offering them. I haven't tried them, but if you have, write in and tell the rest of us how they work...If you get a chance, look at page 11 of the **February issue of Fly Fisherman**. It's not a big deal, just letting off some steam. I didn't mean any of it. Yes I did...**How do you find a good headbadge maker?** The old badges were metal and stamped, so look in the Yellow Pages under Metals, stamping. Call a few, weed out the ones who don't know what a bicycle is. Talk to salespeople who say yes, we can do it, easy, how many do you need? If they aren't turned off by just five hundred (a two year supply if things go just great), then you send art and detail, and the engineers reject it. Send a sample, an old badge from 1960, and they say "Nobody does this anymore. We use acid and lasers now. This was done with people using scrapers and fine brushes and—no, nobody does that anymore." Then the salesperson shows you what they can do, and it's not interesting, even if they do list famous appliance and computer companies among their customers. Repeat this seven or eight times, then look in the Yellow Pages under Engravers, and things get better. Do you stamp? "No, we etch. How deep do you need? We can go twenty thousandths." Then you send them the artwork and they never get back, or say, again "nobody does this." I finally got two good leads. One in San Jose, one in Washington. Update next issue.

ALTERNATIVE BIKE PUBLICATIONS DEBUT IN THE U.S.

Bike Culture Quarterly (BCQ), published by Open Road Ltd. in Britain, is a new & ads-free

magazine that, according to its U.S. distributor, "celebrates the spirit and pure joy of cycling from a global perspective." Hmm...In real life, it is the only palatable presentation of wacky bikes I've ever seen. BCQ reports on the latest technological advances, in all kinds of bikes, not just racing ones. Past issues have included stories about recumbents for kids, folding bikes, hub brakes, luggage-carrying systems, derailleur-alternatives, art in cycling, photo essays, humor, interviews, history, and travel. The feeling you get after reading one, is that here are people who accept all **lunds** of bikes as good, and who don't arbitrarily elevate the competition machine above the rest. BCQ's companion publication, *Encyclopedia*, is a big catalogue/source book for some pretty unusual paraphanelia. You can't order from it, but it provides enough information about the source so that a clever and obsessed reader can do the rest. *Encyclopedia* and BCQ are available only through a handful of shops nationwide, or direct from Open Road USA. An annual subscription including 4 BCQs and one *Encyclopedia* is \$43. Back issues are \$10 each including postage. Canadians have to pay more.If you want to know more about the bike industry, subscribe to *Bicycle Retailer & Industry News*, the only trade magazine that sells to consumers as well. **Twenty-six dollars you'll never regret spending.** 1547 South St. Francis Dr. Santa Fe, NM 87505. Mention, just for fun, that you heard about it here.

RIVENDELL ACTUALLY HIRES A REGULAR EMPLOYEE

Spencer Chan, a 21-year old student and bike rider, and he helped me through the roughest days by tirelessly entering orders and packing beeswax and posters, catalogues and Simplex derailleurs, musettes and Campy allen keys. He's here about 30 hours a week. Ariadne and Ernie work a day or so a week. Mary comes on Fridays. Mary, my wife, works 3 hours a day. No pictures, not yet, but that's us. ☺

THE DANISH DAGGER STORY

by Errett Callahan

DOES A STONE KNIFE REALLY WORK? DON'T EVEN ASK. THAT'S LIKE ASKING IF WE REALLY MADE IT OUT OF THE ICE AGE. OF COURSE WE DID, AND WE DID IT USING STONE KNIVES. OBSIDIAN, FLINTS, CHERT, AND CERTAIN OTHER MATERIALS CAN BE SHAPED INTO HIGHLY EFFICIENT CUTTING TOOLS BY CONTROLLED FRACTURE, A PROCESS CALLED FLINTKNAPPING—THE ANCIENT CRAFT WHICH GAVE PEOPLE THE EDGE IN SURVIVAL. OF ALL FLINTKNAPPING MATERIALS, THE MOST PRIZED IS THE NATURAL VOLCANIC GLASS, OBSIDIAN. BECAUSE OBSIDIAN FRACTURES TO THE LAST MOLECULE, IT IS CAPABLE OF AN EDGE 500 TIMES SHARPER THAN STEEL. IT DIVIDES, RATHER THAN TEARS. IT IS HARDER THAN STEEL, TOO, AND WILL HOLD AN EDGE LONGER ON SOFT MATERIALS. THESE QUALITIES HAVE MADE OBSIDIAN SCALPELS USEFUL IN SURGERIES WHERE FINE CUTS IN DELICATE TISSUE ARE THE ORDER.

Thirty-eight hundred years ago in Scandinavia, the onset of the Bronze Age brought the Stone Age to an abrupt yet glorious end. Perhaps “abrupt” is a bit harsh, since the death blows were all dealt over a 100-year period between 1800 and 1700BC; but “glorious” is an understatement. For when the stone craftsmen of Denmark suddenly found themselves competing against knives made from bronze, the new miracle alloy of copper and tin, their skills soared to unprecedented heights. The stone daggers produced during this period are the epitome of the flintknapper’s art.

During the Dagger Period of the Late Neolithic era (2350 - 1700BC.), styles evolved slowly and followed long-established tradition of shapes and sizes. The blades were wide in the middle, and the handle had parallel sides. Bronze knives, though, were wider down near the handle, and the handle had a flared base. Soon enough, the shape of Danish daggers began to mimic that of bronze knives.

But there was more than mimickry going on. The stone knives were being refined. The tool makers were adding purely cosmetic touches unduplicable in bronze, such as the particular way in which the sides of the handle and base were finished off, and the zig-zag “stitching” seam flaked up the center of the handle. They were playing offense as well as defense, and were evolving from toolmakers to artists. In the previous types, the handle was the most sloppily worked part of the dagger, probably because it was covered with leather or cordage wrapping. But with Type IV, the wealth of details on the handle indicates that the grip was probably uncovered, just like the handles on bronze daggers.

But mimicking design elements of the bronze knives wasn’t the only thing that changed the stone daggers. Competition among themselves forced the flintknappers

to hone their craft, and for a while, flint daggers proliferated. Daggers of one type or another were traded all over the Baltic and as far away as England, Russia, and Austria. Then, when people learned how to smelt bronze locally, the art of flintknapping ceased altogether. But for awhile there, the Danish flint smiths brought the art of flintknapping to its zenith. Samples such as the Hindsgavl dagger are a national treasure of Denmark today. With all its beauty, complexity, theme, variation, crescendo, and finale, the Danish dagger has been called the stone equivalent of a Beethoven concerto.

Exactly how the Neolithic flint daggers were made has been the subject of my personal research for the past 15 years. No production site has ever been discovered, so I’ve traveled to Scandinavia seven times to search the museum storerooms for clues. During this time I’ve produced more than 150 replica attempts.

For most of that time, I hadn’t a clue as to the sequence of manufacture, but I suspected there were seven basic stages a flint nodule must go through on its way to becoming a finished dagger, and I worked out my own method by experimenting.

Then on my last trip to Denmark, I discovered in the archives of the Danish National Museum in Copenhagen, three previously unknown preforms (unfinished daggers) which cast a brilliant light on the procedure. Except for minor details, it was just as I’d suspected, but now, finally, I had solid evidence.

As a result of a grant made possible by the King of Sweden, I spent the summers of 1993 and 1994 in Denmark and Sweden unlocking the last secrets of the dagger production code. Now it’ll take several more years to write it up into a formal research report. Then my 15 year search will be done and I can share the results. 🍷

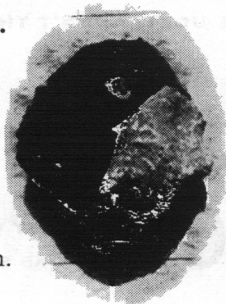
HOW TO FLAKE A DANISH DAGGER

In flintknapping, the generic term for shaping stone tools, you remove and shape stone by **two** methods. One way is percussion, or striking it with another object such as another rock or a heavy antler billet. The other way, which is more germane to this story, is pressure-flaking, where you push on the stone, generally with an antler or, as the Danish flintsmiths preferred, a copper rod inserted into a **stick**.

THERE ARE SEVEN STEPS IN THE MAKING OF A DANISH DAGGER FROM A BLANK.

1. ROUGH OUT.

Obtain an edge (55° to 75°) where there is none. Focus on the outer zone, not the base. I do this by direct percussion.



2. PRIMARY PREFORM.

Obtain a regular, symmetrical outline like that of a hand axe, with generous lenticular cross-sections, but with a nearly parallel end. Focus on the middle and central zones, keeping the outer zones controlled, the edge straight and centered.



Mostly percussion, again.

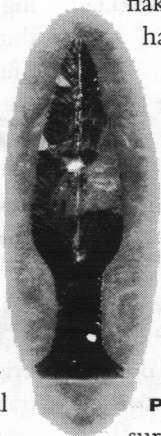
3. SECONDARY PREFORM.

Obtain a tapered longitudinal cross-section while maintaining lenticular lateral cross-sections, sub-parallel-sided handle area, and symmetrical outline. Focus on the central zone, keeping others in check. Start to work on the base. Bring the blade outline to within about 1cm of the tertiary preform outline.



4. TERTIARY PREFORM.

Obtain a controlled, symmetrical outline to within 0.5 to 1.0cm of the eventual outline. Maintain a long, tapered longitudinal cross-section, but with the top of the handle becoming increasingly offset above the bottom face, and with the widest part of the obverse blade area becoming abruptly flat just below the handle taper. Constrict the handle and finish with a pronounced ridge pressed or punched on the obverse side. Gradually thin the blade to within 1-2mm of the ground preform. Square the base and press flakes on either side of the handle ridge.

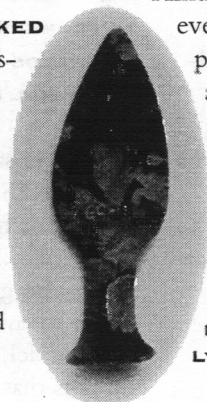


5. GROUND PREFORM.

Grind at least 95 percent of the blade area, and dull the bevel the edges to prepare for the forthcoming set of flake removals. Try not to nick the edge.

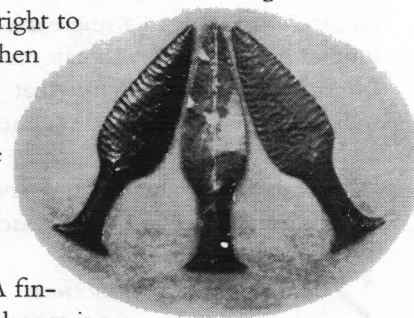
6. BODY FLAKED PREFORM.

By pressure flaking, obtain a straight-in, parallel-flaked blade surface. Begin on the reverse face at the left handle-blade transition and work left to right toward the tip. Then, on the right side, work from top toward base. Repeat on other side.



7. RETOUCHEd PREFORM. Trim the blade edges to create a straight and centered, low-angle sharp edge and symmetrical outline. Strive for triangular flakes with minimal intrusion into the main body flakes. Straighten and align the edge, trim the handle. Create finely controlled, zig-zag seams with evenly spaced, abrupt, backwards pointing flakes, beginning at the base and working forward to the handle/blade transition. Aligning and straightening the base edges, then flake a seam around the base, flaking left to right, right to left. Then abrade the handle until it's

quite dull. A finished dagger is approximately 220MM long and takes me from 15 to 20 hours, with 17.7 hours being the average. The triad above shows a plastic casting of the Hindsgavl dagger, the finest specimen ever found (R); the same ground preform as shown in Step 5 (C) and my finished dagger (L).



ERRETT CALLAHAN'S PILTDOWN PRODUCTIONS SPECIALIZES IN STONE ART AND PREHISTORIC TECHNOLOGY. THE CATALOGUE IS A GEM—YOU'LL KEEP IT FOREVER. SEND \$5 TO PILTDOWN PRODUCTIONS, 2 FREDONIA AVE. LYNCHBURG, VA 24503

QUESTIONS & ANSWERS

THESE QUESTIONS ARE MADE UP, BECAUSE IT'S STILL THE FIRST ISSUE. I'VE INCLUDED A RANGE FROM BASIC TO TECHNICAL, BUT ASK ANYTHING, AND IF I DON'T KNOW THE ANSWER, I'LL KNOW SOMEBODY WHO DOES. IT'S EASIEST FOR ME IF YOU SEPARATE YOUR QUESTIONS FROM ORDERS, MAYBE ON A DIFFERENT PIECE OF PAPER, AT LEAST. SEND ATTN: RRQ .FAX 510 933-7305; MAIL 1547 PALOS VERDES #402 WALNUT CREEK, CA 94596. EMAIL RIVBICI@AOL.COM. MAN, THOSE EMAIL ADDRESSES ARE UGLY, AREN'T THEY?

1 WHY DO RIVENDELL ROAD AND ALL-ROUNDER FRAMES HAVE 128MM REAR DROPOUT SPACING? AREN'T Y'ALL OPPOSED TO NEW, ARBITRARY STANDARDS?

A 128MM makes sense because it works with both the "old" 126MM hubs—virtually every road hub made between 1980 and 1991—and the new 130MM. The 2MM difference works out to a single millimeter per side, and you can easily spread or squeeze the frame that much. Rivendell mountain frames are spaced midway between the "old" 130MM spacing and the new 135MM spacing for the same reason.

2 WHAT'S THE DIFFERENCE BETWEEN RIVENDELL AND WATERFORD FRAMES? JUST THE LABEL?

A Waterford frames are less old-fashioned, a little lighter, and stiffer. Rivendells have a lower bottom bracket, longer chainstays, shallower seat tube angle, and fancier lugs. The Waterford frame has cast stainless semi-vertical dropouts, and a fatter downtube in most sizes; Rivendell's are forged high carbon steel and horizontal. Waterford offers more sizes and is more flexible in designs. I am more conservative. There's no quality difference, no competition. Without me,

Waterford is still Waterford. Without them, I'm spec'ing cheap hybrids in a suburb of L.A.

3 WILL YOU EVER MAKE THAT BOB FANNY PACK?

A Yes, sure. I've lost the patterns, and first I have to find them. I may have to order a minimum of 300 or so. How many of you are really interested? The prototypes are great.

4 CAN I BUY A RIVENDELL BIKE COMPLETE? WILL THERE BE ANY MORE AFFORDABLE RIVENDELLS LATER?

A No complete bikes for at least a year, but I have plans for many of the parts. It's possible that I'll have a less expensive frame sometime next year, probably TIG-welded.

5 BUT AREN'T YOU PRETTY MUCH A SNOOTY JERK WHEN IT COMES TO FRAME AESTHETICS? HOW DO TIG-WELDS FIT INTO YOUR GRAND RIVENDELL PLAN?

A Who said it was "grand"? I like BIKES, and TIG-welding is a strong, inexpensive, practical way to make them. I do think that everybody who goes bananas over bikes ought to own at least one lugged steel model, but the most important thing is that you enjoy riding it, blah

blah blah...

6 WHAT ABOUT WOOL JERSEYS AND BROOKS SADDLES?

A Brooks saddles are supposed to be in by mid-February, but that means they'll probably be here by mid March. The Riv-version will be nearly identical to the BOB version (based on the same B.17). Wool will come later. I could do a compromised version now, but I want to wait until everything's in order to do it right. In the old days I'd be thinking by April. Now I know how things move, so I'll say August. Great timing for wool, I know...

7 WHAT ABOUT THE DATA BOOK? ANY CHANCE OF A REPRINT? AND A DANIEL REBOUR BOOK?

A I got another hundred DBs; your cost: \$18. These are not originals, but photocopies. The illustrations are still plenty clear, but we aren't talking gift-book quality. Anybody who loves beautiful bicycle parts and has even a remote interest in bicycle history and evolution needs this book. This is the last time, so if you want it, order it soon. Daniel Rebour deserves a book. Maybe someone will do one. *Le Monde du Daniel Rebour*, printed in Japan, is not available.

HOW TO GET A JOB IN THE BICYCLE INDUSTRY

by Ric Comar

Some riders think working in the bike industry is about being paid to ride and getting free bikes all year long. There is some truth here, but most people I know in the industry work long, hard hours for not much money, compared to similar positions in other industries. I'm not trying to talk you out of a career in bicycles, but don't think working in bicycles is as fun as riding them.

The nicest thing about the business is that once you're in, you can move around a lot until you find what you're best at, and what you like to do most. But first you have to learn about bicycles, the jobs, and the skills you need to fill them.

Some jobs are the same as they are in any industry: sales, office work, management, design & engineering, marketing, and support (assisting in areas you don't have the skills or experience to manage).

Figure out what your talents are, and where they fit in. Most of the jobs fall into these categories: retail, wholesale distributing, component manufacturing, bicycle manufacturing and marketing. You know what retail is selling direct to the consumer, either by mail or through a store. Retail is not for everyone, and a lot of people bum out on it, and if you haven't already done your time, you won't want to hear that often manufacturers find most of all of their employees from local shops. Working retail shop will also get you into the annual "trade-only" bike shows, where you can connect with other prospective employers.

Wholesale distributors supply bike

shops with items to sell. There are a variety of jobs available here, from warehouse positions that are easy to get, to upper level management positions that require extensive industry experience. Most distributor employees are the sales reps, who travel around their assigned area visiting shops, trying to get them to buy, and acting as a liaison. Reps need to know a lot about the buying and selling practices of bike shops, which is why most reps used to work retail.

Retail experience isn't as critical, and in some cases doesn't matter at all, if you want to work for a distributor in the office or warehouse. But don't think of warehouse work as a stepping stone; most warehouse workers stay there. It's not bad work, the dress code is relaxed, and you can choose any radio station you like. Warehouse experience is a plus, but if you aren't the warehouse manager, you can usually learn about shipping and organizing parts on the job.

Parts and accessory manufacturers have offices to handle the sales, marketing and even warehousing of their parts, and there are a lot of industry jobs available for experienced bicycle people. There are entry level jobs that ~~do~~ not require specialized bicycle knowledge, but if you want to get promoted, you better know bikes.


OE manufacturers—OE stands for "original equipment"—are the actual bicycle companies, such as Schwinn, Specialized, Raleigh, Trek, Bianchi, and so on. These companies need lots of people. Even a relatively small company such as Bridgestone had 25 employees on the office and warehouse; Specialized has more than ten times that. It helps to have experienced in overseas trade, sourcing, design and engineering, inside sales and outside rep.

positions, marketing—just about any other job that all corporations utilize. An office job for a large bike manufacturer isn't that much different from an office job in any large corporation. To get in generally requires the right combination of education, expertise, and personal connections.

The "cycling" jobs in design or technical support are usually reserved for people with bicycling and industry experience, and if you're a design or engineering person looking to work for the U.S. division of a foreign company, keep in mind that most of the final drawings, testing, and real engineering takes place at the home office.

There are also the small frame builders, but typically these guys run on a slim budget, so opportunities are few. Often these smaller businesses hire people they know personally, so if there is a frame builder in your area, buy him (usually guys) lunch sometime. If you have experience with marketing or advertising, there are some excellent opportunities for you. Marketing expertise can outweigh the need for bicycle experience. Most larger manufacturers have marketing departments, although generally these jobs are filled from within. There are also opportunities at the bike magazines, and at independent bicycling or sports oriented marketing companies as well, and you may not need as much actual bicycle experience to work here.

There are a lot of jobs to be had in the bicycle industry. Retail is an excellent place to start, and then you have to match your skills and desires with the opportunities that exist beyond retail.

The first job you get might not be exactly what you want, but once you're in the door it is easier to move around. Good luck. 

RIC COMAR HAS WORKED FOR VARIOUS COMPANIES IN THE BIKE INDUSTRY, AND IS NOW MARKETING DIRECTOR FOR WINKLER WHEEL.

MEMBER INTERVIEW #1:

TIM ZOWADA, KNIFEMAKER

IN EACH ISSUE I'LL PROFILE A MEMBER WHO OWNS A SMALL BUSINESS, GENERALLY AN INTERESTING ONE. IF YOU DO, AND WANT TO BE IT FOR THE ISSUE, LET ME KNOW. I DON'T KNOW WHAT THE RESPONSE WILL BE TO THIS, AND IF HUNDREDS, OR EVEN DOZENS OF YOU RAISE YOUR HANDS, SOME ARE BOUND TO BE DISAPPOINTED WHEN THERE JUST ISN'T ROOM. WE'LL SEE HOW IT GOES...

Tim Zowada is 32 years old and lives in Michigan with his wife of 10 years, and two children, ages 2 and 6. He makes custom knives.

WHAT'S YOUR BACKGROUND?

I grew up in southern Michigan, but I spent a lot of summers in north central Wyoming. I went to Michigan State, and majored in genetic engineering, with a speciality in forestry.

HOW DID YOU START MAKING KNIVES?

I've always liked building things, and I have expensive tastes, and I could never afford the expensive toys I liked. I made my first knife in 1979, and was making knives during my junior year in college, and more people started wanting them. I got mono, took a year off to recover and make knives, and that was it. I make between 15 and 100 knives a year now.

HOW ARE YOUR KNIVES DIFFERENT FROM GOOD HARDWARE AND SPORTING GOODS STORE KNIVES, LIKE BUCK AND SCHRADER?

Well, the lowest price knife I make sells for \$135, and the most expensive one I've made so far sold for \$2,800. But it's not just the price. When I started making knives, forged, laminated blades—called Damascus—were considered the ultimate in function and beauty, so that's what I wanted to make. Damascus bladed knives are still what I make most, and there's a differ-

ence—you can't go down to the sporting goods store and buy one. And for handles I use either natural materials or other laminated materials I make myself. I don't use micarta, plastics,



or even stainless steel. I like old, ancient ivories for handles, and these come from fossilized walrus or mastodons. I won't use ivory from elephants.

A fine custom knife is different from a factory knife. A custom maker can afford to work with the best materials, materials that aren't suited to mass production, and since I make my knives one at a time, I can put extra care into them. I've spent a lot of time perfecting heat treating techniques that are impossible to do in a factory. Maybe it's just me-the-knifemaker talking, but factory knives tend to be cold and impersonal, but a good custom knife has a personality to it.

WHO BUYS YOUR KNIVES? WHEN I THINK OF CUSTOM KNIVES, I THINK OF KNIFE COLLECTORS, AND WHEN I THINK OF KNIFE COLLECTORS, I THINK OF LARGE WEALTHY EX-MILITARY MEN WHO KEEP THEM IN LARGE DENS WITH ANIMAL HEADS ON THE WALLS...

Well, 80 percent are guys. Some people are collectors, but I get a lot of farmers and factory workers, too—normal people. The


knives get used. I make paring knives for the kitchen, folding pocket knives, whatever you want, whatever you'll use, I'll make. Knives are everyday tools, and everyday people buy my knives.

WHERE DO YOU GET YOUR IDEAS OR INSPIRATION?

I steal ideas from many other custom knifemakers, but it's a friendly, flattering kind of theft, and we all do it, and we share ideas. Only a few knifemakers consider themselves to be God's gift to the craft; most freely share their ideas and methods. Dan Maragni, Tim Wright, Phil Baldwin, Jim Schmidt, and W.D. Pease are among the good guys.

DON'T YOU THINK CUSTOM KNIVES ARE RATHER FANCY? THE ONES I'VE SEEN ARE SO OSTENTATIOUS I'D BE EMBARRASSED TO HAVE ONE IN THE DRAWER...

A knife is most importantly a tool, and to have any value at all, it has to do a job. The good knives, the interesting ones, are sharp and functional. I know, you see a lot of glitzy work in the custom knife world, but some of the finest knifemakers in the country are masters of the understated. They can do more with a line or texture than others can do with \$2,000 worth of engraving.

I'd like to say something else about knives. A lot of people see knives as tools of violence for Rambo-worshippers. Even some people in the arts and crafts industries, people who ought to know better, think that way about knives. They need to look inside their kitchen drawer to see them as tools, like so many other things. I'm a knifemaker because I love to tinker and build stuff. Compared to a lot of jobs, I work twice as hard for half the money, but the satisfaction I get and the friendships that grow out of my business are worth every cut and burn. Making good knives beats having a real job, anyday. 

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THE BEAT GENERATION

by Roy Herman, *Rash Dr.*

Used to be guys like me would keep a training diary. Pretty basic stuff. Guys'd write down their route, who they rode with, the weather, the distance, how they felt, whatever.

Then one day someone shows up with a cyclometer. Says he saw Greg using one in the Tour. Raves about how he now knows the length of his rides down to the tent of a mile. Insists that you gotta get one too. Few years later, after all the guys had gotten their blessed cyclometers, same guy shows up with a belt around his chest. Says this belt and this watch around his wrist allow him to monitor his heart rate. Says he now can tell when he's having a good day or a gad day. Insists that you got get one too.

Few years later, you can't fit in on a group ride unless you've got a cyclometer and hear-rate monitor. It'd be like wearing wool shorts, if you know what I mean. Me? Don't get me wrong. *Got* a cyclometer long ago. *Wear* a hear-rate monitor every now and then. *Like* technology, sometimes.

Was ridmg with three other people the other day. It was me, two club-racer dudes, and a young woman on a new RB-1. Said her name was Came. Told me she had only been ridmg on these roads for a coupla weeks. Smiled a fiendly smile that made you want to ride *with* her.

The studly racer dudes had other plans. These guys spent *all* their time looking at their cyclometers and heart-rate monitors. Made sure they were staying in "the zone." For the entire time we rode, they didn't say a word. Just grunted at the digital feedback they were getting.

Is that information so important that these guys couldn't participate in a fiendly conversation with the rest of us? Did they think we would think less of 'em if they rode 18 mph instead of 19? Did they even care about what kind of

example they were setting for Came, the novice cyclist? Weren't they inexperienced once too?

Now, I know you're not like those studly dudes, no way, not you. You may have a cyclometer and hear-rate monitor but you've got time to say hi too. Don't you?

Reminds me of the time I was talking to Andy Hampsten at the Giro d'Italia. *Superguy* Andy is one of the friendliest riders in pro cycling. You'd like him. When you see Andy on TV, climbing the Alpe d'Huez, he's probably thinking of you, wondering what your rides are like back in the good ol' USA. I asked Andy what it's like when he goes on charity fun rides back home.

Andy told me it's pretty neat. Everybody talks and laughs and has a good time. 'Cept for a few racer guys who think it's a training ride and can't let their heart rates fall too low. These guys end up trying to go off the front. Makes 'em feel big to be able to say they dropped my friend Andy. Whatta bunch o' crap.

Just occurred to me: Maybe you are one of these guys. Maybe a ride is just not a ride unless you can express it in terms of beats per minute and miles per hour. Maybe you've got better things to do than talk about the scenery and the weather when you're riding.

If you are one of these guys, please do me a favor. The next time you're out on the road, and you happen to meet up with a few people on the way, spare a few words o' kindness. Might make your heart rate go up a few beats. Might put you into your target zone. Might even slow you down a few tenths of a mile per hour. It's okay. I promise I won't tell.

Whattaya say? It'll give you something a lot more interesting to write in your training diary. @

THE CRITIC SPEAKS:

Doc Roy Herman's Beat Generation, no doubt a sincere effort, lacks a certain quelque chose: a complete sentence, perhaps.

It does not fall short (no, no) in contractions, boasting more of them than a March morn in Maternity at Manhattan General. Where, O where, is that dratted Apostrophe Posse when

we need them?

And wherefore the anti-technology fixation? Grunting at digital technology, indeed... Some of one's best pals grunt at technology and, to be sure, at smiling friendly young women on new RB-1s. Speaking of whom, they insist you gotta get one, too. The Andy Hampstein name-dropping ploy offends, n'est-ce pas? So pretentious!

And the "few words of kindness" nonsense went out with the '80s. Get with it, Man. These are the electronic '90s, the Age of Quantificarius. Wake up. Smell the net. Surf the coffee. Get a life. And put the letters of my name back into the right order. Thank you. —O. Riginal

(Ed note: Mr. Riginal will write his own column in the next issue.)

A SHORT HISTORY OF CARRADICE

Carradice was founded about 1933 by H.W. (Wilf) Carradice. In common with a lot of the young people of the Industrial North of England, Wilf used to escape to the countryside at weekends and the annual holidays. Cycling mushroomed in those days and the virtually traffic free roads and lands were the routes to freedom — until Monday morning came around.

Carrying around and camping gear was the norm; no back up trucks in those days! But the only equipment available for carrying was expensive, heavy, and generally more suited to motorcycling. Wilf, who worked in the textile weaving trade, made himself a saddlebag, stitching it on his mother's treadle sewing machine and using the closely woven cotton material that we call cotton duck. Friends soon gave him orders for similar bags, and Wilf set up manufacturing in the back bedroom of his mother's house. By 1935 Wilf had given up his job at the factory and rented a small workshop where he employed two machinists to make saddle bags and panniers for a hungry market.

Business grew and Wilf didn't confine himself to cycling needs. One of the first single pole lightweight hike tents appears in the 1937 catalogue of H.W. Carradice along with rucksacks, down filled sleeping bags and proofed jackets. In 1939 the war in Europe curtailed commercial progress and all suitable production was directed to the war effort. Carradice were put to making webbing equipment for the Forces and Wilf oversaw this virtually part time

as he was directed to work in the munitions factory.

In 1946 hostilities were over but a war ravaged England had to get back to living again. Things weren't easy, and rationing of food, clothing, fuel and even furniture continued. So in the post war years Carradice struggled to source materials suitable for making by now what had become a standard British saddlebag.

Things improved steadily and a move to bigger premises in Nelson was necessary to meet the growing leisure cycle market of the 1950's. At that time the catalogue ran to eight pages and listed 34 types of cyclebag along with camping, hiking, and motorcycle equipment.

Wilf's elder daughter, Sheila, although a young mother of three children came in to the business and worked alongside her Dad developing a range of outdoor activity clothing using proofed nylon materials for the first time. Tragically Sheila became ill with cancer and died whilst still only in her thirties. Even with this loss Wilf carried on but some of the heart had been taken away and in 1972, by which time he was 70, he was looking to close the company down.

About then a young man named Neville Chadwick, who worked as an accountant, was looking for an opportunity to branch out on his own, and with the help of his wife Sheila, persuaded Wilf to sell the business to them. Although they had a young family of four children they

were confident that they could rebuild the Carradice company and by 1974 extra machinists were employed to meet the demand.

Being a keen cyclist, Neville recognised the need for lighter weight bags and a range of nylon bags was developed with the emphasis on quality materials and workmanship, continuing the Company philosophy. Two further moves to larger premises followed and by 1983 manufacturing occupied 10,000 SQ. FT. New markets opened as a result of export efforts and today Carradice send 40% of mainly cotton duck equipment to mainland Europe.

The search for excellence in design and function continues but at the same time keeping hold of those traditional elements that are a feature of Carradice quality. Control of direction is 100% in the Chadwick hands and the Company is managed on a very personal level with all of the workforce committed to quality. The morale is high and the labour turnover low, so that continuity of standards is assured.

SO WHAT OF WILF? At the present time he still manages to be independent, living in a small apartment suited to his needs. When seen around town he doesn't look a lot different from the familiar tall spare figure, but now a little stooped and slower. There is no doubt that the independent character that started Carradice all those years ago lives on. 🐼

NOVEMBER 1994

NELSON, LANCASHIRE, ENGLAND

FRAME MATERIALS MADNESS

by Jim Papadopoulos

Twenty-five years ago, choosing a bicycle frame material was easy. The choices were steel, steel, or steel. The only decision the frame builder faced was what gauge of steel tubing to use.

But today, there's a wealth of credible choices. Along with a multitude of updated steel alloys and tubing shapes, there's also aluminum, titanium, and carbon fiber, along with the new metal matrix materials (aluminum combined with a stiffening and strengthening agent like aluminum oxide, for instance). Each one of these materials has carved a niche for itself in the bike industry because they promise to deliver better performance than the other materials. Not surprisingly, with every material claiming to be the best, consumers and manufacturers are confused about the choices.

The fact is materials issues are thorny ones in most branches of technology and manufacturing. All materials are multifaceted, with a great many properties contributing to their strength, formability, joinability, corrosion resistance, and service performance. Choosing which material is "best" depends on the task at hand, and even then, the decision is not clear-cut. Bicycle manufacturers want their frames to be strong, light, durable, and relatively inexpensive to make. To varying degrees, all materials in use today can deliver on that promise, but no one material can deliver better than any other. Titanium is very strong and light, but it is expensive. Aluminum is lighter and cheaper than titanium, but it is not as durable. Carbon fiber is the stiffest of all materials for its weight, but is hard to join together and not very crash-worthy. Steel is the heaviest of the frame materials, but is also the least expensive and the easiest to join and repair.

Adding to the confusion is the widespread belief among consumers and manufacturers that the frame and what it's made of has some fundamentally important bearing on the "ride." We believe that some frame flex is necessary because it helps smooth out our passage over bumps which adds ride comfort and makes us go faster. However, too much flex is bad because it saps up our pedal power and slows us down. Frame materials have even been assigned specific performance qualities: Steel delivers a "lively" ride; titanium delivers a resilient, forgiving ride; carbon fiber is stiff but good at damping vibrations; large-diameter aluminum frames are harsh, but

good in the sprint. These beliefs are treated as gospel; they are routinely used in advertising, and they are repeated endlessly by the cycling press when it comes time to talk about ride differences between one bicycle and another.

Since performance is the driving force behind many cyclists' buying decisions, it's obvious why manufacturers spend so much time and money trying to convince us that their choice of frame material will best deliver that magic combination of vertical compliance and axial stiffness. But what does science say about all this? How right are we when we say that the frame material largely determines the overall feel and performance of our bicycles?

My 20 years of research and 25 years of riding experience leads me to only one conclusion: Frame material has little or no effect on a bicycle's feel or performance.

Heretical? Perhaps. But cycling is full of lore and misconceptions that don't stand up to scientific scrutiny. Even top riders have imagined differences which simply weren't present.

For years, riders imagined that radially-spoked wheels rode more harshly than laced wheels. Not true. Racers have declared that their new frame is more resilient than their old, even though the "new" frame is just the old one with a new coat of paint. When I studied engineering at Cornell University, I supervised a student who performed a double-blind test in which three bicycles were identically set up in dimensions and components, but one of the three frames was different. (In a double-blind test, neither the test subject nor the person administering the test knows which test sample is being evaluated.) One frame had much stiffer rear stays than the other two. Of the 18 test

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riders, 17 selected one of the bicycles as different, which speaks well for our ability to detect differences in frame construction. The problem is the group was evenly split as to which frame was different — some thought the frame with the heavy stays flexed more; others thought the opposite.

The bottom line is you can't trust everything you feel. Now don't get the idea that I'm denying the existence of frame flex. Every material responds to forces by changing shape, or giving a little. For a bicycle, the give is elastic, meaning that when the force is removed the bicycle springs back to its original shape. If you take measurements or perform careful calculations, you find that different frames definitely bend and twist different amounts under the normal forces of riding. Furthermore, the amount and nature of the give certainly depends on the frame material: the material's Modulus of Elasticity, or stiffness, determines its resistance to deformation; the material's Loss Factor (damping) defines whether it "rings" or "thuds" when flexed; the Density of a material helps define its natural vibration frequencies and how quickly it springs back to rest.

Of course, equally important to frame flex is how the frame is built; that is, the shape and size of the tubing, how the tubing is placed in the structure, and where any tubing butts are located.

So if the amount of flex in a frame and how it springs back unquestioningly depends on the type of material, the amount used, and the tube shapes, then what's the problem with our notions of frame flex? After years of trying to reconcile various riders' and manufacturers' claims about flex with measurements I've taken, published data, and careful calculations, I come to the reluctant conclusion that the amount of frame deformation one experiences while riding is generally too small to feel.

I don't want to imply that riders shouldn't trust their perceptions about how a bike rides; human beings are certainly sensitive enough to detect subtle differences. My point is that when two bicycles feel different over bumps or in a sprint, what we're feeling has little to do with flex in the frame and a lot to do with everything else that's between us and the road, like the tires, wheels, fork, handlebars, seat and even handlebar positioning (lower bars mean straighter arms and more perceived road shock). If my measurements confirm that frame flex is negligible, they also confirm that these other components have a lot of flex. This is especially true of handlebars, which to my knowledge, are rarely the topic in any road test analysis.

WHAT WE CAN TRUST ABOUT FLEX IS THE FOLLOWING:

VERTICAL FLEX, or flex over bumps, is primarily from the tires, handlebar and stem, the saddle, the gauge of the front fork, and the position of the rider's arms and how much weight they bear. The exception, of course, is when the bicycle is equipped with a suspension.

AXIAL, or pedal-related flex comes as much from components — bars and stem, crank arms and spindle, saddle — as it does from the frame. Some riders probably can feel the difference between frames, but many cannot do so reliably. Even so, I'm convinced that pedal-induced frame flex has no bearing on performance. There is no physical reason why flex at the bottom bracket "robs" pedaling energy. Furthermore, top professional races are routinely won on extremely flexible frames (*the aluminum Alans and Vituses*, for example). Anyone who wants an incredibly stiff bike should **A)** buy stiffer handlebars, or **B)** buy a cheap heavy frame.

There are some types of frame flex that are bad for safety or performance reasons. Steering-related flex in the frame or fork has been implicated in steering shimmy—the dreaded speed wobble—and should not be allowed to exceed a certain value. Also, any flex that creates mechanical interference, like a chainring rubbing the front derailleur or brake shoes rubbing a wheel, will scrub off speed and should be avoided.

ONE MORE POINT ABOUT FRAMES AND PERFORMANCE: The effect of weight. Many forests have been leveled to expound on the virtues of low bicycle weight, especially frame weight. This one seems like a no-brainer—trim weight and go faster. But even here our conceptions are misleading. On a hill so steep it reduces our speed by half, from 25 MPH to 12.5 MPH, an increase of one percent in our weight (*for me, that's two pounds*), will reduce our speed by 0.5 PERCENT, to 12.43 MPH. That difference won't even show up on the speedometer! I can find no evidence that says a couple pounds more or less in weight can be felt while riding. To say so would be akin to saying that we feel faster when our water bottle is empty than when it's full.

Once we get past all the performance hype, we find that manufacturers and consumers alike are primarily interested in frames that are durable and that can be assembled at a reasonable cost. What material properties determine strength and durability of a frame? When engineers talk about how suitable a material is to a particular structure.

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they deal primarily with the following considerations:

YIELD STRENGTH — Can a frame withstand the forces of a large bump, a maximum-effort sprint, or falling over without bending?

FATIGUE STRENGTH — Will the frame develop cracks after many repeated normal loads or fewer peak loads? Every frame will eventually fatigue and break, but how long it will last in normal use before doing so—one year or a hundred?

NOTCH SENSITIVITY — Do sharp shoulders or minor flaws in the tubing or at the joints dramatically reduce fatigue strength? This is especially important for high-strength materials which, as a rule, are more prone to crack at tube junctures, tubing cross-sectional changes, and any holes or notches than more forgiving materials.

STRUCTURAL TOUGHNESS — If overloaded by a big bump or even a crash, does the frame material just yield somewhat and still retain its strength, or does it break or crumple catastrophically?

JOINABILITY — Is it easy or hard to assemble a frame from the material? Do some joining techniques lead to dangerous strength losses, cause cracking, enhance corrosion, or create damaging residual stresses?


Residual stress, corrosion, stress corrosion cracking . . . the list of material considerations goes on and on. The point is that materials can be weak in many ways. Relying solely on one aspect of a material, say an uncommonly high yield strength, does not mean the material is better for the job than some material with less yield strength. Some weaknesses are well-understood and can be explored in standard engineering texts; others are discovered only once the material is put into service. Here's where experience is invaluable. A design and material that has been used extensively (more than a season!) by a lot of riders in a lot of different situations will have revealed its major weaknesses. Engaged manufacturers will have learned how to build safe, durable frames that satisfy the performance expectations of riders.

Where my safety is concerned, and also the longevity of my frame, I'm a real conservative. Standard lugged frames made from medium-strength, low-alloy steel have a respectable track record. Some still occasionally break, but usually not dangerously so. Many can tolerate being bent in a crash and then straightened afterwards. Nicks and gouges in the tubes don't lead to brittle fracture. This is not to say that durability can't be improved. Maybe some of the titanium or carbon fiber bikes on the road today may turn out to be more durable than steel—who knows? But the scuttlebutt on the internet about composite bike failures and aluminum-frame manufacturers' warnings leads me to believe that these materials have a long way to go to match steel.

Cost involves both the material cost and the joining and finishing cost. Most high-tech materials cost more than steel, but for reasons you might not expect. Titanium, for instance, costs much more to refine from ore than steel. It can be processed into tubing with techniques similar to those used to make steel tubing, but since the primary market for titanium tubing is the aerospace industry, the tubing is processed to much more rigorous standards than are necessary for bike frames. Framebuilders must buy their titanium tubing from the same mills that supply companies like Boeing, so they must pass these built-in costs on to the consumer.

Low-strength aluminum is relatively cheap to buy, and can be easily joined by welding. But the sexy high-strength aluminum like 7075, are difficult to form into tubes, are tough to weld, have poor corrosion resistance, and are notch-sensitive, and cost a lot more. Likewise, metal matrix materials, which use aluminum as a base, are also tough to form into tubes and weld.

Raw carbon fiber is expensive and can be made into a bike frame only through a molding process, like Kestrels, or bonding individual tubes to lugs, like the Trek OCLV frames. The molds and jigs to make carbon fiber frames are expensive; the result is high assembly costs and little flexibility in design.

Beyond a point, I don't think there's any real value in searching for ways to make frames stiffer or lighter. As far as I'm aware, the exotic materials don't significantly affect a bike's feel or performance. Consequently, the new materials are not about functional superiority, but about sexy ads and bragging rights. 

JIM PAPADOPOULOS IS A REGISTERED MECHANICAL ENGINEER, WIDELY EXPERIENCED IN BICYCLE TECHNOLOGY AND RESEARCH. HE RECEIVED HIS PH.D. AT MIT, WHERE HE DEVELOPED FRACTURE EXPERIMENTS. HE WAS SUBSEQUENTLY A PROFESSOR AT CORNELL, AND CO-FOUNDER OF THE CORNELL BICYCLE RESEARCH PROJECT. HE IS ALSO AN INDUSTRY CONSULTANT AND, OF COURSE, A BICYCLE RIDER. JIM HAS AGREED TO WRITE A COLUMN IN EACH OF THIS YEAR'S SIX ISSUES.

SOME WEAKNESSES
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HISTORY WITH HERLIHY

by *David Herlihy*

IN THE PAST FEW YEARS THERE HAS BEEN INCREASING DEBATE IN THE INTERNATIONAL BICYCLE COMMUNITY REGARDING WHO INVENTED THE BICYCLE. HERE, BICYCLE HISTORIAN DAVID HERLIHY SUMS UP THE DIFFERENT THEORIES AND TELLS US WHO HE THINKS IS TO BLAME. YOU KNOW WHAT I THINK AFTER READING ALL THIS? I THINK THE— WELL, FORGET IT. LET ME KNOW WHAT YOU THINK. THEN I'LL LET YOU KNOW WHAT I THINK.

THEORY 1: THE BICYCLE WAS INVENTED IN ANCIENT OR MEDIEVAL TIMES.

Although no one believe that the ancients actually pedaled bicycles, it has been suggested that some cultures may have built kick-propelled two-wheelers similar to those popularized in the 1820s.

Proponents of this theory point to various ancient images which appear to depict two wheelers (probably the most famous of these is from a stained-glass window at a church in Stoke Poges, England, of a horn-blowing cherub perched on two wheels).

But if the two-wheeler is so old, why are there no references to it? And why is there no evidence of further evolution in the centuries that immediately followed? Maybe we are reading more into these images than exists.

CONCLUSION: *It's doubtful that two-wheel travel was ever established so long ago.*

THEORY 2: LEONARDO DA VINCI INVENTED IT.

This claim is relatively new, following the discovery in 1974 of a sketch resembling a modern bicycle, attributed to a pupil of Leonardo. Some (especially the Italians) have been quick to conclude that the bicycle is an Italian invention, after all.

Even if we accept that this sketch is genuine, it clearly does not represent a functional machine (no steering mechanism).

CONCLUSION: *It is a colossal exaggeration to say da Vinci "invented" the bicycle. As far as we know, he never built or even inspired an actual two-wheeled vehicle.*

THEORY 3: IT WAS COUNT DE SIEVRAC, IN THE LATE 18TH CENTURY.

Many bicycle histories start with this mysterious Frenchman who purportedly built a kick-propelled two-wheeler several decades before the German baron Karl von Drais. According to recent research, however, this celebrated "inventor" was created by Baudry de Saunier, a renown French cycle historian who sought to mitigate the glory due to France's arch-rival, Germany.

CONCLUSION: *de Sievrac didn't do it.*

THEORY 4: IT WAS KARL VON DRAIS, IN 1817.

There was a Karl von Drais and in 1818 he did patent a two-wheeler which enjoyed a moment of glory among the elite; and his invention did indeed resemble the first real bicycles of the 1860s.

But he was not a cyclist, his

invention was not a vehicle per se, but an "aid to walking," and most importantly, it did not lead directly to the bicycle as we know it. Actually, it quickly fell out of favor as people discovered that their marginal reduction of travel time could not justify their astronomical boot bills. Although at least one person did try to "mechanically assist" the driving system by adding a freewheel device to prolong the locking intervals (Louis Gompertz in 1822), nearly half a century would pass before practical pedal-driven two-wheelers were actually developed.

CONCLUSION: *Drais invented the bicycle's precursor and primary inspiration, but not the bicycle. The term bicycle was introduced in the late 1860s to distinguish the new pedal machine from the older pedal-less variety. That it took so long to make this leap underscores that the Drais machine still lacked a fundamental concept.*

THEORY 5: IN 1840 BY KIRKPATRICK MACMILLAN—OR MAYBE HIS FELLOW SCOTSMAN, GAVIN DALZELL

The MacMillan claim goes back to a Scottish campaign during the bicycle boom to prove that the machine originated in Scotland, not France. At first, it was proclaimed that a tea peddler named Gavin Dalzell was the forgotten national hero in question, but the honor was eventually shifted

to a Scottish blacksmith, Kirkpatrick MacMillan. Unfortunately, both had already died, so they couldn't shed any light on the mystery.

There are also other disturbing gaps, including the lack of any contemporary reports firmly identifying Scottish bicycles. In 1843, a Glasgow newspaper reported that a man (presumably MacMillan) knocked down a young girl with his "velocipede." But at that time "velocipede" generally referred to a vehicle with 3 or more wheels, and the article itself refers to hand-cranked which were not uncommon of the tricycles of the day.

Another problem is that we have only one surviving machine which purportedly dates from this period. It was produced by Dalzell's son around 1888, and he claimed his father made it in 1847 (supposedly, there were papers proving this, but these are now lost). And the machine, now at the Glasgow Transport Museum, has been so heavily restored that it's hard to judge its authenticity.

There is even less evidence to support Kirkpatrick MacMillan's alleged 1840 invention. This claim is based entirely on testimony compiled by a distant relative, James Johnson, fifty years after the fact. Little is known about how Johnson actually gathered his evidence from the elderly citizens who claimed to remember the roving blacksmith, and the original documents are unavailable.

CONCLUSION: *More research needs to be done to determine whether either Scottish claim is really tenable. But even **\$we** do accept that either or both built a treadle-driven bicycle in the 1840s, there is no evidence that they inspired any further development.*

THEORY 6: PIERRE & ERNEST MICHAUX INVENTED IT IN 1855 OR 1861.

It is fair to say that the bicycle as

we know it was born in France. For there is no question that the first functional bicycles available on any appreciable scale date from the Paris Universal Exhibition of 1867. But the real question is: who sparked the first cycling craze, and when?

The most prevalent theory credits the father and son team of Pierre and Ernest Michaux for building the first bicycle in 1855. This claim was first made in 1870, after the initial cycling craze had died, and in 1884, with a Michaux memorial campaign in full swing, a surviving Michaux son named Henry vouched for the claim but moved the date up to 1861. Fending off growling public doubts, he insisted that as a 7-year old boy he had witnessed his father transform a draisine into the first bicycle.

He also claimed his father built hundreds of bicycles before the exhibition, yet there is no trace of these bikes. All verifiable signs indicate that the bike entered the public domain at the Paris Exhibition in 1867.

To be sure, the Pierre and Ernest Michaux were linked to the first bicycles. However, the claim that either had conceived the idea many years before is highly suspect. They had patents for other inventions prior to 1865, so it's unlikely they would have started building bikes without a patent. Their first advertisements falsely implied that they had in fact taken out a patent on the bicycle, but in fact they hadn't,

CONCLUSION: *The Michauxs were the first commercial bicycle manufacturers, but the claim that the basic idea originated with them is unsupported and even contradicted by the evidence.*

THEORY 7: FRENCHMAN PIERRE LALLEMENT MADE THE FIRST BIKE.

When French cyclists dedicated a memorial to the Michaux pair a cen-

tury ago, they were unaware that the first bicycle patent (dated 1866) actually belonged to another Frenchman, Pierre Lallement. Lallement claims that in 1862 while he was an apprentice in the carriage industry in Nancy, he saw a draisine pass by. Recalling a child's tricycle with hand-cranked from a local toy store, he hit on the idea to mechanize the drive system with pedals. He soon moved to Paris to develop his idea, and completed his first crude prototype, which he exhibited on the boulevards, in the summer of 1863.

In July 1865, after two years of frustration, the poor but determined workman left for America with the parts for an improved iron bicycle. He settled in Connecticut, got a job as a machinist, and completed his machine, and eventually found an investor who put up the money for a patent application. After investigation confirmed that Lallement had indeed invented a new and useful device, the patent office granted their request. The patent became extremely valuable, although Lallement sold it early on and profited little.

Nonetheless, the fact that it was consistently upheld by U.S. Courts is compelling evidence that his claim was true. And although it seems plausible that he might have collaborated with Michaux at some point (they were both Frenchmen, after all, and France wasn't so crowded in those days), it would appear that he originated the basic idea of attaching pedals to the front axle of a two-wheeler. —

CONCLUSION: *Although **we** should be careful **with** grandiose titles such as "inventor of the bicycle" (after all, the modern machine we all enjoy is the result of many inventions), the evidence suggests that Lallement was the first to build a vehicle with the unique combination of rotary cranks and pedals.*

BIKE OF THE YEAR

By Ted Costantino

Lately I've come to feel that what many riders really need is a bike that will never be built by the big bike companies (no commercial potential, as the late Frank Zappa would say), but which suits the task of transport—commuting and running errands—with matchless speed and efficiency. It doesn't have a lot of gears, or big tires, or that stout look of resolute invincibility that some mountain bikes engender. On the face of it, in fact, it seems like a non-starter.

But my candidate for the bike most likely to succeed is nothing more, nor less, than the plain old city bike—the battle-scarred, flat-black, one-speed, no brakes, skinny-tires, courier-style city bike, to be exact.

Oh, I know—talk about one-dimensional! But listen: This bike may indeed be good for one thing only, but it arcs across the pockmarked urban grid faster, safer, and with less effort than any other conveyance on earth. Better than a car or taxicab, sure; better than the bus, subway, or tram, too. It generally beats walking or roller-skating. I can tell you from personal experience that it'll get you there quicker than a lift in a cop car or an ambulance, and as for those water-shuttles, helicopters, and stretch-limos still frequented by yup-pistes aglorb in the quagmire of the eighties—*please*.

The thing is, it beats every other type of bicycle, too.

The city bike bests all comers because it is the ur-bike. It is primal, stripped, spare, uncompromising. The essential city bike is nothing more than a slightly beefed-up track bike, usually with the *piste* bars inverted and

the drops trimmed (right at gut-goring height, if you want to know the uncivilized urban truth). No derailleurs, no freewheel. No shifters, no cables. One chainwheel, one cog. That's about it.

Most city bikes, erected on road frames, compromise this essence, if slightly, with the addition of a buzz-cut five- or six-speed freewheel, a rear derailleur, and a brake (you could build a Rivendell version). They are still wondrously spare. In winter they may sprout a clip-on fender, which, paradoxically, only emphasizes how lean they are.

A bicycle so seemingly fragile, so limited in its gearing, so narrow of tire and so devoid of brakes, ought to be outgunned by fancier machinery, I know. I suppose that anywhere else, it might.

But on city streets, it has no peer. Even if you obey traffic laws (unthinkable in Boston, where I live, or New York, but I hear it is done out west) you still get there faster. This is partly due to the bike's acceleration.

Compared to mountain bike wheels, the city bike's weigh nothing. The gearing is also set for sprinting, not cruising or climbing singletrack, so it leaps from a stop with an irresistible rush that makes other bikes look sick.


The 700c wheels not only accelerate better than 26s, but their larger diameter bridges ruts, expansion joints, frost heaves, manhole covers, grates, vents, and cobblestone crosswalks better, too. They come without the squirm suffered by soft fat slicks. In winter, equipped with 28c knobbies, they roll through snow without pushing a bow wave of slush. And they slice through that other winter treat, the fiercely corrosive antimatter-grey city grit born of diesel fumes, cinders, and road salt that seizes the bike in a mortal molecular grip after the first snowfall and then slowly eats it to bits.

The city bike's riding position is conducive to power and agility. It

directs the strength of the muscles, especially in the butt and thigh, to the crankset without cramping them, as mountain bikes do on the road. The narrow bars bring your arms in for a thinner slice against the wind. The lower bottom bracket feels better in comers.

In the city, you become an irresistible force. Power, control, finesse—it's yours, all yours. You soon come to feel that the city is yours, all yours. You thread through clots of stalled cars so quickly that they barely interrupt your pace. Traffic jammed behind buses, blocked by garbage trucks, snarled in gridlock, stymied by delivery vans—all these are quickly and easily dispatched.

At crosswalks, you have to stop, of course, to let pedestrians by, but at cross streets, the take-no-prisoners look of the bike and rider have a wonderfully sobering effect. Even vicious city drivers who gutter-slam the more bovine commuters on their mountain bikes with nary a backward glance will tug their forelocks in obeisance as you pass. Certainly, it doesn't hurt if you adopt the look of a disgruntled postal worker carrying a few fi-agile vials of necrotizing fasciitis in your courier bag as you wing your way through the hustle and bustle of the busy burgh. But often the silhouette of the bike itself is enough to do the trick.

Wool fabric, silk tubulars and the game of baseball aside, the world is woefully short of truly perfect inventions. As much as I dearly love the American city, I must admit that its well-documented shortcomings may preclude it from ever snagging a top spot on that Elysian list. But its bicycle, I tell you, is sublime. 

TED COSTANTINO IS FORMER EDITOR OF THE OLD BICYCLE GUIDE, AND IS NOW MARKETING MANAGER FOR MERLIN METALWORKS.

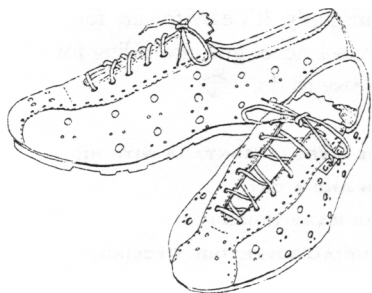
LAST SECOND NEWS

I found some normal cycling shoes. They're made by Camac in France, but these aren't the fancy 'nacs. *These* models are made for the home market. Except for the practical plastic sole, they look like something out of an ancient Ron Kitching's catalogue.

MODEL SS HAS AN UNPERFORATED LEATHER UPPER AND A STIFF SOLE, A PADDED OPENING WITH A SYNTHETIC LINING THAT LOOKS LIKE LEATHER, A DISAPPOINTING NON-LEATHER INSOLE, A LEATHERLIKE TONGUE, AND A PRACTICAL SYNTHETIC OUTERSOLE WITH PEDAL-GRIPPING RIDGES. LEATHER PATCH ON THE SIDE TO PROTECT AGAINST WEAR. BEAUTIFUL SHOES. NOT SPD COMPATIBLE. PRICE: ABOUT \$120.



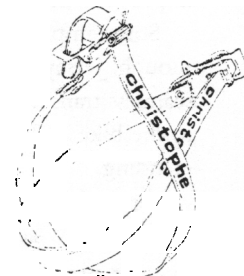
MODEL PF HAS A PERFORATED UPPER, A SPRINGIER SOLE. NO FANCY PADDING, THE SAME HIGH TECH INSOLE AS THE SS, A SLIGHTLY BUMPIER OUTER SOLE, LEATHER SIDE PATCH AS ABOVE, NOT SPD COMPATIBLE, NATCH. PRICE: ABOUT \$90.



There aren't many choices out there in the way of gentle and somber cycling shoes, and these are clearly top-quality. I haven't tried them because I got them today and this goes to print tomorrow (Pineapple Bob drew them for me in a day). IF you are interested—not necessarily ready to order, but at least genuinely interested—let me know ASAP by phone (510 933-7304), fax (510 933-730s) email (RivBici@aol.com.) or on your order. And your size. I wear a 9 Converse All-Star, a 41.5 racing Sidi, a 42 off-road Sidi, and in these I'll wear a 43. These arc shoes for the nonracer, very well made and low-key. They double as dress shoes off the bike.

CHRISTOPHE WHITE LEATHER TOE STRAPS

THESE ARE THE CHEAP TOE STRAPS OF YESTERYEAR THAT ONLY BEGINNERS USED, BECAUSE REAL RIDERS USED BINDA EXTRAS, AT \$15 PAIR. WELL, BINDA EXTRAS ARE HARD TO COME BY NOW, AND WITH THE PROLIFERATION OF NYLON STRAPS (WHICH DON'T HOLD, AND FRAY, AND ARE, WELL, NYLON, THESE PLEBIAN TOE STRAPS ARE, FOR THE FIRST TIME, COOL. JUST \$5 PR.



WARNING: PLEDGE BREAK

Six hundred paid-up members and a mailing list of 4,200 are not sustainable numbers. We need more members if we're going to be able to do something other than sit and squeek & squawk about the state of things, and fizzle out and be the answer to a trivia question ten years from now. I don't want to make Rivendell BIG—that's not what it's about. But I want memberships to at least pay for printing and mailing, and so far they're not even close. So if you haven't signed up and you'd like to, now's a fine time. If you want to be taken off the list, drop a note. If you want to help, please tell your friends, and when they ask "why join?", remind them that members get a 5 percent rebate/gift certificate on all purchases, first crack at specials, and guaranteed six issues per year (non-members will miss out on one or two).

If you can bring yourself to tell someone, do it; and if you can't, tell-mail-fax-email me their names and addresses and I'll see what I can do. Thanks. *End of pledge break.*

1. NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

2. NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

3. NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

4. NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

THE FABRIC OF MEMORY

by Gary Keene

The first big step towards becoming a serious rider is not buying an expensive bike. Anyone can flash a Visa and walk away with one of those. No—the line to cross is to pick up your leg and insert it into a pair of cycling shorts. In the old days this meant you were in such pain from riding in cut-offs that the gain in comfort was well worth any ridicule you might suffer. A huge improvement, bike shorts.

Some improvements are marginal, though. Jerseys, for example, make a seamless transition from the playground to the bike, at least for most fair-weather riding.

One of the joys of cycling for me has been the slow accumulation of distinctive and proclamatory T-shirts for riding. Instantly some people will say “No!

Not cotton!” Well, yes, cotton. I know it retains all moisture. But it fades—beautifully, proving the miles you’ve ridden. Yes, it shrinks and sags and flaps in the wind, cheating you of valuable fractions of miles per hour, but these are all the qualities of character, something today’s fancy jerseys lack. Modern jerseys advertise someone else’s stuff, some other riders and events, not you and yours. The joy of T-shirts is you can tout favorite political causes, regional pride and personal accomplishments. You establish an identity that goes beyond the equipment you’re riding or WISH you were riding, to incorporate the world (your world) at large. It is especially so with regard to accomplishments. If you did a personal tour to the state capital, what do you have to show for it? Buy a souvenir T-shirt! You and your buddies made it all the way there and back and the shirts are your personal history on display.

Then there’s the fact that a T-shirt’s wear pattern allows you to designate any one of them as your “lucky shirt” and

proudly display its faded sagginess on appropriate occasions. For years I had a special shirt that I always wore on the first ride of spring after the snow had cleared and the roads began to ‘dry’. It also had the honor of first day exposure on a tour, or was pulled out for particularly distinctive rides, such as crossing the highest pass of a tour or of a career. Now when I see it, faded by the sun and countless washings, the neckline enlarged by several sizes and the hole in the edge fi-om where I stabbed myself with a tent pole during the Tour of Wisconsin in 1974, I proudly relive my history through its history.

Nylon? Lycra? Generic hi-tech fabric? Never fades, never changes, never really your own. It wicks moisture, gets wet, dries instantly. It’s easy to care for, sure, but then I never got into riding for something easy to do. 🍷

GARY KEENE LIVES IN MONTANA WITH HIS WIFE KAREN AND A CAT. HE HAS LEAD MANY TOURS FOR BIKECENTENNIAL/ADVENTURE CYCLING.

HOW TO ORDER A FRAME

Rivendell frames are built to my specs by Waterford Precision Cycles, in Wisconsin. Waterford is able to build a certain number of Rivendells each month, and it’s my job to order tubing for those specific sizes about two months in advance. So I’m trying to predict how many 54CM road frames I can sell in May, how many 42CM All-Rounders in March, and so on. I have a log book for each model and size, and when March’s 54CM All-Rounders are all booked, I go to April and start filling in those slots. I want this to work, and you want your frames on time. If you think you want a frame, let’s talk about what you want and when you want it.

Each of the three models (Road, All-Rounder, Mountain) comes in specific sizes and with paint and braze-ons standard for that particular frame style. How

difficult (or possible) the semi-custom options are depends on how custom you want to get. Leaving off a dropout eyelet or switching colors between models is simple and will not affect prices or delivery. Canti-bosses on a road frame or an A/R with a sidepull fork is custom, costs more, takes longer, let’s talk.

I’ll have a complete frame information packet to send out sometime in April, maybe sooner. (I won’t have the All-Rounder or Mountain frames until March, and so if it’s going to have actual photos..) Some of you have read the roughs, but the final brochures will be ready in March, and I’ll include a copy with each order I receive. In a nutshell, Rivendell frames are designed a lot like the Bridgestones, but with slightly shallower seat tube angles. The Road frames have longer chainstays and slightly

lower bottom brackets. The Road and All-Rounder frames have horizontal dropouts. The lugs and fork crowns are custom, unique-to-Rivendell, and if you like lugs, you'll like these.

The tubing is custom-drawn Reynolds 753, the first "super steel," and my first choice of any. By "custom drawn" I mean just that. The standard 753 road tubes, for instance, are designed for superlight road and time trial bikes; for Rivendell, the tubes are somewhere in between Reynolds' standard 531 and 753 tubes. The frames are still light by any practical and responsible standard, but have a little extra metal where it'll do some good.

STOCK SIZES

ALL-ROUNDER 42 48 52.5 54 55.5 58 61
(size close to your road size)
ROAD 52 54 56 57.5 59.5 62
MOUNTAIN 16 17.5 19 20.5 (inches!)

RIVENDELL COLORS & GRAPHICS

The standard Rivendell frames will have a painted head tube (in front of the lug) with a matching panel on the seat tube, in the following colors:

STYLE	MAIN FRAME	PANEL
Road	BROWNISH ORANGE	BLUE
All-Rounder	MUSTARD	BLUE
Mtn	GOLDEN OLIVE	BLUE

You can get a road frame in a mountain color, etc. at no extra charge. In addition, you can choose from any of the four following solid colors:

FRENCH BLUE (light, pearly) SILVER
BRIT. GREEN (like a Jaguar) CHAMELEON*

* (a unique metallic that looks simultaneously purple and green. Not as gaudy as it sounds.)

Of course custom colors are available for another \$110 and a month's delay, but I'm trying to maintain some sense of identity, so please no request for fades, neons, etc. Please don't think your bike will be any less special with a "standard" color. The lugs and crowns are truly unique, and twenty years and a couple paint jobs from now, it is these that will identify your frame as a Rivendell. All frames come with a fine brass head badge painted many colors. More details will follow.

To the right is a form that will help me plan production and get your frame to you on time. Fill it out, and I will be in touch with more details.

FRAME INTEREST FORM

1. My level of interest in a Rivendell frame is:

LOW 1 2 3 4 5 HIGH

2. I currently ride the following size:

ROAD _____ MTN _____ X0-1/2 or '93 -4 _____

If you answered 4 or 5 to question #1, please answer the following, with the understanding that this is just information that will help me plan production.

3. I'd be most interested in receiving my frame in

MARCH APRIL MAY JUNE JULY AUG
 SEPT OCT NOV DEC

but I will accept delivery as late as

APRIL MAY JUNE JULY AUG
 SEPT OCT NOV DEC

4. I'd like a frame, but I think I might need a custom size. Explain. Use a separate sheet if necessary.

At this point, this column changes to an order form, with the understanding that, in the case of non-custom designs and colors, your \$300 deposit is fully refundable up to the day it is shipped. If the following questions don't apply to you (that is, if you aren't pretty much ready to order), just ignore the questions 6 & 7, but fill out the bottom part, anyway—if you don't mind. **Then I will mail you my frame brochure when it is finished.**

6. I want a frame. I think I need a _____ (style) in a _____ (frame size). My \$300 deposit is inclosed.

7. I may want a frame, but I have questions. (Ask away. Phone 510 933-7304. Fax 510 933-7305. E-mail (finally) RivBici@aol.com.)

NAME: _____

ADDRESS: _____

CITY: _____ STATE: _____ ZIP: _____

PHONE: _____

FAX: _____ EMAIL: _____

DATE: _____

THE REAR DERAILLEUR IS AS COMPLICATED A MECHANISM AS I CAN UNDERSTAND. OVER THE YEARS THERE HAVE BEEN SO MANY BRANDS FROM SO MANY COUNTRIES, AND SUCH A VARIETY OF DESIGNS, BUT THEY ALL HAVE A PARALLELOGRAM THAT PIVOTS INWARD AND OUTWARD. YOU PULL THE CABLE AND IT MOVES IN, AGAINST A SPRING; YOU RELAX THE CABLE AND THE SPRING MOVES IT OUT.

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

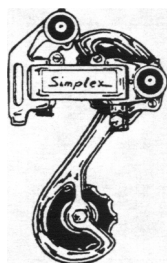
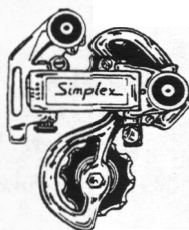
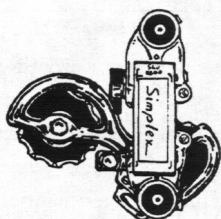
The modern style is the slant parallelogram, developed by SunTour in the early seventies, I think. In a slant parallelogram style, as the parallelogram moves inwards, it moves downwards as well. The advantage to this—and let me say that in my experience this advantage

has always been overplayed—is that the jockey pulley can be set closer to the small cog initially, and follows the line of the cogs more closely, as it moves in and out. When the jockey pulley is close to the cog, shifting tends to be faster, but as I've said, I can't tell a difference. Slant paras are a requirement for indexing, and the irony is that SunTour, which the slant para (no doubt inspired by the old Huret Allvit from France, but that's another story) is no longer with us. I think all currently manufactured derailleurs are slant paras.

Two of the Simplexes I carry, the 6600s, look like slants at first, but when you look closer (as I didn't do until member Jeremy Bunn pointed it out to

me), they move like drops. But the parallelogram is horizontal, so the pulleys move straight in and out, just like a drop. I'm getting a little out of my small area of expertise here, but I think the advantage to this horizontal para design is that the chain wraps around more of the cogs, and so wear is reduced. If anybody knows differently, step forward. (Someone is working on a book about the derailleur. It may be out within a couple of years, and maybe that will tell the story.)

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



THESE ARE FRICTION DERAILLEURS.

SIMPLEX 5500 DROP PARALLELOGRAM -- RACING/GENERAL

The last available drop-parallelogram derailleur on earth, and one which, like so many classic designs, was made unmarketable by indexing. This one works and looks remarktable. Best for six-speed clusters, but I've used it on seven, no problem.

CAPACITY 26T, 180G, PRICE: \$80

SIMPLEX 6600 SLJ HORIZONTAL PARALLELOGRAM -- RACING

A horizontal parallelogram Simplex. The cage actually moves directly in and out, as it does in a drop parallelogram. The horizontal cage increases chain wrap, which ought to increase chain and cog life, but that's minor.

CAPACITY 24T, 199G, PRICE: \$80

SIMPLEX 6600 SLJ HORIZONTAL PARALLELOGRAM - TOURING

A touring/mountain/triple version of the 6600 short-cager, and at 210G, a real lightweight. As is the case with the 6600 short cage, there is no barrel adjuster, so it is refreshingly non-indexable, and shifts no worse for it. Makes any bike classier, more interesting and less attractive to thieves who set their radar for XTR.

CAPACITY 32 T. 210G, PRICE: \$80

THE JAPANESE / FRENCH COLLECTION

Japan is the only place I know where you can still buy new, in the box, Mafac brakes, Maxicar hubs, Huret derailleurs, Stronglight cranks, and Phillipe stems and bars. The Japanese appreciate French style, and when you mix that with a passion-that-borders-on-obsession-for-brand names—well, they want these Simplex derailleurs badly, mostly to equip French collectible bicycles such as Alex Singer and Rene Herse. But think about this: There aren't many of these derailleurs left, and there will be no more, ever. So is it better to save them for private collectors in Japan, who will certainly give them good homes on beautiful French bikes—or should they go to people who will ride them?

This is the sort of issue everyone must have an opinion on, and I'd like to know what you think. In any case, I cannot afford to buy the remaining stock, but there's no way I'm not buying any. As an aside, I've always liked French style bicycles, and the Rivendell bicycle shows its French influence. So in that sense, at least, a Simplex derailleure is far from out of place on a Rivendell frame. (And I've had one on my RB-1 for a year. It seems happy there.)

The Simplex prices above are for riders—not collectors, not investors.

SUNTOUR SPECIAL FRONT DERAILLEUR

A well-made, fast-shifting front derailleure for multiple chainrings. Lacks the style of the Simplexes, but shifts better on modern rigs with large chainlines (chainrings offset far to the outside).

1116 PRICE: \$10

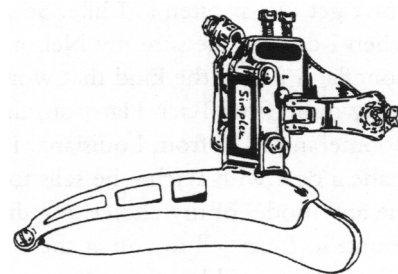
SIMPLEX TOURING F. DERAILLEUR Be the only person you know who rides a fine French front derailleure. This one's for triple chainrings, wide range gearing. A rare, no longer made high capacity front derailleure of absolutely top quality. For best results, the maximum chainline should be 45MM. If you bought one earlier and discovered that it doesn't reach your outer ring very easily, please return it, no problem. What's chainline? The distance from the center of the seat tube to the center of the middle cog (on a triple). In the old days, triple chainlines were much shorter than they are now.

1276 PRICE: \$32

SIMPLEX SLJ RACING DERAILLEUR (DOUBLE)

A two-chainring version of the derailleure above. Nice straight cages for that classical low-tech look, but not to worry, it still shifts fast and furiously. For doubles with no more than 15T difference between the big and small rings.

1166 PRICE: \$32



IN THE EARLY '70S A CYCLING FRIEND USED HIS FINGER INSTEAD OF A FRONT DERAILLEUR. HE DIDN'T WANT THE WEIGHT, HE DIDN'T MIND THE BLACK FINGER, AND HE DID FINE. THE IDEA INTRIGUED ME, SO I REMOVED MY FRONT DERAILLEUR, PUT ON A NEW, WAXED CHAIN, AND AFTER TEN TRIES I GOT THE HANG OF IT, TOO. (DANGER: YOU DON'T WANT TO GET YOUR FINGER STUCK BETWEEN THE CHAIN AND THE LARGE CHAINWHEEL, OH MY GOD). I RODE FRONT-DERAILLEURLESS FOR MANY MONTHS, AND CAVED IN ONLY WHEN I WANTED TO GET SOMETHING NEW FROM THE ZEUS 2000 GROUP, AND THE FRONT DERAILLEUR WAS ALL I COULD AFFORD. I ALREADY HAD THE SHIFTERS.

I'VE NEVER USED A FRONT DERAILLEUR THAT DIDN'T WORK WELL, PROVIDED IT WAS SET UP RIGHT AND USED APPROPRIATELY—SHORT CAGES FOR RACING GEARING, AND SO ON. A FRONT DERAILLEUR'S TASK IS SO SIMPLE IT'S HARD TO MAKE A BAD ONE. THE TROUBLE WITH FRONT DERAILLEURS IS WHEN SOMEONE TRIES TO SELL YOU ONE WITHOUT WARNING YOU ABOUT THINGS LIKE CHAINLINE LIMITS, OR THEIR OPERATORS. WHEN I WAIT TOO LONG TO DOWNSHIFT, I LEARN NOT TO DO THAT—I DON'T LUST FOR NOTCHED AND RAMPED CHAINRINGS.

ONLY THREE THINGS MATTER TO ME IN A FRONT DERAILLEUR: (1) FIT. IT'S GOT TO FIT BETWEEN THE

CHAINWHEEL AND THE CRANKARM OF ANY CRANK I MIGHT WANT TO USE. (2) SMART DESIGN. YOU SHOULD BE ABLE TO IDENTIFY THE INNER AND OUTER ADJUSTING SCREWS. (3) LOOKS. I PREFER STRAIGHT, SIMPLE CAGES TO FANCY ONES, AND I DON'T NEED MY DERAILLEURS TO LOOK LIKE THEY'RE MOVING WHEN THEY AREN'T.

SO—SINCE FRONT DERAILLEURS ALL WORK FINE, YOU MIGHT AS WELL USE SOMETHING INTERESTING. WILL IT SHIFT AS FAST IN A LAB TEST AS A SHIMANO? NOTHING EVER WILL. DOES IT NEED TO? I DON'T THINK SO. WILL IT SHIFT FAST ENOUGH ON THE TRAIL AND ROAD? OF COURSE!

BOOMERANG

Everyone knows what a boomerang is, but you haven't lived until you've thrown one and caught it. And where do you find them? Your neighborhood toy store? It closed twenty years ago. Wal-Mart? No way. You can't even find them in the Pac Bell Yellow Pages, and don't they have everything?

I've flang 'rangs for years, but I don't get out as often as I like. So when I do, I make sure my Nelson Longflap's full of the kind that work. I buy mine from Rich Harrison, the Boomerang Man from Louisiana. I made a deal with Rich—he sells to me any model of my choice at a discount, so I can sell to you at the same price you'd buy from him. Then, with your boomerang, I'll also send you his brochure, so if you get hooked, and you will, you can buy your other boomerangs from him. I'm not diversifying or going crazy here; I just like throwing boomerangs, and I know how frustrating it can be when you can't find one. If you can throw a rock, you can throw a 'rang. Boomerangs are the best bargain in toys today. If I was down to one and couldn't get another, I wouldn't sell it for \$5,000.

I sell a model called the *Yanaki* (rhymes with WUnaki, Nanaki, etc). It's all wood, painted garish colors to make it easier to find. Left- and Right-hand models available, but mostly rights.

PRICE: \$16

BEESWAX

Beeswax lubricates, protects, and keeps threaded parts from vibrating loose. Just degrease and dry the metal surfaces, then put it on dustcaps and crank bolts, pinchbolts and lock-rings—anything you want to lubricate and keep adjusted. It makes excellent cable-end caps, plugs brazing vent holes to keep out water, holds screws to screwdrivers better than a magnet, and helps nails and screws penetrate recalcitrant wood.

Comes in a dixie cup, weighs about 70G, almost 2.5 OZ, slightly more than 1/4cup. One dollar from each sale will be donated to a good cause, to be determined soon.

PRICE: \$3

RBW T SHIRT

Unbleached cotton, very soft, with little flecks, and screened with a 3 1/2-inch multicolored Rivendell circle logo on the front, and a big RIVENDELL and some kind of inscription across the back.

M, L, XL, XXL

PRICE: \$12

RBW MOCK T

Available mid March. Like the T, but long-sleeve, high collar, and organic cotton, if available. Same as above if not. Don't order until 3/12.

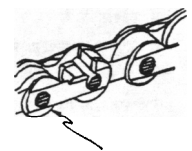
M, L, XL, XXL

PRICE: \$18

SACHS CHAINS, W & UW

Sachs bought Sedis, and as I understand it, the chain machines were part of the deal. The sc-40 is the closest thing to a Sedisport chain, the most universally praised bicycle component of all time (in the old days, even Shimano pros rode them). The more expensive Sachs chains have bigger heads on the pins, to withstand the brutal environment of indexed shifting under load, which is the way most manufacturers think you like to shift. I like the smaller head on this chain because it seems the smaller head will do less damage when you break apart the chain for rewaxing, and Sachs/Sedis chains don't break, do they? A big head might rip a big hole in the side plate—the HyperGlide chain problem, and who needs it? SC stands for silent chain, but I haven't noticed.

The silver ones are waxed, and the wax is caked on thick; you have to work it off with your hands, ride the bike a quarter mile, and then it'll be fine. The black ones come to me bulk-packed, and I send them to you the same. If chains scare you, buy from a bike dealer. If you're comfortable with chains, I've got them.



SILVER, WAXED: \$14

BLACK, UNWAXED: \$10

WHAT'S UP WITH WAX?

WAXING WORKS QUITE WELL IF YOU DO IT RIGHT, AND FAIRLY WELL EVEN IF YOU DO IT WRONG. FIRST YOU HAVE TO DEGREASE THE CHAIN, EVEN A NEW ONE. I USE FINISH LINE'S SOLVENT, ONE OF THE ENVIRO-CITRUSSY ONES. I DO 20 CHAINS AT A TIME, THREAD THEM ONTO A COAT HANGER, AND DROP THEM INTO A 400°F BATH OF 90% NON-FOOD GRADE WAX AND 10% BEESWAX. IN THEORY, THE BEESWAX WILL INCREASE THE ADHESION AND MAKE IT LAST LONGER, BUT I PUT IT IN THERE FOR GOOD LUCK. I MAKE SURE THE WAX DOESN'T REACH THE FLASH POINT OF 425°. AFTER A FEW MINUTES, I STOP STIRRING AND LET THE MIXTURE CONGEAL A BIT; THEN I REMOVE THE CHAIN,

WHICH IS GOOPY WITH WAX THAT HARDENS CRUSTY. THIS IS

HOW I SHIP THEM TO YOU —RUSTY WITH WAX. FLEX THE CHAIN, BREAK OFF CHUNKS, AND PUT IT ON YOUR BIKE. USE THE SAME NUMBER OF LINKS AS THE OLD CHAIN. AND IF YOU DON'T KNOW HOW TO INSTALL A CHAIN, TAKE IT TO SOMEONE WHO DOES (AND LEARN HOW). I GET CLOSE TO 700 DRY MILES FROM A WAXED CHAIN, EVERYTHING STAYS CLEAN, SINCE HEATING WAX IS DANGEROUS IF YOU MAKE A MISTAKE AND GET IT TOO HOT, IT WOULD BE IMPRUDENT FOR ME TO SUGGEST YOU TRY. SUPPOSE YOU NEED TO RELUBE THE CHAIN AND YOU DON'T FEEL LIKE WAXING IT? YOU CAN OIL THE CHAIN, AS LONG AS THE LUBE GETS BETWEEN THE PLATES.

RBW H2O BOTTLE

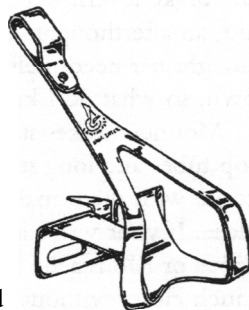
I'd like to be able to tell you these are made from old French plastic recycled from those fine Flemish waterbottles we all loved in the '50s, and have real cork plugs made from cork sustainably harvested from organics—well, forget it. These are made by Specialized, screened with the RBW logo in one color, so I can sell them cheap. Can anyone fault a Specialized water bottle? No. They are the best. Classic white or Safety Clear. State a preference, but accept either.

PRICE: \$4. *One dollargoes to an as yet undetermined charity.*

STEEL TOE CLIPS ARE THE WAY TO GO FOR EVERYDAY RIDING, BUT ALUMINUMS ARE SO PRETTY AND LIGHT AND I HAVE LOTS AND LOTS OF THEM NOW.

CAMPAGNOLO ALUMINUM TOE CLIPS

The thing that breaks aluminum clips is stepping on them. Pedaling won't do it, so theoretically these will last you the rest of your life. Practically, you will abuse them, or somebody else will, and they'll eventually snap. Very attractive, and just 29g in a medium. **PRICE: \$15.**



S (fits to 39, or 7 1/2)

M (fits to 42 1/2, or about 9 1/2)

L (10 and up)

GPM STEEL TOE CLIPS

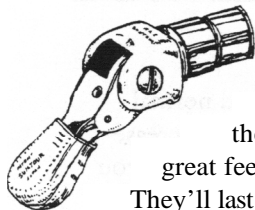
The fifth ugliest toe clips of any material I've ever seen, and the ugliest metal ones. I ordered these sight unseen, and couldn't believe my bad luck. These are fine for a bike you don't care about. Not pictured, with the hope that curiosity might push you over the edge. L only, sold at cost, help! **PRICE: \$3.50**

SUNTOUR POWER RATCHET BAR-END SHIFTERS

Soon to be inducted into the Shifters Hall of Fame, in Moab.

They're chunky, the finish isn't great, they weigh 180.5g per pair, but they have a great feel, they're real metal, and they shift great.

They'll last you 20 years, and I've never heard a single complaint about them. I bought 124 pairs from a distributor in Canada, and to my surprise they came stacked like rocks in a cardboard box—no cables, no housing, no packaging, no matter—I got the levers. I will ship them with photocopied set-up instructions, but you need to supply the cables and housing. Since they're non-indexable, you can use any long-enough cable, and any brake or derailleur cable housing **PRICE: \$25** per pair. I'll put them in a ziplock for you.

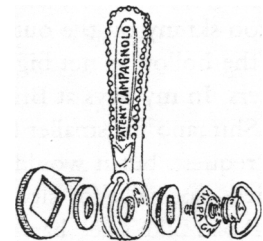


CAMPY NUOVO RECORD DOWNTUBE SHIFTERS

These are the shifters Eddy Merckx rode his whole career, and virtually every pro bike enthusiast rode from 1970 through 1981 or so. Many still do. Absolute classics that go on forever. They tend to loosen, but handy wingnuts make them easy to tighten as you pedal. Or you can clean out the boss cavity, plug some beeswax in there, and solve the problem 80 percent. Beautiful, light, and they haven't been made for years, because automatic bicycles are causing cyclists to lose the ability to shift with one hand on the bars.

Weight: 39g/pr.

PRICE: \$18

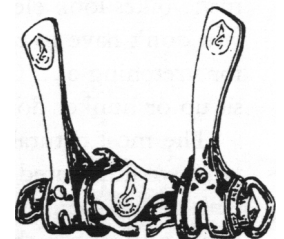


CAMPY C-RECORD RETROFRICTION DOWNTUBE SHIFTERS

Campy's response to the tremendous popularity of the Simplex retrofriction shifter. Shifts beautifully, doesn't slip, pulls more cable than the Simplex, so most people will like it more. Shiny, mirrorlike finish is a bit overdone, but the size saves it. Don't worry about the clamp—the levers pop right off and mount directly to braze-ons. No longer made, and always rare, should last forever.

Weight without clamp: 69g; w/clamp: 94g

PRICE: \$40



ARE BAR-END SHIFTERS A DYING OFF? YES THEY ARE.

WHO MAKES THEM STILL? SHIMANO—BUT IT'S EASY TO READ THE HANDWRITING ON THAT WALL. EVERYBODY IS MOVING TO INTEGRATED SHIFTERS & BRAKE LEVERS. I'M WORKING ON A RETROFRICTION BAR-END SHIFTER, AND HOPE TO HAVE IT AVAILABLE BY JULY. IT WILL WORK WITH ALL CHAINS, FREEWHEELS, CABLES, AND CABLE ROUTING SYSTEMS. IF YOU ARE INTERESTED IN THIS, DROP ME A POSTCARD OR FAX, AND I'LL KEEP YOU POSTED. PRICE? TO BE DETERMINED; BUT AS ALWAYS, I WON'T GOUGE.

HANDLEBARS: A BLURB

There are just a couple things you need to know, dimensionally speaking, about handlebars. "Mountain bike size" bars have 1-inch (25.4MM) clamp areas and 7/8-inch (22.2MM) grip areas. That's the right size for rubber grips, and mountain bike brakes and shifters, but it's too skinny on the outside to use **without** rubber grips, and the hollow is not big enough for handlebar-end shifters. In my days at Bridgestone I used to ask SunTour and Shimano for smaller bar-end plugs; clearly an unpopular request, but it would have created some neat possibilities, especially for city bikes.

"Road bike size" bars are nominally 26.0 in the clamp area, (3TTT are anywhere from 25.8MM to 26MM) and are interchangeable with Nitto, Scott, Specialized, and Modolo drop bars, which have 26mm center sections. Cinelli's is 26.4mm, and so you have to use a Cinelli bar with a Cinelli stem. The bar portion (not the sleeve) of road bars is either 23.8 or 24MM.

I think road bikes look best with traditional drop-style road bars, but I like any bar with curves. Curves are important. They provide more places for your hands, and make bikes look elegant. If the bar has a forward curve, you don't have to rely entirely on the stem and top tube for stretching out. Curvy bars can rise or fall, so you can sit **up** or hunker down, whatever you want.

The most natural and comfortable grip position is with your wrists pointed inward, the way they hang naturally. This allows them to bend the way wrists are made to bend, rather than the than the other way, that straight

bars force on them. It matters mostly when you're rocking the bike side-to-side, as you do in off-the-saddle climbs and sprints.

Straight bars (and by that I include bars with up to a 10° bend) are best for sustained downhill on rough surfaces, when having all that bar in front of your palm helps to keep your hands from sliding forward.

Bar-ends are popular on flat bars because they reduce fatigue and add pulling power by giving your hands a wrist-inward grip, same as on a real handlebar. But bar-ends also hook shrubbery, and take your hands away from the brake levers. I've always thought they were a band-aid, an afterthought, an acknowledgement that the straight bar needs help. Now they're an industry of their own, so what do I know?

Mountain bikes start out with disproportionately long top tubes and long stems partly because the flat bars that come with them make you feel cramped if they're too close. If your wrists are angled inwards, as they are on drops or Moustache Handlebars, you can grasp the bars much closer without feeling cramped, and keep your weight balanced in the bargain.

I want to take one more jab at straight bars. I just hate them, and don't ever want to ride them again, ever. I don't think people who like them are strange or unenlightened; I just personally can't stand them. Don't yell at me for saying that, okay? Don't quote me out of context, either. For trail riding I like a shorter, higher-rise stem used with a drop or Moustache handlebar. Then I get to use road levers and bar-end shifters, too. If you like what you're riding now, stick with it, *of course*. If you're not satisfied, try something radically different. The bars have a lot to do with how you feel on the bike, so find something that works for you—even if it's a straight bar.

DIRTDROPS

These were designed with the DirtDrop stem for the 1987MB-I. The key difference between these and normal drops is a 7-degree flare which begins below the curve. The flare is not that big of a deal, really, but it does increase wrist clearance a bit when you're on the drops and throwing the bike side-to-side. It is a subtle enough flare that you can ride these on a road bike and your friends may not even notice, and unlike some flared drops, the flare begins below the brake lever, so the levers don't tilt inwards. Tilted-in brake levers aren't *bad*, but if you like your levers vertical, as they are on regular drops, and you still want a little more wrist clearance, this is a good shape. 42CM wide at the center of the curve; 48 at the ends. Made from high strength 2014T6, a stronger alloy than regular drops, and heat-treated for flexible strength. A thicker wall adds extra security and weight. A very popular bend with everyone who tries it. **LIMITED QUANTITY. TWENTY-TWO, TO BE EXACT. 401G. PRICE: \$25**

(I'D HOPED TO HAVE AN ILLUSTRATION. MAYBE NEXT ISSUE.)

TECNICAL TUBES FROM TORINO

Tecno Tubo Torino (3TTT, "three-T" or "triple-T") is Italy's premier maker of handlebars. Don't think *what about Cinelli?* because 3ttt *makes* Cinelli. Eddy Merckx rode 3ttt bars. These days most pros ride bars made by the Italian Handlebar Co., Italmanubri. (Ital= Italian, manubri=handlebar).

I'd rather ride a tecnical tube from torino, a town in northern Italy and home of the Shroud of Turin. (Non-Italians call Torino *Turin*, sort of like non-Spaniards call Cristobol Colon *Columbus*. Or maybe that's so we won't have a Colon day, although on the face of it, maybe that's what we all need.)

The news here is that 3TTT is discontinuing production of its fine silver finish, going instead to a "high-tech gray." Pshaw! When I heard that, I ordered way too many silver bars. Bars should be silver, period.

3TTT makes three popular bends: The shallow-drop Tour de France, the curvy Criterium, and the deepish drop Merckx bend. That's the one I like. It's not as deep as a Cinelli #66 (which drop 165MM, I think) or the later RB - 1 bars (about the same), but it's deeper than a Cinelli #64 (135MM) and most typical drop bars (140MM). Some people don't like deep drop bars, others don't like shallow drops, but I've never heard a complaint about these. The 3TTT catalogue lists them as 170MM, but I get 179MM top to bottom, then I subtract

two times half the diameter and get 155. They feel like 150...

If you know 3TTT bars, when you think of 3TT bars, you see the center section enlarged, sans-sleeve. That's what I expected to get with these, but no. These have a sleeve, just like Cinelli and Nitto and all the rest. I was a little disappointed, and now I can't brag about the way they bulge the bar. I don't have anything against sleeves, but it makes me question the reason for the switch.

The decal adjacent to the sleeve didn't help much, either. It reads: Computerized Hi-Tech Heat Treatment / High *Vibration* Control, with *Vibration* written as though the word itself was vibrating. Such gratuitous attempts at high tech imagery make it seem as though insecure, fresh-from-college marketeers have taken over the company, and the smart old guys are off somewhere bound and gagged. The decal comes off easily.

The silver finish bars are beautiful and classic, except for the cable groove for aero brake cable routing. If you ride standard/non-aero routing you'll feel the groove unless you fill it with housing.

Oh man, I just noticed something else. In the old days, the curved section of 3TTT bars was oddly wrinkled, and the explanation was that this was a result of heat-treating, and the wrinkle wasn't polished off around the curve because it helped keep the

tape from slipping (must have been in cahoots with Bike Ribbon). I always suspected the real reason was that it was too hard to polish around the curve, since the outer top of the curve is where the tape slips, and that was polished. I guess the wrinkles made the new slickers uncomfortable, but maybe the "computerized hi-tech heat treatment" refers to a new method of heat treating that doesn't cause wrinkles.

Despite all that, these are gorgeous bars, and sleeve or no sleeve, I'd order them again in a second. It has been common knowledge that 3ttt bars have 26MM centers, but these actually measure closer to 25.8, and the word is that the factory spec is anything between 25.8 and 26. In any case, they fit 26mm stems, which is all that matters. You can add a pop-can shim if you like, affixed with Scotch™ brand adhesive tape. I don't do that, because I'm not a nut. But if I were... .

Everyone else in the world except 3ttt measures handlebar with from the center of one bar end to the center of the other. 3ttt measures from outside to outside, so a 44 3TTT is everyone else's 42, and so on. Beautiful handlebars from the land-of-the-Shroud! (apologies to..)

44CM (299G), 45CM (301G) and 46CM (303G).

PRICE: \$30

MOUSTACHE HANDLEBAR (THE RETURN OF...)

This basic shape is a 100-year old link in the evolution from straight bars to drops. It has advantages of both, and is still popular in parts of the world where people ride bikes a lot, except the United States. This variant was designed for the Bridgestone XO-I, and has proven its worth on everything from 2-mile commutes to both the Iditabike and the World 24-Hour Off-Road record (John Stamstad), as well as the Chequemahegon Fat Tire race, the world's largest (Gene Oberpriller). Compared to the Bridgestone model, the Rivendell model is made from an even stronger alloy, is heat-treated for more strength and is considerably more expensive. Not that the Bstone one was lacking...

Advantages of this bar over a flat bar: More hand positions, improved aerodynamics when needed; a natural, wrist-in position that feels right and makes it easy to pull on the bars; and a natural, flowing look that looks right on a nice bike. Disadvantages over a flat bar: I can't think of any. Maybe it's not as good for pure downhill competition, or mixed couples Kamikaze Dual Slalom events.

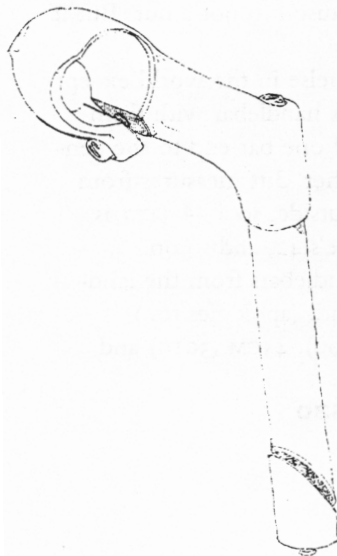
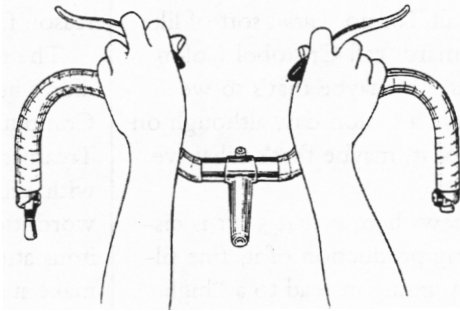
Advantages over a drop bar: Better access to the brakes without leaning over; greater aerodynamics (useful when fighting stiff headwinds); better off-the-saddle climbing.

Disadvantages over a drop bar: Wider, so it's not as good for pack riding; less convenient to carry in a cyclo-

cross race (although some riders still prefer it for cross). And it doesn't allow a nice, close-to-the-stem hand position as a drop bar, because the bend starts right in there. But it's not so bad.

Available in both 26.0MM (road) and 25.4MM (non-road) sleeve diameters. The bar part is the same, and fits road levers and bar-end shifters, not mountain bike stuff. Made of 2016 T6 aluminum. 323G **PRICE: \$47**

I LIKE TO SET THE ROAD BRAKE LEVERS SO THAT THE TIPS ARE ABOUT 13CM APART. AS SHOWN BELOW. AND WITH THE LEVERS HORIZONTAL. NOR-AERO LEVERS ARE PERFECT FOR MOUSTACHE HANDLEBARS, EVEN THOUGH THE PICTURE SHOWS AERO LEVERS.



NITTO DIRTDROP STEM

A short, high-rise stem in a 26MM clamp diameter, originally designed for the drop-bar 1987 Bridgestone MB-1. This stem's finish is halfway between a Sakae finish and a regular Nitto/Campagnolo finish, if that means anything to you.

Raised high, the stem holds drop bars in just the right position for off-road riding; sunk low, it's perfect for Moustache Handlebars. In both cases, the bars provide the forward reach (standard flat bars have none), which is why the stem can be so short. My favorite off-road set up combines this stem with drops or Moustache Handlebars, bar-end shifters and road levers. Ride this way for a week and you won't go back to normal. This stem is also perfect for anybody who just wants a taller, closer position on the road bike.

Made by Nitto of cold-forged aluminum (I think it's 2014 T6 & T4) Actual extension: 80mm; effective horizontal extension: 65mm. Weight: 335g, and that's with a steel wedge. **PRICE: \$40**

BAGGAGE!

Fanny packs work well for small to mid-sized loads, but are awkward off the bike. Musettes are good for small loads, provided they have a waist strap or some other anti-swing device. Courier bags are good for big loads and unpredictable shapes, but are overkill most of the time. Panniers carry weight well, but you need the eyelets and a rack. And what do you do with the load if you have to park your bike and take your stuff out? Saddlebags are an English thing. I like them, but you need a saddle with loops, or a loop device. Clearly, no one bag is perfect for everything, a fact for which those of us with bag obsessions (and who among us hasn't one?) are grateful.

Material. Most soft luggage and packs are made from nylon—either 6-7oz “pack cloth” or 11.5oz Cordura. Nylon has been sold on its tear strength and abrasion resistance—sort of trickery, since when nylon packs self-destruct, they do so at the seams (hot cutting and taping are temporary measures. The Great Fray will get them eventually, usually shortly after the coating peels). Also, nylon is damaged by ultraviolet rays, probably more severely so

than any other fabric.

Rock climbers see 4,000 lb test nylon webbing, after prolonged exposure, weakened to the point where it breaks with a strong pull by hands alone. At high altitude, continuous sun can destroy a lightweight nylon tent in sixty days.

Finely woven cotton is underrated by the uninformed. Cotton frays a short distance, then stops as the myriad interlocking microfiben grab on and hold. And as you know, cotton handles sun just fine.

In any bag, zippers are another weak point, especially if they're nylon coils. A nylon coil zipper moves smoothly around corners, but is wearing out from the first time you move it. Since coils are more difficult to replace than sliders, the zippermakers make sure the abrasion from the nylon zipper wears out the slider first. Coil zippers fail when the slider wears out, not interlocking the coils sufficiently to hold them together. For light use, coil zippers are fine, and for the amount of usage most panniers are subject too, they do well. But for hard or continuous use, or whenever security is more precious than one-click/one-zip accessibility, please choose a metal prong buckle.

CARRADICE CYCLE BAGS, FROM ENGLAND.

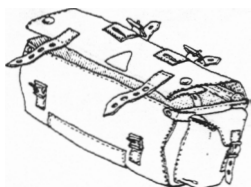
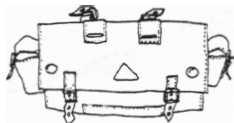
CARRADICE BAGS ARE MADE IN ENGLAND WITH DESIGNS, FABRICS, AND METHODS THAT HAVE CHANGED LITTLE OVER 50 YEARS. THE FABRIC IS HEAVY, WAXED COTTON DUCK, THE STRAPS ARE THICK LEATHER, AND THE BUCKLES ARE BRASS. THESE ARE EXCEPTIONAL BAGS THAT SHOULD LAST YOU THE REST OF YOUR CYCLING LIFE.

A WORLD ABOUT SADDLEBAGS...

They're an English thing. In the thirties and forties virtually every saddle in England wore one. These are the traditional “transverse” style, which means they stick out the sides. They require some method of attachment to the saddle, such as the handy loops that are built into some Brooks models (moulded loops are not trustworthy for large loads). A third, lower strap buckles around the seat post. Saddlebags are my favorite way to carry medium sized loads, and these Carradice models are the best I've seen.

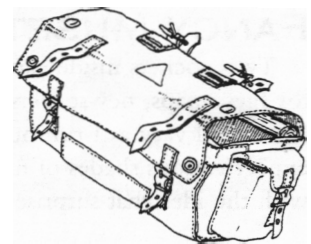
NELSON LONGFLAP: Carries up to 2 gallons of milk, tubes & tools, spare clothes, heads-of-cabbage, boxes of cereal, boomerangs, galoshes, just about anything you throw its way. In seven years I've never had a load I couldn't somehow fit into mine. Lash straps on the flap accommodate a small bedroll or extra clothing, making this a fine bag for summer overnights, three-day hostel tours, or family day trips where you have to carry everything. A good bag for the rackless. Requires at least 13 inches

between the top of the tire and the saddle loops. One main pouch, two outside pockets. 14" x 11" x 8". CAPACITY: 1,098 CUBIC INCHES. 760G. PRICE: \$58



LOWSADDLE LONGFLAP: A hobbit-sized version of the Nelson Longflap, designed for frames in which the saddle is closer to the rear tire (though it works fine for any sized bike). Carries spare shoes and clothing, lunch and tools, or enough bannocks to satisfy the hungriest throng. Mounting evidence indicates the Lowsaddle Longflap was indeed the favorite of Henry Wadsworth Longfellow, author of the glorious epic poems *Evangeline* and *The Song of Hiawatha*. One main pouch, two outside pockets, and handy D-rings, on the outside of the flap (not shown). 14" x 9.5" x 7.5".

CAPACITY: 854 CUBIC INCHES. 680G. PRICE: \$58



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

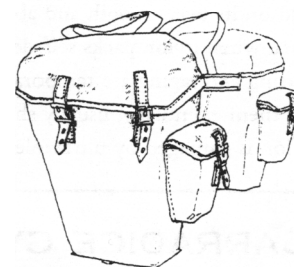
CARRADICE SUPER C FRONT AND REAR PANNIERS

These are simple sacks unencumbered by compartments which create unfiiable corners. (If you like to-compartmentalize your load, do it with stuff sacks.) The top loading style guarantees security and overstuffability; you can always fit one more thing in, because you don't have to close a zipper around it! Push the hooks down all the way until they click onto the rack, then ride far, far away. Sturdy and simple, always up to the task.

Front (works on the rear as well) 11" x 11" - 6" x 4" - 5". One main pouch and an outside pocket. **CAPACITY:** 1,464 cubic inches. 1,304G. **PRICE: \$75**

Rear. One main pouch and an outside pocket.

5" x 12" - 8" x 7" - 6". **CAPACITY:** 2,563 cubic inches. 1,528G. **PRICE: \$100**



SIMPLE MUSSETTE

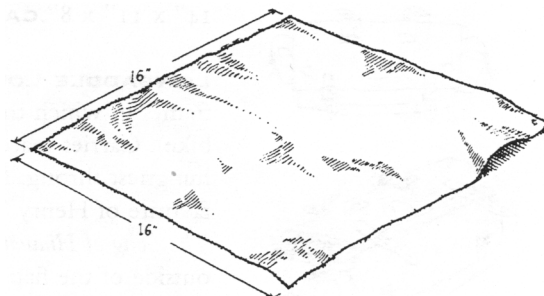
Light, compact, cheap, always useful. Comes with a strap you cut in half, tie onto the **two** side loops, then tie around your waist so you can ride with it loaded and not have it slip around to the front and get banged by your leg. Two rim straps let you overfill it and tie down the excess. Made of strong canvas and reinforced at the stress points. Not a throwaway; a strong, compact sack that's always worth its minimal weight. If you get two you can tie the side loops together and wear one over each shoulder, bandolero style. I keep one in a Carradice, and put my BOBwallet in it when I go shopping. Assorted colors, always cotton—natural, greens, browns, bricks, as available. Size: 2" x 20" x 14". **PRICE: \$7**

FANCY MUSSETTE

Two pockets inside carry your wallet, beeswax, postcards, pens, pencils, and erasers. The main pouch is big enough for files, maps, newspapers, magazines, and 3 medium bananas. It has the same waist-strap as the simple musette. The fabric will vary as I run out of the grey-green BOBfab and move onto others. I can't specify the colors, but you can expect various shades of natural cotton, olives, tans, khakis, and maybe even a brick red. Please be flexible and order with the idea that surprises can be fun. Approximately 11.5" x 10" x 1.75". **PRICE \$11**

TOOL & TUBE TOTE

When all you need to carry is a spare tube and light toolage, this roughly 15" x 15" cut of stout, finely woven unhemmed cotton will do. Put your gear in one corner, roll it up until covered, then fold over the ends and finish rolling. Secure the wad with a stout rubberband, then strap it to your seat rails or seat stays with a toe strap; leather if you've got it (the buckle bites better). Always put one in a Carradice pocket. When you get a flat, just lay it out flat like a placemat, and your small stuff won't get lost in the dirt and leaves. You can't do that with a wedge pack, now, can you? Assorted, always stout fabric in some earthy tone, depending on availability. 15" x 15" (or so). **LIGHT. PRICE \$2**



NAME: _____ ADDRESS: _____

CITY: _____ COUNTY (IF CA RES.) STATE: _____ ZIP: _____ DAYPHONE: _____

EVE. PHONE (CALL TO:) _____

QTY	ITEM	\$	TOTAL
	BEESWAX	3.00	
	CAMPAGNOLO 5MM ALLEN KEY	2.50	
	PLAIN MUSETTE	6.00	
	FANCY MUSETTE (NEW STYLE, VERY SIMILAR)	10.00	
	RITCHEY ROAD STEM 90° X 8 OR 10 (SPECIFY)	32.00	
	FRONT DERAILLEUR SUNTOUR TRIPLE	10.00	
	FRONT DERAILLEUR SIMPLEX DOUBLE/ TRIPLE (SPECIFY WHICH!)	30.00	
	REAR DERAILLEUR SIMPLEX 5500 DROP PARA/26T	80.00	
	REAR DERAILLEUR SIMPLEX 6600 HORI PARA/24T OR 6600GT/32T (INDICATE)	80.00	
	BAR-END SHIFTER SUNTOUR POWER-RATCHET, NO CABLES, PR	25.00	
	DOWNTUBE SHIFTER CAMPY NUOVO RECORD FRICTION, BRAZE-ON	18.00	
	DOWNTUBE SHIFTER CAMPY C-RECORD RETROFRICTION W/ REMOVABLE CLAMP	40.00	
	BOB GLOVES MED OR LARGE (SPECIFY)	7.00	
	HANDLEBAR PRIEST TOURING BAR, 22.2 X 25.4 (FITS STD MTN PARTS)	10.00	
	HANDLEBAR NITTO DIRTDROP, FLARED HEAVY DUTY OFF-ROAD DROP (26MM)	25.00	
	HANDLEBAR 3TTT MERCKX BEND, SILVER, GROOVED 44, 45, 46 (CIRCLE!)	30.00	
	HANDLEBAR NITTO MOUSTACHE DELUXE HEAT TREATED (26MM OR 25.4)	45.00	
	STEM NITTO DIRTDROP, TALL SHORT 26MM.	40.00	
	TOE CLIP CAMPAGNOLO ALUMINUM S M L (SPECIFY)	15.00	
	TOE CLIP GPM STEEL, UGLY BUT FUNCTIONAL, LIGHT, NO RETURNS L ONLY	3.50	
	CHAIN, SILVER WAXED SACHS SC-40	14.00	
	CHAIN SILVER UNWAXED SACHS SC-40	12.00	
	CHAIN BLACK UNWAXED, UNBOXED SACHS SC-40	10.00	
	CARRADICE NELSON LONGFLAP OR LOWSADDLE LONGFLAP (SPECIFY)	58.00	
	CARRADICE SUPER C FRONT PANNIER, PR	75.00	
	CARRADICE SUPER C REAR PANNIER, PR	100.00	
	BOOOOOOMERANG (LEFT OR RIGHT HAND)	17.00	
	BRIDGESTONE 1993 HORSE POSTER (ROAD) OR SHEEP POSTER (TRAIL) SPECIFY!	5.00	
	BRIDGESTONE 1992 BLUE CATALOGUE OR 1994 ORANGE CATALOGUE (SPECIFY)	5.00	
	Q/R HUB DISPLAY/TRAINING STAND (ALL PROCEEDS PAY FOR TOOLING, SO BUY ONE PLS)	5.00	
	BOBSHADES, GREEN OR GREY, WITH OR W/O SIDE SHIELDS (SPECIFY!)	8.00	
	DATA BOOK	18.00	
	RIVENDELL SS T-SHIRT, UNBLEACHED COTTON M L XL XXL	12.00	
	RIVENDELL WATER BOTTLE, NORMAL SIZE, CLEAR OR WHITE (SPECIFY)	4.00	
	SUBTOTAL		
	TAX (CA ONLY)		
	GIFT CERTIFICATE (PAY \$10, GET \$11 GC, PAY 50, GET \$55, ETC.)		
	TOOLING CONTRIBUTION (AT 10%+)		
	MEMBERSHIP (QUALIFIES YOU FOR A 5% GIFT CERT. REBATE ON PURCHASES, DISTRIBUTED QUARTERLY)	20.00	
	SHIPPING (MERCHANDISE ONLY)	5.00	
	GRAND TOTAL		

FAX OR MAIL ORDERS TO: RIVENDELL BICYCLE WORKS
 1547 PALOS VERDES # 402, WALNUT CREEK, CA
 FAX: 510-933-7305 • PHONE 510-933-7304

WANT FRAME INFORMATION SHIPPED ASAP? YES NO RUSH • PAYMENT: CHECK CHECK NO. _____

VISA OR MASTERCARD ? (CROSS OUT THE ONE IT ISN'T) # _____ EXPIRES: _____

SHIP TO, IF DIFFERENT: _____

NOTES/THINGS YOU'D LIKE TO SEE IN THE RR OR CATALOGUE: _____

NAME AND ADDRESS OF FRIENDS WHO MIGHT LIKE TO JOIN? _____

THE THOROUGHLY CONTENTED RIV. RIDER

IS THERE SOMETHING WITH WHICH YOU CAN FIND NO FAULT? TELL US WHY, WHERE WE CAN GET IT, AND HOW MUCH IT COSTS. NO SECOND-GUESSING THE DESIGNER/MFR ALLOWED. NO HINDSIGHT, EITHER (*THEY SHOULD* ...). CHOOSE ONLY THINGS YOU ABSOLUTELY LOVE, NO BUTS— . THE OPINIONS EXPRESSED ARE YOURS ALONE, AND THEY ARE UNPAID FOR, BY THE WAY. SEND TO THE RIVENDELL READER: HR 1547 PALOS VERDES #402 WALNUT CREEK, CA 94596 OR FAX TO 510 933-7305, OR EMAIL RIVBICI@AOL.COM. I'LL EDIT TO FIT SPACE. NEXT DEADLINE, MARCH 14.

BT.S WARM-UP/WARM-DOWN GEL.

You know when you're riding hard before you're warmed up, and the tired feeling in your legs the day after a long, hard ride? BT.S gels are a cure.

There are two lunds: BT.S-1, for warming up, and BT.S-2, for recovery. BT.S-1 definitely shortens my warm-up time; and BT.S-2 makes a huge difference in how fast I recover from a hard ride. The makers say it works by directing salts, vitamins, and minerals back to your muscles without being filtered through your intestines, and this gets more of the good stuff back to your muscles, faster. It works for me—my legs always felt fresh the day after a

hard ride.

It's not a drug, it's non-toxic, it has no side effects, it's completely natural, and you can't OD on it. Clean your legs first, because it'll carry any surface oil directly into your muscles. (*Wha—? ed.*)

Reviewed by Gary Boulanger.

THE HPX FULL-SIZE FRAME PUMP

by Zefal

I've used the same one for eight years through rain, snow, and grit, pumping innumerable tires on group rides and tours, always giving others the benefit of their pumps, only to quickly toss them mine when theirs failed. The Zefal works. And if you

hold your thumb over it and pump jazzily, it burps like a newborn hipster.

COST: ABOUT \$22

Reviewed by Gary Keene

INSIDE THE TOUR DE FRANCE

by David Walsh

In this book, David Walsh takes a unique perspective in his coverage of the 1993 Tour. In each chapter he tells about the tour from a different perspective—that of the Equipier, the Journalist, the Manager, the Sprinter and the Climber, the quitter, the last place finisher, the Wife, and the Champion. Photographer Billy Strickland's excellent pictures convey the rider's feelings, most notably the elation on Lance Armstrong's face after the stage victory in Verdun, and the anguish as Neil Stephens sits on his suitcase, preparing to go home after abandoning the race.

Inside the Tour de France vividly illustrates the realities of the Tour.

Reviewed by Steven Sheffield.

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