

RCN

RECUMBENT CYCLIST NEWS

1998 LWB Buyers' Guide



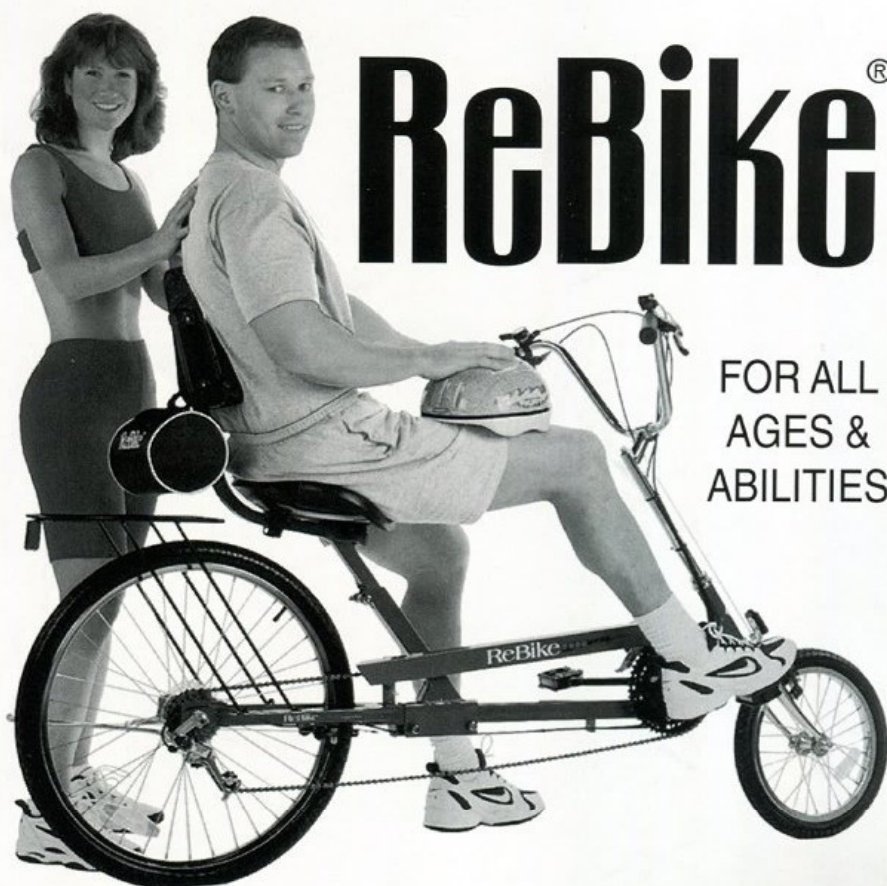
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"Jump"
Compact

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RCN#45 Cover

The 1998 Easy Racer
Gold Rush Replica "Black
Gold" RCN test bike.
Photo by Easy Racers

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RCN

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Sorry, we do not give telephone bike purchase advice, however, we are available on a consulting basis.

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Editorial License



LWB—The King of the 'Bent Hill

No twitchy toys in this group—these are serious bikes

I'm still on information-overload from the last issue of RCN. This whole buyers' guide thing is a bit odd. So here's why! Most of the recumbents sold in the USA are Compact style: ReBike, BikeE, Rans Tailwind and Vision Metro. By my best guesses, this could be 75% of the market. Our Jan/Feb '98 Compact BG issue had just one page of Compact specs—13 models (a 'benter's dozen..). So then the SWB enthusiast custom-spec guys get ahold of stock bikes, swap a few parts and generate 40, count them—"40" different SWB models. SWB hype at its finest.

Now we come to the LWB category—just 21 models (even with the Angletech fleet). Most of the LWB manufacturers have been around for years: Rans, Easy Racers, Linear, Ryan and others—all tried and true.

All of these guys predate my entry into the world of recumbents. I'm a newbie compared to Randy Schlitter (Rans) and Gardner Martin (Easy Racers) and Dick Ryan (Ryan) who welded Avatar frames back in the early 1980's. Many of these models are supremely dialed-in milestone bikes with thousands of owner miles, perfected designs (though tweaked and updated when need be), near bullet-proof frames, and full triangulation with TIG welded CroMo or aluminum frames. LWB 'bents were once the mainstay of the 'bent world when there was no such thing as a Compact, and SWB were considered twitchy toys unable to carry a load except for the heavy load on the 16" front wheel... remember the Hyper Cycle....

The LWB 'bent is a timeless design capable of anything. In the LWB design spectrum, we have the Ryan Vanguard USS tourer; the folding Linear; and the legendary Easy Racers: the touring Tour Easy or the barn burning Gold Rush Replica. Nowadays the LWB are often nearly

shunned as heavy (slow?) bikes in favor of ultra-light SWB bikes with roadie-wannabe components.

The new breed of 'bent mfr.'s proclaims that light weight and suspension are the keys to speedy 'bentdom. I have to tell you, I think a lot of riders are missing the boat here. Two of the most notable performance gurus in the 'bent world are Gardner Martin of Easy Racers and Steve Delaire of Rotator (who builds GRR frames in his spare time). Both builders have speed records. Both build LWB performance machines that are capable of blowing the doors off of most SWB and Compact bikes, regardless of weight or brand of skinny tires.

LWB bikes are more user-friendly, have lower seat heights, lower bottom bracket heights (pedals), less constrained drivetrains, wider-range gearing and they take fairings easier. Even with a Super Zipper or body stocking, just about anyone can easily manage a LWB at speed.

I've tested light SWB bikes against the Gold Rush on my test course—and they are not even close. The GRR is faster by 8 minutes (over 22.4 miles) and 3 mph in overall speed with an average speed of 21 mph! Road-ready, with my spares and adequate nourishment, this bike is a porker by wedgie-weight standards—and it doesn't even matter.

The SWB hype is prevalent in the 'bent world and is getting worse. SWB manufacturers more often sell through dealers, and there are many wedgie salesmen willing to convince you that the a light-weight, often twitchy SWB is right for you...based on their wedgie-master training. I don't mean to come down so hard on the SWB, all I ask is that *you* get recumbent educated. Not all 'bents are created equal. Whether you're going to ride around the globe or do a fast double century, consider a LWB—the bike that this industry was built on. And I still have a SWB and love it too. End of Rant.

Viva Reambency

Bob Bryant.



'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:

RCN, PO Box 58755, Renton, WA 98058-1755

Email to: DrRecumbnt@aol.com 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.

'BENT-KOPELLI & PINK PLASTIC LAWN FLAMINGOS

I am the 'bent rider/silversmith who created the Kokopelli recumbent jewelry (I hope your wife, Marilyn, is enjoying hers). I have some new items in the designs stage—tie tacs, label pin, belt buckle and I am definitely open to ideas from the 'bent community. Enclosed is a recent photo of me and a friend on my Haluzak Leprechaun. Even PPF (Pink Plastic Flamingos) prefer the comfort and fun of recumbents. Fred, the PPF was visiting me for a few weeks. I connect with Fred via a terrific web site, "On Stagnant Pond"—www.osps.sitcrafters.com/homepond.html, dedicated to the enjoyment of Pink Plastic Lawn Flamingos.

We all know that recumbent riders dare to be different. So, host a PPF and enjoy the reaction of folks as you visit places like Biosphere or Tombstone, with a Pink Plastic Flamingo tucked under your arm!

Regards,
Peg Francisco

RCN—TABLOID STYLE!? PRINT THIS IF YOU DARE!

If wedgie saddles can depress 'performance' then 'bent seats may restrict ability when off the machine.

The cause is pinning the sciatic nerve between the point of the pelvis (ischial tuberosity) and the seat base.

After a 30 mile trip, I could hardly walk and my doctor diagnosed it as Sciatica—cycling not recommended.

Your misrepresentation of Fred Teeman's comment about wedgies and self torture did not impress and savors of tabloid style presentation. So there! He is



Peg Francisco and her Pink Flamingo



Hugh Haines—UK and his Rotator

the only person, apart from Mike Burrows, that I have encountered in the media from Giant and his comments seemed quite reasonable—but you may be aware of a hidden agenda unknown to readers.

Hugh Haines
Sunderland, England

PS: I attack every editor within striking distance—without fear or favor.

Hugh, I'm not that kind of doc, but I can tell you that some bikes, mainly those with very closed riding positions and/or upright seat angles have the potential to do the same to me. Other very high-BB models cause problems with toe numbness. Every-BODY is different. As for Mr. Teeman of Giant, I wouldn't be doing my job if I didn't take advantage of that situation. The timing was right, and Mr. Teeman's letter was reproduced almost entirely (minor editing for space). Much of the situation was tongue-in-cheek and no disrespect was meant toward Mr. Teeman or Giant. So there! As for your comments on tabloid style, RCN is, after all, printed in the USA. Would you expect less? We do have a sense of humor.—Bob, RCN

RANS SEAT HOOPLA?

My new Tour Easy arrived a month ago. I set aside my Trek 2100 for good. Despite all of the hoopla about the Rans seat, I still

think its for young butts with skeletal figures. The Tour Easy seat is what I used to wish for when I rode my Trek. Gardner Martin even customized the seat a bit to my specs. He made it wider, deeper and eliminated the slope (foam seat horn) at the front. I now have the kind of comfort that makes me want to ride all day. My speeds have also risen by 10% over my Trek 2100 and about 30% faster into a headwind. I don't find the weight difference between the two significant in terms of locomotion. But face it, the Tour Easy is unwieldy and burdensome to lift and carry when necessary. I can at last ride without the pain of saddle discomfort. I have RCN to thank for that.

Cordially,
Bernie Rosen

TURNER RIDER SPEAKS OUT

I ride a Turner recumbent. I bought it after testing a Rans Rocket, a Vision and one other big name bike. I found the Turner to be more comfortable and more stable than any of the others, especially the Vision. As you said in the closing part of your review, it is basically a good bike.

Your review of the Turner was fairly accurate, but written in a tough style. I felt that you paid more attention to some small

faults than you did to the bottom line that the bike was sound. Unfortunately, Milton felt that he had to offer a response. As a result of your review and letters from readers which you have printed, your pages reflect a spirit of ridicule and elitism which serves no good purpose.

Milton Turner has been fair, informative, and accommodating to me. He is a gentleman who does not deserve to be the target that he has become in your pages.

Please put this behind you and concentrate on the positive development of healthy industry that supports you.

Fred C. Moor
Livingston, TX

Fred, Thanks for writing. I do feel bad about the Turner situation. Unfortunately, I cannot always just be a nice guy. When a bike needs criticism, I owe it to the people who pay to read RCN to criticize the bike. If the manufacturer takes it personally, offers no feedback, response or solution, the style becomes tough. If we/RCN are treated in this way, we can only imagine that reader/customers may get it worse. The positive result from a situation like this is that Turner may improve his bikes and the way in which he resolves problems. If this happens, then we/RCN have done our jobs. If you had a good experience with Milton Turner, then maybe things have improved.

There is no elitism that I know of. At one time Turner provided SWB frame-kits at affordable prices. With his leap into the higher price range, competing with Rans, Vision, Lightning, etc., the Turner bikes need to be critiqued with the competition in mind. Unfortunately, the T-Lite doesn't cut it. My experiences with Turner bikes and the way that Turner resolves problems goes back to 1990. I once spent over 50 hours setting up a Turner LB '90 only to finally return it back to Turner.

We have not heard from Turner Enterprises since the post-road test message. He did not complete our '98 Buyers' Guide info, nor does he subscribe to RCN at this time. I've said it before, and I'll say it again. I would retest the Turner, Lightning Stealth or any other bike that has received a poor RCN review at any time in which the manufacturer sees fit. Though we cannot justify buying another Turner test bike, as we did for the original review.—Bob, RCN

CREAKY BIKEE

I called the BikeE folks yesterday regarding the creaky suspension on my new All Around Air Tech. Paul Atwood told me it

was most likely the swing arm pivot clamp which is inside the main beam. It is snugged down to the beam with two button head screws accessible from the bottom of the bike. One quick tweak was all it took. In some cases a little spray lube aimed at the clamp (through the cable access hole) will help quiet any noise caused by slight movement. There, you are now a BikeE technoid.

Rick Pope
Oregon Human Power

VIRILE 'BENT RIDER

Regarding your ongoing series on penile numbness. I've been wondering how it is that us recumbent guys find the seats on upright bicycles to be so uncomfortable, yet the upright riders still have not switched en masse to recumbents. These's only one answer I can think of—male recumbent riders are simply far better endowed. Tell the girls to spread the word.

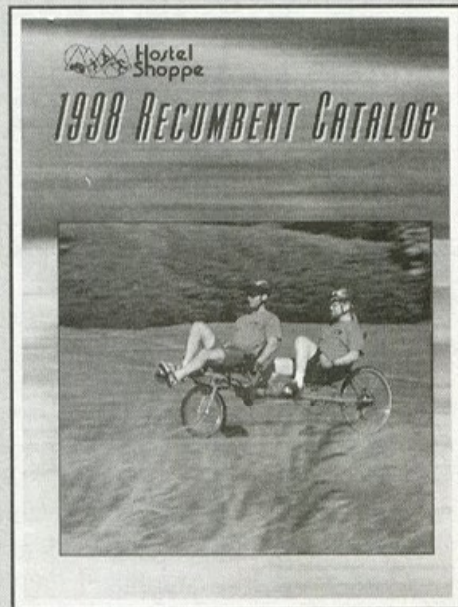
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Somewhere in Florida



Have you received your RCN#44 yet?

All active subscriber issues should have arrived by this time. If yours has not—give us a call today. The postal service occasionally misplaces a bulk mail issue or two. Call 253/631-5728 if you've had a problem. Now would be the perfect time to upgrade to a deluxe first class mail subscription. Send your deluxe renewal + \$1 per outstanding issue to RCN.

Readers, if you have information that may be of interest to others please share it by sending it to RCN, Did You Know, POB 58755, Renton, WA 98058. Please give us the source for you info.



◆ **The Hostel Shoppe** of Stevens Point, WI has a new **FULL COLOR 16-page RECUMBENT CATALOG**—and it's **FREE**. It has advice, pics of BikeE, Vision, Easy Racer, Rans, Comfort Cycle, tandems and 3-1/2 pages of recumbent accessories. The catalog also has a Midwest Recumbent Rally entry form (May 30-31, 1998). To get your copy, give the Hostel Shoppe a call at 1-800-233-4340, M-F 10am-7pm and Sat 10am-5pm (central time). Or email at info@hostelshoppe.com and be sure to tell them you read about it in RCN!

◆ **WHITE GOLD!** There is a new limited edition of Gardner Martin's world famous **Easy Racer Gold Rush Replica** now available. The White Gold comes standard with a Super Zipper fairing, some special options and powdercoat paint with a clearcoat. This limited edition bike is available only through. The Sharper Image Catalog 1-800-344-4444.

■ 'Bent Bits

◆ Kingcycle Demise!

The British Kingcycle SWB is no longer in production. Low Racers and Wasp models will be available on a limited custom order basis only.



◆ hpr^a Racing News

The hpra has just unveiled their first quarterly newsletter with a race schedule, rules, .deciMach Prize info and a race schedule. These are the folks who seem to have taken over HPV racing in the USA and who will be racing HPV's in the Indianapolis Motor Speedway later this season. The annual subscription/membership rate is \$20 to: WISIL HPVers/hpr^a, 260 S. Channing #1, Elgin, IL 60120-6619

◆ LINEAR STUFF

Steve Hansel from Linear called to say that his company will be introducing a new welded non-folding version of the popular LWB model. The first batch of Linear Compact Mk III above-seat steering models are now available. For more information, contact your favorite Linear dealer or call Tel. 319/252-1637.

■ 'Bent Tip

◆ Coroplast Fairing Update

If you are looking for more information after Kent Peterson's fairing article in RCN#44, People Movers sells a Coroplast Fairing video of a seminar given by Ed Gin. Ed has a web site with 8 pages of updated text/photos with a dozen more to come. http://www.mcs.net/~gksol/fairing_seminar.html or call People Movers at 714/633-3663.

■ 'BENT MAIL....

GLISS VIBRATION?

I loved your article on Slumgullion tour in RCN#42. I just received a Rans Gliss from Angletech and find the bike a joy except for a bit of vibration when spinning in the small chainring. The vibration comes from the upper idler, which becomes heavily loaded when on the small chainring due to the angle of the chain over the roller. The uneven nature of the chain causes vibration proportional to the loading.

I was wondering if any Gliss riders have complained about this. I have a Tour Easy which has brought me 6k miles in the last 2 years and perhaps I am spoiled, but I think a \$2000 bike should be free of unnecessary vibration. Am I too critical?? Do you know anything about a possible fix?

Love your magazine

Carl Bredberg

Carl, I have noticed chain/idler drag noise on our similar Rans Tailwind. It oddly comes in the large cassette cog in the middle chainring.

Here are some things you may want to try:

—Put a strip of inner tube or a series of O-rings in the idler groove and let the chain run them to quiet idler noise.

—Experiment with chain tubes/no idler

Special thanks to the Rans owners on the internt HPV list on this one.—Bob, RCN

THE TERRIBLE TRUTH ABOUT 'BENTS

I have been riding a recumbent (BikeE) for about five months now and I have noticed one big problem with it and I was wondering if any of you have noticed it too.

My biggest qualm is how slow I now am going up hills. I never flew up hills on my upright bike, but now on my BikeE I crawl at an even lower speed (3-5 mph on my upright bike, but now on my BikeE I crawl at an even lower speed (3-5 mph on my BikeE versus maybe 5-7 on my upright). I went out for a club ride two weeks ago and I had to drop out because I couldn't possibly keep up with the group. Usually, I would be leading the pack on my upright.

Many people say that the reason I am slow is obvious; I have not developed my "recumbent muscles" yet. Well, I wonder, because I've been riding quite a bit this Winter and past Fall and I haven't noticed any great improvement in my speed going up hills. My best guess is that after much riding, I will be able to increase my speed going up hills somewhat, but even so, I will still be significantly slower on a recumbent than I would be on my upright bike.

I have also heard the argument made

(in RCN) that we recumbent riders make up for our slowness on the hills on the downhills and the flats. I wonder about that statement too, because on the club ride I went on, the "speed advantage" my recumbent had on the flats and downhill was not even close to being enough to make up for my extensive time losses going up hills. So much so that I had to abandon the ride.

Yes, not all recumbents are created equal and I imagine that some recumbents (especially lightweight SWBs) don't suffer from this problem (as much), but I am nevertheless surprised that a bike as well liked as the BikeE is (RCN gave it endless accolades in a recent issue) would suffer from such a serious limitation. Is this 'terrible truth' true, are many (most?) recumbents significantly slower going up the hills than their upright brethren?

Andrew Waldorf
andy1@interport.net

Andrew, recumbent hill climbing is an odd science. Since we cannot climb out of the saddle, our performance depends primarily on rider conditioning. Nothing increases your climbing performance better than pedaling up steep hills.

A few weeks ago my response to you may have been, "buy a faster bike." This past weekend I was again reminded of just how important rider training is. RCN's Kent Peterson led us on a ride from Issaquah toward Fall City and Preston, Washington, in the foothills of the Cascade Mountains. Kent has been training for the "Cannonball" a ride from Seattle to Spokane. Kent looks for hills to climb. His training route goes up Snoqualamie Pass on the race route (to 3000' elevation). Since he chooses not to own a car, Kent pedals to most of our NW rides.

On this day Kent rode, "William Burroughs," a SWB built from two mixte wedgie frames, lots of recycled stuff, put together with JB Weld, hardware store clamps with absolutely no welding or brazing (RCN#47 article). The bike has limited gearing and weighs in "over 40-pounds." Kent has less bucks into this bike that I have into my riding shoes. I'm chasing right behind Kent all day on my Easy Racer Gold Rush, but I couldn't catch him. Luckily for me, Kent left his (actually, his wife Christine's) homebuilt Tour Easy at home. Kent can ride fast and climb well on any 'bent.

All else being equal, I find the performance oriented recumbents, with an acceptable weight, correct weight distribution for the rider size and a stiff frame climb best. Unfortunately, some
Letters Continued on page 53

'Bent News

What's Happening in the 'Bent World

BikeE Again Leads Market by Introducing a Quality Recumbent Bicycle for \$650!



The new \$650 BikeE is sure to gain a huge market share

Corvallis, OR. -- May 1, 1998 -- BikeE Corporation, the world's leading manufacturer of recumbent bicycles, today announced the introduction of the BikeE CT 2.0 -- the first quality recumbent priced within reach of most bicycle riders. The CT 2.0 will be available July 1, 1998 for the suggested retail price of \$650.

"1998 marks the fifth year anniversary for BikeE. We have been striving to produce a BikeE available for all cyclists without the price boundaries of most recumbents," said John Moreland, president and CEO of BikeE. "We have a reputation for leadership in innovation, and the growing popularity of our bicycles makes it possible to produce a BikeE at a

much lower price without sacrificing quality. There are currently no quality recumbents selling for less than \$900, leaving out a large number of riders who are interested in a fun and comfortable bike but don't want to spend the money. We expect to see a whole new category of BikeE riders emerge with our introduction of the CT 2.0." The BikeE CT 2.0 utilizes a patented aluminum main frame (Patent #5,509,678) and a five way adjustable seat to fit riders from 4'6" to 6'2" (an extra long is available for riders up to 6'9"). The CT 2.0 is equipped with a 21 speed Sachs 3x7 internal hub shifting system that offers the rider a wide range of gears for high speeds or hill climbing.

While sales have slowed in the overall bicycle industry over the past five years, the recumbent market, and BikeE in particular, have experienced significant growth. BikeE Corporation has doubled its sales for each of the past three years, and quadrupled sales from 1997 to 1998. Moreland attributes the growth to an increased number of riders looking for comfort, fun and efficiency. "Cyclists are smarter than ever before, and are realizing there is an alternative to the conventional bent-over bikes," he said. "We believe that the BikeE better meets the needs of 80 percent of people riding bikes -- it's great for every kind of riding, from touring to off-road."

BikeE's proprietary products combine comfort and efficiency to provide fun, fast and easy-to-ride bicycles that avoid the discomfort to hands, wrists, shoulders and backside associated with traditional bikes. The unique design won BikeE a coveted "Editor's Choice" award from *Bicycling Magazine* in 1997 -- the first time an alternative bike has ever received the award. The BikeE is sold through over 450 independent bicycle retailers in North America and is distributed in Japan, Germany, Austria, Denmark and Switzerland.

BikeE Corporation, based in Corvallis, Oregon, is the leading manufacturer of recumbent bicycles, producing bikes that are both fun and comfortable to ride. These bicycles put the rider in an upright position on a padded, contoured seat with back support. BikeE's proven cantilever frame design and Air Tech line of suspension bikes set the standard for comfort, control and performance in the growing market for recumbent bicycles.

For more information, contact BikeE at 1-800-231-3136 or www.bikee.com. □

■ A Free 'Bent

◆ SOME LUCKY RCN READER WILL WIN A NEW 1998 BikeE AIR TECH RECUMBENT IN JULY

In a special promotional deal with the BikeE Corporation, RCN will **GIVE AWAY** absolutely **FREE**—one new **1998 BikeE Air Tech All Arounder** 21-speed bike shipped within North America. The customer will need to pay their local dealer for set-up as the bike comes in a box.

RULES: You must have an **active RCN subscription that runs through and including RCN#50** at the time of the drawing the first week of July 1998. **THERE WILL BE NO EXCEPTIONS!** If you would like a chance to **WIN** a BikeE—Renew Today and **WIN!**



ABOVE: If you haven't read our rave review of this bike in RCN#43, order a copy today. Many of you must have read it, as BikeE Air Tech sales are through the roof!

ABOVE RIGHT: John Charlton and his 12¢ Cent 'Bent. Read all about it in RCN #47!

1999 RCN Buyers' Guide Query

We are in the process of planning our 1999 print schedule. We are considering the following options for next year:

1. Same as 1998 with segmented Buyers' Guides (SWB, LWB...)
2. 1996 format: 4 RCN regular issues and a huge double+ (2) issue Buyers' Guide (6 total issues).
3. 6 RCN issues with a new larger separate Buyers' Guide as a subscription option.

We would like your feedback. Leave us a voice mail at 253/630-7200 "##" or email DrRecumbnt@aol.com



RCN Goes After the Establishment in the RCN#47 "Homebrew issue"

We want your homebuilder stories, tips, and secrets to share with other RCN! If your homebuilder article (complete with text and a few pictures) gets chosen as one of the two best—we have **PRIZES** that include bike parts from **Haluzak**, **4-People Movers Fairing Video's**, a **\$50 People Movers Gift Certificate**, one two-year and two one-year deluxe subscriptions to RCN. Winners will be chosen for the best homebuilder article, tips, plans or contribution.

Watch for our upcoming issue:

- Dumpster Diving for Bike Parts. Learn secrets from the pro's.
- Cheap and easy ways to get 'bent!
- Building a 'bent from a BMX bike.
- The truth revealed on industry hype (hoax?) of index shifting!
- The truth revealed about pricey parts!



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CHECK OUT THE NEW RANS WEB SITE

It is finally up and running at: <http://www.rans.com>

RANS CONTACT INFO UPDATE

In RCN#44 we had an incorrect phone number listing for Rans. They have also had an area-code change. The correct phone number for the Rans Company is: Tel. 785/625-6346 and Fax 785/625-2795.

SPEED COMES
RANS
PAIN GOES

RCN

The '98 Easy Racer Tour Easy SS LWB

**By Robert J.
Bryant**

DrRecumbnt@aol.com

Fast LWB bikes are a science at Easy Racers. Most people who've tried will agree to the superior stability, handling and speed possible with an Easy Racer LWB. Forget any roadie platitudes about featherweight bikes being fast. Almost any rider will be faster on an Easy Racer LWB with a Super Zipper fairing.

So you want a comfortable bicycle, but you don't want to sacrifice speed, and you also want to do your first century—or ride across the USA. Well, I've got the bike for you. One other added bonus, it's built by the company that builds the fastest production bicycle in the world (Gold Rush Replica). It's funny how some things never change. This statement is as true today as in 1991 when it was first printed in RCN.

The bicycle industry, and even the new recumbent industry seems to be driven by what is the newest, latest, greatest product in our planned obsolescence consumer driven market. The Easy Racer Tour Easy has become an industry standard. It was the best in '91—the recumbent by which all others were judged—and it's even better today. Our 1998 Tour Easy shows more refinement, yet still retains the timeless quality and durability that is legendary to Easy Racers. They have also inspired an industry of "compact" builders, many of whose bikes look just like mini-Easy Racers.

For the most part, Easy Racers' owner, Gardner Martin, has kept his focus on LWB ASS high performance touring machines which are quite possibly the best overall recumbent design in the world today. This bike exudes recumbent passion. Gardner Martin is the man: chief designer, hpv race team leader and the spokesman of speed, recumbent that is. The Gold Rush Replica is still the fastest 'bent we've ever tested, and a fully faired Gold Rush (Old Gold) rests in the Smithsonian for winning the DuPont Prize, racing to just over 65 mph with Fast Freddy Markham at the helm.

Easy Racers has more race victories and speed records than any other recumbent manufacturer. Many bikes can be fast, but the next time a manufacturer brags about performance, ask about their race team, speed records and race victories.

Fast LWB bikes are a science at Easy

Racers. Most people who've tried will agree to the superior stability, handling and performance possible with an Easy Racer LWB. Forget any roadie platitudes about featherweight bikes being fast. Almost any rider will be faster on an Easy Racer LWB with a Super Zipper fairing.

Our test bike is a 1998 Tour Easy SS with the SRAM GripShift "Attack" 24-speed upgrade and a Super Zipper fairing. The SS has skinny tires and is the performance oriented Tour Easy. The EX comes with fat tires, lower gears and is the touring model.

"Easy Racers existence as a company predates most every recumbent dealer"

■ THE EASY RACER EXPERIENCE

Historically, Easy Racers is not a brand that is displayed at the dealer trade shows, or through as many dealers as other brands. Some dealers may have a difficult time with this. Easy Racers' existence as a company predates most every recumbent dealer in the world.

Easy Racers has spent more than 20 years selling bikes directly to the customer. They are experts at doing this. The bikes are fully set up and bench tested prior to shipment to the customer. My feeling is that every recumbent worthy of the \$2000+ price tag should be prepped this way. What this means to the customer is an effortless assembly. The derailleurs and brakes are set up and adjusted and the fork is installed. The customer needs to insert the handlebar stem, check the handlebar adjustment, install the quick-release wheels, mount the Zipper fairing and put air in the tires, and you're off. The possibility of a problem is very small. Easy Racers has no equal in the way bikes are pre-assembled and packed for easy direct customer (or dealer) setup.



Our 1998 Easy Racer Tour Easy SS test bike with a Rans seat and Grip Shift 24-speed upgrade. The rear fender is a stock 700c with a multiple zip-tie lower mount. The seat bag is by Angletech.—RCN

An Easy Racer test ride can often be a religious experience. When a customer calls Easy Racers there is an excellent chance of talking to Gardner Martin. He is cordial, patient and makes the ordering process fun. He instills confidence in recumbents and his product and makes every customer feel special—something that isn't happening with many of the new corporate 'bent guys. There is no elitist attitude, arrogance or engineering superiority complex. Gardner is an ex-motorcycle racer, builder and hpv racer. He builds and flies airplanes and he's known all over town for his cool laid back chopper-like bikes, black hot rod Studebaker and ex-chicken coop shop behind the feed store just outside of Watsonville, in Freedom, California.

Consistency also plays a big part in the way Easy Racers does business. Attention to detail seems to be job #1. Over the years, we've had the opportunity to assemble several dozen Tour Easys and Gold Rush Replicas. In all of these bikes not one single nut or bolt was missing and there have been very few problems, mostly minor nitpicks. In fact, it's sometimes the other way around

you find unexpected extras, such as replacement tubes, water bottles, assembly tools and even a rearview mirror inside the shipping box.

■ DESIGN PERFECTION

It's tough to explain to people just how good this bike is compared to the newest, latest, greatest whiz-bang models. The SWB and Compacts get a lot of press because the basic LWB was dialed in long before the other designs were ever even prototyped. Gardner Martin tweaks his LWB fleet every year to refine and make them better. He watches trends and the recumbent world more than most. He also pays attention to the often mundane, very political HPV racing groups and their ups and downs. If an Easy Racer homebuilder rides through town, Gardner will try out his bike. He's even been known to make changes to the production bikes based on these rides.

The trick to the design is a low center of gravity, just high enough for safe riding in traffic, a finely tuned (stable) handling, a stiff triangulated (in all the right places) frame topped off with an attractive Harley-

esque look, matched with an uncommon durability and manufacturer service level.

■ FRAMESET

The Tour Easy frameset is legendary. It's stiff, strong and about as high quality as a bike frame can be. The frames are TIG welded in the Easy Racers shop of Aerospace grade 4130 CroMo tubing. The frames have braze-ons for racks (no lower rear fender mount), fenders and a pump.

The Easy Racer welded aluminum handlebars are stiff, narrow and tough with an aerodynamic wrist bend to keep your body tucked in tight. This indeed works, however, the hand position is not as ergonomic as the Rans or Rotator flat (with a slight bend) ASS bars for broad shouldered riders. The bars have a cross stabilizer tube and dual water bottle cage braze-ons. The welds and workmanship are nearly flawless and I've never seen an untrue frame.

Easy Racers' seat slides to adjust on a plate mounted on the frame. There are two 11mm bolts underneath that hold the seat on a track and the seat struts mounted off the back of the seat anchor it to the rear



(Left to right) Double Gold Rush, Old Gold Rush (Smithsonian bike) and Gold Rush LeTour built for the Tour deFrance invitational. (Left to right) Luke, Gardner, Fast Freddy and Estabin

stays. Frames come in four sizes designated by rider height and x-seam: small, medium, medium-large and tall. The bike will fit riders 5'2" to 6'4" with wheelbases that stretch from 63"-69." Easy Racer rider fit and dial-in is a no brainer. What can take weeks on some bikes can be accomplished in twenty minutes on an Easy Racer.

The Easy Racer paint is a very nice and durable powdercoat in Candy Red, Blue or Jet Black. This paint allows the bikes to resist wear better than a wet spray.

■ SEAT—A 'BENT ON COMFORT

Easy Racers now offers three different seats for their Tour Easy and Gold Rush models. The seats are as follows:

- **Cobra**—composite shell/foam/Lycra
- **Cool Back**— stainless steel frame/ mesh back/comp. base/foam/Lycra.
- **RANS** Easy Racer model.

Let's start by saying that the Easy Racer Cobra seat is the best design and finest quality foam covered shell seat made. This seat continues to evolve and get better with each update. The shell is a hand laid fiberglass/composite mix. The hand layered foam is glued and contoured on the shell. A thin Lycra cover goes over the seat. The design is simple and elegant.

The Cobra shell seat offers by far the best performance of any seat in the US market. The Easy Racer riding position is one of the keys to this performance. It makes pushing into the seat for power an incredible experience. I feel more aggressive on the Cobra seat than others and my

test course times demonstrate this.

This aggressive, upright and fairly closed (by LWB standards) riding position does have a drawback that you'll find on most low BB LWB ASS bikes. For some riders (often XL sized) the position puts more weight on your rear end which may lead to "recumbent butt" after a few hours. The seat recline is slightly adjustable, though limited by the distance between rider and controls and thus not *as* adjustable.

This will not be an issue for all riders. Riders in the small-medium build or former upright roadie riders, the Easy Racer "Cobra" seat is perfect.

■ EASY RACER—COOL BACK SEAT

The new mesh Easy Mesh Folding Cool Back seat folds, is lighter, and sits several inches lower than the Rans seat, though is the same height as the Cobra seat.

The Cool Back has a tubular T-304 stainless steel frame with two cross supports (prototype pictured/production is on cover). The seat frame is polished to a near chrome finish, won't rust and doesn't need any maintenance. The mesh is either zip-tied or wrapped around with a Kevlar cord. The seat recline is adjustable using Easy Racers seat support braces.

Easy Racers uses the highest quality seat base material in the business with three differing density layers of foam sandwiched together. The top layer is Swiss Air-Rex foam with gel-like properties. The layers are contoured and glued to the seat base, making for a base of unequalled quality.

The Cool Back's composite base is the same as the standard '98 Cobra seat. At first sit, it feels like the base is more contoured (and more comfy), though the difference is that the rider can scoot rearward and center more on the seat. This benefits larger riders, and those like me with previous broken tailbones (SWB crash 2 years ago). For smaller riders, the seat base can be mounted closer to the back on request. The Cool Back comes in two sizes, (sized by rider weight) and can be custom fit to the riders hiney size, so don't be bashful when you order.

The Cool Back's base is 15" wide x 11" long, the back is 22.5" tall (mesh=20" tall) x 15.75" wide. With the Cobra base, the seat slides to adjust and the seat plate bolts to the frame in the same fashion as the Cobra.

The standard Cobra seat still performs the best, though not by much. The Cool Back is a very close second. Between the two, choose the most comfortable, not by the performance. The new seat will be especially useful for long distance tourists, larger riders or those in warmer parts of the country (who sweat more). The seat is beautifully done and an excellent option.

■ EASY RACER—RANS SEAT

The Rans Easy Racer seat sits up a few inches higher on an adapter plate and will accept taller riders easier (higher/farther back). The Rans seat works well on the Tour Easy, though not as well as on the Rans higher bottom bracket LWB/SWB models.

What I like about the Rans seat is how it cups my rear end like two outstretched hands, one on each cheek, distributing the pressure equally, and better than either of the two Easy Racers seats.

The foam base quality is superior on the Cobra and Cool Back seats. Out of the three seats, I've chosen the Easy Racer Cool Back for my test bike, primarily because I like the low height, increased comfort and added performance. I plan to do more experimentation between the Rans and Easy Racer Cool Back seats this season.

■ COMPONENTS

If you are shopping for a recumbent by cross referencing parts and looking for the best component group, you may be in for a let down. Gardner Martin has always spec'ed an interesting array of slightly retro parts, seemingly unaffected by the industry whiz bang component trend of the day. With a few exceptions, what we thought was a lackluster parts mix has turned out to be a tried and true and works surprisingly well, offering an easy shifting, posi-

tive braking dependable and quiet ride. The components that we don't like have optional upgrades or are easily changeable. A frameset (seat, fork, h'bars, brake calipers and front wheel) is available for those who want to build up something special.

■ SHIFTING

The Tour Easy comes stock with a Deore XT rear derailleur which is probably the best rear derailleur made and certainly the best one you'd ever need on a recumbent. The front derailleur is a Sachs 5000 with an upgraded clamp and bolt. We've had problems with this derailleur on other models, however, not on our Tour Easy.

The stock shifters are GripShift SRT 4.0 (SRT 400 replacement). These are lackluster at best and not an RCN favorite. In my opinion, they are not acceptable for long distance touring. Our test model had a 24-speed upgrade with GripShift "Attack" (X-Ray replacement) which is a better shifter. Some Tour Easy's are being shipped with Sachs Twist shifters, which are better than the SRT 4.0's. Shimano Rapidfires are an available option and would be my choice.

The new thicker walled aluminum Easy Racer handlebars prohibit the use of the very durable Shimano Bar-Con bar end shifters that worked so well on Easy



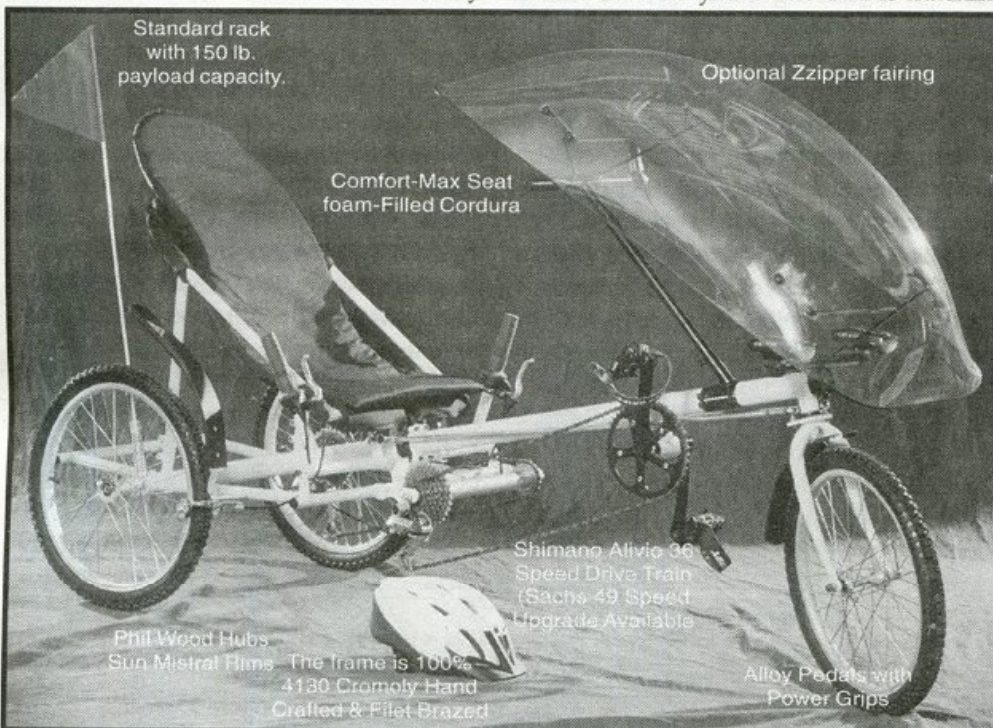
Easy Racer's Tour Easy SS

Racer bikes for so many years. We did find out that Angletech makes the modification and offers Bar-Cons as an option.

■ GEARING

One of the many beauties of this machine

is the ultra wide range gearing that is possible *without* the use of expensive, heavy and potentially power robbing internal geared hubs or supersized mega-teeth chainrings. The Easy Racer center chain idler takes in more than 3" of chain and



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allows easy free-flowing extreme gearing. Our Tour Easy came equipped with a 26/42/52 crankset and an 11-30 cassette for a gear-inch range of 23-127. The EX touring model has a lower-g geared 24-36-46 crankset for a gear inch range of 22-113. This lower range will be better for most riders. No recumbent bike made will handle wide-range gearing as easily or as well as an Easy Racer.

By first impression, the Shimano Exage LX triple crankset looks like a retro parts special sale crank. However, if you look closely, you will notice that it's an exact model of a full size (non-microdrive) Deore LX from a few years ago. Zach Kaplan brought it to my attention that this crank has a narrow Q-factor as well as a full size non-microdrive MTB bolt pattern, so you can easily swap chainrings to suit your riding. The only visible difference is that the Exage LX has a grey matte plastic coating versus a polished finish. This is okay as bikes that are really ridden get scratched up anyway.

■ BRAKES

Easy Racers bikes generally have excellent braking, modulation and control. Our Tour Easy was no exception. Our SS is outfitted with a Shimano Deore LX cantilever in the rear and a Taiwanese dual pivot (Shimano 105 style) sidepull on the front (EX has dual LX canti's). Easy Racers sets up the brakes perfectly and adds aftermarket Kool Stop pads. The result is braking that any 'bent manufacturer would be envious of. Our only criticism of the braking system comes in the Tektro levers which work fine, they just are a bit generic for this thoroughbred. The brake levers are modified to accept the fairing mounts.

■ WHEELS

Easy Racers is very serious about the quality of wheels that go on the Tour Easy, they are top quality, built in-house, by hand with stainless steel spokes and Sun CR18 rims. Our test bike had a radial laced 20 x

1-1/8" wheel with an IRC Roadlite EX 100 psi tire. Easy Racers continues to use the taller 451mm 20" wheel and IRC tire on the SS performance model. The EX has a Haro 406mm 1.5. The rear wheel is a 700c x 28 with a Cycle Pro 100 psi Kevlar bead tire. A fatter 700x 32 is available on the EX.

The choice of a 700c rear wheel is highly preferred by Gardner Martin. He believes that smaller drive wheels offer sluggish performance, a limited high gear and the drivetrain parts wear quicker. A 26" rear wheel on the Tour Easy would require a 56T. chainring to equal the same high gear possible currently with a 52T.

Many riders are initially concerned about the IRC Roadlite front tire. This is one application where the IRC 451mm works very well. I like to ride with fat tires on my SWB bikes, but am always drawn back to a 700c x 28/451 20" combo on my Easy Racer. In years of testing Easy Racer bikes, I've only had a few flat tires and always ridden with an IRC Roadlite EX. This tire works well as the front end has less load than any SWB (60% back/40% front weight distribution). The weight distribution is exceptional for a LWB as well. I still would recommend fat tires for commuters, and tourists, as the IRC Roadlite EX has no business on a touring bike. For weekend warriors, the SS spec is perfect.

On the Internet HPV list, some have noted that the 700c/451mm spec is dated and due for a change. Zach Kaplan offers 559mm/26" rear wheel conversions. The fact remains that racers and a lot of other high performance cyclists use the 700c. There is a great range of perfected tires in many shapes and sizes. The 20" 451mm is another story. The 406mm wheel is emerging as the recumbent favorite. For those who must have an SS with a 406mm wheel, the EX fork (with cantilever studs) and a 406 wheel will fit right on.

■ EASY OPTIONS

Some of our other favorite Easy Racer

options are the Carbon Fiber front fenders and the dual water bottle cages on the handlebars. The fender appears delicate, though is the best 20" fender made—available in 406 and 451mm 20" sizes. The dual cages are good if you don't want to use a hydration system, though the water bottles can drip on your legs when mounted here. Hydration systems easily hang off the back of the Rans or Easy Racers mesh back seat. I use a combination of the stock straps and zip-ties. They would easily mount in front of the handlebars, behind the fairing.

A standard Blackburn rear rack is an option on the Tour Easy. It is recommended that you order the rack with the bike to get the Easy Racers special mounting hardware. Front racks are also a possibility although there are no low-rider braze-ons. Mounting of front racks is not addressed by Easy Racers, so owners are left to their own clever resources. There are rear rack/fender bosses built into the dropouts, but there are none on the front. Here I would recommend the tiny Blackburn "C" clamps for fender/front rack mounting. The Tour Easy comes with a pump peg on the top tube of the frame. HED and Aerospoke composite wheels are available options.

■ ZZIPPERS & STUFF

LWB ASS bikes are the easiest to adapt accessories to. Our favorite Easy Racer option is the Zzip Design Super Zipper fairing. The fairing is a *must* and good for 5% (Ron Bobb/hilly course)-10% gain and possibly up to 20% in ideal conditions on a flat course. The fairing was designed for the Tour Easy at the design's inception, not as an afterthought. The mounts are simple—four plastic bolt/wing nuts. The lower mounts are aluminum clamps that bolt onto the lower fork. The upper mounts are two aluminum pieces that connect the fairing to the Tektro brake levers. The fairing can be removed in less than a minute and rolled up and placed in its shipping box.

Zzip Designs sells T-bracket mounts

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that mount to the handlebar (allowing any brake lever), but requires a Super Zipper with specific upper mounting holes.

A smaller, less effective Zipper covers just the handlebars and is the best choice for loaded tourists and your only choice if you ever plan to use a front rack.

The Gold Rush Replica Body Stocking is available for the Tour Easy. It is best to order this with your bike, as the Zipper bubble is thicker, wider and uses different mounts. These are specially ordered and take a few months to get.

■ THE RIDE

"Born to be wild!" This is the tune that plays in my head every time I climb on board the Tour Easy. This bike even looks fast standing still. The upright handlebar steering is a confidence builder. The Tour Easy is among the easiest of all recumbents to learn to ride, within a matter of a few minutes almost anyone can be cruising in comfort.

The low-slung Tour Easy design feels fast from the moment you climb aboard. Acceleration is excellent, but the best aspect of the Tour Easy is the rider-friendly ergonomics with the ASS, low and natural leg position. The low pedals makes stops, starts and traffic lights easier to handle. The stability the Tour Easy offers while zooming down the road is unequalled.

On our 22.4 mile Kent-Black Diamond test loop, the *Killer* hill is the true high speed stability test. The fast downhill is capable of speeds of 30-40 mph, though very few bikes can handle the off-camber left turn at the bottom combined with sand and gravel over the road. Some SWB and trikes are so downright scary going down

this thing that I don't feel comfortable pedaling. The Tour Easy goes through this better than any other RCN test bike.

The steel Tour Easy frame is quieter than the Gold Rush as the steel resonates differently than aluminum. Also the cheap nylon (derailleur) pulleys in the chain idler are noticeably quieter than the cartridge sealed ones on the Gold Rush. The handling is remarkably more positive and controlled than any other compact, SWB or LWB. The Tour Easy goes through corners like it's on rails.

■ PERFORMANCE

Let's start by saying that 80% of riders will get a benefit from an Easy Racer. And yes, the GRR is faster than the Tour Easy (est. 10%, more on this in our upcoming GRR test). And yes, the fairing really helps. And yes, the body sock helps even more. The Tour Easy went through our test loop with an average time of 75 minutes with a Super Zipper (18 mph average speed) and 79 minutes unfaired (17 mph average speed). The bike is slower than our GRR Black Gold which holds our test course record at 63 minutes (21.5 mph average speed) faired. The Tour Easy feels noticeably faster on the flats and downhills than just about any other recumbent.

Uphills are another matter. The Tour Easy is a decent climber, but it's possible for these bikes to edge into the mid-30 pound range with a rack, fairing, spares, lock, etc. and this all takes its toll up a steep hill. On rolling hills, your flat-land momentum can help you out. On steep granny low climbs you need to muscle your way up. The low BB/pedal position with your feet close to the ground makes climbing easy

Tour Easy SS Specs

Model: LWB, ASS

Price: \$1795

Weight: 29-30 lbs

Wheelbase: 63"-69"

BB height: 13"

Seat height: 20"

Tour Easy SS Options

- Rans seat \$150
- Easy Racer Mesh Back seat \$100
 - 24-speed Grip Shift \$75
 - 24-speed Rapid Fire \$100
- Dual Water bottle cages \$15
- Super Zipper fairing \$279

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and worry free. I sometimes get a feeling that I'm going to fall over on low speed "clipped-in" SWB climbs (especially if the bike is tall). Tour Easy climbing performance is comparable with SWB models once you master the art of ultra-low speed climbing balance. The bike is so long that you can't make switch-back turns to help in your low speed balance. You must develop a new technique. I sway my handlebars left to right quickly, the front wheel actually moves, but the bike continues to track straight. This technique actually works, though takes some practice.

■ PROBLEMS WITH A PERFECT BIKE?

Our 1998 test Tour Easy had a few glitches that we had not dealt with on past Easy Racer test bikes. The most annoying was the kickstand which is standard equipment. The stand is too long, which makes the bike park too upright, thus making it easy to knock over. The problem is that the first time your bike falls over, you could dent your Super Zzipper fairing (I've done it several times), and the first dent hurts. Gardner said that they grind the kick stand

base to fit and ours just needed to be ground down more.

Our Super Zzipper fairing arrived with two quarter sized stretch mark flaws in the bubble. This is the first time we've had a flawed Zzipper. Gardner says 1 in 30 are flawed and 1 in 100 people complain. Easy Racers would replace the fairing had we requested it. The Super Zzipper is by far the best option for this bike and this is the best application for the Super Zzipper.

Our rear wheel went out of true within the first 75 miles. Luckily for us, Joe "Road Warrior" Kochanowski fixed it on the spot, though this would have been an unwanted annoyance for a novice rider, as the rim was rubbing up against the brake pad. Wheels generally need touching up during break in, though this was a bit premature and could have ruined the ride.

We had a difficult time with this Tour Easy's index shifting (the first time ever on an Easy Racer). The problem has to do with the Shimano derailleur spring's compatibility with the Grip Shift, the 11-tooth small cog and the rainy grit and grime of NW winter riding. Solutions include cleaning

and lubing the rear derailleur cable housing, adding a SRAM Bass Worm, Rollamajig or a heavy duty spring. A Shimano Rapid Fire 24-speed option is available. We are planning an article on modern index shifting in RCN#47, the "Homebrew" issue.

Another all-weather complaint we had was the lack of a lower rear fender braze-on. This is even more necessary now that the Tour Easy is offered with the optional Easy Racers Cool Back seat. We had to bridge a lower mount with zip ties, which did work okay, though was out of character on our \$2000 test bike. Easy Racers is looking into a rear fender solution. Riders will get more road dust with the mesh back seat and fenders are a good idea if you ride in the rain or on dusty roads.

■ CONCLUSION

The Easy Racer Tour Easy is the recumbent against which all others are judged and has been for years. New owners can expect the best service, preassembly and a world

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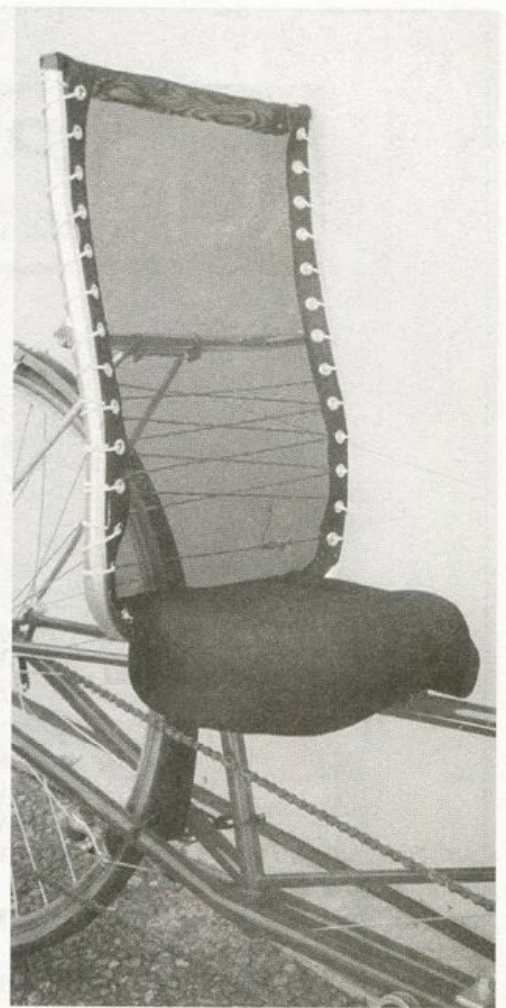
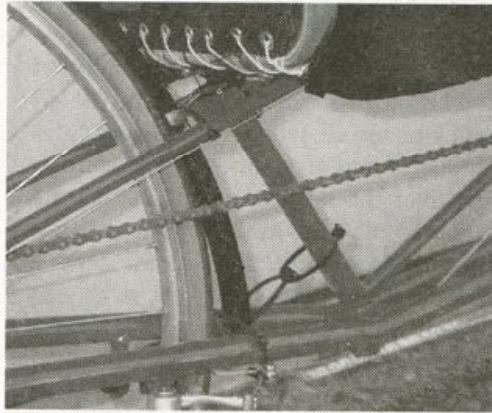
EASY RACER REVIVAL

In our NW group the Tour Easy is the new hot bike. The SWB trend seems to be cooling off, at least locally. I have a Black Gold long term test bike, RCN's Marilyn wants a new Gold Rush "White Gold." Robert, an Alaska Airlines pilot, has a Tour Easy, John has a vintage TE and GRR, we have another new pair of Tour Easy's from Wendell and his wife. Many NW riders are on Easy Racer missions, an Easy Racer revival if you will. Tony Licuanan picked up a used TE really cheap. Then Kent Peterson showed everyone his wife's custom homebuilt light and low TE that he proceeded to comander and start training with it for Cannonball (Seattle-Spokane). Kent said that his SWB with tail and nose fairings "took too much attention over 30 mph." He then mentioned the winter road sand and gusty winds, and wind from Semi-trucks on Snoqualamie pass where he has been training. "The Tour Easy is far more stable at speed," says Kent. Both Tony and Kent have found a performance boost over their SWB and low bikes on the Tour Easy and are working on their own. Cindy Licuanan (Tony's wife) is getting Tony's Tour Easy. The Easy Racer bikes have become very popular locally and we don't even have a local dealer in our county.

The fact of the matter is that no other manufacturer has been able to duplicate the very intuitive, stable, yet responsive handling of an Easy Racer LWB bike. Many have tried, and nobody is close. □

class recumbent bicycle—one that will last for years to come. They don't just say that, they know it. Easy Racers undoubtedly have more owner ridden miles than any other recumbent model or manufacturer and the bikes are more dependable with long lasting durability.

The drawbacks to the Easy Racer bikes are their size, they are long and more difficult to haul around. The benefits are many, but included is a guarantee that you won't be R & D'ing the product for Easy Racers. These bikes were perfected years ago and become more fine tuned as the seasons go by. The updates have always been retrofittable and will make your classic Easy Racer even more desirable. The design is timeless, classic and Easy Racers are in demand and have the best resale of any recumbent, though expect a long wait after you place your order. □



Right: The Easy Racer Cool Back (mesh) prototype seat. The seat now has an upper cross support and zip-ties are used to lace the seat.

Upper Center: This is the Easy Racer Rans seat mounting plate.

Lower Center: We were not excited about what we had to do to fasten a rear fender with the bridged zip-ties.

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By **Ron**
B O B B

Recumbents don't climb hills, riders do. In order for a 'bent to be a fast climber, the rider needs to learn to climb hills fast. I am convinced that the only way to learn to climb is to climb hills. Get out and do it, learn to love the climb. you can become a pretty fast climber simply by always choosing the hilly routes.

I like to climb. The longer, the steeper, the better I like it. No, I'm not into masochism, it's just that in order to ride around hilly Santa Cruz County, where I live, you have to be able to climb to go anywhere. When I first started riding recumbents, I found hills to be formidable barriers that left me sucking big air, while watching wedgies disappear. Since that time, I have learned to get over the hills almost as fast as the wedgies so that downhill advantage is not wasted.

■ WHAT IS POSSIBLE?

Let's take a realistic and candid look at how well you can expect to climb on your 'bent. With practice and training, you will be able to keep up with fit wedgie riders on a 140 mile day with 5000 vertical feet or less of climbing. They will probably out climb you by 10+% on long hills. You can generally make this up on downhills, flats, and into headwinds—if you have a fast recumbent. The truth is that many recumbents are slower than wedgies. On steep uphill (more than 10%) it can be very difficult to keep the wedgies in sight. It's best to save a little gas and catch them later. On rollers (small to medium climbs mixed with descents and short flats) a thoughtfully set up 'bent will show truly awesome performance. You must remember that you are riding a recumbent bicycle, with dramatically different riding and coasting characteristics. It is important to ascend and descend at your own speed and pace. If you ride in a pace line with wedgie bikes, you will find yourself working like a 'Trojan' to keep up on hills and riding your brakes on the downhills. If you ride a recumbent pace it is quite within the realm of possibilities to arrive mid-pack or better on a 140 mile 5000 foot day.

■ CLIMBING TECHNIQUES

Do we spin small gears or do we push

big gears? For as long as I can remember the advice given to new 'bent riders has been to 'spin up the hills.' This may be the easiest way, but it's not the fastest way. Obviously, big gears pushed hard and fast will get you uphill fast. Since even the strongest of us 'bent drivers can't push big gears all day long, the pragmatic answer to the question is...push big gears as long as you can, then take Granny for a ride and spin. Be sure to listen to your body, knees, ankles and hip joints. Big gears are incredibly hard on unconditioned joints.

There is another part of this equation as well. 'Bents generate much more momentum/speed than wedgies, but they lose it fast too. Since you can't stand on the pedals and use your body weight, conserving that forward motion can save you a lot of grunting and groaning. Get your 'bent moving fast and push hard to keep it moving fast. Equip your 'bent with big gears (135 or more gear inches) and learn to pedal (fast) downhill in order to fly up the next hill.

One thing that helps to push these big gears is an efficient riding position. This usually means a fairly closed riding position with the seat back as upright as comfortable (for you). This allows you to push against the seat back with a great deal of force. Lean forward to push the pedals, but be sure to be upright enough to fill your lungs completely when you breath. If you use a fairing (Zzipper type), which you should, the fairing should be at least shoulder height so that the airstream misses your shoulders. I find the Easy Racer Gold Rush Replica to be an ideal bike in this regard as it is easy to set up this way, though there are other similar LWB ASS machines.

Lastly, it is important to know when to back off. If the road goes up over a long 10% grade, the wedgies will drop you. Look at your heart rate monitor, back off and live to fight (or catch up) another day.

■ EQUIPMENT

I have not had the opportunity, time or the inclination to do exhaustive scientific research on equipment, but I can tell you what seems to work best for me. Bear in mind that these recommendations are based on experience and common sense, though there is an element of subjectivity too. I've heard that Lon Haldeman's (two time solo RAAM winner, etc.) priorities for equipment selection are:

1. Comfort
2. Durability
3. Weight

Mine are about the same, with aerodynamics playing a part as well. It is really difficult to push hard or even keep going if you hurt. Make sure everything is comfortable and fits right. Make sure your equipment is strong. When something breaks out on the road, it can take a long time to get rolling again. Many would argue that weight should rank number 1 or 2, but I agree with Lon. You can't get up a hill fast, slow or otherwise, with a broken 150 gram pedal or potato chipped 850 gram racing wheel. Weight is important, but your equipment has to be strong enough to go the distance. My own choice is LWB (long wheel-base) for comfort on rough roads, and because it is fast. It has to have ASS (above seat steering) so I can hang water bottle cages and computer mounts easily. It should have a comfortable seat. I prefer non-mesh so I can push hard against the seat back. On my Gold Rush Replica, everything is stock except the pedals and gearing. I use Shimano SPuD's (clipless) with the rotational cleats. In front I've swapped the stock chainrings for a 24/40/56 T. setup and in back an 11-28 cassette cluster. This gives me a 23-135 gear-inch range. If I feel the need to go faster, I switch to a lighter more aero set of wheels. That's it....no titanium anything.

■ TRAINING

This is one area of astonishment to me. We have all seen it, out of shape 'bent riders who will ride miles out of their way to avoid climbing. As my friend Don Gray is fond of saying, "Recumbents don't climb hills, riders do." In order for a 'bent to be a fast climber, the rider needs to learn to climb hills fast. I am convinced that the only way to learn to climb is to climb hills. Get out and do it, learn to love the climb. you can become a pretty fast climber simply by always choosing the hilly routes. Try to get



Ron Bobb on his Easy Racer Gold Rush Replica Black Gold

up every hill in your middle chainring to build strength. When you are too tired to push the 40 T., drop down to your granny ring and practice that nice smooth spin. Think circles... Speed work helps a lot too. Try to do interval and wind-spring training one or two days per week. Get a heart rate monitor (HRM) and mount it on your handlebars where you can see it. Get a book about working out with a HRM, learn your zones and pay close attention to it while you are riding your bike. I prefer simple HRM's that just give your heart rate. I really don't want some silly alarm beeping to alert the wedgie rider that I'm racing,

when I'm off the scale into the heart attack zone. I'm told that specific weight training helps too. I haven't tried it yet, but I plan to. Also, don't forget to make a point of scheduling adequate recovery time after tough workout days. Learn to recognize the signs of over-training and take time off when you spot them.

So, how are those things on hills? In my opinion, pretty damn good. With the right recumbent, lots of practice and training you can learn to keep the wedgies in sight on ascents and catch and pass them on any other kind of road. □

PERFORMANCE TEST: Tour Easy Vs. Gold Rush Replica

27.5 miles: Average of two runs on each bike, 1800' vertical climbing
No granny climbing, lowest gear used was a 40/28 38.6 gear inches
Bike had 70 oz. full camelback, pump, tools and spares.
Rider wore a heart monitor and maintained 140-145 beats per minute,
77-80% of max heartrate.

GRR/Super Zzipper
17 mph average

GRR
16.2 mph average

Difference with fairing
.8 mph, or about 5%

TOUR EASY/Super Zzipper
16.15 mph average

TOUR EASY
15.6 mph average

Difference with fairing
.55 mph, or about 4%

Ron Bobb's tests are on a course with more climbing, thus the overall speeds are lower than on the RCN test course.

THE 90-SPEED PEUGEOT QUETZAL

Quetzal (kRt-säl) n., A Central American bird (Pharomachrus mocino) that has brilliant bronze-green and red plumage and, in the male, long flowing tail feathers.

By Tony Licuanan

TONYSCAT@webtv.net

"My simple rule of recumbent comfort is as follows:

Go out for a two hour ride and see if your butt hurts. If it hurts, try another bike. If a seat is uncomfortable around a parking lot, the odds are that it will hurt you even more after two hours. I detest poorly designed recumbent seats. Really, why bother? An uncomfortable recumbent seat can really shoot down an otherwise great design"
—Bob Bryant, RCN

It truly is exciting when a mainstream bicycle company not only is interested in recumbents, but actually gets into recumbency. Is this what we are waiting for? The Huffy-ReBike deal actually made some noise in the recumbent world. Still, one can not help but think, now that Peugeot is IN, maybe Trek or Cannondale will be coming in the next year or two?

CUTE

While at a stoplight in downtown Seattle, I overheard a lady on the street say, "Cute...," I thought she was talking about me but she quickly followed it with, "bike..." motioning to the Quetzal as I rode by. Indeed, this recumbent is a good looking bike—but a "babe-magnet,"..wishful thinking on my part! The burgundy color paint on this commuter test bike is quite attractive and first class quality. A large Quetzal bird graphic is emblazoned on the back of the seat. The monobeam frame is clean and simple. The triangulation of the stays offers added strength, and the frame flexes little.

RIDER ERGONOMICS

The rider's view of the road is fantastic. The Quetzal has a very upright seating position and a more closed pedal angle than we are accustomed to seeing in a LWB. The position is a bit extreme for an entry level bike. The huge and wide USS bars are within perfect reach and tilt up or down for rider preference. It easily accepts a side/rear-view mirror, unlike most additional bar-end attachments that you may need to retro-fit on other USS systems.

TOTAL COMFORT!?

This is what the ad says in big bold letters followed by, "If you're in search of total comfort, you should take a look at Quetzal..." Hmm... Comfort on a recumbent starts with a good seat. The Quetzal's seat has been designed by an ergonomics

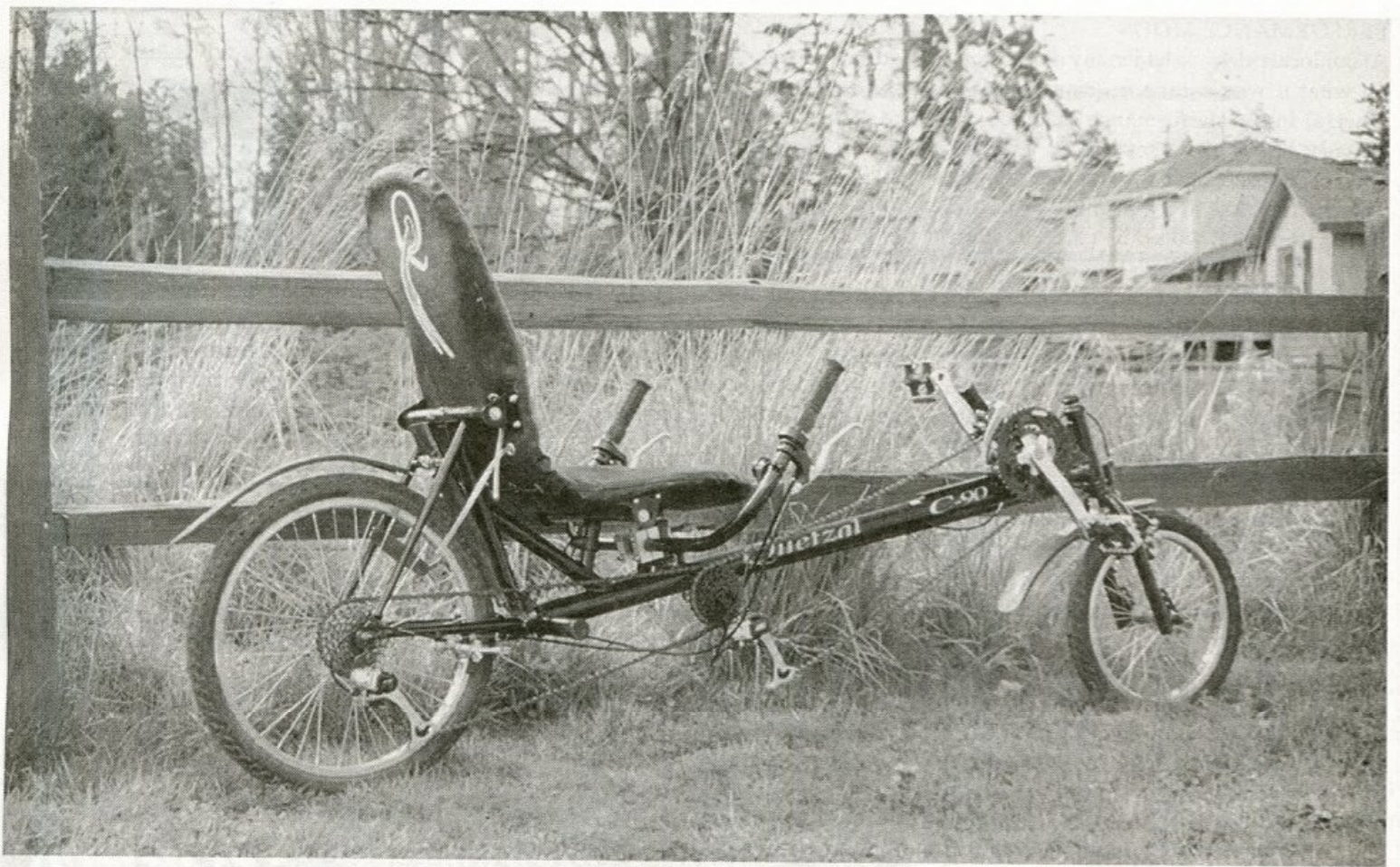
specialist. The seat height is just 17 inches off of the ground and has two air bladders in the back and base of this sling/mesh design. These seem to do little to enhance the comfort. I found blowing into these plastic tubes quite annoying—and the benefit negligible given the upright seat angle that creates the problem in the first place. The seats on my other recumbents give me perfect comfort without having to blow into tubes.

After 4 weeks of riding the Quetzal, nothing had changed and the seat base was still a little hard on me, especially on rides longer than 10 miles. I'm no ergonomics specialist seat designer but let me tell you, my rear end let me know all about it. I've learned quite a lot about seat comfort throughout my own recumbent evolution and the most important thing, in my opinion, is the seat. One might consider the question, does a bad recumbent seat = bad recumbent? The Peugeot seat could use some help, or at least a recline adjustment to take some weight off your rear end or fear the dreaded recumbent butt. Whether this very upright seat will work for you depends solely on the individual rider. Many riders do enjoy upright seat (back) angles and others don't.

ATP Vision, BikeE and especially Rans, continue the never ending quest to better their seats and it shows. Linear has improved theirs quite nicely too. Easy Racers has a new mesh back seat back—and the excellent Rans seat is optional. The Quetzal seat doesn't cut it when compared to these seats.

COMPONENTS

I was quite pleasantly surprised by the performance of the 90-speed mid-drive drivetrain. There is one shifter for the front derailleur, another shifter for the rear derailleur and a third for the mid-drive. It seems like it would be difficult to learn to



The Peugeot/Quetzal C-90 with Apex fenders—RCN

shift, but I was buzzing through all 90 after a few hours. The entry level Shimano drivetrain worked great throughout the test. Even Bob Bryant said that the Quetzal's mid-drive seemed quite dependable. The 90-speed C-90 has an approximate gear range of 23-117.

The Quetzal has cantilever brakes on both front and rear wheels. It stops well and that's all I need on any bike. Cornering fast while on the brakes is predictable on dry surfaces though caution is advised in the rain as the front-end can get loose on you.

The Quetzal has a custom tire set in a 20" x 1.5 (406) and 16 x 1.5" (305) matching 90-110 psi combo. The tires are a nylon all around variety almost semi-knob. The tires are wide enough for the real-life rough commute, while at the same time, have a raised center ridge for better rolling resistance. These unique tires have a raised ridge with little letter "Q's," embedded on the tread.

PERFORMANCE

Cruising on this bike with the ammo that you need, (90 speed) is COOOOL! They even have a 105 speed model, (imagine that!). The largest gear range for total comfort! I didn't think that I would get used to it as fast as I did.

In my opinion, the Quetzal is not a very fast bike, I've been testing this bike for a fair amount of weeks now and can surely say that my commute time is longer. This is most likely because the bike is heavy—42 pounds (with fenders). It also could be the very wide under-seat-steering and upright seating position that make me catch all the wind on my chest.

On one of our NW hilly rides, I came back dead last. Maybe I needed to change the tire pressure, so I pumped it up from 75psi to 110. This only made the ride harsher and less comfortable. The overall speed stayed the same. Riding over railroad tracks, bumps and potholes should be avoided. I took my Vision Metro out for the same commute a day or two later for comparison and thought I was flying. This might not be a fair comparison since my Metro is Zzipper-faired like a Tour Easy. (BTW, my unfaired '97 Tailwind is as fast as my Metro on the same commute.

Quetzal claims their riding position adds to the bike's performance, though I found that it reduced the time I could spend in the saddle.

The Quetzal has a unique 1:2 steering geometry, so that when you move the handlebar 15 degrees, the front wheel will

move 30 degrees. This along with the upright head tube angle and ultra-wide USS bars, made for some initially quick low-speed handling that did take some getting used to.

About 'Bent Mid-Drives

- ▼ They add weight & complexity
- ▼ They add friction to the drivetrain
- ▼ They are not intuitive to use (at least initially)
- ▼ They generally have way too many gears
- ▼ They do not subscribe to KISS (keep it simple, stupid) theory
- ▼ Bike shops don't like to work on them.
- ▼ Dealers don't seem to like to sell them
- ▼ Require more (specialized) maintenance
- ▼ Don't always work as good as they are supposed too.

In saying all of this, there is still room in the market for extreme mid-drive bikes like the Rotators, where they are a perfectly acceptable application, look cool and work reasonably well. A not so great application is the Peugeot, in which the system works fine, it's just not really acceptable for entry level riders who may be drawn to the bike and the weight of the bike far outweighs any possible performance gain. □

PERFORMANCE MODS

At our local rides, we had many discussions on what it would take to transform the Quetzal into a performance machine. It already has a great set of 110 psi tires specifically designed for this recumbent. The Quetzal may fit inside a full or partial fairing, though it would be very wide due to the USS.

The possibility of converting to a 20" front wheel was discussed, though would dramatically change the intended design characteristics and handling of the Quetzal. The switch to a 20" front wheel setup would most likely improve performance, offer bet-

ter tire dependability as well as raise the bottom bracket. The biggest benefit to raising the bottom bracket would be to knock the seat recline angle back a bit to distribute the pressure to the hiney better and make it more comfortable.

As a streamliner, this bike could really go! With 2 cog set (freewheels) mid-drive, it would be easy for anybody to custom tailor their need for that perfect gear set up. Heck if 90-gears isn't enough, switch to a Sachs 3x7 (270 gears) or add a Schlumpf Mountain Drive crank...(180 speeds, or 540 speeds with a 3x7)—I dare you.

BONUS ROUND

The Quetzal's best advantage over other recumbents is its ability to convert to a trike. There's actually a tricycle rear-end that bolts on making this quite the affordable trike. You don't have to buy a different recumbent for different kinds of terrain or weather. On a snowy day, a trike would always out perform any bike. But, on a real bad snowy day, a "Triple-Shot-Grande-Hazelnut-Latte," "would always out perform anything. (Sorry... I live in Seattle).

Best of all Quetzal's price point is \$930 and the bike has excellent availability from the builder, Peugeot of Canada. □

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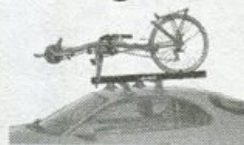
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By **Martin
K r i e g**
'79 Trans AmVet

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Having experienced the one machine which satisfies all of my requirements for the ultimate recumbent, I look forward to watching as Linear leads the charge in this next new wave of recumbent design popularity. I am excited for all the people that will soon get the opportunity to experience this true magic carpet ride.

Linear built it! In 1986, I crossed the US on a state-of-the-art under the seat steered (USS) long wheel base recumbent made by Via Cycles of Houston, Texas. Built by an ex-race car driver named Mark Hajek, this bike offered the best ride I could find anywhere at the time (it still rides like a dream and yet Via sadly is no longer in business). A LWB gave me the kind of comfort I would need for the many thousands of miles that ride ultimately required of me.

On the open road, the Via had no equal. This was just before, of course, the long distance king, the Ryan, became available on the West Coast). When my speaking and media work took me into the cities and towns which became more and more frequent the further my ride took me east, I longed for something more nimble, in and amongst the cars and the trucks and buses of the more urban riding I found myself doing. And as the increased traffic also brought tighter quarters for me and my bike, I also longed for something more compact as I lugged my bike and up and down the elevators and stairs of TV stations, business offices and hotel rooms. With those memories in mind, I was ecstatic when BikeE started the compact explosion back in 1993. I assumed that the only way a traffic-congestion worthy recumbent could ever be made was with the handlebars at chest level.

Even though I love the BikeE's I have been riding over the last four years, I have always longed for the unmatched comfort of the USS design especially when my destination is greater than five miles away. This is so because five miles out on an above the seater means five miles back and if I don't stop, my body always reminds, however gently, that I held my arms in front of me the whole way. I've noticed this small annoyance on any of the above the seat steered bents I've ever tested (which

is most), whether Compact, SWB or LWB. I feel that the ASS design is important for introducing as many people as possible to the recumbent. In time, however, as these new 'Bent Heads advance in experience, they will gain enough confidence in their own sense of surrender (required on a bent) to eventually want the ultimate in comfort, the USS design.

So when, in late 1996, Linear teamed up with the folks from Wheel & Sprocket in Hales Corner, Wisconsin, to build what sounded like my dream bike, I had to try it. In my imagination, the crowds of well wishers returned to cheer me on as I took it down the road for the first time. And yet as I kept riding, something else was different about the Linear experience.

The seat, ah the seat! It totally enveloped me. It begged me to relax. On the Via seat, all that I have to lean against is the heavy Cordura canvas-like fabric that is slung between two bars. On that design, my butt keeps, ever so gradually, sliding forward. As a result, I find myself conscious of my constant need to slide my rear section backwards to just stay on the bike. On the Linear, however, not only do I not have to keep sliding backward to stay on board, but its seat even supports my lower back (it has a special lumbar support). And the generous foam pad upon which I sit acts like a shock absorber to eliminate any disturbance that the road may have to offer. Kowabunga!!

But the extremely comfortable seat on the Linear is not all. On the USS bents of my past I also couldn't use the handlebars to lock my body in place whenever the need for speed arose. Most USS manufacturers, whether SWB or LWB, do not encourage this practice. Steve Hansel, at Linear however, has assured me repeatedly that I can yank on the bars all I want. I have found that by using my arms to clamp myself into the bike whether on the above



The author, Martin Krieg, on his Linear Compact Mk. III. Martin has written a book, "Awake Again" and has a web site at <http://www.BikeRoute.com> where you can find info on recumbents, Martin's Bicycle Greenway, his upcoming 'bent TransAm in 2000, and it's the home for the Alliance for a Paving Moratorium—photo by Kurt Eller

the seat or under the seat steered design, I move quicker on the machine. What this technique seems to do is trim away any of the wasted energy that is lost in a cushy seat or soft frame while also using the strong muscles of the upper back to translate all of one's pedaling efforts into straight ahead motion.

While this Linear certainly will not produce the kind of ever increasing speed one can find on something like a Gold Rush, Rotator or Lightning, it responds with power bursts I've not known many recumbents to possess. Even though you cannot expect the kind of speed that just keeps building until you reel in that wedgie rider who had the gall to pass you, such cyclists likely will not blow by you in the first place when you are on the Linear Compact. Like my BikeE with the handlebars in the lowest position (which unlike the Linear, additionally compromises the ASS level of comfort I talked about earlier), when I'm on the Linear, the upright crowd is always surprised when their speed attacks find me keeping almost instant pace with them. In

addition, instead of waiting for me to hit my first hill where they can just blow by me, those on conventional speed machines are astonished to watch me use this explosive power to also shred whatever hills may find themselves in my way. Once I got the right frame size, I was able to power straight up the same 26% ascent that only those fittest from amongst the local upright crowd will even attempt.

For the kind of riding I do, which is usually within a ten mile radius with lots of up and down here in Santa Cruz, I am pleased with the overall speed of the Linear CLWB. However, on a hilly twenty mile training ride that I do regularly during the winter (unlike the summer when I get my mileage just as a part of my daily riding, I use this stretch during breaks in the weather to get my time on the road), I finished five minutes faster than I ever have on any of the bents I have taken on this "course." Here during the summer, the riding may be faster for some reason, but I did find that time savings impressive.

Even though on the Linear Compact, I

am on a respectable performance machine, another side benefit of its USS design is that I look harmless. With my body in the defenseless position, car drivers as well as passers-by seem humored by me (one person even recently commented that I look like I'm being pushed along in a baby stroller). It makes them smile. This reaction translates into safer passage when I ride as well as an easier opportunity to meet new people once I then stop.

In 1986 when I TransAm'ed on my USS Via, I had written this phenomenon off to the novelty of my doing it on a bent. The eleven years of study in between, however, have shown me that different bents get different reactions. While trikes and under the seaters seem to attract sympathy (I'm not proud, I just want safe passage in and amongst the many tons of steel with which I share the road), the fighting position of the above the seat steered variety gets me a more indifferent response. While people can't help but smile when they see me on a USS recumbent, in this case the Linear, it's almost as if those I encounter when I'm on

an ASS don't want to acknowledge the fact that I've found a better way to do it on two wheels. So instead of being a threat to how those along the way think a person should ride a bike, the Linear totally disarms anyone tempted to question the seriousness of my efforts.

The curiosity factor also surprises me. I'm not sure if it's just that it's the latest greatest bent in this section of the woods, but it does seem to elicit more attention than any bent I have ever ridden around here. The BikeE, initially drew the crowds when I first started riding it down here in Santa Cruz, and it still gets a fair amount of attention, but the Linear also seems to draw in the more discerning onlooker.

With regard to this last thought, recumbents must just be reaching the critical point of mass acceptance. This must be so, because serious cyclists, for example, seemed to stay as far away from my USS state-of-the-art, at the time, Via Cycles recumbent as they could. On the Linear, however, I hear 'cool bike' and 'whoa' from cyclists and non-cyclists, serious or non, almost every time I take it out. Wherever I leave it parked, I can often expect to return

to one or a few people studying its lines as I happily brace myself for the inevitable plethora of questions.

I also like the way it works my body. It seems to be reawakening the muscles that made my 1986 crossing possible as I am told my legs look nearly as 'buffed' as they looked back then. Somehow this stands to reason, as the USS design directly resembles the leg pressing position found in most workout facilities.

While I like the better workout the Linear gets me, it's the most comfortable bent I've experienced, it exceeds my expectations in its on the road performance, especially around town, and it seems to increase my popularity factor, etc., I still needed that bike I could go up and down stairs with and get in and out of the elevators and doorways of congested urban America. Well, the more I spend time with the Linear, the more ways I find that my dream really has come true.

The first place I began was finding its sweet spot. I found that if I grabbed hold of the bike in front of the seat on the bracket that holds it on to the frame that I could carry the bike with one hand wherever I

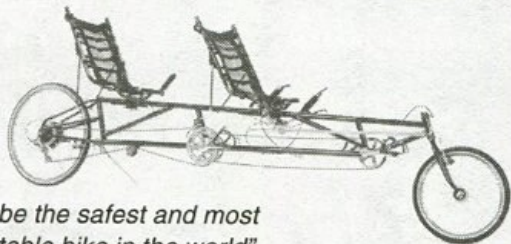
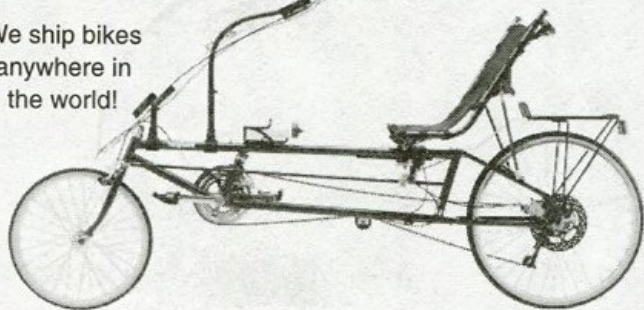
wanted to take it. In this way the heavier back end doesn't come up first making it impossible to carry the bike.

I also needed a way to do bat turns and move the bike about without having to dismount. I figured that one out too. If when you grab on to the handlebars to lift your Linear Compact over a curb, up to a porch landing or to change direction with a full 360, you also twist backwards on them (you can also arch your bike while holding firmly on the grips), the front end will lift high enough for you to make this happen as well. The more weight you have on the back end, the harder you will have to twist, but with practice, I found these all to be easily accomplished tasks.

Having experienced the one machine which satisfies all of my requirements for the ultimate recumbent, I look forward to watching as Linear leads the charge in this next new wave of recumbent design popularity. I am excited for all the people that will soon get the opportunity to experience this true magic carpet ride. Thank you Linear and thank you Wheel & Sprocket for this most awesome breakthrough machine. Wow! □

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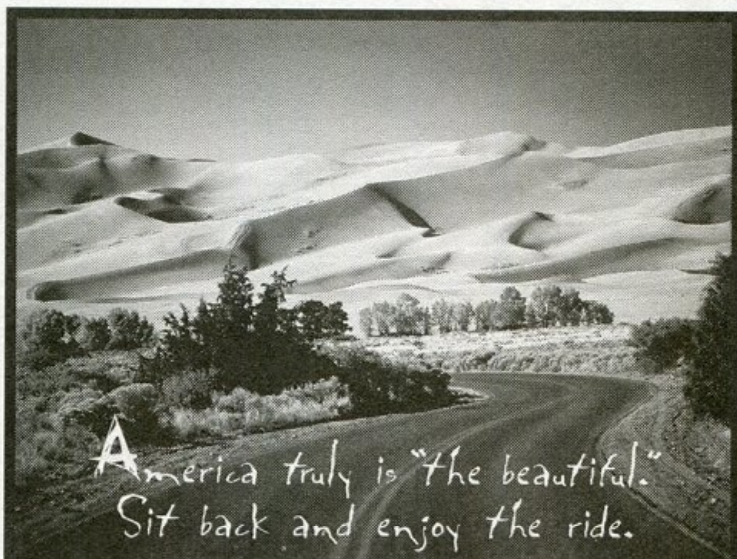
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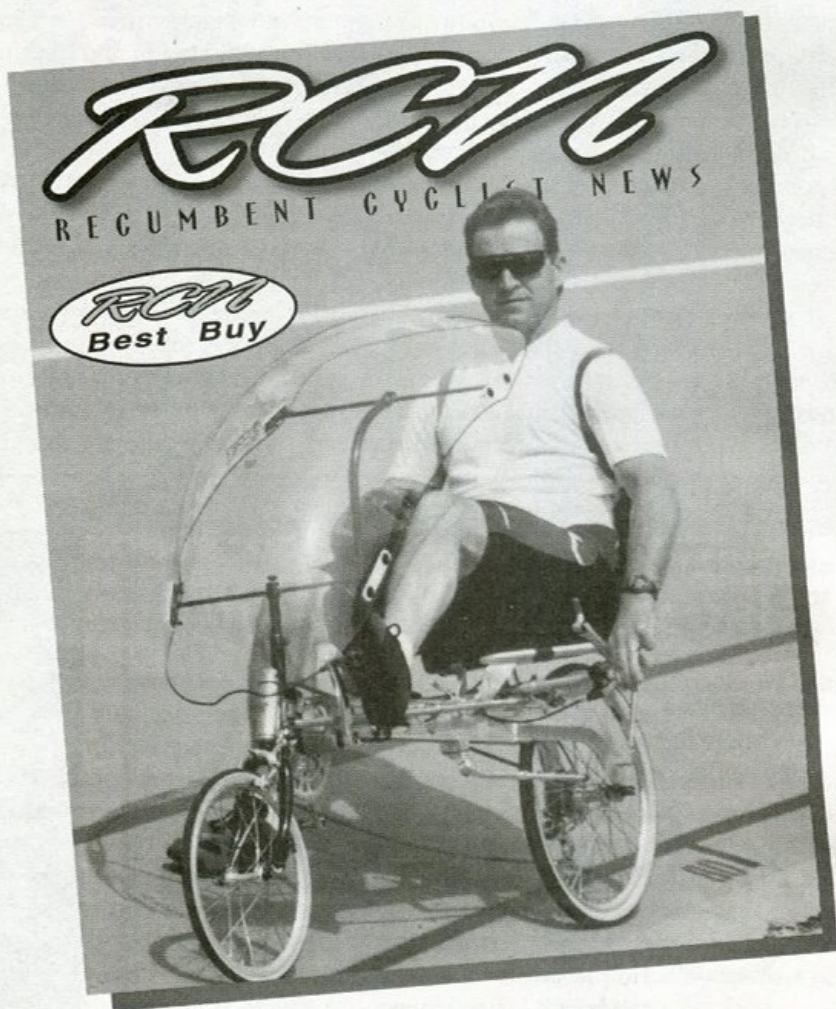
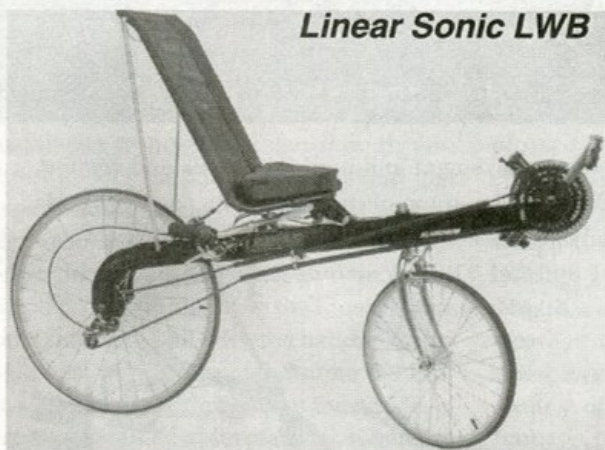
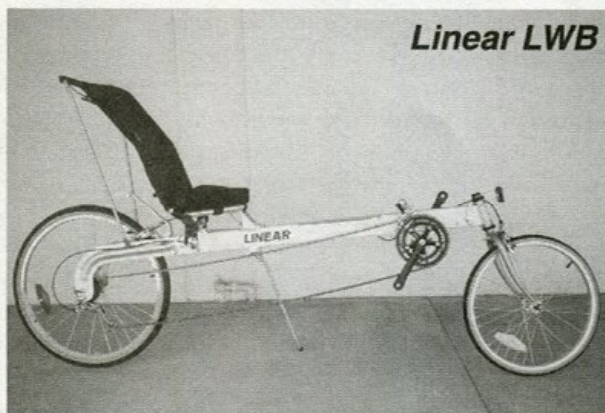


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**By Robert
J. Bryant**

LWB recumbents are the most versatile recumbent models, designed to tour, yet they can be used for anything. LWB models can be equally at home on a fast century as they would be crossing the great plains on a solo tour.

LWB are the most versatile recumbent models. They are designed to tour, yet they can be used for any purpose. LWB models can be equally at home on a fast century as they would be crossing the great plains on a solo tour. Some models are nearly unbeatable performers. The Gold Rush racer now rests in the Smithsonian for winning the DuPont Prize and breaking 65 mph with Fast Freddy Markham at the helm. They are extremely stable even at downright scary speeds! The bikes are a joy to own and ride and many are the classics of the recumbent world. They are proven and dialed—trouble free for thousands of miles—Easy Racer, Ryan Vanguard, Rans Stratus and others. The only real drawback is the size of the bike—which is not an issue until you attempt to mount one on a car rack. It can be done, but it takes careful planning—like you would for a tandem.

LWB recumbents can be used for fitness, touring, commuting and recreational riding. They take far less attention to the road, thus their primary designation as ultimate touring bikes. Tourists can use rear racks, front racks, handlebar or seat bags and tow trailers with most models (check with your manufacturer/dealer for recommended cargo carrying methods).

LWB (Long Wheelbase) 60"-71+." LWB models have the front wheel ahead of the crankset. They are very smooth, stable, fast and inspire confidence in first-time riders. There is no heel interference with the LWB and the drivetrains are relatively straightforward. For some, they are less maneuverable than their SWB relatives but generally more stable at speed. LWB recumbents are usually outfitted with the more standard 26" or 700c rear wheels and 20" BMX size front wheels, though you will still find a few with 16" front wheels.

Some of the negative features of a LWB can be tight maneuvering on a busy city

street or narrow bike trail. The LWB bikes are usually heavier than SWB models, although there are some exceptions.

In the LWB lineup you will find dedicated touring bikes with fat tires and ASS or USS. There are also high performance machines such as the legendary Gold Rush Replica and the hot rod Rotator Pursuit/Interceptor, so don't get the idea long bikes are lame. In fact, most LWB builders, LWB riders and now RCN's Zach Kaplan will argue that the SWB machines ARE NOT better climbers. And they are quick to point out the quick handling of the SWB. We have found that LWB performance models are absolutely the most stable at speed.

■ LWB HANDLING

The best handling comes from LWB ASS bikes that have a bit of tiller effect such as the Easy Racer and Rans Stratus. The Rans Gliss style steering has less tiller, but can also feel a bit light in the front end as you speed upwards of 30 mph.

USS models must use a steering linkage. This adds weight and complexity. The steering rod is something that should be checked every time you ride. If it fails—you could lose your steering. LWB USS bikes have a smooth, easy, neutral and unique auto-pilot feel to them.

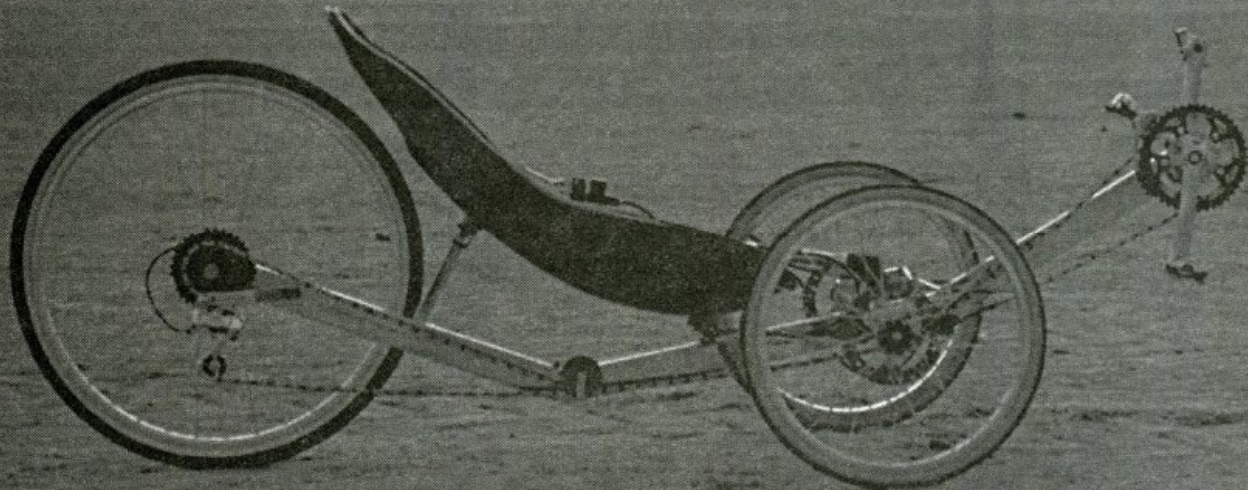
■ LWB PERFORMANCE

Look for models designed with performance in mind like those from Easy Racer, Rans and Rotator. These more aggressive designs are generally ASS models, though they can offer equal comfort for touring or commuting as well. USS bikes are more passive, less aerodynamic and designed for comfortable touring, not necessarily speed. Fairings can help compensate for the increased frontal area of the USS.

LWB fairings work better (simpler mounts) and are less expensive than their SWB counterparts. They offer up to a 10%

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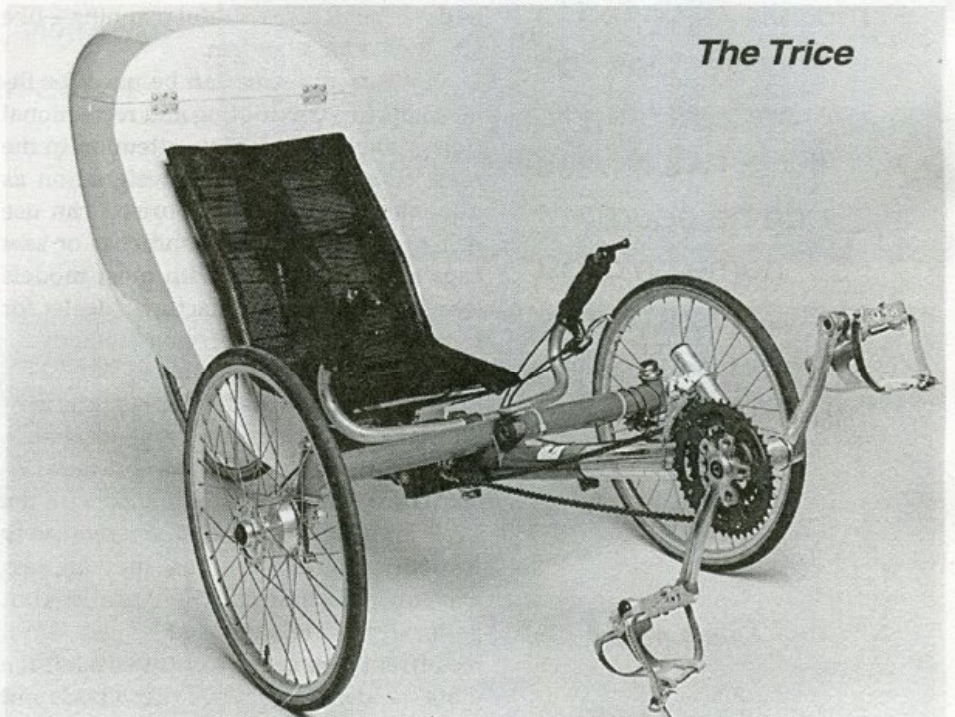
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speed benefit. The king of the hill performance-wise is the Easy Racer Gold Rush Replica. This bike is fast and stable—for nearly any rider. Add a Super Zzipper or a body stocking and you might as well change your name to Fast Freddy, or Fast Steve, or Fast Tony, Fast Kent, or Fast Matt. The trick to the Gold Rush Replica is that it does not require training, a test or really any advanced skills. For those on a budget, a coroplast tail box can add up to 10% (Kent Peterson says 1.5 mph) which could be as much as a front fairing. Super Zzipper front fairings are available for most LWB ASS and USS models. Rans has a prototype for the Gliss/Tailwind Zzipper.

■ LWB WHEELS

Skinny tires work better on LWB models than on SWB due to the weight distribution and lighter front wheel loading, however, this is not an overwhelming endorsement. They are best for light riders who ride on smooth pavement. Consider both your weight and where you ride before you go with skinny/high pressure tires. LWB with skinny tires get fewer flat tires than on a SWB. This is, again, most likely due to the lighter load on the front end. Fat tires are still better for real world use and can perform nearly as well with a proper tire choice. They will also improve rider comfort and safety.

The 406mm BMX sized front wheel is the standard, though some performance oriented designs use the skinnier, taller 451mm. There are really only two tires available for this rim, the IRC Roadlite EX 1-1/8" and the Primo Comet 1-3/8". The Roadlite is a tire I'd never run with on a SWB, but works great on the front end of a Gold Rush Replica. Gardner Martin says if they'd build a 30" rear wheel, he'd use it.

LWB models come equipped mainly with 20" front wheels. 20" is the standard, offering better handling, tire durability, tire choice and stability. 16" front wheels work best for shorter riders, though expect quicker handling, less performance and shorter tire life.

■ LWB DRIVETRAINS

They work better than their SWB counterparts. You don't need idlers (as much), nor do LWB require the steeper chain angles. Some models don't have idlers and the chains flop around a bit, such as the Linear LWB. A little known option is a chain idler that hangs off the I-beam frame. The Ryan skate wheel works well and picks up the slack. The Easy Racer spring loaded idler

looks similar to a rear derailleur cage which allows for super-wide gearing given the nearly 4" of chain that it idles.

■ LWB FRAMES

A fully triangulated frame is the best, second would be a frame with an excellent warranty. Fully triangulated LWB frames are plentiful as the classic designs are all LWB machines: Easy Racer Tour Easy, Rans Stratus and Ryan Vanguard. Monotube frames are acceptable though you can count on more flex than their SWB counterparts. A flexible frame will rob power and make the bike less controllable at speed.

■ LWB SEATS

Most of the popular LWB seats are very good. We have rated the Rans tops in SWB. The seat works excellent on Compacts and LWB too, though the seat won't recline as far, especially on the Stratus. The Rans seat is known for its ergonomic mesh back and base that works great for long ride comfort.

Easy Racers offers the best composite shell/foam/cover seat made, though compared to mesh-type seats, the seat-base comfort is lacking after a few hours, though offers fantastic performance. For '98, Easy Racers has unveiled their own "Cool Back" mesh back/composite-base seat that is now optional on all models. This is the best seat we've ever tried on an Easy Racer. It will work especially well for large(r) riders and those in warmer climates (see test).

Vision's seat on the LWB is extremely comfortable. The LWB Vision has wonderful 0-pressure point comfort that works especially well due to the laid back (adjustable) seat recline and higher bottom bracket of this LWB. This often overlooked model is affordable, available and is a great ride.

Ryan's seat is a full sling/mesh that is laid way back in one of the most open-riding positions known to 'bent kind. The seat is very breathable and comfy, however, be forewarned about the seat horn that props up the forward edge of the seat mesh on the base. I've been blowing my horn off about it for years and Dick says I'm in a small minority of riders who notice this.

The one drawback to the mesh base is what can best be described as "squeezed cheeks." When our rear end sinks into the mesh hammock—it pinches our cheeks.

Ride many LWB bikes and give them a fair shake. Even though they are a bit more difficult to track down, a LWB USS tourer or LWB ASS performance machine can offer advantages that a SWB or Compact just cannot come close to. □

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- ▲ Smooth predictable handling
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- ▼ LWB monotube frames FLEX
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- ▼ Hill climbing may suffer
- ▼ Difficult low speed handling (length)
- ▼ Difficult to store
- ▼ Difficult to transport
- ▼ Most popular models difficult to test ride (sold mfr. direct only)

LWB ASS or USS?

UNDERSEAT STEERING—The handlebars are placed underneath the seat and are connected to the front fork with a steering rod or directly to the fork. When considering performance, underseat steering is less aerodynamic than most ASS, but can be more comfortable for long rides. Underseat steering can also be harder for novices to learn; however, after a short time, the balance becomes second nature. In saying this, I've never felt as direct a connection with my USS bike as I do with ASS. This equates to my performance as well. I am more aggressive with ASS, and less so with USS. USS riders have a more difficult time navigating through bike trail dividers and in traffic due to the bar width.

Handlebar reach can be an issue for some riders on some models. A few manufacturers have bar-end extensions which work to resolve this problem. Bar-end shifters help. The best way to determine if you are an underseat rider is to determine whether you are a passive (touring) or aggressive (high performance) cyclist.

ABOVE-SEAT STEERING—This has been the standard bicycle steering method for over 100 years. It looks more 'normal' and acceptable (if that's possible). ASS is more aerodynamic and all of the serious performance machines use it. ASS offers better control, is easier to learn to ride with and control ergonomics are near perfect. You can easily mount accessories that are more difficult to mount on USS bikes.

Riders will get accustomed to ASS quicker than to underseat steering. The major benefit to this setup is that it needs no special parts such as steering rods, rod-bearings, and cables. SWB models with ASS offer ergonomic controls placed close to your body and the best models have strut recline adjustment. A 90 degree bend in your arm/forearm with ASS bars just clearing your knees and the bars back as far as you feel comfortable ("begging Hamster" position). Be aware that some SWB models have roomy cockpits while others (wheelbases less than 40") may seem claustrophobic and tight. □

■ LWB MACHINES

The LWB recumbents are, for the most part, seasoned and dialed-in machines that have been in production for many years with all of the bugs worked out and yearly refinements to make them even better.

The LWB fleet differs dramatically and crosses the spectrum of bike types:

The veteran performance LWB builder is **Easy Racers** with their Gold Rush Replica (fastest 'bent we've tested). Easy Racers has race records too. Easy Racers are among the most consistently great recumbents we have the pleasure of testing.

RANS achieving critical acclaim for their SWB bikes, has been a builder of the popular LWB "Stratus" ASS since 1974!

The veteran LWB USS touring manufacturer is **Dick Ryan** with his Vanguard.

Rotator is a smaller, performance specialty builder of ultra-low and unique LWB high-performance bikes with hpv racing and solar electric victories.

The only true folding 'bent is the LWB aluminum **Linear**.

Vision builds a SWB with a LWB option—and now with dual suspension. Visions are easy to find in dealers across the USA and the bikes are modular.

Infinity is a name that has been around for years in affordable aluminum LWB USS. Now marketed by "Doc" at Bike Emporium in Scottsdale, Arizona.

A LWB newcomer **Human Powered Machines** offers an updated Gary Hale "Runner" (ancient history) rebadged as the "Roadster," a dual 26" Easy Racer wannabe, well kind of. We're jazzed about this one!

The **ReBike 2600**, what more could you ask for in an entry level bike for \$459.

The new kid on the block is **Peugeot/Quetzal**, though European Peugeot did introduce a recumbent over 50 years ago!

■ Easy Racers, Inc.

What can we say. Others have tried to get to this position of product refinement and respect in the industry and no others have made it (a few are close). The Tour Easy and Gold Rush Replica are two of the most well revered recumbents in the history of recumbent bicycles. They are fast, stable, handle great, reliable for thousands of miles and besides all that the chopper-like look is very cool.

The LWB bikes are nearly bulletproof, offer three different seats to please nearly



Bob Bryant cruising in Gliss bliss on the main drag of Gunnison, Colorado. Oops, no helmet.—Janice Schlitter (stoking a Screamer tandem)

every rider and who can argue with the Easy Racer performance.

Easy Racers bumped the Tour Easy price up \$200 this year though the bike is still a pretty good bargain. An exclusive new upscale model called the "White Gold" will be available at a premium price through the Sharper Image Catalog. Also new for '98 is the Easy Racers mesh back touring seat which is fantastic and the most comfy Easy Racer seat yet!

The coolest thing about the Gold Rush Replica (and often the Tour Easy) is that most new owners will see an immediate performance increase. This unequalled performance and reliability does not come at the price of tricky handling or a company with an attitude. Gardner Martin and crew builds some of the finest 'bents on the planet. Look for a Gold Rush Replica test forthcoming.

Delivery Time—12 weeks.

◆ **Road Tests:** RCN#21 GRR; RCN#28 EZ1; RCN#35 EZ1 vs. BikeE; RCN#45 Tour Easy.

■ Human Powered Machines

Jan Vander Tuin's HPM is associated with Eugene Bicycle Works (EBW) and the Center for Appropriate Transportation (CAT),

which is HPM's retail outlet. At CAT Jan is just as involved with teaching the Eugene area teenagers how to work on bikes, as he is building his own bikes.

Jan reports that he is working on a new updated version of the Gary Hale designed, Hale Runner (ancient history), a dual 26" wheeled LWB/ASS, now called the "Roadster." This is a Tour Easy-like model with a sling/mesh (Ryan/HPM trike-like seat) for under \$1200. We're very excited about this recumbent and have ordered a test bike. Jan is toying with the idea of building a Hale Triple that looks a bit like a Tour Easy tandem. Jan custom builds recumbents and can turn your sketch into a bike.

■ Infinity

Ace Tool, Infinity and the loyal fans of the square tube aluminum bike take heed. The bike is still being built and is available from "Doc" and the gang at Bike Emporium, Scottsdale, AZ's recumbent specialist.

Not much has changed over the years since we've reviewed it (RCN#22). The frame is the same square-tube structural, non-heat-treated aluminum and the seat is the same aluminum-framed, mesh back/base seat that has no seat stays. Everything

is still built in Mooresville, Indiana by Ace Tool, though sold through Bike Emporium.

The USS is controlled very simply by dual aircraft cables between the fork and bars. The fittings are pretty generic and require monitoring of the cable tighteners.

The drivetrain of the Infinity has been freshened up, though is still a bit dated, and the price has increased to \$1199.

◆ **Road Tests:** RCN#22

■ Linear

Linear recumbent bicycles are very similar in spec/build, whether it be SWB, Compact or LWB. The LWB is the flagship of the line. It has been refined over the past several years to a very dialed machine. The 26" rear wheel/20" 406mm wheel combo is the best ever. The braking is still just adequate with the BMX calipers. The drivetrain is a 21-speed based upon a Sachs 3x7. Add a front derailleur post (optional) and you can have a 63-spd. Linear. The component spec has always been fair, and changes frequently due to component availability. We did hear that many '98 bikes are going out as 21-speeds with front derailleurs due to a Sachs 3x7 shortage at Linear.

The LWB has a high back seat with an optional lumbar bend (we like the straight back) and adjustable seat stays (recommended). The Linear LWB folds at the rear stays and the front head tube. A frame bag is available to make storage a breeze. Without a bag to put the folded bike in, the sharp edges, and hinges sometimes bite back. This is currently the most compactible LWB available. Linear has been in the business of building LWB 'bents for many years.

Delivery Time—4 weeks.

◆ **Road Tests:** RCN#45 (this issue), RCN#5 & 24 Linear LWB; RCN#40 Compact.

■ Peugeot

The Peugeot/Quetzal line of LWB recumbents are very unique. They have a monobeam frame of CroMo or aluminum and a 20"/16" wheel combo. The drivetrains are mid-drives, meaning the bikes have two rear derailleurs (one at the rear wheel and one amidships) along with a front derailleur. There are three shifters to click through the 90-105 gears.

The bars are wide USS with built-in extensions with the controls facing open-end up. There are three shifters, and the coordinating all of the gears, derailleurs and shifters takes some patience. The mid-drive works pretty well, though we'd rather see a Sachs 3x7. The 90-105 speeds is over-kill and unnecessary on this bike.

The Peugeot seat is extremely upright in position and has little adjustment. The seat can be pretty comfy, especially with full pressure in the back/base air bags, however, the upright seat angle and closed position (loading your hiney) make the dreaded "recumbent butt" a distinct possibility. Our NW testers all noticed this.

The quality of the Peugeot is surprisingly good, though the design is odd, almost as though they were not aware of other recumbents. Procycle Canada/Peugeot is not the same Peugeot that built your college 10-spd. This is a Canadian company that builds medium range bikes, among them—the Quetzal recumbent.

The C-90 (90-spd.) and C-105 (105-spd.) are the CroMo models that have sliding bottom brackets. These bikes work well, though the CroMo frames make the bike heavy (40+ pounds!). The aluminum T-105 is their aluminum flagship. This bike has a telescoping frame and a cut-and-set steering rod (you have one chance to get it right). It's a very personal bike that offers no rider adjustment once set to your body.

The Peugeot's offer a unique 90-105-speed drivetrain that works as follows: 6 or 7 speeds (at the rear wheel shifted by rear derailleur) x 3 (triple crank) x 5 (mid-drive shifted by a rear derailleur). It works and shifts surprisingly well, but for such a recreational bike, a 3x7 hub would have been a better choice—lighter, simpler and much easier to use.

Dealing with the Peugeot has not as easy as it should be. There is a USA sales office and a few dealers, but for our purposes, getting through to the right people in the Canadian office has been difficult. The CroMo LWB models are a good value, though have yet to become very popular with enthusiasts.

Delivery Time—Available now.

◆ **Road Tests:** RCN#45

■ Rans

Rans is building the most modern LWB designs in the recumbent world. The Gliss is the LWB with rear suspension and a unique frame design that gets the bottom bracket higher than the traditional LWB (Stratus), and the seat just slightly higher than that—making for near perfect ergonomics for the rider. The CroMo stays come out to the bottom bracket, but *do not* connect to the head tube—the bike is not 100% triangulated. This brief gap in the frame triangulation along with the built in flex of the T-bar allows for some passive suspension up front. The cush of the Cane Creek

AD5 shock (same as the Vivo and BikeE) is world class. Riders like the LWB ASS feel. The downside to the modern Gliss is that the bike gets a bit light in the front end during fast downhill speeds. The classic Stratus or Easy Racers still have the upper hand in fast handling. However, the Gliss has them all beat for overall ride comfort.

The Stratus is a fantastic LWB ASS recumbent. It's about \$200 cheaper than a Tour Easy, has a wet-spray paint job, and ESP components and the Rans seat is stock, not a costly option. The problem is that the

RCN AWARDS LWB

For a complete listing of 1998 Editor's Choice Awards, please see RCN#43 Jan/Feb '98

▲ BEST LWB 'Bent—1998 (best in class):

The Easy Racer Tour Easy EX with Rans seat option. The Tour Easy is now available with the standard Easy Racer seat, Easy Racer mesh back seat and Rans seat. LATE UPDATE: Just as we went to press with this award (RCN#43 2/98), Easy Racers raised their price by \$200 which makes the similar Rans Stratus a better buy.

▲ **BEST LWB USS 'Bent—1998:** *The Ryan Vanguard. We like the Linear LWB 3x7 too.*

▲ **BEST LWB ASS 'Bent—1998:** *The Easy Racer Tour Easy. The Rans Stratus is an extremely close second with better components, though the Easy Racers stiff frame, refined steering geometry and handling are unequalled. The Rans Gliss is a worthy contender as well. The Tailwind is the accidental LWB. For \$950 it will give riders most of what they are looking for—in a compact size.*

▲ **BEST LWB Suspended 'Bent—1998:** *The Rans Gliss doesn't have a front shock, but it's an awesome bike and our choice.*

▲ **BEST LWB Touring 'Bent—1998:** *The Angletech/Rans Gliss GL63 models. The Gliss is very popular with folks who like LWB ASS without much steering tiller-feel.*

▲ **BEST LWB High-Performance 'Bent—1998:** *The Easy Racer Gold Rush Replica "Black Gold." It holds the record of 63-minutes on our 22.4 mile test course!*

▲ OTHER BIKES TO CHECK OUT:

The Rans Tailwind is our pick for best cross-over bike. It's kind of a Compact, but really a LWB—and undoubtedly the best deal in the LWB world. See RCN#42 and #43 for Tailwind info. □



The \$1200 dual 26" wheeled Human Powered Machines "Roadster" inspired by the Hale Runner of the early 1980's

Stratus is rare for '98. The fully triangulated "X" frame in three frame sizes has the perfect mix of comfort and stiffness that equates to a very smooth ride. The 26/20" wheel combo is ideal. The only thing better is Angletech's wide-range touring Nultegra version.

The Rans Tailwind with a wheelbase of 60.5" just edges into the LWB category. We found this out as the Compact BG was about to go to press. The Tailwind is like a 'bent without a design category. As a Compact, it's the best handling and most serious bike of the bunch. As a LWB, it's compact, handles great, ten inches shorter than the Gliss, yet it feels sporty. The Tailwind was as fast as an unfaired Tour Easy, Rocket, Vivo, Haluzak Hybrid Race and others on our test loop—making it nearly a perfect 'bent at \$995. The Gliss and Tailwind are both one-size-fits-all frames that work best for riders in the mid-upper 5' height range for optimum weight distribution.

T-bars are finding their way onto Stratus through some dealers. A T-bar Zzipper is on its way, though, again, some dealers have made their own mounts (Angle Lake Cycle in Seattle Tel. 206/878-7457).

The Rans bikes are so well revered by enthusiasts that demand has far out-

weighed availability. Rans is feverishly working to ramp up. For now, call dealers. **Delivery Time**—14+ weeks, call dealers.

◆ **Road Tests:** RCN#12 Stratus; RCN#23 V-Rex; RCN#25 V-Rex; RCN#39 Stratus is sold out. An article reprint \$3; RCN#37 (Rocket); RCN#42 V-Rex Slumgullian & Rans Tailwind; RCN#44 V-Rex.

■ ReBike

How can you go wrong with a 'bent that costs just \$329? The original Compact ReBike 606 6-speed is the best bargain in the 'bent biz. The LWB model is the 2600, similar to the 606, but it has a 26" rear wheel and 18-speeds. The good news is that ReBikes look cool because they are painted bright colors, have a John Deere-type seat base with padded backrest. All that chrome shines up nice. ReBikes are readily available, too. The bad news is that the chrome and steel is heavy and the bikes weigh in the mid 40-pound range.

The 2600 has a better gearing range, though we still like the 606 and 818 models that have 20" drive wheels. This is the original ReBike design.

ReBike's are now built in Ohio, USA by Huffy. You can order from a dealer or the ReBike website. You can even hire a

mechanic to come out and set up your ReBike. ReBike is quite possibly the largest recumbent manufacturer in the world, with a speculation of sales in the thousands. Unfortunately, ReBike hasn't seem interested in an RCN test since 1993.

If beach, bike-trail cruising or around the neighborhood are for you, the ReBike is awesome just the way it is, though don't expect to keep up with the local club riders or do a ride across the USA on one.

◆ **Road Tests:** RCN#15 (1993).

■ Rotator

Steve Delaire of Rotator Bicycles fabricates the LWB Rotator Pursuit frame along side the Lightning Stealth and Rotator Tiger SWB frames. The Pursuit is Steve's pride and joy. It's what he rides and the technology that he believes in. For 1998, the Pursuit frame has been updated and refined. The mainframe braze joint/bend just ahead of the bottom bracket has been removed and the main tube is now one piece. The bottom bracket is now brazed below the main tube. Delaire has also tweaked the fork/steering geometry to tame the dramatic wheel flop/tiller steering.

The drivetrain is the same Sachs setup with a mid-drive. It shifts pretty well,



The \$459 ReBike 2600 18-speed



'97 Easy Racer GRR Black Gold with optional HED wheels. The Boone crank has been replaced with a Shimano Ultegra Road Triple this year

though most owners should consider learning to work on the bikes themselves.

The Pursuit is a neat bike and Delaire breaks all of the LWB design rules and does it his way. The '98 bikes have improved since our last test and are looking good.

The Rotator's are not for the faint of heart. These are cutting edge low and extreme performance bikes (though Steve's

mom rides one). The bikes have a raw, gutsy racing heritage and Rotator's have a design all their own. We would like to see some component tweaks for this very cool and low performance machine and we're dying to test the updated bikes.

◆ Road Tests: RCN#34 Lightning Stealth ; RCN#37 Pursuit (reprint only).

■ Ryan Recumbents

Dick Ryan is the "Godfather" of modern recumbency. Dick and son Karl build the bikes out of their Boston shop. The LWB Vanguard is a LWB kinetic work of art. Dick has very high standards, which makes the Vanguard a dialed and trouble free machine ready to circumnavigate the globe.

Ryan and company have slightly repo-

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moste snope 1/2 page



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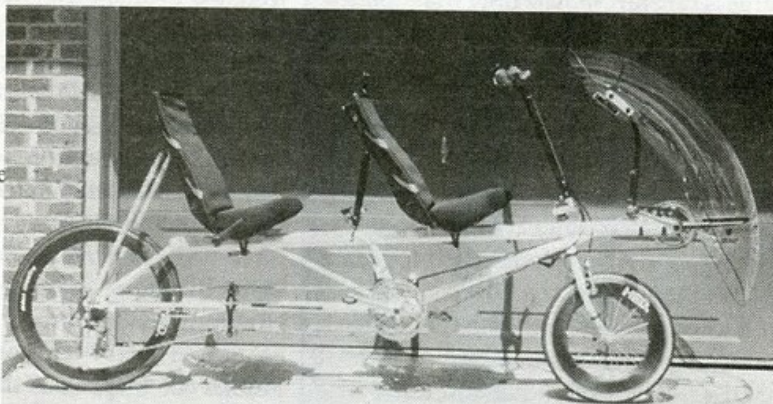


Photo courtesy of Roy Ryall

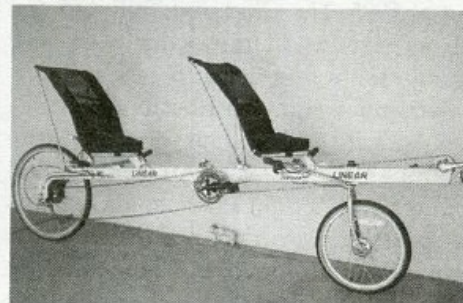
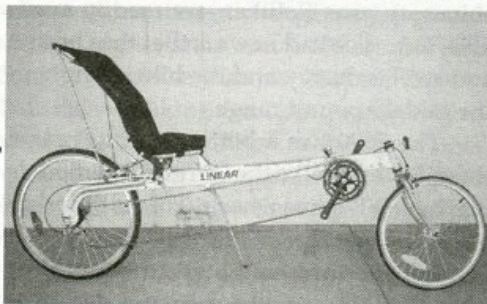
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sitioned the bottom bracket so that anyone can ride their standard frame (no need for an XL size option). Don't get your hopes up about a more modern Vanguard, as the difference is barely noticeable to the human eye. Dick is a retro kind of guy and builds his bikes with what he knows will work—and won't fail you when crossing the fields of grain, anywhere, midwest, USA.

The component specs are very nice with this 105/XT drivetrain shifted by retro Ultegra bar-con bar-end shifters mounted on stock handlebar extensions. The 26"/20" wheel combo is about as bullet proof as you'll ever need. One upgrade that is notable is the use of Shimano Deore LX V-brakes. Dick said he'd have put XT's on, but they don't work as well on his bike.

The Ryan seat is very relaxed and reclined. It is a full sling/mesh, though as a seat-horn to hold the mesh taut to the front of the seat. This does bother some riders. It takes some time to get acclimated to the very open riding position.

Bicycling Magazine didn't find the Vanguard very fast, but speed is relative. I don't feel like Fast Freddy riding one, however, there's a guy named Don Houter who used to ride solo on a Ryan tandem and ride circles around everyone.

The Ryan is a true touring masterpiece and the finest LWB USS built in N. America. **Delivery Time**—4 weeks.

◆ **Road Tests:** RCN#29; RCN#32(DuPlex)

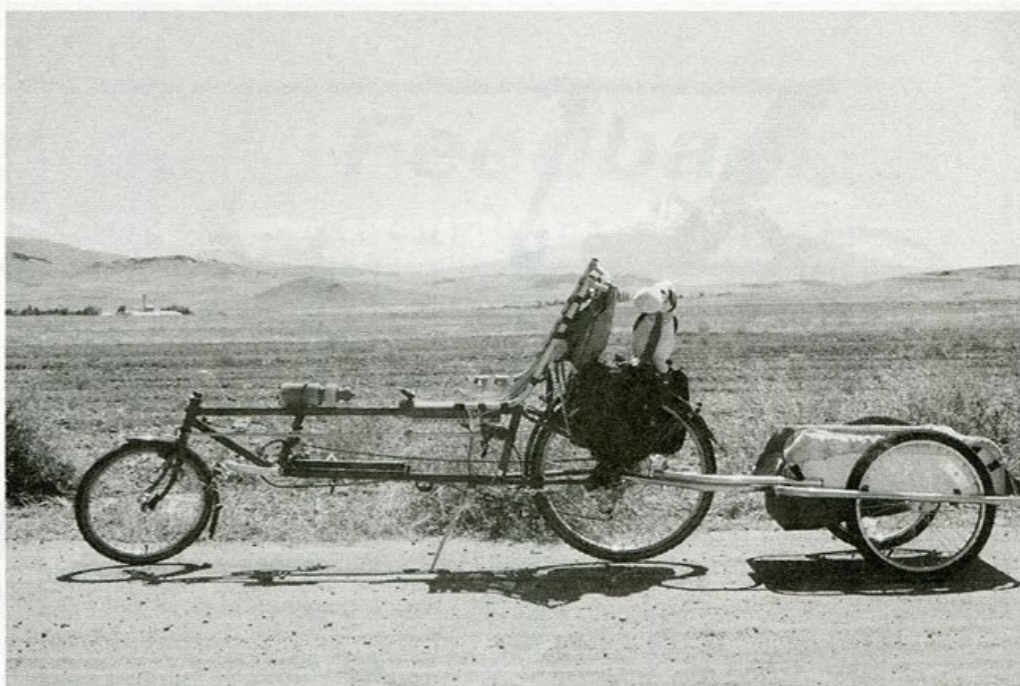
■ Vision

Vision offers LWB versions of the R40 and 42. This bike is the transformer of the 'bent world. It can be a LWB, SWB, ASS, USS, hardtail or rear suspension with 16" or 20" front wheels (LWB doesn't need front susp.). The LWB is actually an option to the SWB, though is sold as distinct LWB model as well. The SWB boom is replaced by the LWB boom and the frame telescopes to adjust for rider size. A set screw locks in the setting, though there is a slight sight adjustment to align the two frame sections.

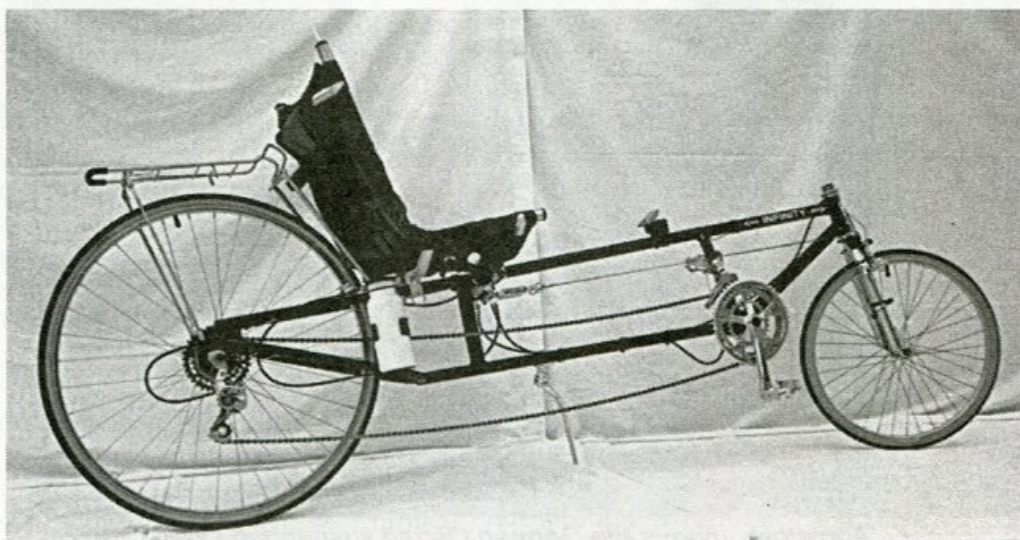
Both the R-40 and 42 utilize the 2" HiTen mainframe. The R42 LWB doesn't get the SWB's aluminum boom. We love the new Shimano spec which works great. The Rapidfire is the perfect choice for Visions.

The Vision seat likes to be ridden reclined. The seat has a seat-horn, but when reclined (key to all day comfort), you don't feel it. We finally had the chance to try the '98 models and have upgraded the seat comfort rating on SWB/LWB models.

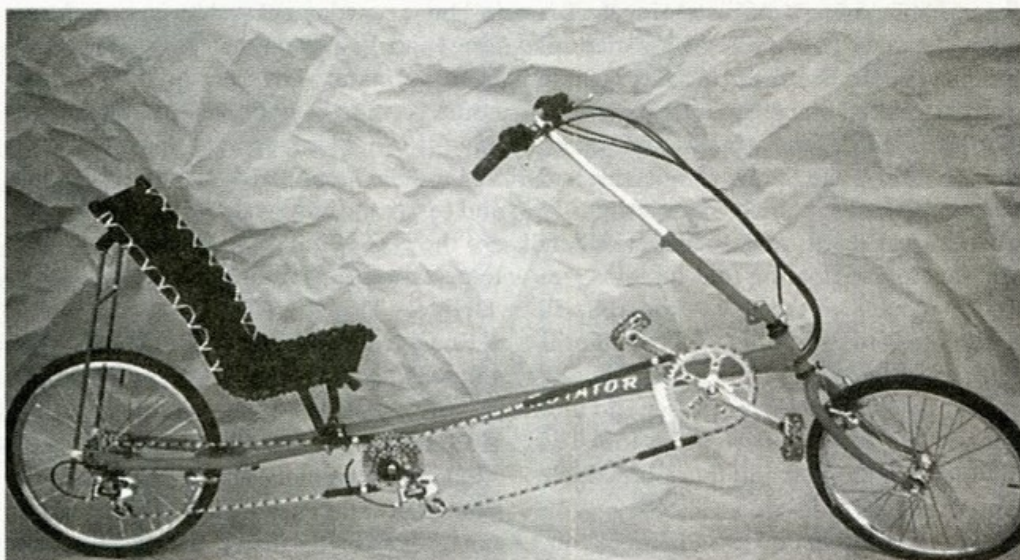
The remote rod/linkage steering has been updated for '98 offering a casual,



RCN reader Eric Seeman's Ryan Vanguard & Burley trailer at Yreka, CA 1992



The LWB Infinity from Bike Emporium—RCN archive photo



The 1998 Rotator Pursuit: Note the straight main tube with updated steering geometry. This is one very cutting edge performance LWB—Rotator



The newly redesigned Vision R42 LWB ASS, a very sweet ride



Angletech imports the German Ostrad suspended LWB

relaxed handling feel. A slick new redesigned ASS option is now available. The Vision LWB Vision's ASS steering feel is much like that of other SWB bikes and operates via a rod linkage. Updates include a lower stem bolt for better crotch clearance, an adjustable riser, and stem clamp for your choice of bars. The recline is adjustable and the fold-forward feature has a quick release to set the lock down pressure (some riders don't like a free floating fold forward feature). In most cases, the new Vision ASS will be at a more upright angle, as the stem is closer to the body on Vision bikes. The ASS unit is made of a steel stem/riser and aluminum bars/handlebar stem on top. The unit is stiffer, tougher and more adjustable than other ASS units we've tested.

We recently visited the Vision factory and were very impressed with what we saw. Bikes are built as ordered, they can

turn bikes around relatively quickly (faster than many other mfr.'s) and the new in-house powdercoat system is up and running, and Vision now buys parts directly from Shimano. The past quality control issues seem to be gone. The '98 Visions we have seen are looking very nice. The LWB Vision "BU" and "BT" are smooth, stable and easy handling sweet riding bikes. They are the best kept secret in the Vision line. Expect more coverage forthcoming.

Delivery Time 4+ weeks.

◆ **Road Tests:** RCN#21 (R-40); RCN#45 (R-45); RCN#34 (tandem); RCN#43 (Metro).

■ Custom Spec

Angletech custom spec's LWB recumbents from Rans and Easy Racers. These models can be even better than the stock bikes. I'm very impressed with the Nultegra concept by mating Shimano Ultegra with Nexave

Megarange. This stuff is perfect for 'bents!

Heed this warning: do not go too crazy with custom spec. Stick with parts that you can find somebody local to work on or fix yourself. Custom spec is not easy in these days where component incompatibility reigns supreme. A lot of times you don't know what will work until you try it.

■ Compact Comparison

As the Compact recumbent comes of age, we find that many of the manufacturers are extending the wheelbases to increase stability and add performance. This year, Rans Tailwind and Linear's Compact/EvoGlide both had their wheelbases extended. Vision's Metro and Easy Racers EZ-1 have an XL frame option. BikeE will build custom frames as long as you want. As you are comparing LWB data, keep your RCN#43 close at hand for Compact comparisons.

■ General 'Bent Info

For more general information see the '97 RCN Buyers' Guide RCN#38, RCN#43 and RCN#44, the first in a series of '98 Guides.

The information included in this buyers' guide are correct to the best of our knowledge. We/RCN sent out BG Questionnaires to known manufacturers, in order that they be included in our '98 guides.

Missing Manufacturers: Maxam is noticeably absent this year. This maker of inexpensive LWB bikes has had a roller-coaster history and we don't know what is going on or where they have gone.

■ RCN Ratings

RCN offers the only Recumbent Bicycle Buyers' Guide in the world today. RCN also RATES the bikes—which is unlike almost any other buyers' guide on the planet! You won't find reformatted brochure material in RCN—we tell it like it is. Bicycles are built up, ridden, rated, and critiqued. We can only conclude that manufacturers who do not submit test bikes are afraid to compete with the best in recumbency.

We use a potential five star system with the following *SuperGuide* ratings:

- ★ Poor/needs work
- ★★ Fair edging toward Good
- ★★★ Good and better median
- ★★★★ Very good—superior
- ★★★★★ Excellent—the best.

The overall Rating is not an average. Ratings can vary by design, price and how it works. (Ratings start on page 43.)

Watch for RCN#46, the Tandem/Trike *SuperGuide* coming in July/August '98 and RCN#47, the homebrew issue following. □

Believe What They Say....

By **Connie
McAyeal**
Portland, OR



Gardner Martin HPV racing on the tarmac at Yreka, California in 1992

Recumbents:
First it was curiosity.
Then the research started.
Then I had to have a subscription to RCN! Then the questions:

Could I ride on one of those recumbent bicycles? They look so different. They do look comfortable.

I wonder if I could balance one of them.

Then the courage: Try to find one and take a test ride.

■ FIRST RIDE

December, 1994—Portland, Oregon

My local bike shop, Coventry Cycles is now selling recumbents. "May I try that BikeE?" "Sure." Fear sets in. Will I crash? Will I weave all over the road? Will I ever be able to get it to go? The tension mounts. The excitement builds. I put my foot on the pedals, push-off and I'm off!

What a thrill! I had no trouble at all. The starting was quick and stable, balancing was no more difficult than a wedgie. I turned around in the road—no problem. I stopped it on a dime and then all I had to do was put my feet down. I couldn't stop grinning. I hadn't had this much fun since I was six years old and took off by myself on my very first bicycle.

After about 15 minutes of pure joy, I took the BikeE back into the bike shop and handed over my Visa card. I did not hesitate, nor did I have to go home and think about it. I knew that this bike was more fun to ride than any other bike I'd ever ridden.

Little did I know that the BikeE would create problems for me. The problem? Everyone wanted to ride my BikeE and I was stuck riding their wedgies while they rode my BikeE! Especially my granddaughter! After two years of this, I bought BikeE #2.

■ WEDGIE FEVER

Slowly but surely my wedgies were being left at home. As I rode the recumbent more

and my body became more accustomed to it. Yes, riding a recumbent requires the use of muscles you didn't even know you had and you need to work up to longer and more intense rides, but never is it as bad as the sore neck, hands, shoulders and rear-end on a wedgie.

All habits began to die this last summer when I rode the BikeE on a 40-mile ride and I realized I didn't even get off the bike when we stopped to rest. When we did stop, I wasn't shaking my hands, walking around in circles trying to get the blood flow normal through my body again.

I can ride distances, I can climb hills and at the end of the day I still feel happy, not grumpy because some part of my body is screaming in pain.

■ THE NEXT STEP—EASY RACER

Should I take the next step by moving up to a higher performance recumbent?

I had seen a Tour Easy on an MS150 ride a couple of years back and I'd never forgotten it. I had kept wondering, "Can I believe all the hype, articles and ads about the Easy Racer bikes?" I kept seeing the name *Gardner Martin* throughout RCN. Could he be for real?

I called Easy Racers and to my surprise, *Gardner Martin* himself answered the phone! I asked every question I could think of and he answered them all and acted like he had nothing more important to do in the world than talk to me. I had a few concerns:

1. Should I buy a bike based on what someone was telling me?
2. I wasn't able to ride the bike.
3. Maybe *Gardner Martin* is just a sales person who wants to sell his product and he's exaggerating?

■ MAY 1997—PORTLAND, OREGON

Again, I found myself in the Coventry showroom. There right in front of my eyes



was a bright red Tour Easy. I could touch it and I could sit on it. It was too big for me, but I was able to ride it a little. This time I was very nervous when I said, "Order me one in my size."

Now I believe I have something to offer people who are hesitant (like I was), who are wondering (like I wondered), who question (like I questioned), who are afraid to spend the money without being able to try out a bike like we're accustomed to being able to do at the wedgie dealer (just like I was).

I now know that everything *Gardner Martin* told me IS TRUE—AND THEN SOME! What you read in RCN—IS TRUE! This is what I have to offer: BELIEVE IT! □

The author, Connie McAyeal, on her Easy Racer Tour Easy

LWB PERFORMANCE SUPERIORITY!

by Zach Kaplan

I took the Easy Racer Gold Rush Replica (GRR) with body stocking for a 78 km ride up and around Mt. Tam yesterday with an upright riding friend. He prides himself on his climbing ability. This was my first climbing test of the bike against a strong upright rider. While he wasn't in peak shape yesterday I found I had to slow down for him on the climbs. He appeared to be really struggling climbing out of the saddle while I felt absolutely great. No lactic acid build up in the legs like with the high bottom bracket (BB) bikes.

I think it is fairly clear now the GRR is the fastest climbing recumbent I have ridden and that is with the full body stocking package and mudguards. I was frequently seeing speeds of 20 km/h on the climbs which I seldom top 15 km/h climbing on a high BB bike. My spin feels smoother with the low BB, more like the natural pedaling dynamics of a road bike vs. doing bench presses. When I went to my

cycling podiatrist (who answers medical questions in *Bicycling* magazine) for a bike fitting the other day he remarked this bike was a much better configuration than the previous recumbents I had brought in for fittings. He explained how blood circulation and lactic acid removal is better with a low BB.

The bike climbs great and amazingly I have had zero rear end pain on it. I thought I'd get it with the upright seat back but for some unexplainable reason don't. Could it be because I pressed the seat back into its most laid back position and have a 559mm rear wheel laying things back further? I did once get pain on a TE seat but it was fairly upright and a different type of foam.

Coming down the mountain was a blast. It was quite gusty yet the bike didn't get blown around much. I would have been blown off the road descending at those speeds on an F-40. The inherent stability of the LWB was also much

appreciated on the descent. I had to wait up several times for my roadie friend. At the bottom of one descent I remarked, "This is the ultimate recumbent for Marin County, fast for a recumbent on the climbs, a reasonable speed advantage on the flats and downhills but not so aerodynamic that crosswinds and brake heating become problems."

I am now constantly switching back and forth between SWB and LWB, each have their advantages for different types of riding. The truth of the matter is when you want to go fast on an easy to ride bike with no learning curve the GRR is the way to go. F-40s and low racers can be faster but have various tricky aspects and much longer learning curves. They are not as versatile to ride.

The token LWB in the fleet is becoming my favorite bike. I look forward to the new Rans Limbo when it comes out..... □

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Photo courtesy of Gary Brooks



Easy Racer Tour Easy SS/EX

- SEAT COMFORT: ★★★1/2 — ★★★★★
- RIDE SMOOTHNESS: ★★★★★1/2
- HANDLING: ★★★★★1/2
- PERFORMANCE: ★★★★★3/4
- FRAME/BUILD-FINISH QUALITY: ★★★★★
- COMPONENTS: ★★★★★1/2
- BRAKING: ★★★★★ 3/4
- CHAIN MANAGEMENT: ★★★★★1/2
- VALUE FOR MONEY: ★★★★★
- OVERALL RATING: ★★★★★1/2
- SUGGESTED USE:

✓ HD Touring/Commuting ✓ Sport Touring

■ NOTES: This is quite possibly the most durable and time-proven recumbent built today. It's fast, stable and ready to transAmerica right out of the box. The components are a bit retro, though for the most part durable (see GRR for seat info).

■ TEST BIKE PROBLEMS: We did have a few minor problems with this Tour Easy. The rear wheel came out of true at 75 miles (slight blip). While testing it in the NW rainy season, the index shifting quality deteriorated. The Grip Shifters just didn't want to drop into the 11-T. cog and made for some headaches. We longed for the bar-cons.

■ M.S.R.P. \$1795



Easy Racer Gold Rush

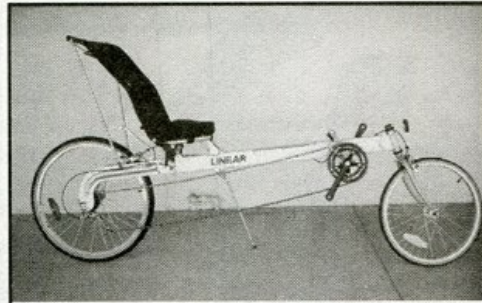
- SEAT COMFORT: ★★★1/2 — ★★★★★
- RIDE SMOOTHNESS: ★★★★★
- HANDLING: ★★★★★3/4
- PERFORMANCE: ★★★★★3/4
- FRAME/BUILD-FINISH QUALITY: ★★★★★
- COMPONENTS: ★★★★★
- BRAKING: ★★★★★1/2
- CHAIN MANAGEMENT: ★★★★★1/2
- VALUE FOR MONEY: ★★★★★
- OVERALL RATING: ★★★★★3/4
- SUGGESTED USE:

✓ High Performance ✓ HD touring/commut.

■ NOTES: You will have arrived when you ride a Gold Rush Replica. It's the finest, fastest, most stable and best looking 'bent we've tested. It also receives the RCN highest rating in '98. The Easy Racer Cool Back seat is the best choice, though the Rans base comfort still has a slight edge. The Cobra performs slightly better, though is less comfy.

■ TEST BIKE PROBLEMS: There have been no problems to speak of on our last three GRR test bikes. The '98 components upgrade to the 105 crank is excellent. Gardner, please take the Tektro brake levers off this gorgeous bike.

■ M.S.R.P. \$2995



Linear LWB/folding

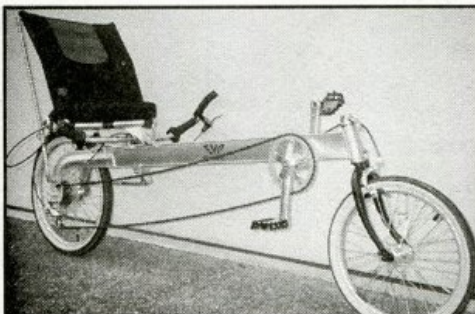
- SEAT COMFORT: ★★★ 1/4
- RIDE SMOOTHNESS: ★★★★★ 1/2
- HANDLING: ★★★★★ 1/2
- PERFORMANCE: ★★★★★
- FRAME/BUILD-FINISH QUALITY: ★★★★★ 1/2
- COMPONENTS: ★★★★★ 1/4
- BRAKING: ★★★★★
- CHAIN MANAGEMENT: ★★★★★ 1/2
- VALUE FOR MONEY: ★★★★★ 1/2
- OVERALL RATING: ★★★★★ 1/2
- SUGGESTED USE:

✓ Recr. ✓ LT touring/commuting ✓ Sport Touring

■ NOTES: The Linear LWB is a refined, comfortable friend. Its been in production for years and is proven durable. The 3x7 26/20 is best. A new non-fold version is on the way (no squeaks). The lumbar seat is a bit odd, though straight seat backs are available, as is an adjustable seat recline option.

■ TEST BIKE PROBLEMS: The Linear is a very dependable bike. The folders often squeak and need careful attention to the joints (clean & lightly grease & set Q.R.'s properly). We've had no problems with any Linear bikes. The component specs are spotty and change often....so ask.

■ M.S.R.P. \$1350



Linear Cpct Mk. III/Evo.

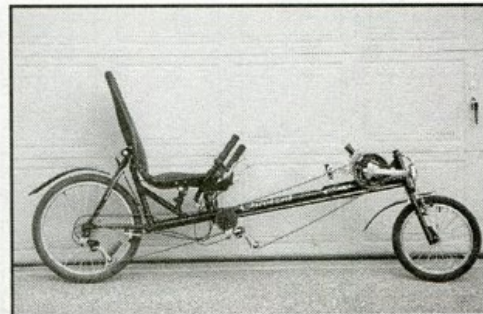
- SEAT COMFORT: ★★★
- RIDE SMOOTHNESS: ★★★
- HANDLING: ★★★
- PERFORMANCE: ★★★
- FRAME/BUILD-FINISH QUALITY: ★★★ 1/2
- COMPONENTS: ★★★ 1/2
- BRAKING: ★★★
- CHAIN MANAGEMENT: ★★★ 1/2
- VALUE FOR MONEY: ★★★ 1/2
- OVERALL RATING: ★★★ 1/2
- SUGGESTED USE:

✓ Cruiser ✓ Recreational ✓ LT touring/commuting

■ NOTES: The Linear Compact is another compact model (along with the Rans Tailwind) that just barely squeezes into the LWB listing. The Linear Compact comes in three wheelbases, one being a 60", which officially makes it a LWB. We're glad to see Linear and Wheel refining this design. A stretching of the wheelbase is the best thing that could have happened to this bike.

■ TEST BIKE PROBLEMS: We had virtually no component, set-up, dial-in or road test problems with any of our three test bikes. We expect an ASS version soon.

■ M.S.R.P. \$1099/\$1399 Wheel EvoGlide



Peugeot/Quetzal C-90

- SEAT COMFORT: ★★ 1/2
- RIDE SMOOTHNESS: ★★ 1/2
- HANDLING: ★★ 1/2
- PERFORMANCE: ★★ 1/2
- FRAME/BUILD-FINISH QUALITY: ★★ 1/2
- COMPONENTS: ★★
- BRAKING: ★★
- CHAIN MANAGEMENT: ★★ 1/2
- VALUE FOR MONEY: ★★
- OVERALL RATING: ★★
- SUGGESTED USE:

✓ Recr. ✓ LT touring/commuting ✓ Sport touring

■ NOTES: The Peugeot is a good value, but an odd bike. It rides nice, though is very heavy and felt sluggish in most conditions. All of our test riders complained about the upright seat angle (heavily loads the rider's rear-end=recumbent butt) and the bike feels small. The CroMo Peugeot's are preferred over the limited rider adjustments on the high-end aluminum models.

■ TEST BIKE PROBLEMS: Our test bike was completely trouble free given the 90-speed drivetrain. The shifting is not intuitive and takes some getting used to, though works well.

■ M.S.R.P. \$939



Rans Gliss

- SEAT COMFORT: ★★★★★
- RIDE SMOOTHNESS: ★★★★★1/2
- HANDLING: ★★★★★ 3/4
- PERFORMANCE: ★★★★★ 1/2
- FRAME/BUILD-FINISH QUALITY: ★★★★★
- COMPONENTS: ★★★★★
- BRAKING: ★★★★★
- CHAIN MANAGEMENT: ★★★★★ 1/2
- VALUE FOR MONEY: ★★★★★ 3/4
- OVERALL RATING: ★★★★★
- SUGGESTED USE:

✓ Recr. ✓ Sport Touring ✓ LT touring/commut.

■ NOTES: This is the modern LWB ASS with rear suspension, ESP drivetrain and Magura hydraulic brakes. At low-medium speeds the bike handles beautifully with near perfect ergonomics (BB/pedals lower than seat). The Gliss has a low gear range.

■ TEST BIKE PROBLEMS: The three Gliss test bikes have been very dependable. Gliss #2 is commuted with in downtown Seattle in the rain. ESP index adjustments have been a minor annoyance. The Gliss front end tends to feel light on fast downhill and the h'bars flex. The upper chain idler is also noisier than on other models.

■ M.S.R.P. \$1930



Rans Stratus

- SEAT COMFORT: ★★★★★
- RIDE SMOOTHNESS: ★★★★★
- HANDLING: ★★★★★
- PERFORMANCE: ★★★★★
- FRAME/BUILD-FINISH QUALITY: ★★★★★
- COMPONENTS: ★★★ 3/4
- BRAKING: ★★★ 3/4
- CHAIN MANAGEMENT: ★★★ 3/4
- VALUE FOR MONEY: ★★★★★1/2
- OVERALL RATING: ★★★★★1/4
- SUGGESTED USE:

✓ Recr. ✓ LT touring ✓ HD commut. ✓ High Perf.

■ NOTES: The Stratus was edged out for Best LWB ASS by the Tour Easy. Within days Easy Racers raised their prices. The Stratus has a more comfy seat, ride, better components, and is less expensive. The Tour Easy still has slightly better handling, handlebars and fairing options.

■ TEST BIKE PROBLEMS: Our Rans Stratus test bike was absolutely perfect. It was delivered for the '97 Seattle Bike Expo, demo'ed and ridden by a lot of people. The Stratus is a proven, and dialed classic 'bent design that only gets better with age. We're hoping that Rans does a 25th Anniversary Stratus next year. Oh, and you gotta like purple.

■ M.S.R.P. \$1675.00



Rans Tailwind

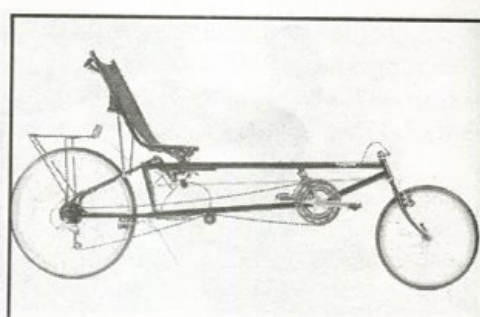
- SEAT COMFORT: ★★★★★
- RIDE SMOOTHNESS: ★★★★★
- HANDLING: ★★★★★
- PERFORMANCE: ★★★★★
- FRAME/BUILD-FINISH QUALITY: ★★★★★
- COMPONENTS: ★★★ 3/4
- BRAKING: ★★★ 1/2
- CHAIN MANAGEMENT: ★★★ 1/2
- VALUE FOR MONEY: ★★★★★1/2
- OVERALL RATING: ★★★★★1/4
- SUGGESTED USE:

✓ Cruiser/Recr. ✓ Sport touring ✓ LT touring/comm.

■ NOTES: The Tailwind is the bargain bike of this listing. You get so much for your money that it puts other LWB machines to shame. Officially a LWB at 60.5" wheelbase, this bike is as light and fast as nearly any LWB in these listings. In fact, the Tailwind did quite well on our test loop coming in with the same speed/time as an unfaired Tour Easy.

■ TEST BIKE PROBLEMS: We've had three Tailwind test bikes. We've had ESP index adjusting woes and one bike needed a cantilever brake adjustment. The handlebars noticeably flex on this model (Rans Gliss/Tailwind "T" bar).

■ M.S.R.P. \$995



Ryan Vanguard

- SEAT COMFORT: ★★★ 1/4
- RIDE SMOOTHNESS: ★★★ 1/4
- HANDLING: ★★★★★
- PERFORMANCE: ★★★★★
- FRAME/BUILD-FINISH QUALITY: ★★★★★
- COMPONENTS: ★★★★★
- BRAKING: ★★★ 3/4
- CHAIN MANAGEMENT: ★★★ 3/4
- VALUE FOR MONEY: ★★★★★
- OVERALL RATING: ★★★★★
- SUGGESTED USE:

✓ HD touring/commuting ✓ Sport touring

■ NOTES: The Ryan is the toughest and best LWB USS touring bike made from one of the most respected recumbent manufacturers. The bike hasn't changed much, aside from component updates. Dick & Karl Ryan build them right.

■ TEST BIKE PROBLEMS: Our biggest complaint about the Ryan is the the painful assembly involved. Since the bike is available mfr. direct only, it should be preassembled or shipped on a pallet or full size box 100% set up. The mediocre front brake has been replaced by an LX V-brake. Be forewarned about the Ryan seat horn.

■ M.S.R.P. \$1850



Rotator Pursuit

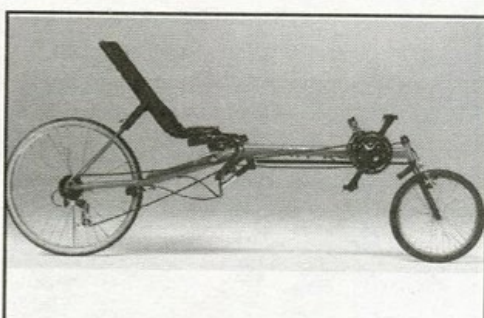
- SEAT COMFORT: ★★★ 3/4
- RIDE SMOOTHNESS: ★★★★★
- HANDLING: ★★★ 1/2
- PERFORMANCE: ★★★★★
- FRAME/BUILD-FINISH QUALITY: ★★★ 3/4
- COMPONENTS: ★★★ 1/4
- BRAKING: ★★★ 1/4
- CHAIN MANAGEMENT: ★★★ 1/2
- VALUE FOR MONEY: ★★★★★
- OVERALL RATING: ★★★ 3/4
- SUGGESTED USE:

✓ High Performance ✓ Sport ✓ LT touring/comm.

■ NOTES: The Pursuit is a high performance, low LWB for the cutting edge cyclist. Low speed starts are difficult, and there is tiller/wheel flop. The bike is fast, very cool and the high performance bargain.

■ TEST BIKE PROBLEMS: We highly suggest perspective owners read our RCN#37 test. The mid-drive shifting very good, though not for everyone. Component spec is somewhat vague. Our '96/'97 test bikes/fairings had some rough edges. The Rotator bikes are not as refined as other more mainstream bikes, though Delaire is brilliant and the new bikes have improved a lot.

■ M.S.R.P. \$1500



Vision R40 LWB

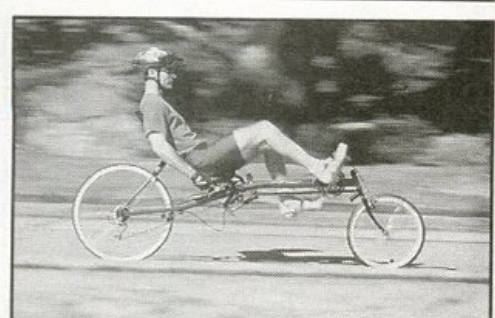
- SEAT COMFORT: ★★★★★
- RIDE SMOOTHNESS: ★★★ 3/4
- HANDLING: ★★★ 1/2
- PERFORMANCE: ★★★ 1/2
- FRAME/BUILD-FINISH QUALITY: ★★★★★
- COMPONENTS: ★★★ 3/4
- BRAKING: ★★★ 3/4
- CHAIN MANAGEMENT: ★★★ 1/2
- VALUE FOR MONEY: ★★★★★
- OVERALL RATING: ★★★ 3/4
- SUGGESTED USE:

✓ Recreational ✓ Sport Touring ✓ LT touring/commut.

■ NOTES: The Vision R40 has the same durable monotube frame as the R42. This model is available with or without rear suspension with USS, redesigned ASS, 16" or 20" front wheels. Vision seats can recline way back, and the bike enjoys a very open comfy riding position (or a closed, upright position). The new Vision head badge is very cool, Seattle-style. Vision quality/QC is on the upswing.

■ LATE UPDATE: We were finally able to try some '98 Visions. Updated ratings are across the board for R40/42 SWB/LWB hard-tail models. 44/45 ratings are improved as well.

■ M.S.R.P. \$1175-1475 (rear susp. optional)



Vision R42 LWB

- SEAT COMFORT: ★★★★★
- RIDE SMOOTHNESS: ★★★ 3/4
- HANDLING: ★★★ 1/2
- PERFORMANCE: ★★★ 1/2
- FRAME/BUILD-FINISH QUALITY: ★★★★★
- COMPONENTS: ★★★★★
- BRAKING: ★★★ 3/4
- CHAIN MANAGEMENT: ★★★ 1/2
- VALUE FOR MONEY: ★★★ 1/2
- OVERALL RATING: ★★★ 3/4
- SUGGESTED USE:

✓ Sport Touring ✓ LT touring/commut. ✓ Performance

■ NOTES: The Vision R42 LWB has a really laid back comfy position, higher BB and an excellent Shimano drivetrain with Rapid Fire. The ASS has been redesigned and works great. The bike handles very nicely and is a great option for those who find the SWB handling too intense. The R42 does not get the SWB's alum. boom. The rear suspension is an option and very plush riding, though not recommended for tall/XL-sized riders. Visions work best for medium height/build riders.

■ TEST BIKE PROBLEMS: We had no problems with our R42 LWB test bike.

■ M.S.R.P. \$1620-2070 (rear susp. optional)

LWB 'BENT LISTINGS	TYPE & DIMENSION	FRAME & SEAT	COMPONENTS
Easy Racer Tour Easy EX Tel. 408/722-9797 Tooeasy1@aol.com http://http://www.easyracers.com \$1795	LWB ASS WB-66"(med.) SH-20.5" BBHT- 13" WT-30 WT DIST- 60%(BK)/40% Colors: Red or black powdercoat. Gear Inches: 21-114	Frame: TIG CroMo steel mainframe, custom CroMo fork, alum. bars/stem, Seat: Composite shell, Lycra covered foam. (Opt. Cool Back or Rans seats). Sizes: Four sizes	Drivetrain: Sachs/Shimano XT 21-spd. Sachs Twist/SRT 4.0, Shim. Exage 24/36/46 crank, YST Roller HS & LX Canti. brakes, Shim. BB, 700cx35/406 mm 20" x 1.5"
Easy Racer Tour Easy SS Tel. 408/722-9797 Tooeasy1@aol.com http://http://www.easyracers.com \$1795	LWB ASS WB-66"(med.) SH-20.5" BBHT- 13" WT-29 WT DIST- 60%(BK)/40% Colors: Red or black powdercoat. Gear Inches: 23-127	Frame: TIG CroMo steel mainframe, custom CroMo fork, alum. bars/stem, Seat: Composite shell, Lycra covered foam.(Opt. Cool Back or Rans seats). Sizes: Four sizes	Drivetrain: Sachs/Shimano XT 21-spd. Sachs Twist/SRT 4.0, Shim. Exage 24/42/52 crank, YST Roller HS & LX Canti. brakes, Shim. BB, 700cx28/451 mm 20" x 1-1/8"
Easy Racer Gold Rush Replica Tel. 408/722-9797 Tooeasy1@aol.com http://http://www.easyracers.com \$2995	LWB ASS WB-66"(med.) SH-20.5" BBHT- 13" WT-26 WT DIST- 60%(BK)/40% Colors: Mirror black powdercoat. Gear Inches: 21.5-129	Frame: TIG welded heat treated 6061 T6 Heat, alum. bars/stem, CroMo fork. Seat: Composite shell, Lycra covered foam. (Opt. Cool Back or Rans seats). Sizes: Four sizes	Drivetrain: Shimano Ultegra/XTR 24-spd. Grip Shift "Attack", Shim. Ultegra Hollow Arm 26/42/53 triple & BB, Sachs chain, 105 HS & dual pivot brakes, 700c/451 20" x 1-1/8"
Easy Racer/Angletech GRR GL63 Tel. 719/687-7475 Anglezoom@aol.com http://www.angletechcycles.com \$3599.99	LWB ASS (SS or EX avail.) WB-66"(med.) SH-20.5" BBHT- 13" WT-28 WT DIST- 60%(BK)/40% Colors: Mirror black powdercoat. Gear Inches: 17-150	Frame: TIG welded heat treated 6061 T6 Heat, alum. bars/stem, CroMo fork. Seat: Rans with cutaway base (Optional Easy Racer seats). Sizes: Four sizes	Drivetrain: Sachs Quartz 3x7, SRAM ESP 9.0SL 63-spd., Ritchey Logic 24/36/46 triple, Sachs chain, Phil BB, Chris King HS, Ultegra BB, 700c/451
Easy Racer/Angletech GRR SHO Tel. 719/687-7475 Anglezoom@aol.com http://www.angletechcycles.com \$4299.99	LWB ASS WB-66"(med.) SH-20.5" BBHT- 13" WT-27 WT DIST- 60%(BK)/40% Colors: Mirror black powdercoat Gear Inches: 21.5-129	Frame: TIG welded heat treated 6061 T6 Heat, alum. bars/stem, CroMo fork. Seat: Rans with cutaway base (Optional Easy Racer seats). Sizes: Four sizes	Drivetrain: SRAM ESP 9.0SL 24-spd., Shim. Ultegra Hollow Arm 26/42/53 triple & BB, Chris King HS & dual pivot brakes, Ultegra BB, HED Wheels 700c/451
Human Powered Machines Roadster Tel. 541/343-5568 cat@efn.org http://www.efn.org/~cat \$1195	LWB USS or ASS WB-61" SH-25" BBHT- 12" WT-32 Colors: Powdercoat Gear Inches: 21-114	Frame: CroMo frame and fork Seat: Alum. frame/ Nylon (sling) mesh Sizes: 5'6"-6'4"	Drivetrain: Sachs 3x7 21-spd., Sachs twist shift, Shimano/Sugino crankset, Shimano sealed HS/BB, Shimano Deore LX V-brakes, dual 26" wheels/Continental tires.
Infinity Alpha (Bike Emporium) Tel. 1-800-Dr BIKE1 Culver@primenet.com \$1199.	LWB USS WB-63"/67" SH-21" BBHT- 15.5" WT-27 WT DIST- 63%(BK)/37% Colors: Red, white, blue or custom Gear Inches: N.A.	Frame: 6001 Sq. Alum. mainframe, Hiten fork, alum. USS/bars, Seat: Alum. frame, mesh back/base Sizes: Two sizes (4'11"-6'2")	Drivetrain: Shimano STX 21-spd., Sugino Fuse 500 26/36/46, Weinmann side-pull brakes, KMC chain, Shimano BB, YST HS, Altus/Sovos 700c/20" (451)
Linear LWB Tel. 319/252-1637 http://www.Bikeroute.com/Linear/Linear.html \$1350.00	LWB USS/folding WB-62" SH-25" BBHT- 19.5" WT-29 WT DIST- 60%(BK)/40% Colors: Anodized blue, silver, gold, black Gear Inches: 21-104	Frame: Sq. Alum. mainframe extrusion, CroMo fork, alum. USS/bars, Seat: Alum. frame, mesh back, nylon covered foam base Sizes: Five sizes	Drivetrain: Sachs Twist Grip, Sachs/Shimano crank, Sachs 3 x 7 21-spd., Dia Compe Bull Dog rear brake, Dia Compe 730 sidepull front brake, 26" RW, 20" FW
Peugeot/Quetzal C-90 Tel. 1-888-783-8025 http://www.quetzal.ca webmaster@quetzal.ca \$939 (incl. duty, shipping & setup)	LWB USS WB-54.5-62.5" SH-N.A. BBHT- N.A. WT-40 WT DIST- N.A. Colors: Burgundy Gear Inches: N.A.	Frame: CroMo monobeam, HiTen fork, USS/bars, Seat: Alum. frame, mesh back, air bag seat base & back suspension Sizes: 2 sizes: Sml.-Med./Med.-Lg.	Drivetrain: Shim. TY22/Altus (2, front & center), Grip Shift MRX-170, Triple crank, 90-speeds, Light alloy cantilever brakes, Big hubs, 20"/16" x 1.75" Quetzal Tech tires
Peugeot/Quetzal C-105 Tel. 1-888-783-8025 http://www.quetzal.ca webmaster@quetzal.ca \$1099 (incl. duty, shipping & setup)	LWB USS WB-54.5-62.5" SH-N.A. BBHT- N.A. WT-40 WT DIST- N.A. Colors: Twilight Blue Gear Inches: N.A.	Frame: CroMo monobeam, HiTen fork, USS/bars, Seat: Alum. frame, mesh back, air bag seat base & back suspension Sizes: 2 sizes: Sml.-Med./Med.-Lg.	Drivetrain: Shim. Altus/Acera-X (2, front & center), Grip Shift SRT-400, Triple crank, 105-speeds, Linear pull (V-style) brakes, Shim. hubs, 20"/16" x 1.75" Quetzal Tech tires
Peugeot/Quetzal T-105 Tel. 1-888-783-8025 http://www.quetzal.ca webmaster@quetzal.ca \$1795 (incl. duty, shipping & setup)	LWB USS WB-54.5-62.5" SH-N.A. BBHT- N.A. WT-36 WT DIST- N.A. Colors: Natural polished aluminum Gear Inches: N.A.	Frame: Alum. monobeam, HiTen fork, USS/bars, Seat: Alum. frame, mesh back, air bag seat base & back suspension Sizes: 2 sizes: Sml.-Med./Med.-Lg.	Drivetrain: Shim. Alivio/STX-RC (2, front & center), Grip Shift SRT-400, Triple crank, 105-speeds, Alivio cantilever brakes, Shim. hubs, 20"/16" x 1.75" Quetzal Tech tires
RANS Stratus Tel. 785/625-6346 bikes@rans.com http://www.rans.com \$1675.00	LWB ASS WB-67.75" SH-22.25" BBHT- 14 WT-32 WT DIST- N.A. Colors: Mystic Violet Gear Inches: 30-123	Frame: CroMo mainframe, CroMo fork, alum. C-bar (T-bar opt.) Seat: Rans ventilated mesh back, comp. base, nylon covered foam seat Sizes: 3 sizes	Drivetrain: GripShift ESP7.0, ESP 700 24-spd., Shimano 105 ft. der., Campagnolo Mirage 32/42/52, Sachs chain, Ritchey Logic HS, Shimano Deore LX V-brakes, ESP levers, levers, 26" Ritchey Tom Slick 20" Primo Comet

LWB 'BENT LISTINGS	TYPE & DIMENSION	FRAME & SEAT	COMPONENTS
RANS Tailwind Tel. 785/625-6346 bikes@rans.com http://www.rans.com \$995	Compact ASS WB-60.5" SH-23" BBHT- 19" WT-30 WT DIST- varies (slide seat) Colors: Hot Red powdercoat Gear Inches: 25-104	Frame: CroMo mainframe, CroMo fork, alum. T-bar/stem. Seat: mesh back, comp. base, nylon covered foam seat Sizes: 36" one-size-fits-most	Drivetrain: GripShift ESP 5.0/7.0 24-spd., Suntour X-1 36/46/58, Sachs chain, Ritchey Logic HS, Shim. CS21 BB, Alivio Canti.brakes/ levers, 20" x 1.35" w/Primo Comets
RANS/Angletech Tailwind GL63 Tel. 719/687-7475 Anglezoom@aol.com http://www.angletechcycles.com \$1999.99	Compact ASS WB-60.5" SH-23" BBHT- 19" WT-30 WT DIST- varies (slide seat) Colors: Hot Red powdercoat Gear Inches: 19.4-140	Same as above	Drivetrain: GripShift ESP 9.0 SL, Sachs 3x7 63-spd., Ritchey triple 38/50/61 crank, ST XC Pro HS, Phil BB, Sachs chain, Magura HS24, 20" x 1.75" (406) F w/Tioga ST Comp
RANS/Angletech Stratus SHO Tel. 719/687-7475 Anglezoom@aol.com http://www.angletechcycles.com \$3149.99	LWB ASS WB-67.75" SH-22.25" BBHT- 14 WT-32 WT DIST- N.A. Colors: Mystic Violet Gear Inches: 22-120	Frame: CroMo mainframe, CroMo fork, alum. C-bar (T-bar opt.) Seat: Rans ventilated mesh back, comp. base, nylon covered foam seat Sizes: 3 sizes	Drivetrain: GripShift ESP 9.0 SL, Ult. 30/42/54, Chris King HS, Ultegra BB, Sachs PC91 drilled chain, Control Tech V-brakes, Phil/Rolf/Hed Whls. 550c Conti GP RT, Conti GP
RANS/Angletech Stratus Nultegra 24 Tel. 719/687-7475 Anglezoom@aol.com http://www.angletechcycles.com \$2199.99	LWB ASS WB-67.75" SH-22.25" BBHT- 14 WT-32 WT DIST- N.A. Colors: Mystic Violet Gear Inches: 22-116	Same as above	Drivetrain: Shim. Nexave/Ultegra 24-spd., Ultegra 30/42/52, Nexave Mega range 11-34 cass., Ultegra BB, YST HS, Sachs chain, Shim./Bont. 26"/20" x 1.25, Schwalbe Marathon
RANS Gliss Tel. 785/625-6346 bikes@rans.com http://www.rans.com \$1930.00	LWB ASS WB-67" SH-23" BBHT- 18.75" WT-31 WT DIST- N.A. Colors: Pocono Green Gear Inches: 28-104	Frame: CroMo mainframe, Cromo Swing-arm, Cane Creek AD5 rear susp. shock. CroMo fork, alum. T-bar. Seat: Rans ventilated mesh back, comp. base, nylon covered foam seat Sizes: One-size fits most	Drivetrain: SRAM Grip Shift 9.0/900 24-spd., Shimano 105 ft. der., Campagnolo Mirage 42/53/63, Sachs chain, Ritchey HS, Magura HS 11 brakes & levers, Shimano/Sun 20" x 1.25" with Primo Comets
RANS/Angletech Gliss GL63 Tel. 719/687-7475 Anglezoom@aol.com http://www.angletechcycles.com \$2499.99	LWB ASS WB-67" SH-23" BBHT- 18.75" WT-31 WT DIST- N.A. Colors: Pocono Green Gear Inches: 19.4-140	Same as above	Drivetrain: SRAM Grip Shift 9.0/900/Sachs 3x7 63-spd., Shimano 105 ft. der., Ritchey Logic 42/53/62, Sachs chain, Ritchey HS, Magura HS 11 brakes & levers, Shimano/Sun 20" x 1.25" with Primo Comets
ReBike 2600 Tel. 1-888-ReBike (732-4531) http://www.rebike.com \$459	LWB ASS WB-53" SH-24-29" BBHT- 19" WT-45/45.5 WT DIST- N.A. Colors: Red, Green, Blue & Black powdercoat Gear Inches: 20-89	Frame: HiTen mainframe & fork, steel bar/stem, Seat: nylon covered foam back rest, padded saddle with adjustable saddle tilt. Sizes: One-size fits most	Drivetrain: Shimano 18-spd., thumbshifters, steel triple crank 28/40/48, KMC chain, APSE cantilever brakes, 26" x 2.125" bolt on RW, 16" x 1.75 bolt on FW w/Wha Fong tires
Rotator Pursuit Tel. 707/539-4203 rotator@neteze.com http://www.hpv@ihpva.org \$1500	LWB ASS WB-65" SH-15" BBHT- N.A. WT-30 WT DIST- varies (slide seat) Colors: Powdercoat red Gear Inches: (est.) 25-150	Frame: CroMo/Hiten brazed mainframe, CroMo fork Seat: CroMo frame, vented nylon mesh Sizes: N.A.	Drivetrain: Sachs/Sachs twist shift 35-spd.with mid-drive, Sachs cantilever brakes, dual 406mm 20" wheels
Ryan Vanguard Tel. 781/979-0072 http://www.ryanbikes.com ryanbike@ryanbikes.com \$1850	LWB ASS WB-65" SH-15" BBHT- 15" WT-30 WT DIST- 60%(BK)/40% Colors: Powdercoat red or black Gear Inches: (est.) 23-123	Frame: TIG CroMo, CroMo fork Seat: Alum. frame, vented nylon mesh Sizes: One-size-fits most	Drivetrain: Shimano 105/ XT 24-spd., Shimano Ultegra bar-ends, Shimano 105 30/42/52, Shimano sealed BB, Sachs chain, STX Roller bearing HS, Shimano LX V-Brakes brakes, LX/Sun 26"/20"
Vision VR40 Tel. 206/467-0231 ATPVision@aol.com http://www.VisionRecumbents.com \$1175-\$1475	LWB USS (ASS, SWB, Susp. optional) WB-63" (rigid) SH-19.5" BBHT- 20"/21" ¹ WT-31.5-36.25 Colors: Powdercoat teal & red Gear Inches: 26-114 ¹ Depends on 16", 20", suspension, or rigid frame	Frame: 2" DOM steel TIG mainframe (Opt. Cane Creek Air rear susp.) CroMo fork (Opt. suspension fork) Seat: Alum. frame, nylon mesh, foam pad Sizes: Fits riders 4'8" to 6'4"	Drivetrain: Shimano RSX/STX Rapidfire 21-spd., Shimano Exage 28/38/48, Shimano BB, HS-YST St., KMC chain, Dia Compe VC-2 canti. brakes, RSX/alloy 26" RW/16" (349) or 20" (406) FW, Vision Primo Comets
Vision VR42 Tel. 206/467-0231 ATPVision@aol.com http://www.VisionRecumbents.com \$1620-2070	LWB USS (ASS, SWB, Susp. optional) WB-63" (rigid) SH-19.5" BBHT- 20"/21" ¹ WT-29-34.25 Colors: Powdercoat teal & red Gear Inches: 28-123 ¹ Depends on 16", 20", suspension, or rigid frame	Frame: 2" DOM steel TIG mainframe (Opt. Cane Creek Air rear susp.) CroMo fork (Opt. suspension fork) Seat: Alum. frame, nylon mesh, foam pad Sizes: Fits riders 4'8" to 6'4"	Drivetrain: Shimano RX100/STX Rapidfire 24-spd., Shimano RX100 30/42/52, Shimano BB, HS-YST alloy, KMC SS90 chain, Dia Compe VC-70 canti. brakes, RX100/Sun 26" RW/16" (349) or 20" (406) FW

The Notebook of an Unreasonable Man

By Kent Peterson

peterson@halcyon.com

Joe and the Joetator

"My God, what is that thing?"

This reaction comes almost involuntarily to the lips of anyone who sees the bike that we've dubbed "Joetator." Yes, we explain, it's a bicycle. 12 feet long, one hundred pounds, but still a bicycle. Somehow, I hadn't thought it would turn out this way. It began, like many a misadventure, as a simple plan. I'd seen the beautiful flowing lines of the Rotator Pursuit in Recumbent Cyclist News and I'd read Bob Bryant's glowing review. "Oh, yes," I'd thought, "it will be mine." The problem, as usual, was saving up enough money to purchase this sleek antelope of the asphalt. My money was mostly getting channeled into such frivolities as food, a roof over my head, shoes for the kids and other such nonsense. My pursuit of the Rotator was shaping up to be a multi-year ride.

My buddy Joe Kochanowski had the answer, "I'll build you a bike," he said. Now you have to understand that Joe is a genius. An absolute, certifiable genius, like Thomas Edison or the guy who came up with the idea of a TV show called "Xena: Warrior Princess." But Joe's medium isn't electricity or TV programming, Joe sculpts in steel and he builds bikes. Sure, most of his bikes are massive, scary looking things but most people only catch glimpses of these bikes as Joe pilots them at speeds more often associated with the oval race track at Indy than the pot-holed streets of Seattle.

I began to warm to this idea. "Yeah, Joe's version of a Rotator...we'll call it the Joetator. It'll be great!" My thoughts continued on. "Yep," I told myself, "when you're friends with Michelangelo, you don't put in ceiling tile." Joe actually owns a Rotator Super Seven, one of the legendary Rotator racers.

Of course, Joe has extensively modified his Rotator and he rode it fully faired in last year's Seattle to Portland ride. One of the

thousands of people he passed was heard to mutter, "He's got a motor in there." No, it's just Joe but Joe is enough. So Joe would take his knowledge of the Rotator, mix it up with some of his street smarts and build a super bike.

talking money with Joe is like talking about Harrier jets with an Amish farmer

We talked a little bit about money but talking money with Joe is like talking about Harrier jets with an Amish farmer. He may be vaguely aware that such things exist, but they really don't enter his day to day thinking. "I'll build it, you ride it and if you like it and use it, pay me whatever." Great, Joe has just invented the first shareware bicycle. Well, at least on paper anyway. And that was step one. Get a big piece of paper. Actually it was a chunk of an old cardboard box Joe scavenged out of the trash. Joe scavenges everything.

When I first met Joe, I wondered if he was homeless. I later learned that he lives in a house just north of Boeing Field, just south of Seattle, in the industrial district. His house is packed with bike parts and tools. And when I say packed, I mean packed. It looks like the Tour deFrance crashed into an exploding oil rig and landed in his basement. There are bikes, metal tubes, lathes, cut-off saws, wrenches, old fairings, airplane drop tanks, oxygen cylinders, small to medium caliber weapons, pedals, cranks, large vises, micro calipers, air compressors, and enough miscellaneous hardware to build two stealth bombers with enough left over to make a small chemical refinery and an espresso machine. But we were starting simple. A big line drawn on the cardboard where the main body tube would go. Here's where

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 and determination. Kent is the master 'bent recycler...he's currently working on the world's cheapest and ugliest BMX based SWB bent.

"The reasonable man adapts himself to the world.

The unreasonable one persists in trying to adapt the world to himself.

Therefore all progress depends on the unreasonable man."

— George Bernard Shaw

the bottom bracket goes, the wheels wind up here, the seat goes here... "How long are your arms?" Joe asks. "Huh," I reply as I distractedly try to calculate the scrap value of the metal in the room. I'm beginning to think Joe's net worth may be somewhere in the Bill Gates neighborhood. "Your arms...HOW LONG ARE THEY?" Joe grabs my arm and a tape measure, "I have to figure out where the steering goes and I want to make sure you can touch the ground. You don't want to unclip at a light, you'll just put your hand down." Joe takes a couple of readings, makes a few marks on the cardboard and is on to the next problem.

Joe is good at solving problems, but he works at his own schedule. Despite the presence of enough hardware to jumpstart the economies of several Balkan republics, Joe would continually comb swap meets, surplus stores and industrial dumpsters to find just the right part. This went on for months. I managed to spend some time with my wife and sons and get enough real work done to get a handle on that whole food/shelter/clothing thing.

My recumbent fever had not lessened at all. I home-brewed a couple of SWB bikes of my own (yeah, I'll get around to doing an article about that someday!) and somewhere along the line I bought Bob Bryant's ex-test Rocket. I got very used to seeing my lovely wife's eyes roll heavenward and her head shake in disbelief as I explained my need for yet another bike. But for some inexplicable reason she loves me very much and I now have this fleet of, well, let's call them "unusual" bicycles.

But Joe kept working. I'd get calls and questions and reports from the lab. "The Pursuit has tiller steering," Joe would say, "you don't want that. I'm going with side sticks, OK?" "Sure, Joe. Build it the way you'd want it." After all, I figured, Joe knows at least a thousand times more about this than I do.

"You want rear suspension." Joe would lose points on Jeopardy because he didn't phrase this in the form of a question. Joe had bolted the period onto the end of that sentence and then TIG welded it to be extra secure. "I want rear suspension," I echoed like the Imperial Storm Trooper in Star Wars saying "These aren't the droids we're looking for." "This is winding up heavier than a Pursuit, but weight doesn't matter once you're rolling..."

"Weight doesn't matter once you're rolling," I thought, "but how do I get this thing rolling?" It's a few months later and I'm at Joe's. I'm settled into a rollable

Joetator. It's, um... an experience. "You'll feel more secure once I get the rollcage done," Joe assures me. "Rollcage?" I think for an instant but as I survey the pounds of tubes and cables and metal bits that could become awkwardly pokey in a crash I think, "you know, a rollcage is a pretty good idea!" Joe push-starts me down his street. The Joetator has semi-conventional controls connected in unconventional ways to a custom drivetrain and brakes that are looking a little overwhelmed by the rest of the bike.

I'm a bit overwhelmed by the bike. OK, OK, I'm terrified. But I'm rolling. In a straight line with a deathgrip on the side sticks. "You can heave on those as much as you want," Joe says, referring to the steering sticks, "You can't break 'em!" "No," I'm thinking, "nothing in this bike is breakable with the exception of me..." But Joe has wrapped me in various pads for my test flight and even without the rollcage this bike has an "inside." I'm inside and the outside world is just something I run over. The Joetator is picking up momentum. I do a little course correction with the sticks but when I attempt my first turn, I crash. It's very uneventful. It's like the bike is some kind of big, stubborn hippo. I wanted to turn, it wanted to lay down. It won. "It'll take some getting used to," Joe assures me.

"It'll take some getting used to," I assure him. But I get up and get the bike rolling again under my own power. Ride... crash... ride... crash... ride... ride... crash..., I'm getting the hang of this... crash... ride... ride... this ain't so bad... ride... ride... I get so I can navigate the industrial-sized streets of Joe's neighborhood. I ride back to his place and crash in his driveway. "Hmm, you need more practice," Joe discusses final tweaks and plans for the rollcage/fairing frame. "It's just a little more work..."

Six weeks later I took delivery of the Joetator. Part of the reason for the delay was working out the logistics of delivery. You don't just strap a twelve foot long bike to the roof rack of a VW Jetta and go. No, this is a deliberate process.

There was no way I was ready to pilot the Joetator the twenty-something miles from Joe's industrial neighborhood in south Seattle to my house in the suburban foothills of the Washington Cascades. And Joe wasn't volunteering to ride the beast up to my burbclave either. Maybe that climb along the north edge of Cougar Mountain was making him pause. Maybe it was just his basic distrust of neighborhoods where coffee shops outnumber machine shops.

Our pal Tony Licuanan solved this

problem. Tony has a van. And it's not one of those delicate shuttle-a-few-kids-to-little-league minivans either. No, this is a VAN, an old Ford built like gas still cost twenty-five cents a gallon and designed on the theory that vans are used for bringing eight burly guys and all their gear up to construction sites in the Alaskan wilderness.

So Joe, Tony and Steve Nash managed to coax the Joetator into the van. It was a tight fit. When they showed up at my house one Saturday morning, the Joetator was squeezed in diagonally with its tail flush with the left rear door and its nose draped over the passenger side front bucket.

Steve had ridden all the way over with his head poked up between the fairing frame tubes. He looked like Hannibal Lecter being escorted to the maximum security ward. The combined efforts of Joe, Tony, my friend Kevin Coughlin, and myself were applied to the problem of extracting the Joetator from the van without beheading Steve. I'm happy to report we were successful. I stood there looking at my new bike. It didn't have a skin over the fairing frame (that was my finishing job) but it was basically done. It was my bike now. I actually own another bike built by Joe, I've seen various bikes he's built and I'd seen the Joetator in various stages of its construction. You would think that this would have prepared me. You would be wrong.

You remember how you saw the first "Alien" movie and it was pretty scary and then you saw the second movie with the bunch of Aliens and they were scary but then near the end of the second movie you saw the Alien queen and you went "Oh My God!?" "Oh My God!," I said. "Yeah, it turned out great, didn't it?" Joe said. "Wow, it's...umm...big," I stammered. "Yep," Joe flipped up the canopy. The Joetator looks like a cross between a beached whale and a wingless fighter plane. The fairing/rollcage makes it a bit tricky to get into, but I manage. Yeah, it's like I remember but it seems so big. The feeling is like a mirror image of the feeling you get when you visit your old elementary school and realize how tiny the desks are. We all have places to go and things to do so I'm spared having to do too many minutes of my ride...crash...ride dance in front of an audience. Later, it's early evening and I'm alone with the bike. I approach it with caution, which is what Joe himself recommends. "You can't let a bike like this go to your head. Just because you can run over animals and smash into cars and come out unscathed doesn't mean you should do stuff like that." Right, I

really shouldn't do stuff like that. But the bike is big. Really big. I realize that I'd always seen it in on the wide streets of Joe's neighborhood. In my neighborhood, it's a monster loose in the village. Kids who regularly yell out "Cool bike, Mister!" as I whiz by on my Rocket now cower in terror and hide behind their mother's skirts as I lumber up to an intersection. I feel like I should file a flight plan every time I want to go for a ride.

On the first night I own the Joetator, I pull a muscle in my back as I try to jockey it into my carport. "I thought these bikes were supposed to be GOOD for your back," my lovely wife quips. She is not one of the Joetator's biggest fans.

I never get used to the bulldozer steering of the side sticks. It's an odd combination of sluggishness that suddenly becomes a fierce over-steer. I try to explain this to Joe. "The steering sucks!," I explain. Joe presses me for details. "Sucks how? Too slow, too fast, what?" "Yeah!" I say, "that's it. It's too slow and too fast. At the same time! Can you change it?" "Nah, I'll build you a new bike." That's one of the problems with Joe, once he gets a new idea, he wants to build a new bike which explains his continuously expanding fleet.

But I've learned more about myself, too. The Joetator isn't a bad bike. It's a great bike... but not for me. I like bikes to be little, fast, cute, zip-around bikes. Joe likes vehicles. Big, fast, frightening ones that are bikes, too, but a different kind of bike than what I ride.

A few weeks later it's the Seattle Bike Expo. The whole RCN gang is there: Bob, Tony, Steve, Joe and me. My pal Mike Ewing had taken the ends off a really big trailer to help me get the Joetator down to the Expo. It's being shown off along with various other bikes including my latest toy, a tiny SWB low racer built by John Williams, raced at Yreka, California in the '92 HPV event, retired, and then rebuilt and customized by Tony Licuanan and now dubbed Pillow Bike (more on this later).

I have no intention of bringing the Joetator back home with me. I have to work up the nerve to tell Joe. I find him at the swap meet. I'm just getting ready to launch into my "It's not the bike for me" speech when Joe says, "Would you mind giving up the Joetator? Tony's got this buddy who'd really like it. You know, it's not your kind of bike anyway, you're more of a SWB guy." Like I said before, Joe is a genius.

A month or so later I met Richard Lanier. We started talking bikes and then



Joe Kochanowski (right), Richard Lanier (left) and Grant A. Arnold (back) hold up the Joetator. Richard is now the proud owner of the bike.—Cindy Licuanan

Richard starts describing his latest bike. "Joe built it. It's amazing, about twelve feet long..." "You've got the Joetator!," I interrupt, "How do you like it?" "Well," he says, "it's really something. I've got to change the steering, though...it really sucks." □

Check out Kent's cool web site at: <http://www.halcyon.com/peterson/bentkent.html>. The unofficial site for the NW Low Down and Laid Back Recumbent Riders. See NW riders Bob Bryant and Steve Nash ride a well-known 'bent trike on two wheels.

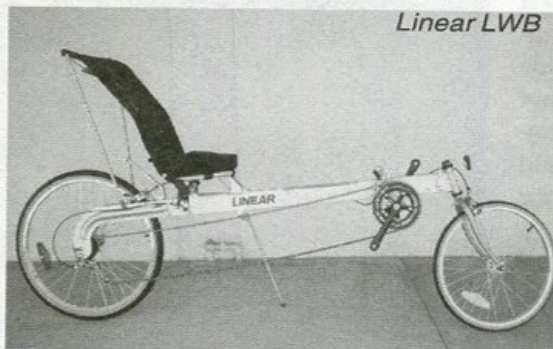
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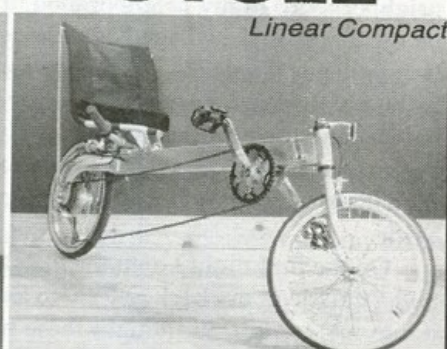
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GREENSPEED RECUMBENTS

Una 'Benter Manifesto

By **Joseph
Kochanowski**

A person's strength comes from within oneself and not from one's car....



I ride thru the valley of the shadow of death. I fear no evil because I'm riding the meanest, most frightening, menacing vehicle in that valley.
-Joe "Road Warrior" Kochanowski

My primary transportation for the past several years has been a recumbent streamliner. A bike like this, with at least a roof and a windshield, lets me wear basically the same attire all year round no matter what the temperature and weather. I don't need rain clothes or sunscreen and I don't dress like an Eskimo in the winter.

It's been my experience that all the world's scientific proof and broken speed records will not convince anybody to ride a recumbent. To achieve this you have to show people that recumbents WORK! This means having a real vehicle that they can see being ridden day after day, season after season, in various weather conditions over a long span of time. By riding my streamliner I am a living testament to the practicality of the recumbent streamliner as a vehicle for daily transportation.

Many experts in the field of automobile design and industry, cycling gurus and bicycle advocates have told me that streamliners will never see popularity. I don't agree. Whenever I ride a fast streamliner like the Moby, Rotator Super Seven or a faired Tour Easy with side panels, people are interested. The faster it goes, the more interested they become. However, most people are unaware of streamliners and have never seen one. Conventional cycling is seldom seen on TV, in movies or in the general pop culture and awareness of streamliners is almost zero. But when people see my streamliner riding around on the street—they remember the bike—and they remember me.

Currently there is no mass-produced state of the art streamliner that any ordinary person could buy and safely use for transportation. I have concluded that since THE WORLD HAS FAILED to produce one in the past 50 years, I have to build the thing myself. I just cannot wait for the likes of Trek, Schwinn, the Japanese, the Euro-

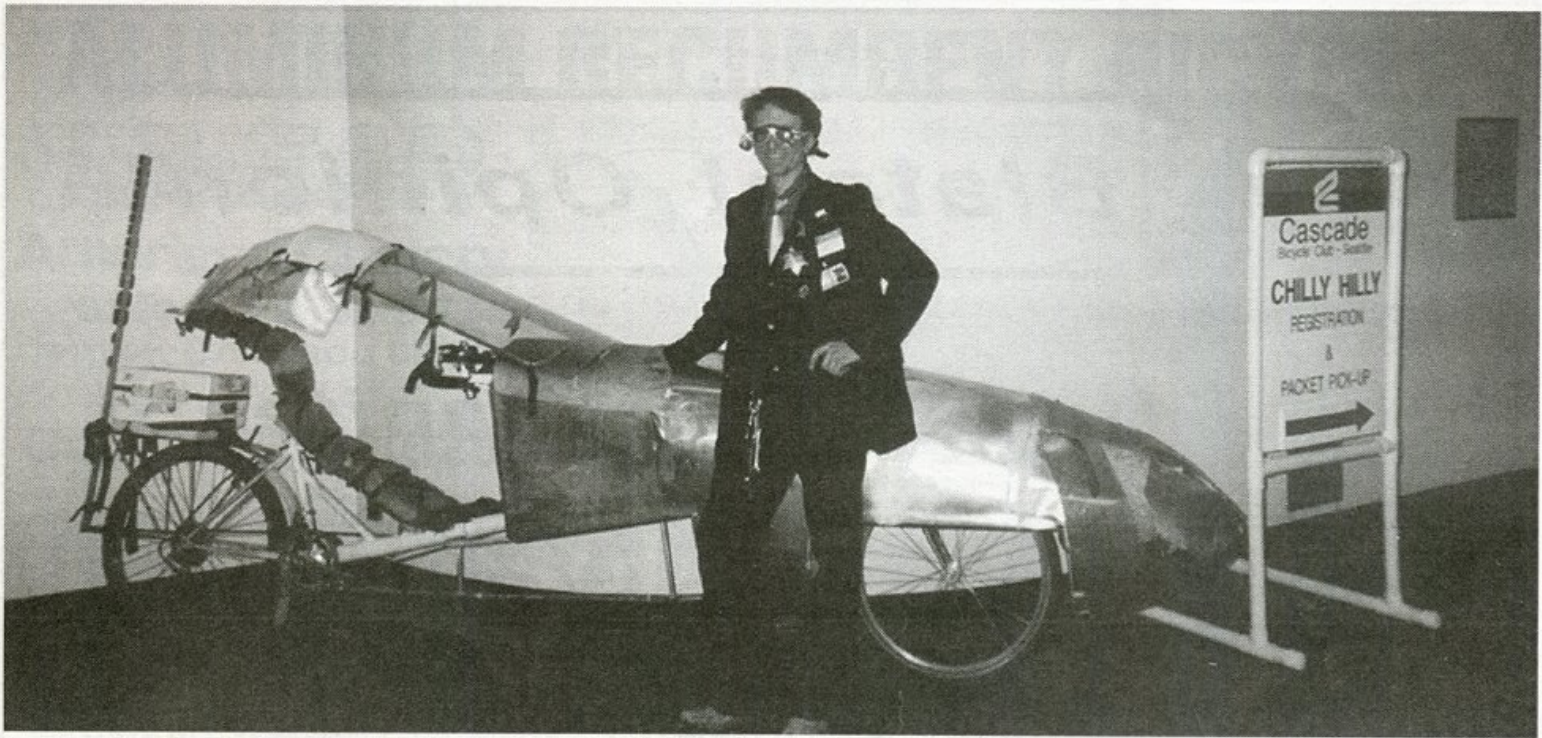
peans or Tim Brummer to include all the specifications I need in one package.

SAFETY... A good Streamliner has a top speed of at least 50 mph on flat and/or rolling terrain and cruises all day at 35. It is stable on slick roads and self-centering in crosswinds. The most important feature would be the "CRASH PROTECTION." A good sales promotion would show one being run over by a truck with very little injury or none to the rider. A head-on collision into a solid object (like a brick wall with a crash test test dummy) at 15 mph with no injury should be possible. A cargo capacity for such things as lawn mowers, a full set of golf clubs or a 24-foot. extension ladder would be helpful. All this would be in a package that fits into the back of a pick-up truck and weighs about 60 pounds. This is what I need to escape the evil empire of the automobile.

My current machines are about 100 lbs, after installing all the usual equipment (lights, spare parts, tools) and I sometimes carry a 50-pound cargo of groceries. When someone asks, "How do you ride a 150 lb bike?", I answer, "Real men ride heavy bikes." A heavy bike also turns any short ride into a major workout. This helps keep me in shape. I don't need the latest yuppie, infomercial exerciser. Most car drivers are so weak that they need motors to move themselves around.

MOTIVATION... Money and ecology don't motivate me. I am going to tell you why I must ride a recumbent streamliner. First of all, I would rather fly, but I am not permitted since the FAA does not like anybody to take off and land on their own driveways or the local supermarket parking lot. Now, I am forced to use the government roadways.

Automobile innovation has been a dead end for the past 50 years. The research



Joe "the Road Warrior" and Titanic, the terror of the streets of Seattle. Note the dual riding position cranks for riding wedge style. The photo was taken at the Seattle Bike Expo—Tony and Cindy Licuanan

desperately needed is from the vast untapped potential of the human body. A Human Powered Vehicle is the most technologically advanced machine on earth. I seek to improve the human machine. A person's strength comes from inside oneself and not from one's car.

My foundation of good streamliner building is bargain hunting. The difference can be finding NOMEX honeycomb for 50 cents a pound at the "Lazy B Ranch" (Boeing Surplus) or using plain old corrugated cardboard. I scavenge and recycle old bike parts, go to swap meets, recycle bikes and braze my own frames. I collect materials like titanium, polycarbonate, honeycomb, fiberglass, stainless steel, cardboard, and other high-tech stuff to create a bicycle, which gives me the confidence to solve any problem. I AM IMMUNE to adversity.

CHALLENGE... is a good thing. But the only real challenge in driving an automobile is to earn enough cash to pay for it. A Human Powered Vehicle puts it all to the rider's mind, spirit and body. There's something to gain even for those riders who only ride on bicycle trails, weekly/monthly rides, racing, velo, tours and centuries. Commuting is paramount. This challenges my fate, riding day after day, year after year. The most useful skill that I've learned is the development of my sixth sense. Riding a streamliner helps to develop confidence in my skills. A properly tuned mind (conscious or subconscious) can sense in ad-

vance when red lights occur, when cars appear around turns and where "mine-shaft" potholes are located. Therefore an HPV commuter becomes immune to adversity, since danger stares you right in the face at all times. A good HPV rider understands that courtesy is the fuel that keeps our transportation system running smooth.

The words "self-confidence" are treason to those who have sold their souls and freedom in exchange for the vehicles the BIG CAR COMPANIES and BIG GOVERNMENT command them to use. I live on less money than many yuppies spend on their cars. One local rider told me his two cars cost him over \$1,000 per month when all expenses are paid. We are turning into a nation of people who no longer improve ourselves. I do not need someone else to tell me that I am too weak to transport myself anywhere I wish to go, under my own power and untaxed.

The typical government roads are made for large, heavy, fast care-free cars. I know riders of frail lightweight bicycles that only ride on smooth, low traffic roads and bike paths. I choose not to surrender the roads to cars but to build and ride a rugged, fast machine that is designed for the real world and not some smooth-pavement, skinny-tire racer wannabe fantasy.

ROAD RAGE... Since my unique vehicle attracts a lot of attention, I must always set a good example in traffic. If a motorist follows me and wants to go faster, I will

not get in their way. Road rage is a fight over the poorly designed government roadways. There is nothing to gain for any winner in the dispute. Any motorist who wants these crummy roads that bad can have them. In the capitalist world inventors like Edison, Ford and Bell have earned the respect of everyone. I try to earn the same respect from motorists by building and riding a HPV that can compete with cars. I am either treated with inventor respect or I am so funny that nobody wants to fight a comedian. I ride thru the valley of the shadow of death. I fear no evil because I'm riding the meanest, most frightening, menacing vehicle in that valley.

NATURAL HIGH... Riding a streamliner is my way of getting a natural high. I am against drug use, alcohol and/or cigarettes. People can drive an automobile wasted or drunk, that could cause their own death or the death of others. Cars are far more dangerous than bikes. You cannot do this with Human Powered Vehicles. If you cannot balance yourself, you get nowhere. And if you get killed by trying, then you deserve it for you are responsible for your own actions...your own life.

TAKE ACTION!... I am not here to change the world or the opinion of others. I am here only to improve myself. I am not afraid to take on the challenge. I have been mostly alone in this quest and am not willing to say, "Let someone else take care of it." □

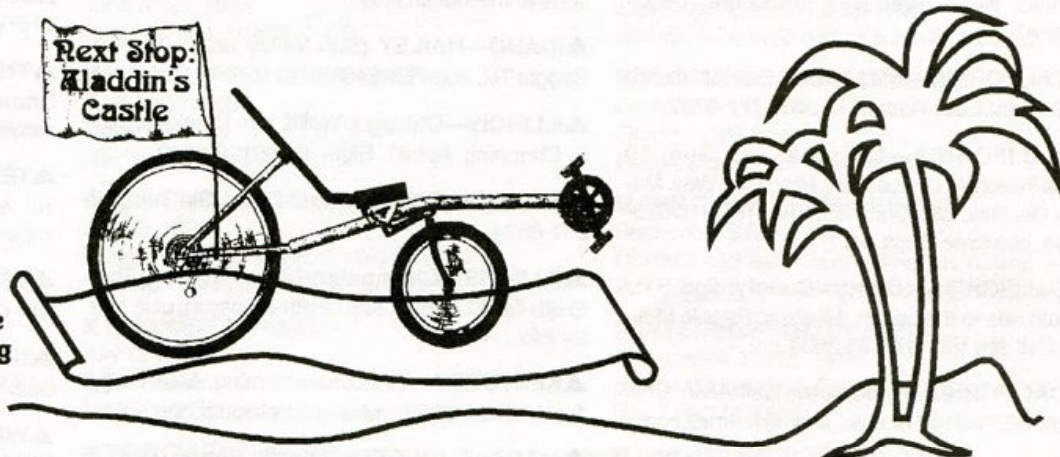
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RCN Letters Cont'd from page 8
Compacts and rider combos don't meet this
criteria. Moral to this story: Find hills to climb
and climb them...and climb again. —Bob, RCN

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▲ **CALIFORNIA—LA area:** 3rd Sun., 10 am@Burton W. Chace Park, Mindanao Way, Marina Del Rey, CA. Chris Broome, Tel. 310/823-2464, cbroome@usa.net

▲ **CALIFORNIA—Orange County:** 2nd Sat./month ride to the beach. Meets at People Movers Call Jim Tel. 714/633-3663.

▲ **CALIFORNIA—Palo Alto:** Call Alvin Chin Tel.650/571-5147 or chin_alvin@hotmail.com.

▲ **CALIFORNIA—San Francisco BARC** (Bay Area Recumbent Cyclists) 1st Sat./month, 10am@ Mill Valley Plaza in downtown Mill Valley. Any weather. Zach Kaplan Tel. 415/381-5723 or zakaplan@earthlink.net.

▲ **CALIFORNIA—Monterey/Santa Cruz:** 4th Sat./month. 10:30am. 15-30 miles casual sightseeing. Meet @ Seabright Brewery/Java Junction Coffee House complex, 519 Seabright Ave. in Santa Cruz, Martin Krieg, Tel. 408/426-8830, cycleam@BikeRoute.com. <http://www.bikeroute.com/RecumbentRides.htm>

▲ **CALIFORNIA—San Diego:** Last Sat./month from the Mission Bay Vis. Ctr. Bill Volk Tel. 619/824-8323, bill_volk@lightspan.com

▲ **CALIFORNIA—Sacramento:** Recumbent Riders of Sacramento. Rides along the Am. River Pkwy. Gary Tel. 916/600-8312, Dave @ 916/483-4435 SacBent@aol.com

▲ **CALIFORNIA—San Dimas:** EZRiders (~30 mi. E of LA) Most Sat. 20-50 mi. (workouts) Sun. 10 - 20 mi.(social) odonnell@ xsis.xerox.com or & Ischeetz@cyberg8t.com

▲ **CONNECTICUT:** Recumbent Yankee Pedalers meet 2nd Sun. @ 9am. Dave Tipping Tel. 203/484-2937, nz1j@juno.com

▲ **FLORIDA, FOOLS CROW CYCLES, LASERR,** (Tallahassee): Call Ed Deaton @ 904/224-4767, edde@freenet.tlh.fl.us

▲ **IDAHO—HAILEY** (Sun Valley area): Bob or Reggie Tel. 208/788-5433.

▲ **ILLINOIS—Chicago:** WISIL Len Brunkala, 260 S. Channing, Apt.#1, Elgin, IL, 60120-6619.

▲ **ILLINOIS—Chicago:** Fast Eddie Gin Tel.773/237-6624.

▲ **ILLINOIS—Champaign/Bloomington:** Tom Smith Tel. 217/351-7305, tsmith@s.psych.uiuc.edu for info.

▲ **KENTUCKY—**'Bent group forming. Mike Reilly Tel. 502/491-0328, mfreilly@bellsouth.net

▲ **MASSACHUSETTS—North Shore:** Riders wanted! Contact: Bob Hicks Tel. 508/774-0906.

▲ **MICHIGAN:** Michigan HPV Michael Eliasohn Tel. 616/982-4058.

▲ **MICHIGAN:** Wolver-bents (S.E. area): Meets Sat. @ Willow Metropark Pool shelter, Mar.-Nov. 9am. Bob Krzewinski, 706 Dwight St., Ypsilanti, MI 48198, Tel. 313/487-9058, BobMich@compuserve.com. <http://Recumbents.com/Wolverbents/>

▲ **MINNESOTA—Minneapolis:** MnHPV Meets 2nd Wed. 7pm Lk. Nokomis Com. Ctr. Ride 6pm - Mar.-Oct. Mark Stonich Tel. 612/824-2372.

▲ **NEBRASKA—Omaha:** County Cruisers Meet 2nd Sat., 6-30 mi. Armand Gibbons Tel. 402/553-4472, <http://www.nfinity.com/~armandg.html>

▲ **NEW MEXICO—Albuquerque:** Ride one Sunday morning per month. Contact Hester at Absolutely Recumbent Tel. 505/345-7736.

▲ **NEW JERSEY—Metro Area Recumbent Society** (MARS) 3rd Sunday from the George Washington bridge (NJ side) Contact John Tetz, Tel. 973/584-6481; E-Mail jgtetz@aol.com.

▲ **NEW YORK—Rochester:** RARE (Rochester Are Recumbent Enthusiasts) Hank Walck Tel.716/265-4287; Michael Brisson Tel. 716/461-5084; Dave Larson Tel.716/235-4116.

▲ **OREGON HPV ASSOC.:** Ride contact: Jeff Wills Tel. 360/254-3736, jwills@pacifier.com OHPV, PO Box 614, Beaverton, OR 97075

▲ **TN/NW GA/N.AL—Chattanooga:** Easy Chair Rec. Bikes Tel. 423/886-1499, easychairbikes@att.net

▲ **TEXAS—N. Texas R-BENT:** 4th Sat./month. Tel. 972/329-1225, <http://web2.airmail.net/imbent2/bentride.html>

▲ **TEXAS—Houston:** Ride 2nd Sun. @ Katy HS. Contact Pat @ 281-347-3627 for start time.

▲ **UTAH—Riverdale:** Comfortable Crotch Club Brett Rodgers Tel. 801/399-2447.

▲ **WASHINGTON—Seattle/King County:** NW Low Down & Laid Back 'Bent Riders: Weekly rides, email for calendar update. Bob Tel. 253/631-5728, DrRecumbnt@aol.com

▲ **WASHINGTON—Spokane:** Meet 2nd Sat. 9:30am @ SIRTI parking lot east of Fairfield Inn, Jeremiah &; Karen E/Z RIDER CyCLES Tel. 509/725-4249 jmangini@famrc.org

▲ **WASHINGTON—Vancouver:** Meet on the 3rd Sat., 9am from the Old Holland Bakery. Gale Simpson Tel. 360/891-1947.

▲ **WASHINGTON—SE: WRTW2*** Two Wheeled, Recumbent Riding Trombone Teachers of Walla Walla. VonBruno@bmi.net

▲ **WASHINGTON DC AREA: W.H.I.R.L.** Every Sat., 8am (9am-winter) @ Viers Mill Rec Center. <http://www.recumbents.com/whirl>

▲ **WISCONSIN—Madison:** Recumbent Brigade. Last Sat. 9am @ State St. corner of the Capitol. May-Sept. mfox@iss.wisc.edu

▲ **DO YOU WANT TO START A GROUP?** Send us a listing similar to those you see here, keep us updated and on your mailing list.

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• 1998 RECUMBENT EVENTS CALENDAR •

■ WHIRL BIG RIDE

May 16, 1998
Tel. 703-314-3044 www.Recumbents.com

■ MIDWEST 'BENT ROUND-UP

May 23, 1998
Hales Comer, WI
Wheel & Sprocket Tel. 414/529-6600

■ HPV Development Series

May 9 & 24, 1998
San Diego, CA (SD Velodrome)
Bill Volk Tel. 619/824-8323, bvolk@inetworld.net

■ MIDWEST RECUMBENT RALLY

May 30-31, 1998
Stevens Point, WI
Hostel Shoppe Tel. 715/341-BIKE

■ MICHIGAN HPV RALLY

June 6, 1998
Waterford, MI
SASE TO Michael Eliasohn, 2708 Lake Shore Dr.,
Apt. 307, St. Joseph, MI 49085. Tel. 616/982-4058

■ CRATERS OF THE MOON 'BENT TOUR

June 6-7, 1998
Sun Valley, Idaho
Bob Cummins@True Wheel 208/788-5433 Call to
reserve a spot. 120 mi., great food, scenery &
friends.

■ hpr HPV RACE SERIES-WATERFORD

June 6
Waterford, MI (Sportsmans Center)
Gary Hill, 220 Vill-Edge Dr., Granville, OH, 43023.
garriehill@nextek.com. www.recumbents.com

■ hpr HPV RACE SERIES-DELTA COLLEGE

June 7
Bay City, MI (Delta College)
See hpr contact info or Michigan HPV Rally above

■ HPV DEVELOPMENT SERIES

June 13, 1998
San Diego, CA
Bill Volk Tel. 619/824-8323, bvolk@inetworld.net

■ BOSTON RECUMBENT RALLY

June 13, 1998, 9am
At the half-shell on the esplanade
Contact George Reynolds Tel. 603/432-7327.

■ EASTERN CANADA RECUMBENT RIDE

June 21, 1998
Wolfville Nova Scotia, Canada.
Kevin & Denise Baker, 120 Capri Dr. Porters Lake
NS, Canada. scooter.baker@ns.sympatico.ca

■ SLUMGULLIAN TOUR

June 26-29, 1998
Angletech Tel. 719/687-7475

■ WORLD SPEED CHAMPIONSHIPS

June 24-27, 1998
Indianapolis, IN
See hpr contact info

■ hpr HPV RACE SERIES-NORTHBROOK

July 18, 1998
Northbrook, IL (Northbrook Velodrome)
See hpr contact info, write for updates

■ RECUMBENT ROUNDUP

July 12, 1998
Ogden, Iowa
1-800-645-2981 www.thebikebarn.com

■ BIKE CULTURE WEEK

July 18-25, 1998
York, England
See Bike Culture Magazine

■ CYCLEFEST '98

July 29-Aug. 3
Lancaster, England
John Bradshaw Tel. 010 441524 32878. Fax 010 44
1524 847472. J.Bradshaw@UCSM.ac.uk

■ 5th ANNUAL 'BENT EVENT

August '98 date to be announced
Mt. Airy, MD
Mt. Airy Recumbents Tel. 301/831-5151.
Email: Abikie@aol.com

■ hpr HPV RACE SERIES-ELKO

August 8-9, 1998
Elko, MN (Truck Driver Training Facility)
See hpr contact info

■ hpr HPV RACE SERIES-KENOSHA

August 29, 1998
Kenosha, WI (Kenosha Velodrome Night Racing)
See hpr contact info

■ hpr HPV RACE SERIES-ELKO

August 30, 1998
Burlington, WI (Auto Test Facility)
See hpr contact info

■ HPV Development Series

Sept. 12, 1998
San Diego, CA (SD Velodrome)
Bill Volk Tel. 619/824-8323, bvolk@inetworld.net

■ PEOPLE MOVERS 'BENT BASH

September 5th, 1998
Orange, California
People Movers Tel. 714/633-3663

■ CENTRAL ILLINOIS BIKE RIDE

September 5 & 6, 1998
Contact: McLean County Wheelman, Box 947,
Bloomington, Illinois 61702 or Jerbal1@aol.com

■ INTERBIKE TRADE SHOW

September 11-14, 1998
Sands Convention Center, Las Vegas, NV
Tel. 714/376-6161

■ hpr HPV RACE SERIES-OHIO

October 1998
Columbus, Ohio
See hpr contact info

■ hpr HPV RACE SERIES-FLORIDA

November 1998
Tallahassee, FL
See hpr contact info

■ RACE CONTACTS:

—hpr HPV RACE Contact Info: Gary Hill, 220
Vill-Edge Dr., Granville, OH, 43023.
garriehill@nextek.com. www.recumbents.com

—San Diego Velodrome Series: Bill Volk Tel. 619/
824-8323, bvolk@inetworld.net

■ RIDER GROUP CONTACTS:

—See RCN rider-group listings. These are usu-
ally enthusiast groups with volunteer leaders. Make
it a point to stay in contact with them as many of
the groups meet weekly and ride in local organized
recumbent rides.

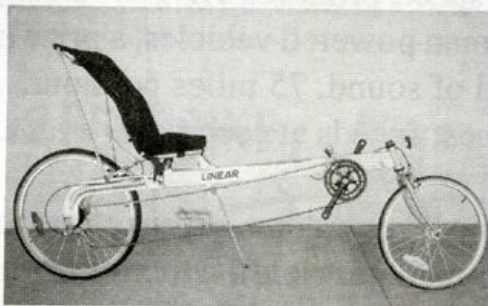
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Indianapolis 500 Speedway June 25

.deciMach 200 Meter Sprints
WSC 200 Meter Sprints
.deciMach 200 Meter Sprints

Indianapolis Speedrome June 26

200 Meter Sprints
1000 Meter Pursuits
Last Man Out Races



Indianapolis Waterfront Plaza June 27

100 Meter Water Sprints
1,000 Meter Water Circuit
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Further Information:

large self addressed envelope to:
e-mail garriehill@nextek.com
web page www.recumbents.com

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USED 'BENTS

FOR SALE: '92 Rans Stratus, full fairing, Sachs 3x7, 63-spd., Trek computer, pump many extras \$1995 OBO; 1998 **Vision R40 LWB** USS \$1250; Falmouth Recumbent Bicycles 207/774-2488 (ME/45)

FOR SALE: Easy Racers Gold Rush Replica, polished aluminum, long-wheelbase, small frame size, immaculate condition, 1000 miles, Super Zzipper fairing, Shimano 21-spd., 105 brakes/hubs. \$2500 firm. Tel. 619/453-5749 (46)

FOR SALE: 1996 Double Vision Recumbent tandem. Very good condition, with IPS and several other upgrades. \$3,100. For more information please call 970/223-8521 or email jmitchell@webaccess.net. (CO/45)

FOR SALE: 1997 EASY RACER TOUR EASY SS, medium, red, Super Zzipper, rear rack, dual WB cages, computer, <1000 miles, one-year old. Chuck Tasca, Tel. 208/765-1711 (ID) Email cnichuck@dmi.net \$1400. Seattle delivery (46).

FOR SALE: LEMLE LIGHTNING CYCLE TAILWIND LWB USS, steel, emerald green imron paint, sliding mesh seat, Shimano 21-spd., thumbshifters, 28-451 20" ft. wheel, 700c x 24 rr. Many innovative features, many extras included. < 2 years old. Fits 5'2"-6' tall, \$1000 firm incl shipping. Shari Tel. 954/370-4804 or email: shari.bernhard@mail.ccur.com (FL/46)

FOR SALE: RANS V-REX: 24/20, Sachs 3x7, Magura, brakes, lights, computer, metallic green, fenders, high-back seat, Frog Speedplay pedals, excellent condition, \$1400 firm Tel. 250/384-4545 (CAN/46)

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USED 'BENTS

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FOR SALE: 1997 RANS STRATUS LWB, custom metallic red paint, 3x7 63-speed, upgraded chain, crank, Avid cantilevers, Angletech trunk, upgraded bottom bracket, 37" frame, <400 miles, Exc. Cond \$1499 + S/H Tel. (days) 303/866-5038; eves 303/756-1217 (45).

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FOR SALE: LIGHTNING P-38 XT, med. frame, blue, 700c/16", 250 miles, 1-year old, computer, 21-speeds, coproplast body. Tel. 609/399-4755 (NJ/45)

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FOR SALE: EASY RACER GOLD RUSH REPLICA, 1997 model, full Zipper fairing, low miles, mint condition \$2200. Tel. 440/526-8301 (46)

FOR SALE: ATP VISION R45 SWB ASS 1000 miles, 17" Moulton front wheel, Ritchey triple crank, Shimano Bar End shifters, Shimano Deore XT derailleurs, Ultegra hubs, Onza cantilever brakes, computer and rear rack. Immaculate condition \$1800. B.Hammer@worldnet.att.net (46)

USED 'BENTS

FOR SALE: '98 BikeE RoadE Air Tech 21-spd., black., new barely ridden, Aero rims, Air shock, includes new Dia Compe shock pump \$1100. New BikeE Zipper \$350; BikeE seat bag \$60; Two accessory mounts \$25 both. Tel. 619/452-3889 (CA/46)

FOR SALE: 1995 Lightning Stealth, brand new upgrades include Shimano STX rear derailleur, new chain and GripShift. Excellent \$995 Tel. 508/785-1931 (MA/46)

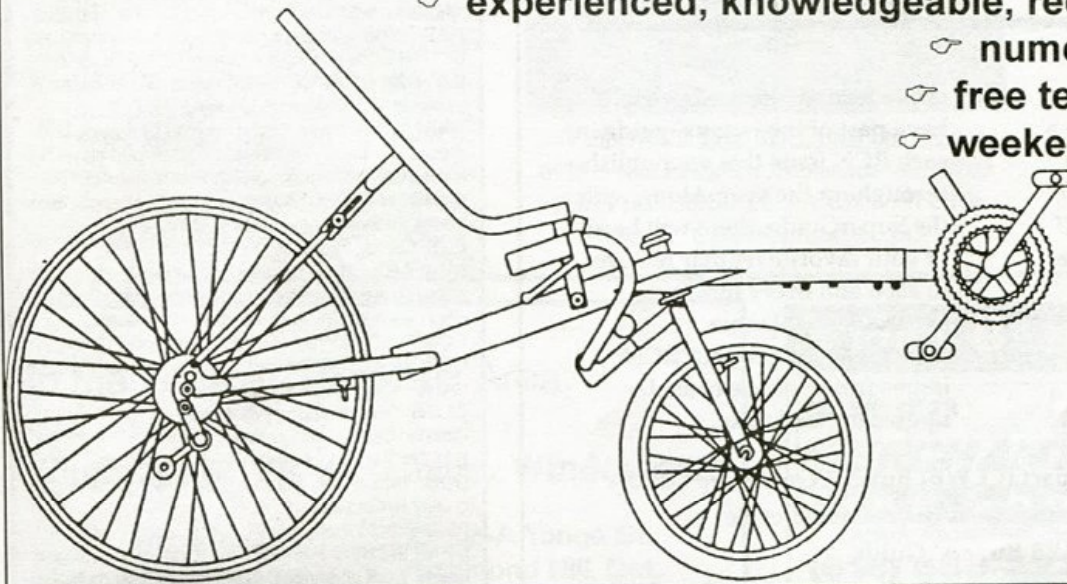
FOR SALE: 1997 ATP DOUBLE VISION TANDEM recumbent, IPS (independent pedaling system) under 500 miles. Excellent condition \$3,000 + shipping. Scott Henry Tel. 920/868-3309 or oldtimeportraits@dcwis.com (46)

FOR SALE: LINEAR FOLDING LWB, 42" frame, above-seat-steering, Gold with red custom Rans-type handlebar bag/fairing. VG condition. Fits riders 5'3" to 6'; great entry-level recumbent. A dream to ride! \$590. Tel. 904/692-2375 (FL/46)

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▲ RCN 1998 SCHEDULE

For 1998, we *WILL NOT* have a traditional buyers' guide as in years past, but instead a new *RECUMBENT SUPERGUIDE!* With the idea of bringing more current up-to-date coverage, larger, more attractive regular RCN issues and in favor of subscription growth, we have opted out of the *yearly* buyers'

- ✓ RCN #43 Jan/Feb '98 Compact (CLWB) Buyers' Guide/ 98 Editors Choice Awards and How To Buy A Recumbent Bicycle
- ✓ RCN #44 March/Apr '98 SWB Buyers' Guide
- ✓ RCN #45 May/June '98 LWB Buyers' Guide/Recumbent Seat Shootout
- ✓ RCN #46 July/Aug '98 Tandem/Trike Buyers' Guide/Accessory Guide
- ✓ RCN #47 Sept/Oct '98 Homebuilder Special/SuperGuide Update
- ✓ RCN #48 Nov/Dec '98 1999 Season Preview

guide format. Instead, we will have part of the buyers' guide in each RCN issue that we publish throughout the year. Along with the SuperGuide, there will be all of your favorite regular features in each and every newly expanded RCN issue.

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393-BENT

GLOSSARY

ABOVE-SEAT STEERING (ASS): Handlebars above the seat, knees or frame-Above-Seat-Steering. A standard bicycle type steering similar to that of a hot rod/Stingray type bicycle of the 60s.

ALUMINUM: AL, or Alum. A lightweight ductible, tarnish resistant material.

BAR-ENDS: Handlebar extensions most often used on USS bikes to bring the controls closer to the rider.

BOTTOM BRACKET: (BB) pedal axle & bearings, sometimes called boom-bracket.

BRAZING: A frame joint is created by flowing brass around the tubing junctures. Builders then either file/sand the joints smooth or leave them natural.

CARBON-FIBER: A high tech, high strength composite material that is black in color.

C.G.: Center-of-gravity

CHAIN-IDLER: A modified skateboard wheel, derailleur pulley or custom-made wheel that carries the chain slack on SWB and some LWB models.

COMPACT: CLWB or MWB recumbent

COROPLAST: Plasticized cardboard that works great for homebuilt recumbent fairings

CLWB: Compact Long Wheelbase 47"-60."

CroMo: Chrome-moly steel.

DELTA: Two-wheels in the rear trike design.

DOM: Drawn-over-madrel. This is a type of higher quality HiTen steel.

FWD: Front Wheel Drive

GEAR INCHES: Formula used to determine range of gears: front churning divided by rear cog multiplied by drive wheel dia.

GRIP SHIFT: A trademark of the SRAM Corp. A brand of twist-grip shifter.

HiTen Steel: High tension or mild steel.

HPV: Human Powered Vehicle.

INDIRECT STEERING: Underseat steering via a rod linkage that connects the handlebar to the fork.

KEVLAR: A high strength, bulletproof composite material that is gold in color.

LWB: Long wheelbase 60"-71"+ (crankset low and behind front wheel).

LOW-RACER: A SWB recumbent built as low as possible for HPV racing (may exceed our wheelbase range for a SWB).

MAGURA: A high quality, strong German hydraulic caliper brake.

MID-DRIVE: A mid-ship mounted, wide-ratio, two-chain drive freewheel shifted by a rear derailleur.

MTB: A dated abbreviation for mountain bike.

MWB: The same as CLWB. Formerly used to describe longer SWB bikes.

NEXUS: Shimano's internal 4/7 speed hubs.

PEDAL STEER: Pedal-induced steering input that makes the bike more difficult to track straight. This generally happens on SWB models with wheelbases of less than 39" or a very laid back head tube angle.

RCN: Recumbent Cyclist News founded by Robert J. Bryant in 1990.

RWS: Rear-Wheel Steering.

SWB: Short-Wheelbase 33"-47" (crankset high and in ahead of front wheel).

TIG WELDING: Tungsten-Inert-Gas; a proven no-lug process common with MTB's.

SACHS 3 X 7: This is the Sachs Internally geared three speed with 7-spd. freewheel (21 speed total).

STEERING ROD: The steel or aluminum rod that connects the fork to the bars.

STEERING STRUT-RISER: An ASS extension that rises from the stem or head tube to raise the bars over the legs.

TADPOLE: Two-wheel in the front trike design.

UNDERSEAT STEERING (USS): Steering via handlebars beneath the seat.

V-BRAKE: A new and strong style of cantilever brake the has high arms in a "V" formation.

X-SEAM: A measurement used for recumbent fitting. This measurement simulates the distance between the seat back/base out to the farthest reach of the pedal stroke.

ZZIPPER: A Lexan fairing by Zzip Design.

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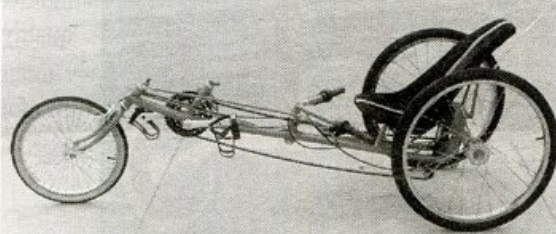


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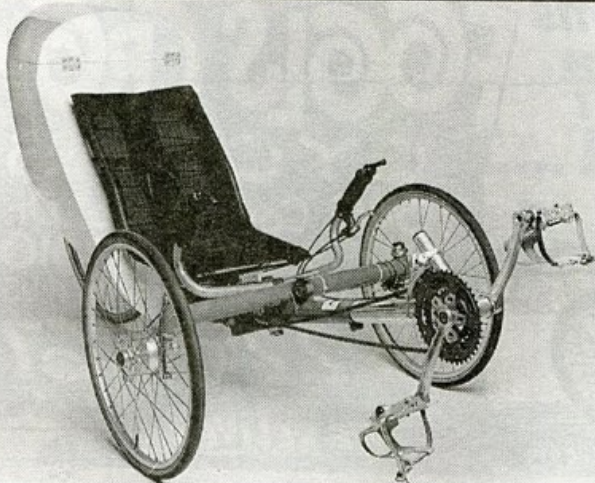
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
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
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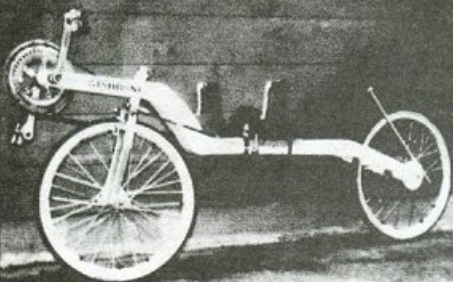
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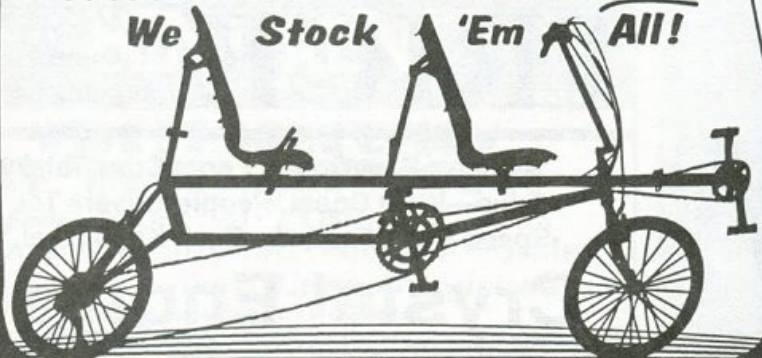
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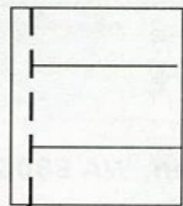
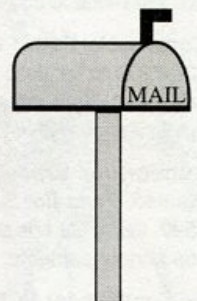


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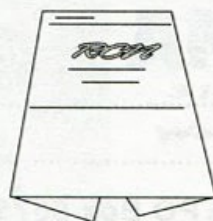
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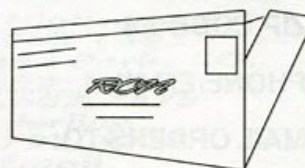
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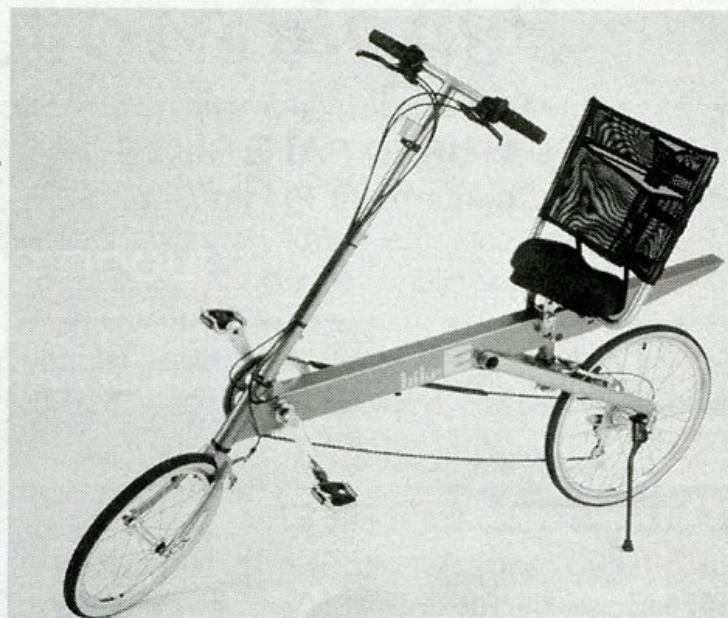
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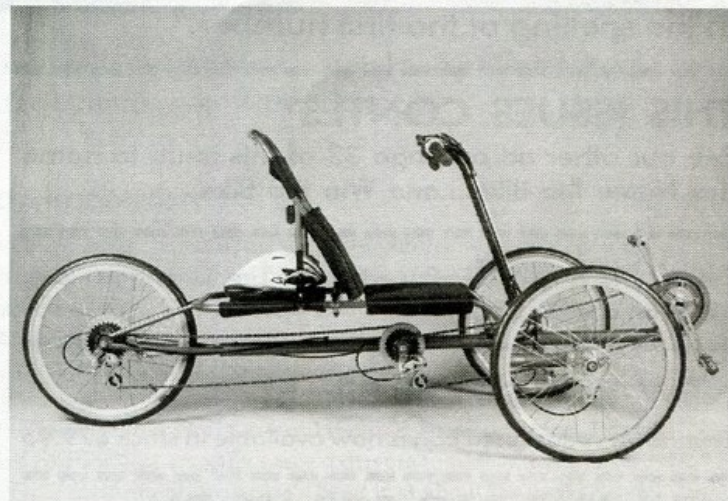
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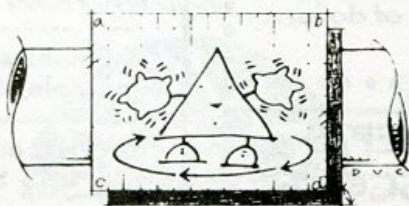
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LAST ISSUES CONTEST

Last issues puzzle winner is John Rutter of Holland Michigan. John received a Vetta C25 Cycle Computer! The runner-up was David Kajudo of California. The answer was, "The second number is the amount of letters in the spelling of the first number."

THIS ISSUES CONTEST

See our other ad on page 33 of this issue to name the Name the Bike....and Win the Bike

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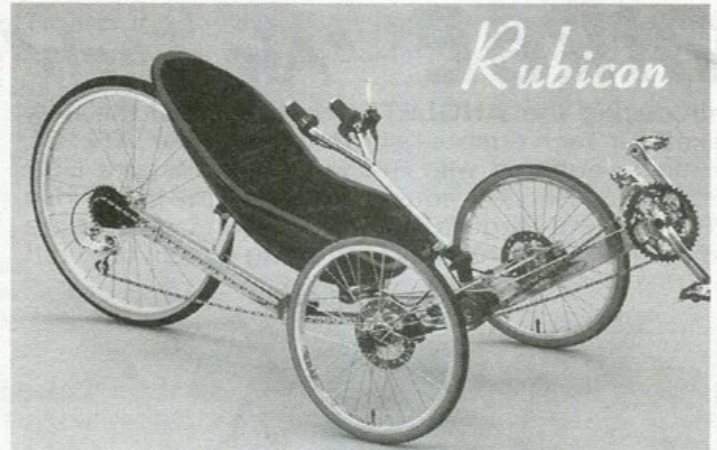
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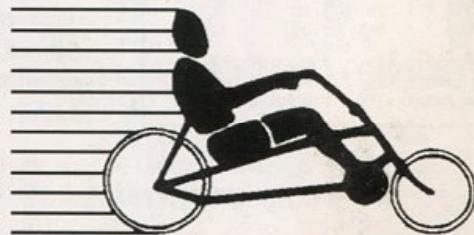
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