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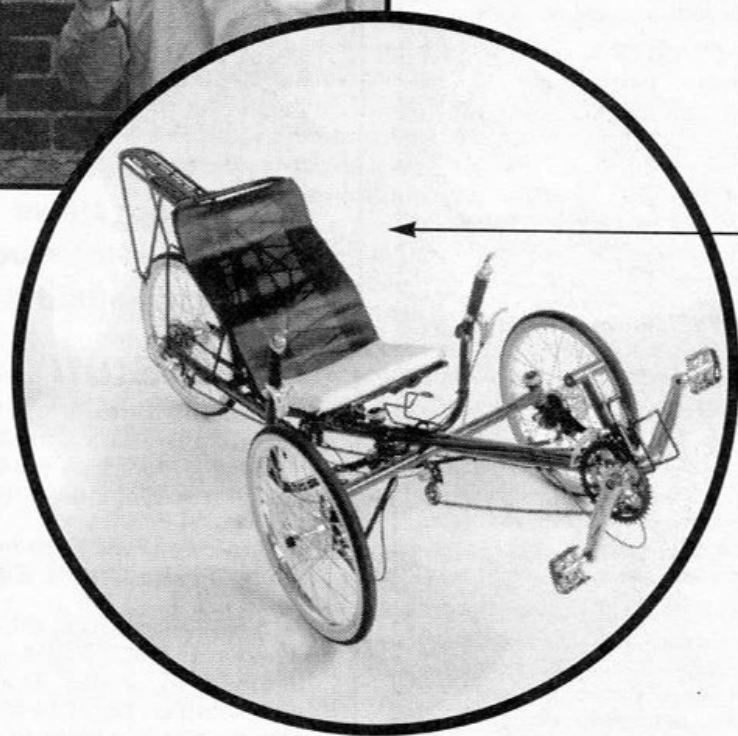


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— Bob Bryant, RCN

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Although we at Recumbent Cyclist News make every effort to provide useful and accurate information, we do not claim to have definitive answers—particularly with regard to safety, technique and equipment.

What We Don't Do

Due to our minimal staff, we do not: give bike buying advice, return advice calls, take credit cards, credit card orders, overnight orders, or bill for orders. We ask that you be patient, as we do make mistakes, but we guarantee that we'll do our best to correct them when we do.



R E C U M B E N T C Y C L I S T N E W S

*The Voice of the Recumbent World***Issue #48****Since 1990****Nov/Dec 1998****Features**

- 10 **Easy Racer Gold Rush Replica: A Magic Bike**
- 18 **BikeE: The Ideal Shuttle Vehicle**
- 20 **Front Wheel Drive Recumbents**
- 23 **The Chronicles of the Lords of the Chaining**
- 24 **Car Free Times: A Ticket Out of Homelessness**
- 27 **A Vision of (Digital) Touring**
- 29 **REVIEW: The B.O.B. Coz Trailer**
- 32 **Chuck's Always There**
- 34 **Are Recumbents Faster Than Uprights?**

Departments

- 5 **Editorial License**
- 6 **'Bent Mail**
- 8 **'Bent News**
- 32 **The Notebook of an Unreasonable Man**
- 37 **Classified Ads**

Other Stuff**RCN Contributors**

Robert J. Bryant • Mark Colliton • Kent Peterson • Richard Drdul
William T. Conklin • Bill Patterson • Randy Ghent • Alan Thwaites
L.S. Smith-Weinberg • Paul Arends • Christine Peterson • Ron Schmid

RCN Cover Fast Freddy Markham and the Gold Rush LeTour Racer
Cover Photo Credit Easy Racers, Inc. Watsonville, California

RCN#47 Booboo's, mistakes and apologies: Our apologies to Dan Kavanagh who wrote "GET PRIMAL" on page 18 of RCN#47. We mistakenly forgot to list Dan in the issue credits. The article "Cheap & Ugly" never made it to print, though it was listed on page 14 in the RCN#47 Homebuilders Source Guide. Charles Brown reports another booboo about his Recumbents Made of Wood article in the letters section. Oops....our sincerest apologies go out to female recumbent homebuilder Ming Dinh (A Budget Basic Bolt-on BMX Build RCN#47 page 27) to whom we mistakenly wrote "his BMX shopper" in the photo caption) Ming wrote to encourage other females to build recumbents.

Fine Print: RCN is published by Bob and Marilyn Bryant & family in Kent, Washington. We are a two-person company. We publish from our home office. We have no employees, only dedicated volunteers and friends who work cheap. We are as far from a corporate affair as you can possibly imagine. This magazine is published by enthusiasts, for enthusiasts—because we love recumbent bicycles. We are the voice for the enthusiast recumbent world since 1990.

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Editorial License and Bob Rants...

One Cyclist's Transformation

by Bob Bryant

Last year I wrote about my Slumgullian ride (RCN#42) over the Colorado Rockies. I wrote about my mission in training and how I made it to the best shape of my life for that ride. The planets were aligned. I trained. I lost weight, rode hard, and was a he-man cyclist. I was invincible.

■ AN OFF YEAR

This year, things haven't been so great. I sprained my ankle in an off season cycling accident while riding a bike that had a messed up drivetrain (I was too busy to fix it). With the expanded RCN size and my grandiose plans (and 100+ hour work weeks), there wasn't enough time for riding (I am riding just 75-100 miles per week). All of this sitting at the computer has taken its toll on my hiney (previously broken tailbone from a SWB USS crash a few years ago). I really have no desire to ride any more than 30 miles at a time this season. In fact, I am quite enjoying 20 mile rides—more than ever!

Even so, I am more addicted to cycling than ever. I find my interest changing from a gung-ho racer wannabe to somebody who wants to cycle as a way of life. Lately, I feel guilty about asking people to drive their cars to a bike ride. I have been reading up on the damage that the automobile has done to our country socially and environmentally. I've been thinking about a way to do away with my car for good.

■ CARS SUCK

I had always been interested in cars, owned more than my share, and loved driving. I guess the transformation started 18 months ago. I have always driven small cars. While driving my very small car, a Dodge Ram 1-ton 4x4 pickup rammed me from behind. I saw my life flash in front of my eyes—and haven't felt totally comfortable driving a car since.

Part two of my fall from grace with the automobile came by being run off the road countless times on my Black Diamond test loop last summer. Yuppies in SUV's (Sport Utility Vehicles), monster trucks and old Camaros illegally speeding down the two lane blacktop of suburban King County have gotten the best of me. I now carefully plan my rides NOT to go on heavily travelled roads. Recently on the NW group's midweek Mercer Island training ride, I had a very close call where I was nearly broadsided by another SUV. This person thought a free right turn meant "I don't have to stop or look, and get the hell-out-of-my way." I was in a crosswalk at the time and was nearly hit. I am starting to feel invisible to motorists and wondering what to do about it.

I am now reading the *Auto Free Times*, memorizing passages from *Asphalt Nation*,¹ and making long-term plans for a less auto-dependent RCN and Bob Bryant. I would like to be car free, though as a two-person micropublisher in Kent, Washington, USA, this will require careful planning and relocation. I'm hoping to teach my kids about the freedom that can come with a bicycle, without a car payment and that the American dream of suburbia is not all it's cracked up to be.

■ EXPENSIVE LOVE AFFAIR

Today, I am a more conscientious cyclist. Instead of "training" 200 miles per week, I ride to get the mail, to the library, to the store, and to the park with my kids. I try not to use my car. The total damage to our planet from one car is beyond belief—they are basically polluting machines.² The cost of auto ownership is through the stratosphere as well. The American Automobile Association says that it costs \$5,762 a year or \$505 per month to run a modest sedan. And a shiny new 4x4 SUV has to be upwards of \$1000 per month. Automobiles kill more animals

than hunting and animal experimentation combined. Car crashes are the number one cause of death for children nationwide. Suburbia has become unsafe for pedestrians and cyclists.³ I've had so many close calls, I wondered how can this be? See the statistics below—they are enlightening.

Most people don't want to take responsibility for the destructive automobile. "It's not my problem." "I don't drive that much." Or "No, that can't be." It's true. If you don't believe me, study up on this subject. This problem is being downplayed so much one might get the idea it's a corporate conspiracy between insurance companies, oil companies and auto makers. Oh yeah, doesn't our government defend oil fields in far off lands?

■ SLOW DOWN

Don't get me wrong, I'm not going enviro-loco on you. I just have a new mindset on cycling. I'm proud to be a cycle-tourist/commuter. I will never be a racer and the thought of racing 200 miles of STP, or 280 miles of Cannonball in one day just stresses me out. I'm just obsessive enough to fall into the trap if I let myself. I love bicycling because the world goes by slower. I can look at the sky, smell the flowers, watch the sailboats and listen to the wind blow through the trees. If you get the chance to tour by bicycle your world will change.

This new attitude is good for my mind. In contrast, the "race" may be fun, though it is just a continuation of the fast forward life we live in today—the one I try to escape from when I ride my bike. I don't carry a beeper, a cell phone, or a laptop computer while riding. I don't double book my schedule on riding days. Riding is riding—I don't have anywhere else to be—but on my bike.

I have at least one bike set up so that I can ride in street clothes. A few years ago I might have assumed that a cyclist dressed in street clothes was a rookie or not so serious cyclist. In reality, they may be the most serious kind. They are the commuters, cycle tourists and car-free bicycle enthusiasts who have made cycling a useful part of their lives—not just a leisure activity.

I believe the tourist/commuting cyclist represents the highest level of cycling one could hope to achieve. What is gained from "racing" as fast as you can all of the time? I would much prefer to tell a tale of crossing the Rockies by bike, and I would love to ride my bike across the USA one day. To be car free and solely depend on my bicycle as transportation would be even greater. □

1 *Asphalt Nation: How the Automobile Took Over America and How We Can Take It Back* by Jane Hotz Kay. Amazon.com usually stocks this book.

2 From *Asphalt Nation*: According to researchers at the Environment and Forecasting Institute of Heidelberg Germany, before a motor vehicle leaves the plant it creates 29 tons of waste and 1,207 millions cubic yards of polluted air. On the road, this one auto pumps another 1,330 million cubic yards of polluted air into the atmosphere and scatters 40 pounds of worn out debris on the highway. When the car's useful life is over, 133 million cubic yards plus the PCBs and hydrocarbons that accompany the burial, the car produced another 66 tons of carbon dioxide and 2.7 billion cubic yards of polluted air.

3 From *Asphalt Nation*: Car manufacturers dabble on the fringes of carnage from roughly 2 million "merely" disabling motor vehicle injuries to the 43,000 fatalities each year—120 auto-related deaths per day. In the Persian Gulf War, 146 men and women died fighting to keep the world safe for petroleum, and 4,900 people died with equal violence on the country's highways during the same time period.

Bob writes this column from his home office in Kent, Washington. The computer goes on at 7am, and he likes to hit the road for his daily ride by 3pm. Bob likes to hear your feedback. He likes it even more when recumbent enthusiasts write articles and participate in the process. Feel free to drop Bob a line at DrRecumbnt@aol.com or c/o RCN



'BENT MAIL

WE WANT TO HEAR FROM YOU

Directions for use: Send your cards, letters, *RANTS*, gum wrappers, feedback, response, pictures, articles, newsletters, newspaper clippings and whatever to:

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If you disagree with an RCN opinion or have a differing viewpoint or experience—we want to hear about it! RCN reserves the right to edit submissions for clarity, content and space limitations. If you write to RCN and *DO NOT* want your name, email address or letter published, please make this request in the letter.

RICHARD'S HIGH TECH RANT

I enjoyed your extended rant in RCN #47 regarding retro vs. new technology. I got quite a chuckle reading your descriptions of the evil inherent in modern bicycle components.

But seriously, you're starting to sound like a conspiracy theorist (it was Shozo Shimano on the grassy knoll!). I'm concerned that your retro rants might actually lead some recumbent newbies to equip their bikes with gawd-awful components like friction shifters, freewheels, sidepull brakes and toe clips. I grew up riding with all of that retro stuff, and I'm glad to be rid of it.

One of your arguments in favor of the old stuff is that it is more reliable. In my experience, the new stuff is just as good, if not better. I ride through the same Northwest winters as you, and I haven't had any problems with new fangled bicycle components. My daily commute to work includes a 5 km off-road section through a muddy rain forest. Yet in spite of these lousy conditions, the indexed Shimano drivetrain on my commuter bike (upright) shifts flawlessly, my clipless pedals easily engage and disengage, and my V-Brakes continue to stop me on a dime. My mountain bike is subjected to these nasty conditions year-round, and I have had no problems with the modern components on this bike. Ditto for the components on my V-Rex (although I must admit, it doesn't get quite as much exposure to rain, road grime, mud and other crud as my commuter bike and my MTB).

Indexed shifting is a real improvement over friction shifting. There is nothing quite as satisfying as the quick click of an indexed shift. Compare that with a friction shift—gradually moving the shift lever until the chain jumps, listening to it clatter against the cogs in the meantime and hoping that it doesn't over-shift. Indexed shifting is reliable—the only maintenance my indexed drivetrains require is occasional adjustments after I've installed new cables. In eight years of using indexed shifting in good and bad conditions, I have never once had to resort to the friction mode that used to be a "feature" on some indexed shifters. Oh, and one last point in favor of indexed shifting—the display on the shifter tells you which cog you're on (a nice feature on a 'bent where you can't see the cogs). Try that with friction shifting!

Toe clips are medieval torture devices that have no place on a 'bent. The only way toe clips ever worked was if the straps were fully tightened. In the bad old days before clipless pedals, I fell over more than once when I stopped without first remembering to loosen the straps! In comparison with toe clips and straps, clipless pedals are a gift from the gods. Clipless pedals offer secure engagement so that my feet will never accidentally slip from the pedals and disappear under my 'bent, combined with easy release. And the best part of clipless pedals is that I can ride my 'bent wearing sandals (something that's tough to do with toe clips, unless you've got really thick calluses on your feet!).

The only place a sidepull brake belongs is on a diamond-frame (ouch!) road bike. I'm sure the sidepull brakes on your Gold Rush stop well, but they don't have clearance for fat tires and fenders. As a fellow Northwest cyclist, I'm sure you agree these are necessities. V-Brakes enable me to use big fat tires and fenders, and are powerful enough to stop a speeding tandem. The only possible complaint a retro-

grouch could have against V-Brakes is that brake pads on the cheapest models need periodic adjustment. I agree. However, it's easy to avoid this minor annoyance by using V-Brakes which incorporate a "parallel-push" linkage. They only need to be adjusted once. After that, the only maintenance required is occasional (and easy) pad replacement.

Recumbent newbies (and anyone shopping for a new 'bent) who want reliability and low maintenance shouldn't be scared away from modern bicycle components. Shimano MTB components offer the best value and reliability, with the following exceptions. Use Shimano road hubs and convert these for grease injection—once they're adjusted, they never need anything more than a periodic squirt of grease. Buy a high-quality MTB headset such as Syncros, WTB or Chris King. Install clipless pedals with free float, like Speedplays or BeBops. If necessary, use road cranks (with ramped and pinned chainrings) to get the desired gearing.

And—most importantly—take Robert Bryant's retro rants with a grain of salt!

Love the mag!

Richard Drdul, drdul@portal.ca

Richard, I am aware that you are commuting and riding most of your rain miles on your MTB/commuter bikes. I am also aware that your V-Rex is not stock spec. For those who hand-spec every part on our bikes, and do your own maintenance, this is a non-issue. Utilizing hand picked top-of-the-line parts can make your bike nearly maintenance free. (A Chris King headset, Phil hubs, BB, derailleurs, and shifters.) However, this is NOT generally reality for the typical RCN reader. Also, you have conveniently left out the issue of how much this stuff can cost (it can double the cost of the bike). Another issue is the mixed-component drivetrain issues that plague many 'bents. This is an issue that uprights do not have to deal with (Shimano derailleur-Grip Shift-II tooth cog in the rain situation). Lastly, RCN has been touting the benefits of modern bicycledom for 46 issues. For one issue, we discuss low-tech and retro alternatives—so much for respecting alternative ideas—Bob, RCN.

THUMB-CLICKS FOR THIS GRR

I have been a subscriber for three years; this is my first opportunity to write. I enjoyed your recent Homebuilder issue much more than I thought I would; I own a Gold Rush and have no plans to replicate it in my garage. I do like to fiddle and I am always attempting to make the bike work better. Your advice on indexed shifters gave me food for thought. When I purchased my Gold Rush three years ago it came equipped with a Grip Shift SRT 600 and Shimano XT rear derailleur; the system has always been fussy. I always thought the long cable length is the main problem. Over the years I have replaced the Grip Shift with a Sachs unit, added an Avid Rollamajig and replaced the derailleur return spring with a much stronger unit. What did I get for all my efforts? Not much; the bike continued to require constant tweaking to avoid double up-shifts or down-shifts.

Your comments on antiquated shifting systems got me thinking. I own four other bikes of various vintages which have included all the

shifting systems discussed in your advice to homebuilders. I would agree with all your comments, especially regarding Bar-Cons and thumb shifters. I had replaced a set of Shimano thumb shifters with a Grip Shift unit on one of my mountain bikes. The thumb shifters were seven speed units but I remember that there was always an extra "click" so I thought they would work with my eight speed cassette.

My step backwards has proved successful. The Gold Rush has never shifted smoother; the proverbial "hot knife through butter." Besides shifting reliably through all eight speeds I always have the "friction" option by merely pushing a small auxiliary lever. Incidentally, I find the levers no less comfortable than the twist shifters. In fact, because of the greater leverage, they may be more comfortable. Curious I'm not sure if there is real benefit to twist shifters.

I would make one observation at odds with your comments regarding gears. Since I use a fractional horse power motor, I am thankful for the eight speeds and I appreciate the value of a close ratio transmission. In fact, the double shifting on the twist shifters was always a source of irritation because the ratio jump was too large. The right gear and cadence make the ride more enjoyable.

Jeff Turner
JTurner@ccgate.SKCAM.com

You know I do love the retro thumbshifters and bar-cons. The current Gold Rush drivetrain with XTR drivetrain is awesome. However, the price tag on the XTR stuff is into the stratosphere—Bob.

TRIKES TWICE AS WIDE...

Despite the charge by Ian Sims ('Bent Mail, RCN#47) claiming exaggeration, Bob Bryant's statement in RCN#46 that trikes occupy more than twice the road width than two-wheelers, was right on target.

Say that the right wheel of a trike can be held as close as three inches from the edge of the road (something of a white-knuckle feat for the pilot whose viewing position is a skew angle to that wheel), then with a typical wheelspan of 34 inches, the trike extends 37 inches out into the road.

I can easily hold my two-wheeler at an average of six inches from the road edge. With bars that are two feet wide and with six inches of my right bar extending beyond the edge of the road, my machine requires 18 inches of road width. Readers are invited to do the resulting math for themselves.

Eugene Villaret

RCN#47 HOMEBUILDERS

I just read RCN#47 cover to cover. This issue is an important one—and will be referred to by homebuilders for years to come. Definitely one of the "ten best" RCN issues ever.

Gardner Martin
Easy Racers, Inc.

WOOD RECUMBENT UPDATE

In my article "A 'Bent Bike of Wood" (RCN#47 page 19) there was a misprint. A wooden bicycle frame tube of only 1/8 inch would be flimsier than a motorist's moral foundations!

A steel tube has about the same strength in all directions, including around its diameter. Wood, despite being quite strong along the grain, is weak across the grain, with a corresponding lack of 'hoop strength,' so the walls must be proportionately thicker to compensate, down to 1/8 the outside diameter, assuming that localized loaded points are reinforced

well. Plywood can go a little thinner, and generally works best overall with the grains at a 45° angle.

Because the strength and stiffness vary with grain direction, the effective elastic modulus of a wooden beam or tube in torsion is only about 1/4 what it is along the grain, and as a result, most successful wooden recumbent frames take the shape of a single large diameter tube. Like other materials, wood must be used with intelligence. It is good stuff—my most recent wood recumbent weighs 23 pounds.

Charles Brown

HOMEBUILDER CULT

RCN#47 was terrific. You were able to capture the tone of the mildly crazed homebuilders quite well. In short, I loved every bit of it.

Terry Parker
Gig Harbor, WA

CULTY CONTACT

Regarding the Culty road test by Michael Wolfson. They do have an email address which should make inquiries a bit easier. Mail to: culty@liegerad.com.

Oliver Zechlin

RCN#47—BUILT WITH HACKSAWS & DUCT TAPE

Just got my Homebuilder's Issue of RCN and it's great. Thanks for publishing my article. You made it look so professional! The only problem I have with this issue is that it makes me feel so woefully inadequate. All I can do on my bike is clean the chain and polish the frame. I can't even adjust the brakes or derailleurs correctly, and here these people are building bikes from pieces of stuff with a hacksaw and duct tape. It's incredible. I applaud all of them!

Shari Bernhard
Shari.Bernhard@mail.ccur.com

IMPORTANT NOTICE

People Movers is no longer the official credit card agent for Recumbent Cyclist News. RCN will *not* accept credit cards for subscriptions until further notice. We would like to thank People Movers for several years of great service.

CLIPLESS—A SAFER OPTION?

I read with interest the discussion about toe clips, Power Grips, and clipless pedals in RCN #47. Based on recent experience, I'd like to add an observation of my own on the subject.

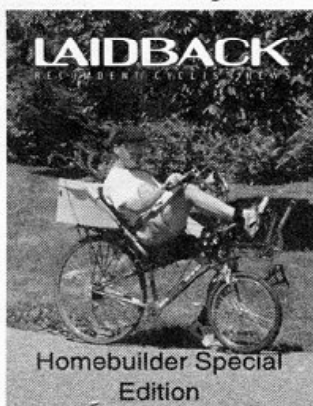
For years, including the first 2700 miles on my V-Rex, I rode bicycles with toe clips. I also tried Power Grips and, while they worked well, I felt that toe clips were entirely adequate: they held my feet in place, I could pull up for extra power and a smoother stroke, and it was easy to slide my shoes in and out of them as needed.

But then my old mountain bike-style bicycling shoes, which I probably had used for the better part of a decade, wore out. When I replaced them with a new pair, my problems began. Up until then, I hadn't realized how unusually smooth and unobtrusive the Velcro-backed straps on my old shoes were. My new shoes (and other new shoes I looked at) have much bulkier (i.e., "fatter")—straps that stand up so far that they snag instead of slide smoothly under the straps on toe clips or, I suppose, even Power Grips in all but their very loosest position. I found that unless I paid careful attention to what I was doing, the straps on the shoes were likely to hang up at the most inopportune times when I needed to release my feet from the pedals. In light of this new development, I switched to clipless pedals as the safer option.

Frank Calloway
fcalloway@earthlink.net

LETTERS....continued on page 35

Have you received your RCN#47 yet?



All active subscribers should have received this issue. If you have not, give us a call at 253/630-7200.

Special Thanks to People Movers & Bicycles By Haluzak for Promotional Support of RCN#48 Recumbent News

FALL EVENTS

■ LASERR RIDE IN FLORIDA

November 14-15, 1998

Come ride in Tallahassee with LASERR and the Fools Crow gang. Tel. 850-224-4767 or email: edde@freenet.tlh.fl.us.

■ PASADENA DOO DAH PARADE

November 22, 1998

"Recumbent Revolution" for the 8th annual Pasadena Doo Dah parade (CA). Contact Greg Du Vall tel. 310-829-5662 or send \$10 entry fee to Gran Design, 2930 Colorado Ave., #D-12, Santa Monica, CA 90404.

■ 1999 CALENDAR LISTINGS

Please submit your event dates for our 1999 calendar ASAP

■ RIDER GROUP LISTINGS

Rider-group listings will be listed in two issues per year. We will keep an accurate list, so please send us an update '99 info ASAP. For a copy, please refer to RCN#43-47 or send an SASE or a \$1 and we'll mail you our most recent Rider Group Listing.

READ ALL ABOUT IT

A complete Super Guide update to the 1999 recumbents in the next issue of RCN—#49 Jan/Feb '99

If you would like to see your bike in our 1999 Season Preview issue—please call for our '99 Ad Planner Today.

Bob Bryant, Recumbent Cyclist News
Tel. 253-630-7200
Email: DrRecumbnt@aol.com

'BENT WINDSOCKS

You've seen them—those spinnny windsocks at the beach, hanging on front porches—and occasionally even on the back of recumbent bikes. If you are riding a low bike, or want to be seen better in traffic—a wind sock may be the way to go.

RCN reader Susan Christie found that The Kite Company offers a 24" Spinsock (perfect size for bikes). These come in rainbow colors (red, blue, green, yellow and orange) or circus colors. The Spinsock sells for \$8 and a flagpoke kit sells for \$7.95.

The Kite Company, 407 SW Coast Hwy., Newport, Oregon 97365. Tel. 541-265-2004 E-mail: tkc@teleport.com

The Kite Company is happy to ship anywhere. ☐

1998 BikeE BabeE

On 9-18-98 Morgan Alexandria Eckroth was born into the world. The proud parents are Lee and Michelle Eckroth. Those in the industry will know Lee as BikeE's Product Marketing Manager. At the Interbike tradeshow in September, Lee had a wad of cash and a list of 47 flights out of Vegas as Michelle was due any day. Many of you will remember Michelle Eckroth from Interbike 1997 and her demo'ing BikeE's at the People Movers Rally in September 1997. CONGRATULATIONS Family Eckroth from the RCN crew and readers. ☐

RCN 1999 SCHEDULE

We will be retaining our '98 six issue bimonthly schedule for 1999.

- ✓ RCN#49 Jan/Feb '99 1999 Preview
- ✓ RCN#50 Mar/April '99
- ✓ RCN#51 May/June '99
- ✓ RCN#52 July/Aug '99
- ✓ RCN#53 Sept/Oct '99
- ✓ RCN#54 Nov/Dec '99

1999 Recumbent coverage will be start in our next issue—RCN#49. This issue will be an update to the '98 SuperGuides series. These issues are available as a set for \$25 (\$30 Can/\$37 Int'l Air-US funds). This includes RCN#43-46 and RCN#38, our '98 BG.

Watch for road tests of all of the new 1999 bikes throughout the year and updates in the Recumbent News section. ☐

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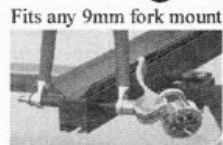
Bill Patterson of the Two wheel drive and FWD WYMS (With Your Main Squeeze) tandem, RCN FWD article (this issue) and Chronicles of the Lords of the Chainring fame is currently offering a rear suspension unit for a Linear LWB bicycle. The unit adds a plush ride and rigidity to the drivetrain of the venerable Linear. It also has the ability to use a rack with the unit. The unit replaces the stock folding chainstays (the bike will no longer fold). A 20" drive wheel, brake, derailleur and seat stay nipples must be added. The suspension unit retails for \$415+\$21 shipping. Bill Patterson, WYMS, PO Box 2278, Orcutt, CA 94357 or email to: wyms@lightspeed.net.

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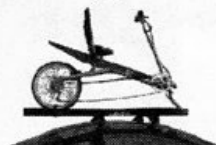
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NAME GAME

When RCN eventually makes it to the newsstand, we will need a name that grabs attention from a crowded rack—something that grabs attention from those who don't know what the letters "RCN" stand for. We will be experimenting with a new masthead or two to find one that works. "Laid Back" was just for RCN#47 Homebuilder Special Edition. If we can't find one that we like, we will retain the '98 masthead. ☐

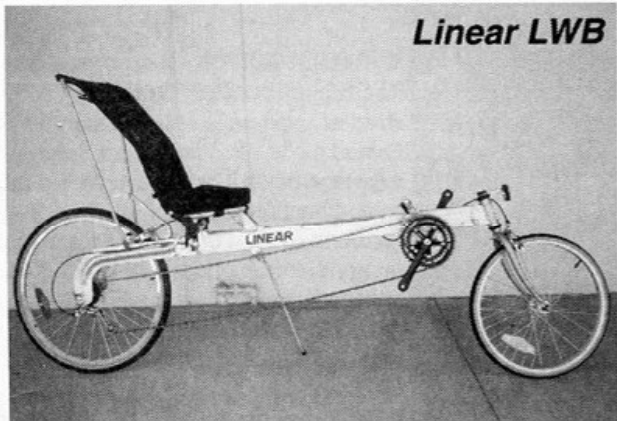
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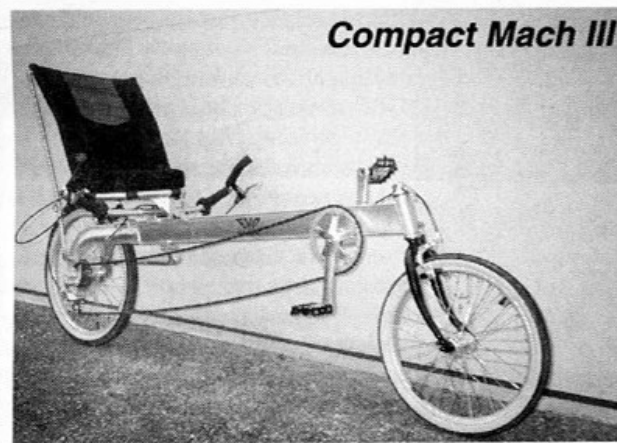
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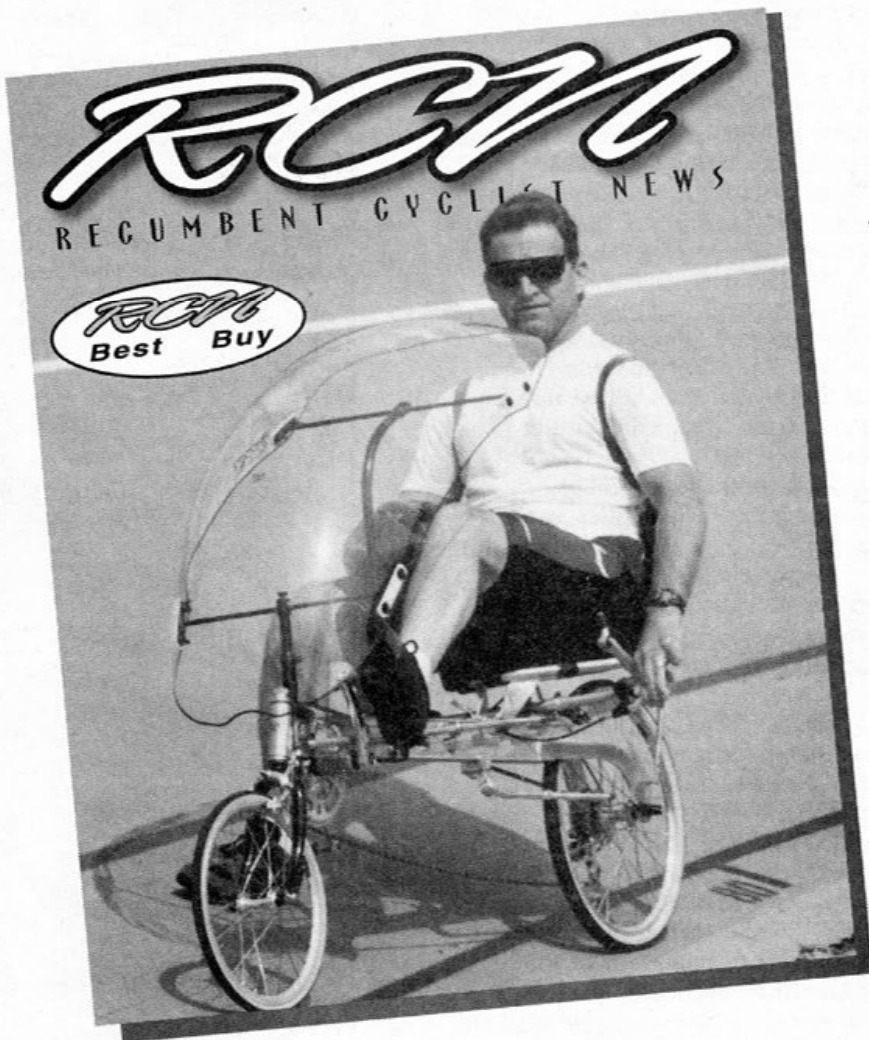
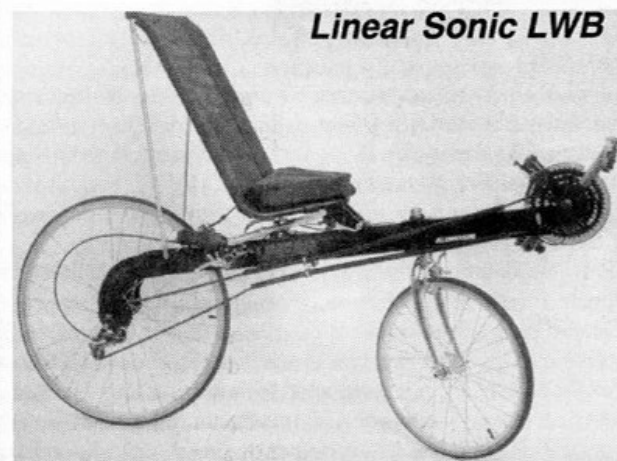
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by Robert J. Bryant
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■ MAGIC BIKE

I've been testing various Easy Racers bikes for over ten years—many test bikes, all models and many variations. In all these years I've had a few unanswered questions about the Gold Rush Replica. What makes this bike so great...so fast...so smooth? And what makes it different than the nearly seemingly identical Tour Easy (steel frame)? After ten years of asking these same questions, Gardner finally leveled with me and said, "Well, you know Bob, sometimes things just work. You can't find scientific theory to back it up." It shouldn't be that much faster, but it is, and it shouldn't be that much better—but it is. We came to the determination that the Gold Rush Replica is a *magic bike*.

Magic or not, there are some immediately noticeable differences between the steel Tour Easy and the aluminum Gold Rush Replica.

1. WEIGHT: The Gold Rush Replica is not just a lighter Tour Easy. Yes, it does weigh 3 or so pounds less than a Tour Easy SS/EX.

2. STIFFNESS: The aluminum frame is stiffer at the bottom bracket, but flexes more vertically offering a smoother, livelier ride and taking the edge off of the harsh road bumps and imperfections.

Most aluminum frames feel very stiff, and dead, and they beat the rider up badly. Gardner Martin's careful design mix of frame tube diameters on the Gold Rush offers a unique blend of optimum power transmission and smooth ride.

3. PERFORMANCE: The Gold Rush Replica is faster than a steel framed Tour Easy.

■ WHAT LEGENDS ARE MADE OF

The Gold Rush Replica is the street version of the legendary race machine. The Easy Racers Racing Team has been dominating HPV races since 1979. A fully faired Gold Rush streamliner ("Old Gold") was piloted to 65.48 mph by Fast Freddy Markham in 1986—and the bike now rests in the Smithsonian.

This past summer, the Gold Rush team dominated the field at the HPRA event at the Indianapolis Motor Speedway. The Gold Rush won 1st and 2nd place overall, and won in the 200 meter top speed, Road Race, and Velodrome events. Gardner Martin is currently working on a new race bike to go after a high altitude record as well as the DeciMach



Bob's Foo foo '97 Gold Rush Replica

in 1999. Few other recumbent manufacturers have comparable race histories, and no other are more respected in both the sport of HPV racing and commercial manufacture of recumbent bicycles.

■ THE RIDE

The ride of the Gold Rush is nothing short of spectacular. I sometimes look behind me to see if somebody is pushing me—or if I have a tailwind or something. Yes, it is that fast—the center of the 'bent universe where all points connect and all is good. The trademark Easy Racer handling has yet to be duplicated—though many have tried. The trick is in the steering geometry, handling and handlebar design. It isn't a neutral handling bike. The GRR has a refined bit of chopper-like wheel flop that is ever so dialed in—though it's not really tiller-like in the negative sense of the word. The GRR travels like it is on rails. It is as stable at 50 mph as some SWB models are at half that speed. The acceleration is quick and smooth. Maintaining speed is effortless as the GRR rides fast on flats, over rollers easier than most 'bents, and even faster down hills. Weight distribution is better than on just about any LWB.

You don't know how many times I've heard people say that they didn't believe me—until they finally experienced it for themselves. The handling of this bike is perfect.

■ FRAME/BUILD

Our test frame was superbly hand crafted by Steve Delaire of Rotator under contract to Easy Racers. GRR frames are TIG welded, heat treated 6061-T6 aluminum. The frames are then powdercoat painted and hand built-up at Easy Racers. The Tour Easy and GRR forks are Easy Racers designed and custom built by Spinner in Taiwan. There are two forks, one for the dual pivot brake and the other for cantilevers.

The GRR frame is among the finest in design and execution of recumbent bicycle frames available today. The durability and reputation of this bike are beyond reproach.

If we had one nitpick of the GRR, it's finishing details. The powdercoat finish is fine, though lackluster for a bike of this level—the GRR deserves a custom paint job or have the aluminum polished natural (optional). We'd also like to see higher quality decals under the paint or clearcoat.

The aluminum GRR frame fabrication will come in house for 1999. Rotator's Steve Delaire will take on the frame building of the new Titanium Gold Rush, or "TiRush."



A stock 1998 GRR "Black Gold" Rush Replica—Easy Racers



Bob's '97 GRR test bike with Foo foo components

■ SPECS

Foo foo '97—Our GRR test bike was originally set up as a '97 model with Boone Tech CNC twist crank. These have a black finish, with black chainrings—gorgeous, but they scratch easily. In an experiment, Easy Racers set the bike up with Scott Superbrakes. Again, gorgeous, but they required all kinds of machining to make them fit, and V-brake rollers to make them work, but they just weren't as good as the stock 105 brakes. Our bike was also set up with the very cool HED wheels. Pricy and exotic—they look downright sinister on the GRR. We were concerned about long term durability—and rightfully so; we later heard that one of our test wheels had a problem. These wheels are not as tough as spoked wheels, though they seem a bit faster.

Hard Core '98—We sent our GRR back to Easy Racers to be refit as a '98 model. Stock brakes, wheels, XTR rear derailleur, SRAM "Plasma" 8-speed Grip Shifts, and a Shimano Ultegra splined bottom bracket, hubs, road triple crankset and front derailleur were all installed. The outcome is dramatic. The drivetrain is quieter (go figure...). The bike shifts better than the '97 with the new XTR reverse pull rear derailleur. The indexed shifting is very dependable—and shifting under load (hill climbing) has never been better on any RCN test bike/recumbent. The Grip Shift gear-display reads backwards and the gear range is exactly opposite of other drivetrains (Nexave is the same way). With the derailleur pulling in from the large cog, the GRR shifts fast and perfect. The only missed gears have been due to me forgetting which way to twist. I have always been a big fan of Easy Racers drivetrains, as the spring loaded midship mounted chain idler takes in so much slack that the bike will accept the outrageously wide gear ranges that we as performance recumbent enthusiasts require (high highs and low lows). This alone sets Easy Racers apart from other manufacturers.

Most recreational riders will find the Gold Rush gearing perfect in the low end, perfect in the high end, but too high in the mid-range. If you ride a lot of hills, or rollers, this will affect your performance. My suggestion is to ride the bike stock for a few months, and then plan on customizing the gearing more to your personal riding style. Hammerheads will need a higher high, tourists will need a lower mid-range and possibly lower low. To reach optimum hill climbing performance, we suggest that you read: RCN#42 Slumgullian Tour article and RCN#45 Ron Bobb's "How Are Those Things On Hills?"

■ BRAKES

Beauty, performance and ultimate simplicity—that is why the Shimano 105 SC brakes are my personal favorites. I've tried V-brakes, Maguras and our Foo foo '97's Scott Superbrakes (People Movers has this brake set for sale). Nothing even comes close to the 105's in refinement, simplicity and finesse. They last nearly forever, anyone can adjust them and they stop fast. The only downside is that the 105 brakes do not work well with fat tires. A 32mm is the limit on the rear and a 451 mm 20" x 1-3/8" Primo Comet on the front. A fender won't work with this tire, though it's my favorite. Rear brake swaps are not simple on this bike. It is either a one-bolt caliper brake or some kind of custom mount.

■ WHEELS

Easy Racer wheel quality has always been at the upper end of the recumbent spectrum—and far superior to most other stock recumbents. This GRR test bike is no exception. They are built up hand built in house of WheelSmith stainless steel spokes, Shimano Ultegra hubs and Sun aero rims. The wheels were touched up just once in our six month test. The spokes on the radially laced 451mm front wheel did come loose, but the wheel never came out of true. Over the years, our Easy Racer wheels have earned the reputation as the best we've ever tested. Even the stock skinny tires and aero section rims offer a smooth and comfortable ride, while offering exceptional performance.

■ WHEEL SIZE CONTROVERSY

Zach Kaplan (Zach Kaplan Cycles) makes some interesting changes to the Gold Rush Replica's that he sells. He uses a 559mm (26") drive wheel, a 406mm 20" front wheel, Maguras or V-Brakes and sometimes Rans "T" handlebars. This wheel combo allows easier fender mounting and a wider tire selection (fat tire rant...) and lowers the bike somewhat. Zach's system requires custom brake mounts (call Zach Kaplan Cycles for updates and availability) and larger chainrings to accomplish the equivalent stock gearing (559mm 26" requires a 55-tooth chainring to achieve the same high gear possible with the stock 52-tooth with a 700c).

I have tried the 559/406 combo on our test GRR and prefer the stock 700c/451 set up for performance riding, though for touring (rough roads, winter, etc.), I would opt for the 559/406 if it were available. Our test GRR currently has the stock CyclePro 700c x 28 kevlar bead rear tire and a 451mm 20" x 1-3/8 Primo Comet. The Comet offers more sure-footed handling and tracks better than the IRC Roadlite EX 20" x 1-1/8." The only problem with the Comet is that it is too tall to fit under the Easy Racer fender (see winterizing).

For testing purposes, I adapted our test GRR using Dia Compe Big Dog BMX dual pivot brakes with Kool Stop brake pads front and/or rear (from People Movers). If you are going to change the wheel sizes my suggestion is to lower both ends of the bike at the same time (559/406).

■ SEATS

Designing a seat for a low BB (bottom bracket) recumbent has always been more difficult. The main reason for this has to do with leg/thigh clearance over the forward edges of the seat base when pedaling in a downward angle (SWB and higher BB Compacts and LWB don't have this problem). Easy Racers is now in their 3rd generation Cool Back seat (mesh back). During the past six months, I have had the Cobra and two Cool Backs and a Rans seat on my GRR test bike. Here is a bit more about Easy Racer seats:

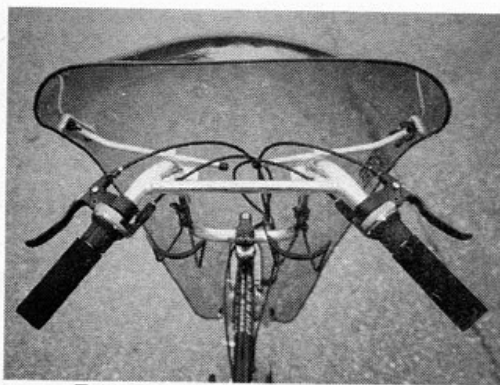
✓ **Cool Back**—Gardner has paid attention to our seat rants and now offers by far the best seat ever placed on an Easy Racer—the new Cool Back. It starts with a polished T-304 stainless steel back with nylon mesh now laced on with a kevlar cord (instead of zip ties) and the seat base is newly widened and recontoured with more foam added (maybe too much foam for skinny riders). This seat works best for medium-large

and XL sized riders. It allows you to slide back on the base for optimum positioning over the base and the seat back is totally breathable. Most riders can push equally well into the Cool Back, though athletic body types may still opt for the Cobra.

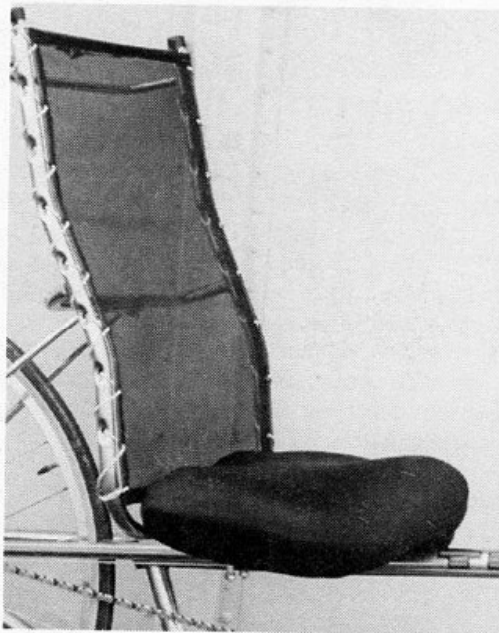
The quality of Easy Racers seats is exceptional—and better than most seats of this type. The Cobra shell and Cool Back base are layered fiberglass/kevlar/carbon fiber. The foam is three layers, glued and contoured with the top layer being a Swiss Air-Rex. The seat foam quality is far superior to Vision and Rans. The only drawback is that tiny twin hose-clamps connect the seat back to the base. Owners should never need to tighten or remove these clamps so this is an acceptable use, however, I am against the use of hose-clamps on expensive commercially built bicycles, recumbent or otherwise.

✓ **Cobra**—This is the latest version of the original Easy Racer seat. It utilizes a composite shell with lycra covered foam. The seat base has been updated and is now the same as the Cool Back. This seat works best for light(er) athletic performance riders who want to push hard with their backs into the seat back. The new Cobra now shares the Cool Back's seat base. The Cobra is far more comfortable than the original naugahyde covered seats.

✓ **Rans Easy Racer**—This is the standard Rans seat (in medium or tall back), with a raised pedestal and Easy Racers seat plate adapted. This seat is no longer offered by Easy Racers, though you can order it through Rans. With all of the mounting hardware, it is pricey. I love the Rans seat, however, it has never worked as well on low BB/pedal bikes due to the potential for thigh



Zzip "T" bracket upper mounts with wider, thicker Zzipper.



The '99 Easy Racer Cool Back seat.

chafe from the added height. Remember, this seat was designed for the V-Rex. If you could delete the adapter and somehow bolt directly to the Rans base, it would lower the seat the necessary few inches. I did notice a performance loss while riding with the Rans seat on the GRR (due to the raised seat height).

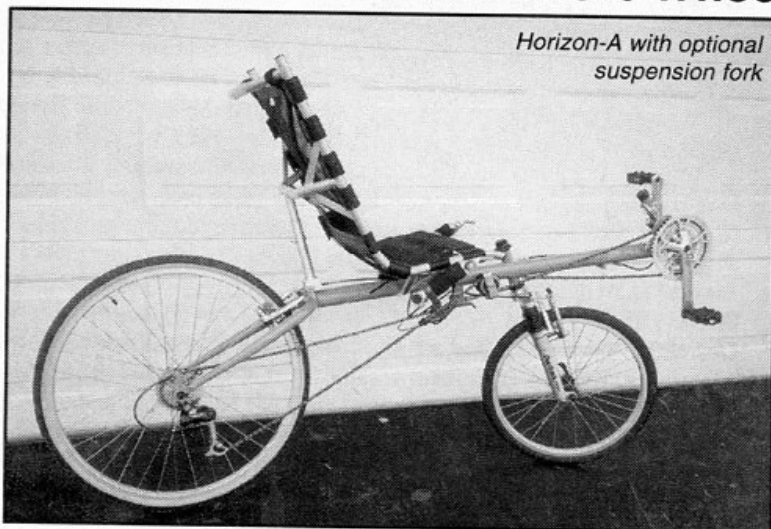
■ COMFORT POLITICS

The question of optimum recumbent seat comfort can be a no-brainer, or a challenging debate. For upright cyclists, any recumbent seat is light years better than a ti-railed wedge. For serious recumbent enthusiasts, who test ride different bikes and seats, the experiences and answer will vary. What I have found is that it may not have as much to do with the seat design as it does the rider position. Easy Racers have a relatively upright seat back and a low-BB/pedal position. Reclining the seat back too far is difficult—as it places the rider too far away from the controls. The bike begs for this upright position. This is very effective performance-wise (the Gold Rush Race bikes actually have a lean forward position). The downside is that it places more weight on your tail-end and can lead to premature recumbent-butt. Riders who believe that optimum comfort comes with a more reclined (and adjustable) seat angle, may not find recumbent comfort nirvana on the Easy Racer.

This is not a universal problem. In fact, in our local rider group I am the only one who brings this up. Kent Peterson and Tony Licuanan have ridden double centuries on old style Cobra seats. Wayne Boone and Jim Giles crossed the USA on old style Cobras. I haven't heard Zach Kaplan or Ron Bobb complain either.

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(Left to right) Double Gold, Gardner Martin, Fast Freddy Markham, Gold Rush and Gold Rush LeTour—Easy Racers, Inc.

For those of you who believe that Easy Racer has the best recumbent design in the history of modern man—the new seat designs are the best you'll ever set your tush on an Easy Racer.

The most recent Cool Back offers by far the best comfort of any Easy Racer seat we have ever tested. It doesn't get much better than this. This is an optimum seat design for the Easy Racer ergonomics built with exceptional quality.

■ PERFORMANCE

The performance of the Gold Rush Replica is exceptional. We have never tested a faster recumbent. Sure, some streamliner, lay-down SWB, low-racer or full fairing bike might be faster, but will it be as easy to ride or will you be afraid of being sucked under a semi at speed? On our 1997 RCN test course, the Gold Rush holds my course record at just over 21 mph average speed. Admittedly, I haven't been able to meet or beat that time since, though I believe it to be accurate.

In RCN#45, Gold Rush rider Ron Bobb wrote of a .85 mph difference between the GRR and Tour Easy. The Super Zipper achieved a 5% performance gain. I found a 15% difference between the GRR and Tour Easy. Since Ron Bobb's article, I have deduced that some of the differences in our performance pertains to the different fairing mounts and positioning between our GRR and Tour Easy test bikes (read on).

Super Zipper—The Super Zipper fairing was designed for the Easy Racers Tour Easy. This full size front fairing comes out of a box and bolts onto the fork and handlebars with four nylon Zzip wing nuts. The GRR Super Zipper is good for 5%-10% in performance and maybe more. This fairing works best on the Tour Easy and Gold Rush Replica. No GRR owner should be without one. The weight is about 1.5 pounds.

Easy Racer Mounts vs. Zzip Design Mounts—Zip makes two bubbles that fit this bike: the standard Easy Racer bubble (with Easy Racer brake lever mounts) and the wider thicker (body stocking) Super Zipper bubble which is available from Zzip Designs or as part of the body stocking option from Easy Racers. If you ever plan to adapt a fac-



Gold Rush with Super Zipper and body stocking—Easy Racers, Inc.

tory or homemade body stocking, opt for the wider, thicker Zipper.

There are three differing sets of mounts available: the stock mounts from Easy Racers the body stocking Zipper Easy Racer cross mount, and the "T" bracket upper mounts from Zzip Designs. If your body type is wide or tall or you just want additional positioning capabilities, opt for the Zip "T" bracket mounts. Be sure you tell Karl at Zzip (or your dealer) that you want the "T" brackets and Super Zipper to go with it (upper mounting holes are different).

I'm 6' tall and found the additional positioning benefits of the Zzip "T" brackets and wider bubble well worth the weight penalty. They allowed me to position the fairing so that the airflow was directed over the top of my head rather than into my face. You still look over the top of the fairing—and with airflow directed over the top of your helmet. Gardner believes there is something to my fairing height performance theory, but cautioned me that it stretches out the fairing and makes tight turn fairing clearance more of an issue.

For fast runs, I was able to use the handlebars as aerobars and lower my head behind the fairing for a short time. I have often thought of designing some aero-bars or bar-end extensions. In my Tour Easy test, I used stock Easy Racer Super Zipper fairing mounts and the fairing was lower on the bike than on my GRR. I am certain that this played a part in my performance difference between the Tour Easy and GRR. It is recommended that you do not look through Zipper fairings for extended periods of time. Proper set-up means looking over the top.

Body Stocking—The body stocking includes the wider, thicker Zipper that comes with an upper cross support and a customized rear rack with a tower to hold the body stocking. The lycra stocking installs and removes in less than a minute—and offers up to an additional 10% performance gain. The fairing, mounts, lycra body, rack and tower weighs 5 pounds, 1 ounce. The complete set-up costs \$695. Besides being an expensive option, the body stocking can take along time to get once ordered—as they are hand made. For the performance enthusiast—it is well worth the wait.

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I haven't tested the body stocking since 1992. When I had it, I rode with it about 25% of the time. This is not because I didn't like it, but because when you ride a fast bike with a fairing, you are expected to ride fast—and sometimes you just want to cruise.

■ ACCESSORY & OPTION RECOMMENDATIONS

A handlebar bag is handy, and fits in front of the bars and behind the Super Zzipper. Mine is a standard drop-bar touring bag. Rear racks work well, and Easy Racers can carry a heavy load if they need to. The dual water-bottle cages on the bar risers work well—though they tend to drip on hot sunny days (especially if you freeze your bottles). For long rides, I place my hydration system in place of the handlebar bag. The very large new design ('98) BikeE seat bag can be used on the GRR Cool Back seat, providing you have a rear fender. This seat bag is by far my favorite seat bag available today and fits many different recumbents. Hopefully, somebody will come out with an Easy Racers seat bag. If you opt for a kickstand, your bike will eventually fall over—and dent your fairing. I finally took mine off after several years.

Most GRR's come in black (Black Gold). Many owners don't like the fact that they look like a black Tour Easy. In the old days, they were polished natural aluminum. Easy Racers will still do this on request and there is a charge. A limited number of white Gold Rush frames are available as well. These also have clearcoat over the powdercoat paint. Our preference is the white or the optional natural polished aluminum.

■ GARDNER MARTIN & COMPANY

You won't find a better recumbent manufacturer, or better service. In fact, it's tough to find anything to complain about. Okay, maybe the long wait to get one. Well, the warranty issue is another, so we called and checked. It is a lifetime warranty on the frame, 5 years on the fork and 1 year on the seat and cover. Easy Racers is so confident that you'll love your bike, they offer a 30 day buy-back program that if you don't like it, you can return it (minus a 10% restocking fee).

Easy Racers are built to last. Gardner Martin does not build "planned obsolescence" into his bikes (as some do). Long time RCN reader Dave Burgess of Dolan, Alabama has owned many recumbents and his GRR is his favorite. The bike has an amazing 46,000 miles on it, 39,000 of which he rode (he's the 3rd owner). Dave recently rode from Miami to Maine with no problems and says his newly polished GRR looks like new! Easy Racers ride and wear well.

The Gold Rush Replica is a versatile recumbent. It is very fast, yet nearly anyone can effortlessly ride it. It makes mediocre riders into fast riders. The bike makes all of its riders look good and the Harley-esque looks are beyond cool. The design is tough, durable and nearly as bullet-proof as a recumbent can be. No other recumbent is as refined as a Gold Rush Replica. The new Titanium version is the ultimate Easy Racer.

The Gold Rush Replica is a high performance recumbent, yet will

work great for touring, recreational riding or a fast double century. This is as good as it gets. Like the ad says, you have arrived.

■ SNEAK-PEEK: THE GRR TIRUSH

Just before press time, I received a call from Gardner Martin alerting me that I needed to be at the People Movers Rock & Roll Recumbent Rally to ride the new Titanium Gold Rush to the beach. Steve Delaire is building the new TiRush frames for Easy Racers. Steve finished frame #001 a few days before the People Movers event. The bike was my size—a large. With two days notice, I drove 18 hours to LA for the event. The People Movers Rally is the west coast premier 'bent event—and I have become a regular.

I rolled into town during a rain storm Friday, midmorning. On Friday evening—the Easy Racers crew roll into Orange, California. We are all sitting around shooting the breeze when out rolled quite possibly one of the most beautiful recumbent bicycles I've ever seen—a natural polished Titanium Easy Racer Gold Rush Replica—TiRush! The unpainted Titanium finish is background to new (and predominant) Easy Racer Ti-graphics that prominently announce that the TiRush has arrived.

I was excited to be the first pilot of #001. I threw on my pedals, checked the air pressure of the tires, and checked the X-seam (perfectly adjusted already). We installed the fairing—and then stared at the bike in unison while Gardner gave us a lesson in Titanium bike building. Titanium is rare, expensive, very strong and resilient. It has a memory and bounces back. It is also a lighter material, so the TiRush is immediately 1/2 pound lighter than its aluminum stablemate. The difficult build process and costly Ti-tubes will make this an expensive machine—\$5,000. Gardner Martin will be using a custom Ti stem, and lighter handlebars—which should make the bike a full pound lighter.

Titanium is lighter than steel or aluminum (when sized for bike frames). Ti's strength and rigidity are between that of steel and aluminum and corrosion resistance is superior to both. Ti is scratch resistant and cannot be marred like aluminum (which is very soft). Ti actually dulls files and holesaws used in fabrication. They are often good for only one cut. Titanium is considered the premier building material in the bicycle world. The only negative seems to be the cost of raw materials and difficulty of fabrication.

The test on TiRush #001 was awesome. This was People Movers' yearly Recumbent Rally. The crowds were building and the coffee was brewing. Southern California was experiencing some odd weather due to the tail end of a hurricane in the Gulf of Mexico. Blistering hot temperatures and thundershowers the days before brought an unseasonably NW-like overcast day to ride to the beach.

Our group of 100 or so riders headed off to the beach. I'm not in the killer-shape that I was in a year ago, though any Gold Rush—as usual—made me look good. The new TiRush rides much like the aluminum bike with a stiff bottom bracket offering very direct power transmission,

FENDERS & WINTERIZING THE GRR

Easy Racers builds quite possibly the finest fenders known to man. They are handmade of kevlar in the Easy Racers shop in Watsonville, California. The fenders are available in 406 and 451mm 20" front sizes only, though Gardner is contemplating a 700c size. They should mount to any 'bent 20" wheel.

In the past, a rear fender was not completely necessary on the Tour Easy or GRR (Cobra seat and a mountain bike style rack). With the new mesh "Cool Back" seat, the need for a rear fender and a fender set has never been greater if keeping your hiney dry is an issue.

For such a versatile bike Easy Racer's (GRR & Tour Easy) biggest failure is outfitting it for wet weather. The bike is missing a rear fender lower mount (at the front of the wheel). I use a series of zip-ties to anchor and center the lower forward section of the fender to the frame (in between the stays), though this is barely acceptable.

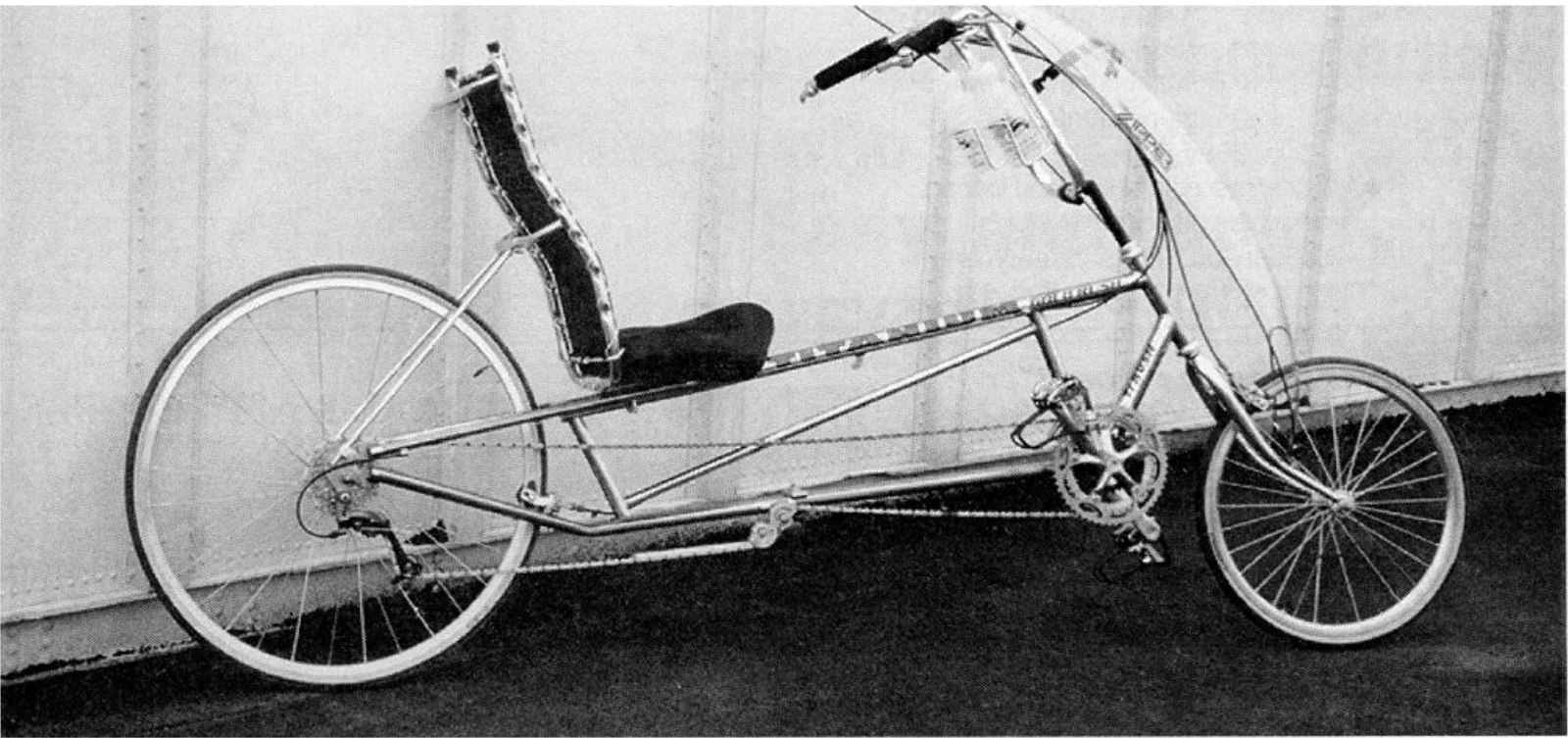
Since the 451mm Primo Comet won't fit under the fender, I had to revert back to the narrower and less sure footed IRC Roadlite. This

change made me realize how nice fat tires would be for rainy season riding. With the GRR's 105 dual pivot brakes, a rear fender is a tight fit. 32mm is about the maximum width for the rear tire.

Having soaked a fair amount of foam seat pads in the NW rain, I rainproof my seats as well. I cut a piece of coroplast (plastic cardboard/signboard) and zip tie it to the behind the mesh to the seat frame down to where it hits the seat tube on the frame. This helps to keep the cold winter air away from my back. It also acts like a splash panel for water than wants to sneak up into the seat foam.

Super Zzipper fairings will help to keep the rain and cold wind off of your body. Never leave the seat uncovered in the pouring rain (Lycra is not waterproof). A plastic trash can liner will keep the seat foam dry when you are in the coffee shop.

It is unfortunate that many recumbent builders assume that owners only ride on sunny days. This season Vision has agreed to supply us with a new R44 with Vision Zzipper, Rain poncho and fenders. □



The Titanium Easy Racer TiRush —RCN

but with equal or maybe even more shock absorption in the ride. The TiRush performed every bit as good as our aluminum test bike. Ron Bobb has been testing the TiRush and says it does climb better than his personal GRR—which made him faster.

Do you need a TiRush? If you have to think about it—the answer is probably not. This is the supreme \$5,000 Easy Racer—for the Gold Rush connoisseur and the \$2,000 question (\$2000 more than an aluminum Gold Rush). Expensive, yes, and as good as it gets in the recumbent world.

■ ROCK & ROLL RALLY

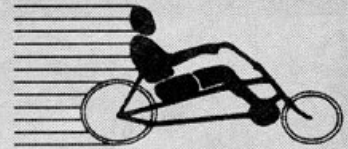
The People Movers Rock & Roll Recumbent Rally is the recumbent event on the west coast. People from all over the USA come to visit Orange, California and hang in the parking lot. Jim & Linda Wronski are the premier recumbent show people. Attendees were treated to 50's Rock & Roll, recumbent riding, fun, games, lots of food, an "official" event spokesmodel and a chance to win thousands of dollars in prizes (A Tour Easy, BikeE and other stuff were given away).

There were other 1999 product unveilings besides the TiRush. Bill Haluzak was in town to show his new People Movers Transit/Transport

Compact with optional take-apart frame and Dan Duchaine unveiled the very cool Pharobike LoFat LowRacer (available soon) and Gardner Martin and the TiRush.

Even though the bike trade-show was a week away across the Mojave desert, the '98 People Movers Rock & Roll Recumbent Rally was the best and most fun to date. Plan to be there next year! ☐

EASY RACERS



SPEC SHEET

MODEL.....	Easy Racer Gold Rush Replica
TYPE.....	LWB ABOVE STEER (ASS)
WHEELBASE.....	.64" (sml), 66.5" (med.), 69" (lg.)
SEAT HEIGHT.....	21.5"
BOTTOM BRACKET HEIGHT.....	13"
WEIGHT DISTRIBUTION (Mfr.).....	65%/35%(ft)
WEIGHT.....	26 lbs. 2 oz. (sml.), 26 lbs. 9 oz. (med), 27 lbs. 1 oz. (lg.)
FRAME.....	TIG, heat treated .6061 T6 Aircraft aluminum
FORK.....	Custom geometry CroMo
STEM/BARS.....	Easy Racers Ti/Xtra Light
SEAT.....	Easy Racer Cobra or Cool (mesh) Back
COMPONENTS	
CRANKSET.....	Shimano Ultegra Road Triple 26/42/53
BOTTOM BRACKET.....	Shimano Ultegra hollow
DERAILLEUR-REAR.....	Shimano XTR
DERAILLEUR-FRONT.....	Shimano Ultegra
SHIFTERS.....	SRAM GripShift Plasma 8/24-spd
CASSETTE.....	Shimano XTR Ti
WHEEL-REAR.....	700c x 28 Aero Rim
WHEEL-FRONT.....	451mm 20" X 1-1/8" Aero Rim (406 opt.)
WHEEL BUILD.....	In House, SS spokes
HUBS.....	Shimano Ultegra
BRAKES.....	Shimano 105SC dual pivot side-pulls
PRICE.....	\$2995+ \$279 Super Zipper or \$695 Body sock
NOTES.....	Ask about '99 GRR EX touring specs

THUMBS UP

- ▲ The fastest recumbent we've tested
- ▲ Near perfect drivetrain performance/shifting
- ▲ Perfect handling and road manners
- ▲ Great ride—comfortable and stable
- ▲ Cool Back seat is the BEST Easy Racer seat yet

THUMBS DOWN

- ▼ LWB are noticeably larger than other bikes
- ▼ LWB are difficult to haul around (cars, racks, etc.)
- ▼ The GRR deserves a nicer paint finish (pre '98 polished?)
- ▼ We still don't like Tektro brake levers
- ▼ We found two hose clamps on the seat
- ▼ Optimum "all day" comfort is still elusive for Bob

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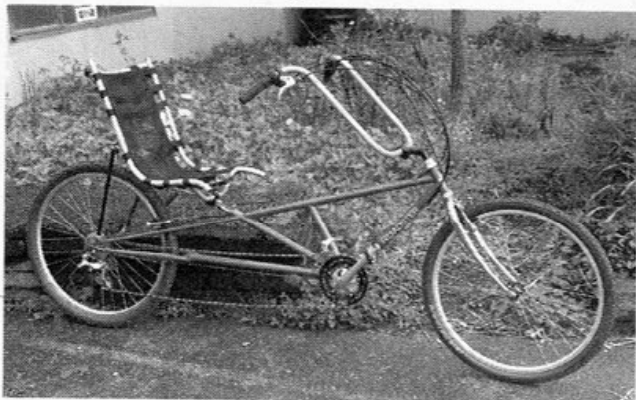
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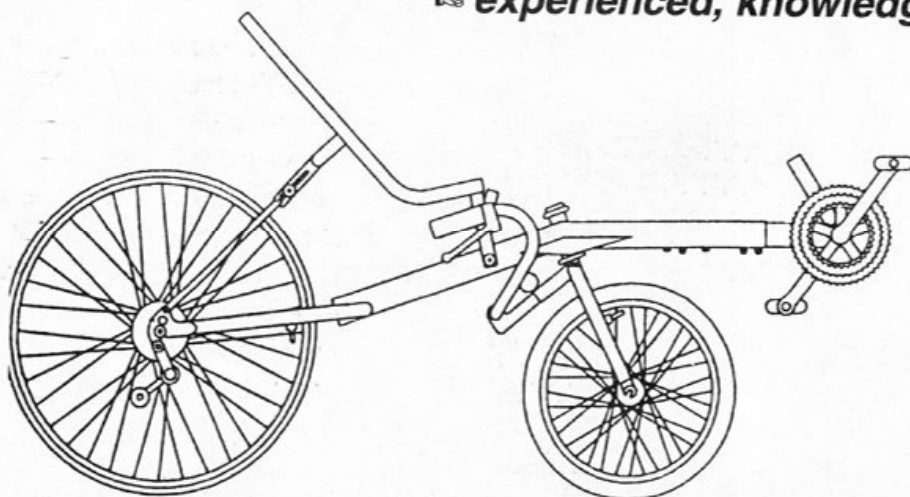
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The folks at Easy Racers want to congratulate all of their customers who crossed the U.S.A. this year on Tour Easy and Gold Rush Recumbents. A better way to see the U.S.A.

A special thank you to Wayne Boone and Jim Giles for the photos.



Wayne Boone and his Gold Rush Replica



Jim Giles and his Gold Rush Replica. Jim rode from Maine home to Washington

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Wayne Boone, age 55, from Monterey County, California loves to ride long distance tours and he likes to go fast. There is only one bike that meets his needs:

THE LEGENDARY GOLD RUSH REPLICA!

Dear Gardner,
I completed my cross-country trip on the Gold Rush on July 26th—having ridden 4,350 miles in 59 days (including 5 rest days). I averaged 80 miles per day. I didn't have a single mechanical problem or even a flat tire! Nor did I experience any wrist, neck, shoulder, or crotch problems. I was always ready to ride in the morning, even when I had the wind in my face!

You build a GREAT bike!

Viva Recumbency,
Jim Giles
Quilcene, Washington

**Easy Racers, Inc.
Tel. 408-722-9797**

by William T. Conklin

Every July and August, I head toward Glenwood Springs, Colorado with my kayak and my bicycle, for the express purpose of kayaking Glenwood Canyon with a bike shuttle. One of the complexities of kayaking is that one must get the car located at the pickup. Although I have six recumbents and a carbon fiber mountain bike in my garage, I picked two BikeE's for the job. My expensive mountain bike hasn't been out of the garage since I discovered recumbents. If I can't do it on a 'bent, I can't get real interested.

The BikeE is the ideal shuttle vehicle for the kayaker. First of all, a kayak is a recumbent vehicle so a BikeE has a natural feel to a kayaker. Anyway, one warm summer morning in July, my friend Peter Forss and I loaded up the car with two BikeE's and two kayaks and other stuff and took off for the scenic grandeur of Glenwood Canyon, Colorado. Along the way, we got lots of weird looks. As you know, recumbent riders attract a lot of attention with their carloads of weird bikes. After a three hour drive from Denver, we made it to the Grizzly exit off I-70. There is a great put-in at Grizzly with modern restrooms and a neat cement ramp down to the river.

We unloaded the kayaks and assorted equipment and drove to Two Rivers Park in Glenwood. We quickly unloaded our BikeE's and headed through the park and into the town of Glenwood. I really like the sitting position of the BikeE. I sit higher on it than my other recumbents and the above-seat steering feels very natural—especially in traffic. I always use a flag or one of those Spinnie-things to attract attention. BikeE's, however, do attract a lot of attention, comments, and questions on their own. As we started up the canyon, we were stopped several times.

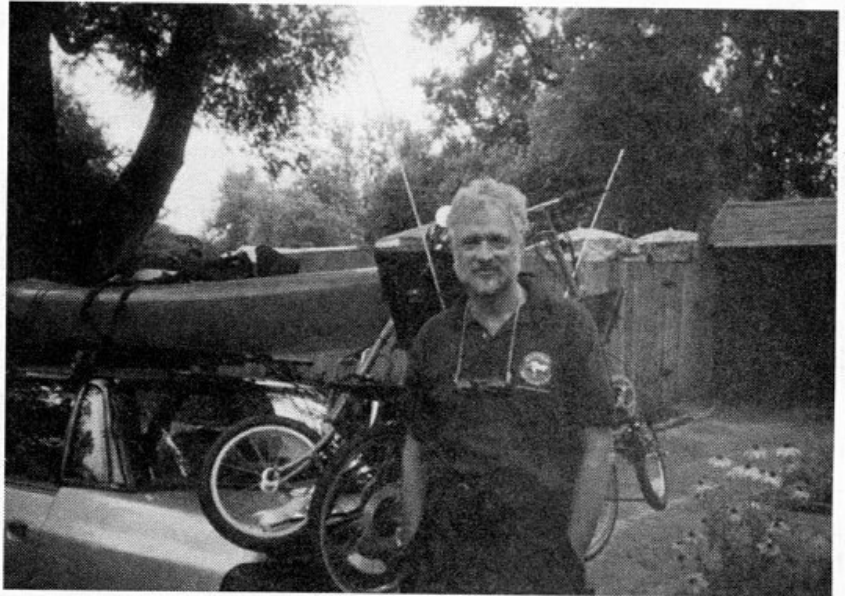
It is possible to ride over 13 miles in Glenwood Canyon and it's uphill all the way. Some people think that recumbents can't climb hills, but once you learn to ride a recumbent on hills, you won't have any problem on bike paths or roads.

The visibility on a recumbent is really a treat. Sitting on a BikeE, we could really see the beautiful canyon walls. We didn't have to bend our necks back to get a look at the terrific scenery. In the past when I rode up the canyon on a mountain bike, I had to make an effort to look up. On the BikeE, I just sit back and relax. I never get sore wrists and hands, so I forget to wear cycling gloves. I suppose it would be helpful to be wearing gloves if I fell off my bike, but in three years of riding a BikeE, I have yet to fall.

We continued our ride up the hill to the Grizzly put-in and locked our bikes up so they would be there for our return.

The trip down the canyon is great. Glenwood, from the Grizzly exit to Two Rivers Park is a level 2 river. There are nice waves to play in and from time to time, the highway disappears and the canyon feels quite remote. I use sit-on-top kayaks because they are quite stable and safe and even a beginner can enjoy a ride without the fear of dumping his boat and having to swim to shore to empty the boat of water.

After a very enjoyable paddle, we pulled our boats out at Two Rivers, changed clothes and drove back to Grizzly to pick



The author, Bill, kayaks and BikeE's



Author Bill and friends on the trail near Glenwood Springs

up the BikeE's. We ended the day by swimming at the fabulous Glenwood Hot Springs Pool.

If you like bike riding, swimming, and mellow river trips, coupled with beautiful scenery, you might consider loading up your BikeE (or 'bent of choice) and heading off for Glenwood Springs, Colorado. □

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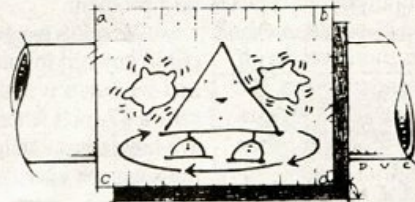
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"BIKE TECHNOLOGY FROM A DIFFERENT ANGLE"

Front Wheel Drive Recumbents

Being the fifth part of the Chronicles of the Lords of the Chaining

by Bill Patterson
wyms@lightspeed.net



Von Drais sat in a 2 wheeler and pushed himself along the ground. The next step was to place pedals on the front axle of the Velocipede and 'take off.' Speed was increased by making the front wheel larger, until we reached the ordinary with front wheels of 50 inches or more. Bikes started out as front wheel drive machines.

The advent of the chain allowed the 'safety bike' with its rear wheel drive to proliferate. We have forgotten that front drive was the first option, and is still an option for the designer. Now, more people are discovering the comfort of the recumbent, and front wheel drive may become important again. The recumbent rider normally rides in a chair with the feet in front. It is logical to have the crank near the driven wheel. The advantages are easy to understand. A shorter chain is lighter and cleaner. The lack of chain to the rear wheel allows more space for people and packages, and the cycle can be more compact.

■ FIXED BOOM FRONT DRIVE

The fixed bottom bracket of this type of cycle can be driven in a straight line in the same manner as the rear drive bike. Some problems occur as the bike is turned because the drive chain must twist to accommodate. One commercial bike is built in this manner and fixed boom racing bikes are becoming more numerous. These bikes have the advantages of front drive without the learning period of the moving bottom bracket bikes. The Bevo bike from Germany may be a force in the future.

■ MOVING BOTTOM BRACKET

The moving bottom bracket front wheel drive bike has many advantages. It can be easily folded and can be ridden hands off for extended periods, the chain is shorter than the safety bike and some designs can be incredibly agile. We recently measured the turning radius of our tandem. It was only 57 inches, and that's for a bike with a 47 inch wheel base.

A disadvantage of FWD is the learning time needed to transition from a 'frozen' bottom bracket to a moving bottom bracket bike. The other disadvantage is the weight-shift problem for the high-seat machines. Climbing on wet, steep surfaces is not recommended.

■ DESIGN CONSIDERATIONS

Two vastly different designs of moving bottom bracket are in use. In Holland, the commercially built Flevo/Chinkaras have the rider sitting over the head tube. The American designer, Tom Traylor has the rider lower and to the rear of the front wheel. These designs mirror the riding conditions in the two countries. Holland has less relief than parts of the US, so hill climbing isn't an issue. The high seat Flevo-style bike transfers more weight off of the front wheel in a climb and allows the wheel to slip under power. The high seat, however, does increase agility. The Flevo-type bike can turn very tightly. The low seat design, on the other hand, is no more agile than any other bike. Our legs interfere with large steering angles.

The Traylor and some of the Flevo racers make better hill climbers. The low seating position reduces weight shift on the uphill. People in mountainous terrain or with slippery road conditions will prefer the Traylor type seating configuration.

The designer has several frame configuration values that can make a front drive easier to ride.

The bottom bracket can be lowered to place the feet more in line with the fork. This arrangement will reduce the force on the handlebars as the bike is pedaled. Longer wheelbases will be easier to ride. Also, the long wheelbase bike will keep more of the weight forward on the front wheel

where traction is most needed during hill climbing.

The headtube angle can be relaxed to reduce bike response. The big problem with excessively low head tube angles is the larger range of low speed instability due to the torsional spring rate. The Flevo has a 45 degree headtube, which may increase the learning time for their new riders. My tandem has a 60 degree headtube and I feel that even that may be excessive.

Several riders have tried both the WYMS and the Chinkara. They indicated that the WYMS was easier to ride. This could be because of any one of three differences: longer wheelbase, steeper headtube angle, or increased trail. Or it could be that I was standing nearby and they were being polite. I found the Chinkara to handle well, if it was a bit light in the 'feel' department.

Trail is a mysterious thing. It brings on the nice 'feel' of the controls. But in excess, it can cause the bike to handle like a truck. We have built several variable geometry bikes with mixed results. I prefer 100 mm of trail for the feel and the high speed stability on front drive bikes. A missed shift or a foot slip will cause large disrupting forces on the controls and more trail helps keep that front wheel straight in such an event. Many riders have noticed that less trail makes some of our variable geometry bikes handle better for them. However, most people like more trail at higher speeds. The amount of trail to use is a very subjective thing.

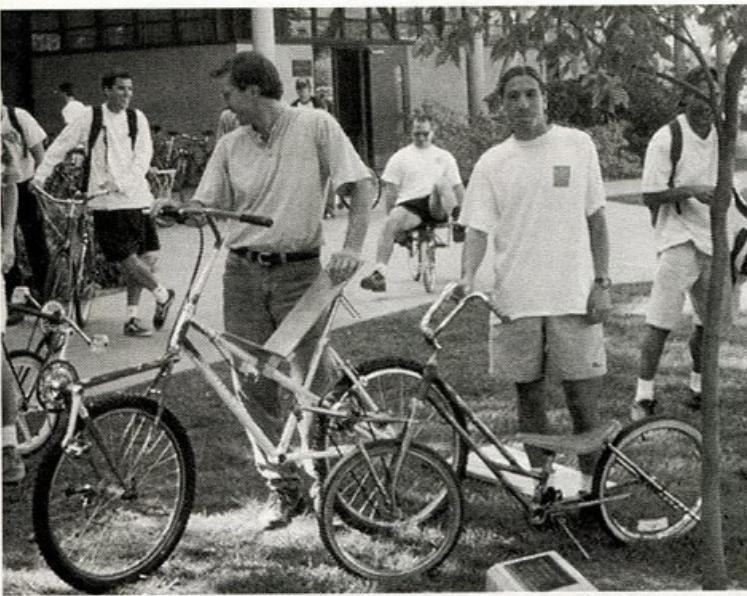
Front drive bikes exhibit another interesting phenomenon. The front drive bike will tend to roll and yaw with each pedal stroke; this is certainly true for the new rider. At certain pedaling rates the next stroke will exactly counteract the deviation of the last stroke and the bike will be self correcting. I call this cadence the 'pendulum frequency.' It's interesting that the bike is easy to ride at cadences below the pendulum frequency and effortless to ride at the frequency, but is much more difficult at higher pedal rates. At high cadences, the bike starts to feel unstable and requires much more attention. The main problem of this pendulum effect is high spin rate climbs up very narrow paths. Another interesting effect is that below the pendulum cadence, the bike is easier to ride 'hands off' while pedaling. Above that rate it's easier to ride 'hands off' without pedaling. So at higher speeds it's difficult to ride only with the feet. The rider has a tendency to stay in a higher gear with a high seat front wheel drive bike. The lower seat of the Traylor or Flevo racer shouldn't exhibit these tendencies. The pendulum frequency is dependent on seat height, so a low seat bike will have a pendulum frequency above most pedaling cadences, and shouldn't be a problem.

We ride a two-wheel drive tandem daily and find it delightful. We can climb any hill in San Francisco, we can ride off road on mild, firm paths, and we can travel the same roads as any other bike. Yet our tandem has only a 47-inch wheelbase and can be packed in an even smaller package. We have totally independent pedaling and coasting, because we are driving separate wheels. I am confident that front wheel drive will return as recumbents become more popular.

A front wheel drive bike with an enclosed drive system may make the perfect folding/commute bike. Such a bike could be easily folded and would allow hands-off riding from normal walking speeds to 30 km/hr. Only time will tell.

■ GETTING STARTED: BUILDING A FWD

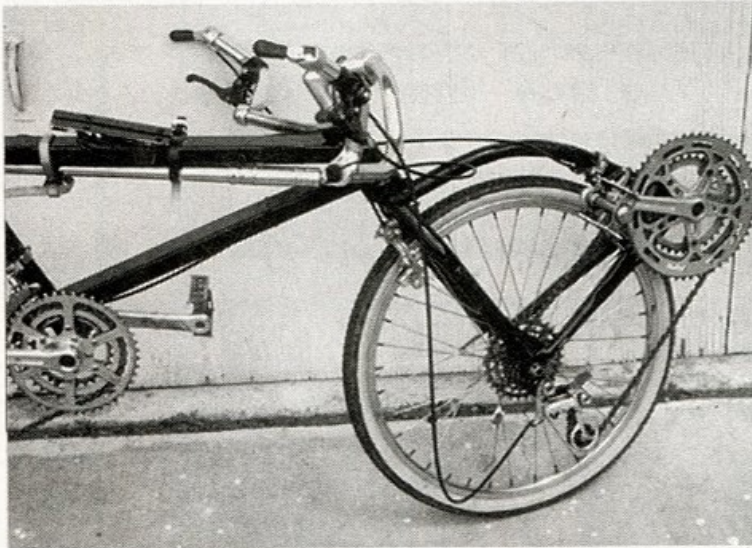
Get two 20-inch wheel bikes. Sacrifice one bike by cutting the top tube near the seat post and the down tube near the bottom bracket. You now have a rear triangle. Bend the front fork of the whole bike outward to



Student FWD builders—Bill Patterson



Bill's WYMS tandem (Bill captain, Cornel Ormsby as stoker)—Bill Patterson



The WYMS FWD unit—Bill Patterson

accommodate a rear wheel. Mount the rear wheel and the rear triangle dropout to the front fork. Be sure the bottom bracket of the rear triangle is down. For more trail, I suggest that you turn the fork around backwards at this step.

Attach the rear-triangle, seat tube/stay apex to the headtube of the bike. Use bolts, bailing wire, etc.

■ YOU NOW HAVE A FRONT DRIVE

Put a seat on the bike in a comfortable position. Insure that the seat backrest can take a side load. You will be generating strange forces on the backrest as you pedal.

Congratulations, you are now the proud owner of a front wheel drive bike.

■ THE FIRST RIDE

Find an open level spot. An empty parking lot is perfect. Be sure that the bike is in low gear. Do not stomp away as you start. Just flow. Zen away from the stop.

Now you are riding. You will notice that it takes quite a bit of force to keep the bike straight. Don't push so hard on the pedals. Ride a while.

After a day, try pushing outward on the pedals as you apply force. Now you will notice that the hands are not needed. Tomorrow, you will be riding hands off.

You've arrived. □

Ed. Note: Yes, that is Bill Patterson riding FWD no hands on page 20.

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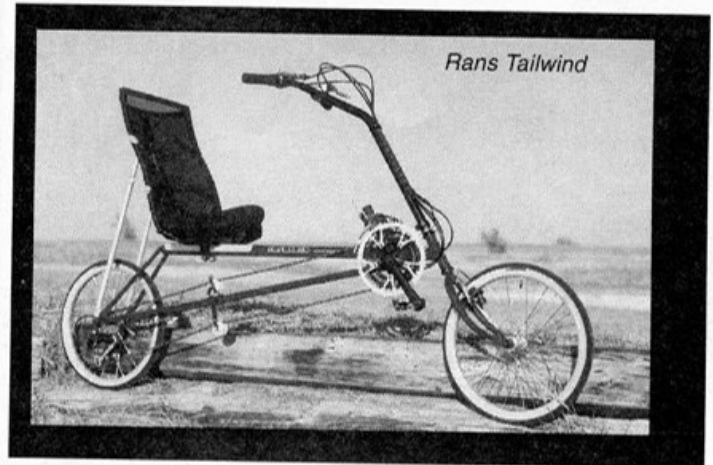
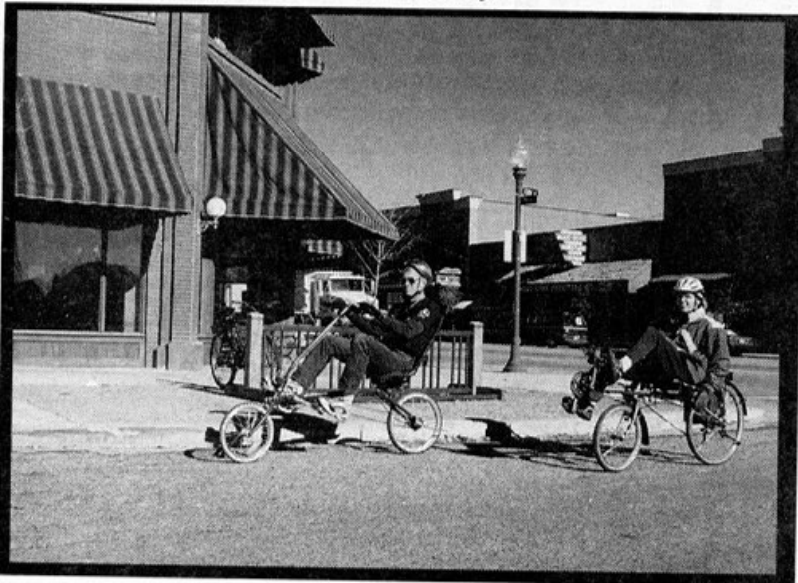
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The Chronicles of the Lords of the Chainring

Several years ago I was asked to be the advisor of the CALPOLY University Human Powered Vehicle race team. My experience with the helicopter club that flew the first human powered helicopter was that a successful club is built on a technical course to provide the necessary focus and foundation.

I had been sponsoring student projects to investigate bicycle geometry for the 10 years. The product of our investigation was that "hands off" stability wasn't providing the specific information we needed to design and build proper handling high speed vehicles. Flight test experience led me to generate handling qualities equations for bicycles and a course was started at the University. A web page for the course is available for inspection. <http://www.calpoly.edu/~wpatters/>

The Chronicles of the Lords of the Chainring is the theory that is covered in the University course and has proven to be effective in designing bicycles for all speed ranges. The notes have been refined and modified as several classes have been taught and should provide the bike designer/builder with information that will save a lot of cutting and trying and make for a better handling class of future vehicles.

Bicycle dynamics can be very complicated, whether investigating handling qualities or hands-free stability. I removed all second order terms and neglected other terms to provide truly simple and clear advice as to the effect of geometry changes upon handling qualities. The changes cause little error and directly connect geometry with rideability.

The designer determines 3 values for his bike:

1. Control Authority Factor (K) that determines responsiveness.
2. Fork flop, a feedback sensor that aids in feeling roll angle errors.
3. Control spring Factor (K2) that determines the important control force.

The simple comparison of these values predicts the feel, responsiveness and controllability of a new design. Overcontrol at high speed is addressed and is governed by choosing proper values of K and K2. The booklet also provides all derivations of the theory. The handling quality factors are all determined by wheelbase, seat position, front wheel radius and tire size, weight, handlebar width, headtube angle and fork rake.

As many as 100 different designs of bicycles have been built and tested over the years. This experience is imparted along with photos of some interesting examples. A computer program that allows the user to input geometry values and generate handling quality factors and plots is also available.

Anyone wishing to order a copy of the "Lords of the Chainring" can do so. Send check or money order for \$32 for The Chronicles of the Lords of the Chainring and \$10 for the Lords computer program (specify XL or qbasic) to:

Bill Patterson
Wyms
P. O. Box 2278
Orcutt CA 93457

RCN

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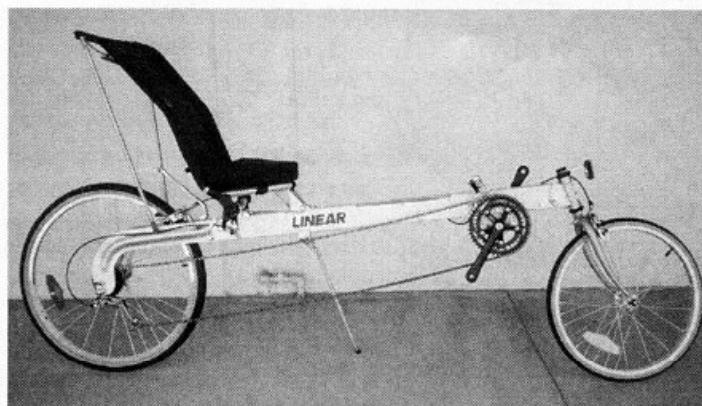
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By Randy Ghent

Reprinted with permission from the Auto Free Times

You've heard of houseboats—but housebikes? Probably not. There are only 13 in the world that we at the Auto-Free Times know of.

And Brian Campbell has built every one of them. Together they form what Campbell calls, "the GeoFleet."

Each bike weighs 200 pounds, has 135 gears, and—once you get going—can go faster than a racing bike. It can even carry loads of 500 pounds, and is extremely strong and durable.

Sound like too much to be true? There's more: One GeoFleet housebike, effectively replacing both the owner's house and car, can even produce economic security for less than \$200.

If used parts are relied upon, the bike can be built for under \$500. So you can say good-bye to rent, insurance, pollution and the rest of it.

It's not exactly luxurious living—just a cozy weatherproof place to sleep, made of rigid urethane insulation, that's the width of a twin bed. But for the claustrophobic, the largest sleeper box available with GeoFleet's standard frame sleeps four.

In fact, the sleeper box is so well insulated that the occupant's body heat keeps it warm all night long.

"It's like the Bahamas within seconds, even in winter," Campbell said. "There's no condensation problem because of the dehumidifying windows."

And with a unique double kickstand, the bike is remarkably stable. It won't budge, even with three people inside.

Mostly aluminum angle bar bolted together, the bike's framework has long drive chains and a set of gears underneath that connect to a specially designed automobile wheel in the rear.

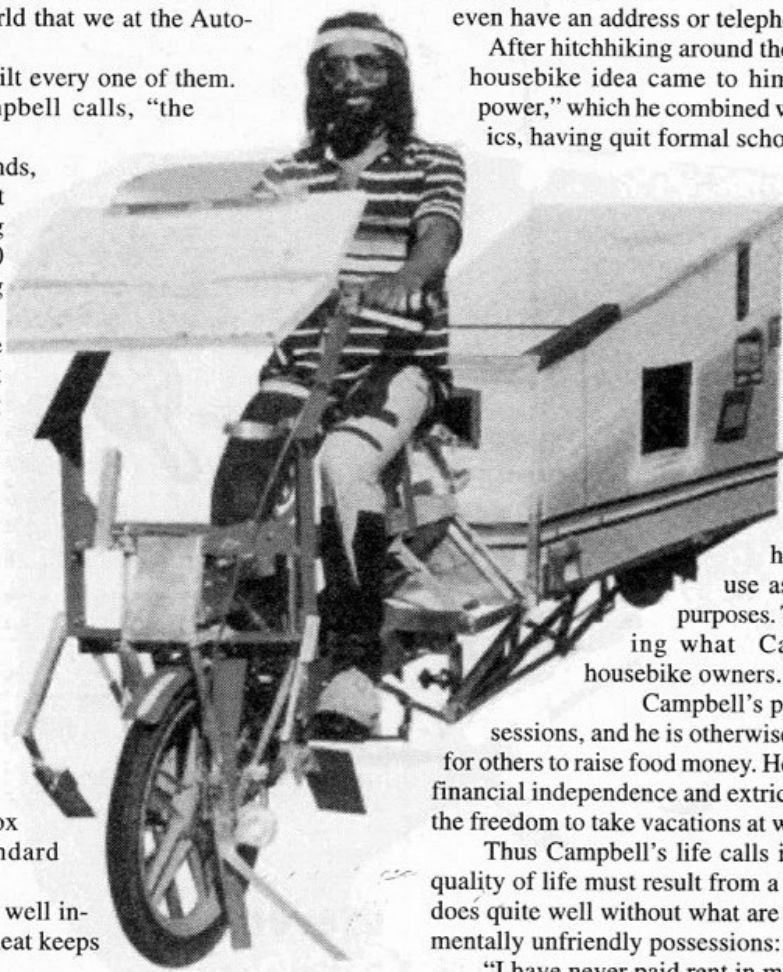
The bike is driven partly by a turning, weighted mechanism that provides centrifugal force power. So once you get going, it can feel like you're riding a two-pound bike, Campbell said.

He calls it a "spring-action, thresher flywheel." "This mechanism uses the internal weight of the wheel itself—not where the wheel is hitting the road," Campbell claims. "It almost feels like you have a big ball of steel pushing behind you."

Campbell and a partner have even patented this design, as well as that of the drive chain.

GeoFleet bikes are so unique that Campbell and his cohorts jokingly use Star Trek terminology to refer to them. They call the bikes "ships," and have assigned themselves titles such as "Captain" and "Admiral."

But Campbell has little desire to promote his product, prove his



claims about it, or build a business out of his creation. In fact, he doesn't even have an address or telephone number.

After hitchhiking around the USA for 11 years, Campbell says the housebike idea came to him through "non-action, non-thinking power," which he combined with self-teachings in science and physics, having quit formal school in eighth grade.

"The spirit of the Earth came and spoke to me saying I'm not going to be like all the rest," recalled Campbell. "Before I started those bikes, I didn't accomplish one thing. I just barely ate, and that's it."

Now 40, Campbell has been building housebikes since 1984.

The geometric-structured frame design, made to hold weight from all sides, hasn't changed in seven years.

At press time, Campbell is building GeoFleet's fourteenth house bike for the Auto-Free Times to use as a work bike and for demonstration purposes. The magazine will be unofficially joining what Campbell calls a "private club" of housebike owners.

Campbell's personal house bike holds all his possessions, and he is otherwise homeless, sometimes building bikes for others to raise food money. He views his bikes as a means to achieve financial independence and extricate oneself from poverty. He now has the freedom to take vacations at will—a freedom most car owners lack.

Thus Campbell's life calls into the question the idea that a high quality of life must result from a high monetary standard of living. He does quite well without what are usually a person's two most environmentally unfriendly possessions: a house and a car.

"I have never paid rent in my life," Campbell proudly asserted.

HOUSE BIKE UPDATE: "Housebike Creator Run Out of Town by Green Arcata." Brian Campbell has been gone from Arcata for a few months, despite having made friends and won admirers from around the world. Living in his housebike was not a technical problem whatsoever; it is the attitude of the locals which defines his ability to become a citizen of a community.

Last issue's cover story resulted in mainstream press inquiries from CNN, Los Angeles Times, Associated Press, Harper's Magazine, and the Utne Reader. Brian, however, disdains publicity. "I only wanted to be interviewed and photographed by the Auto-Free Times." He also had mail and business offers resulting from the story, but for the most part Brian has just not been around. Brian, if you're reading this, we hope to see you in Arcata, and our city could try to be more hospitable to you. (Sorry I depaved my driveway, Brian, which ruined your mooring at my place, but I know you understand! -Ed.)

Homeless people usually have nowhere to go but to move on.

This is true to almost every town in the country, and in "open spaces" it is discovered that corporations or their government instruments "own" or control access to our Earth. To be rich is to pollute to the max, and to be respectable in a money-and-property oriented society, owning or renting a car with at least a plot of land with a fence

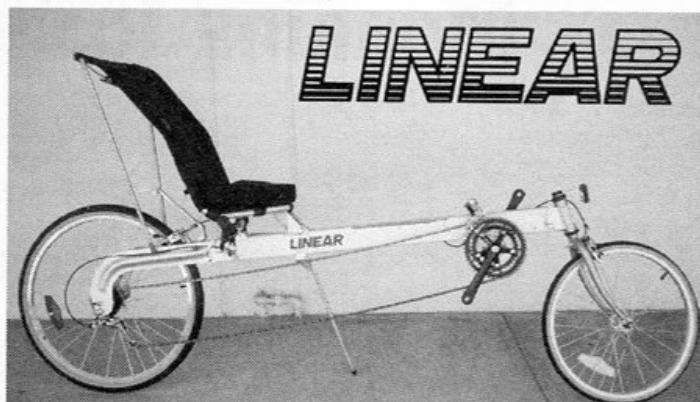
around it is the only way to be left in relative peace or even to survive. If anyone is really supportive of our beleaguered environment, he or she should reward low-impact consumers and encourage non-motor vehicle lifestyles. Should the "transient-rouster" ever feel totally comfortable at an Earth Day event with his or her little family?

All Brian wanted to do is camp in his housebike. Being an African American man and a technical innovator with practical solutions to automobile-dominated living, he had enough pressures. But with police getting tough in the spirit of private property, and with no hope of a supportive alternative agency or judge to defend him a reasonable time, Brian moves on. He was recently in Garberville, southern Humboldt County where the Sheriff's Dept. is the only police force besides the California Highway Patrol and doesn't have a big presence.

Brian's friend Bicycle Bill, an APM (Alliance for a Paving Moratorium) volunteer, says that wherever they were rousted by the police, "signs didn't say 'No Parking', but parked as we were it resulted in enforcement of a 'no camping' ordinance which is not posted on streets." This policy is probably okay with most consumers who fear "vagrants" or "transients." Such labels dehumanize "homeless people," which is a more descriptive and compassionate label. A better name would be "green citizens" at least for those, like Lee, a drummer in Arcata, who doesn't have a car or a house on purpose. In truth, a survivor who is hep to what the economy and the police state are about is a person who offers more security, for example, to a mate than if he or she were playing the "respectable" game of 9-to-5 wage-slavery and owning big-ticket items on credit.

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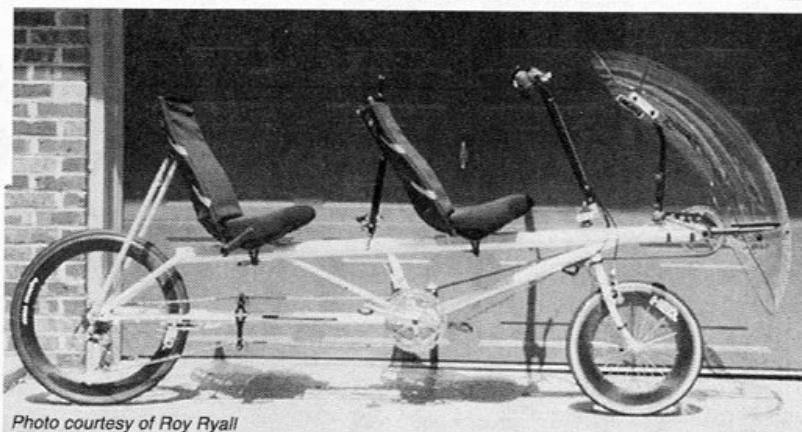


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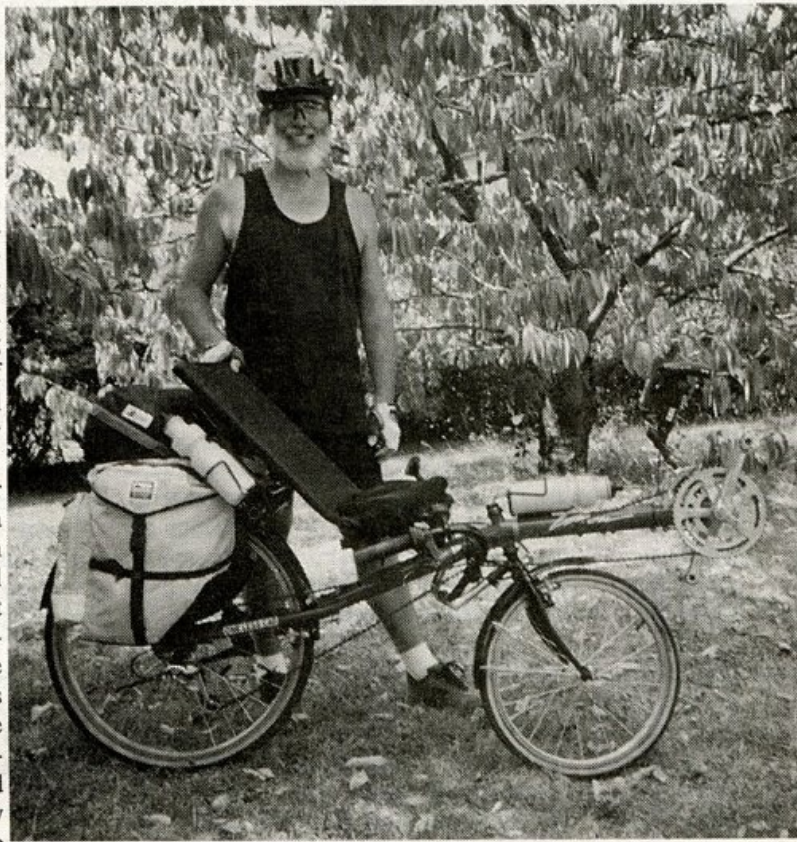
by Alan Thwaits
nomad@praxcomm.com

What is the perfect equipment combo for a long-distance cycling tour? Well, for my recent 10 day, 1,100 kilometer (680 mile) trip through near-northern Ontario, Canada, it was the following: a SWB/USS recumbent, a palmtop computer and PCMCIA modem, a digital camera, and a GPS (Global Positioning System) unit. Not the usual choice of tools in the cyclotouring community, I'll admit—but, if you went for the regular stuff all the time, you wouldn't have any fun at all, would you?

This tour was my regular June effort, though my first on a 'bent. I bought my 1998 Vision R-40 in early March, from local recumbent guru Joe Guttman, at The Bicycle Spokesman in Richmond Hill, Ontario, and have been riding it on all kinds of roads and in all kinds of traffic since purchase. The Vision is a barn-stormer—quick, responsive, and oh-so-comfortable. But how would it stand up, I wondered, to the rigors of a lengthy self-supported tour? There were a lot of questions to be answered. Would the SWB Vision handle well with a full load (clothes, tools, stove and cookset, food, tent, sleeping bag, and more)? Would the 'bent and I be able to handle the hills on the route I had chosen? Would the Vision be reliable once I got away from the big city and into the boonies?

As if that weren't enough, I had other tests to make. On last June's tour, I'd used my palmtop computer and a cellphone to access email and the World Wide Web (I'm a freelance technology journalist, and need to keep in touch with my editors on a daily basis). But that trip—which took me from Toronto to Montreal, then south into the Adirondack Mountains and the Finger Lakes district of New York state—taught me that cell access isn't always available. And no access means no communication. So, this year, I decided that, rather than look for cellular access where it might not exist, I'd scrounge land-line connections on a daily basis. (The cellphone still came along for emergency/safety purposes.) Would the locals be agreeable, I wondered, to a sweaty cyclist on a funny bike hitting on them for a telephone jack?

Well, what's a guy to do but set out again—a different route, new tools, and new discoveries? For this year's June tour, I rode an all-Canada trip, setting out from my home near Toronto, and cycling north along the Niagara Escarpment to the rugged Bruce Peninsula. The Bruce is the northern tip of the 734 kilometer (456 mile) long Escarpment, a spine of erosion-resistant rock that runs all the way from Niagara Falls in the south to Manitoulin Island in the north. From the northern tip of the Bruce, I took the Chi-Cheemaun ferry to Manitoulin Island, the world's largest fresh-water island, then spent a couple of days touring



Alan Thwaits and his touring Vision

the rural roads of Manitoulin. It's near-ideal touring country—empty roads, large stands of pine and cedar, heart-stopping vistas of white and pink quartz hills on the mainland's North Shore, and tiny villages tucked among the forests. Then I returned to the Bruce via the Chi-Cheemaun, and cycled home. Nine days of riding (and one rest day) in all, and a total of 1,093 hugely enjoyable kilometers.

▲ ROLLING EQUIPMENT

The Vision continued to live up to—and go 'way beyond—its good reputation. The weight of all that equipment over the back wheel seemed, if anything, to make the SWB configuration a better-handling setup than usual. The panniers and camping equipment made the R-40's handling as responsive as ever, but just a little bit less twitchy.

Surprisingly, there wasn't as much of a change from unloaded to fully-loaded as I'd noticed when fitting my old upright touring bike for a self-supported trip. And the Vision's handling proved itself on

any number of fast downhills, where I felt much more confident than I had on such slopes when riding my upright. I'd definitely suggest that more 'bent riders check out the possibilities of SWB touring!

My Vision is pretty well stock, except for the addition of such touring-friendly necessities as Vision fenders, a Blackburn rear rack, and two 43 liter (2600 cubic inch) panniers. I kept the out-of-box tires (20 x 1.35 Primo Comet on the front, 26 x 1.4 Ritchey Tom Slick on the back) pumped to 90 psi, which gave me an effective combination of speed and comfort. Gearing was stock, and suitable for riding the combination of flats and (sometimes) steep hills that I encountered on this trip. Sometimes, I found myself wishing for a larger front ring than the 48-tooth that comes standard on the R-40, but, with a fully-loaded bike, that wasn't often an issue. The Shimano 11-26 rear cassette offered a good range, though not ideal—as with all gearing setups, there were the inevitable duplicates.

My 1998 R-40 came to me with Sachs GripShifts. Normally, ATP Vision fits its '98 models with RapidFires. My bike, though, according to ATP's Ricky Comar, was one of the last to be supplied with the twisty things. No matter, they worked well for me—tight, precise, and accurate. This was my first experience with GripShifts (I'm an old bar-end kind of guy), and it was a good one.

A nice feature of this tour was that it gained some new converts to the 'bent world. I had started the tour in the company of three friends, all mounted on upright bikes. One dropped out very early on, hit hard by a stomach virus. The other two riders and I soon realized that our touring styles—and speeds—were very different, so elected to ride sepa-



Alan Thwait's touring Vision

rately, and meet again at Tobermory, at the top of the Bruce, where we were going to meet a dozen or so touring cyclists for a friendly get-together.

As it turned out, the Tobermory get-together only served to advance the 'bent cause even more! Most of the attendees were members of the 'bent group I ride with, Human Powered Vehicles of Southern Ontario (HPVSO). Two days of riding with experienced 'bent people on a good selection of quality mounts—two more Vision R-40s, two Lightning P-38s, and a BikeE—were all it took to convince my touring companions that they would soon be in the market for the recumbents of their dreams!

If the truth be known, my upright friends—despite the fact that they're twenty years younger than I am—couldn't keep up with this middle-aged rider and his 'bent. I was faster on the flats AND on the hills! Added to that was the usual scene after a long day on the roads.

Upright riders tend to crash towards the campsite, arching their backs and rubbing their hands in a doomed effort to get away from the effects of riding all day in a cramped, comfortless position. 'Bent riders are annoyingly cheerful, refreshed and eager for more distance! I'm happy to say that the three of us are still good friends, and still ride together.

▲ A 'BENT PALM TOP

As for the techno-tools? Well, they did yeoman service though not in such exciting fashion as the Vision. My palmtop computer is a Psion Series 5 model, a 32-bit, 8 Mb machine with communications capabilities. So, along with the usual daily journal, spreadsheet (to keep track of daily stats and costs), and a couple of e-text novels for the rainy days, I had full e-mail and Web browsing connectivity. That meant that, at the end of each day, I'd approach the owner of whatever campsite I was in to plead for a land-line connection, plug in, collect my e-mail, and browse a Web site for the next day's weather. Strangely enough, no-one ever turned me down—not even those who I'm sure didn't have a clue what the Internet was or how I was connecting to it!

Everyone I asked was full of the milk of human kindness, including the staff of the South Baymouth ferry terminal on Manitoulin Island, who helped me get through a four-hour wait for the next ferry by giving me free access to a spare telephone connection.

▲ ONBOARD ELECTRONICS

A new tool on this year's tour was a GPS (Global Positioning System) unit—the Garmin II Plus Touring Pak, designed specifically for touring cyclists. The GPS linked me to 12 geosynchronous-orbit satellites, and fed me information about current position (latitude and longitude, accurate to within 15 meters), current speed and course, average and maximum speeds, and current time. Also, it let me track where I'd been,

entering waypoints for a possible return route. The Garmin GPS weighs only 225 grams, and runs for about 10 continuous hours on four AA batteries, more than enough time for most days on the road. Linking the GPS via cable to my Psion Series 5 allowed me to overlay information gathered by the GPS on my mapping software (Palmtop by's Route Planner) via NMEA protocols. It's definitely an odd feeling to cycle along a country road, knowing you're linked to 12 satellites "up there" somewhere!

▲ A VISION FOR TOURING

The verdict on the Vision's suitability for touring—as you've probably guessed—is overwhelmingly positive. A great design and good engineering make the R-40 a strong, stable, and quick mount for loaded touring. It was good on the flats, good on the hills, and good to its rider—what more can a cyclotourist ask?

Of course, there are always new tools to try, and there's always an upgrade list for the next tour. For me, first and foremost is a Zipper fairsing for the Vision. I'm not (and never will be) a performance rider, but, over the course of a six- to eight-hour riding day, the Zipper will do a lot to increase my daily distances, and will also offer some weather protection on those inevitable rainy days. Though the stock tires on the Vision were more than acceptable, Joe Guttman at The Bicycle Spokesman is recommending a switch to a Conti Avenue for the back wheel and a Conti Grand Prix for the front—and given Joe's depth of wisdom about things recumbent, I'm going to follow his advice. And I'm going to play with the R-40's gearing a bit, so I can do away with as many duplicate gears as possible, and give myself something more for those occasional high-speed runs.

On the techno-tools side, a friend has convinced me that video would make a nice addition to my toolkit—we're planning to mount a video camera on the 'bent's rear rack or in a pannier bag, attach a remote lens to my helmet, and put a trigger on the handlebar. Slow pans of great scenery at full speed will be the (hoped-for) result. Then, it'll simply be a matter of editing video clips into AVI or MPEG formats, and uploading them to a Web site for download or online viewing.

That leaves only the choice of a route for my next long 'bent tour. Where to go? Not a problem. I've got (literally) a world of roads to choose from—and a great bike to ride them on!

▲ TOUR FACTS

Ride: 1998 ATP Vision R-40 SWB/USS

Electronics: Psion Series 5 palmtop computer, Kodak DC25 digital camera, Garmin GPS Plus II, Motorola DPC650 cellphone

Luggage load: 14 kilos (30 pounds)

Total tour distance: 1,093 kms. (680 miles)

Longest daily distance: 232.58 kms. (144.52 miles)

Shortest daily distance: 77 kms. (48 miles)

Overall average speed: 22.53 kph (14 mph)

Maximum speed reached: 72 kph (45 mph)

Amount of water consumed each day: 8 - 10 large bottles, equivalent to between 6 liters (6.34 quarts) to 7.5 liters (7.93 quarts)

▲ AUTHOR

Alan Thwait works as a freelance technology journalist - his passion is long—distance bicycle touring. RCN readers can catch up on his latest exploits via his "Digital Cycling" Web pages, at <http://www.praxcomm.com/cycle.htm>, and on HPVSO news and events at <http://www.inforamp.net/~bruceb/hpvso.html> □

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by L.S. Smith Weinberg

I have been curious about the B.O.B. trailer products since I first saw them, from the YAK, to the Boomer and the Boomer D'Lux. Then when the COZ came out, I just had to see what it was all about and how it would work with my recumbent.

▲ WHAT IS IT?

What is appealing about the COZ is the Rubbermaid™ Action Packer covered waterproof container, which can be quite useful, especially during the rainy season. Additionally, the COZ is lockable. The folks at B.O.B. include two types of attachment systems to make sure they will attach to most types of bikes. So, you could move a COZ between your recumbent single and to your tandem. You could even loan the COZ to someone who had a wedgie (upright mountain or road bike). The patented B.O.B. Quick Release Centerline Attachment System helps to attach the COZ quickly and easily. There are B.O.B. Nutz™ to make it completely adjustable to most any bike. The basis for the mounting system is a special quick release that allows the B.O.B. trailer forks to attach to the Q.R. with removable pins to hold the trailer on. The B.O.B. Nutz work well for bikes with bolt-on axles, internal gears or the Sachs 3x7 hub.

The COZ arrived with everything packed in the case in the kind of cardboard box you wish your recumbent was packaged in (like when you'd like to take your 'bent on a plane). It's so perfect that when it arrived, I admit that I hated to unpack it, but I did and once it was attached to my recumbent, I felt like a proud parent with a new child following me.

After testing it out, I easily disassembled the frame, and everything once again fit inside the box for storage until its next trip down the road.

It took about 20 minutes to assemble and attach the COZ: probably with practice it would be faster. If you use the COZ often, you would probably keep it partially or completely assembled.

By now, you've probably read or heard "COZ" enough to wonder why is it called that? COZ is short for COZmopolitan (I know, cosmopolitan): it was designed for the "bike commuting market and solves the urban dilemma: how to carry stuff on a bike, keeping it dry and secure, at a great economic value."

▲ SOME SPECIFICS

The cargo box is the Rubbermaid™ Action Packer in forest green which holds 15.5 gallons in its 3600 cubic inches, approximately 24" x 18" x 11." The weight of the COZ trailer is 19 pounds—that's without any stuff. The maximum suggested capacity is 50 pounds, unlike the Yak which will hold 70 pounds and only weighs 12 pounds. The full length of the COZ trails out 52" from the end of the rear tire. The COZ attached to the recumbent tandem is nearly as long as our van—it's a bit like riding at the head of your own parade.

I'd recommend trying the COZ without anything in it and seeing how it maneuvers in most conditions. Then slowly build up the weight instead of going straight to a 50 pound cargo.

As with all B.O.B. trailer products, the tires are 16" x 1.75" (305mm). The frame is made of HiTen steel. The hub is steel with a nutted axle; the spokes and rim are made of nylon. Like the other B.O.B. trailers, the COZ comes with a yellow safety flag, fender for its own

tire, and reflectors (on the fender and another in the spokes).

▲ DOWNHILL TRAILER RACE

Now, if that isn't enough of a reason to get a COZ, there's the challenge of the Downhill Trailer Race at the Kamikaze Downhill Course on Mammoth Mountain in California. The World Record was 51 mph on one of the other bikes: there certainly should be a recumbent challenger. The 1st Annual B.O.B. European event was held in Bern, Switzerland. Other upcoming B.O.B. events may include Napa and Norway.

▲ HOW WILL THE COZ AFFECT MY RIDING

Obviously, sharp turns could cause a problem. The B.O.B. manual warns, "when the trailer is rotated in an extreme clockwise direction it is possible for the retaining pin on the derailleur side to come in contact with the derailleur mount. This contact can cause damage to the derailleur mount, quick release, and retaining pins...."

Because of the aerodynamic design and low center of gravity of the trailer to the ground, the COZ seems not to interfere with our performance of the recumbent bicycle. Riding along with the COZ, I noticed a slight rumbling sound of the extra tire, fender and frame. You do have to keep in mind that the COZ has no brake, so complete stops take a bit longer—more so the heavier the cargo or slicker the road surface. Although there is a red reflector on the back of the fender, you might want to attach an additional flasher to the trailer.

▲ HOW DO YOU PARK IT?

The B.O.B. company recommends turning the COZ 90 degrees to the rear tire when parking your bike and the COZ. Of course you must have the right kind of place to park in. Parking at 90 degrees with the COZ made it possible to keep a Vision recumbent upright without a kickstand. By the way, level ground is always a good place to start. If you have the space and a kickstand or a bike rack, your bike and trailer can be parked in a straight line.

Don't forget to lock up your trailer along with your bicycle. B.O.B. suggests using the "U Lock" or a standard cable system run through the fork of the trailer.

So what can you get in your COZ? A sleeping bag, towel, clothing, extra shoes, toiletries, some food supplies, or you could load up on 12 six packs and be the hit of the party.

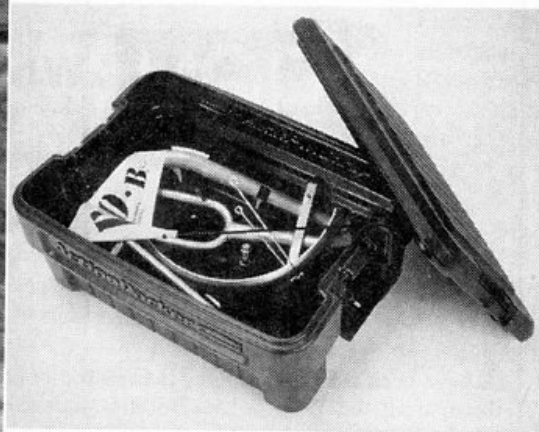
▲ HEALTHY, OUTDOOR, CAR-FREE TRANSPORTATION

You will read that B.O.B. promotes this in its manual. Earlier this year, the B.O.B. company offered members of the IHPVA a discount as their support of car free transportation.

The COZ fulfilled my expectation of a sizeable, waterproof, lockable trailer. Can you ever have enough space to carry your stuff and keep it dry and clean while having your own parade follow you?

The retail price of the COZ is \$199. □

You can purchase B.O.B. trailers from your local recumbent or bicycle dealer. B.O.B. is located in San Luis Obispo, California: Tel. 805-541-2554 and on the web at www.calamer.com/bobinc.



Zach Yaks about the COZ

by Zach Kaplan

I would recommend the COZ over the YAK because even with relatively modest loads the COZ handles better than the YAK due to the greater torsional rigidity of its large diameter monotube frame and pivot. For touring the COZ also has the significant advantage of easier transport in that the trailer frame comes apart in the middle and fits into the cargo box. On all trailers tested the custom wheel was used. The wheel that comes with the YAK, although higher quality than the wheel that comes with the COZ, is still substandard for regular, long term, and high performance use. The discriminating buyer looking for long term value and performance is going to want to obtain a custom wheel regardless of whether they decide to buy a COZ or YAK. Unfortunately BOB won't sell them without the wheels; I already tried that. The trailers, like the wheels, are made in Taiwan and they receive them prepackaged in boxes with all the accessories.

In the case of my COZ trailer I went to the 349mm size because significantly lighter rims, tires, and tubes are available in this size. □

Terry talks about the BOB

by Terry Parker

When I was younger, my passion was backpacking. I loved the feeling of putting all the things that I needed to sustain me in a pack and heading for the mountains. Now I ride a recumbent bicycle and love to tour. All of my tours, until this past summer, had been charity rides where sag wagons would carry my camping gear. I read about the B.O.B. trailers a year ago, and I began to consider trying the self-contained trip again. I got hold of a B.O.B. COZ trailer and began planning. Late in the summer, a riding companion and I set out to do a 300 mile trip across the Cascade Mountains and down the Columbia River in Washington State.

The mechanics of the trailer are a wonder. My recumbent is a Vision R-42 ASS, LWB. The coupling system using the special B.O.B. quick release for the rear wheel was easily installed. The trailer tracked beautifully and didn't seem to change the handling of the bike very much. I was worried about shimmy and oscillations, but the ride was smooth and solid. This included some 40 MPH plus descents out of the mountain passes. The weight of my gear did slow me down about 10% on level and more on the climbs, but touring probably should be slower and more meditative.

Getting all my gear into the COZ was not an easy task for me. I tried to minimize the weight and bulk of my gear but still found that I crammed the trailer almost to bursting. I ended up carrying my sleeping bag, my pad, and my tent on the lid of the COZ using bungee cords. These three items were very light for this summer tour and didn't change the handling of the B.O.B. significantly. I'm sure the B.O.B. folks would recommend against carrying loads on top, but a few light items on top seem to work all right for me.

The B.O.B. trailer works well. I think the COZ was undersized for my needs, and I should probably have used the higher capacity YAK model. The system's handling and mechanical design are very nice. The trip whetted my appetite for the self-contained tour. My experience with the B.O.B. product has been very positive. □

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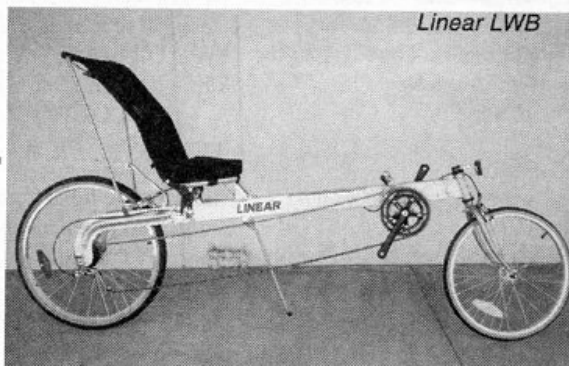
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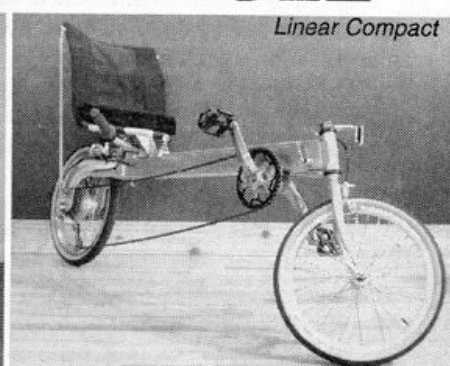
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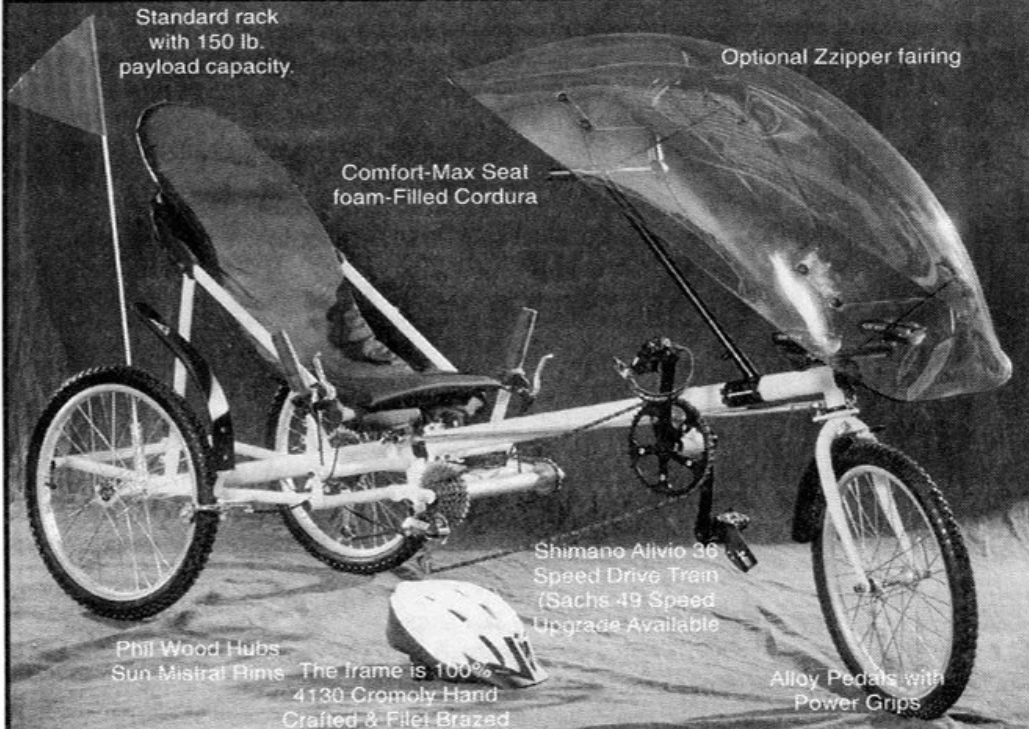
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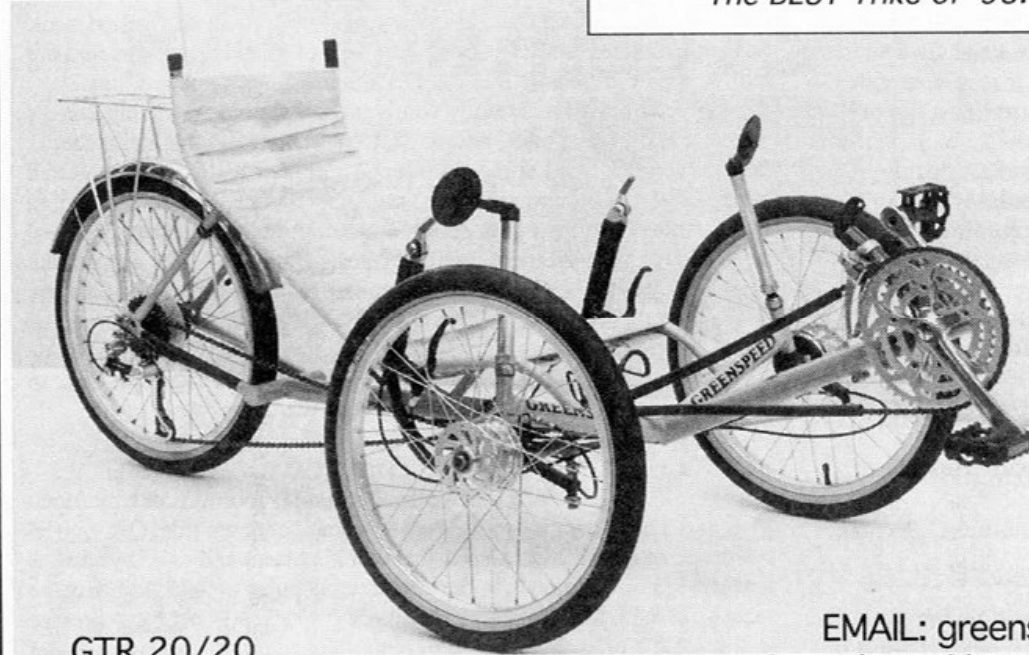
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GREENSPEED RECUMBENTS

The Notebook of an Unreasonable Man

By **Kent Peterson**

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www.halcyon.com/peterson/
bentkent.html

Chuck's Always There

Kent's Mission: A 'bent beat from the back alleys, garages and dumpsters where new bikes don't come powdercoated and old bikes live on with the help of duct tape, hose clamps and determination.

It's early morning on the Fourth of July and my pal Steve and I are riding along the east side of Lake Sammamish. Steve is riding his used-but-new-to-him road bike and I'm riding old Blue, my trusty Trek. "Pffft" goes Steve's tire, and we roll to a stop. "Great!" says Steve, and he really does mean great as in good, not great in the sarcastic sense. "Now you can show me how to change one of these things!" You see, Steve's bike has sew-ups, and in my younger, faster days I raced on sew-ups. Steve is counting on me to pass on this knowledge. I show him how to peel the tire off the rim and mount his spare — counting on old glue, luck, and air pressure to hold it in place.

"What about patching the old tire?" Steve asks.

As I explain the painstaking, almost surgical, process, I remember why I don't ride sew-ups anymore. I assure Steve that this is something best done at home with plenty of spare time and liquid refreshment available. Besides, Steve doesn't have a sew-up patch kit with him.

"So what happens if I get another flat today?" is Steve's next logical question.

"You won't get another flat. We'll just ride around and count on luck." Steve doesn't look convinced. I do recall that Lady Luck and Steve aren't exactly on speaking terms. In fact, Steve attracts flats like a trailer park attracts tornadoes.

"Maybe we better head for home. I don't feel comfortable riding around without a spare."

Damn, this ride wasn't supposed to be this short. But where can you find a sew-up tire at 8:30 AM on the Fourth of July? I get an idea. "Look," I say, "it's 10 miles back home, but only a couple of miles to the velodrome. Let's head up there and see if we can buy a tire off one of the trackies. They must use sew-ups, right?"

We ride up to the Redmond velodrome and find that trackies aren't morning people, or maybe they are all taking the holiday off. Anyway, the track is empty. We do find a trio of road riders in the velodrome parking lot, getting ready to take off on their ride.

"Say, you folks wouldn't happen to have a spare sew-up, would you?"

"Nope." But they are friendly, old-school roadies who at least know what sew-up tires are.

"You should go to Chuck's. Chuck can help you out."

"Who's Chuck?" I ask.

"Chuck's great," I'm told. "Chuck Salwaysthere. He runs a shop out of his garage. He'll have sew-ups."

I point out that it's before nine on a holiday morning.

"Do you think he'll be there?"

"Of course he'll be there. Chuck Salwaysthere."

Now it's time to get directions to Chuck's. The directions involve a 7-11, a chocolate bagel place and an elementary school. If Steve or I knew where any of these things were, it would have been easy to find Chuck's, but we realize that whenever we look confused, more confusing details are added to the already complex instructions. We fake enlightenment and go on our way.

Fortunately, Redmond is a small town. With a bit of persistence,

we find the 7-11 and the chocolate bagel place. By doing a series of orbits we finally locate the elementary school, and then we find Chuck's.

It turns out Chuck's last name isn't Salwaysthere, it's Pace, and his shop is called Pace Cycles. And of course, Chuck is there. Chuck's always there. This morning Chuck is talking on the phone while working on a bike while watching over his three year old daughter. Chuck's shop may have started life as a garage, but it has obviously been a few years since any automobile has called this space home. No, this is definitely two-wheel territory. The inside of the shop looks like someone tried to cram the Tour de France into a phone booth. Wheels and tires hang from the rafters and lie in piles. Jerseys huddle in a corner while a Park workstand rises out of the chaos like a lone oak that has somehow survived a chrome-moly tornado. Little drawers and boxes hold little parts while frames are almost everywhere, and it looks like a few are making a break for the door. Bike carcasses that have donated all their parts that others may ride lie waiting for a rusty end in the little gap of yard between the shop and the house.

Chuck wraps up his bike-related phone call and asks how he can help us. I say something about how glad we are that he is open early on a holiday. Chuck gives me a look that tells me he doesn't understand the concept of taking a day off. Steve asks if he has sew-ups.

Oh boy, does Chuck have sew-ups. From some nook in the rafters comes a big box of sew-ups. Cheap sew-ups, expensive sew-ups, training tires, racing tires, silk, Egyptian cotton, kevlar belted tires. Sew-ups that are stretching on spare sets of wheels, sew-ups that are still wrapped in plastic like Laura Palmer. Chuck's got sew-ups.

We go through a carefully constructed dialog to determine Steve's needs, riding style, taste, and budget. Steve gets a tire. Chuck checks out Steve's bike and adjusts the rear brake that had somehow gotten bugged out of alignment. Steve gets himself some Wolber glue to go with his new tire and gets detailed instructions on the ways of "real tires." The total price tag for the tire, the glue, the brake adjustment and the expertise is a bit below my guesstimate for the price of the tire alone.

Steve and I are back on the road to enjoy the day. Chuck's phone rings as he's picking up his wrench and turning his attention back to the bike at hand. I think Chuck's enjoying the day as well.

▲ FAST FORWARD

Now flash forward a few weeks. It's Sunday morning and my friend Matt and I have decided to squeeze in a crack of dawn ride. OK, maybe not crack of dawn, Matt sleeps through his alarm and calls me just as I'm headed out the door to our rendezvous point at 5:45 AM. But we meet up at 6:45. Matt's on his road bike, a classic Carlton. Matt decides to top off his tires, so we pump them up to pressure and ride about a mile up the west Lake Sammamish Parkway. It's a scenic ride, but a few of the less evolved locals seem to have misunderstood the concept of curbside recycling. Matt and I hone our slalom skills dodging the bottle fragments that glisten in the morning sun.

"Pffft."

Matt flats. No problem, I always carry a couple of spare tubes plus a patch kit. But then we look at the tires. Weird, old, funky tires labeled 27 x 1.25 x 1 inch with cords showing dangerously through the tread rubber. Matt didn't flat on glass, he flatted because the tube hemorrhaged through the tire. This requires some surgery. I use a Band-Aid from my first-aid kit to boot the rear tire at its worst spot—the spot where the tube pushed through the cords. The front tire is slightly better. We get things somewhat roadworthy, but this is going to be a short ride unless we can find a shop with some odd-sized tires that's open at a bit before 8:00 AM on a Sunday morning. Stop me if you've heard this before. Matt is looking woeful.

"My tires were fine when I left home! OK, they had one bad patch, but now look at them!"

I figure the extra pressure tipped them over the edge. "Don't worry Matt. We'll just ride up to Chuck's in Redmond and get you some new tires."

"At 8:00 AM on a Sunday?"

"Don't worry. Chuck's always there." I describe where we are going using the 7-11 and the chocolate bagel place as landmarks.

Matt gives me the same blank stare I'd worn a few weeks ago. "Don't worry," I say. "I can find it."

We ride up to Redmond with no further flats. We find Chuck's with no problem. Chuck's there. Chuck's always there.

Chuck looks at the Carlton and looks about three times before he believes that it really has 27 inch wheels. Chuck and I chat about my habit of riding around with guys on old bikes and bad tires while Chuck digs through a mountain of tires. He finds a couple of different options for Matt. Matt buys a nice pair of new tires and a set of Mr. Tuffy's.

I figure as long as I'm up at Chuck's, I'll ask the question that usually gets me a blank stare from the kids who clerk bike stores nowadays.

"So, you wouldn't happen to have any Binda buttons?"

Chuck stops and looks at me. I've seen this look before. The same look crossed Alec Guinness's face when Mark Hamill asked him if he knew Obi-Wan Kenobi.

"So you must be what, about 40?" Chuck says slowly.

"Yeah, about that," I admit.

"You and I must have been racing about the same time. Yeah, I've got some around here. You know, only guys our age and maybe a few track racers even know what Binda buttons are anymore."

Chuck rummages around and finds some Binda buttons. In case you're too young to know, these are the little buttons that go on the end of toe straps — they let you cut the straps fairly short yet still be able to get a good grip to cinch them down. They are really nice for cinching down straps in the rain. I select a pair of blue ones that are a dead-on match for old Blue.

Matt and I take our purchases and head over to a park where we put Matt's new tires on the Carlton. Another ride saved by Chuck.

Chuck's saved a variety of rides. When my BikeE's odd, threadless bottom bracket seized and cracked right before a big century ride, it was Chuck who had the tools and skill to thread the bottom bracket shell and install a standard sealed bottom bracket. All in a long day's work for Chuck.

It's been a couple of years now since that July Fourth when I first found my way to Chuck's. In conversations with other riders, more than a few Chuck stories have surfaced, usually involving him making some amazing repair just in the nick of time. I've even heard it said that Chuck gets out of his shop every once in a while and goes for a bike ride, but I don't believe everything I hear.

Chuck's more than just a guy with a big pile of parts and odd working hours. In Japan, they'd call him a living treasure—here, we too often take guys like Chuck for granted. Paying his reasonable prices and saying thanks hardly seems like thanks enough, but Chuck just shrugs off any suggestion that what he does is in any way extraordinary. He's just a guy scraping out a living doing a job he loves.

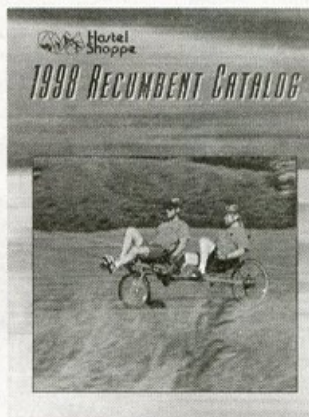
But if you're riding anywhere near Redmond, Washington and your bike breaks down, don't curse your luck. Thank your lucky stars and look for a chocolate bagel place, a 7-11 and an elementary school. When you find those, you're close to finding Chuck's shop. Chuck can help you out.

And don't worry, he'll be there. Chuck's always there. □

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by Richard Drdul
drdul@portal.ca

I've been on the hpv mailing list on the Internet for three years now, and every month like clockwork, someone starts a big discussion by asking *the* question — are recumbents faster than uprights? The first few times this question came up, I was surprised that many recumbent riders reported they are no faster on their recumbents than on an upright. Some blasphemous individuals even reported that they are (gasp!) slower!

Why would I say "blasphemous"? Well, it seems that most recumbent cyclists want to believe that recumbents are faster than uprights. That was a big selling point for me when I bought my first recumbent. After hearing many claims of almost superhuman speeds, I was expecting to rocket around my local "test loop" the first time out on my new V-Rex. To say the least, I was mildly disappointed that my speeds weren't much different than on my road bike. Sure, I was comfortable, but my disappointment in the lack of supersonic speeds diminished the pleasure of a comfortable ride and the other great aspects of a recumbent.

And that's the point of this column. Collectively, we're doing ourselves a disservice if we continue to emphasize speed increases that many recumbent cyclists will never realize. Instead, let's emphasize comfort, a better view, uniqueness and other benefits which anyone can be confident of experiencing. Those should be sufficient to attract people to recumbents — there's no need to oversell recumbents and risk disappointing a new recumbent rider.

▲ SOME REAL DATA

Of course, being an engineer, I like to be able to back up my arguments with good solid data. So I grabbed my unfaired V-Rex and my road bike, and headed over to the local crit course to do some laps. It's a 2.3 km circuit with a long level section, a downhill section, a moderate uphill

section, and a short steep uphill section. In other words, it's a miniature version of the real world.

I rode one lap on my road bike, recording elapsed time and maximum speed on the downhill section. I then rode a lap on my V-Rex. I alternated back and forth until I had completed four laps on each bike. To keep things fair, I wore a heart rate monitor and maintained a heart rate between 155 and 170 beats per minute.

As the results show, I'm slightly faster on my V-Rex — not really enough to claim a true speed advantage. Now, before anyone gets too excited, let me point out that my road bike is no 19-pound wonder. It's a refurbished 1970's touring bike with moustache handlebars, fenders, rack and a sprung Brooks seat. It weighs 13.0 kg (28.5 pounds). Of course, my V-Rex is no lightweight, either, registering an impressive 15.5 kg (34.0 pounds) with fenders and seat bag.

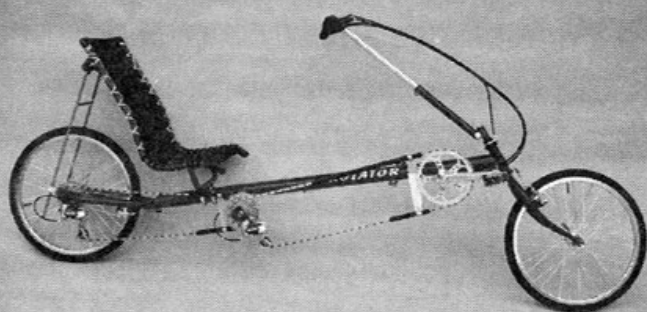
Even though I'm faster on my V-Rex, it's not by much — just a 3% increase in speed. Without the precision Swiss timing and rigorously-controlled conditions of my comparison test, most cyclists wouldn't be able to tell the difference. What this shows is that a speed increase is not a significant benefit of switching to a recumbent.

On the other hand, comfort is a significant benefit. On the road bike, in order to get up to 50 km/h on the downhill section, I had to pedal with my nose jammed against the stem. Not only is that awkward and uncomfortable, it also makes it difficult to see the road ahead. On the other hand, on the V-Rex I just laid back and cranked it up to 53 km/h, with no discomfort and with a wide open view of the road.

So, let's stop selling recumbents on speed, and talk more about comfort, the view, and whatever else it is that you enjoy about riding your recumbent. □

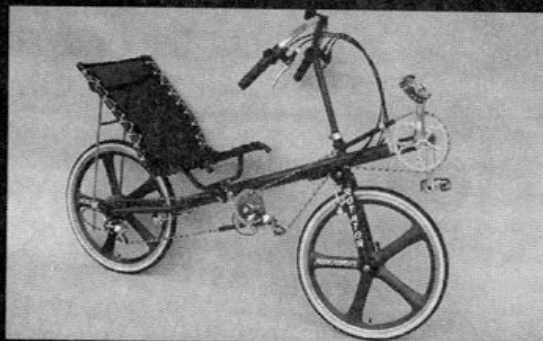
Run	Time	ROAD BIKE		Time	RECUMBENT	
		Average Speed (km/h)	Max. Speed (km/h)		Average Speed (km/h)	Max. Speed (km/h)
1	4:44	29.2	49.6	4:41	29.5	52.8
2	4:51	28.5	50.1	4:39	29.7	52.4
3	4:52	28.4	48.7	4:38	29.8	53.1
4	4:42	29.4	49.6	4:28	30.9	53.7
Average	4:47	28.9	49.5	4:37	29.9	53.0

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LETTERS....continued from page 7

WIDE FEET & BENTS

In reading your article on cleats and bike shoes for recumbents today I find it to have a slightly different twist. In essence you appear to have discovered that the age old trick of choosing a longer shoe to accommodate wider feet is problematic in the case of cleated bike shoes when riding a recumbent.

Since beginning to ride SPDs on my bikes, I have begun to feel them to be essential. After six (6) years I could not go back to any other method. I've tried the Speedplay Frogs but found them to lack float in the inward direction (which is where I need it). I now use the following combination with a modicum of success:

My shoe size is 10.5 EEEE. The shoes that I find to be best for my feet are the Diadora Jalapeno IIs. I replaced the stock cleats with the multi-release variety. These allow a bit of inward rotation of the heel without release. The real trick to my setup is to ride with Shimano downhill racing pedals. These are bright red in color and have an enormously wide platform which surrounds the actual cleat attachment mechanism.

Since my legs are heavy, I tend to ride with my knees pointing outward. In fact, in my case, the quadriceps do not grow large, instead the hip flexors and extensors are oversized.

These, however, are smaller muscle groups and tire more easily than the quads. If you want a shoe which will fit your foot width-wise, then look at the Diadoras. And if you have a tendency for your foot to roll towards the outside of the pedals (as do mine), then by all means look at these extra wide pedals. They make an enormous difference.

Eric Geoffrey Vann
eric_vann@beezodogsplace.com

CLIPLESS

You are right about clipless pedals (RCN#47). I'm going back to Power Grips myself after two years with clipless pedals. One reason is that walking around on cement with clipless pedals is noisy. Even the MTB type make a great crunching sound. They are not for touring. Go into a historical church and you wake up all of the dead saints. Another reason is that I tend to fall over in panic stops. The right (wrong) foot always comes unclipped and I go over to the left. On a tour I had to stop suddenly, and just as I was about to place my right foot down a large semi passed me and sucked me right (left) over in front of the group. They never let me live it down. No matter how loose I make the clips, one foot or the other gets stuck. Besides, I used to have to carry sneakers and now have one less thing to carry.

Francis Celino
Francis.Celino@maf.nasa.gov

NON-RETRO RANT

In my opinion "Magura" brakes are the safest, strongest, easiest to use, most reliable brakes on the bike market. The problem in Colorado (RCN#42 Slumgullian Tour) was that no one brought a brass crush gasket with them to fix the brake. This is a very small light item, you probably could not weigh it on a postal scale and it should be an easy thing to add to most bike standard tool kits even though it would not be used much. Also, they could have fixed this bike without said part if it had been an emergency.

If a person uses a logical mechanical mind to think about these brakes, they would see where I'm coming from. Example: If there is a loss of hydraulic fluid because a line pulled out, put a new crush gasket on the end and tighten it down with an adjustable wrench from the biker's standard tool kit. No "Magura" hydraulic fluid, no problem. Just about anything will do sewing machine oil, cooking oil (your favorite), water. Heck, you could even urinate in the lines if you had to. Try that with a broken brake cable! Let's say that the line was broken in the middle by something like a rock or tree limb. It's still not an emergency just a little tape (electrical or masking) and a person is back in business. The hydraulic pressure involved is so little that this would work as a temporary repair. What would a mountain bike rider do off road if his back brake cable broke in the middle and he had not brought another one? Limping home with his front brake would be his only option.

Ron Schmid
nullian@pacifier.com

Ron, I guess I'm not a logical mechanic. For '99, Rans has discontinued Maguras on the Vivo, Gliss and one Screamer model. Word has it that this was primarily due to comments from dealers about difficult setup—Bob, RCN. □

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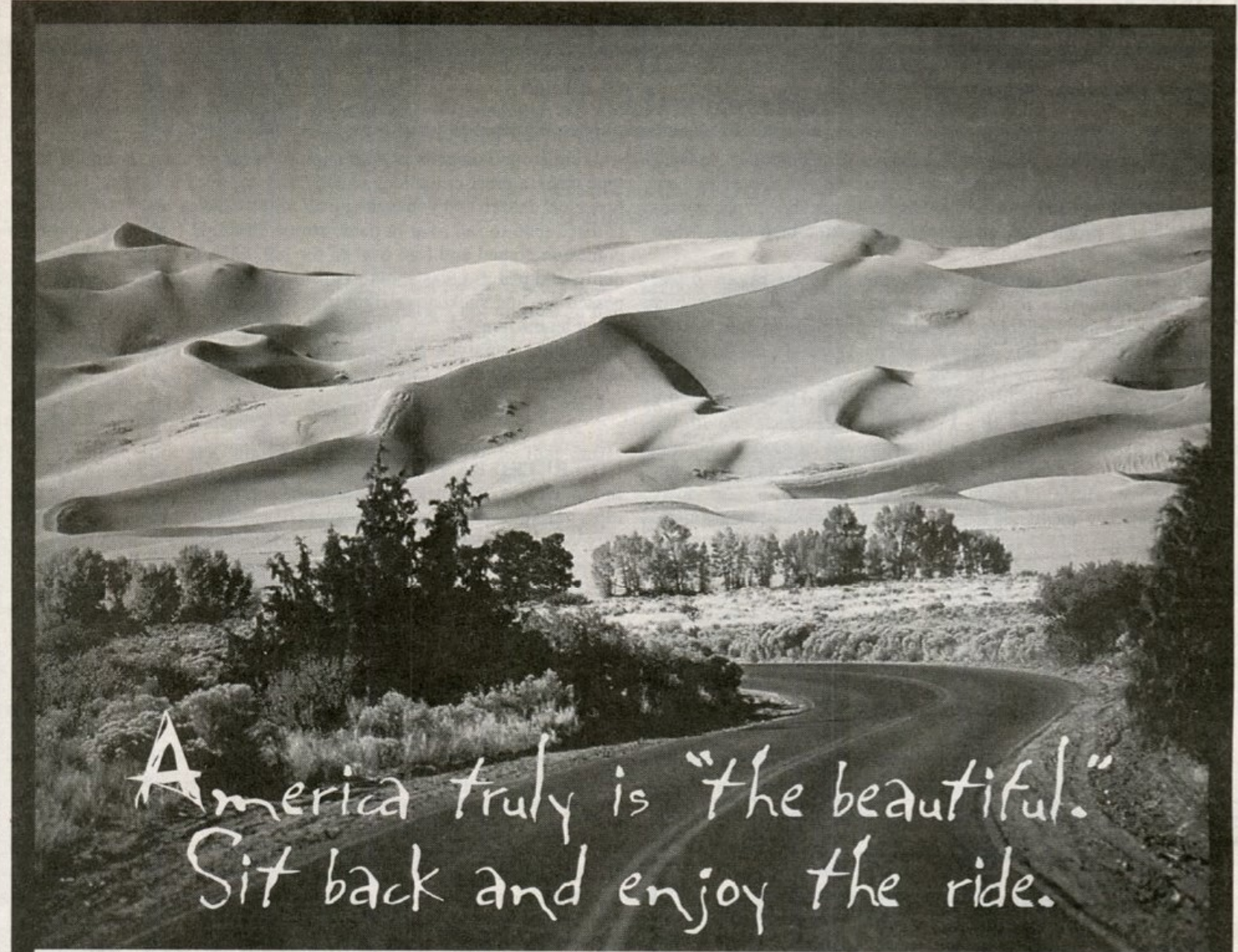
RECUMBENT CYCLIST NEWS

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- \$25 1998 SuperGuide Buyers' Guides and an RCN#38 (97 Buyers' Guide (RCN#43-46 and 38)
- Back issues are \$3 each, two for \$5, 5 for \$10 postpaid: RCN#42 Slum.; #41 A'Tech Altitude; #40 Linear Compact; #38 '97 B'Guide (counts as 2)
- #34 Screamer/D'Vision test; #32 '96 B'Guide; #30 Greenspeed; #29 Ryan;
- #28 EZ-1; #26/27 '95 B'Guide (color cover); #25 Vision R45; #24 Linear & F40 test; #22 Infinity; #19 '94 B'Guide; #18, #17 First BikeE, #13, #9 Vision R20; #8 First B'Guide. We have a few oldie sets of 20-30 issues. Email for details.
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Questions? Email DrRecumbnt@aol.com



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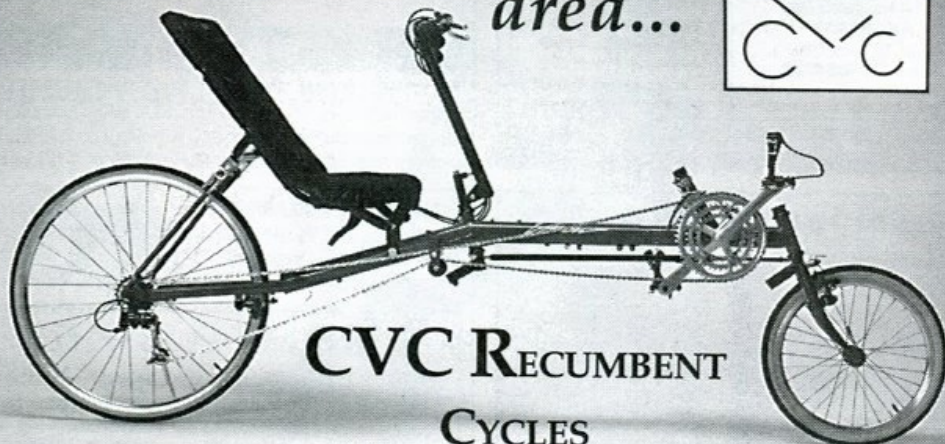
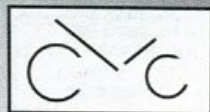
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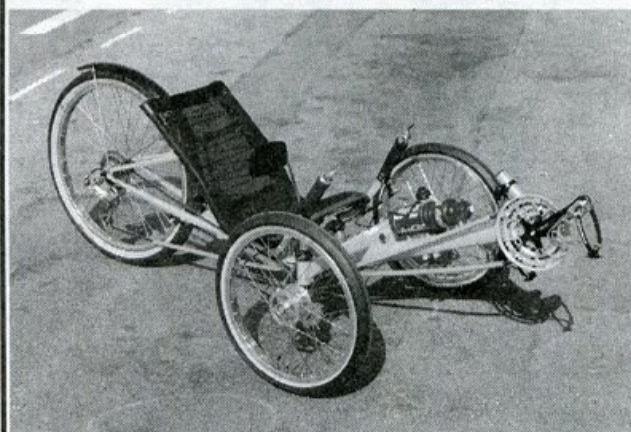
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
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
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
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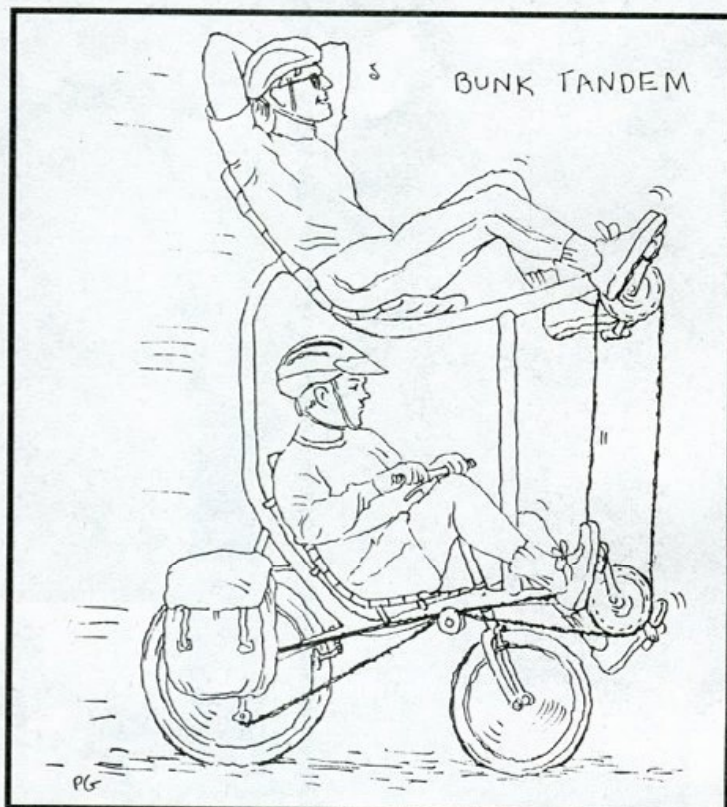
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