



And I Think To Myself, What a Wonderful Wool

Bhima (our buyer and inventory manager) and I recently attended the Outer Retailer trade show in Salt Lake City (north of Provo), where everybody who makes any sort of outdoor gear displayed and took orders on their new fall line. We were in search of wool, and found it from Iceland, Sweden, Scotland, England, Norway, Australia, New Zealand, Bolivia, Canada, and the United States. There's knit wool, woven wool, boiled wool, coarse wool, fine wool, merino wool, non-merino wool, and even something called Goose Wool. The Norwegian and Icelandic sweaters have old, traditional colors—blues and cream, white, grey, red, and olive—knit into snowflakey and geometric patterns. The British sweaters come in simpler “country colours”—patternless shades of olive, sage, camel, and Derby tweed. Some have sheepskin patches on the shoulders and elbows.

One thing that was so striking about seeing all that wool, and talking to all those wool makers, is their commitment. Sometimes it's a matter of continuing a family business that goes back generations, and began 50 to 150 years ago, when real men made a living in the forest (woven wool, buffalo plaids, buttoned pockets and collars) or the sea (knit wool, no plaids, collars, or pockets). Usually too, there's a mission to prove that wool is still the champ in a harsh, natural environment. During a recent 109-day trans-Russia expedition with skis and dogsleds and monstrous loads, one fellow, Tony Larsen, began and finished the trip in the same pair of underwear, never even getting out of it. Can you imagine him after a week in polypropylene underwear?

We also learned that in the old days, wool was used in firefighting suits, because it's fire retardant. A few years ago, a more fire retardant synthetic replaced it. But the edges get hot and melt, and fire fighters were tired of getting burned by molten chemicals; so now they're back in wool. Burning wool forms an ash on the outside, then self-extinguishes.

We learned that the merino sheep was originally from Spain, but was brought to Australia about 200 years ago. At the time, most other sheep-raising countries raised sheep for their wool and meat. Australia,

though, soon had too many sheep to eat all by itself, and it wasn't possible, in those pre-jet years, to export meat to other countries, and the land and climate happened to be ideal for merino sheep. So Australia turned its sheep-focus to breeding finer and finer wool, wool that even wool-fearers loved. A fiber of merino wool is about 22 microns thick. There are twenty-four thousand five-hundred microns to the inch, and 22 microns puts merino wool right in the middle of the “fine” range, as wools go. Most people have an itch threshold of 28 microns, which is in the medium range. It works like this: When coarse wool touches you, it pokes; when fine wool touches you, it bends. Most of the time when people say they're allergic to wool, all it means is they don't like getting poked by coarse wool, 30 microns and thicker. For any given breed, lambs wool is the softest. Lambs wool by definition is wool that comes from the first shearing of the lamb, and it's so soft because it's tapered. Once you shear a sheep, there's no more taper, ever. Soft, flexible fibers aren't always good, though. They make lousy rug wool, because they wear out too fast. The wool used in rugs made hundreds of years ago is often superior to that used in modern wool rugs, because back then people weren't walking around like zombies chanting, “merino, merino, merino” (like we all do today, right?). There was a better selection of thick, rug-grade wool, and generally more wool knowledge. If you're buying a wool rug today, ask the seller if the wool came from a Lincoln, Romney, or Border Leicester sheep, whose wool goes up to 48 microns, and watch him or her call for assistance.

For every wool maker, there are forty synthetic sewers. They brag about their ex-milk bottle fleece, and that *is* better than landfill, but I can't warm up to it. The names get to you, too, and every couple of years there are new versions. The oldest known wool fabric, on the other hand, was found in a bog in Denmark. It was made in 5000 B.C.

One-hundred percent wool socks are harder to find than wool under and outerwear. Wigwam still makes a 100 percent worsted wool sock, but it's for ice fishing. Up until last year Wigwam made a light, off-white, 98 percent lambs wool sock, but it came in medium and large only, and this year it's gone. Likewise, the ...*Continued on page 4*

IN THIS ISSUE

EDITORIAL 1

SURVEY 3

A LOOK AT LUGS (OUR NEW CROWN) 5

DOCTOR BERNIE ON FOOT PAIN 7

CHECK YOUR BIKE THIS WINTER. MAKE SURE EVERYTHING'S FINE 8

OVERHAULING A PHIL WOOD HUB 9

THE PRECIRAY. BY JOE YOUNG 11

REMEMBER THE RIGI? 13

THE SUB-24-HOUR OVERNIGHT 15

WHO RIDES AN ATLANTIS? 19

CLASSICS: MAXICAR HUBS. BY JAN HEINE 20

CURT GOODRICH BRAZES IN A SEAT STAY CAP 22

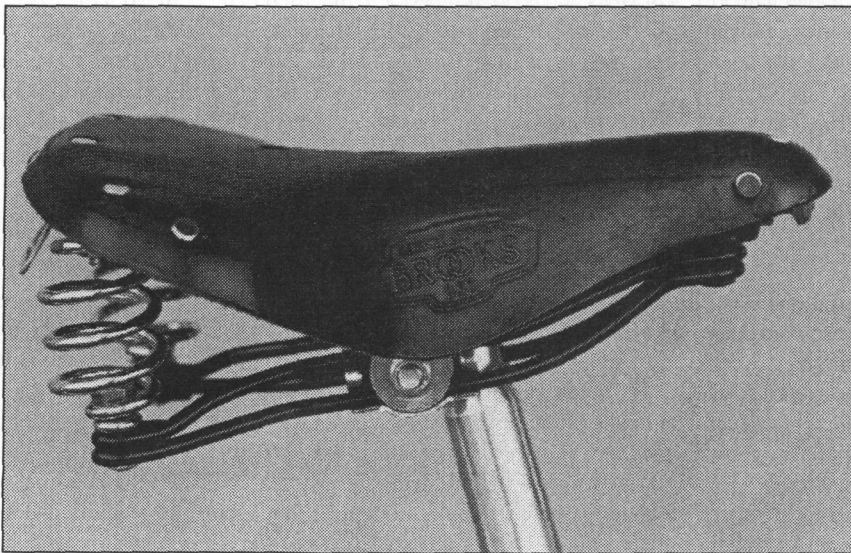
BICYCLE MAKEOVER 24

INTRODUCING JOHN AND NINA 27

MAYNARD'S PAGE 28

JOE BELL INTERVIEW AND FOLLOW-UP EXPLANATION OF HOW HE PAINTS .. 29

THE PRE-SPRING FLYER 35



THE RIVENDELL READER

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There are always issues and questions, and believe it or not, we sometimes don't have the answers, and often don't have a strong opinion or even a clue; or we have strong conflicting opinions. Most of our customers are conscientious and thoughtful, and if you're among them, we want to know what you think. Thanks.



The Pre-Spring Survey

1. Atlantis color: Keep it the same (creamy blue green, see the website), **or** change it yearly?
2. Eventually we'll get in an Atlantis-grade road bike. One **color**. What's best?
3. **Most** you'd pay for a long-sleeve **wool** jersey?
4. **Do** you prefer to shop with us:
 - a) by phone; b) by mail; c) by fax; d) online?
5. Have you tried our online shopping lately?
6. Assuming it wouldn't wreck our lives **or** steal from riding time, should we be open weekends?
7. Have we done anything in the past that is making you hold a grudge against us? What?
8. In this issue, which are your favorite sections?
9. Would making the RRs available as pdfs online be a big deal to you?
10. What would you like to see covered in the **RR** more? **Or** at all?

Optional: Name and/or customer number:

1. Atlantis color:

2. New road bike color:

3. \$ LS Wool jersey:

4. Way to shop (in order)

5. Tried shopping online?

6. Open weekends?

7. **You** mad?

8. Whatcha like?

9. PDFs?

10. RR Topics?

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Continued from page 1

Norwegian company, Devold, made an all-wool sock last year, but this year it's 80-20. My own personal favorite everyday sock is a Wigwam 632, one of its oldest models, and 85-15. I work in it, ride in it, sleep in it. It's good for everything in temperatures between 40°F and 100°F, at least. These days I'm finding myself riding more and more in 632s. They go on furry and silently, no snapping into them, and you can take them off with your toes. We spoke to Wigwam about a cycling sock with 85 percent or higher wool content, but it's a long shot. We'd buy them, but I can't believe there's a big market out there in the real world.

The competition among sock makers has led to "Technical socks," a sock industry term describing socks with function-specific sections in them. The heel is designed to cushion, so it's thick and may be terry-looped. The instep doesn't need cushion, so it usually hugs your foot slimly, to aid breathing. The ankle is ribbed, to stay up and look like the ankle part of the sock. The ball of the foot is cushy; the toe is reinforced with a toenail-resistant intimate blend of something fuzzy and something famous for toughness. The sock business is competitive, and features sell. "Let me tell you about our rag wool sock. It hasn't changed in 80 years" is not much of a pitch.

Fox River makes a 90 wool sock called the Backpacker. At about \$10.50 a pair, the best deal out there in a thick wool sock. Fox River is a big sock maker, and this is the neatest sock in their line. For cold-weather bicycle riding, it would be pretty hard to beat it.

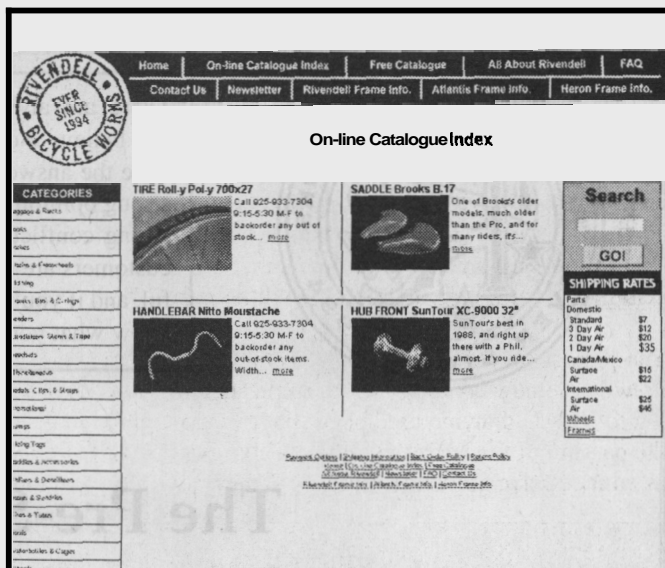
We went to the Smartwool booth and found that the X-Trainer, a low-cut white sock like the cycling sock, is 75 percent wool (compared to the Cycling sock's 65 percent). It seems fumer and less "technical" than the cycling sock, but it comes only in M and L.

About six months ago I got frustrated trying to find a wool hat, but I must have been looking in all the wrong places (outdoor sporting goods specialty retailers). Most watch caps are synthetic, but Wigwam still makes some in all wool. There were lots of hats there that the vendors claimed to be all wool, but you'd flip up the brim and see a fleece lining; so "all wool" can mean "looks like all wool."

Woolrich is the oldest woolen mill in the country, having been around since 1830 something, and it's still the main source of woven wool, the kind used for lumberjack shifts, for many wool makers. But in its own line, it doesn't have a single 100 percent, made in the U.S. shirt, and wool is an increasingly small part of its menu. Woolrich is branching out into wallets and belts, cotton and synthetics. Filson still has an all-wool shirt, but it's not a roughly plaid.

There's a Swedish company called Ullfrotte, that makes some remarkable sox-undies-gloves-mitts-hats out of a (boo!) 70-30 fabric. Seventy percent wool is better than 69 percent wool, and in their favor, the only part that touches you is 100 percent (the nylon being woven into the outer skin). At some point I think we may succumb to it, but the 30 percent nylon is a hurdle.

By the end of March we'll be mailing a Spring catalogue and a Frame catalogue. I think we need to mail stuff out more frequently, and that's supposed to be my job. I'll get cracking on it, and thanks for being patient and supportive. — Grant



The Webalogue Is UP

It started when Henry Kingman called up and volunteered his programming services. He said something like, "You need this, and it won't cost you anything." Then former Rivendell employee and still riding partner Peter Kelley volunteered his time to layout the pages. Joe Bauder, who actually works here for pay, worked with Peter and Henry to get the images **up** there, and the nice pictures are the work of Andrew Drummond, who also works here (part time). He used a two digital cameras—one a gift from Rivendell member Barry Weiss, and the other a dinky little Olympus 340L we've had for a while. Andrew was a photography major in college and generally shoots with a Nikon F2, but he stooped to digital for this project, and it's a good thing.

The webalogue means no more emailing orders in, which always caused confusion. We have a secure server, a shopping cart, and all the other things most much bigger companies have. We don't have the resources (loot) to put into it that they do, so we get by with help from friends—which makes it more special, anyway.

The webalogue will continue to evolve, but it's pretty useful already, and we're happy to finally have it up there. If you'd like to be on our list for updates on this or that, by all means let Joe here know your email address. On the other hand, if you're philosophically opposed to getting unsolicited email, even from your chums here at Rivendell, then let him know that, too. No need to shriek about it and lecture about the evils of spam—just tell us **NO MAS**, and we won't do it no mas.

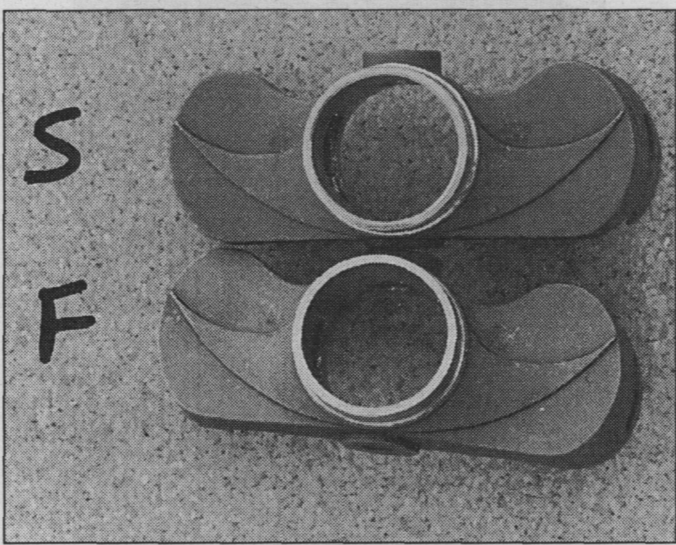
Any webalogue comments or suggestions, please send to jbaunder@rivendellbicycles.com. The webalogue will change more often than our paper catalogue (next issue due end of March).

Our New Fork Crown

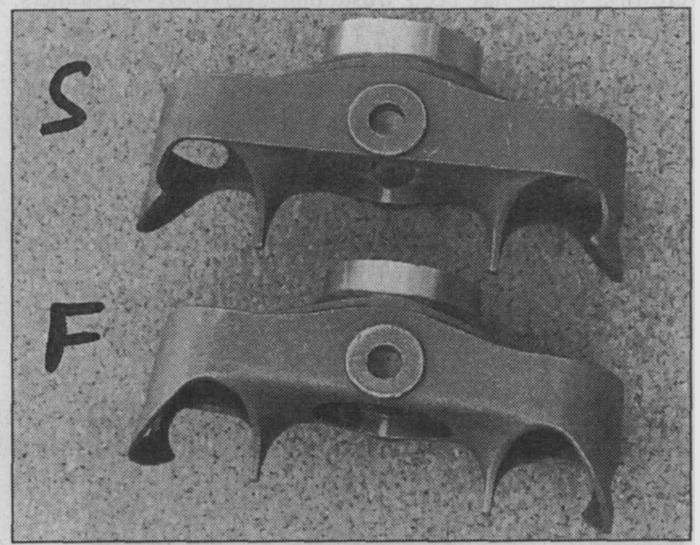
Wherein S = Sample; F = Final.

We started designing this crown about a year and a half ago, shortly after we introduced the Papilio Robustus series of lugs. The idea could have been to make a crown that better matched the wavy points of the lugs, but actually, the lugs were just an excuse to do another crown. As a manufacturer, we feel we can never have too many variations of the flat-topped fork crown. This one will be available starting May.

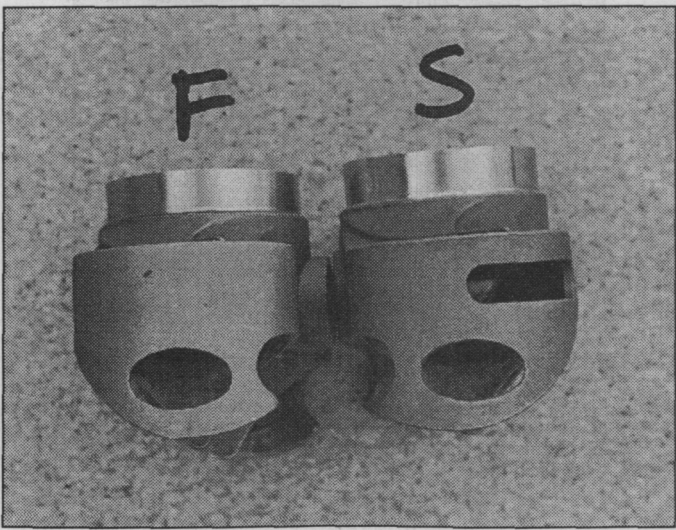
The project started off smoothly, as they always do. I took an existing fork crown drawing, whited out the parts I wanted to change, drew in the new contours, noted some specifications, and sent it off to Long Shen, our Royal Caster. They converted my hand drawing to a CAD drawing and faxed that over for approval. As is my way, I proceeded to make changes here and there, based largely on the passing of time and the mere ability to do so, and after three or four more rounds of this, I sensed I might be forging a reputation as an indecisive quivering mass, so I knew it was time to lock in the specs. The following photos show the sample and final.



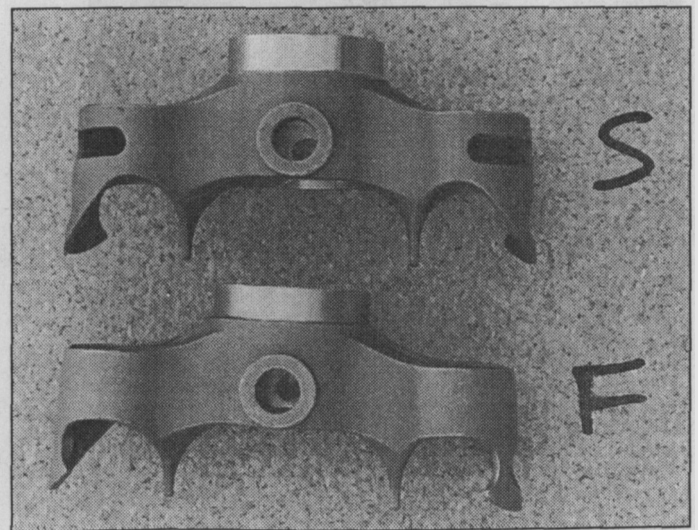
Top View. The idea was to make the wave curved, to mimic the curve in the lugs. We kept the front straight and added a waist in back to make the whole crown look wind-swept, too. If these crowns look identical here, it's because they are.



Front view. Just a slight change—the top and bottom edges of the final have a larger radius on them. There's no functional reason, and a very small aesthetic one, since once you mount a brake, who can tell?



Side view. The sample shows the slot we eliminated, and the big mess-up: The wave on the sidepoint is facing the wrong way. The final has the rear-swooping side point going in the same direction as the top wave. On custom-calved crowns, the side view will be modified any of about ten ways.

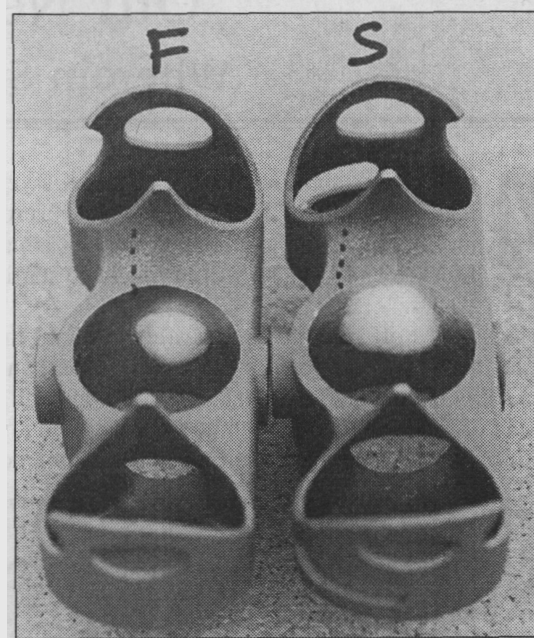


Back view. The sample had a misplaced slot that started on the side and curved halfway around the back. We decided to eliminate it altogether, to leave that area blank and customizable.

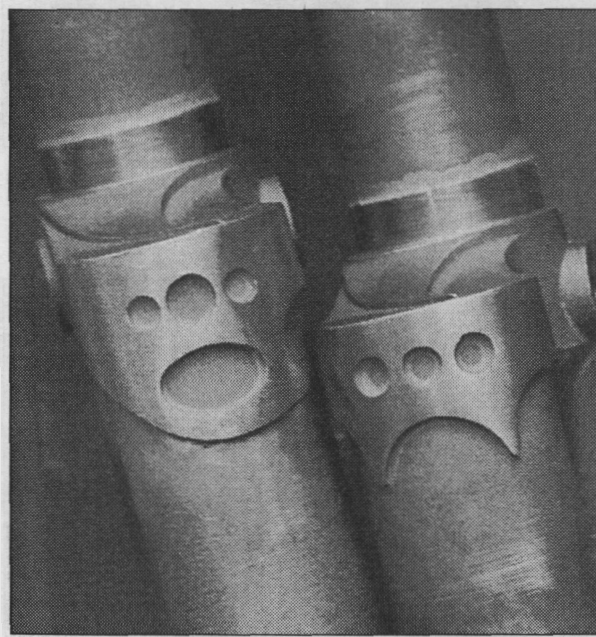
Through a miscommunication that wasn't apparent on the drawing, Long Shen read the sideview backwards, and so after all this time, we received a box of 50 samples were only about 70 percent correct. They were so far off it would have been funny if time and money weren't issues, but it was all my fault. I then enlisted member-pal Shawn, who lives in Taipei and speaks the language and knows bikes to come to our aid. I communicated all the changes to Shawn, by email and real mail and photographs and samples well-marked up, and he and a real Chinese friend of his took a 3 1/2 hour bus ride to LS to **fix** the details and find out whether a new mold would have to be made. It worked out well. LS said they could modify the mold for \$1,000, and we'd have new samples in about 6 weeks.

In the meantime, we've been holding up forks waiting for these crowns, which has been frustrating everybody — customers, builders, painters, us. We are down to about 20 of the old crowns, but are saving those for accident replacements, if someone wants the original crown. We have some really nice standard issue LS crowns that we'll build some forks with, upon request.

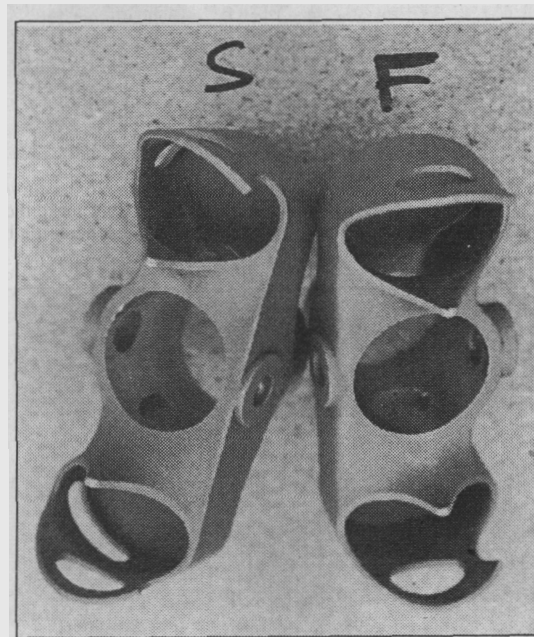
We'll build a few test forks with the first samples. I stuck a few on trees in my yard, so the branches would grow into them; and the rest we'll sell as paperweights.



The tunnel shrunk. There's a hollow between the steer tube bore and the fork blade socket. In the sample, the tunnel followed the outer contour closely, resulting in a lighter crown, but not enough metal (for peace of mind) at the waist. In this photo, the dotted lines represent the wall thickness back there. Adding metal (shrinking the bore) added about 1/4 oz, but increased brazing contact area and strength.



Here are two test forks made from the new crown, available in a few months, showing samples of hand-carving (+\$75, you take what you get). The one on the left seems to be saying, "Hey, fellas, what's happening there with you? Can I play, too?" While the one on the right is just a frowning monkey-sea lion hybrid.



The front lower edge of the sample has a definite edge to it, and it looked harsh, so as long as we were changing the mold in important ways, I thought we'd radius this edge to give it a softer look, so the front face would blend in better with the bottom.

One Type of Foot Pain & How To Eliminate It

by Bernie Burton, M.D.

Adapted with permission from *UltraCycling* magazine • For more information, visit <http://www.ultracycling.com>

A

lthough I'm a dermatologist by trade, a 17 year relationship with foot pain lead me to research its causes and treatment. Following the stories of Lon Haldeman's difficulties with this problem in the mid 1980s during RAAM—therapy for which included riding in wing-tips—I tried all of the recommended treatments including looser shoes, untied laces, moving the cleats back, looser toe straps, and Time pedals. No matter what, within 60 minutes of riding, a severe knife-like stabbing pain in the left ball of my foot would develop. If I continued riding, the pain would return any time I walked on a hard surface without shoes. My riding was becoming more frustrating and less frequent.

Finally, in April, 1992 a half page article on foot pain appeared in *Bicycling*. Written by Ed Pavelka, it explained Lon Haldeman's and Bob Breedlove's contention, that foot pain in cycling frequently is due to Morton's Neuroma.

Morton's what? *Neuroma!* When you ride for hours, the nerves between your foot's metatarsal bones can become compressed due to lack of movement. The result may be a tumor of 'nerve cells, called a neuroma. To prevent or alleviate this, Haldeman and Breedlove recommended moving your cleats rearward one inch to get the ball of the foot off the center of the pedal. To pedal more with your arch, in other words.

I couldn't do that to my cleats. There wasn't room. So after trying a few different things, and growing tired of my feet coming off the pedal, I bought some non-cleated touring shoes and some Power Grips, those diagonal pedal straps, which let me pedal with my arch, but kept my foot securely on the pedal. With 60 miles of training in six months, I left two days later for the 1992 Oklahoma Freewheel — 492 miles of hills and heat. I completed it a week later, with no pain at all.

After that, I thought that it would be interesting to study foot pain. In 1985, a friend and orthopedic surgeon, Dr. David Huang, evaluated 107 finishers who suffered foot pain in the Hotter-'n-Hell Hundred. He found that 101 of them had Morton's Neuroma.

The Cause of Morton's Neuroma

As Lon Haldeman and Bob Breedlove said in the 1992 article, Morton's neuroma is caused by pedaling pressure on the ball of the foot. It's so common among cyclists because so many cycling shoes are super firm/stiff and unpadded, and there's such extreme pressure on the foot during hard pedaling. It's much less common in runners, because they wear soft shoes and aren't pushing hard against a pedal. The irony here is that the super stuff sole, which isolates us from the pedal and is supposed to be a good thing, can be part of the problem.

Got Morton's Neuroma? Pedal with Your Arch!

It is a common perception that "ankling," or pushing down with a relatively flat foot on the downstroke and pulling up with the heel on the upstroke (and thus, pivoting slightly at your ankle as you pedal) is good technique. It's also commonly held that efficient and powerful pedaling requires the ball of the foot be directly above the center of the pedal. However, in Edmund R. Burke's superb book, *The Science of Cycling*, Peter R. Cavanaugh and David J. Sanderson, in their article, "Biomechanics of Cycling," show that in an ergometer test of competitive cyclists, there was no difference in power output at any part of the cycling stroke while moving the cleat as much as 1" forward and rearward. The only discernible difference was a predictable shift in the ankle pattern. The test riders felt as though they exerted less power, but that wasn't the case.

How I Solved My Foot Pain

I ordered some custom Don Lamson cycling shoes, which allowed me to move the cleat way back. For me, it has removed all cycling-induced foot pain. I had to go custom, because on modern cleated shoes you can't move the cleat back far enough, because the sole curves upward too abruptly. (*ed. note: I have heard that Don has since folded, but I this isn't the case, sorry, Don, and we'll list your contact information in the next issue.*)

Medical/Surgical Management of Morton's Neuroma

The most common treatments include, (1) Cortisone shots to shrink the lesions and make them less tender. I've had this treatment twice, and it held them off for 2 to 3 years; (2) Surgery, which rules out cycling and any other form of exercise for three months following the operation. (3) A metatarsal arch pad in your everyday walking shoes, to eliminate the pain and prevent its recurrence.

Summary

Foot pain in cycling is often caused by Morton's Neuroma. You can avoid it by pedaling with your arch, rather than with the ball of your foot, but most cycling-specific cleats make that difficult. Wear whatever shoes allow you to pedal with your arch, which seems to be as efficient, and relieves the pain.

SIDEBAR

John Hughes, ultramarathon cyclist, coach, and president of the Ultra Marathon Cycling Association, recommends the following to alleviate foot pain

- 🍏 Ride lower gears and spin more
- 🍏 Wear shoes one size larger, so they won't be too tight when your feet swell
- 🍏 If you pronate (turn in at the ankles), use orthotics
- 🍏 If your shoes allow it and you're desperate, drill new holes and mount the cleats 1 cm behind normal, so that ball of the foot is not on the pedal axle

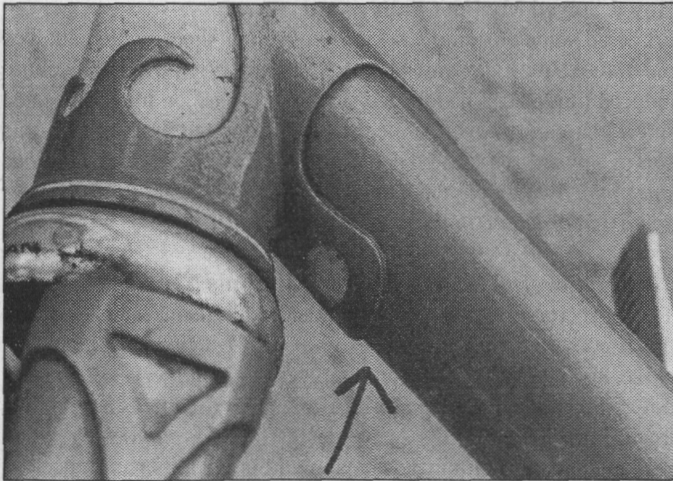
This Winter...CHECK YOUR BIKE

Even if you have a good, expensive, highly regarded steel bike—even if it's a Rivendell—you should check it over periodically to make sure all's well with it. Here's a checklist to help you do that. Although the sample problem areas are shown on a Rivendell, pretend it's your bike (Rivendell or not). The arrows don't point to cracks; they point to the places on any bike where cracks have been known to develop. If your bike isn't exactly like this one, it will be close enough to make these pictures helpful.

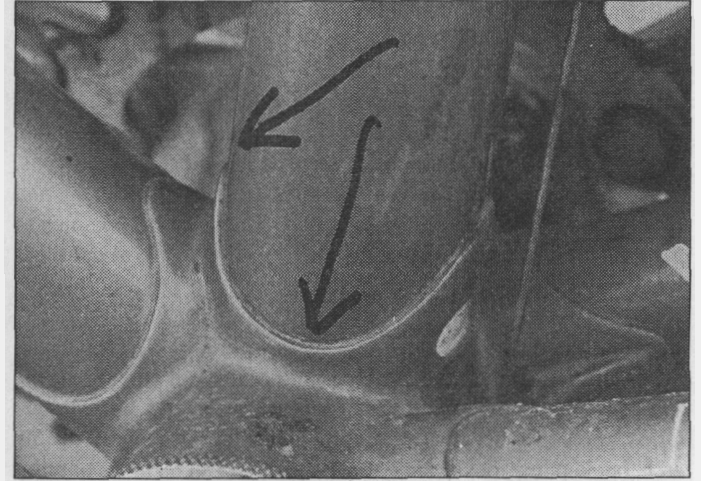
Real Crack, or Paint Crack?

Some paints are more brittle than others, but no matter—when you see a crack in paint, assume that the metal beneath it is stretching, or has been stressed, and either ask the maker to look at it, or have an experienced shop look at it. No manufacturer wants you to get hurt, and so long as you're reasonably credible when you claim no abusive riding, you'll probably have no problem getting a replacement.

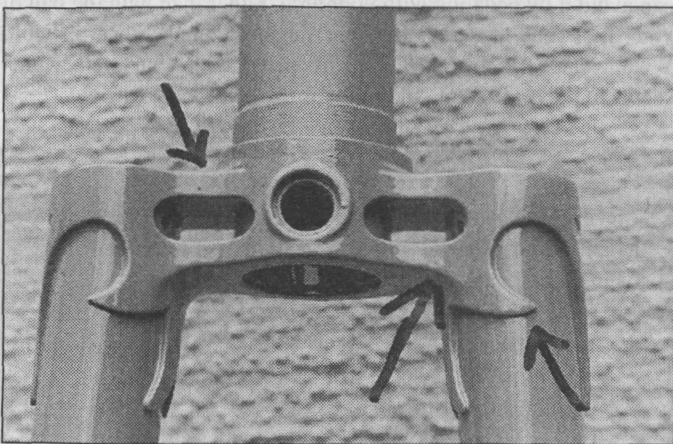
Professional-quality bike frames are often more likely to crack than cheap, thick, heavy ones. Many of today's makers go what we consider to be too far in shaving weight from their frames, but even the heavy old classics are relatively light (compared to the rider they carry!) and should be checked regularly. Clean bikes are easier to check than are dirty ones. Light colors are easier to check than dark ones. But whatever you have, whatever brand, material, age, or weight—check it over before you ride it.



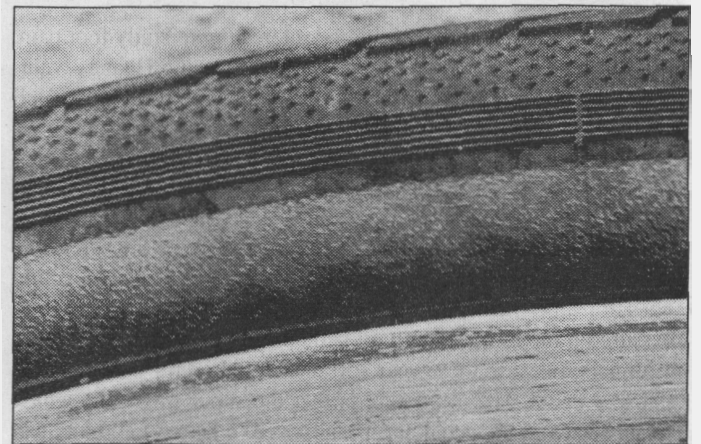
A. The underside of the down tube behind the head tube. This is the most stressed part of the frame, and the most likely spot for a main-frame crack to occur. Clean the bike first, so it's easier to see.



B. The bottom of the seat tube. The bottom bracket shell tips side to side as you pedal, flexing the seat tube down here. Another common place for a crack to show up. This is true for lugged, welded, or glued frames. Clean, then look.



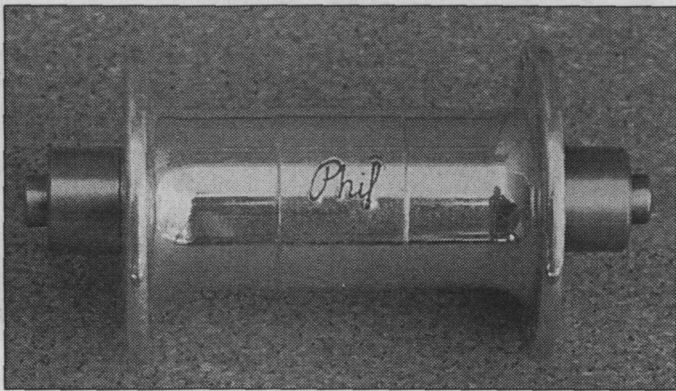
C. The fork. Look for cracks around cantilever bosses, the upper "corners" of a fork crown (both sides) as shown here: and wherever the crown meets the fork blades. The crown shown happens to be one of ours, but you can find the equivalent spots on yours, whatever it is.



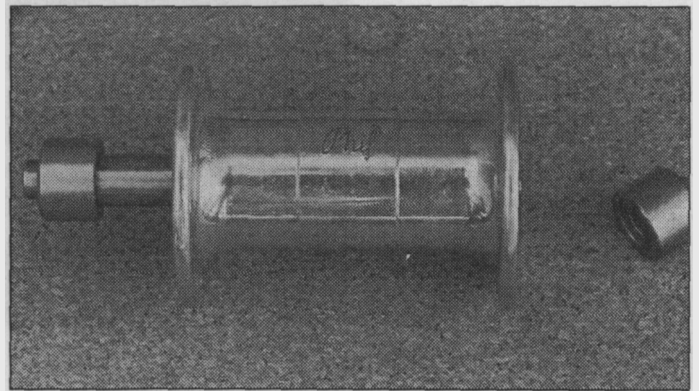
D. Tire sidewalls live a hard life, are kind of thin to begin with, and those in lightweight tires aren't all that cut resistant. Make sure your brake pads don't rub them during braking, and check for cuts, gashes. None here!

How To Overhaul a Phil Hub

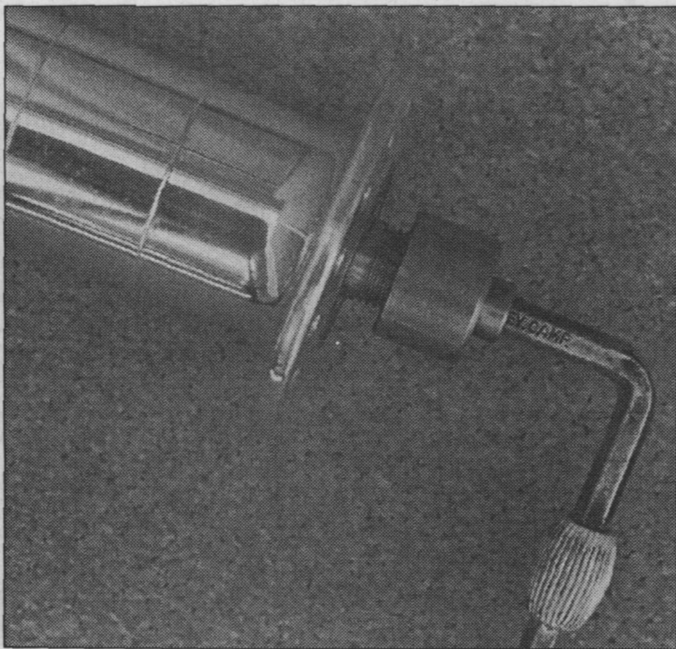
PHIL HUBS HAVE BEEN FIELD SERVICEABLE FOR ALMOST A DECADE, BUT YOU SHOULD STILL WAIT UNTIL YOU'RE HOME OR AT LEAST ON PAVEMENT BEFORE YOU TACKLE IT. IT'S EASY. ALL YOU NEED IS TWO 5MM ALLEN WRENCHES, AND EITHER A Mallet OR A PIECE OF WOOD AND A ROCK.



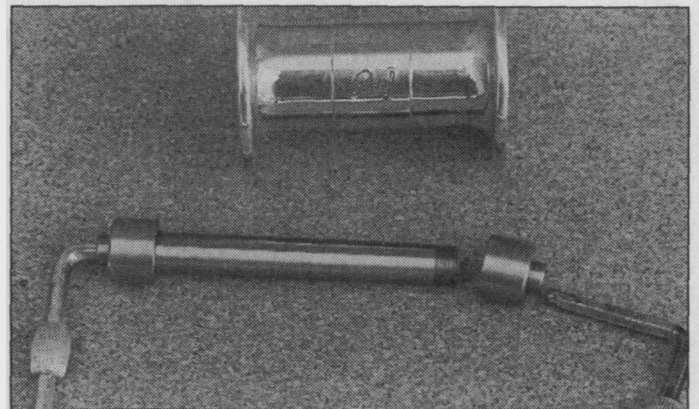
A. Here's a front hub. Pretend it's on a laced up wheel and the bearings are shot. The bearing size, by the way, is 12mm ID x 28mm OD; common wherever bearings are sold.



C. Usually one (the looser one) will come off - but that's all you need. Slide the axle out the other end.



B. Stick a 5mm allen wrench in each of the hub's end caps, which are milled for 5mm allen wrenches. Loosen.



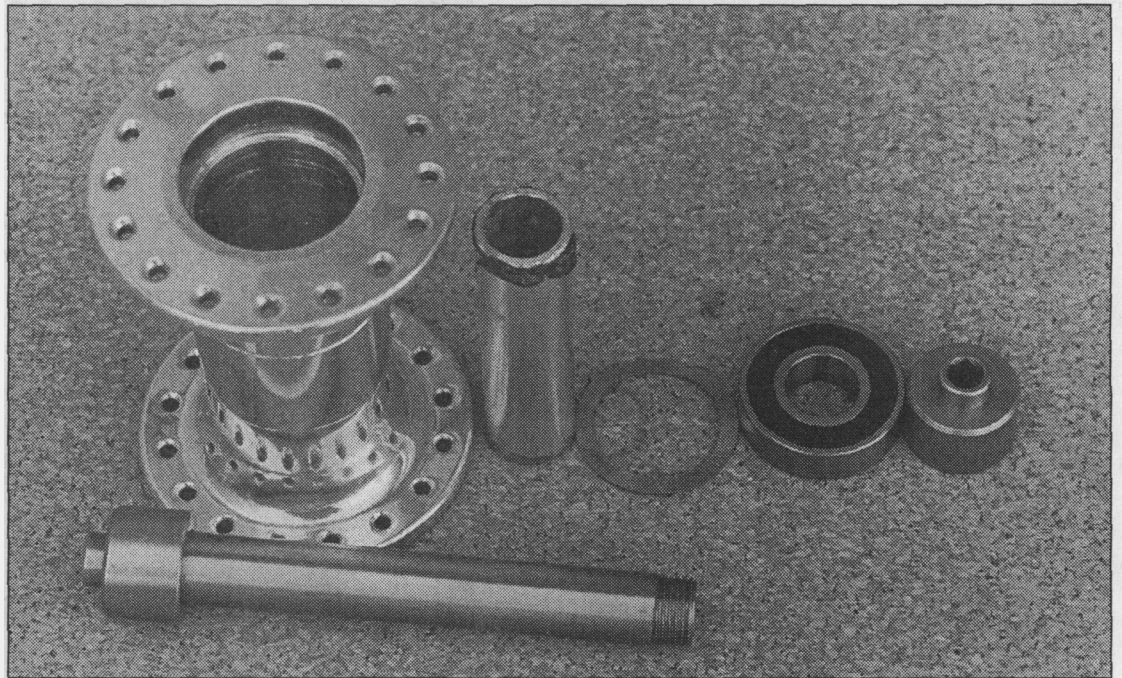
D. Now the hub still has two bearings and a bearing spacer. The axle and end caps are out.

Will a Phil Last Forever?

It might. Although the caveman in us likes cup-and-cone hubs for their simplicity and accessibility, a sealed bearing hub that you can actually service will probably last longer, for the simple reason that you can ride it when the bearings are bad without doing any damage. It's not a huge deal, but if you want a lifetime hub, it's a good way to go.

E. Sometimes the bearings will almost slide right out at this point. If they don't, here's what you do: Let the bearing spacer (shown here next to the hub body) slide over, then take the axle end and put it up against the end of the spacer. Gently tap it out with a piece of wood, a soft mallet, or whatever you have there in the field. The bearings will pop out, followed by wave washers (shown here between the bearing and the spacer tube). Then, if you need to replace the other bearing, use the spacer tube to knock it out, too.

To replace the bearings, grease and insert the wave washers, then one bearing (tap into place lightly if necessary). Then put in the bearing spacer, then the other washer and bearing, then the axle, and then the end cap. It is so easy, that anybody can learn to do the whole thing in less than four minutes. **But** what's the rush, anyway?



Lawyer Lips

Those are the anti-quick-release tabs you see on the dropouts of many forks these days. They're called "lawyer lips" because in lawsuits, the plaintiff's lawyers are all over you if your frame doesn't have them; while the defendant's lawyer contends that they're unnecessary, so long as you close the quick-release properly (which of course is true). Eighty percent of the bike lawsuits involve the front wheel coming off, and so "lawyer lips" are an issue in many lawsuits. They're one of several types of "front wheel retention devices."

They used to appear just on low-end bikes, the idea being that low-end bikes were more likely to be ridden by people who didn't know how to use a quick-release. It was a sticky wicket for bike makers. By putting them on the low-end bikes, you're seeming to acknowledge that lawyer lips have value; and then by leaving them off the upper-end bikes, it is easy for a plaintiff's lawyer to contend that you're choosing to put your upper-end customers at risk. An all-or-nothing approach is easier to defend. These days, lawyer lips have climbed higher into the price ranks, and at least in mountain bikes, it's almost impossible to find a fork without them.

If you know how to close a quick-release, then lawyer lips are stupid and frustrating. They completely negate the quick-release, and turn fast wheel removals into slow ones. We recently had to reorder front, single-eyelet dropouts, and found that the only one



A pair of lawyer-lipped dropouts and a rare lipless one

left that met our dimensional requirements, came with lawyer lips. Our builders will remove them by grinding, making them "normal" again. There are no plans to offer a Rivendell or Atlantis frame with lawyer lips.

The Preciray

by Joe Young

In 1968, Ateliers J. Martin, a Belgian industrial tool manufacturing company, began making an ingenious truing stand called the "Preciray". The innovator/designer is P. Rensonnet who changes it only to increase its precision and quality. All of the readily available parts still fit even the oldest Preciray, making it simple to recondition.

To date, 6500 have been sold in 58 countries—459 in North America, including the two I sold when I became the sole agent for Preciray in the United States in 1998. In the 1970s, about 200 were sold by Raleigh USA as part of a dealer shop package.

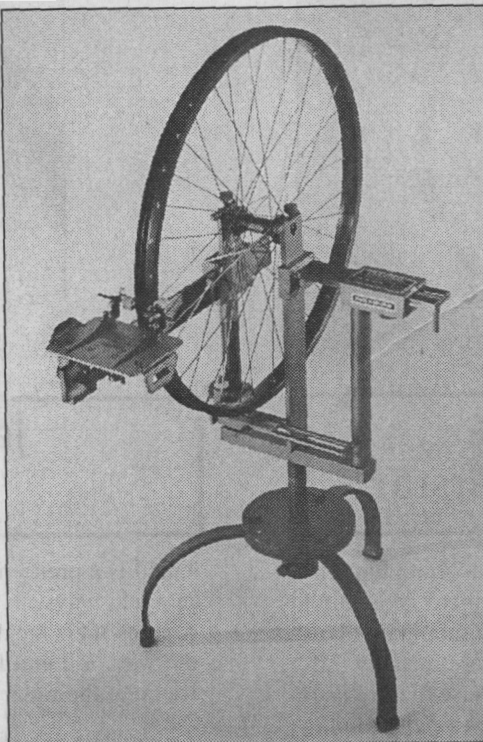
Since then, these remarkably accurate, time-saving devices have been relegated to clothes racks, hidden in storage rooms, or at best displayed as a curiosity from the "good old days" in high end bike shops. I think the reason the Preciray fell out of use in North America is rapid bike shop staff turnover. Over time, no one knew how to use it, and, unlike conventional truing stands, the Preciray requires the wheelbuilder not necessarily to take lessons, but at least to read the instruction manual. However, it is easier to learn on a Preciray than it is on a regular device, because you can see the eccentricities of the wheel without having to take the time to develop the intuitive skills of a master wheelbuilder.

I got my first one from Grant Petersen. When I was working for Ritchey Design a few years ago, I also began building wheels for Rivendell. One afternoon I delivered some wheels when Grant said, "Hey, let's test them on *this*" and pointed to an old Preciray. I fell in love with it and bartered it away from him.

I couldn't run Joe Young Wheels using anything else. Aside from its precision, the Preciray sits on the floor, free-standing, which is far more comfortable.

How it Works

The Preciray is the only wheel truing stand on which you can center front and rear wheels over the hub, using special gauges and mathematical formulae. You see in triple magnifica-



The Preciray



You can turn the nipples and actually watch the rim come into true while you're doing it.

tion the trueness of the wheel from both radial and axial views. The two rollers contact the rim on the side and the top and are connected to pointers which move back and forth over a static line. The movement indicates the degree of adjustment you need to true the wheel. There's even a special roller that lets you true a wheel with the tire on.

Since the wheel is static, you can turn the nipples and actually watch the rim come into true while you're doing it. It's as if you're molding the wheel into shape, just like a sculptor molding clay. With the Preciray, you have a greater measure of control than you do with other truing tools. For this reason, most Euro team mechanics, bike manufacturers, and bike shops build wheels with the Preciray.

So if you find one lying around, get yourself a can of WD40 or Quick-Glo and some emery cloth and polish up this treasure. If you need parts and an instruction book, I can get them for you.

Joe Young

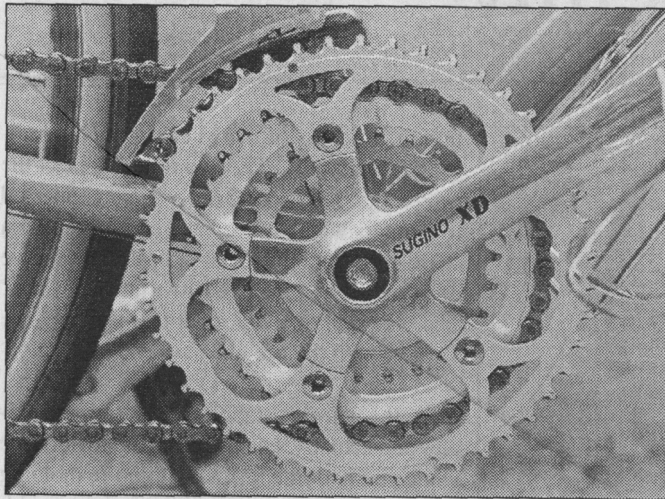
210 Herrick Road, Newton Centre, MA 02459
(617) 244-5185 • <http://youngwheels.com>

More

The Preciray costs about \$750 to \$800. In use, it is NOT self-explanatory. It's a heavy, awkward contraption not easily moved by one person. It takes months to get one. If you're a professional builder, during that wait you could build a hundred or more wheels. If you're an amateur, how can you justify it? What I like about the Preciray is that it is designed as though nothing else in the world matters as much as a hand-built wheel. And although it is more complex than any other truing stand, it is no more complex than it has to be to speak for the wheel and provide crystal clear feedback with every turn of the spoke key. The Preciray is inspirational, and in its own way, helps bring our favorite pastime up a notch or two among things that matter.

— GP

Sort of, but not *quite* like an ad.



Sugino's XD-2: The Unknown Superstar

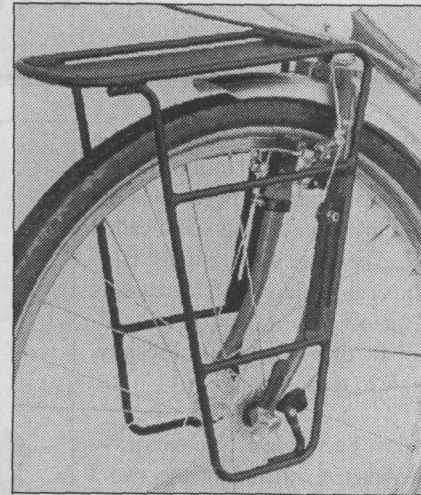
THERE AREN'T MANY CRANKS with 110mm and 74mm bolt circles any more, but this one's still hanging in there. You don't see it as original equipment on bikes, because mountain bikes have gone to compact drive trains, and are usually all-Shimano. You don't see it on road bikes, because they're usually all Shimano or Campagnolo. But you don't have to play by the same confining rules as a product managers spec'ing original equipment on complete bikes sold to bike shops.

This Sugino is neat because it has a nice, silver finish, a comparatively low (by modern standards) Q-Factor of 160mm (when set up on a 107mm spindle, which works for road bikes and Atlantises); and it's cheap—just \$100 or so. The 110x74 crank comes with 46x36x24 or 26 rings, which works great with 11t and 12t small rear cogs, giving you a plenty high gear for tailwinds and downhill. You can ride whatever gearing you like, and if you want to customize it, you'll find more size choices in 110mm and 74mm than you will in any other sizes out there. If you go up to a 130mm or 135mm bolt circle (Shimano or Campy road), you're limited to a 39t inner ring, and will be hard put to find 46t or 48t big rings.

The finish is excellent. The cranks are shiny silver and look good even when they get scratched up. They're forged and strong, made by Sugino, who has years of experience and a good eye for design. We've sold dozens of these to Rivendell and Atlantis owners.

This crank's lack of popularity has us worried for its future. The chainrings will be available for it for years to come, but if the crank dies, there are no reasonably priced options. This Sugino is a fantastic value.

A New Item For Us. This is its introduction..



Jandd Extreme Front Rack

Jandd is a pretty neat company in lots of ways, and especially in rack ways. I don't know anybody there, but whoever designs their racks is a smart independent thinker. Jandd, by the way, is J and D — the initials of the founder and his girlfriend at the time, who split a year later, leaving the D.

This rack is great: It's a high rider *and* a semi-low rider. "High rider" just means it has a platform above the front wheel, and a way to mount bags high up, level with the platform. For off-road riding, that's way better, because it gets them out of the way of rocks. **Also**, the platform is usable for other gear, and doubles as a way-better-than-nothing fender.

The "semi-low rider" position is the horizontal rod several inches below the platform. If you want to lower your bags, **just** hook or strap them on lower. It doesn't carry as low as a genuine low-rider, but it doesn't make any difference, and you still get more ground clearance.

I've never seen a low-rider rack that offered you the option of strapping on stuff sacks; they're always open on one side, assuming, usually correctly, that you're carrying regular panniers on them. That's fine if you've got regular panniers, but it's nice to be able to cram a couple of stuff sacks **full** of gear and just strap them onto the sides, and the shape of these Jandds **is** perfect for that.

What's the catch? Well, it's made for wide, mountainy (or All-Rounder) forks, not road forks. It weighs about 2.36 pounds, but it's not *for* brevets, it's for self-supported touring in the boonies. They won't break, because they're made with thick, solid, aluminum rods, and are well-designed and strongly welded. If you have a mountain bike or some kind of All-Rounder or expedition bike, this is a fantastic front rack.

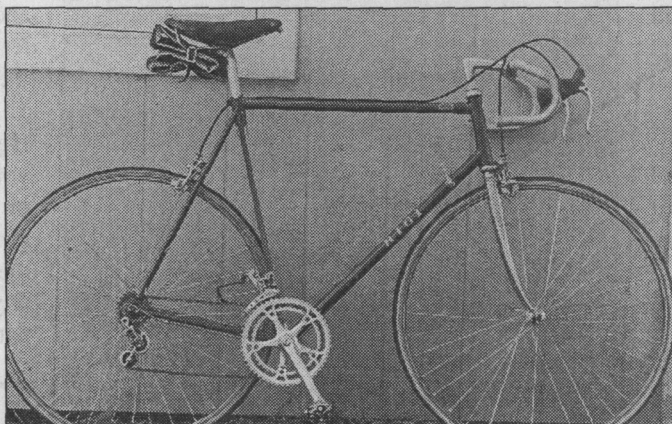
#20-067 \$58

Remember the Rigi? No?

EVERY SO OFTEN WE'LL PROFILE A STRANGE BIKE FROM THE PAST, TO SHOW THE INDEPENDENT THINKING THAT AFFECTS BICYCLE DESIGN. THE RIGI RECEIVED RAVE REVIEWS IN THE ITALIAN PRESS, AND WAS THE FIRST BICYCLE TO EVER WIN THE PRESTIGIOUS COMPASSO D'ORO (GOLDEN COMPASS) AWARD, WHICH MUST BE A BIG DEAL IN ITALY. THERE WERE TOO MANY CRAZY THINGS ABOUT IT TO BE COPIED BY MASI, COLNAGO, AND THE OTHER WELL-KNOWN ITALIAN BRANDS, BUT SHORTLY AFTER THE RIGI CAME OUT, CHAINSTAYS STARTED GETTING SHORTER AND SHORTER.

Back around 1978 or so, an Italian industrialist and engineer named Giorgio Rinaldi set out to make a shorter, lighter, and quicker bicycle frame. He named it Rigi, after himself, and it was so far out there that you just had to take notice.

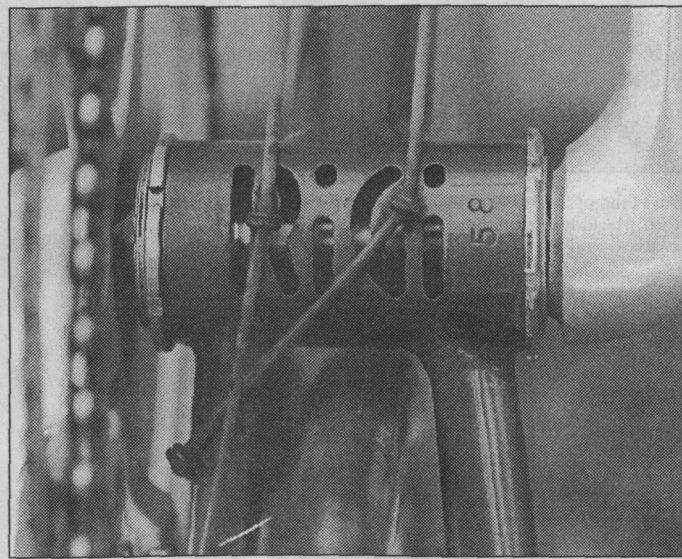
The main thing was the seat tube, which, instead of being a seat tube, was two skinny seat tubes separated so that the rear wheel could fit between them. Ordinarily, the rear wheel doesn't actually touch the seat tube, but the Rigi's chainstays were 37.5mm long, and when you do that, you'd best have a split seat tube. The shorter chainstays also allowed you to shorten the chain by 6 to 8 links, further reducing the weight.



Giorgio's Dream bike. A 58cm Rigi equipped with Gipiemme crank, Gian Robert front derailleurs, Huret Jubilee rear, Brooks Pro on a Campy Record seat post, Superbe pedals, Campy shifters, 3ttt bar, Cinelli stem.

According to a brochure I have on it, the shorter chainstays and wheelbase (92.5cm, or about 2-3 inches shorter than normal road bike wheelbases) result in a bike that "becomes practically an extension of your body, responding almost as quickly as thought." I remember a *Bicycling* review of the Rigi, which said something to the effect of, "When you reach for the downtube shifters, you do a U-turn." It's responsive, but not THAT bad.

The Rigi sported some pretty sporty head and seat tube angles, too: A 55cm model came with a 79-degree seat tube and a 77-degree head tube, with 2.6cm of fork rake. And the top tube sloped downward 2 degrees, from the seat tube to the head tube. That's just the opposite of what we do on many of our frames.

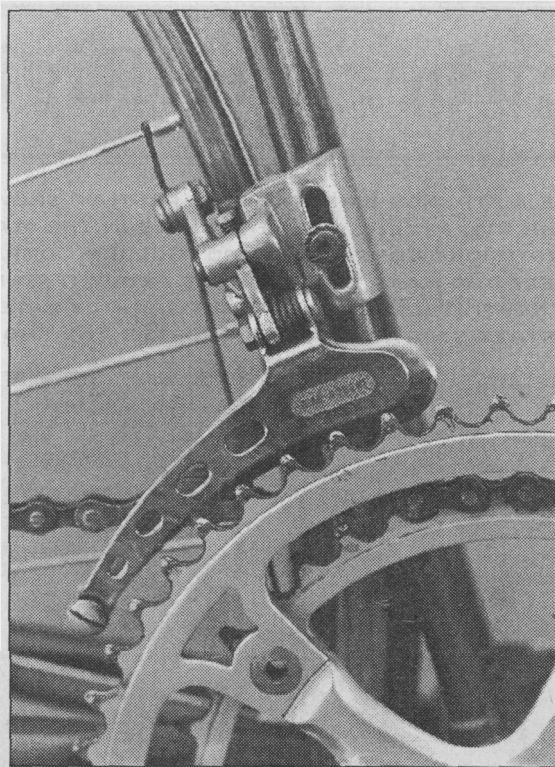


Above: The underside of the BB shell. Cutting out metal here isn't totally dumb, as it lets water drain. On our new shells, there's an 8mm "weep" hole.

Left: Bella bottom bracket, Giorgio! No existing bottom bracket shell would work, so the Rigi's odd combination of tubes is fillet-brazed to a solid shell.

If you're thinking ahead, you might be wondering how the front derailleur attached. Remember, the split seat tube. The Rigi came with a Gian Robert (zhee-on row-bhair) front derailleur. If you gathered together a thousand bike mechanics with 20+ years of experience each and asked them, "What's Gian Robert?" probably 250 of them would say, "A chain tool." In those days, you had your full Campy or VAR tool chest, or a Park and Bicycle Research collection, but the chain tool of the stars was the Gian Robert.

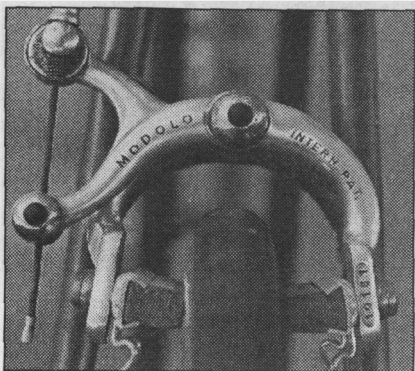
A local shop sold Rigis, and a friend of mine who worked there bought it and let me ride it around the Berkeley



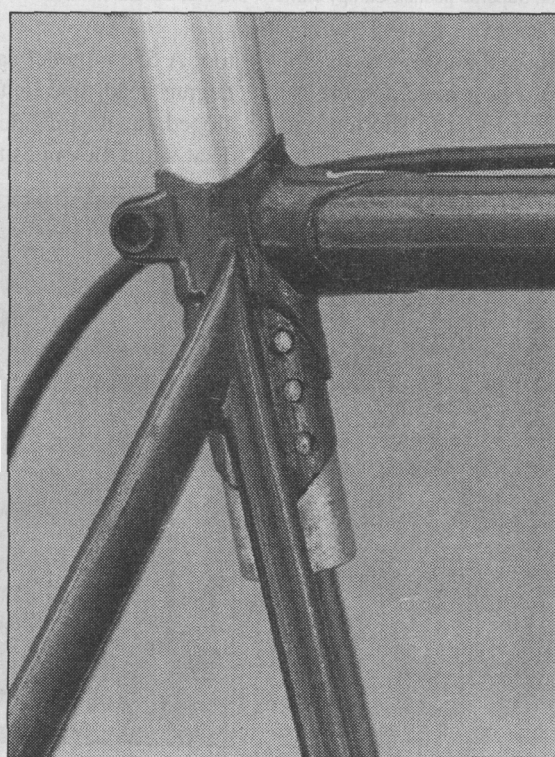
I don't remember whether or not this was the first brazed-on front derailleur, but it was the first one made by a chain tool maker.



Any kind of lug is better than no lug at all: The Rigi's head lugs are simple, just fine, but a few swirls wouldn't have hurt anything.



Pretty good clearance, Clarence! As "tight" as the Rigi is, you can still fit fenders or chubbyish tires on it. This was typical of the era.



Nice seat cluster, Giorgio! This is how Rigi got the signature twin seat tubes to work with a normal seat post. It's one way to ID a Rigi even if it's lost its decals.

Hills. I didn't do any U-turns, and after a short breaking in period, got used to the handling. I did find, though, that the steep seat tube makes the saddle poke you in the butt/back when you're standing on the pedals. That would be hard to get used to, I think. The same fellow (D.S.) used it as his do-all bike, loading it up with a rack pack and everything, as I recall. I looked him up and he still has the bike, and agreed to let me borrow it for this story, so that's the bike you see here.

If you're an Italian trying to promote your frame, you've got to have a team on it, and Signore Rinaldi managed to get the Polish national team riding these. They rode them in the 1980 Olympics. Some Italian amateurs won national titles on them, too.

The Day I Borrowed the Bike

I live over the hills from D.S., and I drove over there to pick up the bike. I hate driving, I will do almost anything to get out of it, but this time I drove. D wasn't there, but his wife was, and although I hadn't seen D for 20 years or so, she handed me a book and said, "D thought you'd like this, so he wants to loan it to you. His father gave it to him," and it was inscribed on one of the pre-pages. It was titled *Ten Thousand Miles Around New York*, published in 1884. It was in immaculate condition, which we both remarked about. I thanked her, left, loaded up the car with the bike, and left the book on the roof. Thirty seconds later the guy next to me motioned to me, and I looked in the rear view mirror in time to see a car smack it hard. I pulled over, but by the time I got to it, it was in pieces.

I spent a few hours tracking down the best book fixer, and a few hundred dollars later, it looks okay. Not like Frankenstein, but she did a remarkable job. I give D back his bike and book in four days.

—Grant

The Sub-24 Hour Overnight

Spur-of-the-Moment Bike Camping For Busy People

The easiest and most do-able form of bike camping is the Sub-24 Hour Overnight (S24O). It's good because...

You Can Go on a Whim

The S24O fits into your schedule even if you work full-time and have family obligations on weekends. On a summer Friday night you can eat dinner, play with your family, tuck in your children, brush your teeth, pack in 30 minutes, and just go.

You Don't Need Specialized Gear

If you have racks and panniers, great. If you have a rack but no panniers, put your gear in a sack of some kind and lash it to the rack. If you don't have any of that, carry your gear in a rucksack, messenger bag, or something.

There's No Such Thing as a Proper Packing List

It's not an extended tour, so it doesn't require extended planning. If you don't sleep well on hard ground, bring a pad. Bring a sleeping bag of some sort. If it's bug season and you don't want to wake up with mosquito acne, bring a tent or a bug-proof sleeping sack. Everything else is optional—reading material, a laptop, pepper spray, a sheath knife, comic books, tire booting material, a snake bite kit, two flashlights, some tunes, and a cell phone? A trip like this isn't going to win you the Jedediah Smith Award no matter what, so make up your own rules.

Where Do You Go, Though?

There's never any place that's perfect, so you work around that. Open space, regional, state, or city parks all work. Sometimes you can plan ahead and actually get a camping permit, but it is amazing how many things you can't do when you go through proper channels. Consequently, many times I've found myself packed up and wandering around on my bike during and after sunset, ending up inside a regional park after hours, and unable to find my way home. If you find yourself in a similar survival situation, it's best to find a nice spot with a view, lay down camp, not start any fires or leave litter, enjoy the night. I've found that when the sun rises, I can usually find my way out of there.

If you do a S24O, write in about it, and take a picture of your camp. Tell us how far you rode (3 miles scores as many points as 50), where you went, how you slept, what you took, and whether you'd do it again. Send us a non-returnable picture of you and your camp. If you go alone, then just your camp.

BICYCLE TOURING
IS ABOUT TRAVEL AND DISTANCE
AND SEEING THE SITES ALONG
THE WAY, FINDING A
PARTNER (USUALLY), AND
COMMITTING THE TIME.
IT'S EASY TO DREAM ABOUT,
HARDER TO DO. BASICALLY,
IT'S FOR KIDS, RICH FOLKS,
SCHOOLTEACHERS, AND RETIREES.

BIKE CAMPING
IS ABOUT GETTING THERE BY
BICYCLE, THEN SETTING UP CAMP,
EATING SOME FOOD, AND THINKING
"OH MY GOSH, NOW WHAT?"
BIKE CAMPING TAKES THE
PRESSURE OFF MILEAGE.

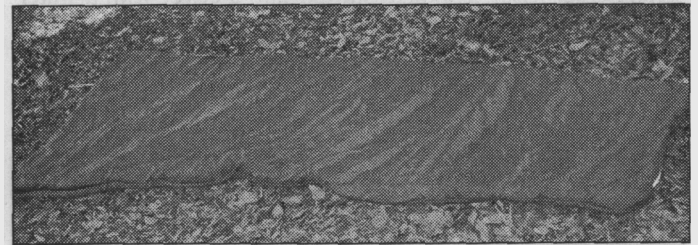
Letters or email. Limit it to 300 words. If letters, send to Rivendell Overnight, 2040 North Main St. #19, Walnut Creek, CA 94596. If we publish it, you'll get a \$50 gift certificate.

THREE SLEEPING BAGS

1. Slumberjack Solo Lite

A compact, made in China, tapered rectangular bag that weighs 2.5 pounds, will keep most people warm enough down to 40°F, packs up small enough to fit into a big saddlebag with room left over for a compact tent, and costs \$75 to \$100, depending on where you get it, whether you're getting last year's version or this year's, and so on. In any case, it's perfect for warm

weather bike camping, and cheap enough to buy without a lot of hand-wringing. If your local source doesn't have anything suitable, get a Campmor catalogue or look up Campmor on the web. www.campmor.com.



Slumberjack Solo Lite

2. Western Mountaineering MityLite

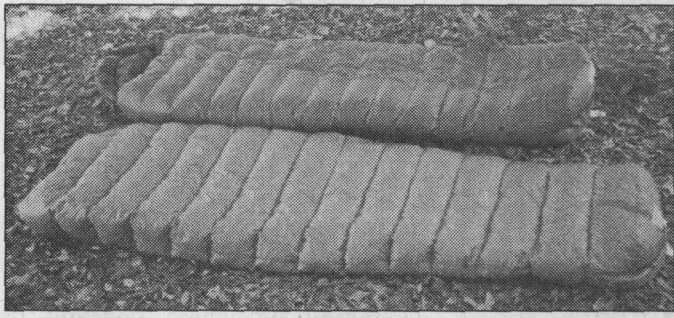
A 1-pound 10-ounce/40°F semi-rectangular summer bag that you can fit into a handlebar bag. Warm enough for most cycle-camping weather, roomy enough even for anybody under 260lbs, light enough for weight-fanatics. Naturally, you can use it on non-cycling trips, too. It costs about \$220; slightly more for the longer one. This is the high-road for a summer bag: Made in the U.S. of the best materials available. The most compact bag listed, and at 26 oz, you won't find anything with this combination of lightweight, compactness, roominess, and warmth.

3. Western Mountaineering Aspen

A 2-pound 4-ounce bag that'll keep you warm down to the mid 20s or so, which makes it plenty good for spring through fall in most places. It's hard to imagine a bike trip that you'd need any more bag for, but you won't sweat like mad in it when the temperature's around 50°F. It comes in hooded and unhooded ver-

sions, in different lengths, and costs between \$260 and \$300 depending on the particulars. It's warm enough for most late-spring through late-fall mountain trips, too. More versatile than the MityLite, so you may use it more often.

Western Mountaineering is a pretty neat company. Its bags are more expensive than most, but they're made in California, and are as good as down bags get, I think. No, I don't know anybody there, and I *bought* the bags. Phone (408) 287-8944 or fax (408) 287-8946.



Western Mountaineering Aspen (top)
Western Mountaineering MityLite (bottom)

THREE SLEEPING PADS

1. Covered Open Cell Foam

The most comfortable pads are 1 1/2-inch open-cell foam, which is basically a sponge stuffed into a cover with a waterproof nylon bottom. Maximum bulk and cush, middle weight and price. They generally weigh a pound and a half to two and a quarter, and cost about \$30. REI sells them.

Getting Out the Door

Most of us like the idea of sleeping outside, but find there are too many impediments to actually doing it. No perfect place; fear of being mugged by drunks or drug addicts; bugs or rain; nobody to go with you and keep you company; and the biggest one of all—leaving the comfort of the evening sofa and whatever companionship or family you have right there with you.

So, you might have to force the first one. Try to go with a friend, scope out the place first, and take way too much stuff. Make a list and note what you didn't use, then don't bring it next time. I did about ten of them between May and September of last year, and I'm looking forward to more this year. For me, it's therapy. I love riding, and touring, and all the gear that goes with it; and this is one way for me to get out a lot. It doesn't replace real tours, but it helps.

—GP

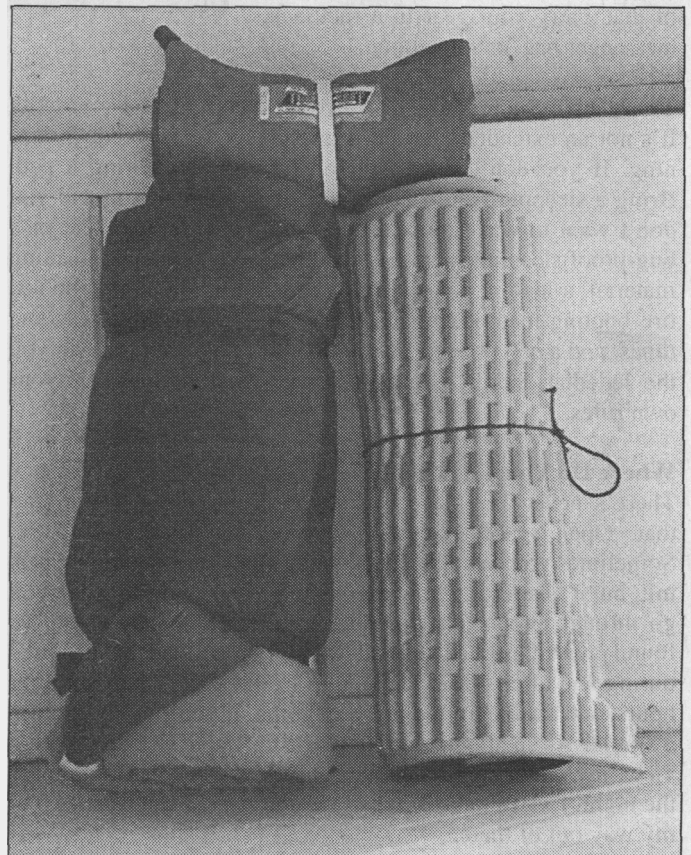
2. Closed Cell Foam

The lightest and cheapest pads are 3/8-inch closed-cell (does not absorb water) foam. They cost from \$9 to \$20, and are fine for most people when the ground is flattish, but they don't smooth out the rough spots as well as open-cell foam, and that's a consideration when you're making camp at night. Medium bulk, minimum weight and price. 9 to 10 oz, \$10-\$20.

3. Thermarest and Its Copies

For years, the wealthy softy gearhead's favorite pad has been open-cell foam covered and sealed all around by water- and air-proof nylon; with a closeable valve at one corner, to let the air escape when you roll it up, and to let it back in when you want to sleep on it.

The defining brand is Thermarest, still made in Washington. The best one for cycle-camping is the 314 length Ultralight, which weighs just a pound and rolls up to about 3.1" x 11"—tiny enough to fit into a Carradice, thus preserving your efforts at being a tidy packer. Most camping stores sell Thermarests, and most big ones and speciality ones sell this model, since it's the newest, smallest, and lightest. Cost, about \$50.



Left: Bulky, comfy, covered open-cell foam. About 24 oz; \$25-\$30

Right: Not quite as bulky as open cell foam (it only looks as bulky because this one here is longer than the open-cell pad to its left), not as comfortable, but good enough if the ground is flattish. Cheap & light—\$9 to \$18, 6 to 10 oz.

Top: A compact alternative, the Thermarest Ultra-Lite in 3/4 length. It weighs a pound, costs \$50, feels fine, and fits into a saddlebag.

TENTS

Any backpacking tent will do, but if you plan to leave at night, be prepared to pitch your tent by flashlight and in more wind than you'd have when the sun's up. The backpacking tent industry is monstrous, and if you want to research it on the web or in print, it will take you months. It may be a fun and educational, but it won't be quick. Here's a quick look at three good ones.



1. Black Diamond Megamid. No floor or mosquito netting, but you can bring a tarp or buy a floor for it for another \$75. Sleeps two and covers two bikes as well; or sleeps four if you keep your bikes outside. One telescoping pole in the middle. Sets up quick, looks fine. Not the tent for Mosquito Marsh, but it works great lots of other places. Light (3.25 pounds) and compact. Costs \$175.



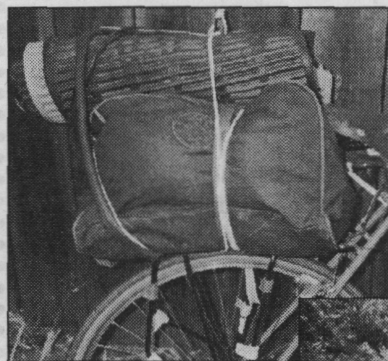
2. Eureka Mountain Pass I. Easy to set up as long as it's not windy or raining. Convenient features, windows, storage areas. Plenty of room for one plus gear. Has short, 12-inch pole sections, so the poles fit into a Carradice saddle-bag. Medium weight (4 1/2 lbs) for a one-person tent, but roomy. Decent in wind. Made in China, so it sells for \$120 or so (Campmor catalogue or online).

Light, compact, expensive. If you can get your full overnight kit down smaller than this, you must be cheating. Packed inside the Camper Longflap and Baggins Boxy bag are a tent, bag, pad, food, flashlight, book, and wool.



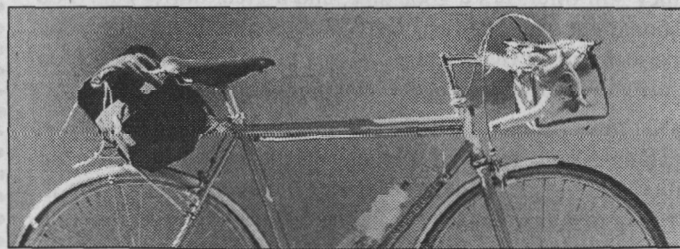
3. Hilleger Akto. Not as impressive on the sales floor as the Zephyr XT, has fewer convenience features, and it costs \$340 or so. But it is roomier, 12 oz lighter, ten times faster to set up in a strong wind, quieter in any wind, and you can set it up in a rainstorm without exposing the inner tent. Made in Estonia by a family owned Swedish company. I think it's the best 1-person tent available. Just 3.75 pounds. **You** can set it up fly alone and sleep two. This is a great tent, designed and made by a small company that's pretty far ahead of everyone else in practical and smart tent design.

SAMPLE BIKES FOR OVERNIGHTS

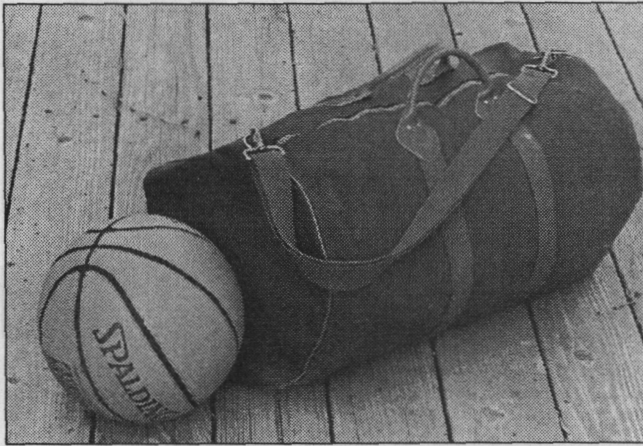


Cheap and Sloppy Me with a last-minute pack job that worked fine—a duffel and a pad strapped onto a rear rack. It looks like it's rubbing on the tire, but no, it didn't. I wouldn't want to tour with this arrangement, but for an overnight, nothing matters.

Neat and Tidy Pal Jeff is tentless and carries a bulky sleeping bag that fills his Carradice Camper to the brim. The other stuff (enough for two days, shown here) fits into small front panniers. He's shown here on his old Rivendell Road Standard; evidence that a versatile design and some rule-breaking go a long way.



Dieing Duffle?



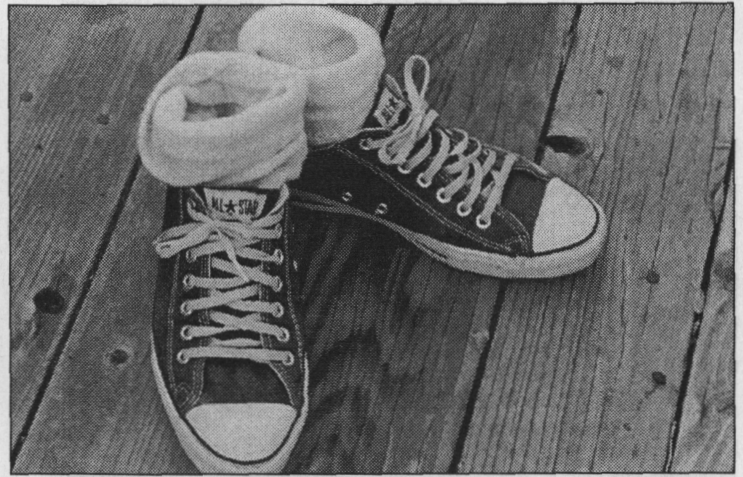
I've been an L.L. Bean customer for 35 years, since I was 11 and bought my first jac-shirt from them. Then the belt, then the moccasins, then the pocket knife, then the trout knife, chamois cloth shirt, and lately, a few seersuckers for hot weather cycling. I've spent a million bucks there, it seems, but in recent years I've also become a skeptic and part-time critic. On one hand, I understand that the final evolutionary phase for every outdoor-related company is to import fleece loungewear for women, while banking on their rugged outdoor heritage. If we're so lucky, Rivendell Bicycle Works will be there in about 2098. We'll sell clothing you can't even feel, clothing with the scent of the great outdoors, clothing that lets you program in your plaid or tartan or choice, and change it on a whim, if someone at the dinner party had the same idea. Bean will beat us to it, though.

One of Bean's staples, one of its oldest items, has been the Bean Duffel Bag. It's brown cotton duck, with leather handles and a big brass zipper. I've had one since I was 15, and we had two others in the house, and they've all faded to light brown, and some have been patched and repaired more than once. For a packing slob like me, the open compartment is just perfect.

Up until a year or so ago, they came in small, medium, and large. I never had a medium one until a good friend bought me one this year as a gift. As it turns out, it's the only size they still offer. It's a good size, and a great duffel bag. You should get one. They're only \$53 plus shipping, and it's the perfect size for overnights, carrying on a plane (if it's not too stuffed it'll fit in the space), and general travel.

I bet Bean discontinues this bag soon, so if you're interested, call them now. It's not by any means the only good duffel out there, but it is a good one, and you'll never regret having it. The item number is 36132, and it costs \$53.75 plus shipping. Bean's toll-free number is 1 800 221 4221.

A Farewell to Cons



Converse All-stars, the shoes Bob Cousy and Bill Russell and just about every other basketball player wore before the age of the million dollar sneaker; the shoe you graduated to from P.F. Flyers and U.S. Keds if you were a kid in the '60s, are no longer being made.

I grew up in All-stars, wore them all through high school, and still wear every day of my life. I've got them on now! They're not running shoes or multisport shoes by the modern definition of them, but there's not much you can't actually do in them, and since they were relatively cheap and machine washable, you didn't hesitate to take them up to the pollywog pond, even when they were brand new. Man, you can't even buy an American made sneaker any more. What's this world coming to? Maybe Sperry Topsiders still are. But wide feet blow them out at the side seams, and they look effeminate.

When I was growing up, we didn't have a dryer, so I often woke up to the smell of hot Converse coming from our oven. I'd put them on hot, dry, and curly at the toe. It wasn't recommended, but it didn't seem to hurt them.

Then around 1970 or so you could get all kinds of colors. Later, spurred on by fancy sneakers, Converse introduced leather, camouflaged, neon, and superthick soled versions.

America doesn't make much stuff anymore. People are leaving manufacturing jobs behind, because they don't pay enough, or aren't prestigious enough, or something. Manufacturers are sourcing their everything overseas, and where the quality is excellent and the prices are one fourth to one thirtieth as much as they are here for the same labor, and it's hard to resist that. Still, overseas or not, it's hard to find a pair of sneakers these days that you can throw into the washer and dryer. If you think about it, shouldn't sneakers be washable?

A good question to ask is: If they came back exactly as they were, made in America and all, how much would you pay for a pair? My answer is \$50, but I have stronger ties to them than most people, and I think most people would max out at about \$25. You have guys in their 40s and 50s who remember them as \$10 shoes, and would refuse to pay that. Anybody under 26 wants superstar sneakers. Converse All-stars didn't stand a chance, but they were good at what they did, which is just about anything. And, you could wash them. With shoes, you'd think that would be a selling point.

Who Rides an Atlantis?



STEVE LEACH DOES.

Stem:Nitto Technomic Deluxe, 8cm
 Bars:Nitto Dream Bar, 46cm
 Seat Post: ..Nitto One-Bolt
 Saddle:B. 17 Honey Brown
 Front Der: ..Shimano Sora
 Rear Der: ..Shimano Deore
 Shifters: ..Supermix Bar-ends
 Crank:Sugino 170mm XD500, 46x36x24

BB:Tange
 Wheels: ...Bontrager Fairlane 36h, Deore rear
 hub, Superbe Pro front
 Tires:Panaracer Pasela 700x35
 Pedals:MKS Touring, with Avocet straps and
 wooden buttons
 Fenders:SKS 700x45
 Other:Nitto rear rack, Baggins Boxy Bar bag

Name: Steve Leach

Age: 34

Family: married 11 years, two girls, ages 4 and 6

Occupation: botanist

Interests beyond my occupation and bicycles: Traveling with my family, the flora and fauna of vernal pools, plants of the southern Cascade Range.

Favorite type of riding: Quiet roads with views and interesting plants, some climbing, some coasting, a light tailwind, polite driver.

Absolute dream cycling trip: A two week ride anywhere with my wife. Are you reading this, Eileen?

Favorite Book: Coming Into the Country, by John McPhee

Favorite Movie: Harold and Maude

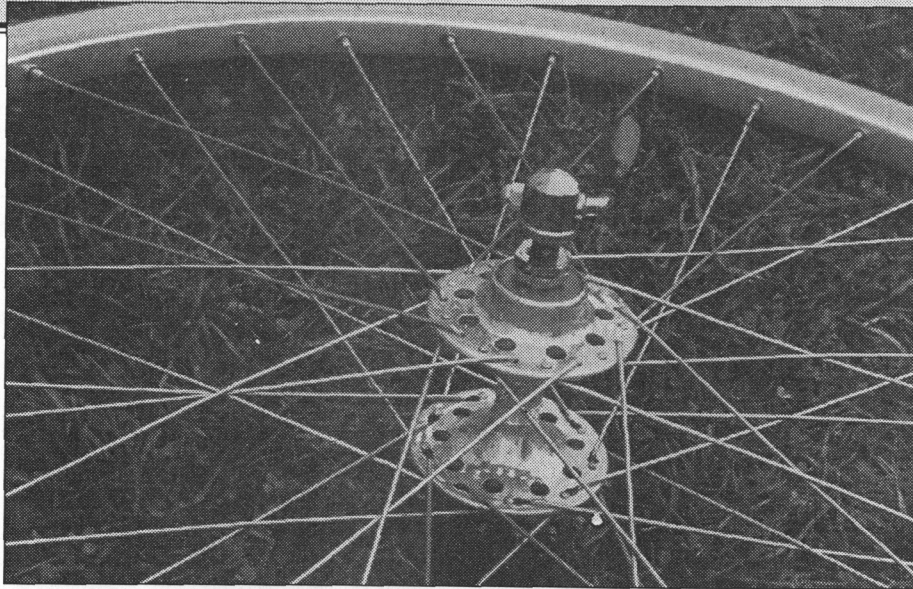
Favorite Breakfast: Kelloggs Raisin Bran with honey on top.

Favorite Lunch: leftovers from dinner

Favorite Dinner: Bean and rice burrito in a flour tortilla.

Classics: Maxicar Hubs

by Jan Heine



What is the most annoying problem with classic, high-end bikes? Surely not the lack of index shifting, or the Brooks saddle or the fewer gears. It's axles that break or bend with predictable.

Sealed-bearing hubs, with fat axles that don't bend, are one of the greatest inventions of modern bikedom. Modern? An elderly spectator admired my Rivendell at the turnaround during Paris-Brest-Paris. He told me he had 40 years on a set of Maxicars! My curiosity was piqued. In France, whenever I saw a really well-designed bike, with racks for bags, nice alloy fenders, a Brooks saddle, it also featured Maxicar hubs. Forget Maillard and Normandy - the stuff of cheap IO-speeds.

Maxicar hubs date back to the late 1930s, when they were introduced as Maxi. Within a few years, one of the riders of the "Reyhand" team suggested using bigger bearings, and the Maxicars were born. With minor cosmetic variations (holes drilled in the flanges appeared around 1965), these hubs were used on all quality French touring and randonneur bikes. Sometime in the 1970s, production stopped - it appears the maker went bankrupt. Rousson & Chamoux, manufacturers of parts for inexpensive mass marketed bikes, bought the rights and production resumed in 1976. To find out whether they still are being manufactured, I called the company in France. The friendly receptionist put me through to M. Rousson himself, who confirmed that they still make them, albeit in very small numbers.

The hubs feature true quality and ingenious design. Just consider the feature list:

1. Sealed industrial bearings, easily available, easily replaceable. Even if the hubs aren't made any longer, any bearing supply store will be able to sell you new bearings, and most machine shops can replace them.
2. An additional, screw-in labyrinth dust seal, because the plastic dust shields of cartridge bearings don't repel moisture all that well. A simple feature, but well worth it.
3. Oversized axle, made from steel, to resist bending and breaking. The axle comes either drilled for quick releases or with threaded, smaller diameter ends for wingnuts.
4. On one end of the axle, there is a spacer nut. This makes re-spacing the hub easy: Use a different spacer nut, and grind down the axle end if it is too long.
5. On the other end, there are two nuts, locked against each other, that allow adjusting the bearings. As the bearings wear, you move the nuts a little further inward to take up the play. Unlike many cartridge-bearing hubs, these will never wobble.
6. "Keyhole" spoke holes on the drive side rear: You can replace all spokes on the bike without pulling the free-wheel! In addition, the slots are a bit shorter than the distance between holes on the other flanges. Why? This requires slightly longer spokes than normally on the drive-side, making all spokes on a wheelset the same length! A feature you appreciate if you break a spoke near Carhaix during Paris-Brest-Paris at 2 a.m. If you carry a spare spoke and a little adjustable wrench, you'll be back on the road in 5 minutes. (Of course, if you have these hubs, your bike probably has the clearance for a wobbly wheel as well. But why risk ruining the rim, if you can fix the wheel right then and there?) However, their 40-hole and tandem hubs have standard spoke holes. Maybe the standard holes are better able to withstand high loads? Or is it that too many slots would leave too little of the solid hub flange, risking broken flanges?

7. The number of holes in the flanges matches the number of spokes: On 32-hole hubs, each flange has 8 holes, on 36-hole hubs 9, etc. Not only does it look nice, it makes for a stronger hub flange - the holes are exactly in the middle between two spoke holes. (Why didn't Campy ever do this?)

Combined with a most lustrous finish, these hubs are hard to fault. But let's not be blinded by nostalgia... Here is a look at the potential shortcomings:

1. They are expensive (a bit less than Phil Wood hubs). You won't see these hubs on bikes spec'd to a cost. But for decades, French connoisseurs have considered them worth their money.
2. The rears are available only for freewheels. But then, cassette hubs ostensibly were invented to cure the problem of bending and breaking axles. Somebody manufactured a cassette version back in the late 1940s, but it never found widespread acceptance.
3. The "Keyhole" spoke holes make building a rear wheel a bit more difficult. The spokes tend to fall out as you try to

tighten them. Placing a nail in each slot to prevent the spokes from moving helps. Furthermore, you have to adjust the bend at the spoke elbow before you insert the spoke, otherwise the spoke head sits at an angle to the hub flange. This happens because the spoke is supported only on three sides (but those are the three sides that matter). With a round hole, the spoke bend will be forced in the right direction, but if you don't adjust the bend after building a wheel, you may experience premature spoke failure. So maybe a smart marketing person would call this a feature an "indicator to show whether spoke elbow bend has been adjusted correctly." (For more information on adjusting the spoke elbow bend, see Jobst Brandt's book "The Bicycle Wheel.")

So where can you get them? Some good bike shops in France still have them. They never were popular in North America, probably because the company was content to supply the hubs only to those who wanted them, and never bothered to advertise. Few over here bothered to ask, so few got them. A few were imported for tandems.

Why Racers Don't Advance Sensible Bike Technology

When comparing a top-end racing bike from the 1930s or 1940s to a high-end French touring bike from the same era, it is amazing how crude the racing bikes were. Many frames were put together with little love, the bikes didn't have gears (or maybe 3 or 4 with the most ludicrous shifting devices), nor did they have brakes that really worked. However, they were reasonably light, somewhere in the 21-25 lb range - mostly because they had so few parts. Now let's look at the touring bike: Double or triple alloy cranks, 4-speed rear, giving a wide range of easy-to-shift gears. Index shifting if you got the Nivex derailleur. Cantilever brakes that work as well as current models. Beautifully filed lugs, polished alloy fenders, lights. All that stuff must weigh a ton? 20-25 lbs. Wait a minute, I hear you say—how can a touring bike as light as a racer, and why didn't the racers adopt the same technology?

The explanation is simple: The racers were bound by rules and as long as everybody was using the same material, it didn't matter how good or bad it was. In the Tour de France, the organizers even provided the bikes to ensure a level playing field. Racing was considered a sport of men, not machines. (Still is, which is why many people were irked when Greg LeMond won the Tour with aerodynamic handlebars that weren't available to his competitors.) Already in the 1940s, support cars were very much part of the sport: After all, it was a test of men, not machines, so a broken bike should not make anybody lose. If an axle bent or broke, you'd get a new wheel.

Compare that to the tourists: They were competitive as well—the famous technical trials were hotly contested. But the rules were different. The emphasis was on the machine. No support was allowed, and points were deducted for broken or non-functional components. The riders had a free choice of bikes, with extra points awarded for elegant solutions, so technical innovation was everywhere.

Aluminum frames were popular for a while just after the war, some bikes had quadruple cranks with 6-speed freewheels (24 speeds—there were points for the largest number of gears in some events). Aheadset-style stems were used to save weight. There were tandems weighing 13 kg (28.6 lbs), singles as little as 6.9 kg (15.2 lbs), and they had to survive 400 km on rough roads to arrive at the finish without penalty.

But by the 1950s, the trials were history—interest had moved on to cars and motorbikes. By then, a standard design had emerged: Lightweight Reynolds 531 frame and fork, long wheelbase, low bottom bracket, standard quill stem (for its adjustability and easy replacement), triple cranks with four- or five-speed freewheels, racks from tubular steel. "Camping" bikes featured low-rider racks at the front and sometimes even the rear. 650B wheels (a bit bigger than 26")—on Maxicar hubs, of course—with wide tires for all types of road conditions. Classic bikes that work as well now as they did then. But sometimes I wonder what would have happened if the trials had continued beyond 1950...

Why does it all matter? The various bike booms in North America first were influenced by racing bikes, with cheap 10-speeds combining all the disadvantages of an inherently poor design with none of its benefits. Then came mountain bikes, which traced their ancestry to Schwinn Cruisers—bikes never intended for performance. These two groups still are feeding off each other, and most development is driven by marketing. For those of us looking for sensible bikes that are enjoyable to ride, we have to figure it out ourselves—the benefits of low bottom brackets, long chainstays, wide tires, stable handling. And then we discover that we are replicating the efforts of the French touring bike makers from the 1930s! If only we had known.

—Jan H.

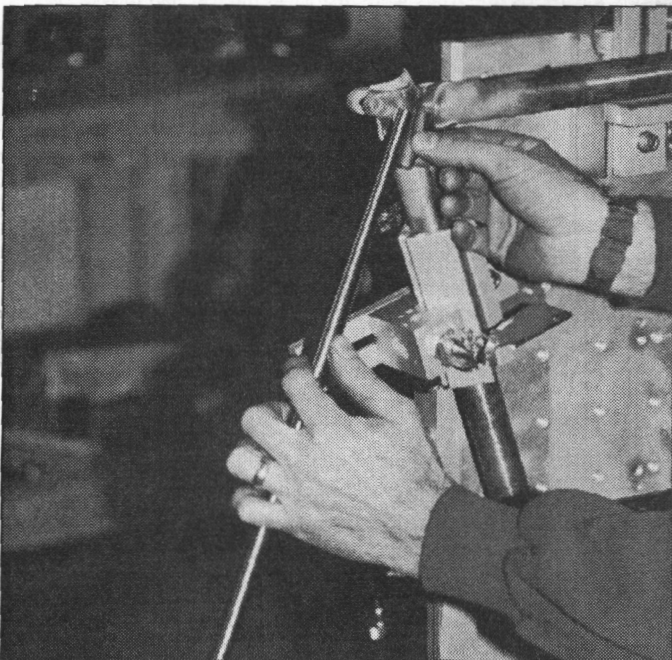
Brazing The Seat Stay Plug

by Curt Goodrich

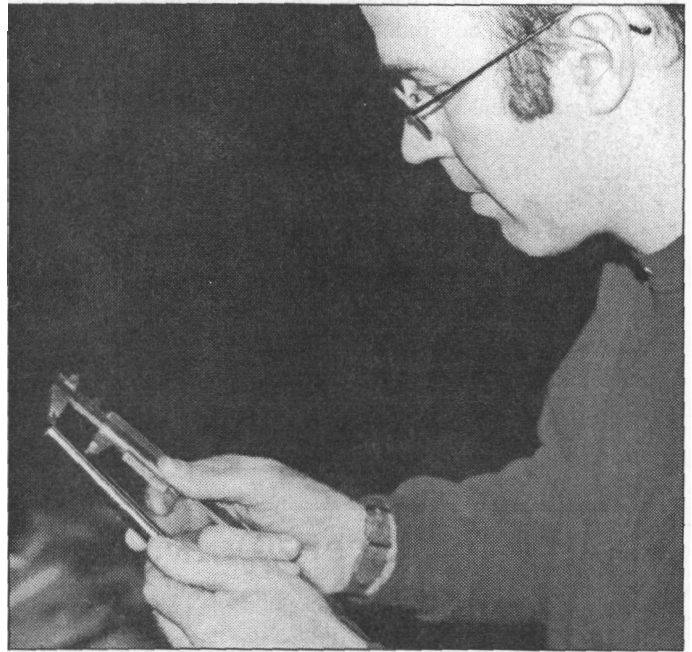
Brazing in the seat stay plug is generally one of the simplest frame building tasks, but when the seat stays you're working with are double-tapered, as they are on most Rivendell road frames, the procedure is a little more complicated. Double-tapered seat stays are narrower at the top and bottom, and fatter in between, with the fat part up near the top. For instance, a typical Reynolds 16mm double-tapered seat stay starts out 570mm long (about 22 inches), with the top end a little over 12mm in diameter, the bottom end just over 11mm. The 16mm (fat) section is roughly 250mm (ten inches) from the top.

The first step is to determine where to cut the seat stay, and the goal is to cut it so that the brake bridge is in the fattest part. Also, the outside diameter of the tubing has to be the same or smaller than that of the plug, so the transition is invisible. To accomplish this, I put the front triangle (seat tube, top tube, head tube, and down tube) in the frame jig and hold up the seat stay and cap next to it. The distance from the brake bridge to the dropout is predetermined by the brake reach, so I mark the seat stay and make sure the fat part of the stay, where the bridge goes, is the right distance from the dropout.

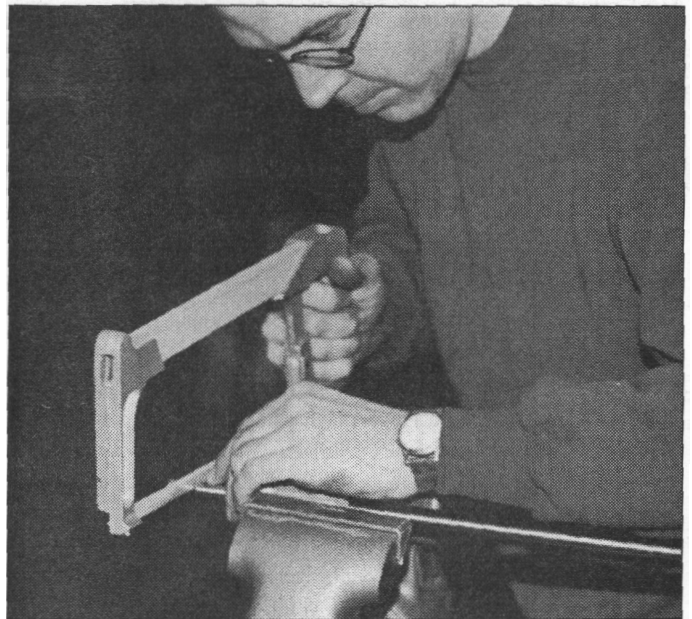
I use a hacksaw to cut the stay, and a disc grinder to square up the cut. Then I use a die grinder with an abrasive cartridge roll to prepare the inside of the stay for brazing. The abrasive removes the scale from the tube, which helps the brazing material bond with it.



With the already-brazed front triangle in the jig, I hold the seat stay and plug up to it, to determine the cut-off points, so the plug fits and the brake bridge is where it should be.

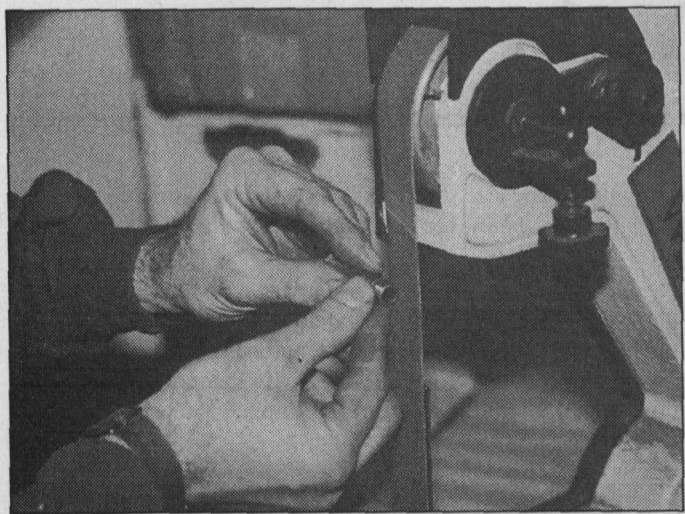


I use a vernier caliper to measure and scribe the cut point.



I hacksaw off the end. For those of you who are tool aficionados, that's a four-inch Wilton machinist vise.

Curt builds full time for Rivendell, and makes about half of all Rivendell frames. In the past three years, he has probably built more lugged steel frames (including Schwinn Paramounts, during his stint at Match) than any framebuilder in the country.



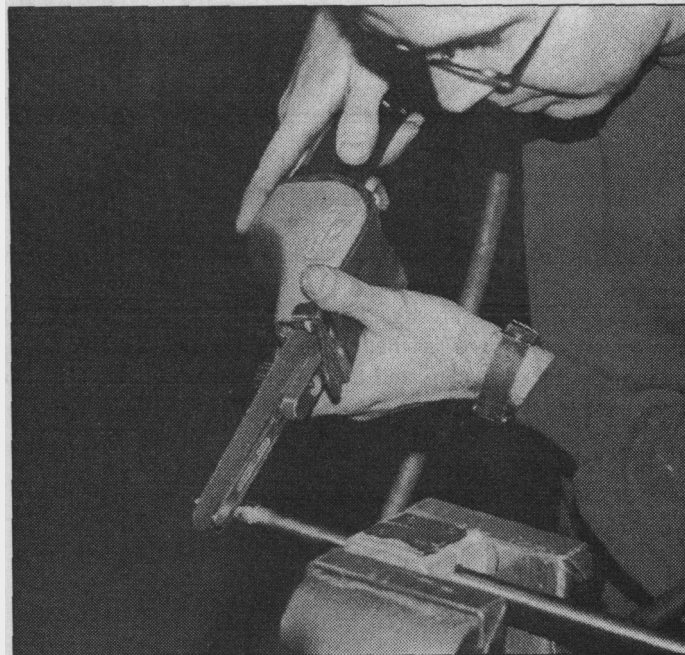
Here I am sanding the inner plug until it fits snugly into the seat stay, to ensure a good fit and symmetrical stays.



Silver-brazing the plug into the tube. That's a Rivendell-designed plug, only found on Rivendell road frames. The paste on the tube is **flux**, which may be discussed in another column.

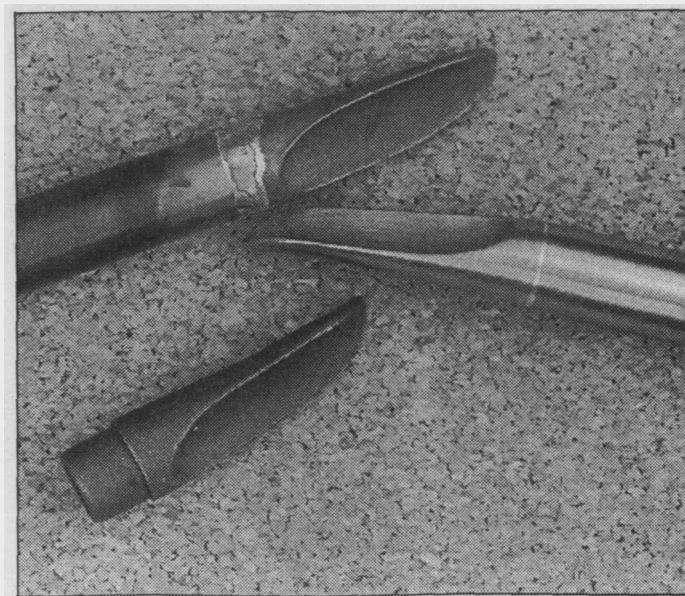
Then the plug, or seat stay cap, needs to fit snugly, but still allow the flow of brazing material. I use a belt sander on the portion of the plug that fits into the seat stay, grinding it down until the fit is just right.

Now I'm ready to braze the plug onto the seat stay. I gently clamp the seat stay vertically in a bench vise and apply flux to both the plug and the tube, to protect the metal during brazing, and ensure a good brazing environment, I concentrate the torch on the plug, since it's the thickest part and takes the longest to heat up to the correct brazing temperature. When the plug is nearly hot enough, I then apply the heat to the tube and plug, bringing them both up to brazing temperature, and then I add the silver rod (brazing material). The heat joint sucks the molten silver into the fine gap between the plug and the tube, and since there's the joint is so small and simple, the actual brazing of it is anticlimactic.



Sanding off the high spots with a Dynafiler, an invaluable tool for the frame builder!

After the joint has cooled, I soak it in water to get the flux off. Then it's time to clean up the joint (the one I brazed). The goal is a seamless transition, so that the painted frame gives no clue that the tube ends and the plug starts. I use a pneumatic Dynafiler, a hand-held belt sander, to remove the high spots of silver standing up out of and around the seam. During brazing, you want to overfill this joint, because brazing material tends to "shrink" as it cools, and that results in a recessed seam that catches all sorts of attention when it's painted. So, I overfill it, then grind the spillover to the same diameter as the tube and plug. I finish the sanding by hand, to make it perfect.

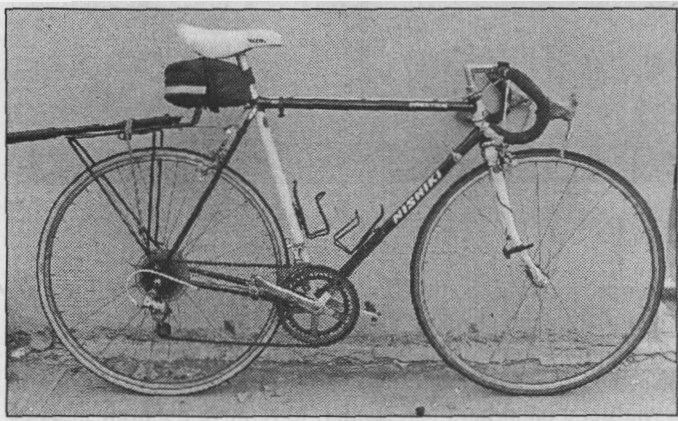


Top: Freshly brazed, with **flux** removed. Middle: Cleaned up, ready to be brazed to the main frame. Bottom: A plug. It's 2.36-inches long, 1.4ounces.

A Bicycle Makeover

Eventually you end up with a bike that doesn't work for you anymore. The size, the way it's set up, just something about it isn't right, and since you can ride only one bike at a time, it's the one that never gets picked. If it's a good bike otherwise, maybe it just needs a makeover. Here's one way to do it.

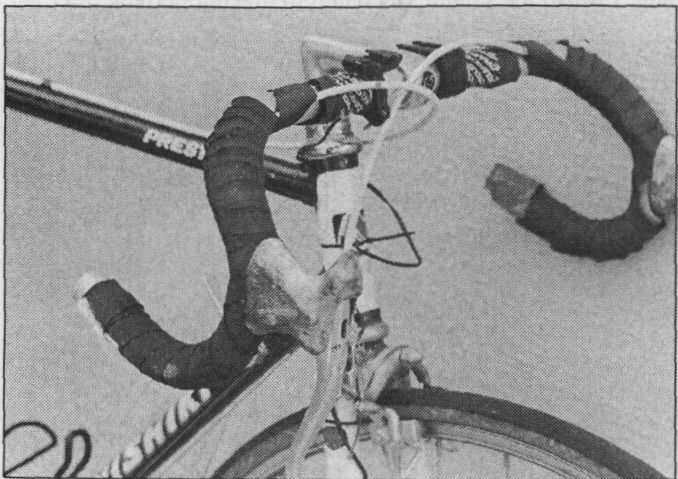
This bike is a Nishiki Prestige, built in the early '80s from Tange No. 2 tubing, a really fine seamless CrMo tubing equivalent in grade and quality to Columbus SL (what Eddy Merckx rode for most of his career) or Reynolds 531. And it is lugged, and has a semi-sloping fork crown, and raked blades, and forged dropouts with eyelets. It was made in Japan probably around 1984, by Kawamura, a frame sub-contractor whose frames were half-a-cut-above most Japanese production bikes, and worth the effort to fix it up.



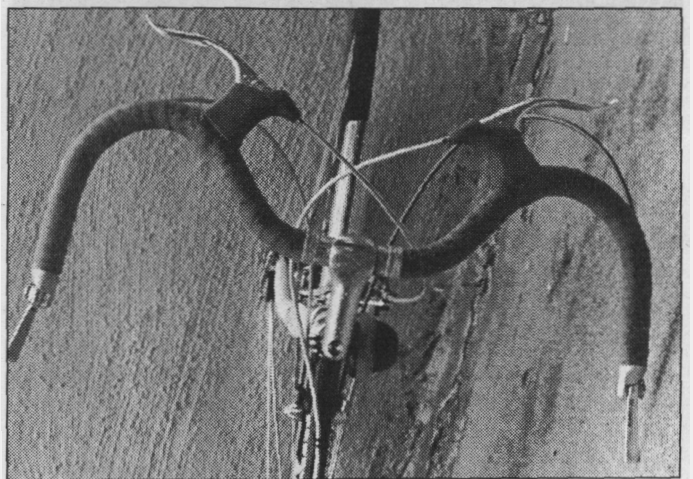
Before: Look at the handlebars. They're rotated forward, which steepens the ramp behind the brake levers and puts tons of weight on your hands. And they're too low. It would be hard to be comfortable on this one.



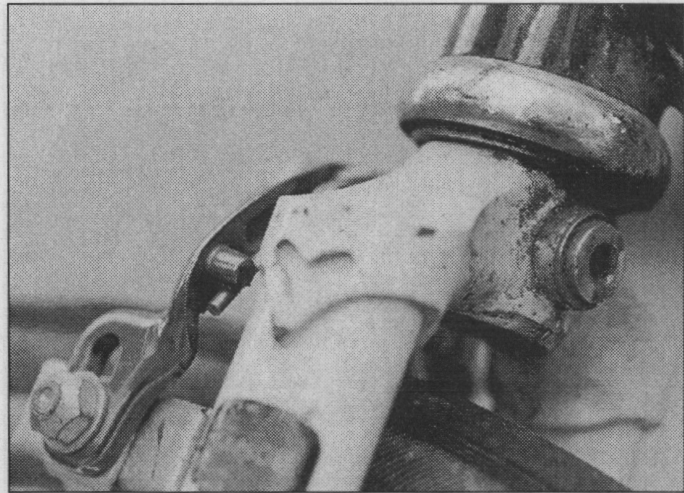
After: We put on a DirtDrop stem and Moustache Handlebars. The steep ramp is gone, the bars are higher, it's better.



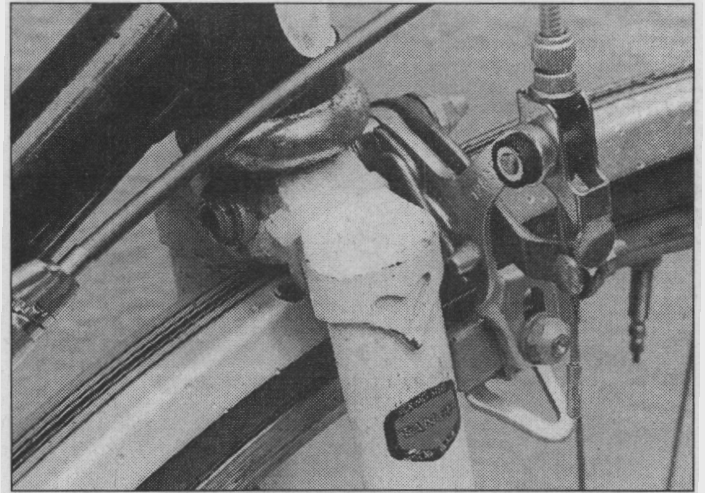
Before, handlebar detail: The old corky tape is trashed, the bars need plugging, and the brake hooks, which **started** out white, look scary to touch. Unrelated to that, notice the nice contrasting head tube. After 1985, touches such as this were discontinued forever.



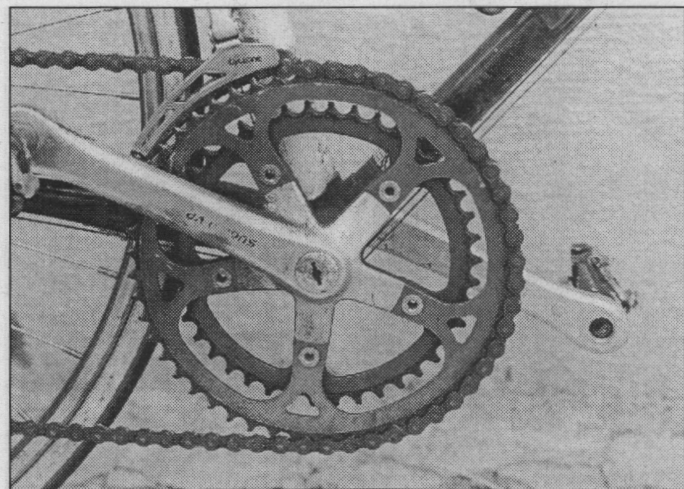
After, handlebar detail: New, shellacked cloth tape, Supermix shifters, new brake levers. This view of the handlebars is what you see a lot, so it pays to keep it clean and nice-looking.



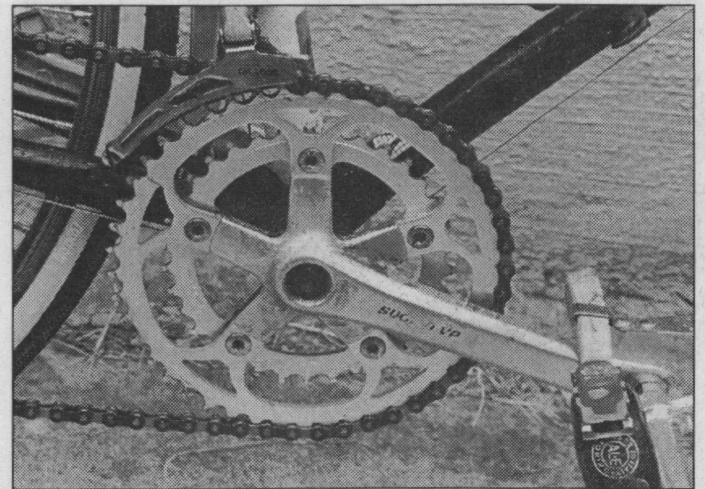
Before, crown/tire detail: The brake bolt is too high, but there's still room for a fender in there, and a utility bike needs fenders.



After, crown/tire detail: The easy (and therefore, preferred) way to fit fenders when there's just barely room, is with zip-ties. Remove the L-bracket, drill 4 holes, and strap them on. Black ones would have shown up better here.



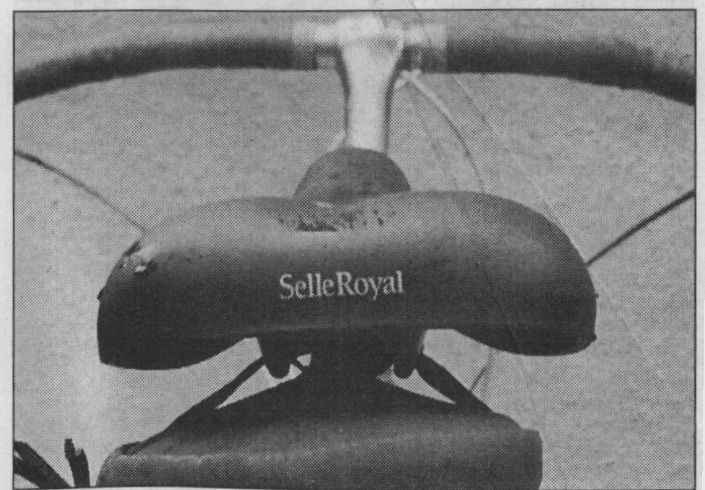
Before: The 52x42 rings are big for a utility bike, but the 110mm bolt circle crank lets you go smaller.



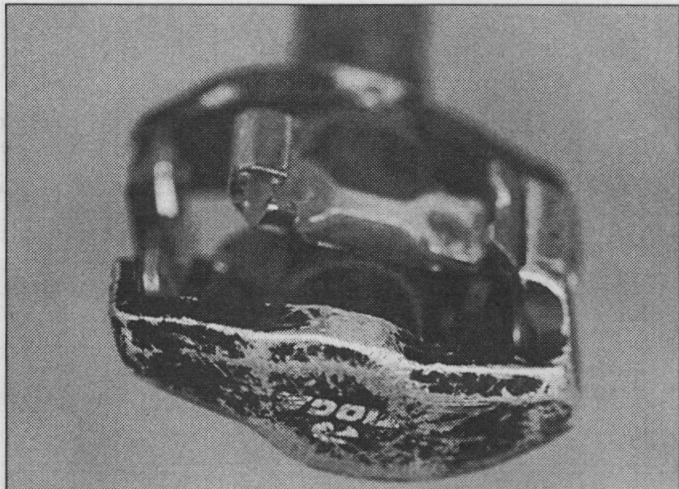
After: Fresh silver rings of 46 x 34 look better and provide more usable gears for hilly rides.



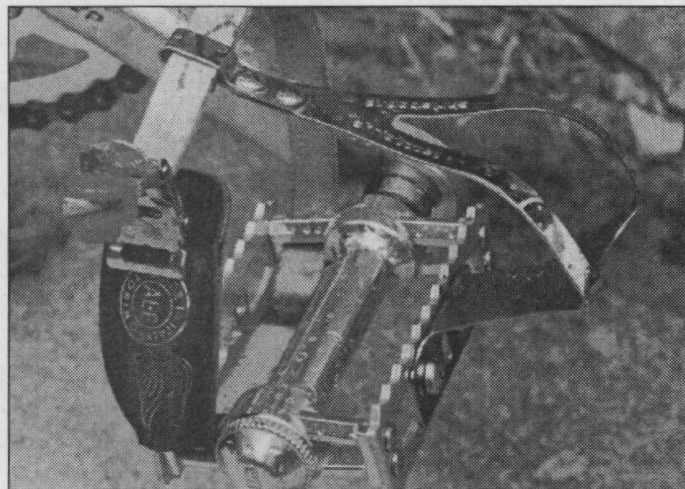
Before: The saddle started shedding its cover—never a good look. Also, notice how round and narrow the back of it is. The new bike needs something better.



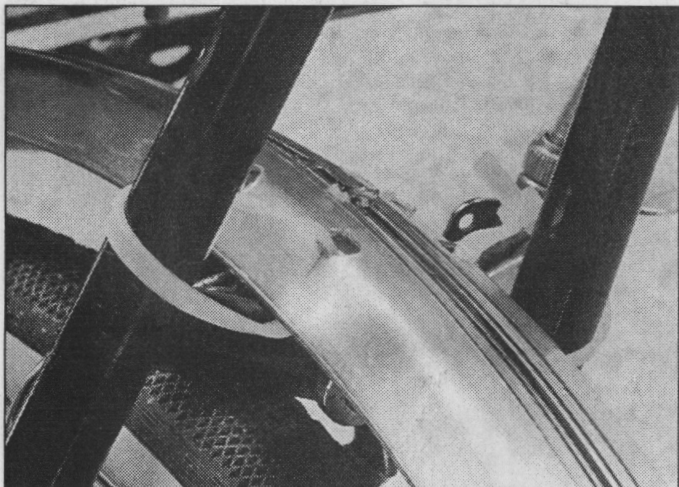
After: A \$10 saddle picked up new from REI's bargain box. Wide, flat in back—better for a more upright position.



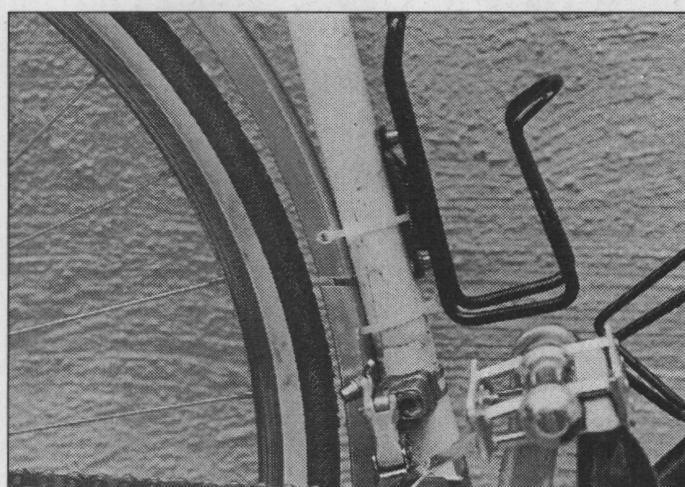
Before: Clipless pedals on a utility bike don't make much sense. You've got to be able to ride it in any shoes.



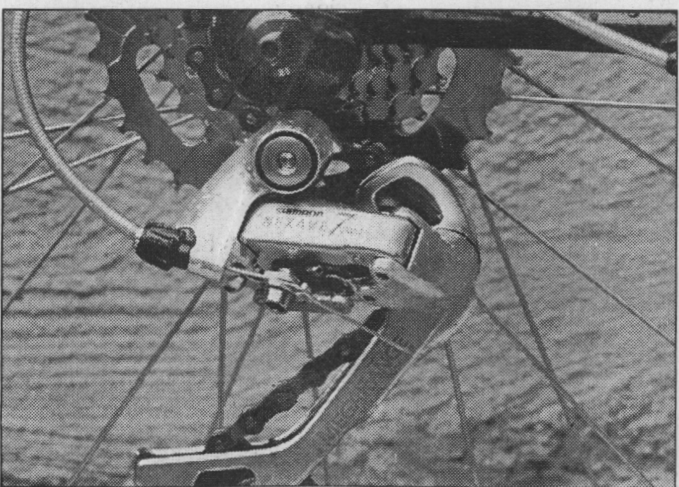
After: Fresh touring-style pedals, clips, straps, pads, and buttons. The clips etc. make sense for longer rides, but for around town, these pedals are great all by themselves.



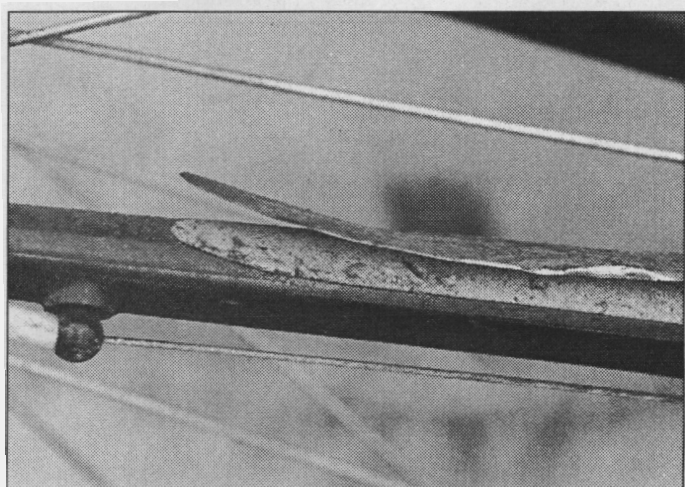
Rear fender: There wasn't enough room under the brake, so I routed it over the brake and held it there with zip-ties. Not possible with mono-stays.



Rear fender again: Clearances were tight behind the seat tube, so zip ties to the rescue again. The rear fender is pieced together out of fender sections. It's not a show bike, after all.

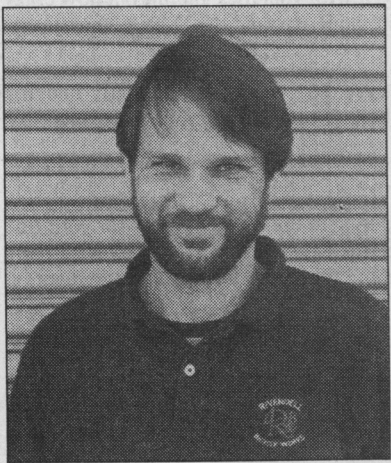


Rear derailleur and cluster: I took off the 13x24 6-speed and put on a 14x34 megarange Shimano freewheel. The matching derailleur is kind of weird. It works in reverse action. It's easy enough to get used to.



The chainstay guard: This looks terrible. A new chainstay guard would have been fine, but I didn't have one, so I took it off and wrapped the stay with tape.

Introducing Two New Employees Who Answer The Phone A Lot When You Call In



**JOHN
BENNET**

John's on the phones Tuesdays and Thursdays.

Age: 44

Hometown: Webster Groves, Mo.

Hobbies and interests other than bikes: Riding horses, mysteries of the East, dogs, and traveling (recently to Tibet)

Involvement with bikes: A lot as a kid (Sting-rays and ten speeds), followed by a long gap. Now I'm a daily commuter, and last Summer I did a solo tour down the coast of California. I work just part time at Rivendell, and my other job is working with developmentally disabled people as an employment specialist, focusing on interview skills, resumes, and job seeking skills.

Favorite books: Anything about psychology or philosophy, and especially a combination of the two.

Favorite movies: *Ordinary People*, *The Tao of Steve*, *Groundhog Day*, and *The Ice Storm*.

Favorite Music: The Beatles, Bob Dylan, Beth Orton, Elliot Smith, Burt Bacharach, Thelonus Monk, Miles Davis, Cole Porter, Bobby Short, Brian Wilson, and anything in the blues or reggae category.

Favorite foods: Vegan anything, and lots of it.

What I'd do if I won a million dollars: Buy a farm in Wales, and give away whatever was left.

What I'd do if I lost a leg: Sell my crank arm on eBay and never look back.



**NINA
LA ROSA**

Nina's on the phones M—F, through April.

Age: 19+

Hometown: Shelburne, Vermont

Hobbies and interests other than bikes: Downhill skiing, fly fishing, hiking and snowshoeing with my dogs in the mountains of Vermont; and reading.

Involvement with bikes: This is my third year road racing for Excite.com/SmartFUEL and the Green Mountain Bicycle Club. This past year, I also raced mountain bikes for Serotta.

Favorite books: *Atlas Shrugged*, by Ayn Rand. John McPhee, and Roald Dahl. Great bedtime reading.

Favorite movies: *The English Patient*, *Last of the Mohicans*, *The Black Stallion*. I love the cinematography and landscapes. I'm a visual person, and I like epic stories.

Favorite Music: Just about everything. Bach, the Beatles, Bjork. No rap.

Favorite foods: Strawberries and chocolate, but not together. I also love olives, but not out of a can. I'm a particular eater.

What I'd do if I won a million dollars: Invest, then pay my way through college so my parents could retire. Finally, I think I'd have Grant help me design a strong and superlight Rivendell to race on the road.

What I'd do if I lost a leg: I think about this kind of thing because I'm at a transition in my life. I read about a guy who had a prosthetic leg climbing Mt. Everest; and at the Fitchburg/Longsjo Stage Race, a guy in the Pro 1/2 field passed me up Mt. Wachusett, and he had a prosthetic leg from the knee down. So, maybe I'd keep racing.

Tough Love

by Maynard Hershon

Your neighbors are moving further from their jobs. They commute further, one neighbor per vehicle, in larger and larger vehicles: trucks or SUVs. They used to drive VWs or Civics. Now they buy vehicles as if each time they drive they're moving their homes, not merely their bodies.

Because the freeways are parking lots mornings and evenings, your neighbors instead choose scenic, secondary roads you've ridden on your bike for years. They drive as fast as they would on the freeway — if the freeway were empty. The freeway hasn't been empty since 1971.

They hate you for being there on their roads, slowing their commute or trip to the mall. They act as if all traffic hassle is some cyclist's fault, as if out on the freeways, where there are no cyclists, all is well, love is in the air.

You ride anyway.

Your neighbors' land-yachts sprawl across narrow lanes. They crowd you on your bicycle, scaring you. Your neighbors sip drive-thru lattes and chat on their cell-phones, not scared at all.

They pause in school zones, mom or dad dropping off Justin and Heather. You pedal down School Street, a corridor of fear vibrating with the rattle of huge diesel engines.

Mom and dad almost never see you, as if you did not exist. When they do see you, they look straight through you — as if you didn't exist. They wish you didn't. You're just a nuisance, pedaling uselessly through the school zone.

You navigate around sudden U-turns and unpredictable moves. Any crazy thing could happen. You are beyond fearful. You're a submarine captain listening for the depth charge that penetrates the hull, lets black freezing water roar in.

You ride anyway.

On your ride, young guys in baseball hats, one cheek bulging smokelessly, practice "sharing the road" with cyclists. They share the road 90/10. The cyclist gets 10%; The young guy's rusty Ford four-b'-four gets the rest.

If the young guy is lucky enough to have a girl sitting close to him in that old Ford, the split *goes* to 95/05. You can hear the Dixie Chicks as the truck skims by. You hate the Dixie Chicks.

You ride anyway.

When it rains, bits of glass from car crashes and nails spilled from truck-beds cut the wet rubber of your tires. Thorns you could have rolled over harmlessly in July now find their way into your tubes. The air gets out.

You have six times as many flats as summertime. You fix them in silence on the flooding roadside in the rain. Your hands take a beating from the work and the cold. My hands are always dirty, you think. And wrinkled.

You ride anyway.

When you get to work, you change out of your soaked cycling clothes and spread newspapers under your dripping bike. You hang pieces of dripping clothing off your saddle, top tube and bars. You stuff your shoes with newspaper as if you really believed they'd dry by quitting time. They never have.

People at work do not mention your commuting by bike. They know that if they even start to discuss it with you, they'll blurt out how crazy they think you are. You ride in the RAIN and the DARK, they'd say; Why do you do that?

You can see all that in their eyes, so you continue, quietly hanging your soggy tights from your bars. They stare at you, astonished. No one speaks.

You ride anyway.

In winter it takes you nearly as long to dress and undress for your ride as the ride takes. You feel like the Michelin man. You own 22 pairs of gloves but you're still searching for the perfect pair. Not to mention booties.

You're obsessive about rainy-weather chain lubrication. You know you are. No one else on the planet cares about it at all, and you're obsessed. You fool yourself that you have your little problem under control. You don't. It hasn't impacted your work life or relationship, but it could...

You sense an intervention lies ahead. Tough love for the chain-lube freak.

You ride anyway.

You've spent four grand on high-tech bicycle lights. You're considering buying yet another system based on a glowing magazine test. You know that some people, on learning of your somewhat excessive light-buying behavior, would conclude that you're a genuinely sick person. They would be correct.

You ride anyway.

You get a cold a year. It's not a terrible cold, no worse than three years as a prisoner of war in Viet Nam or manning an oar in a Roman slave galley. Your cold typically lasts eight or nine days, during which time you forget why you ever thought life was worth living.

You ride anyway.

You take your ex-girlfriend to the airport in her car. She's flying to Italy. She'll be gone a month. She promises to buy you a jersey in a cool bike shop in Florence. She leaves you her wine-colored Mazda Miata, the Special Edition with tan leather and tan top. CD player. It's gorgeous. Enjoy it, she says.

She fills the tank for you, to thank you for dropping her off at UAL Departures and picking her up next month. Sweet woman. Nice car. Rains all week.

You ride anyway.

You sit at a light next to a dark-eyed woman in a print dress in an old Ford station wagon. The light changes. She gasses it, turns right, cuts you off brutally. You yell something not quite coherent at her. She shakes her fist at you: It's YOUR fault!

You see her three days later, same light. She honks. You look into the old Ford wagon. She's made a little cyclist doll. It's wearing a tiny yellow Giro helmet like yours and, ohmigawd, a club jersey just like yours! She pushes a hat-pin through the doll and smiles at you. The light goes green.

You ride anyway.

Joe Bell Interview

JOE BELL is exceptional in more ways than I'll think to mention here, and his work and **ours** are linked tight. We're almost half of his business, and there's nobody I trust more with **our** frames. His decal placements are **so** perfect that you never notice them. The seat tube diamond is always where it ought to be, just above center on the seat tube. When the **downtube** decal placement gets tricky because it runs over the edge of a water bottle braze-on, rather than mess up the location by even a quarter of an inch, he'll make sure the decal lays down over the corner, perfectly. He places decals by eye, not by measurement, and he's never off. He's painted more than **500** frames for **us**, and the few times when there have been issues, he's never tried to squirm out, but has always said, "Send it back, **I'll** redo it"—not an easy thing to say when you've got more than a day's work into a frame already. We pay the highest prices, but get the best service in the world for it.

Despite **our** being his best customer, he doesn't kow-tow to **us** or give **us** cuts ahead of one-time customers; and he is always direct and immediately honest. His prices go up every year, and are not negotiable, and he doesn't dance around money talk—it's always, "We gotta raise prices again, **so** get ready," and that's it.

He's humble and I've never heard him say a bad word about his competitors. Rather, he says, "They're capable of the same thing, it's just a matter of taking the time, and we charge more because we take the time. But they can do it"

You'd think, after painting **so** many bikes over the years, and dealing with **so** many indecisive-yet-superpicky customers, that he'd get tired of the whole process. It hasn't happened. He still cares **so** much that he's refused to **not** paint in window cutouts, even when we and **our** customer have requested they be left plain. "The frame doesn't **look** finished that way, and it makes me look bad. You're getting the window fill whether you like it or not, but I'm charging you for it." On the surface, that attitude seems outrageous, but the fact that he cares **so** much about his work gives it a whole different spin. He's a craftsman with a lot of pride who knows what looks good and wants **you** to have it. Over the years there have been two or three times when we've **had** to get a bike painted in a day, and JB and crew always come through for us. **Joe**, and his two-man crew of Ralph Lowe and Rob Roberson are part of what **you** get when you buy a Rivendell, and we're all lucky to have them.—GP

RR: How old are you, and how long have you been painting bikes?

JB: I'm 44, and I've been painting professionally since 1978.

RR: When did you paint your first bike, ever?

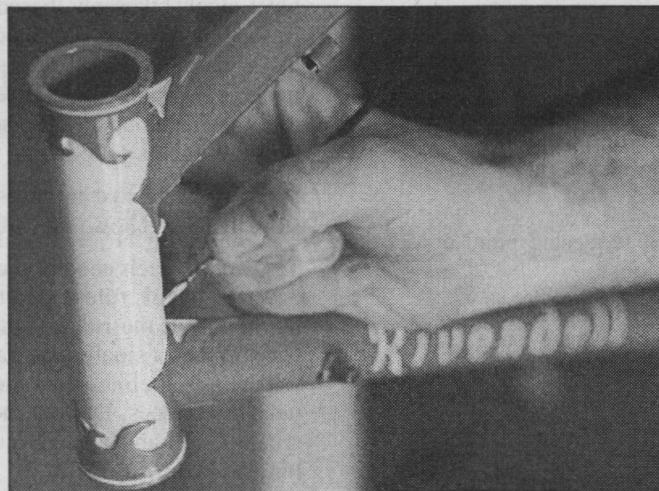
JB: Around 1969 I think. I was in the 8th grade. It was a Schwinn Sting-Ray that was pretty beat up from hard use, so I stripped it down and sanded it as smooth as I could, and poof-canned it black with white decals purchased from the local Schwinn shop. No clear coat. There may have been some runs in it. I watched my brothers restore a '53 Chevy, and learned some prep technique from them. I had several Varsitys, a couple of Continentals, Super Sports, a Sports Tourer, a Superior, and a Super LeTour—the whole range of lower end Schwinn.

I bought them used, took them apart, painted the frames, shined **up** the parts, then put them back together. I'd make them look racy by removing

the spoke protector, adding alloy handlebars and SunTour bar-con shifters, things like that. They looked real clean when I was finished. and I had no problem selling them.

RR: How did you come to bicycle painting?

JB: I had painted several of my own bikes in the garage next to the water heater in the early 70's. I later stumbled into the coolest pro shop in San Diego county, called Casa De Oro cycles. It was owned by Bill Holland. Soon I was hanging around there so much they had to hire me or charge me rent. I became head mechanic pretty quickly after that. Bill was already refurbishing bikes as a side business. I remember you could get your Paramount painted with Imron, lugs masked, original decals, clear coats and full braze-ons for about 95 bucks!! Anyway, after about three years, Bill sold his bike shop and asked me if I wanted to paint bikes with him. Not having anything better to do, I said, sure! Why not? And we were off and running like a herd of turtles.



Joe Bell, with his secret weapon, details a Rivendell.

RR: Who taught you?

JB: Bill showed me the basics of how to get the job done and helped me along whenever I had a problem. After that, I just gained experience. Years later I learned some techniques from Brian Baylis that we still use today.

RR: So...you've been painting bikes about 22 years professionally. How have your skills or styles or techniques changed over the years? Let's say, arbitrarily, that you're a 10 now. What were you when you first opened up your shop, and was it just experience or technology that brought you along?

JB: I'd say I was about a 4. Bill Holland would be a better judge of that. For me, I believe it was mostly experience and paying attention that brought me along. There have been a few technological innovations along the way, such as high transfer efficiency spray guns that spray more paint with less overspray; paints with different kinds of color effects, and better quality sandpapers and buffing compounds, but for the most part we're still doing it the same way now as 20 years ago.

RR: When you look at a bike, do you look at the paint first?

JB: Yes.

RR: When you look at the paint, what do you look for? Color, style, detail? How much can you tell about the paint job just by looking at it?

JB: I look at all those things, but the painter's eye always hones in on the gloss (or lack of it). You can tell a lot about the painter's attention to details and how much he or she cares about the work, but you can't know everything about the frame by looking at the finish. A good paint job can hide a lot of sins on a frame.

RR: Rivendells aside, what's the most requested paint color and style for either repaints or custom jobs?

JB: We probably do more reds and blues than any other color, but I think those are always going to be the most popular. Candies and fades are pretty common but every frame is different. There is no production painting going on in our shop.

RR: What kind of bike do you ride, and how is it painted?

JB: It is a steel frame Bill Holland made for me in 1987, I think. It is a nice blue candy pearl with cream pearl Nervex Pro lugs

that have been heavily romanced by Baylis. Lugs, crown, bottom bracket and bridges are all contrasted in the cream pearl and it has lots of cutouts in it. It was a collaborative effort with Baylis sprucing up the lugs, Bill making the frame and I did the paint. It's retro-classic with Campagnolo Super Record components on it. I'm used to the old Campagnolo parts.

RR: Do you get bored painting single colors, or the same Rivendell style over and over again?

JB: No. I'm the detail guy so I don't squirt the majority of the colors anymore. The nature of the work is tedious, so it's important to stay focused on the work at hand.

RR: Is there a particular style of paint, or color, that you just don't like?

JB: No, I don't think so. Nothing that I really can't stand. Almost any color looks good once the decals are applied, trim is painted and clear coats laid on. Clear coat is the painter's best friend.

RR: What do you like the most?

JB: I think I gravitate to well done simple stuff with original decals but I also like some of the flashy pimpy looking things, too. I like clean masking, British style paneling, sharp pinstripes, nice blends. About the only thing I don't like is sloppy work.

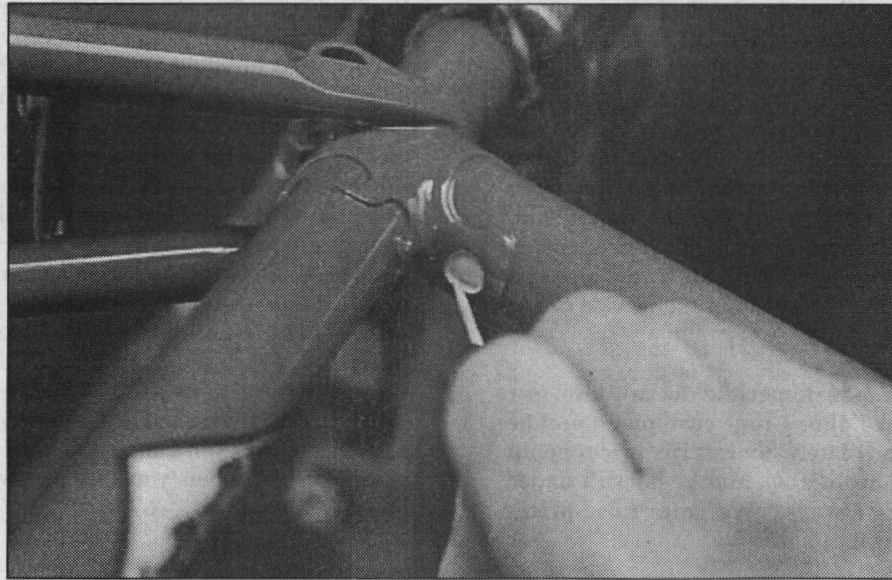
RR: How old are your children, and do they have JB paint jobs on their bikes?

JB: My daughter Dionna is 13 and my son David is 8. They have stock bikes purchased from the bike shop, and haven't trashed them enough to need new paint. I don't like to sacrifice a new paint job just for the sake of changing the color or to put my initials on it. My children have many interests, and are not as enthusiastic about cycling as I am. That may change in the future, but I'm not pushing them.

RR: I've heard that Imron is illegal in some places. What's the story there, and how often are you checked out, environmentally?

JB: I think each geographic region has its own timetable and environmental rules about VOC's (volatile organic compounds), but the rules seem to be changing all the time. I'm classified as a small parts painter and I believe I fall under less stringent guidelines than the auto body painters. As far as the paint itself goes, DuPont makes a low VOC Imron, but I'm a creature of habit and I'll continue to buy the liquid death as long as I can get it.

Bicycle painters are generally adaptable, though. When every-



Painting in the windows is easier than doing the head tube.

body has to use latex semi-gloss, I'll figure out a way to make it work. We get inspected once a year by the county HazMat division and the Fire Department comes by to look around, also.

RR: What kinds of paints do you paint with? Compare the durability of different styles or brands of paints. Pearls, solids, metallics.

JB: There are many cheaper alternatives out there that will look good, but may not hold up as well in the long run. I want the best looking, longest lasting paint available; and for me it's Imron, the standard by which all the others have been judged for many years. I'm not saying all the other paints out there are junk (most of the big paint companies have good quality Urethanes that work fine), I'm saying Imron has been the best for me. Durable paint doesn't guarantee a durable paint job, though. So much of it is how the frame is prepped before painting. Still, we use DuPont Imron, the best quality polyurethane enamel around. You can't get it in lots of places, and it's also very expensive, up to \$250 a gallon, for a special red. It's formulated for tough hard use and not much care, so they use it for aircraft, trucks, heavy equipment and bicycles. It only comes in solids or metallics so we use mostly House of Kolor kandies and pearls for the custom colors, but we mix those with Imron for increased durability. I believe the solid colors are the most durable with metallics running in second, but I can't back that up with hard numbers, just observations. Pearls are something that gets added to clear to create a different look. I don't think it affects durability.

RR: It seems to me that solid colors look thicker than metallics. Are they thicker, or is that just an optical illusion?

JB: Metallics usually have a lot more clear mixed in the paint so the solid colors actually do have more..uh, solids in them but painting technique can also determine whether a finish looks thick or thin. But it's the preparation of the frame and skill of the painter that lays down the paint not too thick and not too thin. And there is a fine line between too much and not enough.

RR: Powder coating is more durable. What do you think about it? What are its limitations? Do you get requests for it?

JB: Powder coating is a good, durable paint for many types of metal finishing, including bicycles. I don't offer it because I don't have the equipment. The bikes I've seen come in for repainting that are powder coated have been rather thick looking. That's okay for TIC-welded frames, but not for fine

lugged ones. The details get lost, and you can't see the lugs as well.

One way powder coaters save time and materials is by omitting the primer (powder coating doesn't require it). But the thing is, primer is crucial to corrosion resistance. I've seen powder coated bikes come in with no outward signs of rust, but when the frame was stripped you could see rust crawling around everywhere under the finish. The paint held together well, but a little chip in the paint had left the door open for rust to move freely underneath it.



Rob Roherson preparing a frame.

Wet paint lends itself to custom colors, decals, fine masking, and more intricate work. The gloss is always better with wet paint. I think powder coating is a good reasonable finish for mountain bikes, beater bikes, and general use stuff. I just don't recommend it for really fine lugged frames. Sometimes people call me looking for a finish for \$150 or less, and I steer them to the local powder coater.

RR: On customs, how do you go about matching samples? What kinds of things have people wanted you to match?

JB: Matching samples is an art in itself because auto paints don't always translate well to a pantone chip, piece of cloth or a photograph. I just start mixing paints together to see how close I can get. Paint also dries to a different shade, so I just do the best I can and ask my customer to be flexible. I try to get people to pick a color from the book if they can, but many folks have a tough time deciding what they want (we call this Color Choice Paralysis, or CCP). I understand this because throughout the custom frame process the customer usually has minimal input on the specifics of the building of the frame. The color is the only part he or she has to decide on, and with so many choices available it's easy for CCP to set in. I try to help and let them take as long as they need to pick a color. It's important to make the right decision here because the color of the bike can affect how a person feels about their bike. I've had people ask me to match jerseys, photos, small chips of paint, fingernail polish, cars, even a volcano video.

RR: How common is it for a customer to just not like his paint job, and blow up?

JB: It's never happened. Over the years there have been a handful of times when the color wasn't quite what they were after, and asked if I could give it another go. I always take good care of my customers and it's important to me that nobody

happens all the time. The best painter is usually the guy who's best at fixing mistakes. I was a little anxious when Richard Sachs sent me a frame to paint 14 years ago. He'd never heard of me, but sent me a frame on the recommendation of Baylis. He wanted his usual red paint job, but the red is a special brew that only a few painters know about, and it can be tricky if you're not used to it. I decaled it, trimmed it, and was ready to put clear on it, and when I did, the clear just fish-eyed over every square inch of the bike. There was no way to save it, so I just stripped it and started over. I told Richard the story, and he was amused, but we haven't had any problems since. Another time we painted a Merckx frame, but forgot to add the braze-ons the guy wanted; but didn't forget to bill him for the braze-ons. He was less amused. Those glitches don't happen often. Most mistakes happen when you're hurried. I don't want to talk about it any more.

RR: Which other painters do you think do an especially good job?

JB: Let's see...how many of my friends can I get in here for a plug? Actually, I don't get around that much, so I only really know what I've seen at trade shows, or in chance meetings. Most of the good painters are the ones who've been at it a while, of course. Baylis, Tom Kellogg, Bryan Meyers at Fresh Frame, Alan Cline from Co-Motion, Peter Weigle, and the guy who paints Glen Erickson's frames does nice work, too. Jim Allen has been around since the stone age; and Cyclart has been doing cool stuff for many years. If I left anybody out, sorry—your payment didn't arrive in time.

RR: Now that so many expensive bikes don't require paint, how is that affecting your business? What were your peak years for bike painting, how many did you paint, and with how big of a crew, and what's it like now?

JB: I haven't had any problems finding bikes to paint; there's plenty to go around. The only bikes that don't need paint are titanium. Most carbon fiber frames need some sort of cosmetic assistance. Many people like the utilitarian aspect of Ti frames; they can ride 'em hard and put 'em away wet. But after a year or two of the dull grey look, people bring them in and say "make it candy apple red!" Colors convey emotion. People will always want to paint their bikes because it's eye candy and can be interesting and a personal statement. My best year was 1999. We painted 385 frames with four people including myself. We had three people last year and painted 60 fewer frames. These may seem like small numbers to some people, but every frame is different and there is no way to crank out one-offs on a production line. I'm trying to streamline a few things to become more efficient but there are some things that will never get faster unless I start cutting corners, and I refuse to do that. It's what sets us apart from the less expensive painters.

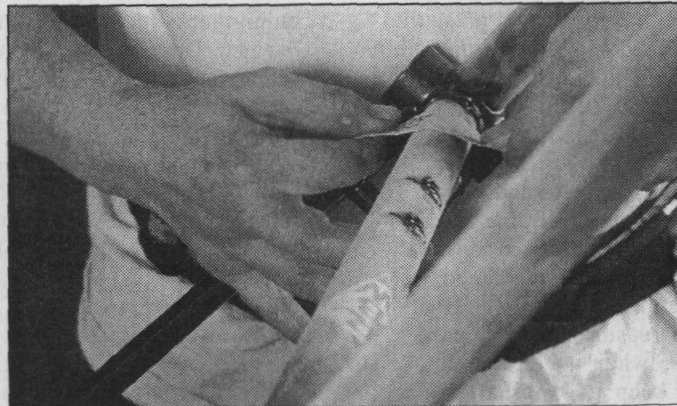
RR: Aside from us and Richard Sachs, who else sends you

bikes to paint, regularly?

JB: Mostly individuals who want something they can't get from the factory or bike shop. A few bike shops around the country send me repaints on a semi-regular basis; Turin bike shop in Illinois is probably the most consistent for me right now. It seems that if you get a service manager who knows his stuff and sticks around the same shop for a long time, he or she can bring more business in. I can't completely count on bike shops for business because of the transient nature of bike shop personnel, so I accept work from anybody who calls me. I don't have a website. I also paint for a few small hole-in-the-wall framebuilders who appreciate what a decent painter can do for the appearance of their frames.

RR: How much of your work is restoration of old classics, and how much is new bikes?

JB: Half of my business is new bikes thanks to Rivendell; the other half is everything else. I get a few classics in and they are fun to do but I don't restore them to look exactly like they did before. Sure, I'll paint it the same color with original decals, but they look cleaner and glossier than they did new. Some enthusiasts call it over restoration, but I've seen plenty of original work with orange peel clear, thumbprints and crooked decals. I don't do that.



Ralph Lowe sands a clear coat. One tedious step in an 8 1/2-hour paint job.

RR: What do you see as the future of expensive, painted bikes? Or, another way to put it—how nervous are you about the future—in two, five, and ten years, for instance?

JB: I think there will always be a market for a high end custom painter like me who only paints 300-400 frames a year. A good reputation will always get you work, but I've never been more uncertain of my future in this business than I am now. The cost of doing business in California is frightening for a small business owner. Rents, energy, materials, fees and taxes are all climbing faster than I am able to keep up with. People who work with their hands are slowly being shoved into the poorhouse and it's too bad because the world needs art and craft and beautiful handmade objects. Without it, all we will create is a blizzard of worthless paper and neurotic self loathing human beings. I got into painting because I love to ride bicycles and work with color and my hands. The years have blown by quickly and I now have a wife and two children to support. If I had a crystal ball back then and could've seen the difficulties with running a small business today, I would have chosen a different path. I'm too old to get retrained now and nobody would hire me anyway, so I will continue to try to make ends meet.

RR: Do ever get to relax?

JB: I am most relaxed when everybody leaves the shop, the phone stops ringing and I am by myself detailing and coloring bicycle frames. I love it and that is what I know how to do best. That's what keeps me going. **END**

How We Paint Bikes

by Joe Bell

First we look the frame over for any obvious problems (dents, rust, pin holes, bulges, alignment, etc.) This gives us the opportunity to check out the builder's work and critique the workmanship. We call this "bus driving." We then put toothpicks in the breathing holes, bolts in the water bottle bosses and plugs in the bottom bracket and head tube so that sand will not get inside the tubes during the blasting process.

Next we put the frame into the blasting cabinet and sandblast the frame clean to insure a good bond between primer and metal. We use a special pressure-pot cabinet because it is designed to yield superior results with half the air pressure that would be needed with a siphon feed cabinet. Normal air pressure is 35-45 psi as opposed to 75-90psi. This is much better for the frame and doesn't make the air compressor work as hard.

Our choice of blasting media is 60 grit garnet sand because we like the fine "tooth" that it etches on the frame to promote paint adhesion. It is lavender in color. Coarser grits and higher blasting pressures are the way metal is cleaned for most industrial finishes, but is not appropriate for relatively thin walled bicycle tubing. Another reason we prefer garnet as opposed to other media is because when it hits the metal, it tends to break down rather than keep its original shape. This insures that the media does not imbed itself in the metal, causing stress that could lead to a potential failure down the road. A popular blasting media known as aluminum oxide has been known to do this to lightweight steel. It costs about the same as garnet (\$30.00 / 90 lb. bag) but the garnet is more desirable because it's more gentle.

After the toothpicks, bolts and plugs are removed and excess dust is blown off, we bring the frame into the spray booth for the first coats of epoxy chromate primer. The frame is then force dried in a small room with a heater at approximately 150 degrees F. for one hour.

Then we look for minor imperfections and touch them up with spot putty (bondo). When the putty dries, we sand it, smooth it, and apply primer. When this is dry the whole frame is carefully sanded smooth with 320 grit dry sandpaper. It is now ready for top coating. The frame is then blown off with air and sprayed with a special radioactive static eliminator nozzle to greatly reduce dust nibs caused by small airborne debris. If the frame is a Rivendell, then the head tube is sprayed with DuPont Imron Polyurethane enamel #4296 Cream in three coats, with a flash time of 10-15 minutes between each coat. After sitting overnight or 1 hour in the oven the head tube is now carefully masked using only the finest quality 3M automotive masking tape. It's expensive tape, but well worth it as it leaves no adhesive residue and comes off easily when it's time to pull off. Just try spraying and baking urethane over Home Depot tape and then removing it and you'll see what I'm talking about. The tape

is then delicately cut with a virgin #11 x-acto blade right in the corner of the tube and the lug. A special tool is used to make sure the tape is laying down properly. This process separates the men from the boys in bike painting. The cream overspray that was not masked is re-scuffed with 320 grit and blown off once again with air and then the ray gun. We're now ready to mix paint!

After making sure the frame is clean, we make sure the spray booth is relatively sanitary and then suit up and don the face mask that will supply clean air that is piped in from a remote pump that is feeding air at the rate of 15psi. This is necessary because DuPont Imron fumes are toxic. The can of paint is selected, opened, stirred thoroughly and mixed in a ratio of 6 parts paint to 1 part high solids activator and 1 part reducer with a smidgen of paint additive thrown in for insurance against contamination. The activator is the good stuff that makes the paint kick off. It has lots of wonderful ingredients like aliphatic polyisocyanates, ester solvents and xylene. Wonderful brew, indeed. They have to make the container for it extra large just so they can fit the warning label on it. I get the bro' deal on this stuff and it still costs me 300 bucks a gallon. But I'm digressing here.

Three topcoats are skillfully applied with a 10-20 minute flash time between coats, depending on temperature. After sitting overnight, the masking tape is carefully removed and the transition area between the main color and the cream is gently scraped with the x-acto blade to remove any excess tape or paint build-up. Decals are now applied and the first coat of cream is painted in the cutout windows around the frame. About twenty minutes in the oven to cure the decal adhesive and make sure cutouts are dry and we're ready for clear coats. One good solid un-reduced coat over the entire frame and fork with several coats over the decals and it's off to the oven for an hour at 150-160 degrees F.

Time for the fun part. By this time, even with all the babysitting the frame has been through, there's always some dust nibs in the paint. So we break out the 320 grit dry paper and sand the clear smooth. Don't fall asleep at the sandpaper and go through the clear to the color because you've really blanked it up when that happens.

Now we have all these 320 grit scratches in the clear coat. We want to get as good a gloss as we can, so we're going to make those scratches a lot finer by wet sanding with 1000 grit sandpaper. I might add here that we've already gone way beyond where production bike painters have already finished, cleaned the gun, shipped the frame and are well into that second 12 pack of Old Milwaukee. Only the best custom painters are left in the room now.

Okay; now we wipe down the frame and get it really clean with no sanding backwash left. The second coat of paint is applied in the cutouts. This is necessary so that you can't see

through the cutout and see the color of the frame underneath. It really does count; just look at some of the Italian imports (the ones that still have lugs and cutouts). It looks like they paint the windows with a worn out toothbrush. The lug line of the head tube is gone over with the cream as well as the pinstripe around the top and bottom head lugs. A little more close inspection and fussing over the frame and we're ready to go back into the booth for the final time. More wiping down, blowing air, ray gun action, a little prayer to the paint god and we lay down three coats of clear Imron, baby! A little more reducer in each successive coat for increased flowout and we are now running the ragged edge between liquid glass and run city. Let it sit for awhile to flash off and try not to trip while carrying it in to the baking room.

I usually like to let it sit overnight and cure slowly before giving it an hour of oven time the next day. Now it's time to look it over and see if any errant dragonflies have landed on the top tube and stumbled along in a fog leaving their tracks

in a crooked path before being overcome by cyanate fumes and becoming permanently encased in the ever hardening clear coat.

If all looks good, we pull the tape is pulled off the shift bosses and from inside the head tube and a clear vinyl chain-slap protector is laid down on the right chain stay so that it disappears— a little extra protection where it's needed. We also write the date it was finished on the steering column for future reference. All my records of paint jobs are categorized by date of completion.

Now it's time to put a little FrameSaver or Boeshield inside the tubes, Drill holes in the head tube and screw that way cool Rivendell head badge on. Ship it!!

Well, there you have it. It's not easy or fast, but it's nice to do something for a living that people like to look at, can appreciate for many years, makes them want to ride their bike, and with a little luck will lead to many happy memories.

Updates

Hérons are on hold. The cost of making them has increased to the point where it's not longer possible to sell them for less than \$1,000, and even though they're worth \$1,000, such a price increase would change the whole Heron program. They'd no longer be the "blue collar workhorses" that we've billed them as in the past. Heron's owner, Ted Durant, made the announcement recently, but wants to keep the door open for the future. There was talk on the internet that we "killed off Herons," but that's not the deal, sorry!

We had planned an Atlantis price increase by this time, but the Yen is falling, and so it looks like we'll be able to maintain the current pricing (\$950) for at least several months.

We are also looking into an Atlantis-grade road frame. This is something we've been thinking about for a year or more, but since we had Herons, there was no immediate need; and it would have been hard to beat a Heron, at that price, anyway. But now with Herons on the block, we're moving ahead with a replacement frame. It won't be identical to a Heron road, probably something between a Heron road and touring, but with sidepulls, for sure. Like the Atlantis, it will be made by Toyo. We have the lugs and all the hardware. The earliest it'll be here is Fall, 2001.

It will likely be the Romulus. We like Libertas, also, but it's been used before, about 25 years ago in Belgium. The name is up for grabs in the U.S. and maybe worldwide, too, since it seems to have been abandoned. We don't want people yelling at us for using an old name, but heck, it means liberty in Latin, and it's right there in the dictionary, and it's not as though we'd be trying to capitalize on an old classic name, since it's about as unknown as bike names get. Anyway, we'll go one way or another, and will keep you update here and on el webbo.

Late this Spring we'll have a Touring catalogue, which will include more racks, bags, bottle cages, tires, rims, wheels, saddles, stems, bars, and clothing that we've found particularly good for touring and tourists.

We're trying to work up a Baggins saddlebag, in the same khaki color as the others. And after that, some smaller, front panniers, and then a replacement for the old Acme saddlebag, that tiny one made of tin cloth.

The new frame catalogue will be out within 3 weeks. We'll send it to every current member. It will have color pictures, maybe, but by the time you read this we should have good color pics up on the website: www.rivendellbicycles.com

We're getting a new handlebar from Nitto. It's a drop bar, it should be here in June, and it'll be good. No better than the Dream Bar, but a little different, and variety is good. You'll see it in the catalogue, due by, hooboy, how does May sound?

Pendleton, the Oregon wool shirt people, are making almost everything either overseas or at least in Mexico. There are a few styles that still have the made in U.S.A. label, but the direction is clear. Again, no biggie, but if you want a U.S.-made Pendleton, you'd best read the label and buy it soon.

Joe here is investigating-thinking about online movies of this and that, and it's hard to say whether it will happen in the next two months, but I bet by July it will. It's something to shoot for, anyway. We could show shellacking, twining, strapping on a Carradice, maybe even Curt or Joe building a frame. It might frustrate those who don't have the software to view it, though. Anyway, we're looking into it.

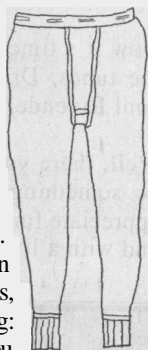
Nearly Spring Flyer

A List of Goods

Fax orders to (925) 933-7305. Phone (925) 933-7304. PLEASE use part numbers. Thanks!

Woolies!

Always the most popular item in our catalogue except for pine tar soap. Soft, furry, light enough to not make you sweat, and cozy enough to keep you from shivering. Sleeveless, short-sleeved, and long-sleeved, PLUS bottoms now, too. If you live by yourself and are without job or mate, you can start off clean on Monday and wear them several days straight. For cycling, they're perfect under anything else you're wearing, or by themselves. Especially the tops. Wash in the machine, warm is fine. Hang in the bathroom overnight to dry. You can get at least 5 wearings out of them between washings. The tops sizes are true, reasonably generous, but if you want a loose fit, buy UP. Bottoms sizing: Bearing in mind that they're underwear and you shouldn't walk around in public in them alone, the sizing isn't all that critical. The XLs will fit waists to 44, about, The L will go up to about 38, the M, 35, the smalls, about 28 to 32. If you want nice loose wooly pajamas, huy up a size and use a safety pin to take in the waist.



Sleeveless—\$17

S: 21-113 M: 21-114 L:21-115 XL:21-116

Short Sleeve—\$24

S: 21-117 M: 21-118 L:21-119 XL:21-120

Long Sleeve—\$28

S: 21-123 M: 21-124 L:21-125 XL:21-126

Bottoms—\$24

S: 22-067 M: 22-068 L:22-069 XL:22-070

Pine Tar soap—\$4

This isn't the purse-sized little cutie you see sold in most natural food stores; this one's the bath sized, a full 4.25 ounces. Brown, pungent as the piney woods, cuts through all kinds of stuff and rinses clean. The best deodorant around is an armpit full of foamy pine tar soap. First wash and rinse, then wash and don't rinse.

25-001

A Book of Nonsense—\$14

Edward Lear's book of limericks, the alphabet, short stories, and a botany lesson. Originally published in 1848, and a work of genius, humor, and nonsense. This is about as far from modern, sophisticated humor as it gets, and for that reason alone, it feels good to read. It is a terrible sign of the times that the 150 or so copies of this we sell each year represent about 40 percent of the U.S. total. Finely hardbound in cloth, with gold letters on the cover, and a sewn-in bookmark.

23-004

Eldi No. 61 Pedal Wrench—\$15

Listen up, seriously: Tools like this are just not made anymore. There's an old-world metal quality to this one, from texture to shine, that you just don't see anymore. It's the best pedal wrench we've used, with hardened, chrome-vanadium jaws and enough leverage for the most recalcitrant pedals. Tip: Grip it in the middle to install pedals, because if you crank them on using the full length, the person who removes them will have a bear of a time—unless they've got the same wrench.

We predict that this wrench will go out of production within the year. It happened to the Eldi tyre levers, you know

19-051

Cyco-Active Map case—\$12

This is the best map case we've used. It Velcros onto your handlebars and rests on the stem, and opens and closes with yet more Velcro (but we still like it). Thick clear, soft vinyl protects the map and doesn't crack or get blurry. Fits a standard sheet of paper folded in half (to 5.5 x 8.5, that is). Made in Seattle.

20-058

Smartwool Socks—\$9

White, lowish cut cycling socks, about 65 percent wool, with some nylon in there at the heels and toes, and some around the instep, and a little up there in the cuff, as well. As cycling socks go, these are the best we've used. They do not wear out, and you can use them for non-cycling, too.

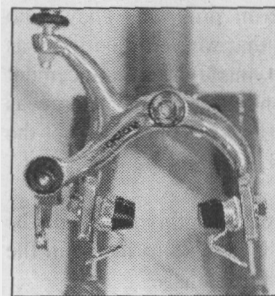
M: 21-082

L: 21-081

XL: 21-083

SunTour Cyclone Sidepulls—\$45

If these were introduced today, they'd cost \$150. They were made in the late 1980s, when SunTour's survival strategy (in part) was to go head-to-head against Shimano's bread-and-butter Shimano 600 group, and Cyclone was the group they developed. Cold-forged calipers, stiff and solid, excellent finish, every thoughtful detail you could ever want in a single-pivot sidepull. We've sold these for 6 years and are starting to run low on them. Not THAT low, but it's doubtful that we'll have them next year. Forty-five dollars a set is peanuts, and the brakes are fantastic. Allen fittings, for most modern bikes; or Nuted, for older bikes. Short reach (to 50mm) only. One bikesworth of calipers.



Allen: 15-026 Nuted: 15-027

700C Touring Tubes—\$4

These fit tires from about 700x28 to 700x45, and are perfect for touring with 700x32s and 35s. You can use the skinnier tubes also, but starting out a little fatter means the tube stays a little thicker as it expands to fill the space. It might help.

10-001

Avocet Toe Straps—\$7

Nice thick blue leather with a perfect buckle. These were made years ago, there is no continuing supply of them, and we might easily run out in a couple of months. These are excellent quality, and when they're gone, we'll replace them with something not as good, for more money.

14-040

Dia-Compe Cantilever Special Road Brake Levers—\$63

This is the model 287, which was designed to help cantilever brakes work great with normal road levers. It pulls more cable than most. Generally, we are skeptical of its advantages when used with the can-

tilevers that we sell, but there are probably some models out there that really do benefit from it. But all that aside, it's a fine quality brake lever that provides good braking from the tops (better than most), and fits big fat hands better than any other we've seen. **15-066**

Priest Bars—\$18

The best upright, Wicked Witch of the West-style bar we've ridden, and the key to turning a spare bike that nobody rides anymore into a super comfortable bike that everybody grabs for first. The clamp diameter is 25.4mm, so if you use it with any of our Nitto stems, you'll need a shim, too (**Shim: #16-095, \$6**) (**Priest bars:#16-056, \$6**).

Cork Grips—\$15

Brand-name synthetic rubber grips cost almost this much, but do absolutely nothing for the cork harvesters of the world. These add a measure of naturalness to your bike, and offer a comfortable, grippy grip that you'll like for sure. Glue them on with 3M Spray Adhesive, available at any hardware store, or with Super Glue Gel. Test it, make sure the glue has set. Permatex works great, too. **16-103**

Rear Hub Q/R Skewer44

Japanese made, so you know it works perfectly every time. Either SunTour, Shimano, or Specialized brand, but they're all basically the same, and at \$4 each, we refuse to email you a digital photo of it before you buy. Fits rear hubs with overlocknuts of 130mm to 135mm. If you have an aluminum frame that's 135mm and it has super chunky dropouts, this probably won't work for it. But it fits all normal frames. **18-041**

The World's Best By Far Refrigerator Magnets—\$8

Cloisonne-style enameled disks with either the Rivendell Bicycle Works RBW logo, or the BB Baggins Bags logo. About 1 3/4-inches across, round, colorful, and quite powerful, thanks to the rare earth magnet we bought separately and glued to the back. Rare earth magnets cost a lot and last indefinitely. This is a magnet you'll have for the rest of your life. Even after you die, it's so nice looking and shockingly strong, that nobody will ever throw it out.

Baggins magnet: 24-087

RBW magnet: 24-062

SunTour XC9000 32-hole hub—\$20

Cold-forged body, angled flanges to reduce stress on the spoke head, fine polish, sealed AND shielded bearings of the best quality. What more do you want? These are a small fraction of the cost of any boutique hub, and they're every bit as good. The bearings are easily removed with a cheap tool that we don't sell yet, but start thinking about that in about 10 thousand dusty miles. **18-052**

Zefal Safari 111 Rear Rack—\$40

The best rack bargain out there. French made, unwelded aluminum, a great design, rigid as can be, solid and strong, and it's also the most practical rack we know of, by virtue of its integral (yet replaceable) rubber tension strap, which can hold down a 10-inch stack of books with total security. It mounts easily, the instructions are good, and at \$40, it is cheap enough to buy without a whole lot of thought. We love this rack, and use it in every possible way. **20-061**

ALE Bottle Cage—\$9

Chromed steel cage, about 100g, simple and nice looking, and best of all, it won't blacken your bottles like aluminum always does. Put this on your bike, and it'll still be there in 8 years, which works out to just

more than a buck per year. It's one of the best bargains around. **29-001**

Quick-Glo Rust Remover46

Non-toxic gritty grey paste that when combined with a scotchbrite pad and some elbow grease, gets rid of rust like it's nobody's beeswax. It also gets shines up pots and pans, copper, brass, silver, and if you make popcorn on the stovetop and leave it in the pot too long, Quick-Glo will let you clean up the pan to newlike condition in about one-tenth the time it'll take with regular soapy-type soap. **31-015**

Phil Tenacious Oil—\$6

Ideal for nothing, good for everything. No, actually it is idea for some things, like brake pinch bolts, which you don't want to remove to grease, and freewheel bodies, and chainring bolts, and pedals, if you just want to add somejuice to them without a complete overhaul with grease. If you're a bike mechanic, have a tube around, and you'll find plenty of places to squirt it. **31-013**

SunTour Lite Front Derailleur—\$5

This one missed making it into our Catalogue No. 6, but it'll be in No. 7 for \$1 0. It's the best deal out there in a front derailleur. It shifts great, looks fine (we put it on Rivendells, no problem), and isn't clunk or cheap-looking in any way. So why is it so cheap? Because we bought googolplex of them several years ago for \$0.75, and so we can afford to sell them for \$7 (or \$10, later). It is designed for up to a 16t difference in chainrings, but we've used it with as many as 20, and no problem at all. The clamp is sized for a 31.8mm seat tube, but it comes with a neat plastic shim that downsizes it perfectly to a normal 28.6mm one, so you can put it on your steel bike. Despite all this, most people will still see the low price and assume something's wrong with it. There's nothing wrong with it!. **17-034**

The Bicycle Wheel—\$25

Jobst Brandt's book on the bicycle wheel. How one works, how to build one so it'll last, theory, and appreciation. The wheel is the symbol of our sport, and this is the best book we've seen on the subject. If you're working on your bike library and don't this, get it. If you've been thinking about building your own wheels, there's no better book to guide you. A modern classic, it should never go out of print. **23-008**

All Sail Set—\$13

An award-winning book written in the '30s, mostly for young boys, about the Flying Cloud's maiden voyage from New York to San Francisco. It's entertaining, even gripping most of the time, and you'll pick up some non-dirty sailor phraseology as you work your way through it. If you're not familiar with the Flying Cloud and the significance of its first trip, then it's even more important. Although, if you read this and want to know more details, you should get Flying Cloud: The True Story of America's Most Famous Clipper Ship and the Woman Who Guided Her, by David Shaw. ISBN#0-688-16793-4. It costs about twice as much, but it's a longer book, We don't sell it.

All Sail Set: 23-012

Bondhus 4mm allen with Handle46

This is worth the price in avoided aggravation when you try to mount just one water bottle on your bike (assuming your water bottle bolts have 4mm socket heads). Also good for racks and fenders. Sometimes those L-shaped allens are just no good. **19-011**

Velox Rim Tape—\$3 per roll

The best rim tape ever. No slip-o, no tear-o, no crack-o, no shift-o. One wheelsworth, so you might need two. **18-054**

Shimano Deore DX Front Hub, 36H—\$15

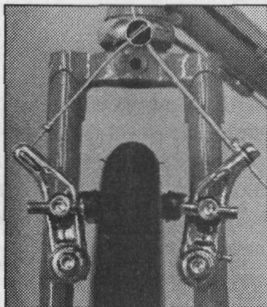
A Toyota Corolla quality front hub for less than dinner for two at any place you'd be likely to take a first date. With a quick-release skewer that's worth at least \$5 all by itself. Silver. **18-047**

Brooks Proofide—\$6

A thin layer of Proofide, warmed slightly with a hair drier and rubbed in with your bare fingertips or a square of sheepskin with the hair still on it, will protect your leather saddle from sweat and surprise downpours. If you know it's going to pour, use a saddle bonnet, which we're currently out of, or a plastic bag duct-taped over the saddle. But even so, you should have some Proofide laying around. **11-005**

1994 Bridgestone Catalogue—\$5

Learn how steel, aluminum, and titanium are made; and how fine bike parts were made before investment casting; and how stamped lugs are made, and how Reynolds puts the butts in tubing; read about VAR, the toolmakers; and a lug-crafting story by Richard Sachs; and a Keith Mills story about Nokona, the last All-American baseball glove maker; and a Maynard story about how green you are, really, when you ride your bike. Feel the archival-quality 100 percent post-consumer waste, acid-free paper, undoubtedly the most expensive paper any bicycle company catalogue has ever been printed on. All for \$5! **23-010**

**Shimano CT-91 Cantilevers—\$28**

If you're in need of cantilevers now or you think you will be in the future, you're nuts not to buy them. The only marginal things about them are the brake pads, which seem kind of woody and not all that grippy. But the feel and action on the brakes themselves is as good as any, and the finish is just fine. At \$28 for a whole bikesworth, they're a tremendous bargain. **15-074**

Sugino XD Crank,—\$100

The crank we rave about on page 12. More than a centimeter narrower (lower *Q* Factor) than your typical mountain triple, and narrower even than a Campy Racing triple (which, at 165mm, isn't all that narrow). 46t outer, 36t middle, and 26 or 24t inner, no choice.

170mm: 12-167 175mm: 12-190

Shimano BB for Sugino crank—\$40

The UN-72 model, aka Deore XT, In a 107, it's perfect for road frames or the Atlantis. The 110mm fits most mtn frames. The crank and this BB come to just \$140, which, these days, is pretty cheap for a good crank and bb. **107mm: 12-191 110mm: 12-192**

BB install-takeout Tool for Shimano BB for Sugino crank—\$10

If you want to do the work yourself, you'll need this tool and a big crescent wrench. It's easy. **19-055**

Jandd Expedition Rear Rack—\$58

The biggest, stoutest aluminum rear rack in the world, suitable for loads of a size you have no business carrying. Made in California, welded strong and reinforced all over, this is the rack you get if you don't care about rack weight (and on a loaded bike, you shouldn't) and want the absolute most strength for your dollar. **20-065**

Jandd Extreme Front Rack—\$58

The most useful and adaptable front rack we've seen. You can strap a load on top of it, because there's a platform. Carry bags high on the side for ground clearance when you're touring off-road; or strap them onto the lower rails, if you think you can tell a difference in where the weight is carried, and don't need the ground clearance (for road riding). Quite versatile, you can adapt it to your needs, easily. Like the Expedition, it is designed and built to survive a few wars and countless expeditions. The best-designed front rack we've used. **20-067**

Hey, It's Winter! Where the heck are your FENDERS?—\$40

These now go by SKS fenders, since last year or so when SKS bought out ESGE. All that's changed is better packaging. These are favorites around here and the world. They're strong and gummy, the gummy-ness being important for crash-n-crack resistance. You can ream holes in them for zip-tie mounting, easily. They're silver with thin black strips, so they make your bike look expensive, but not in such a way as would attract thieves (who don't steal fendered bikes). Made in Germany of recycled plastic, with stainless steel hardware. Our web site has tips on fender-mounting, for those who've never done it. Four models:

P-50, for 26-inch wheels up to 26 x 1.9—#27-002

P-65, for 26-inch wheels up to 26 x 2.35—#27-003

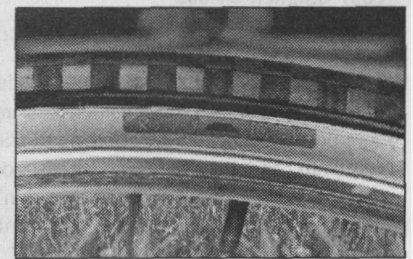
P-35, for 700C wheels up to 700x35427-004

P-45, for 700C wheels up to 700X45—#27-005

Roll-y Pol-ys are back in stock—\$40 (kevlar), \$30 (wire)

This is our first choice in an all-around sporty-light road tire. It would be strange if that were not so, since we specified every detail of it. It is really round, so it comers well and feels a lot like a tubular. At 27mm wide and 686.5mm in diameter, it's larger than most of the tires sold as fast road clinchers, so it cushions more and protects the wheels better. But the kevlar bead model weighs just 250g, so it's still light and zippy. The wire one is just a hair over 300g, which is plenty light, still.

The casing is super strong, reinforced with kevlar from bead to bead, and is probably the most expensive casing used in a clincher tire today. Certainly, it adds about \$10 to the price of each tire, so you know it's good. The black tread and tan walls look proper, and



the tan walls are still the best for signalling a tire-going-flat. Even with these, it's possible. The checkerboard tread looks kind of neat, but there's no magic in it. The rubber is Panaracer's best, developed for long wear and super grip. The tread is directionless, so you can't screw up the mounting; and the logo is small, cute, and unobtrusive, so the tires don't become yet another graphic element, except in a good, generic way. This is the largest tire that will still safely fit on most carbon fiber or aluminum forks. We've received many letters praising this tire. You'll like it. **Kevlar bead: 10-034 Wire bead: 10-035**



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03/01



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_____ No Backorders, just send me what's in stock.

Backordered items are charged \$2 freight per line item, up to a maximum of \$6. No backorders on items less than \$10. No int'l backorders.

If no line is checked, we'll backorder it for you.

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UPS 3-Day Select\$12 2-Day Air \$20

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P.O. Boxes, AL & HI: \$7 Priority Mail, restrictions apply. Call for Int'l rates on shipping frames, wheels, bicycles.

Table with columns: ITEM NO., DESCRIPTION, QTY., SIZE, EACH, TOTAL. The table contains 10 empty rows for item entry.

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I'D LIKE TO JOIN OR EXTEND MY MEMBERSHIP FOR ONE YEAR. (\$15)

I'D LIKE TO JOIN OR EXTEND MY MEMBERSHIP FOR TWO YEARS. (\$25)

SIGN ME UP OR EXTEND ME FOR THREE YEARS. (\$35)

SIGN ME UP OR EXTEND ME FOR 99 YEARS. (\$200)

FOREIGN SUBSCRIPTIONS ARE \$22 PER YEAR.

First Subtotal: _____

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Shipping (see left): _____

Enter Membership cost (\$15, \$22, \$25, \$35, \$200)

Take \$10 discount only if you renew or signup now:

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