



## THE LATE EIGHT

**W**riter's block and little twinges of what I fear is keyboard-induced carpal tunnel is what I've got, and I wonder if I'd have either if I was typing this on a typewriter rather than a Mac. Probably not the carpal tunnel, because I wouldn't be typing as much or as fast, and I think it's caused more by repetition than by magnitude. I told myself a month ago that I should start clicking the mouse left handed, but that's like vowing to do lower-back-strengthening exercises after my yearly back-twang.

If I didn't write on a computer I probably not the writers block, either. Monitors, like TV sets, have a dumbing effect on me, and don't take this the wrong way, but I hope I'm not the only one. (I don't wish it on you—I wish it on people you don't like.) When I turn on the computer the screen takes over the part of my brain that used to help me gather and organize my thoughts and come up with new ones. It has gotten to the point where the act of typing and seeing the words appear on the screen seems to help the act of thinking, and that's a pitiful thing, not a good one. One of the recurring themes in the Reader and things before it has been that it is not good to become dependent on technology for accomplishing fundamentally simple tasks, because use it or lose it kicks in hard, and sometime you'll need to use it again. Shifting gears while pedaling and staying upright is one of them, writing a decent paragraph is another. From now on, if I can just get through this column, I'm going back to the way I used to write before I had a computer at home. I'll think about what I want to say, I'll write the first several drafts out by hand, and then I'll type it on the computer.

On another note, someone told me they heard someone else say "Rivendell is raking it in," and that makes me want to know what *it* is. We had a crummy summer, sales wise, but after we got the catalogue out in late September, we did very well for about 3 months, ending the year with \$500 thousand in sales but not a dime in the bank, and it's not in my bank, either. That means I'm doing a crummy job running the business, and it's why I hired Peter.

Anyway, I want to thank you for allowing **us** to exist. We've put in more than 10 thousand orders in the past **two** years, and had only one uncollectible check. We've made every flub-up a mail order company can make, but we've improved 200 percent in the past three months. **Our** goal this year is to become less dependent on your patience, to keep paying our bills on time, and to end the year with \$10,000 in the bank. And to finally get those touring racks from Nitto. —Grant

### Not Inside the RR-8:

- LOTS OF LETTERS TO THE EDITOR PRAISING US
- BIKES OF THE HOLLYWOOD STARS
- TRAINING TIPS BY PROS, WEALTHY SINGLES AND OTHERS WHO DON'T LIVE YOUR LIFE
- CYBERCYCLIST'S GUIDE TO WEB SITES

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**THE RIVENDELL READER**

1561-B Third Avenue  
Walnut Creek, CA 94596  
Phone: (510) 933-7304  
Fax: (510) 933-7305  
The web thing:  
<http://www.veloworks.com/rivendell/>

*New EMail Addresses*

For Grant personal:  
RivGP@aol.com

For orders: RivOrder@aol.com

For general/technical questions:  
RivBici@aol.com

For Spencer: RivSC@aol.com

For Peter: RivKell@aol.com

For Gary/follow-up on frame orders:  
Beeswaxman@aol.com

*Editor:*

Grant Petersen

*Staff:*

Spencer Chan  
Mary Anderson  
Gary Boulanger  
Peter Kelley

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BY GABE KONRAD

# BRITISH 'CROSS, THE EARLY YEARS

TURN OF THE CENTURY "DEAD SEASONS" WOULD FIND A YOUNG FRENCH ARMY PRIVATE, AND LATER SECRETARY-GENERAL OF THE FRENCH CYCLING UNION, CYCLING THROUGH THE SNOW-COVERED FORESTS IN THE OUTSKIRTS OF PARIS ALONGSIDE HIS HORSE-MOUNTED GENERAL, SHARING THEIR LOVE OF THE OUTDOORS. DANIEL GOUSSEAU ENJOYED THESE OUTINGS SO MUCH THAT HE INVITED A FEW FRIENDS ALONG AND SOON DOZENS OF CYCLISTS WERE ROLLING ALONG THE TRAILS. IMPROMPTU RACING OCCURRED AMONG THE SPORTING CYCLISTS AND SOON ORGANIZED, THOUGH INFORMAL, EVENTS WERE SCHEDULED. CYCLO-CROSS WAS BORN.

**I**n 1902 Gousseau was given the chance by the national governing union to organize the first French championships, which was won by F. de Baeder. For years this "rough stuff and "mud plugging" remained a French indulgence until its popularity exploded when Octave Lapize attributed his 1910 Tour de France win to the off-season sport. Suddenly every champion wanna-be that could bear a freezing wind was running through the woods, leaping logs with bikes hiked waist high or slung over shoulder. To give a chance to all nationalities of 'crossmen to compete against one another, the first International Criterium, which was won by the Frenchman Gaston Degy, was held in Paris in 1924. Following Gaston to the podium in the following years were many of cycling's greats: Charles Pelissier in 1926, '27 and '28, Sylvere Maes, the handlebar namesake, in 1933, and Robert Oubron who won in 1937, '38, '41 and '42!

In 1950 one of the international events became the official World Championships, and in Paris the 1947 Tour winner, little Jean Robic, was the first to pull on the rainbow jersey. Like the International Criteriums, the World Championships saw many of cycling's brightest stars cross the finish line. But among them, Belgium's Eric de Vlaeminck was definitely king of the 'crossers having, at the tender age of twenty, won in 1966 and then each year from 1968 to 1973.

France, and indeed Belgium, played a large hand in the history of cyclo-cross - but when did the off-road sport reach the shores of England? Many look to the early

1950s when British racers became involved in international events. But the birth of English 'cross was actually three decades earlier. What was to eventually evolve into British cyclo-cross first began in March 1923 as "cyclists versus harriers" races. The cyclists had a definite edge on the downhills and the clear trail and paved sections. The cross-country runners, however, had an easier go of the uphill and were able to leap obstacles without the hinderance of a cumbersome bike to lug around. The cyclists were able to dray first blood when Harry Genders, who raced the road for England in the 1920 Olympiad and was several time national champion, won three of the first four events. But even though the first few rounds went to the bikers, record books up to 1970 show that the harriers more than caught up with 18 wins to the cyclists 17, with one tie.

It wasn't long after the start of the cyclist-harrier races that pure cyclo-cross events sprang up. Several small 'cross scrambles, as they were sometimes called, attracting fields of ten to twenty riders, were run all over England - the term "off-season" had started to become obsolete with dedicated roadies riding straight through the winter months. Even during World War II, when most race activity ground to a halt, hardcore enthusiasts still managed to stage sporadic cross-country time trials. These trial courses, which usually stretched for 25 miles, were *so* brutal that one race had to be shortened to 16 miles and it still took Keith Edwards two hours and ten minutes to win.

In the confusion of post-war Great Britain, race selection remained slight. One of the most popular of the remaining events was the Bagshot Scramble at Bagshot

Heath. Started in 1938 as a club event, it usually ran a field of about forty. But after the war the number of contestants blossomed to around 100. It was run, in the earlier years, as one large lap, rather than the usual multiple laps of a smaller track, and had several prime viewing spots with charming names like like Caesar's Camp and the Lower Star Post. The Bagshot became known as the unofficial national championships. The single lap format was also the mainstay of the more modern Three Peaks race. Three Peaks, held on the last Sunday in September, is traditionally the first big race of the season and is so demanding that only the fittest athletes apply. If the natural obstacles and curves of the land don't get you, the chest-high stone walls with their built-in wooden ladders will! As an interesting side-note, Eric Stone, five time winner of Three Peaks, regularly rode 24 spoke wheels to victory.

By this time cyclo-cross had become a sport in its own right. Not only were roadies using it for off-season conditioning, but some specialists were using road racing and time trials for off-cross-season training. In 1953, England was formally invited to the World Championships in Spain. The National Cyclists Union didn't have the financial reserves to send a team to the race, but a call was put out for racers who were willing to pay their own way. And who should answer but Keith Brock, Keith Edwards, Ken Parrot, John Edney, and Bill McAteer. Five talented, qualified 'crossers who were, none-the-less, soundly beaten by their international competitors. But when this troupe returned to England they were wiser by far, and this knowledge, along with the growing national interest in the sport, helped spawn the British Cyclo-Cross Association in the autumn of 1954.

Race organizers began using the knowledge imparted from their international athletes, and several scrambles were quickly sanctioned by the B.C.C.A. The courses were longer, harder, and loved by spectators. The popularity of the B.C.C.A. exploded, taking an informal governing role over most 'cross club events. They wasted no time in establishing a fund for racers to compete in continental events and organized the first official National Championships on February 13th, 1955 at Welwyn Garden City, Hertfordshire. De Laure Cycle Club's Alan Jackson was the first to take the Nationals, he had also just won an award as London's apprentice plumber of the year.

Within just a couple of years, the B.C.C.A. sanctioned over fifty events and during the 1956/57 season they released their first National Cyclo-Cross Handbook.

In 1960 an agreement was penned between the British Cyclo-Cross Association and the British Cycling Federation that formally appointed the B.C.C.A. as the governing body of the sport in England and Wales. This move enabled the B.C.C.A. to better control all but the smallest 'cross races, and enlarged the pool of talent that they could fish from for future international competitors.

The 1962 National's at Tingley in Yorkshire included a women's classification that, not surprisingly, was won by one of cycling's greatest female riders, Beryl Burton. On the podium after her victory, the Mayor of Morley awarded her the incredibly insulting prize - a blender.

The 1963/64 season brought the start of the Viking Trophy Series. With this five event series, the B.C.C.A. hoped to bring together England's greatest racers. While it was a bit slow taking off, in the coming years they would realize the vision and the Viking battles would be the prime picking grounds for World Championship team members.

In 1967, following a mandate by the Union Cycliste International, the format of the World Championships was changed. The field was now split between professional and amateur racers - a special junior title would be added in 1976.

At this time, John Atkins was one of the dominate British riders. He was winning, or placing in, all the national races, conquering Viking battles one after another, and had taken a very respectable 7th place in the 1969/70 World Championships in Zolder, Belgium. But he had a bit of bad luck during an early '70/71 season race when he fractured his collarbone. When the time came for the Viking opener at Wallsend, Atkins' name was in the program, but no one actually expected the injured athlete to show. Jaws dropped, however, when Atkins rolled to the line and not only jumped off the front to win, but beat Eric Stone, one of Britain's up and coming stars, in the process. Unfortunately, Atkins' injuries would soon sideline him for the remainder of the season. The Viking series continued for eight years until it took the name of the magazine that took over its sponsorship, the International Cycle Sport Trophy. The first two of which were won by the superb Atkins.

Up to now, the number of B.C.C.A. sanctioned events had gradually grown to more than 100, but looking at the lackluster results of their riders in international competition, they knew they had a long road to hoe in grooming top level racers for competition abroad. To aid in this effort, 'cross courses were designed to more closely



mimic the continental raceways, revenues from the increasing television coverage were thrown into the international racing coffers, and a national coach was appointed. Also, a nation-wide school-level program was instituted with the aid of the Government Sports Council. Now children, just barely old enough to be riding bikes, were careening down hard-packed singletrack and trudging through glue-like mud with converted kids bikes and miniature versions of the pro's rigs slung over their shoulders.

The B.C.C.A. certainly did something right - the 1970/71 season handbook showed a 40% increase in the sport from the previous year, over 250 races were listed. Then a great boon came to the sport as the U.C.I. approved England's request to host the 1973 World Championships in South London at the Crystal Palace.

Two weeks prior to the World's at the International Cycle Sport Trophy final, the final selection race for the championships, Eric Stone thought he had an opportunity to topple Atkins' reign. "If I can stay with him for the first couple of miles then I think I have a chance." But when Atkins saw that Stone was serious, he used his incredible strength and agility to leap off the front, not a wince of pain on his poker face, to win the race and take Stone by one minute, four.

The Crystal Palace exhibition grounds were opened when the huge glass dome that was used to house the Great Exhibition of 1854 was moved from its original site in Hyde Park to South London. For years the Football Association cup finals, along with musical and arts presentations were held there and, with the completion of the National Sports Center, British cyclo-cross found a natural course for many national championships. And on Sunday, February 25th, 1973 the Palace was brimming with excitement as the World's host.

Impeccable organization by Ray Richards, once an accomplished 'cross racer himself, resulted in over 12,000 spectators - including a huge Swiss and Belgian contingent. The amateur race included the first American, Eckhart Reiger, to take part in a World Championship. Unfortunately, out of a field of 52, he was the only rider not able to finish.

In the professional class, John Atkins was once again Britain's great hope, and after a slow start the Ti Raleigh rider was able, in the off-road sections, to work his way to the front. But in the paved sections Atkins would fall back, not able to compete with the likes of Eric de Vlaeminck and Peter Frischknecht - strong roadies in their own right.

In the end it was disappointment for Atkins who duplicated his 1971 7th place performance - two minutes, forty seconds down from de Vlaeminck who had just won his 7th World Professional title.

Atkins, happy to be the winner among the Brits, offered some concessions to de Vlaeminck's win, "he's like I am in the Nationals, he knows what it's like to be champion." Eric obviously retained his taste for victory and had the talent to do something about it. As for Atkins' future, he said "I'd stop riding World Championships right now if there were four riders good enough to be in the team, and I wish there were, but I'll go on riding until there are four better - probably another five years." The closest two Britons to Atkins were Keith Mernickle in 10th and Eric Stone in 16th.

By the early 1970s cyclo-cross was as popular as ever. All cycle shops stocked 'cross gear and most frame-builders knew the specifics of 'cross rig construction. The best known continental parts importer of the time, Harrogate's Ron Kitching, offered the No. 10 'cross kit, a T.A./Zeus/Milremo/C.L.B. combination to hang on their Vitus Superlight 971 frameset. It was the same set-up as the "Ron Kit" sponsored riders like Barry Davies, who, in 1974, won 17 races, including the Northern Championship and the scramble considered to be the world's toughest - Three Peaks.

There was a shocker at the 1974 British Nationals. As John Atkins rolled predictably to the finish line, arms raised in victory, junior Jeff Morris sped past, snatching the race by mere inches. Ever cordial, Atkins was pleased for the young Polytechnic Cycle Club rider's win. It seemed the beginning of the end for Atkins, though. While he was still the dominant professional, his wins were becoming fewer, his winning margins narrower. At the '74 World's he could manage only 12th - Atkins would never realize his, and England's, dream of pulling on the rainbow jersey of the world professional cyclo-cross champion.

Britain still retains her love for cyclo-cross, and while the pro World title still eludes her, success has been found in the junior class. Stewart Marshall won the 1986 junior World Championships, in 1992 Roger Hammond did the same. But whatever the stats, the English passion for 'cross will be inspiring Brits to hike their bikes to their shoulders and to go for the glory for many years to come.

END

# HOW TO BUILD A COMPLETE RIVENDELL ROAD BIKE FOR LESS THAN \$2100

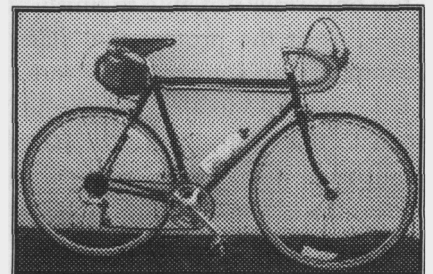
**NOT THAT \$2K IS CHICKENFEED, BUT IT IS 1996 AND THERE ARE PLENTY OF BIKES THAT COST A WHOLE LOT MORE. THE LIST BELOW DOES NOT INCLUDE THE CHEAPEST OF EVERYTHING THAT WE OFFER, AND YOU CAN WHITTLE THIS DOWN ANOTHER \$100 - \$150 OR SO. PRICES ARE WITHIN A DOLLAR OR SO; THIS ISN'T A QUOTE, BUT AN EXERCISE.**

PART	DETAIL	PRICE \$
Headset:	Tange Rollerball	40
Seat Post:	Nitto 1-bolt	33
Saddle:	Brooks B.17	65
Bottom bracket:	Ritchey WCS	40
Crank:	Ritchey triple	190
Pedals:	MKS Sylvan track	45
Toe clip:	Christophe chromed steel	10
Straps:	Christophe cheap leather	5
Brakes:	SunTour Cyclone sidepulls	28
Just For Fun:	Mathausser brake pads	13
Cables:	SunTour	5
Brake lever:	SunTour Superbe, blk hoods	28
Front derailleur:	SunTour Lite	6
Rear derailleur:	SunTour Alpha 5000	35
Shifters:	SunTour Superbe Pro No LAT	35
Stem:	Nitto Aero	18
Handlebar:	Nitto, any non-heat treated model	37
Tape:	Tressostar cloth	7
Wheels:	Rivendell (very nice wheels)	235
Freewheel:	Shimano 6sp*	23
Chain:	Sachs M55	24
Tires:	Any two-Ritchey, Avocet, etc	48
Tubes:	normal	6
Rim tape:	Velox	7
<b>Parts subtotal:</b>	<b>983</b>	
<i>5% off if you purchase them on one invoice: (983 x 0.95)=933.85</i>		
Freight on parts:		5
<b>Parts total with freight:</b>	<b>938.85</b>	
<b>Frame:</b>	<b>One-color</b>	<b>1050</b>
subtotal:	1993.85	
Freight on frame:	35	
now we're up to:	2028.85	

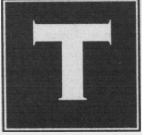
\* Singapore-made Shimano 14 x 28 6-sp freewheels are pretty good and very cheap and index perfectly with the SunTour No LAT shifter in the "UL" mode, as a matter of fact.

This is **not** a quote, it's an exercise. If you live in California, you have to pay tax. If you live near Waterford, you **may** be able to escape the \$35 frame freight and pick it up yourself. If you want to **take** delivery on a fully assembled hike (minus whatever disassembly is required to get it **into a box**), we'll **put** you in contact with a **local** guy who does great work for \$120—in which case you pay him, not us. If you want us to take that assembled and tuned hike and ship it to you in a box, add another \$35.

**END**







he following instructions cover the 11 easy steps to a complete frame. Each step has a corresponding diagram at the right, and the solid line represents the most recent step. The numbers identify important intersections. You'll end up with a stick figure, not a working blueprint, but in the process you'll learn a lot. Besides, you can take your stick figure to a builder to build, and whatever's missing the builder can fill.

You'll need a pencil, eraser, clear ruler (metric ones with grids are best), calculator, compass and protractor (the ones that show both acute and obtuse angles). Keep track of each dimension you calculate, and write it down as you go — you'll refer to these dimensions often during the process.

It's easy to work in a scale of 1:4, in which case a 14cm top tube on the drawing represents a 56cm real one. If you work in 1:4, divide the real life dimension by 4 and draw it in. Measure all dimensions center-to-center — from the centerline of one tube to the centerline of the tube it intersects. In this exercise, the only **two** dimensions you won't control are wheelbase and front-center. These will be determined as a result of the others. If you want to design a frame with a particular wheelbase, you'll have to give up control of something else. This time, just play 'along.

The following chart provides reference points for most normal frames:

	MTN	ROAD
<b>SEAT-TUBE ANGLE</b>	<b>70 TO 75°</b>	<b>72 TO 75°</b>
<b>HEAD-TUBE ANGLE</b>	<b>70 TO 73°</b>	<b>72 TO 75.5'</b>
<b>BB DROP</b>	<b>30 TO 40MM</b>	<b>60 TO 80MM</b>
<b>CHAINSTAY LENGTH</b>	<b>400 TO 440MM</b>	<b>380 TO 450MM</b>

### SOME GENERALITIES

**Seat tube angle.** Steeper seat tube angles shift your weight forward. People with stiff hamstrings tend to like them. Triathletes and others who ride with their hands well forward of the front axle need them. Tourists and long-distance riders usually like a more rearward position, best achieved with a shallow seat tube angle. Short-legged riders usually ride steeper seat tube angles than long-legged riders. Seat tube angle affects your weight distribution, which affects comfort, and to a lesser extent, the way the bike behaves.


**Head tube angle.** The shallower/slacker/more relaxed the head tube, the more the bike resists turning. That's what you'd call a gross generalization, because there are other things that combine with head tube angle to affect the steering. Fork rake is one of them. Fork rake and head tube angle combine to give the bike a certain amount of "trail," a term that has nothing to do with trails. On a road bike with a 73-degree head tube angle, 4.5cm of fork rake usually works okay. On a mountain bike with a 71-degree head tube, 4mm works okay.

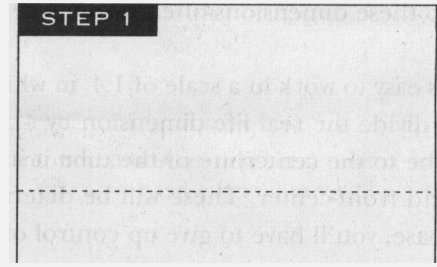
Understanding how geometry works, and how the dimensions work together and influence one another, are aspects of bicycle knowledge few riders have. It will help you appreciate bikes even more, if that's plausible.


I know what some of you are thinking—isn't this a reprint of something Bstone offered a few years ago? Yes it is, but we circulated fewer than **two** hundred of those.

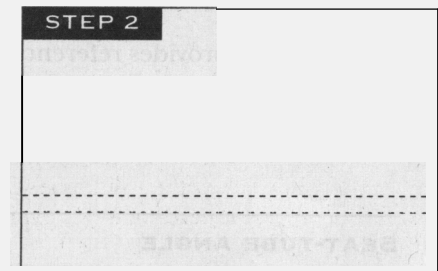
# A FRAME-DESIGN PRIMER


## 11 STEPS TO A STICK-FIGURE FRAME

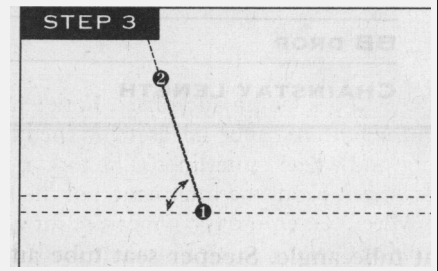
 **STEP 1...**Wheel radius and wheel-center height. Choose the wheel/tire combination you'll ride most of the time. Measure the diameter from end to end, then divide by two to get the radius. (The radius of a normalish 700c wheel will be between 335 and 350mm.) On the graph paper, where the bottom line is the ground, measure the wheel-radius height and draw a light horizontal line across the page. This represents the height of the wheel centers and is a benchmark for other dimensions.




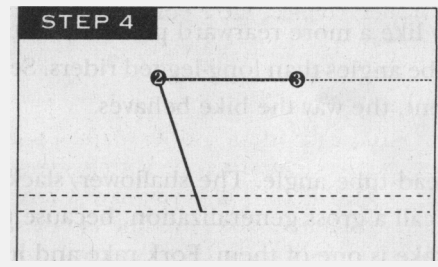
 **STEP 2...**Bottom-bracket height. Choose a bottom-bracket height and subtract this number from the wheel-center height (from step 1). Measure the difference down from the wheel-center line, and draw another horizontal line. This represents the centerline of your bike's bottom bracket, and is called *drop*. Most production road bikes have a drop between 65 and 70mm. Mountain bikes are around 40.




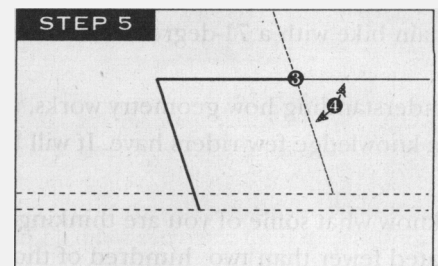
 **STEP 3...**Seat-tube angle. Mark a point just to the left of the center of the paper on the horizontal bottom-bracket line (1). From this point, measure your desired seat-tube angle with a protractor. Mark the angle, then draw a straight line from the bottom-bracket line through this mark to the top of the page. This line should slope up to the left, as it represents the centerline of the seat tube. Somewhere along that line, measure your desired seat-tube length from the bottom-bracket line and mark it (2).



 **STEP 4...**Top-tube length. Draw a line forward (to the right) of the seat-tube mark. Extend this horizontal line to the end of the page. This is the centerline of your top tube. From the intersection of the seat tube (2), measure your chosen top-tube length and mark it (3).



 **STEP 5...**Head-tube angle. Measure from the top-tube centerline. Flip the protractor upside down, with the centerpoint at (4). Draw in your desired head-tube angle (4) and mark it. Then draw a straight line connecting this point to the forward end of your top tube (3) and the wheel centerline (from step 1). This "head-tube-angle line" is crucial for the future of your drawing.



**STEP 6...Head-tube length.** This is determined by fork-crown height, tubing diameter (oversize tubes require longer head tubes), method of construction (lugs tend to lengthen a head tube), and, of course, frame size. A true frame-design blueprint would take these factors into exacting account, but for this exercise, you need only apply an approximate head-tube length, something between 5.5 and 9cm (measured end to end). Determine an appropriate head-tube length, maybe from a frame you already own, and highlight it on the head-tube-angle line (5).

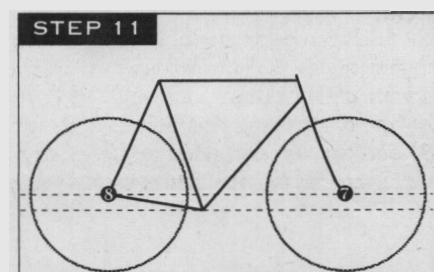
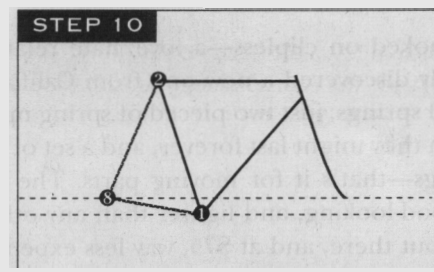
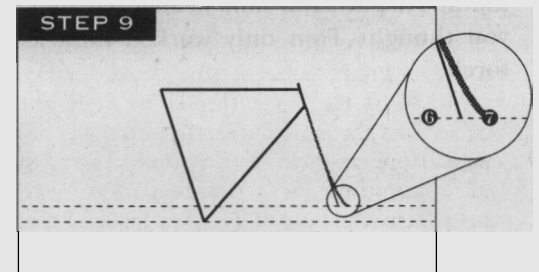
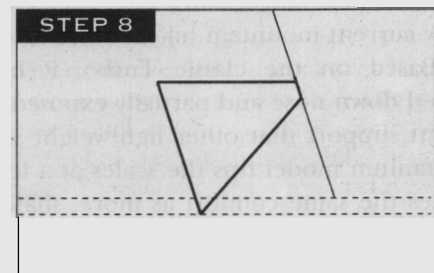
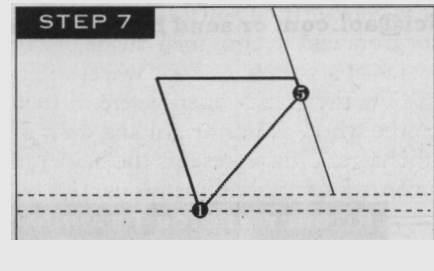
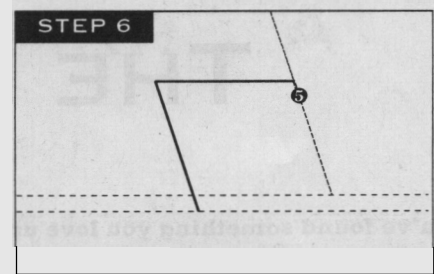
**STEP 7...Add the down tube** by drawing a straight line from the intersection of the seat-tube and bottom-bracket centerlines (1) to the lower end of the head tube (5).

**STEP 8...Headset stack.** The headset is a factor in front-end geometry because it ties the frame to the fork. The lower stack height—the height of the lower part of the headset—is typically 13mm. Measure this distance from the bottom of the head tube, then mark a short line below the head tube. Do the equivalent procedure with the top of the head tube—a typical upper stack height ranges from 22 to 28mm.

**STEP 9...Fork length and offset.** Fork length is the distance between the bottom of the headset and the intersection of the head-tube and wheel centerlines. The fork must be long enough to clear the wheel. From the intersection of the head-tube-angle line and the wheel-center line (6), measure forward and mark the desired offset (“rake”). If it’s a straight-bladed fork, draw a straight line from this mark (7) to the head tube (5). If you’re using curved blades, connect these points with a protractor to get the proper curvature.

**STEP 10...Chainstays and seatstays.** Choose a chainstay length, then draw a line connecting the bottom-bracket and wheel centerlines (from 1 to @). Unless you have a very high BB, as on a trials-oriented mountain bike, this line should slope down to the right. Add the seatstays by drawing a line from this chainstay/wheel-center intersection (8) to the top-tube/seat-tube intersection (2).

**STEP 11...Wheels.** Set your compass to the desired radius (refer to step 1) and draw in the wheels. For the wheel axes, use the fork end (7) and seatstay/chainstay intersection (8), both of which should be located on the wheel centerline. When the circle is complete, the bottom of the wheels should just touch the ground line. If they don’t, or if the wheels don’t fit into the frame, retrace your steps and figure out where you messed up.



# THE HAPPY HUMAN



If you've found something you love unequivocally, write it up and send it in so the rest of us know about it, too. It needn't be a "Rivendellian" sort of thing, either. Just make sure it's actually available, tell us where we can get it ("your local bike shop," "Bike Nashbar," wherever), and list the price you paid. Send by fax 510 933-2305, email Rivbici@aol.com or send by regular mail.



## RITCHEY VECTOR TITANIUM SEAT

For riders who want a more modern lightweight seat, yet eschew current mountain bike aesthetics, this saddle is the one. Based on the classic Turbo, it has an elegantly slimmed down nose and partially exposed rails, yet retains the butt support that other lightweight saddles cut away. The titanium model tips the scales at a feathery 220g, yet provides the same comfort as more, shall we say, full figured models. It also possesses miraculous self healing properties. A major gash, which I initially thought spelled the saddle's death, has now healed and left nary a scar. And you thought Tom only worked miracles with a welding torch.

*Eric Gustafson  
San Francisco*

## C4 CLIPLESS PEDALS

I'm hooked on clipless—a love/hate relationship, until I recently discovered a new one from California, called C4. No coil springs, just two pieced of spring metal that look as though they might last forever, and a set of standard sealed bearings—that's it for moving parts. The rest is compact and good-looking, and lighter than any other clipless "systems" out there, and at \$75, way less expensive. Check out this low-tech, high-function, long-living pedal and buck the SPD system.

*—Randy George  
Portland, Oregon*

## EGG PASTINA

My very Italian mother used to feed me egg pastina for breakfast. Three was a very good year. This new old food is the easiest of all pastas, usually in the shape of little stars. Cook a few tablespoons with as little water as necessary. Add a little salt. Feeling decadent? Add just a bit of butter. Absolutely delicious, with, or without teeth. You can find it in the pasta section of your local supermarket.

*Douglas Brooks  
Rochester, NY*

## GILLETTE SAFETY RAZOR

I have owned just one Gillette safety razor, the kind that opens like a little drawbridge, for my entire adult life, which, although some people might dispute just how long I have behaved like an adult, I put at around 35 years. One blade-okay, the modern so-called platinum kind, lasts me a month. One doesn't throw away another bit of irreplaceable nonbiodegradable petrochemical after every use; and it has a nice heft to it, better than the plastic throwaways you have to bear down on. This simple machine has always done the job; and it is not sold in pink to women for a higher price than the blue men's version. I expect to have this razor for the rest of my life. Still available at any drugstore, I hope.

*B. Parker  
Islamabad (Pakistan)*



## BRAKE BOOSTER

These are the thin horseshoe-shaped pieces of metal which attach to the rear cantilever brake studs. Mine are made by Odyssey, but my guess is they're all about the same. They reduce the tendency of a light steel or titanium frame to flex under braking with powerful modern brakes and pads. They do not make the brakes more powerful—most good cantis are powerful enough to lock the rear wheel anyway. Instead, the brake booster increases modulation. You don't have to squeeze harder halfway through the lever pull, as the frame starts to flex.

At about \$12 and 70g, they're worth it, and if you get a black one, they're not too ugly.

—*Sam Mandel*

## FARMER'S FRIEND HAND SALVE

A soothing, aromatic blend of essential oils of rosemary, eucalyptus and lavender, beeswax, and herbs, this balm softens dry hands and does a good deed on chapped lips, too. It also has insect repelling qualities, and you can't beat that. It's made by Burt's Bees in Guilford, Maine 04443, and should be available at gardening shops.

*Mark E. Manson*  
*Louisiana*

## WARTIME GUIDE BOOK

I recommend The War Time Guide Book, published by Popular Science in 1942, not impossible to find at the used bookstore. It is 3" thick and is filled with complete do it from scratch recipes and procedures, from bottle cap compound to vanishing cream, which you couldn't get during the big war. There is a test for pure beeswax in there, and did you know that 4oz beeswax with 10oz turpentine makes a wood putty? It is the embodiment of the BOB/RR philosophy, except does anybody know where I can buy a pound of Arsenic Trioxide?

*Keith Bolog*

## FIVE FROM JAN

1. Esge Fenders. Everybody knows that riding in the rain is miserable without fenders, and can be quite nice with. Our team has a fender policy during the winter months, and the Esge's are the only ones that last. All others seem to break after a few thousand miles, so people ride with fenders that lack the rear part, and the person behind gets mud in their eyes. The Esge's last several years, and I haven't seen one break yet. Keep your friends dry - ride Esge fenders... Available at Rivendell, I believe.

2. American Classic bottle cages. Once again, all the others break at some time, these are light, beautiful, and an elegant, simple design. The bottles never fall out, yet they are easy to retrieve and insert. I consider these on par with the Simplex retrofriction shift levers. Available at many bike stores. Grant? (They're too light—G)

3. Tire savers. Yes, those little wires that brush your tires and keep the glass and nails from getting imbedded. I put them on for a long road race on infamous roads, since my sew-ups were getting worn. Haven't had a flat since, for 6 months. Never brush your tires again. Your gloves will last forever. Set them up so they lightly brush the tires. They won't slow you down, really. Availability: Loose screws may have a few. Rivendell should carry them.

4. Specialized wide-mouth bottles. They don't look right, but they are easy to clean. I use apple juice during races, and all other bottles grow stuff in places I can't clean. These dry faster, too. Most bike stores have them.

5. Apple juice as a fluid replacement drink (or whatever they call the stuff you put in your bottles these days). I dilute one part of juice with *two* of water, and it has enough sugar and electrolytes to make a difference when racing. I prefer organic juice over some sugary powder with ingredients of which I never have heard. **Also**, it is available at most gas stations (non-organic), so a refill on a long ride is easy to find.

*Jan Heine*  
*Seattle*

BY KEITH BONTRAGER

# THE MYTH OF KOPS

## AN ALTERNATIVE METHOD OF BIKE FIT

*(reprinted with permission from the old Boston-based Bicycle Guide. This appeared in an old issue, maybe six years ago. The — Ed. in this case is/was Ted Costantino.)*

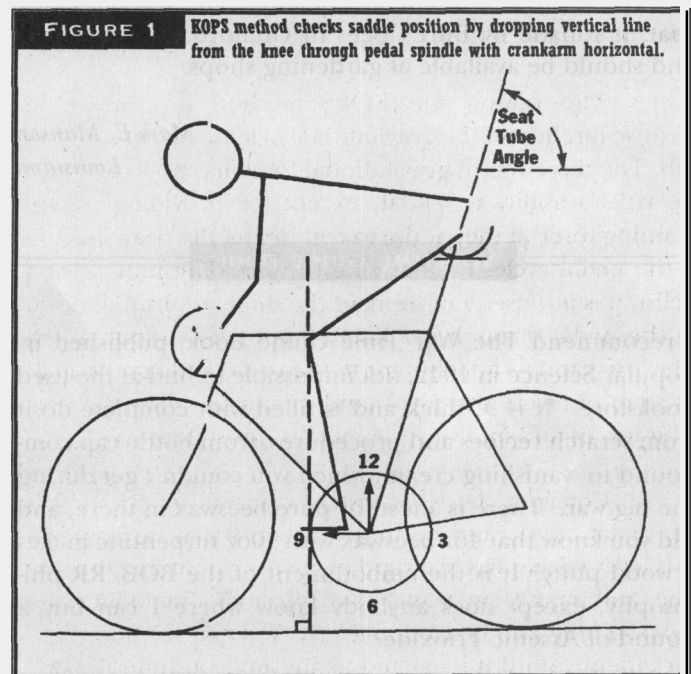
**E**XPLODING MYTHS IS TOUGH WORK. PEOPLE DON'T WANT TO BELIEVE THAT THEIR IDEAS ABOUT HOW THINGS WORK OR HOW THINGS SHOULD BE ARE WRONG. KEITH BONTRAGER TACKLES ONE OF OUR PRIMARY BELIEFS ABOUT BIKE FIT: THAT ALIGNING THE RIDER'S KNEE OVER THE PEDAL SPINDLE IS CRITICAL FOR PROPER POSITIONING. HE SHOWS THAT THERE IS NO PHYSIOLOGICAL BASIS FOR IT. HIS DISMISSAL OF THAT RULE, AND HIS ALTERNATIVE METHOD OF BIKE FIT, IS BASED ON QUITE A BIT OF ANATOMICAL STUDY AND A LOT OF PRACTICAL EXPERIENCE IN FITTING RIDERS TO HIS CUSTOM-BUILT FRAMESETS. SOME OF THE IDEAS IN THIS ARTICLE MAY BE INITIALLY HARD TO GRASP, BUT IF YOU BEAR WITH IT, YOU WILL DERIVE AN UNDERSTANDING OF AN APPROACH TO BIKE FIT THAT CONSIDERS THE NEEDS OF THE RIDER IN ALL RIDING POSITIONS, NOT JUST THE SEATED ONE. —ED.

For the cyclist interested in performance, good bike fit is paramount. A properly fitted rider will feel efficient and comfortable on the bike. An efficient position is one that enables the rider to produce more power for a given muscular effort, and to produce that power without working any muscle groups excessively or needlessly. Comfort and efficiency may be at odds in certain riding conditions, however, so riding position may have to be modified to favor one quality over the other. In a time trial, for instance, efficiency matters most, so a position allowing the best aerodynamics is desirable. But in a long road race, an uncomfortable bike may ultimately be more fatiguing than a small loss in efficiency.

Good bike fit has three general parameters: correct saddle height, correct saddle-to-bar distance, and correct fore and aft saddle position. The established methods for finding the correct saddle height (seat tube length) and saddle-to-bar distance (top tube and stem length) seem fairly straightforward. For maximum power, the

cyclists leg should be nearly extended at the bottom of the pedal stroke (This advice is good for your knees, too; the straighter your legs are during the peak power portions of the pedal stroke — usually between 100 to 130 degrees from top dead center — the better it is for your knee joints — Ed.). The reach to the bars should allow the cyclist to assume a comfortable position whether sitting or standing.

In my opinion, the primary difficulty in finding the correct fit for a road cyclist is in determining the correct horizontal saddle position. This aspect is important



because saddle position has a direct bearing on frame geometry. Saddle position affects seat tube angle as well as the top tube/stem length dimension.

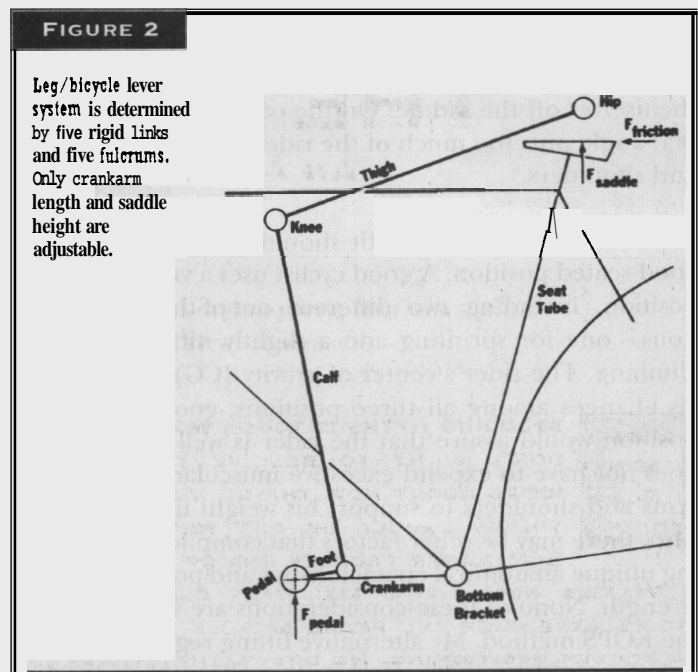
The traditional method for achieving horizontal saddle position is to position the rider's saddle so that the bump below the knee (the tibial tuberosity) is over the

pedal spindle with the crank horizontal to the ground. I'll call this the KOPS (Knee Over the Pedal Spindle) method (see Figure 1). The common way to check this position is with a plumb bob. Typically, a framebuilder will choose a seat tube angle that places the saddle at the center of the seatpost clamp with the rider's knee in this position.

The KOPS rule seems sensible enough; it puts the knee in line with the pedal at maximum pedaling force, which must help, right? Wrong. The KOPS rule of thumb has no biomechanical basis at all. It is, at best, a coincidental relationship that puts the rider somewhere near his or her correct position. It probably grew out of someone's observations that many successful riders sit on their bicycles with their knees somewhere over the pedal spindle. In fact, there has been little comprehensive work done in the field of cycling biomechanics that has studied rider position on the bicycle in order to maximize power input or minimize fatigue. Most builders and fitting specialists rely on customer feedback to tell them whether a change in position feels better or worse. This information doesn't pertain to power output; it is a result of physiological response called perceived exertion, only one of the several important variables that are related to a rider's muscular effort. In short, there is no scientific evidence to support the KOPS method.

The reason the KOPS method is arbitrary is because it relies on the gravitational orientation of a plumb bob. The direction of gravitational force has no bearing on the rider's ability to pedal, except for providing a constraining force at the saddle to counteract the peak portion of the pedal cycle. In analyzing the pedaling motion of a cyclist, it is not useful to think of the thigh as pushing down on the pedal through the knee. It is better to look at the rider's leg and its attachment to the pedal and crankarm as a system of levers and pivots and to consider how the pedaling forces and joint torques act on this system.

Consider the lever system made up of the rider's leg, pedal crank, and bottom bracket drawn in Figure 2. This lever system has five rigid elements (including the seat tube and crankarm), and five fulcrums (including the pedal spindle and bottom bracket). You can see that it will work identically if it is rotated to any angle around the bottom bracket so long as the relationship between all the elements is maintained, that is, there is no change in the angular range of any of the lower leg joints as the whole system is rotated. (Note that this is not the same as sliding the saddle back and forth on its rails. To do so changes seat height.) The knee joint works exactly the same and has the same forces acting through it regardless of its orientation.



As an example, note that a recumbent rider's position does not in any way relate to the force of gravity acting through the knee. The recumbent rider's legs act in the same mechanical way on the crankarm, even though he is rotated roughly 90 degrees from the standard position. The gravitational constraint that is lost at the saddle is replaced with a mechanical one, a seat with a backrest.

As a rider is rotated about the bottom bracket, the angle between his torso and hips may vary. There is a fundamental connection between the activity of the hip extensor muscles and the muscular torque at the knee joint, but there is no evidence of any sacrifice in propulsive power as the range of motion of the hip joint varies. Moreover, within the confines of the diamond frame, the extent to which a rider will vary his torso angle during normal cycling by changing posture and hand position surpasses the small changes that any rotation about the bottom bracket will have.

It should be easy now to see that a rotation of the leg/crank lever system about the bottom bracket is the same as a change in seat tube angle. A shallow seat angle has the same effect as rotating the rider in our diagram clockwise about the bottom bracket; a steep one does the opposite. In both cases, the plumb bob will swing away from the pedal spindle, but the lever system remains the same. Obviously, too much rotation away from seat tube angles found on diamond frames will change the effects of gravity enough to be noticeable. The horizontal component of the peak pedal forces may become large enough to overcome the frictional forces that help keep you in the

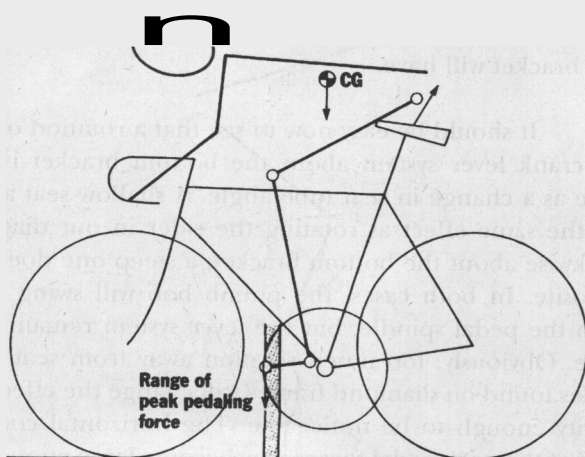
saddle. Some mountain bike riders used to complain about how the 69-degree seat angles on the old Ritchey-type bikes made them feel like they were always pushing themselves off the saddle. On the other hand, too steep a seat angle puts too much of the rider's weight on his arms and shoulders.

I feel that proper fit should involve more than a good seated position. A good cyclist uses a variety of riding position, including two different out-of-the-saddle positions - one for sprinting and a slightly different one for climbing. The rider's center of gravity (CG) over the pedals changes among all three positions; good overall bike position would assure that the rider is well balanced and does not have to expend excessive muscular energy in the arms and shoulders to support his weight in any of them. Also, there may be other factors that complicate fit, including unique anatomical characteristics and poor upper body strength. None of these considerations are served at all by the **KOPS** method. My alternative fitting regimen outlined below considers these factors as well as the standard requirements of comfort and efficiency.

The CG of a seated rider in a fairly aerodynamic position will often be about 1 to 1.5 inches (2.5 to 3 cm) in front of the bottom bracket. I have determined this in two ways: by direct measurement of the rider's anatomy (measuring this balance point), and by weight distribution calculations (weighing the axles). Of the two, the latter is the more accurate. The result is generally consistent with a 45/55 fore and aft weight distribution that many classic cycling texts regard as optimal.

FIGURE 3

Seated Position



The peak pedaling force applied by the seated rider produces an upward and slightly rearward force at the saddle (Figure 3). If pedaling forces are small, the cyclist is able to remain seated because the upward component of force is smaller than the rider's weight on the saddle, and the rearward force is smaller than the static friction between the rider and the saddle. During the angular phase of the pedal cycle when the pedaling force is small, the rider tends to fall forward due to the moment between his CG and the saddle, and this must be resisted with upper body and torso effort.

As peak pedaling forces increase, the gravitational constraining forces on the rider at the saddle are no longer sufficient and larger arm and torso efforts are required to maintain a seated position. At extremely high pedaling forces, the rider comes out of the saddle to straighten the load path for his arms which allows them to effectively resist the loads created by the much stronger leg muscles. The diagram of the lever system in Figure 1 is no longer accurate at this point; the rest of the rider becomes a complicated system of levers as well.

The two basic out-of-the-saddle riding positions are useful in many circumstances. The one mentioned above is used to accelerate as rapidly as possible during a start, jump, or sprint. A slightly different position is used to climb hills. These two circumstances are worth considering in more detail in order to understand how the horizontal saddle position determines the rider's overall position on the bicycle.

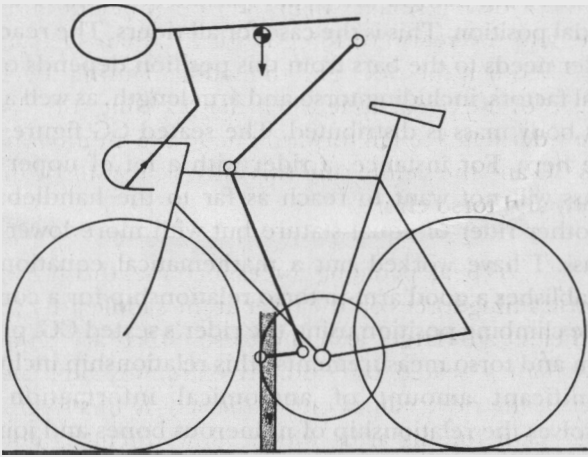
The sprinting position is the simpler of the two. The rider is making such large pedaling forces that his torso and upper body can do little more than resist the peak forces of the power stroke. The arm effects between the peaks keep the bicycle leaning in the direction that puts the pedal being pushed under the rider, as well as locating the rider and contributing a small amount to the pedal forces. Peak pedaling forces are large compared to gravitational forces, and the rider's position adjusts accordingly, shifting his upper body forward to achieve the best load path for the arms (Figure 4). The rider's CG is typically forward of the pedal at this point. During the phases of the pedal cycle when pedaling forces diminish (around the six and twelve o'clock positions), there is a small torque on the rider about the pedal. As before, this will tend to cause the rider to fall forward and will need to be resisted with upper body and torso effect.

The pedaling forces are smaller when climbing. When a rider gets out of the saddle to climb (Figure 5), his



FIGURE 4

Sprinting Position



CG moves over the region directly above the range of pedal positions where the pedaling forces are high (from eight to ten o'clock). This allows the rider to “balance” on the pedals when the forces are high, minimizing the arm effort required and lets the full weight of the rider contribute to pedaling forces. The torque on the rider is still there when the pedal forces decrease and must be resisted, but it is smaller because the rider’s CG is closer to the bottom bracket spindle. The geometry of the link between the torso and bars made by the rider’s arms when climbing out of the saddle is something I pay particular attention to when I fit a rider, but is somewhat flexible due to the larger number of bones and muscles that make it up.

With this insight into pedal forces and weight distribution for both in- and out-of-the-saddle riding, we can look at what happens to rider position as the seat angle is varied, and how these variations affect performance. We can start with something in the middle of the range of seat tube angles and see what changes occur to the rider’s position as this angle is varied.

At about 73 degrees, the rider’s CG is a little in front of the bottom bracket spindle when seated, and it moves a little forward when he rides out of the saddle. As the seat tube angle is rotated back (made shallower), the seated rider’s CG will shift back. The bars will have to come back to keep the reach the same. However, when a rider gets out of the saddle, only the bars and pedal locations determine position. Since the bars are back, the standing rider’s reach is shortened. There is less room available between the rider and the bars (Figure 6). At 69 degrees, the out-of-the-saddle reach is reduced by seven to

eight percent. For a typical medium-sized bicycle, this change correlates to about a five cm reduction, a large change compared to typical stem length adjustments.

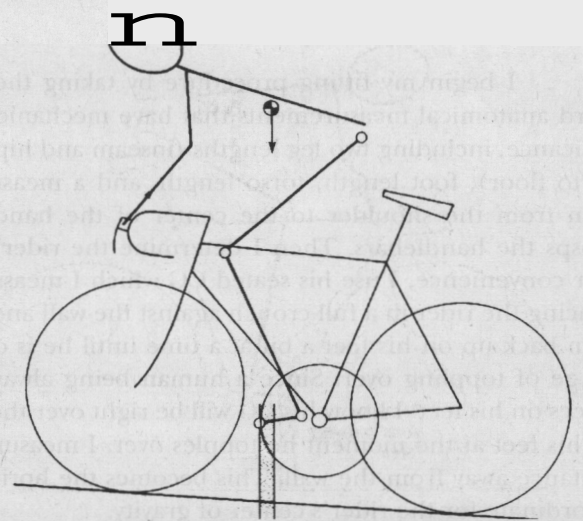
The opposite result occurs when the seat tube angle is steepened. The seated rider’s CG moves forward and the distance between the bars and saddle is maintained by installing either a longer stem or a longer top tube. But as the rider stands out of the saddle, his CG will again move to the spot a little behind the nine o’clock pedal position. The result is that the rider has to reach farther forward to the bars. At 76 degrees, the out-of-the-saddle reach is increased by five to six percent and the rider will have to reach forward roughly four cm more than at 73 degrees. Again, you can appreciate that this is a fairly large change when compared to a typical stem length adjustment.

In both these extreme cases, there could be problems. If the seat tube angle is too shallow, rider CG will be well behind the position where it is comfortable and efficient for out-of-the-saddle riding. If he jumps out of the saddle for a sprint, he may hit his knees on the bars. In the climbing position, the rider may have to lean back uncomfortably far, putting extra stress on the arms and shoulders. In most cases, the rider can put just as much power in the pedals, but only at the expense of upper body comfort. As an example, early off-road designs suffered from these problems, although current frame design trends solve it.

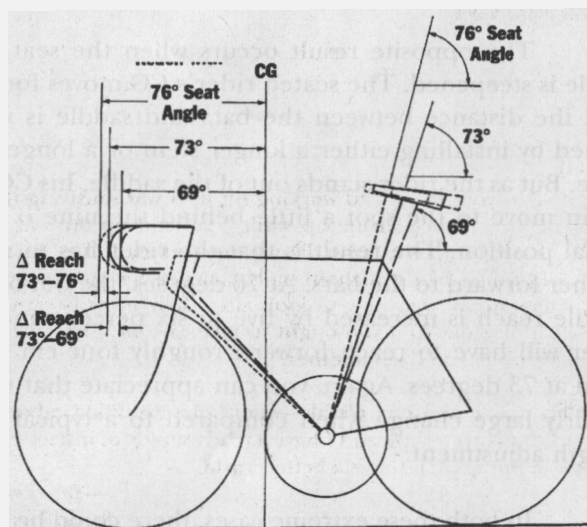
Too steep a seat tube could cause a rider to have to reach too far for the bars when out of the saddle (a poor load path), cause the saddle to interfere with the rider’s legs as the bike leans from side to side, or put his CG too

FIGURE 5

Climbing Position



**FIGURE 1** Out-of-saddle reach changes with seat angle, but rider's CG remains in same position over pedals.



far forward, increasing the load on the arms and torso to catch himself during the low force portions of the pedaling cycle. Some production frames in the smaller sizes have these problems built in. They have steep seat angles and uncomfortably long reaches due to the geometrical constraints, such as wheelbase and tow clip overlap, forced upon them by 27-inch front wheels.

Now we can derive some insight into what proper seat tube angle should be. The correct seat tube angle allows correct weight distribution for both in- and out-of-the-saddle riding. The cyclist will find the handlebars in just the right position for a comfortable riding stance in all riding positions. I am neglecting the fact that the overall weight distribution of the bicycle affects the dynamics of the vehicle and may need to be considered, though that is not generally a problem with road frames.

I begin my fitting procedure by taking the standard anatomical measurements that have mechanical significance, including two leg lengths (inseam and hip socket to floor), foot length, torso length, and a measure of arm from the shoulder to the center of the hand as it clasps the handlebars. Then I determine the rider's CG. For convenience, I use his seated CG which I measure by placing the rider in a full crouch against the wall and have him back up on his feet a bit at a time until he is on the verge of toppling over. Since a human being always balances on his feet. I know his CG will be right over the balls of his feet at the moment he topples over. I measure this distance away from the wall. This becomes the horizontal coordinate for the rider's center of gravity.

With the anatomical measurements and the CG finger in hand, I am ready to design the frame. My first concern is setting the rider's out-of-the-saddle position. Invariably, a climbing rider will place his CG at a spot two to three cm behind the pedal spindle at the nine o'clock pedal position. This is the case for all riders. The reach the rider needs to the bars from this position depends on several factors, including torso and arm length, as well as how his body mass is distributed. The seated CG figure helps me here. For instance, a rider with a lot of upper body mass will not want to reach as far to the handlebars as another rider of equal stature but with more lower body mass. I have worked out a mathematical equation that establishes a good arm-to-torso relationship for a comfortable climbing position using the rider's seated CG, plus his arm and torso measurements (this relationship includes a significant amount of anatomical information that involves the relationship of numerous bones and joints in the standing rider; any interested framebuilder can contact me for details about this equation). The math gives me the horizontal distance from the pedal at the nine o'clock position to the handlebars.

Now we know where the handlebars and pedals are so, using the rider's torso and arm measurements, it's a simple matter to extend the top tube back, locating the seat. At this point, I look at the overall design and consider a rider's particular requirements. For instance, if the rider demands a short wheelbase, I'll try to change the design to accommodate him.

In my experiences so far, I've found that most riders are suitably positioned with a seat angle that falls between 72 and 74 1/2 degrees. What is important is that I have not noticed any specific correlation between seat angle and my customers' femur bone length. I am reasonably certain that none exists. Still, it is easy to see how the KOPS method can get by. It usually puts the rider in the range of correct fit, although in my experience, the more anatomical proportions vary from the norm, the more off the mark the KOPS method is.

In general, I believe this new way of approaching the fit problem is physically correct. It ignores the arbitrary knee/pedal relationship of the KOPS method and replaces it with a procedure that tries to minimize the muscular efforts required by the rider to maintain each riding position. So far, I haven't had any complaints from my customers and I've been able to clear up fit problems for riders that were positioned poorly by the KOPS method.

**END**

# LETTERS

## BUSTED B.72

I was thrilled to see you are carrying the Brooks E72 and that Joe Breeze is still making his adapters. It's the one component of my bike I would never want to change. Never. And Joe and Connie were awfully nice when I spoke to them by phone.

But there's always a fly in the ointment. I thought I'd be riding this saddle for years, it's 5 years old now, and one of the rails has broken. Snapped clean through! I didn't abuse it. I just rode it. I see so many of these saddles old and beat all to hell on English racers, I can't believe this kind of breaking is common. Or is it? Should Brooks give me a new one?

—Paul B.

*Paul, lots of good saddle rails break, and sometimes the problem is a bad seat post clamp. What to look for in a clamp: Long support area (30mm+), rounded edges. Avoid the opposite. I'm not suggesting that Brooks has never made a defective rail, but it's a fact that nobody tests rails more stressfully than Brooks, and if a Brooks rail broke, probably any other would have broken sooner. A friend who distributes Selle Italia saddles, has for years, has noticed a much higher rate of rail breakage in the last few years, and most of the time it happens with a new post.*

**Postscript: Brooks's US agent replaced the saddle, all's well.**

## BIG STRONG HANDS

My background is competitive swimming, which led to triathlons by way of a few years of rugby. The rugby was a bad idea for reasons too numerous to list here but did have a role in bumping up the limit of my discomfort threshold to the point that, by comparison, triathlons didn't seem all that bad. In fact, triathlons are much like hitting yourself in the head with a hammer; it feels so good when you stop. The sport also served as an introduction to bicycles, a passion which, by turns, has been profitable, enriching and an excuse to dig through boxes of what my wife might consider other people's junk, and now ours.

So it was with great joy that I tore into the box from Rivendell to find, among other goodies, my chunk-o-beeswax. I struggled throughout a staff meeting to warm the stuff up and make it pliable. About the same time my manager asked me to stop doing what looked like isometric exercises, I realized that I'd spend much more time in the pool churning out the yardage than I had in the bike shop stretching new sew-ups.

As they often say in the south: "...Boy love 'em bicycles but ain't got no more strength in his hands 'n some ol' swimmer."

The point is, and there is one, it made me think of my grandfather. I grew up back East and like the rest of the family, I loved clam chowder. It's better with oyster crackers which are too big to fit in your mouth whole in polite society and would probably break your teeth in the process. My grandfather worked his whole adult life for Bell Telephone and had big strong hands. He showed my sister and me how to hold the crackers between the heels of our clasped hands and get the leverage to crumble them. Same thing works on that gob of

beeswax when you first get to working on it. It was satisfying to let the rest of the meeting drone on while I softened up the wax and thought of my grandfather who, like many working folk of his generation, did things like straighten nails, sharpen his own tools and show his grand children how to look after their bikes because "It looks like a nice one and you ought to take care of it because you don't know when you'll get another."

The wax is now more than pliable—vent holes are filled, vibration-vulnerable bolts are secure and I have a ready supply of instant emergency cable tips on hand. It is a better world.

—Bradford Rex  
Santa Rosa, CA.

## CUSTOM GEOMETRY?

I have a question about frames. On the frame order sheet it has a spot for "custom geometry," how much change can you make to hanger drop, head and seat tube angle, chainstay length, top tube length, (mountain frame). Here is an example, 18.0" frame size, seat tube 72 deg., head tube 71 deg., top tube 22.5, seat tube length 16.0, chainstay 17.0, b.b. drop 0.0. Is this too far from Rivendell norm? Thanks for your time. (I like my wool jersey even though my kids snicker at me)

—Kevin Roebke

*Kevin, that would be custom, and maybe even out of our reach. You have 18-inch frame size and 16-inch seat tube length (there must be an explanation); and zero drop—which sounds like a bmx bike. Most customs are for really big people (we've done a 67cm) or women (58cm with 55.5 top tube) or for people who know they really, really need a 71-degree seat tube angle, and want to use standard reach brakes, with clearance for both 700x35 and fenders. At the point where what is conceived as a custom Rivendell starts to become a self-custom, or a style of bike we don't make (Trials bike)...then we respectfully decline, as we want the frames to be representative of our work. However, I think you must have something particular in mind, so let's talk. Grant*

## IN SEARCH OF A CHEAPER A/R

A year ago you mentioned the possibility of a tig-welded frame for those without the budget to enjoy beautiful lugs and exotic metals. Any near-future plans on this one? I presently ride a 55cm X-01 which is too short (top tube) and a 59cm is too large (standover). Consider it my parents' fault. I've seen 'Heron' mentioned in the RR. Is this a tig-welded A/R? If not, then what?

Thanks,  
Randy Bozarth

*Hérons will be lugged and silver-brazed and built with Reynolds 531. They'll be around \$650 to \$700 because they won't have the handwork and extra details of the Rivendells (most \$1200 frames don't, for that matter). What you won't get: water bottle braze-ons, rear brake bridge tangs, options on rear end width or braze-ons. The lugs will be designed for full-contact with tubes mitered with a straight angle-cut, not fishmouthed. There will be 2 or 3 col-*

ors, no options, and eventually they'll be powder-coated, which will eliminate many steps. The decals won't be clear-coated, but will be of a type that really stands up to exposure, so no problem. Herons are going to be smart, pretty, affordable, and wonderful. There may be a tigframe in our future, but right now we're doing lugs, and lugs are good too. We'll try to have a size that'll fit you. We're starting to add sizes to the Rivendells, as well, and by the time you read this, we'll have your size. Grant

#### NORMAL, EVERYDAY CAR EXPENSES

Earlier this year I searched for about 3 months to find a quality used automotive vehicle with which to carry our newly-augmented family to and fro. We were successful in our quest, thereby reducing our cash outlay by approximately \$13,000 vs. the price of a new vehicle of the same description. Visited national tire sale/service outfit this weekend in order to get tires balanced. While being serviced, the vehicle body was significantly damaged by improper/negligent use of hydraulic lift. Technician lies, denies causing damage; manager hedges and awaits my next move. Repair estimate is \$600.

—Howard Smith

#### HOW MUCH IT WEIGH?

We talked about your XCross frames when you were in Portland and I still haven't bought a new one. Looked at lots, including Ritchey. Yours seems about the same price. You will not like this question, but what does a 53cm frame and fork weigh? Gotta know.

—Name lost, blame it on the computer operator

I don't know what one weighs, but it's pretty close to 4.3 lb; and the fork is about 1.4 lb. Our frame is heavier than Ritchey's. Tom's is pure race, and we can lighten ours up for pure race, but there is a point which Tom will venture beyond and we won't—not that we shouldn't, but we won't.

Clearance: Ours clears 700x38 EASILY, with wobble-room, and can handle up to 700x41. If you only race tubulars and racey clinchers, that's another issue, and IF that's the case and you want the lightest custom cross bike I feel comfortable selling, let's talk.

Ultimately, a lugged frame of this quality, all made here, will cost more than some other bikes. Ritchey frames are super, Tom is super, I can't in my heart or good conscience dissuade you from a Ritchey because he's a nice guy and a smart guy and his frames ride great. It's a different frame than the Rivendell, and each has its strong points. Grant

#### 700C VERSUS SOMETHING ELSE

Is there any other reason besides historical accident that most road bikes have 26.5" wheels (about) while mtbs have wheels that are an inch to two inches smaller (about, all this when you put tires on)? I vaguely remember an article somewhere, sometime that quoted Ernesto Colnago to the effect that the standard road wheel was first designed to be just big enough to bridge the gap between your average pair of cobblestones while still being small enough to accelerate with some efficiency. and that with today's roads a 26 inch wheel is more practical.

I know from experience that all else being more or less equal, smaller wheels are less forgiving over rough surfaces, though how much of this is due to smaller, more rigid frames, a smaller contact patch, or to a more rigid wheel, is another question. Smaller wheels also accelerate noticeably quicker, all else likewise equal. Given these things, why shouldn't mtbs have 27 or 28 inch wheels (can't you just imagine a 2.5" 28" knobby?) and road bikes have 26, or 25, or for that matter, 17 inchers?

I sold my Falcon in 1991 after putting together my first "road mountain bike" using Specialized mtb Turbos and finding that going back

to the Falcon (which had an average, good quality 700c wheelset) was like riding in molasses. (The Falcon didn't fit that well anyway.) Both my road bikes now use mtb wheels with road tires (and these get my vote for your "Satisfied Cyclist" column). What are others' opinions?

Patrick Moore

Patrick, it's path dependence (see RR7). I don't know why 700c came to be, but no doubt one of our members does and will write. The Colnago story sounds believable, though, and I vaguely remember reading the same thing. As the path dependence principle predicts, once a standard, almost always a standard, and the modern "559" mtn bike tire (so-called because it mounts on rims whose bead seat diameter is 559mm) came from the 26-inch sire rims Schwinn used.

About 8 years ago GT (the bike company) figured it could combine the best elements of both 26-inch tires and 700c tires in a new, "7000" size. Ritchey even made a tire for them. It flopped, and probably in a century a 7000 bike in minty mint condition will sell for a couple thousand dollars.

I know everyone talks about smaller wheels accelerating faster, but I can't see how that could be. I suspect if you're used to the feel of a 52 x 17 gear on a 700c-wheel bike, then you hop onto a 26-inch wheel bike with its inherently lower gears, you feel the pedals that are accelerating more quickly, because the gear is lower, and mistake that for the bike moving forward faster. This is a question for Bill Nye the Science Guy (and bike rider). I'll ask him and maybe we'll have his answer in the next issue.

#### THAT BIRD AGAIN

I know the deadline's past but thought I'd give the "e"-less raven a shot. Singly upon a midnight drab,

I thought, in firm and wanting a nap,

On many a quaint and curious book of now  
unknown information.

As my skull swung, I was almost napping, abruptly I was struck by a tapping, as of an individual softly rapping,  
rapping at my room's door.

Tis a visitor I said, tapping at my room's door.

Only this and nothing in addition.

john ephron

#### NAGGING QUESTION

I got the Catalog and RR-6 last night, and your seatpost selection brings up a nagging question — how to size a seat post for a frame. My touring frame is 531 ST, so the seat tube is 28.6mm with 1.0/0.7mm walls. Reynolds' catalog says that with either 0.6 or 0.7 walls a 27.0 seat post is recommended. But my math says  $28.6 - 0.7 * 2 = 27.2$ , so reaming it out to 27.25 for a 27.2 post seems sensible. Any ideas on this? (Really, I need to buy a new seatpost for the new frame I'm building, and I want one with lots of offset, and there's that beautiful Nitto 2-bolt post in your catalog.... Plus I got a very lightly used 27.25 seat tube reamer used for \$10 from a guy who didn't have a 27.0.) Also, I'm still working on my stem project, and I am taking pictures this time, so I really will send you pictures and write up when I'm done. Also, I'd heard the Carradice saddle adapter was ugly but the catalog picture is the first time I've seen what they really look like. Cyclo makes (made?) much prettier adapters — small individual bolt-on loops, one for each saddle rail. I have some on my Conquest that I got from Cyclo-Pedia for \$4. Speaking of loops, I've seen a Conquest on another bike that had real saddle bag loops, not add-ons. They were in the spring stack, between the spring and the frame, like on the B-66. I couldn't wait around for the owner to find out if these came with the saddle or were scrounged off a B-66. Glad to hear the



Nitto Randonneur bars sold out so quickly, and I can't say I'm surprised — they're beautiful and comfortable and one of the few decent drop bars available with a 25.4 center. I'm ordering more. In your brake section you mention Mafacs. Real Mafac cantis may be gone, but do you know if Weinmann still makes their Mafac-copy canti brakes? They were part-for-part compatible with Mafacs, and I used to have a set on an old bike that got stolen. They're still in the 1990-91 Weinmann catalog, but I haven't seen any newer Weinmann brake catalogs. Re. your Jobst interview — great! If I could have asked him one more question, "What about 26-inch wheels on touring bikes, and good 26" tires?" Not that I dislike the Ritchey Crossbites I'm commuting on, but I'd like a 26" version of the Avocet 700x32 or 35 slicks. On-line Jobst has been rather dismissive of 26" wheeled road bikes, but then he's tall enough he could probably ride 28" wheels and still get perfect frame geometry.

Josh P.

Joshua,

The same seat post sizing occurred to me, so I asked Marc Wford, and he told me the heat from brazing distorts and effectively (not literally) shrinks the tube slightly, and then the inside diameter is made right by a reamer. Sometimes, he said, it doesn't even quite distort it enough (at Wford) because they're gentle with the torch.

All the Conquests I've seen have just the springs, and you attach the bags to them directly. Randonneur bars: It's a beautiful bar with a nerdy image, and I like them. The old Randonneur bars, the ones from the '70s, tended to be too narrow for most large-sized Americans, but we have wider ones in now. I still go back and forth between carrying the 25.4 or the 26Ø clamp size; we stock both now, but when the next catalogue comes out we'll probably go to 26 only.

About Jobst: Thanks for liking the interview. There are a couple questions I didn't ask that I wish I had, too. Some are answered in his book, but it would have improved the interview. As for his wheel size, you're right. His frame is a 68 or 69cm, I think, and if he rode 26-inch wheels the head tube would be almost as long as the fork.

#### HERON Q

Will there be a Heron cyclocross frame? If so, when and how much? If not, well, there should be.

-John D.

The bb height needed for a cyclo-x frame would mean another investment cast mould, and we're trying to start Heron off without going deep into debt. If the road and touring frames sell, we'll then do an All-Rounder style and a cyclo-x. Lots of people who are interested in the cycloX frames really just want a road frame with cantis and lots of clearance...in which case the touring frame will be very nice. Of course, if you want the higher bb of a cycloX frame for racing cycloX, that's another matter. But a lower bb makes the bike ride better.. Grant

#### A POEM FROM A FELLOW WITH A NEAT LAST NAME

Thanks for the catalogue. I will get organized next week to get US \$15.00 to you. I thought you might like a poem which has been in my head for about 10 something years. It is my life poem, in the tradition of Japanese 'Life' and 'Death' poems. The 'Life' one you live by, when you tell the 'death' one everything else is filling in time. I'm not ready for that yet.

"Needs"

If there's blue skies behind me  
And a road in front.  
If there's breath in my body  
Nothing more shall I want.

I try to live by this. I have now lived and worked in seven countries and I try not to accumulate more than I can carry. Time to go to work.

Catch you later.  
David Mildwater

#### BES

Hey, is there anything new about your bar end shifters? Are they in production or still on the drawing board?

-anon. student in Colorado

They're less critical, now that we found more SunTours. Ted from Rona/Willow is going to make a bar-end plug onto which you can put any downtube shifter — very much like the current Shimano. If you have one of those, you can mount any downtube shifter, and away you go. —G

#### A SCOLDING OF SORTS

I am a member who thoroughly enjoys reading the RR and appreciates your cycling expertise as well as your sense of humor and writing ability. I have noticed, however, a couple of RR articles wherein the writers expressed negative feelings or opinions of religion (for lack of a more specific term), or of their religious beliefs.

Just as you seem to feel that the Olympics is an inappropriate forum for people to express their religious beliefs ("John 3:16 signs in the audience," RR6), I suspect the RR is an inappropriate forum for criticism of such religious expression. How about we leave our religious beliefs (or lack of) out of the RR?

—Karl Cox  
Billings, MT

Karl, you're right about everything, but I think you're misinterpreting my comments about the John 3:16 signs. The truth is they always intrigued me, and over the years I came to look for them. I don't have any negative feelings about religions, although I do wish people would quit fighting over them. My "apologies to—" thing, which shows up a few times in every issue (e.g. "thank heaven..." (apologies to atheists, or a2a as it's devolved to)) — that's just kind of is making fun of the '90s over sensitivity; and as for my cycling expertise—people tend to overestimate the abilities of people they don't actually know, but whose names make the magazines now and then. There aren't many things I can do, so it's not as though I can parlay anything I've learned in the bike industry into a better paying, more rewarding job somewhere else — it's this or nothing for me, so I try hard and I like it. —Grant

#### TH' RAVN REREVISITED

Hey, I didn't get my Radr until last wk, would you please consider my ntry?

During an awful midnight, thinking a lot,  
without vim or vigor  
About many a quaint and curious book of lost myths, -  
I was nodding, almost unconscious,  
and was hurt by a tapping,  
As of a human timidly rapping, rapping  
at my room's door.  
"Tis a visitor," I said, "tapping at my room's door;  
Only this, and nothing worth worrying about."

—Graham Bergh

#### THE TWO OF THEM NEED LOOK NO MORE

I wanted to let you know of another use for Grandpa's Pine Tar Soap. I was getting ready to give my dog "Ben" a bath when I discovered we were out of doggie shampoo. I decided if Grandpa's was good enough for me, then it must be okay for my dog. Well let me tell you Ben the Weimareiner has never smelled so good, Grandpa's soap got rid of all

of that doggie odor. **So** from now on it's only Grandpas Pine Tar Soap for the both of us.

Had the pleasure of receiving RR6 and the catalogue! I noticed the picture on the front of the catalogue of an elegant (vintage) water bottle cage, but nothing in the catalogue! Do you have any? I am interested in plain cages, especially the old TA style if you know of any..

Mitch Gitkind

*Yes, Mitch, we have tons of them. They're ALE, chromed steel, thigh wey 100g and don't mess up the outside of the bottle.*

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A MESSAGE IN A BOTTLE

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I am interested in a new bicycle for next year, **so** I am checking out the possibilities. I am getting very confused though. I would go as far as to say, that my world has fallen apart.

When I was younger, I did some racing (I was never very good, but I had a good time). Now I'm 33 and the last couple of years I haven't had time to train very much (you know: Job, family etc.). Now I feel it's time to get fit again, and I want a new bicycle. I was thinking of a classic racing bike, probably an Italian one, with Campagnolo equipment. I was dreaming of the Record series, but (my wife says) it's too expensive, **so** a cheaper one could do.

Then I saw the Rivendell name mentioned in the newsgroup, and one of the posters supplied the URL of the homepage. I started reading the articles there, and I think, **you** are right in what you say about frame design. Trouble is, now I find, that **all** the classic racing frames are made the wrong way, and I don't really want one of those. On top of that, you promote funny equipment and say, that Ergo/STI is heavy, expensive and not needed, **so** I don't even like Campagnolo anymore. I don't know what to do.

On the internet anybody can write anything (which they often do!), and often those who write don't know enough and are totally wrong. Because of that, I am always a little skeptical. The reason I think you are right is, that the best bike I've ever had, is my first racing bike. I now use it as my everyday bike with just a coaster (foot-) brake, mudguards and a flat handlebar, and nobody passes me between the traffic-lights. It is 531DB all round and built in Italy (no name) formally LBS at that time, who put his own name on the frame. It is made very much like you prefer with longer forks and chainstays, lower BB and shallow angles. Later I had handbuilt frames from that LBS (Schrader, which is probably the oldest and best framebuilder in Denmark). I've had one with 531DB and one Columbus SLX. They were good, but somehow I never got attached to them like the first one, and I've sold them both. I didn't know why, but now you come along and explain.

I wrote in the newsgroup, why I am a little afraid of buying a Rivendell. A larger company with a Danish importer feels safer. Also I tend to be a little non-mainstream (I use a Mac:-) and even retro in many ways. That has sometimes cost me a lot of grief after buying a more expensive product, which needs much more maintenance without being nearly as good as the modern one (wooden skies comes to mind). How do you say in English? Once bitten twice shy?

The bike I have now is a handbuilt 653 from 1990 with Campagnolo Chorus (still friction shifters in those days). Unfortunately I had it built by one I used to race with, and he was not as skilled as he should be. The other day, I measured the frame, which I had always found a bit too small (After six years. Better late than never), and found it had a seat tube of only 60 cm (C-T). With my 189 cm I need something like 62 cm, which I'm sure I ordered. The top tube is 60 (GC) which is fine. The seat tube is also so steep, that the saddle points a little downwards, and that is also annoying. Can you understand, why I'm scared of small for me unknown framebuilders?

Still I don't need a bike until early spring (we have awful climate

in winter), **so** depending on your delivery time, I can think about it a little. I would also like to check with the Danish customs, how much it will cost me to get a frame from USA. We have 25% V.A.T. (value-added tax) on everything here in Denmark. If they put that and some customs tax on, it will make the frame quite expensive. Can you send it tax-free to make it a little cheaper?

In the meantime, is it possible for me to become a member and receive the Reader, **so** I can lurk around a little and get to know you guys? Do I snailmail you my creditcard number or what to pay?

Kind regards (and sorry for the long letter)

Henrik  
Denmark

P.S. If you are so retro, how come you never mention tubulars (sew-ups)?

*Henrik, you had a bad experience with a small framebuilder, but that's just one, and Waterford, who builds our frames, has built tens of thousands of professional frames—probably more than any other US builder. There are three full time builders there, and none are small. As for the VAT, I'll look into it, but we can't break any laws. You can email or regular mail the credit card number and we'll sign you up—thanks. Now about that “if you're so retro...”—That's not a label I put on myself, or on Rivendell, but I know others do.*

*We have mentioned tubulars, and in fact we've sold more than 120 Campionato Del Mondos in the past year, but they're hard to get and cost a lot.*

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BALANCE, SI; JUDGEMENT NO.

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I couldn't help but notice your defense of squirrels in The Stiltstep Factor (RR7). While it's true they do have good balance, I can't say the same for their judgement, which, if the squirrels in my neck of the woods are typical, is nothing short of appalling. I'm no scientist, but in my book, it's holding them back, evolutionarily speaking. What say you?

S. Helwig  
Pioneer, CA.

S., I'm with you all the way.— Grant

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RACK STUFF.

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Hi, I've seen your all-rounder and it has inspired me. I currently own a road bike (Colnago with a mix parts), a MTB (Ritchey same story) and a beater/commuter (old road bike with an even more diverse parts mix). I've felt for some time that this commuter was not versatile enough as I would like a bike that could also handle self-supported touring (thinking about doin' France). When I saw your Webpage and the all-rounder I thought “this is perfect”, but alas I (poor student) don't have an extra \$1000 (like ~\$1400 CDN) lying around. **So** I am going to try to build up a bike based on the same concept. This brings me to my point, I found a frame that may be suitable and I was wondering what you might think. Bridgestone MB-4, I think 93 or so (its lugged), about 21in (my road size is 58c-t); do you think this is suitable for full loaded touring? A couple of things that concern me are adequate chainstay length for rear paniers (without doing a wheelie), frame geometry and frame strength. I think I might need to use a funky MTB stem with positive rise to get drop bars up high enough. By the way Bruce Gordon kind of intimates in an article on touring on the Web that your A-R is too thinly tubed to resist flex from loaded touring, from reading your catalogue it sounds to me like you have this covered, just thought I'd mention it. I'm not yet a member but I will undoubtedly be joining and ordering parts to build up this bike. Any advice would be greatly appreciated

Cheers, Chris

Chris, the MB-4 would be fine for your project. Get a short high stem, though. Chainstay length: They're 163/4-inches (425mm) and although a dedicated touring bike ought to have longer stays than that, as long as your heels clear the rear bags you'll be fine. Some rear bags require 435 or longer, some do fine on 425, even with monsterfeet.

Yes, I know Bruce says "too thin!" but if we put in an 8-6-8 top tube—and a 435 chainstay (both of which we can do an **no upcharge** and have done many times) **will** he then say "the All-Rounder is perfect for loaded touring?" Maybe not. It's okay—his Rock 'n Road is a 'great touring bike, and it's not **our** intention to snuff it out with the All-Rounder. I think our long-butt 1-1/8 inch Reynolds 753 top tube is plenty stiff, but there are different approaches, **so** just pick the one that makes the most **sense** to you. We can substitute a thicker top tube at **no** charge, and the larger size A/Rs have 435 stays already. It's not a magic number, though. Eventually we will offer **our** own Nitto-built fillet-brazed, electrodeless-nickel plated touring racks. Gordon racks are fantastic, wonderful, pretty much perfect, and I wish him well and all the success he deserves, which is plenty.

Grant

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#### SETTING SEAT HEIGHT...

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I've wasted a lot of time in REC.BICYCLES.TECH and started a thread asking the question "What is the best way to set seat height?" I got **20** or more responses and various people flaming each other's ideas. Nothing conclusive as a result. I am suggesting a comprehensive RR article on setting saddle height to be written by an authority of your choice... shedding light on this dismal, often confused and conflicting practice..... done in a concise, no nonsense Rivendell manner. I think your readers would benefit and maybe you could cut out some of the myths. Sincerely,

Peter Guyton

Seat height....a good idea for a story, but I don't think we'd come up with anything like **1.09% or 89%** or any of those. If I wrote it it might be wishy-washy, but I'm suspicious of people who think they have the single answer. I think once you throw in the hard-to-measure things like flexibility and foot length when angulated, all the formulas get nervous. It's probably best to just start with a height that allows a slight bend in the knee when the pedal is farthest from the saddle, and tweak it up and down from there.

In my own experience, if the saddle is too high I sit too far forward (not on my sit bones) and get numb down there AND pains in both my Achilles and my Kneehilles tendons. If it's too low, I get pains under my kneecap from (I hear) bone rubbing on cartilage.

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#### TOMATO OR POTATO?

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RE Lacquered tape. I did not know about the method you described. But it sounds a lot like shellac, not lacquer. I am mailing you **all** the lacquer recipes in the above mentioned book. The vehicle is usually plain old methanol (wood alcohol). Let me know if you experiment with any of them. One recipe not in the book was given to me by my house painter. Pulverize an old 78RPM record (which is likely to already be broken) and soak it in a jar of alcohol a few days to make black shellac.

—Keith Bolog

I read with interest the newsletter and think I may know what you're looking for re the handlebar tape. If what the article said

~~was true~~ about denatured alcohol being the solvent, then **you must** be talking about some type of shellac (lacquer thinner is solvent for lacquer). Shellac would also make more sense in that it is a **very old** finish and is natural (medicines and candies are sometimes coated in it.) Shellac is made from the excretions of some insect that eats trees in India. It comes in flakes of little balls which are then dissolved in the alcohol. I think the article called it gumlac, which I imagine is a less refined shellac. The closest supplier of shellac that I know of is Liberon which is in Mendocino. As far as I know they produce a range of shellacs from the least refined (I think seedlac) up through the most refined, super blonde shellac. Good luck with it! Rob Manheimer Rob, thanks—I'll contact Liberon today. The insect-Zndia-tree tip is fascinating, too, but what are "te excretions"? Is that with a long "e" or a short one? It sounds Buddhist to me. All this shellac lacquer information makes me want to have a different type of goop on every bike—old record, toothbrush handle, insect te excretions, le French stuff, True Oil. I'm serious about this, which is the scary part. A different one for every day of the week! This is beyond Beyond, and terribly fun. —G

Grant:

I just received my copy of RR #7 - a thoroughly enjoyable read. I loved the story of Freddie Hoffman, and will be sending you \$25 for an autographed T-shirt (but don't bother sending me a T-shirt - just give **all** the money to Freddie). I couldn't help but chuckle at the ironic (not sure that's the correct word but I'm too lazy to Alt-Tab over to the thesaurus) combination of articles. First, after the article on Freddie, an article on "path dependence" - the continued use of obsolete or inefficient technology because of the considerable investment that's already been made in the technology and/or good marketing. Then, later in the magazine, an article by Edward Scott supporting the same concept - just because everyone in the Tour de France uses sidepull brakes doesn't mean they're any good, and isn't it about time we broke free from "path dependence" on bad brake technology?

Elsewhere, though, there's an article on bottom bracket height, a very interesting discussion of the evolution of derailleurs (which promised improvements in derailleur technology in the future), and comments scattered throughout the magazine discussing the finer points of lugged bicycle frames, pooh-poohing index shifting, and extolling the merits of various cloth handlebar tapes. I know it's fun being a retro-grouch, but c'mon, you can't be serious! Who cares whether the bottom bracket is 10" high, 11" high or 10.5" high, when it's on a bicycle that represents 100-year old technology? Talk about path dependence! Sure, some of the bits might be titanium or carbon fibre or whatever the new material-of-the-month is, but it's still a 100-year old bike. I heard a great analogy on the Internet a few weeks ago - the modern bicycle is the equivalent of a Model T Ford with a titanium body and a carbon-fibre hand crank!

Now don't get me wrong - I love retro bikes as much as the next grouch. Up until last year, my main bike was a hand-built, lugged steel touring bicycle that I bought in the '70's. I rebuilt it recently with moustache bars, a honey-coloured Brooks Conquest saddle (you can't find that version in the Brooks Catalogue) and some other neat parts. With new paint and natural colour Cinelli cork tape, the bike looks beautiful. But it's not my favourite bike any more.

Okay, maybe you guessed it by now. My favourite bicycle - purchased last year - has a bottom bracket height of 26", give or take a half an inch. It is far and away the most comfortable, the fastest and the most fun bike I've ever ridden. Unfortunately, you won't find it in many bike shops, and you will never see it in the Tour de France.

You see, I became "path independent" and bought a recumbent.

Now, I didn't write this letter to preach the gospel of recumbent bicycles – if you're into butt pain, back pain, arm pain, neck pain and wrist pain, plus you like to stare at your front wheel a lot, well, that's none of my business. I'm happy, comfortable and faster, and that's all that matters. But I did want to use this as an example of how badly "path dependence" has affected all of us. Free yourself of silly notions about what a bicycle should be, and you can increase your cycling pleasure immeasurably.

Good luck with Rivendell – I hope there will always be a market for beautiful hand-built, lugged frames like yours, no matter how low your bottom bracket might be.

Richard Drdul  
Vancouver, B.C., Canada

Just got my first catalog and newsletter and it's great. Just the kind of stuff I need; I'll be on the horn soon to get a set of moustache bars for the bike my pal Barry Riopelle, the world's best unknown frame builder, is making for me. And lots of other useful stuff- levers, tires, canvas bags. For someone like me, whose every bike is a study in the history of bicycle technology, the catalog is akin to shuffling through the back room of a 50 year old bike shop. I love it. And the newsletter is great fun, and often useful. I'm one of those people who can't get enough of those great drawings of old derailleur and brakes. The brake article is super, Freddie's exploits are inspiring, and the article on laquering tape is one of those historical bits I can't get enough of. Before I get to the critical part of my note, a couple of tech hints you may find useful:

There are a lot of lubes on the market with fancy names that claim, for \$12/oz, to reduce friction to zero, eliminate wear and improve your sex life. Most are no better than lubriplate or 3-in-1 oil, but there's one that is better than just about any lube on the market, and costs pennies per use: ATF, or automatic transmission oil. The original ATF, Dextron, was basically sperm whale oil, long known as the best lubricant for small parts running under high stress. It won't gum, won't break down and protects, which is why watchmakers swore by it. Modern ATF is an improved version of this natural lube, and has the advantage of not involving you in bumpersticker wars, either. Use ATF in freewheels, pedals, track hubs (not outdoors, though) and the like. I was tempted to bottle some in tiny squeeze bottles and sell it for \$15 as "Mike's Wonder Lube", but thought better of it.

The other great lube is Boeing's Boeshield. Yes, most bike shops already know about it, but mainly as a protectant for mountain bikes (where it does truly excel). I use it as a chain lube, especially in the winter, and I spray the \*inside\* of all my frames with it. That's probably the best use for it.

Now about those critical remarks...

The unsigned lead article in RR-7 claims that a 20% improvement in speed and a similar improvement in security makes for a 40% improvement in steering. Uh-uh. At best, it's a 20% improvement. Consider: If a bike has 100 parts, and each part was drilled to obtain a 10% weight reduction, would you have achieved a 1000% overall reduction in weight? Right. You'd have reduced the weight 10%. The other comment has to do with Passel's article. This notion of "market failure" getting a lot of press lately, but this is unfortunate as it's mainly nonsense. The examples given are, for the most part, untrue.

One thing a study of economics and markets shows you is that there's

no such thing as a stable monopoly except where governments protect the monopoly (utilities) or rare examples of natural resources creating a monopoly (the DeBeers monopoly based on the Kimberlite Pipe). Betamax is one of the common examples, but the author himself notes that it was Sony's marketing mistakes that killed Beta. The technical superiority of Beta is marginal at best, and has long since been negated by improvements to the VHS format. And note that 8mm is killing compact VHS, despite the fact it requires a larger investment. The Macintosh/Windows story is the same. Apple squandered an early technological lead through its attempt to keep making monopoly profits. This provided a window for Microsoft to provide an equal, or better product more cheaply. And as went Apple, so will go Microsoft. The supposed MS monopoly is slowly starting to crumble under the attack from the new open Java architecture. DSK is the most robust of the examples, perhaps the only one that doesn't fall apart under close examination. It does weaken, though. Most users do not obtain the tremendous increases in speed that some DSK users claim, and given that any user can go out and buy a DSK keyboard, or just remap their keyboard (I can remap my \$120 keyboard to DSK in a few seconds), if DSK truly is better it will no doubt eventually take over, given the low or negligible cost of conversion.

But those are my only complaints. Keep those newsletters and cool parts coming.

—mike

OK .... A long shot... but I've been spending too much time on the internet and took one idea and twisted it a bit. We had 6 speed, 7 speed, 8 speed, now 9 speed and so how about a "Rivendell 7"

#### The idea:

Get Sachs to produce a narrower version of the 7-speed freewheel by using 9 speed spacing between cogs (and narrower cogs) - granted this is the tough part, but maybe they could use existing 6-speed bodies with 9-speed spacing and SEVEN narrower 9-speed style cogs. If it fit, they'd just need different spacers and narrower cogs.

This way you keep 7 speeds but with a much narrower freewheel and perhaps eliminate cross chaining to the extent that all 7 cogs could be used with either chainring. You'd have less wheel dish and a better wheel. You'd have to use the new narrow 9-speed chain.

#### THE UPGRADE WOULD BE:

NEW CHAIN

NEW FREEWHEEL

NEW CHAINRINGS

RE-DISH THE REAR WHEEL.

Not too bad... you gain two more gears than current 7-speed setups (assuming I'm correct about the elimination of cross chaining), it would probably be lighter (chain is lighter, freewheel is lighter, chainrings are marginally lighter) and the rear wheel is stronger.

"What kind of gearing are you using on that bike?" asks bike dude one

"Rivendell 7" answered the practical and knowledgeable bike dude Two.

... man, thank God tomorrow is Friday! I'm losing it.... anyway, a fun thought.

Peter Guyton

P.S. the original guy on the internet posted the idea of using a 5 speed freewheel with the new 9-speed spacing and going to a triple up front....

Dear Grant, Gary and folks:

I'm strongly interested in **buying** a Rivendell frame, but first I'd like to ask a few questions **so** that I'll have a better idea of what I might be getting myself into. I've got a couple of really nice bikes right now (not to mention the tandem). Both are made here in Seattle by Davidson; one is a lugged, 52cm center-to-top, road bike and the other a TIG-welded, 42cm center-to-sloping-top, mountain bike. Both are wonderful and have served me well. But neither were really designed for century riding or for commuting, activities which are closer to my heart these days than the racing these bikes were intended for. I am intrigued by the concept of the All-rounder. I like the idea of having one bike that can do the work of **two**. I'd love to have a beautiful Rivendell frame with that knock-out cloisonne head badge. I'd like to have a quick-handling bicycle but I want something more relaxed and more versatile than the typical road racing bike. Yet I don't want a frame that is too laid back, which I fear a touring frame might be. If I got a wild hair, I might race the bike in a criterium or take it out on some trails. I have little interest in the idea of full-loaded towing **or** full-on single trail riding. Can the All-rounder tit the bill? Or **do** you think I would be better served by the Road frame?

My other concern is my size. Being five-foot-eight, I ride a smaller frame; I realize that 700c wheels might not be the optimum size for a bicycle my size. **So** I find the idea of 26-inch wheels very appealing. I seem to have shorter-than-usual arms for a person my size, making the 53 cm top tube on my current road bike a little too long for my comfort. This is how I answer the questions about size listed on the order form:

-692 mm is the distance between center of bottom bracket to top of saddle (on both bikes); -I'm five feet and eight inches in height; -I am slightly thick in build (but with a little work I hope to be back to medium soon); -80.3 cm is the distance from the floor to the bone between my legs. After typing this letter to you, I think that I'm leaning toward the road bike. But please, tell me your opinion.

-Larry Bafus

P.S. I dislike cantilever brakes, but I can live with them if necessary; they are **so** difficult to set **up well** and **are** less-than-elegant in general. Also, could you tell me the formula for figuring gear ratios? I know I used to have it written down somewhere, but I don't know where it has gone.

*Larry, an A/R would be good-to-ideal for the kind of riding you describe, but **so** would **our** roadframe. You'd be on a **54** roadframe, by the way, and probably a 525 A/R, maybe a **54**. That probably sounds way to big to you, but **our** frames fit small—which means that the shallower than average seat tube and the lower than average bottom bracket combine to give the bike a lower standover height than just about any other bike of the same nominal size. A **54** Road easy, and I wouldn't fret about the top tube being too long. In either case, the goal **is** to get the height of the tops of the handlebars to within an inch **or** less of the top of the saddle. Read the TT/BH story in RR6--.*

*The road frame fits tires **up** to 700x35, and with a fender you can ride **up** to 700x32. If you're after a great commute bike you can ride with fenders and fatter tires than that, **so** you can ride through deep potholes with added air **to** prevent a pinch flat, then the A/R is the way. If you also wanted the bike to be a fantastic loaded touring bike, I'd say the A/R for sure; but you said that didn't matter, and **so** I think it's all a matter of how fat a tire you want to be able to ride with and without fenders.*

*The road is a very all-around road bike, and the A/R handles like a good road bike when you put roadish wheels on it. I know that just makes the decision more difficult, **so** go back to the tire issue. If you're commuting and want to ride pothole-proof tires AND fenders, get the A/R. If you pretty much know that the fattest tire you'll ride with fenders is a 700x32, then the road will do fine. If you want the new bike to double as a mountain bike, then the A/R...*

*I'm glad you're interested, and call **or** write **or** email with any questions you have. We can fit you perfectly, even without seeing you. I'd like to see a photo of your current bike set up as you ride it, though.*

*I know what you mean about cantilevers, but there are three of them **out** there (two deceased) that are actually easy to deal with, if you can imagine. The Mafac and Dia-Compe #982 are a cinch to set up and adjust, but they're gone. The SunTour XC Pro, which we still have, are as **90%** easy as sidepulls.*

*Gear ratios: (chainring/rear cog) x wheel diameter. For instance, with a 700c wheel (use 27-inches), a **51** x **17** is an **81** inch gear, because  $51/17 = 3$ ;  $3 \times 27 = 81$ .*

Grant

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LETTER FROM A DEALER

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Hello,

Someone gave me copies of **RR3** and **4** recently and I've been enjoying them. Reading the Progress Report has hit close to home, as we've been going through some terrible cash flow times this year too.

I have to say I share your frustration with the way things have turned **out** with the Big Component guys. The planned obsolescence and purposeful incompatibility of parts really gets my goat. Up here we **still** have quite a bit of interest in traditional touring bikes, and it's getting harder to assemble compatible drivetrains. Occasionally I get a customer who asks for the old stuff, and it's fun using Dura Ace freewheels, Phil hobs, conventional-sized chainrings, and downtube shifters. Everything works so easily.

Why can't more people see it that way? They **all** fall prey to the hype (now we have) people thinking they can't afford the "good stuff." Most of the time if I talk about the advantages and simplicity of downtube shifters or bar-end shifters, they think I'm trying to unload some old stock on them, and I'm actually unselling the sell.

—F. R  
Washington

The **local** bike shop **guy** suggested I use "neetsfoot" oil on the underside of the leather and "kneed" the top gently with a ballpeen hammer to break down the leather fibers...have you ever heard of this technique?

Tom A4

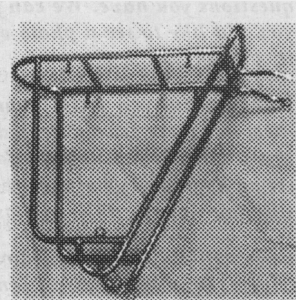
*In the '70s a dealer in this area used **to** soak saddles in a tub of neetsfoot oil for a week, then pound them with a sawed-off baseball bat. It breaks down the fibers and ages the saddle ten years in a week, **so** I don't recommend it. A wellshaped saddle set up properly is hard but comfortable, like a park bench. After a couple hundred miles **or** so, your sit bones will create little recesses in the top, and it'll be even more comfortable then. Hard isn't the enemy—if it were, we wouldn't be selling hard-as-wood saddles to people who formerly rode gels. Grant*



# PROJECT UPDATES

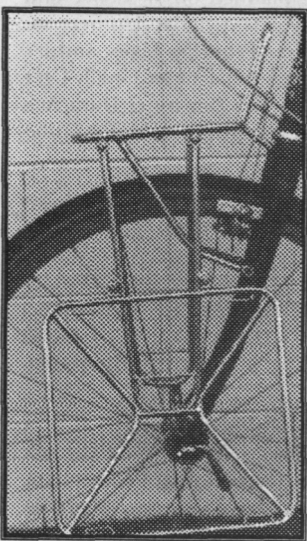
## Nitto Racks

The standard Nitto rear rack is too short for the Carradice bags, so the lower portion has to be modified. Another solution would be to use a hookless attachment method in which the webbing strap would do a U-



turn around the lower portion of the rack, then double-up on itself and attach by means of a hook or buckle of some sort. The disadvantage here is that it would be a bit of a pain to remove the bag; but it would be the most secure method of all, no doubt about it. The modification we're proposing would allow both. Masa said he'd spearhead this thing, and since he's living in Japan about an hour from Nitto, that makes some sense.

The Mini-Front, mostly for the All-Rounder and Mountain frames, just needs a curved rod where there is now a straight one. This is a cute rack, but we have no bag for it—a future Carradice project.



The Low-Rider Front rack is changing from a square to more of a triangle shape, and will more or less follow the lines of the Carradice Super C front bags. It should work with all models of front bags, and I can't see anything about it that would rule out any bags; but the main concern is compatibility with the Carradice fronts. There is no High-Rider front rack yet, but we want one.

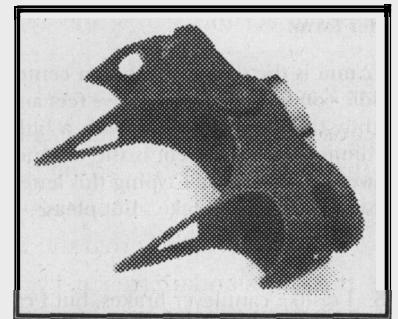
The Handlebar Rack is far out there. The rack we're doing will be compatible with Pearl stems, Technomic, Technomic deluxe, and the Rivendell lugged stem, and Nitto's current model, which they make very few of per

year, is perfect. We just don't have a bag for it. We can send Carradice Nitto's bag to copy (we asked Nitto, since they're no longer supplying bags, and they said Sure).

At least three sources including Carradice are working on a new saddlebag adapter, so you can use a Longflapper on a Brooks Pro or any modern saddle. Carradice will send us a sample soon, as will Craig Metalcraft and a local fellow.

Carradice has sent us a sample Courier bag, and is working on a saddle cover, for riding leather saddles in hard rains.

The Heron fork crown looks nice on the outside, but the inside isn't even close to spec. It reminds me of an empty shell. We have five samples. Here's a picture: It's a round-blade crown, and we built the Long Low prototype with this fork crown, and it works just fine. Long Shen will fix it and send new samples by end-January, at which point Wford will build them up and Specialized will test them.



Ted is still working on the Mafac-like cantilevers, hoping to have them made here sometime before never, and I think he's shooting for Summer.

Our frame brochure is coming along, but we still need about 10 more photos, then layout and production. At one point the plan was to include it with RR8, sort of stuff it in there and staple it shut, but it looks unlikely now. Spencer's taking photography and he may shoot some of the pictures.

We're looking at **traditional gloves**, crochet-backed cotton and leather jobs from Pakistan, glove capitol of the world. I called Cannondale and left a message asking where they got those great crochet-gloves they had made 15 or 20 years

ago, but no reply—I'll try again. Still, they were something like \$25 in 1977, *so* even with a few Rivendollars they'd be up there now.

The **cycling caps** are in, and they're okay. A little Confederate-shaped for me, but they fit well and have served us well in the sweat-absorbing and rain and sun-shielding departments this past month.

Coming in early February: very few, 10 of each size from 3 to **6, Italian (Sergal) wool jerseys and pullovers**. The jerseys are striped with 3 colors, stripes about 5cm tall, horizontal, custom, that's all. We couldn't afford to buy many, but couldn't resist doing a small run, so if you're willing to gamble and know your European size, call up and order. \$80. The pullovers are a tad heavier, green with a short zip, no pockets, and \$90. We expect to be out of these three weeks after this issue hits. If you miss out, it's not as though you missed out on a screaming deal, since they are costly. If you get one, you'll like it. Peter's wearing the jersey in the photo accompanying the Sit On a Bike Right story.

**New Road model.** Our internal name for it is Long-Low because it has a longer wheelbase and lower bottom bracket than our standard road model, which already boasts a low bottom bracket and longer-than-common wheelbase. The main difference is that the LL model will be designed for the old standard reach brakes, or if you don't have those, cantilevers. It'll have clearance for 700x38 tires (The Road standard clears 700x35); and 700x35 with fenders (the Road standard handles 700x32 with fenders). In some sizes the seat and head tube angles are half a degree shallower; in the larger sizes they're pretty close to The prototype rides great.

**Light, fat tires from Panaracer.** The Pasela tire with a kevlar bead. The Pasela is Panaracer's sort of all-around non-racing road tire, and even with a wire bead it's quite light (a bit over 300g in a 27mm-wide 700x32). We asked for Kevlar-beaded versions, and they said they'd do it if we committed to 300 per model—and we're interested in the 700 x 32 (27mm wide, 265g, 700 x 35 (31mm wide, about 290g) and 26 x 1.25m (30mm wide, 245g). Now we're asking for spread-out shipments, and we'll see how lucky we are. Very nice tires. I wish they were slicks, but more important than that is their round profile and good rubber. They're Japanese-made, top quality.

Flash: Ritchey has a 700x30 Tom Slick, and if they can do a light version (current is more than 400g), we'll just go with that one for our puffy-smooth tire. If not, the Pasela.

**From Brooks.** Leather brake lever hoods. Brooks says maybe not. Tooling is costly, we'll see. Grey saddles: We continue to ask. Ti-rail B.17 and Pro: same story, stay tuned.

**From Carradice.** A courier bag, and we should have a couple samples by now. The normal one is a quickie bag, probably best for real couriers who have to be fast; and they're making a sloth-like model for us, too—with leather, metal buckles, something for the contemplative courier. We'll get samples in a couple of days, try them, see how it goes. Carradice is also working on a rucksack, a remake of a model they made thirty years ago. We were going to do our own, but the quote we got for a single prototype was \$825, and we aren't that nuts.....And also, by February we'll have a prototype of a **Carradice saddle cover** made specifically for the oft and much ballyhooed (here) Brooks B.17 when rigged up with a Carradice bag.....and finally, we've got lots of possibilities for a saddlebag adapter—Nitto, a local guy, Craig Metalcraft, and Carradice itself. David-of-Carradice says they've been working on a new one for a while now. After contacting outside vendors-whodo-metal and getting discouraging quotes due to the small volume, **he** finally bought some small machines himself and has a pretty universal design worked out. I hope we can put it in cat. No. 3. ...

**Our color frame brochure** should be out soon. We're trying to settle on a few colors, and many good ones will get cut. It makes things easier.....We'll have another catalogue out sometime in the Spring. It'll have stuff on Herons.

**Those fancy English touring shoes** arrived and look great, but we had a horrible fitting batting average—more than half came back. As touring shoes go, these are in a class by themselves. You can wear them to the classiest shows or joints, you can walk around town in them, do yardwork in them, ride them **two** hundred miles, and not look forward to taking them off. They don't fit skinny feet, they don't accept cleats, they do have heels. If you want them, send us your American size and we'll order you the English equivalent. To order, send \$140 before March 1 and be prepared to wait **6** months. If they don't fit, return them. All leather, all black, very nice. **END**



# PROGRESS REPORT

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

## OCT 27

This is our busiest month ever, I think. and it's a good, good thing. Getting the catalogue our really helped, but so many people still have not received it. Well, at least 300. It's pretty clear that the printer didn't even mail them all by hulk—he just didn't mail them, period. I think he mailed maybe half. Bulk mail is had, but it's not that had. The only way we'll catch up is to write something in RR7, and send out RR6 to the ones who still haven't received it. I don't what to do about his hill. He says we owe him \$6,000+, and we've spent at least \$3,500 on postage trying to make up for his mistake, and we lost at least \$24K in sales, and we've spent at least-at LEAST 80 hours on the mailing project. I don't get it, I don't understand how that is. He's so hyper and friendly and it's depressing to think it's all an act.

Our Nitto and Carradice orders are taking forever. Ritchey's out of things we need, our fender supplier is out and people are ordering fenders like mad (five a week is "like mad"). The racks seem to be lost in a black hole somewhere—communication with Nitto is as close to nonexistent as it gets, and it's such a shame because the potential is so good. Herons are coming along. Marc's nervous about the dropout supply. We've designed a super duper dropout for them, but can Tecnociclo come through on time, or do we go to Long Shen in Taiwan? With Tecnociclo we can get forged steel, even stainless; with LS we can get cast stainless or cast CrMo. Mario has been nice and helpful and Italy has to be the sentimental favorite, but it all comes down to who can really, actually, honestly deliver the dropouts to us by January. Tooling charges are close to the same, and the Italian drops cost more, but not that much more—about \$4 per set—but it means nothing if we don't get them. If we start now with LS, we (well, Ted) has to front the money for tooling, and it'd be a waste if we ended up not needing them—so we have to put all the eggs in one basket and hope it works, and we're leaning toward Mario.

The decals are coming along, but I'm not sure about the headhodge (nameplate). I'll ask Chuck today.

## ELECTION TUESDAY.

We had a terrific October. almost \$51K in sales, and we're almost caught up with our Waterford hill. Peter's been so good, really helpful to Spencer and me, and it's happy times here now. The past two days our invoice totals have been more than \$5,000 each, and for the first time in more than eleven months we've gone into a payroll week with enough money to make payroll even before Monday's work.

The Nitto orders are still our big hangup, but everything else is coming along okay. For a while there it seemed every one of our vendors was having inventory problems. Ritchey is discontinuing the 1.7 Megahites in the blackwall kevlar version, and both Ritchey and Specialized have been out of 26 x skinny

tubes for a long time. We ran out of Campionato Del Mondo tubulars, but were able to fill the orders by getting them from QBP (at much higher prices, so there was no net profit in these at \$35. I'd like to import them directly again, but the freight is so high. We ordered 60 jerseys in 4 sizes (15 per size) from Sergal, pretty striped jerseys in our own pick of colors, and they'll be here late December. We'll have to sell them, but we don't have enough to put in a catalogue, so maybe a flyer.

The printer screwup is a mess. He gave us a bill for \$6,040 for printing and mailing, but he cost us almost that much in remailings, and about 4 times that much in September sales, so I wrote him a letter explaining why we weren't going to pay him (I sent it to our lawyer first, she said "great letter—send it")—and haven't heard from him since. At first I thought "bulk mail is worse than I thought," but it's pretty clear now that he failed to mail at least 1,800 of them, because that's how many people responded to our postcard asking them if they'd received it. Bulk mail is bad, but not that bad. I just don't know what he was thinking, why he'd do that.

RR7 is at another printer now, and we're getting quotes on the catalogue, too. We need another one of those out by February.

I'm enjoying work more now than ever, and I feel so lucky to be able to do this. Our customers are so nice, so tolerant, so patient, just good people.

## Nov 19.

We're doing well, plenty of orders, more organization, not too many frustrations. The Freddie T-shirt thing is a little slow, we're running low on some Nitto and MKS stuff as usual. Herons are coming along with only a slight chance of some slowdowns. We're current and even a little ahead with Waterford now. There's so little time to work on the Reader, though, and I've got to make time for that. Then there's the catalogue, which we're about out of now and have to reprint, but reprinting costs so much for small runs, and we can't afford a big run. I think we'll do about 1,000 of them, then redo the whole thing in March. We're working on a frame brochure now, with color pictures and all. It's a hassle getting the photos taken, and we really ought to show some complete bikes in there, too.

RR7 is out now, barely, and it's doing okay. People seem to like it, but I hate the typos—"price" for "pride" in the Freddie story, and some missing words later on. One of these years we'll do a typo-free one. Tom Ritchey's going to use our road crown for his Swiss Cross frame. He's the only builder I'm selling to, and only because he designed some Bstone crowns for free back then. He can't get those crowns anymore....

If sales continue this way we'll have a good year. I wonder if we'll make money. Cash flow is acceptable now, and I think that matters most, anyway. Peter's

talking to a member who has some suggestions for our mailing. He's in the direct mail business, and thinks we've been wasting money the way we do it. If that's so, we want to know.

## OCT. 20.

We're starting to get orders from RR7 already, which is good because the others seem to have slowed. We're out of Nitto and Carradice stuff but doing okay otherwise. I'm working on the frame brochure, redoing some of the decals just a little bit in ways probably nobody will even notice. Peter's building some bikes for Bike Guide. It's payroll week now and Mary says we've got to have a few really good days if we're going to make it. We've been paying Waterford a lot lately—we're even ahead now, I think, and maybe we should have held onto more of it, but it feels so good to pay bills and be current. I'm really proud of that, and I don't ever want to blow it.

I hope we can give some Christmas bonuses, just something, and something for the mail lady Julie and Peter's mom. We're also busy with our usual payroll day. We've got to be the toughest stop they have, and they're pretty good about it.

I've been thinking more about another road model, something not quite a dedicated touring hike, but with clearance for 700x37 tires or 700x35 with fenders, with either cantilevers or standard reach sidepulls. Maybe in the Spring.

## Nov 26.

We've been doing well, but the RR7 mailing is taking a lot, and I guess we've been ordering lots of hubs and bottom brackets and cranks and hars and stems and hags, because next week will be the second week in three with \$10K in bills due, and both are payroll weeks, too. We made the last one, and I thought wow, if we ran do that, we can do anything, but I never really thought we'd have to do it again, and it's happening next week. We're starting to get too many returns, almost always sizing issues. It can't be as bad as L.L Bean, but man, it just eats up the time and niggles away at the account constantly, and it's our fault for not giving good sizing information. The Carradice pants, for instance—almost everyone takes a small, regardless of how big they are. The Freddie T-shirts were supposed to be the same Fruit of the Looms that our others are, but they were out of them, and the substitutes, which are very nice, are very large. I got an extra large, and can fit a large with room to eat.

I'm starting to have doubts about the Herons ever happening. The original cost estimate seems to have been incredibly low, and now there's talk of downgrading the tubing, eliminating the head badge, stuff like that, and that's just depressing. Nobody wants to do that, we all want to make it good and pretty, but it can't be a moneyloser. At first we were talking about \$600 per frame, then \$650, and now it looks like \$800

is closer to it, and if that's the case it's not even worth doing. If it's over \$700 I don't even want to do it. The main thing driving up the price is hand labor due to lack of production machinery, but the machines cost about a hundred thousand dollars, including powder coating stuff.

We've talked about selling them to dealers as well, but that was when they were going to cost us a lot less, and even then we'd have to run our margin to nothing, to the point that it would just about be a personal favor, and now that's all eaten up. I think the price will have to be \$700 at least, and I'm afraid it's going to cause some problems internally.

We're trying to shoot bikes for a color brochure and it's going slow, and I was hoping we'd get the brochure out with RR8, and no way now. There's still good stuff—orders are coming in, and when we get our next Nitto and Carradice orders we'll be able to fill lots of backorders. The Nitto racks are snailing along. I told Masa we'd give him \$800 if he could light the fire and get us perfect racks, no changes necessary, by the end of December.

Carradice is working on a saddle cover for a B.17 with a saddlebag. Gene M. sent us an old Carradice catalogue that had some rucksacks in it, and I asked David of Carradice if he could still make them, and he's looking for the patterns. The hats will be here the last week in December. In the meantime we just have to stop buying new stuff. We have to keep the catalogue stuff in stock, but no more new things for a while. The hills are outrageous. It makes me think we'll never get ahead. We've been potting money away in a savings account, and had to take out half to make payroll last week, and we'll most likely have to take out that much again (about \$3k) to make payroll next week. Ted's coming the week after to help with the computers. Our order entry program needs some help, and he seems to be the one to do it. Maybe Nate. maybe not. I wish Nate had the time, but he's understaffed and has much bigger clients to deal with. Main thing: No more ordering stuff that we don't need NOM'.

### DEC 3.

We got in the first forging dropout paperweights yesterday—37 of them, weighing 36 pounds and the freight was \$342.12, making them money down the drain. I've got to find out why the freight was so much. They were sent the slow way (Expedited, rather than Express), and we've received Carradice shipments that weigh way more and cost way less to ship. It was COD, too, and it was shipped on our shipper number, so something's up.

The days have been good, the hills have been high, and we've been able to pay them and make payroll, just not put any money aside. We may have a \$500 thousand year, but where's the savings, where's the profit, where's the trimmings from that? Ben called about the hats yesterday, said the colors look good (he seemed concerned about the choices earlier) and they should be here soon.

We need a printer at the home office, or a \$300 part for our old Laserwriter II. I'm in email heck again—at least 6 hours of correspondence to dig into, getting way behind, but no time to do it. RR8 is roming due, and I need about 10 hours to complete it, but same story. It's all fine, at least we have orders and are getting a few new members a day.

### DECEMBER 12.

This has been the best day yet. I don't know how much business we did (yet), but for the first time

since opening day I've actually relaxed and been happy and confident. All the other good days have been tainted with pressure to repeat it again tomorrow, or comparisons with much lesser days, or with some kind of thought like "we'll never be able to keep it up." For some reason, today isn't like that. I think we'll take in a couple thousand dollars today, but mostly I see a pattern developing, and it indicates that we're on the right track. Ted has been here working on our computer, getting things straightened out. Peter's been taking charge of lots of things. It's just good.

### DEC 15.

I wonder if we should have an employee meeting or something. Things seem to be going good, but I want everyone to like working here, too, and I'm not sure that's happening. I've been inputting orders full time for the last week, and about half the time I'm mid-phone call as I'm entering, and I have to check on a back order for someone, and in my haste and distraction I take down a credit card number wrong, or a phone number, or forget to write the size, or I don't have fresh order form handy so I write it down on whatever's handy, and sometimes it gets lost. I've put in probably 3,400 orders by now, but it's been so busy lately, and I've been juggling that and lots of other stuff—ordering things, working on other projects, sometimes writing the RR, correspondence. I really want to work on the RR more, and #8 is coming up and will need the time if it's to come out good. The Heron catalogue, too, and our new new catalogue. Collecting the artwork, arranging for more. The Reader would be better and whole lot easier if I didn't have to do most of it after 11 at night. I hope S is happy here. I'm not sure he is. He's cooped up here so much of the time, when he should be out living.

### DEC 12.

Lots of Nitto stuff is out of stock and it seems so hard to get on time. Peter says "we'll never have NOTHING on back-order, so don't be miserable about it," and that seems like good advice, but it's so frustrating, anyway. Grant H. came by yesterday with the French lacquer chips, about 1kg of them, and I'll get some denatured alcohol at the hardware store and try it out. We've got to send the cyclo-cross bike to Bike Guide, and I think I'll Tru-Oil that tape.

### Dec 16.

Gary's out here for the week, taking over in the office so I can stay home and work on the RR and catalogue. He brought with him the prototype LL bike, and we stayed up until 2am to build it so I could ride it tomorrow. One problem with the rear bridge (too low), but that's an easy change to make, and it rides great. It has the round-blade crown that we'll use for Herons, too. It looks neat and doesn't flutter (like the naysayers say roundblade crowns do), but that's probably due to the custom blades. Anyway, I like how it rides, and we'll introduce it sometime in the Spring.

### DEC 17.

Bad day, we had a frame break, an A/R. It broke at the rhainstay. Larry S. the owner, says he breaks a lot of frames, but I am really bummed about this. He's had it a year or so and rides it a lot, but still. He's cool about it, I am not.

### DEC 21.

Larry dropped by the frame today, cool as ever. I'm settling in with it. We'll replace the stay and repaint

the bike (he's switching colors now), and he'll have it back in two weeks. I guess there's no sense doing the frames if we're/I'm going to get funky out when this happens, but man o man, I sure wish it hadn't. I wonder if people will read this and shy away. I wonder if people who have one will think "mine's next!" and worry about it. Sometimes I wish this report weren't public, but I don't want to start writing it any differently. It's a personal journal, it's emotional, it's supposed to be honest and I'm supposed to be able to say what's on my mind, and this sure is. Whatever happens happens.

### DEC 22.

Jeff and I rode halfway up the mountain in what he always calls "Rivendell weather," meaning we'd better wear as much wool and waxed cotton as we can, and fill up the Carradice bags, I rode the prototype cycloX frame with fenders on it, and it looked great. It felt terrible, but it's amazing how much fun you can have on a bike that feels so crummy. Once you're on the bike you forget it, you just go. Shellac is happening all over the place now. I'm getting INTO it, and I'm not sure whether that's good or not. I found out shellac is made from bugs called "lac bugs," and I like that. I wonder what it's like at a shellac factory. I've got one more layer to brush on one of the next magazine bikes, then off it goes.

I'm home alone for a few days, then I go meet the family up the coast for Christmas. It's the only time I get to play Bob Dylan music, since The Ballad of Donald White and No More Auction Block aren't holiday tunes.

### JAN 2.

We had a good year, about \$500 thousand in sales, hot still no money put away except for a few thousand slated for stem tooling. The accountant will tell us whether or not we made money on paper. We need to get the new catalogue and Reader, and I hope Bicycling says good things about the Reader. We need more members. I was reading in the paper about Title Nine sports, the women's sports stuff supplier, and the two owners said in their tiny first year they mailed out just 15 thousand catalogues. We mailed out 4,000 in our second year, but I guess the cost has something to do with that. Now T9 mails out 5 million, something we wouldn't do even if I lived to be a hundred and fifty.

Jan 14. It's been slow and my email's been down for more than 3 weeks now, so I must have a two hundred messages in there. We moved the house computer into the living room while the office room/playroom got dried out after the flood, and I kept getting error message 11's when I tried to open the email. Then Peter told me we didn't have a modem hooked up anymore, and that was why.

Ted has been working on our FileMaker system, getting it converted to the kind that actually keeps track of inventory, and we haven't been able to do any invoicing for three days, so we're kind of behind. Ted's pretty amazing with that stuff, though. He's doing it from 2K miles away, and it's so far beyond me.

Peter's been sick for five days. Spencer's back in school half time. He just bought a Leica M3, his first camera, so who knows where he'll go from here.

# FABRIC ISN'T ALIVE

(So it can't breathe, sweat, burp, or worse, either)

**B**reathability refers to water vapor passing through the fabric, but it's a bad term because "breathing" suggests the fabric plays an active role, as though it inhales your body vapor and exhales it on the other side. You'd have to be a nut to believe that.

A molecule of vapor is smaller than a molecule of water, so it makes sense that if you pick the right pore size in a fabric or laminate, vapor can go through it but water can't; but it's not quite that simple. Vapor passes through pores by osmosis, which you may recall is the passing of something (body vapor) through a semipermeable membrane ("breathable fabric") from an area of greater concentration (the air right next to your skin) to an area of lesser concentration (the world outside your jacket or whatever). Osmosis stops when an equilibrium is reached; for example, when it's just as humid outside the fabric as inside. When it's raining, the outside humidity is 100 percent, so there's no "area of lesser concentration" for the vapor to go to.

Temperature affects it, too. Fabric passes vapor better when the air on the inside is much warmer than the air on the outside. If you're in a warm rain, forget it, and most of the time when it's raining, it is kind of warm. (Compared to cold.)

..... Yet another thing that affects vapor-moving-through-fabric is the amount of interference between your skin and the outer layer of clothing. Someone once explained to me, and I'm not repeating this as a fact, but it makes a good story, and the guy who told it to me had all kinds of credentials (physicist, mountaineer, full-time product tester). As good as I can recall, he said vapor molecules are their smallest when they first leave your skin, and as they travel farther from your body, they lose energy and grow larger as they pass through the insulation. Then, as they finally reach the outer layer, they're too big to pass through the pores. In below-freezing air, the outer layer itself is cold, and the vapor condenses and freezes on the inside of it. I tend to believe this explanation because in the old days when I used to spend a lot of the winter snow

camping, I used to wake up with a layer of frost inside my breathable sleeping bag cover. Anybody who's ever slept in a breathable tent or sleeping bag cover in subfreezing conditions has had the same experience.

Have you noticed that the most expensive rain garments have the most zippers to aid ventilation? Under the back flap, under the arms, sometimes from wrist to lower hem. When you open the zips you're making it harder for osmosis to happen because you're equalizing both the humidity and temperature differences. The vents offer an effective, low-tech solution. Once you've got zippers open, you might as well have vinyl raingear, because there's no way the moisture is going to fight its way through the fabric/laminate, when it can just coast through the floodgates.

When your rainwear is a laminate and the outer layer is wet, even if it's not raining (anymore), then that wet outer layer acts as a 100 percent humidity environment, and until it dries, forget it, it's not going to pass body vapor. It will pass vapor that's forced through it under artificial pressure, as some retail displays, with their Plexiglass tubes and air pumps seem to prove; but those are fake experiments. You can't force vapor through fabric with the same pressure those electric pumps can.

The ideal circumstances for body vapor transfer are: Cold but above freezing outside air, moderate to vigorous exercise, minimal insulation between skin and shell. Light cross country skiing in 39-degree weather wearing a single layer of wool or polyplastic under a breathable shell, for instance. But probably you'd wear more insulation than that and you'd zip those vents open. Some combination gets you through, but it's not the miracle fabric.

There's no way to climb a long hill strenuously and in the rain without getting a bunch of sweat on the inside of the jacket, no matter what it's made of. A poncho works better because it vents better. Or, if it's just a light rain and not too cold, just wear enough layers of wool to keep the drizzle off you. As for rainwear, just get something that sheds water. If you want to buy garments made from semipermeable fabrics that work in the rare, ideal conditions, that's fine, but don't expect them to breathe.

END

# RIVENDELL LONGLOW ROAD FRAME

**W**

e call it the LongLow because the wheelbase is about an inch longer than our standard Road frame's, and the bottom bracket (given the same tires) is exactly 5mm lower. About 1/5th of an inch. If those were the only differences we wouldn't have bothered with a whole new model, but there is one other thing that, combined with the first two, justifies this frame's existence: It is designed for standard reach (new guys call them "long reach") sidepulls, and that means two big things. **One**, you can't put today's modern sidepull brakes on it, because even if you slide the brake shoes to the bottom of the slot, they still won't reach the rim. So you can either round up some older standard-reach sidepulls, or get Shimano RX100 standard reach side-pulls—one of the rare standard reach brakes still being made; or you can use cantilevers, in which case we braze on those bosses for you, all at the same price. **Two**, you can fit tires as large as 700x38 (compared to 700x35 on our standard road frame). It works with fenders and 700x35, too.

On our standard road frame we give you the most tire and fender clearance possible and still have the bike accept modern sidepulls. The LongLow trades the ability to use modern sidepulls (except for that RX100 one already mentioned) for the ability to use still fatter tires.

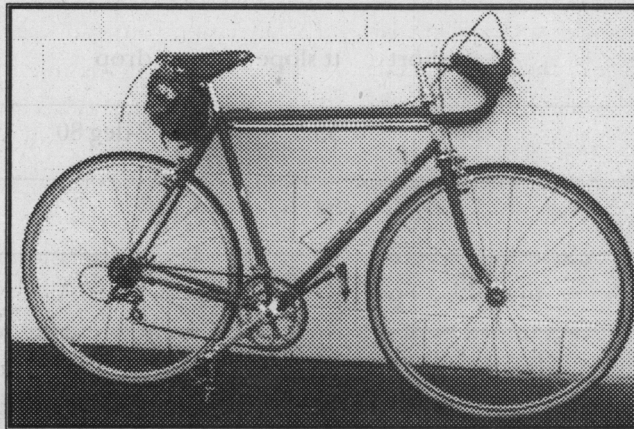
The LongLow standard Road ride a lot alike. The longer wheelbase of the **LL** is detectable to someone who's sensitive to minute differences. in which case it feels a little more gentle, kind of whispery, peaceful, and—you see how

hard it is to describe the ride of a bike with normal words? IF we praise the softness and smoothness of the ride, it makes our other bike seem harsh and jerky, and it's nothing like that. If we point out the "muffled" feel, it makes it seem sluggish, and it sure isn't that, either. It rides right. It's not your bike if you're after a criterium switchblade, and it may not even be your bike if you're after the turn-

on a dime quickness associated with most modern road-racing style frames. But it's smooth on the straight flats, it climbs as well as any bike (frames don't climb, legs do), and it descends our local Mount Diablo as fast and securely as any, and probably has the edge over all other road bikes in gusty crosswinds and on bad surfaces. Historical note of no import whatsoever: The 44cm chainstays on our 59cm and smaller LongLows are

the same length as those on Jaques Anquetil's 1961 Helyett, and a mere 5mm shorter than on Louison Bobet's 1954 Stella.

The LongLow has a **flat** fork crown of our **own** design, and and uses round, Reynolds 531 blades. Round blades are common on track bikes, but are rarely seen on road frames these days (a 28mm x 20mm oval is the standard for steel bladed forks). The blades we use are slightly heavier than track blades, and are solide and non-fluttering under the hardest braking. They're just 12mm Ø at the dropouts, giving the bike kind of an old-fashioned look right out of the box. When you ride hard over rough roads you can look down and see the tips flexing, doing what they're **sup** posed to do.



Is the LongLow our version of a touring bike? No! There's nothing wrong with touring bikes, and you can certainly tour with this bike—fat tire clearance, two eyelets front and rear, and rack mounts on the seat stays—but our intention all along was to design a bike that rode more like our road bike than any other bike that isn't our road bike. In most sizes, the head tube angle is the same as it is on the road bike, and in all sizes it's within half a degree. The LongLow has a light, easy tilt characteristic of all our frames.



*The LongLow crown is a flat style and uses 24mm round blades. We're using on Herons, too. Prototype forks are being ridden and lab-tested now, and we expect them to pass... The same crown is also shown in project updates.*

**Frame sizes 52 through 65 in 1 cm increments.**

**Member price:** \$1,050 (1-color); \$1,150 (painted head tube) Same as all our frames.

**Availability:** We're taking orders now and have sold ten already. Delivery should be sometime in March, pending final production of the fork crown. Right now we're riding and testing prototypes.

#### RIVENDELL LONGLOW ROAD FRAME GEOMETRY

st	ht	rake	tt/short	tt slope	drop	cs	LUGS
52	73	72	50	53.5	2-deg 80	44	road
53				54			
54		72.5	45	55/54			
55		72.5		55.5/54/5			
56	72	73		56/55			
57				57/55.5			
58				57.5/56.5			
59				58.5/57.5			
60		73.5	42.5	59/58		45	
61				59.5			
63				60			A/R
65				61.5			



# A COMFORTABLE AND EFFICIENT POSITION

## ONE WAY TO GET IT

**Y**ou should sit well behind the cranks on a comfortable saddle that doesn't numb the plumbing or crush the folds. How far back you sit is up to you (as is everything else), but you should be back far enough *so* that your weight is being supported by your butt, not your hands.

You should be able to ride the brake hoods with a good, noticeable bend in your elbow, *so* your forearm is more horizontal than your upper arm. You should be able to remove your hands from the hoods, stick them behind your back, and hold your upper body position without a strain. You should be able to grab the tops (the straight section of bar next to the stem) gently, like a piano player, and without "falling into" them. You should be able to reach the drops with little if any change in upper body position, and ride the drops comfortably on a flat road for a couple miles at a stretch without feeling as though you're doing time. Compared to the position most riders have, this one has the seat a little farther back and the bars much higher, and it works well for most people.

Finding a position like this isn't impossible, just improbable, because people sell and buy bikes too small. Most bike sizers talk about smaller frames being "lighter, stiffer, stronger, more responsive," but in the big picture those things matter as much as ant molecules: Lighter? A few ounces of weight isn't enough to matter.

Stiffer? Once a frame is reasonably resistant to bending, there are no important gains to be made by making it any stiffer; and almost all experienced riders like the feeling of flex. Stronger? Frame failures are caused by accidents and bad engineering, not "buying toobigga frame." More responsive? A common description that caves in under any analysis at all. Does it mean "goes faster for any given load applied to the pedals"? Prove it. Does it mean "reacts more quickly to steering input"? Then it will it also react more dramatically to a pothole or a rock in the road.

Most experienced bike riders are scared of getting a

frame too big, because they associate it with looking like a newcomer. Lots of adults who buy their first "serious" bike graduate from a slightly too big old cheapo to a way too small expensive one, then find that the old bike, for all its weight and rust and squeaks, provides a better perch. They may not be able to straddle it with their feet on the ground (not how you ride a bike anyway), but the riding position itself is more comfortable. On the other hand, getting a bike too small has no stigma to it at all—if anything, you get macho points along with the sore hands, back, etc.

The first step in determining your proper frame size is settling on a saddle height—the distance from the center of the bottom bracket to the top of the saddle.) That height depends a little on the seat tube angle, because the farther behind the pedals you sit, the farther away you are for any given saddle height; but for any given bike, you'll

have a saddle height that feels best to you and gives you the proper leg extension, and that's all we're after.

Once your saddle height and fore-and-aftness is set properly (there should be a slight bend in your knee at the bottom of the stroke; and see Keith B.'s enlightening comments in this issue about the unimportance of fore-and-aftness), the single thing you can do to get more comfortable on the bike is raise the bars to within a quarter inch of the top of the saddle (on small to an inch and a half of the saddle height—less on smaller

frames, more on big ones. Most riders have the tops of the bars where the drops are supposed to be, and the drops are down there so far they never get to them.

They can't raise the bars enough because:

- 1) The stem quill is too short.
- 2) The stem angle is too low.
- 3) The frame is too small.
- 4) A combination of those

On a bike you already have, the most common way to raise the stem is with a either a long-quill "periscope" style



such as a Nitto Technomic or an upjutter like those found on the older mountain bikes..

If you're starting over with a new bike, just keep the standover clearance to a minimum in order to maximize the height of the head tube and stem exit point (the point at which the stem quill exits the headset locknut). In other words, *buy the biggest bike you can straddle with an inch of clearance between the top tube and pubic bone.*

Don't worry about the top tube on the bigger bike being a centimeter or so longer than what you're used to and like, since the higher bars this frame allows will make up for that (see the TT/HT Factor, RR6).

Handlebars can be too high. If you climb a lot of hills off the saddle and holding the brake hoods, you need to be able to completely relax and nearly straighten out your arms as the bike rocks side to side. Don't say *but you aren't supposed to rock the bike side to side!*—it slows you down and stresses wheels, because it happens anyway and you can't worry too much about it. Leg muscles are stronger than arm muscles, and when you're tired, your salamander-like arms just can't counter the thrusts of your cluster-o'-dolphins-like thighs,

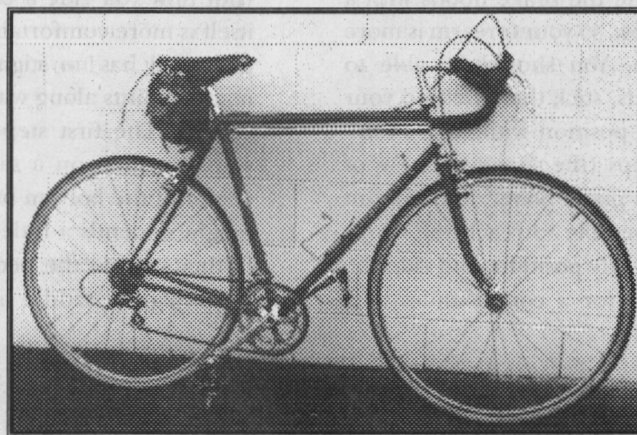
and the bike tilts. Some good things happen, then: When you rock the bike to the left, it allows your left arm to extend and relax; same thing on the right. But if the bars are too high your arms won't extend and relax, and your biceps will get tired from being flexed all the time.

On the other hand, if you don't climb hills off the saddle, you won't mind the bars way up there. Usually people raise the bars as a last resort to fix an aching back, but I think 95 percent of all riders can benefit from higher bars, and that includes fast people. If you're time trialing with your back nearly horizontal, hands on the drops, look at your lower arm. If it's still pretty vertical, it's just catching more wind, slowing you down. In that case, higher bars won't change your upper body position, but they will change that arm angle, and if the theory holds true, you'll go faster. (Keeping your same back position but riding on the hoods will do the

same thing, but far be it from the Rivendell Reader to start giving Go Fast advice.)

The whole idea of raising the handlebars isn't revolutionary; it's the way everyone used to ride until things got crazy, and it still makes sense.

**END**



*On a mid-sized road frame such as this 57cm LongLow prototype, you shouldn't need a mountain-bike seat post. Notice the relative height of the saddle and handle bars. In this case, there's about 2 m difference, and no— This is not the only way to set up a bike!*



# RIVENDELL CYCLO-CROSS FRAME

**C**yclo-cross is sort of like mountain bike riding without the aid of springs, hydraulics, oil, polymers, linkages, and body armor. A cyclo-cross bike should be light like a road racing bike, because you pick it up and run with it a lot. It should be strong like a bike made for loaded touring, because you ride it over rough ground. It should have lots of tire clearance because cyclocross races are often muddy, and more clearance means your wheel won't jam up as soon; and if you whop your wheel, you want it to be able to clear the frame tubes (particularly the chainstays) as it rolls.

That's a cyclo-cross bike: high bottom bracket, light, strong, and with good clearance.

Good clearance is easiest in steel, since chainstays made in other materials have to be fatter to be as strong and stiff, and the fatness eats up clearance, crowding the tire. If you just angle the stays outward to get more tire clearance, they stick out too far and start hitting the chainrings or crankarms. If you just use a longer bottom bracket spindle to handle that, you increase the Q-factor. You don't have to be a believer in the ergonomic advantage of pedaling with your feet closer together to appreciate a low Q-Factor; all you have to do is try it, and be grateful for it the next time you're threading the bike between a rock and a stump, or negotiating a too-deep singletrack. Steel is a great material for a cyclocross frame because it allows the desirable clearances. You can still design a steel frame without the right clearances, and it happens a lot.

"Light" is easy in any material, and so is "strong," but light

and strong is hard. If you're a sponsored rider and durability is no object, you'll want the lightest frame available, because you get a new one when it breaks. But if you're unsponsored and committed to the point where you're willing to buy a new cyclocross frame and you *don't* want to baby it and you *do* want it to last several seasons and longer, it's probably a good idea to have a few more well-placed ounces in frame weigh. That's our approach here.

Our frame has the same tubing diameters of our All-Rounder and mountain frames: 28.6mm top and seat tubes, and a 31.8mm down-tube.

**Top tube.** The same as on our road frames, and it is light—0.65 x 0.5 x 0.65. (A typical road top tube is 0.9 x 0.6 x 0.9). It's stiff enough and strong enough in this gauge because it's larger than the old standard 1-inch top tube, and it's made of Reynolds 753, which is about 50 percent stronger (in yield and tensile strength) than regular chrome-moly tubing. When

you add the thickness of the lugs, you end up closer to 1.5mm. This top tube is a good compromise of strength and light weight.

**Seat tube.** Again, the same seat tube we use on most of our road frames, as well—0.6mm at the top, and takes any 27.2mm seat post. The 0.8mm butt at the bottom, being lugged and silver brazed Reynolds 753, is plenty strong.

**Down tube.** Ours may be heavier than it needs to be—0.8 x 0.6 x 0.8 with a long, 120mm butt at the upper end—exactly where you want the extra weight to be. A lighter downtube can save about 60g, a hair over two ounces, but



it's not exactly dumb to put extra steel in the most common area for frames to break. **You** can lose **two** ounces of bellyfat instead, and both you and your frame will win.

**Fork blades.** Om standard Reynolds 531 road blades, 27.5mm x 20mm, and 1.0mm thick. The blade starts out as a 24mm diameter round tube, 1.0mm thick at one end, tapering to 0.5mm thick at the other. Then it's drawn down through a series of dies which make the 0.5mm end skinny. Next, the still fat end is squashed into an oval shape. This procedure is not specific to this blade; it's how all blades are made.

**Fork crown.** You have your choice. The lightest option is our 100g road crown, and if you ride tires up to 700 x 32 and don't ride in the mud often, go with that. The standard option is our 145g All-Rounder crown, a better choice for maximum clearance and tires up to 700 x 41. In another couple of months we'll have yet another crown option, but it'll be springtime then and nobody will care about cyclo-cross bikes.

**Seat stays.** 0.2mm thicker (0.8mm) than on the Road frames, because we braze cantilever bosses on there, and 0.6mm is kind of thin for that. The chainstays are the same 0.8mm thick as on the Road and A/R frames. We use the same BB shell as on the All-Rounder, too, so the tire clearance is enormous. Combined with the longer chainstays, you get more clearance on our Cyclo-X frame than on most others. (The IBIS Hakkalugii or however you spell it is another good one in this regard.)

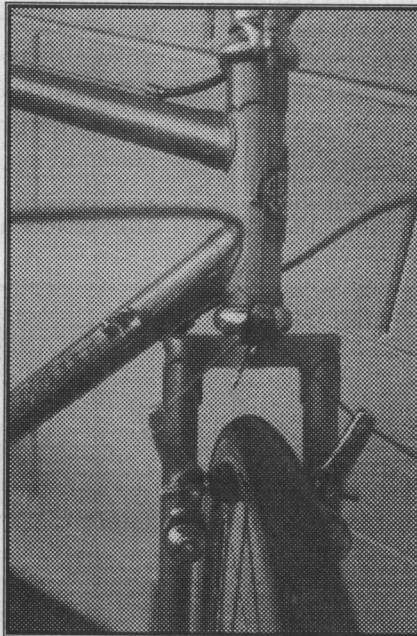
**Rear dropouts.** vertical, same as on the Mountain frame, and have one eyelet each. We went with verticals on this frame, since verticals hold the wheel aligned better if you have a loose rear skewer, as you might in a race when you're in a hurry to put on another wheel. If you want horizontal, you may have them for the same price, though.

**Frame drop.** 60mm of drop—15mm less than the road frame—and so for any given tire, it has a 15mm higher bottom bracket. (Drop is the distance the center of the bottom bracket falls BELOW the centerline of the frame dropouts). With a UFO tubular cross tire (690mm diameter), the bottom bracket is 11.22 inches high, slightly less when you sit on it. With a 48 or smaller chainring and decent technique, that's enough to clear most of the rideable obstacles your

course designer sticks in the way; and upsidedown toeclips clear the ground, as well.

**Shoulderability.** Since **you** carry a cyclo-x bike a lot, you want a big pocket in the main triangle to fit into, and you don't want a radically sloping top tube. We open up the triangle on ours by sloping the top tube up just two degrees (not enough to make it hard to carry). The higher top tube minimizes the distance you have to lift the bike to shoulder it, and the **two** degrees also allows higher handlebars, rarely a bad thing.

**Crotch clearance.** Intuitively you want lots of it, but the way to get lots of it is to lower the top tube, and that shrinks the size of the main triangle, making the bike harder to shoulder. As frame designers, we have to favor one over the other, and we favor the bigger shoulder pocket.



**Bar height.** In all our frames we like to see the bars up there near the height of the saddle, but it may be even more helpful on a cross frame, since it allows you to keep your weight back on steep, bouncy descents. The top tube is sloped up 2-degrees, adding another 20mm or so to the bar height. We still do the 15mm head tube extension as well, and the combination lets the bars go up at least 35mm higher than you can get without these features. Add a long-quill stem, which we have plenty of, and away you go...

**Braze-ons.** There's a pump peg on the left seat stay. You won't be using a pump in a race, but this is too nice a bike to ride only in races. Keeping the main triangle pumpless lets you shoulder the bike easier (as does keeping the main triangle waterbottleless, but at some point hydration matters). Two bottle braze-ons, one eyelet on each dropout, road-style brake and derailleur stops.

**SIZING:** From 51 to 63cm in 2cm jumps. Most people will ride a bike 2 to 4cm smaller than their road frame (unless that's too small). Tell us your saddle height and we'll get you the right size..

**MEMBER PRICE:** \$1,050 single color. With painted head tube, \$1,100. Other options, same as the other frames.

END

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# PARTSWATCH

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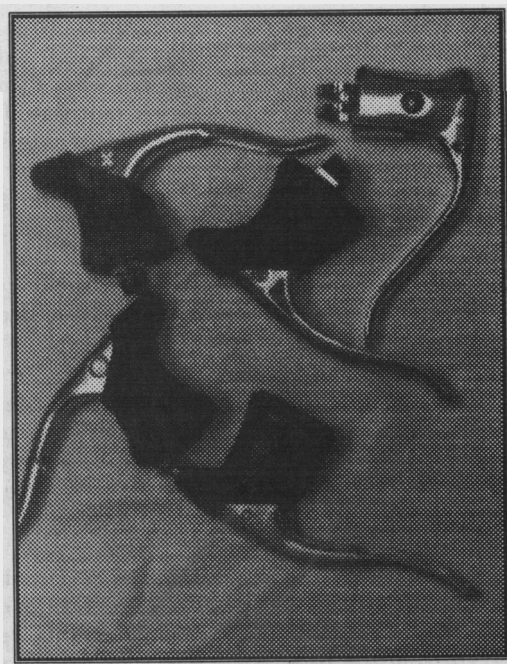


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**L**

ast year we bought 350 pair of SunTour Superbe non-aero road brake levers, half with black hoods, half with gum hoods, and I thought “that’ll last five years, I wonder if we will.” Fifteen months later we’re hanging in there, but we’re down to twenty levers with gum hoods, sixty with black, and we have nothing on the horizon to replace them. We should have charged more, they **are** worth it and there are no levers of that style and quality still being made today.



Simplex and Huret tooling, and was told the same. I’m not sure whether Campy destroyed its Super and Nuovo Record tooling, and I’d rather not ask.

We can buy a few hundred gold-anodized Modolo levers, but they’d have to sell for \$50 to make it worth it, and that’s not a long-term solution anyway. I have one contact in Italy who may be able to help us get some variation of Campy-Modolo-Gipiemme brake levers, and if that doesn’t pan out we’ll start from scratch here.

The lack of standard (non-aero) road levers is a problem when you’ve cast your lot with downtube and bar-end shifters, as we have. It doesn’t make much sense to put STI or **ERGO** levers on a bike equipped with downtube or bar-end shifters. **You** can still find cheap, non-aero Weinmanns or maybe some lower-end old Dia-Compes, but it’s not all that easy, emotionally speaking, to put those on a fancy frame.

I’ve asked about buying the SunTour tooling, but it’s been destroyed. Tooling usually gets destroyed when companies go under. There must be a reason, it must be financially advantageous to destroy the tooling rather than list it as an asset in your final days, but it sure seems like a shame to smash up tools that cost 50 to 150 thousand dollars to make, doesn’t it? I’ve also inquired about

It may be expensive, but it shouldn’t be too hard. This style brake lever has about six pieces, and only two expensive ones. The body has to be cast, and that requires a mold which costs anywhere from \$2,500 to \$30,000, depending on the country, with **USA** being up at the top. Thirty thousand, but it might as well be a hundred. The tooling for the stamped lever is just as much. Maybe we’ll learn some good things in a few months, but right now the future is not good. I’m not writing this to sell Superbe levers. They go out fast enough as it is, and with every pair we sell I get nervous. It’s like parting with kittens; you just hope they go to a good home and get used and not stashed.

**END**



# WINTER FLYER

To help get us through the poor cash-flow season.

## SPECIALES & NORMALES

### 1. Cycling caps \$6

Just in time for the cold season. All cotton, made by Pace, the same people who make just about everybody's caps here in the U.S. The bills are about as long as they can be without looking downright goofy, but they fit better than the Italian Apis brand and they're a lot easier to get. These are the three-panel style. There's a bluish one, a caramelly one, and sort of a yellowish olive khaki green one. The shape isn't round enough for our snooty tastes, darn, but they're good looking otherwise and soak up lots of sweat (not that we sweat).

Price: \$6 (we gross about a dollar a cap). If your order total is \$100 or more after any coupons you might still have, it's \$2 per cap.

### 2. New bigger ACME Musette III \$20

It's 10" x 15" x 3" and made of Filson Tin cloth. Otherwise the same as the other ACME styles sans the shoulder strap. In this case, we had them include loops to which you can tie a punctured inner tube to use as a shoulder strap. A very nice bag, big enough to carry some big books and small sweaters in. Two inside pockets, and away you go.

### 3. French "Gomme Laque" handlebar shellac. (pic of bag) \$6 per loose fistful

This is the stuff referred to in the handlebar lacquer story in RR7 that got me in trouble for mistaking lacquer for shellac. Well, the bag says "Gomme Laque - Rhino," and my French isn't all that good, but that's closer to Gum Lacquer than it is to Gum Shellac. I don't even want to know what the Rhino refers to, but as I understand it, most shellac is made from bugs. To use: pulverize it and dissolve it in about a pint of denatured alcohol, then brush from 5 to 8 layers on your bars over a period of a week, letting each dry before putting on the next one. It's probably best to do a little at a

time. It's a cinnamon color, so take that into account when you choose the underlying tape color. This is an art project, a science experiment, a trial-and-error sort of thing. If you aren't willing to risk botching it up and kissing \$6 bye-bye, it may be best not to order. This is probably the only time we'll have the real French stuff, but we may have some other stuff later on.

### 4. New Long Sleeve Italian Wool cycling jerseys — \$77

These are busy-looking with horizontal stripes, about 2-inches tall, all the way down everything. Three alternating colors: sort

of a blue, sort of an olive-yellow, and another sort of blue. They don't look like anything you've seen before, and they don't even look the way I expected them to look, and at first I hated them. Then Spencer said "they're not so bad," and four days later I agreed. They're 100 percent superwash wool, so you can wash them warm and dry them warm and they won't shrink much at all. Sizes 3-4-5-6 (medium to xxl) We have about 15 of each size.

### 5. Brooks Video \$8

At just 8 minutes long, this has to be one of the more expensive videos in the world, but \$8 is what it cost to have it made, and that's the price, please don't couponate it. We'll offer a \$5 Rivendollar rebate on this if you buy it, watch it, return it. About 20 left.

### 6. Q/R training device \$5

Handmade chromed steel silver-brazed gizmo intended to help dealers show customers how to use a hub quick-release. Also doubles as an elegant front hub display stand. A nice, artsy desktop thing.

### 7. Sachs M55 chain, unwaxed \$18

We're just about out of the DID chains, so this is the replacement. A strong, reliable, indexable German chain in the regal silver-and-black combination. No waxed ones just yet.

### 8. Green Bandanas \$2

Finally, the non-gang colors are in! Buy them before a new sect claims the color and doesn't want to see you in it. Made in USA in the classic paisley pattern. REI sells them for \$1.50.

### 9. Zeus tubular tire carrier \$5

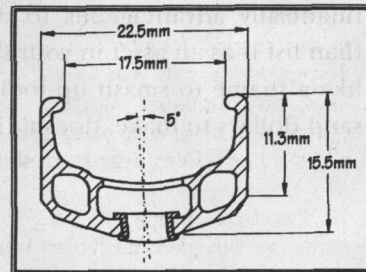
For carrying a spare tubular. Instructions en Espanol.

### 10. Carradice Handlebar Bag \$40

Rigid and boxy, with a hightech German plastic quick-release gizmo. It's not exactly in keeping with the look of the other Carradice stuff, but it does work well, and we do have them. Map case included. A nice design.

### 11. 700c Touring Rim! Sun CR-18 \$40 /pair

With the passing of the Mavic Mod 3, this has to be the number one touring rim made. I know what you're thinking—what about the Mavic T217? Well, that's a nice rim too, and we like its



double-eyelets, but the CR-18 is half a millimeter wider and has thicker sidewalls, and that's a good idea for a touring rim. Naturally it weighs more, but the extra metal is right where it should be—in the thicker, more durable sidewalls. Silver, polished shiny, single eyelets. A great all-around rough-stuff rim. 700c x 22.5mm wide, 538g.

**12. Quick-Release Skewers \$8 each**

Made by SunTour in Japan several years ago. The rears say Specialized, but they're SunTour. The fronts say SunTour and are. The fronts are for standard 100mm hubs; the rears go up to 130mm. Not exactly a matched set (minor detail diffs), but close enough, and a bargain. Specify front or rear.

**13. Wool Cycling Sox \$9**

Made by SmartWool, 80 wool 20 nylon, off-white with blue toes. The nicest cycling sox we've used. They aren't super thin like racing sox. They're cozy, like slippers, but not as thick. Size M (fits feet to men's 4.5 to 7 or women's 6 to 8.5); L (fits men's 8 1/2 to 11 or women's 10 to 12.5); XL (men's 12 to 15 or women's 13.5 to 16.5)

**14. RR-1 \$4**

This came after ZERO, and was our first real Reader. We ran out, didn't even have one around here, then a friend sent us ten (we loaded her up to pass them out and...and she didn't pass out them all), and so we took them to a copy place and had them photocopy them. Other issues are original overruns, so cost less.

**15. IRC 700x32 touring tires \$15, 2/\$25**

Light, durable, fattish road clincher for touring and commuting and general riding. In the last flyer we said something to the effect that "it doesn't corner like an Avocet," and that right there seems to have killed sales. We still have about 50 of them, I (Grant) am riding them on one of the bikes, and even though this tire doesn't corner like an Avocet, what does? It's still a good tire. If you are among the few who bought two before at \$15 each, you may buy two more for \$10 each.

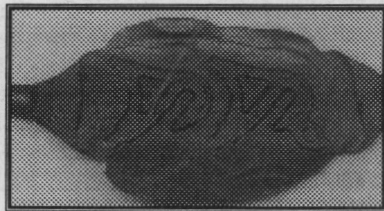
The other 50 percent is curvy roads, and for that I like Ritchey's or Avocets.

**16. Avocet 700x32 road slick \$24**

The best cornering road tire in the world. If your bike has the clearance for them, watch out.

**17. Dropout Forging Paperweights \$15**

Formerly and erroneously referred to as first forgings, but in fact I think this is the second forging in a 3-step process. If you like neat and unusual metal things, this is right up your alley. If you want an unusual gift for a cyclist who likes neat stuff, this is a good one.



**18. Patchouli soap \$3**

Made by the pine tar soap people, but it's patchouli, instead.

Patchouli oil was popular in the '60s with hippies, but it goes back further than that. It originated in India, and Indian shawls (like the ones hippies used to wear) came scented with patchouli. So, if you want to get yourself clean and smell like a hippie, here's your soap. Pronounced "pat-CHOO-lee."

**19. Backyard Boomerangs \$9**

Light, plastic tri-wing booms that go out and come back within about 25 feet. Easy to throw, safe even in a parking lot (pronounced "par-KING-lot"), easy to catch, and durable enough to keep for years. A good lunchtime time-killer. Take one with you anywhere.

**20. Newer Darker Sunglasses \$12**

Made in Buzzard's Bay, Mass. They're plastic-lensed safety glasses minus the side shields, but they're not just for deflecting flying sparks or chips of feldspar—they're great all-around sunglasses and look good even on people who in real life probably would never be caught dead wearing them. Carrie, for instance.



**21. Ambrosio Synthesis tubular rims, silver, 32H \$20 ea**

At 21.5 mm wide, this is the widest silver tubular rim we could find. At 500g each, it's also one of the heaviest and strongest. If you still ride tubulars everywhere and want some very nice and very strong rims cheap, these are the way to go. A few left, priced to move fast.

**22. Wool Pullovers \$90**

Green with grey stripe on collar and cuffs. Short front zip, no pockets. Heavier than a jersey, good for cold weather riding and casual wear. 100 percent Superwash wool, Italian, made just for us by Sergal. Very limited quantities, very nice garments. Sizes 3-4-5.

**23. Campy Alum Toe Clips M and SM: \$15**

We just found some smalls, so they aren't in the catalogue. These are the nicest aluminum clips.

**24. ALE Cyclo-Cross Toe Clips/Straps: \$13**

These are good. The clip "tongue" is short for easy entry, the strap is non-adjustable and kind of unique and clever—also for easy entry; and the clip part is double steel, so you can treat them rough. Not just for cyclo-cross: if you want really convenient clips for a commuter or city bike or mountain bike, or something for your friend who's afraid of regular toe clips, this is the one.



Medium or Large Only. If your foot is M9 or larger, get the Large.



*We don't want to turn you into bargain hunters, but everyone needs a good deal now and then, and let's face it—these coupons are as much for us as they are for you, anyway. Members only.*

## **FIVE RIVENDOLLARS**



**MINIMUM \$50 PURCHASE**



**Good Through February 20, 1997**

## **SEVEN RIVENDOLLARS**



**MINIMUM \$100 PURCHASE**



**Good For The Month Of March**

## **EIGHT RIVENDOLLARS**

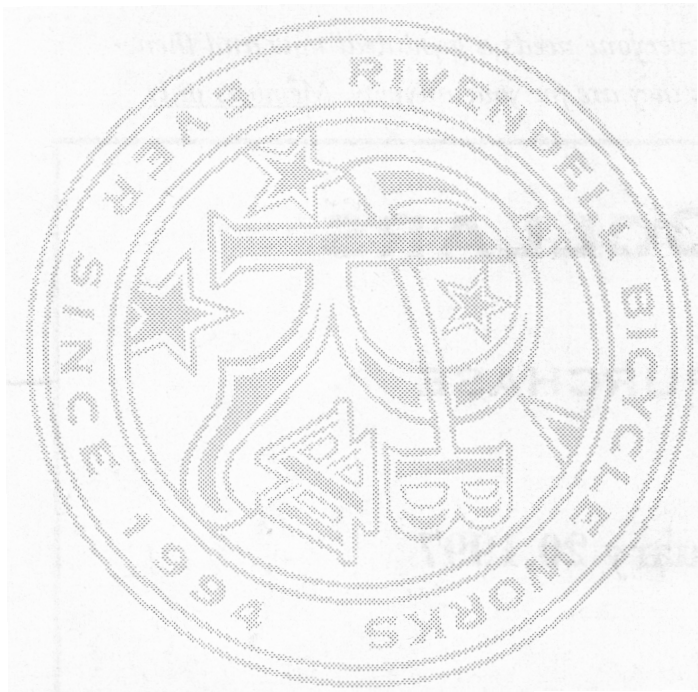


**MINIMUM \$150 PURCHASE**



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