

# RCN

RECUMBENT CYCLIST NEWS

**REVIEW  
TRIPLE PLAY!  
EASY RACERS  
Ti-RUSH  
TERRA CYCLES  
TERRA ZA  
LIGHTNINGS  
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**RECUMBENT  
ANTHOLOGY:  
KELVIN CLARK  
INTERVIEWS  
RANDY  
SCHLITTER  
OF RANS**

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

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**RCN Notes**

- ✓ **RCN#53 MISTAKE—RANDY RACK**—The correct email address is: RLTUCKER2@AOL.COM
- ✓ **RCN HAS RELOCATED**—We have moved our offices to the sleepy Victorian Seaport of Port Townsend, Washington. Port Townsend gets a lot less rain than Renton and offers exceptional year round cycling. There are even a few recumbents in town. While we are getting all of our systems set up, there may be some communications glitches. Our new address is PO Box 2048, Port Townsend, WA 98368. All mail from Renton will be forwarded for six months. The internet is the best way to communicate with us if you have a question or concern.
- ✓ **NEW RCN EMAIL**— publisher@recumbencyclistnews.com
- ✓ **ISSUE DATE CONFUSION**—Contrary to what it says on the cover of RCN, this is the Nov/Dec '99 issue. There is a mistake on the cover dates on RCN#52-54. RCN comes out every two months: #49 Jan/Feb, #50 Mar/Apr, #51 May/June, #52 July/Aug, #53 Sept/Oct, #54 Nov/Dec. The covers are done on photographic film, and they were completed before we caught the error. RCN#51 and 52 were very early. RCN#53 was late due to our relocation and a new mailer. This was somewhat disruptive, though it was planned. We are back on schedule now and we hope to see the RCN#55 Jan/Feb 2000 issue during 1999.

**RCN Contributors**

Robert J. Bryant • Mark Colliton • Jim Langley • Alan Thwait's • John Riley • Bill Volk  
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**Cover Photo Credit** Photo is Alan Thwait's on his Lowracer. Photo courtesy of Alan Thwait's.

**Fine Print:** RCN is published by Bob and Marilyn Bryant & family in the Victorian Seaport of Port Townsend, Washington. We are a two-person company, publishing from our home office. We have no employees, only dedicated volunteers and friends who work cheap. We are as far from a corporate affair as you can possibly imagine. This magazine is published by enthusiasts, for enthusiasts—because we love recumbent bicycles. We are the voice for the enthusiast recumbent world since 1990—10 Years in July of 2000!

# RCN Relocates & 2000 Updates

Robert J. Bryant, Email: bob@recumbencyclistnews.com

*RCN is written by and for enthusiasts. If you want to see an article on a given subject, write it.*

*If you disagree with something we have written—we want to hear about it. If you think you have a better idea—let us know.*

*This is as fair as we can possibly be. There is no excuse for not participating.*

**I**t has been nearly a year in planning, and it is finally taking place. After three months on the market, we sold our home/office in Seattle suburb, Kent, Washington. Our search for a new place to live had us all over the map of the USA, however, we didn't move too far from Seattle (about 2 hours across Puget Sound). On June 26th, we drove the moving truck to our new hometown of Port Townsend, Washington. PT sits in the Olympic Mountain rainshadow. The annual rainfall is about 17 inches—more rain than that banana-belt neighbor, Sequim, but far less than drizzly Kent. Being right on the straights of Juan de Fuca, the air is fresh and clean and the temperatures are 3-5 degrees cooler than Seattle (natural air conditioning). Being on a peninsula, PT is at "the end of the road," as my dad would say, keeps the country roads quiet for the most part. Tourism plays a big part in the local economy. PT is the only Victorian Seaport on the west coast. It is a creative, artsy and bike-friendly place. Being out of the rat race was our dream for the decade—sidetracked more than once—it has now finally become a reality. PT felt like home within a matter of days.

Our local bike shop sells a few recumbents, and there is a yearly Kinetic Sculpture race (RCN is a sponsor) and I have met many of the local recumbent riders. Heck, we might even have the makings of a small local rider group...or at least a recumbent support group.

The main interests here in PT are the wooden boats, great live music, Victorian homes and incredible seafood. It is also a haven to Sea Kayakers—and SUV's are rare (unless they hale from Seattle). Our backyard is Old Fort Townsend and Fort Worden State Parks, which are nearly 1000 acres combined and are right on the water. Riding bicycles here is wonderful—though leave your skinny tires at home.

Our new test course includes many miles of open country roads. We also have our own private road test course (my neighborhood—though the speed limit is 25 mph). Our commute to the RCN PO box includes six miles of terrain that includes paved roads, barely paved roads, a wooded trails, and a crushed gravel bike trail that meanders along the waterfront into town.

## ■ DOWNSCALING RCN

Our move was also a "downscaling." I know, it's tough to imagine a magazine being any smaller than RCN. When we moved out of the Seattle area, RCN was put onto two Macintosh Powerbook computers and one Palm Pilot III. The idea was to make RCN easier to produce with our minimal staff (Marilyn and I). All systems are working very well. USA readers may also have noticed the recent issues coming in polybags. Also notice your mailing label. They are inkjetted onto the issue with barcodes. All RCN issues with USA destinations are mailed first class presort. This is the most reliable way to mail anything (short of Fedex or Priority) though it has come at a cost.

Since we are now a 70 minute drive + 35 minute ferry ride from Seattle, trips into the city will be kept to a bare minimum. The RCN issue originals are Fedex'ed to the printer in Seattle. Once printed, most issues are shipped to nearby Tacoma for mailing. USA mailed issues are in readers hands within 5-10 days of being printed. The extras (back issues) are then shipped to our home office in PT.

## ■ WHICH ROAD TO TAKE

All RCN systems are as refined as they can possibly be. Our overhead is fairly low, though our production costs are skyrocketing. We try to think of peer magazines that are surviving to see if there are aspects of the publishing business that we can improve on without breaking the bank.

For all of you entrepreneurs, I don't have to outline what is costs to be and stay in business these days. Employees, retirement funds, office leases and medical plans (and we don't have all of this stuff) make it next to impossible to compete with the glossy mags that can sell \$10 subscriptions over the internet. These magazines are subsidized by \$25,000 per page (+/-) glossy color automobile manufacturer ads. You might notice the lack of recumbent coverage in such publications...

So where do we go from here? We do understand that RCN has become too expensive. However, we're not sure what to do about it. Our 1999 rate increase made the streamlined printing and mailing systems possible. RCN services are now more predictable and more dependable than ever before. We are *not* growing as fast as one might expect—given the current mainstreaming of recumbents. Our higher subscription rates are at least part of the problem. However, there is no other recumbent publication in North America. We don't get many letters criticizing our content and the recent RCN's have lots of voices and are well balanced. Maybe the Internet is the culprit. Recumbent information travels fast, furious and free of charge, although so does disinformation.

## ■ RCN 2000

RCN will continue as we have been with six issues per year mailed first class mail. The 2000 Season Preview issue will be RCN#56. We are also working on a book/buyers' guide about recumbents due out in early 2000. We hope to have a "Best Of RCN" publication out later in 2000.

We are looking to the future for new ideas on how to make RCN more affordable and available to a wider readership, yet retain profitability. If you have any ideas along these lines, please drop us a note. RCN is *not* a part time gig. It requires two passionate people full time hours, or realistically 4 people to keep it going.

## ■ OTHER MAGS

Even the mainstream bicycle magazines latest incarnations seemingly do not include recumbents. In a related interesting twist, we have heard the disturbing news from a very dependable source that RCN is now *THE ONLY* publication in North America doing *ANY* recumbent reviews. We were recently told that this *other* publication is not planning to list recumbents in their buyers' guide for 2000 (I wonder how their recumbent advertisers will feel about this?). It is difficult to fathom how a publication could make a conscious decision *NOT* to cover the only segment of cycling that is growing.

## ■ UPDATES

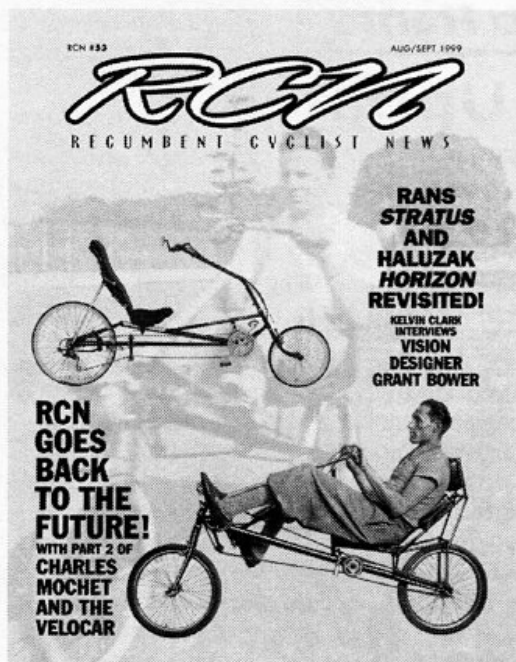
- ✓ Look for RCN#55 Jan/Feb 2000 to be mailed before the end of 1999.
- ✓ Calling All Manufacturers—we need your 2000 product info ASAP!
- ✓ We are compiling articles and info for our next, "Homebuilder Special Edition." Please let us know your favorite web pages, plans, etc.

## ■ RCN COMMUNICATION

Please note our new address: RCN, PO Box 2048, Port Townsend, WA 98368. If you have the need to UPS or Fedex us something, please email or call for our shipping address.

Our phone numbers and email are as follows: Tel. 253-630-7200 (RCN Voice Mail); Email: bob@recumbencyclistnews.com; Web: www.recumbencyclistnews.com.

Viva Recumbency!  
Bob Bryant, Publisher ☐



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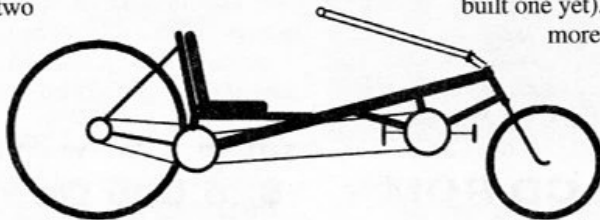
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# Recumbent News

Nov/Dec 1999 RCN#54

## LaBent, An Affordable New LWB from Plans or Kit

**W**ant a recumbent, but don't want to pay the high prices? With a little work and not much money you can build your own great looking "bent." The LaBent is built from two old 10-speeds (or whatever). The frame uses square steel tube for strength and easy construction. Included are plans for a simple-to-build, comfortable seat. Components are salvaged from the two old bikes. The drivetrain has two chains and two sets of gears which eliminate a long floppy chain and allow a wide range of gearing possibilities.



anyone. Squint your eyes and you're building an Easy Racer. The plans are complete, straightforward and easy to follow (though I haven't built one yet). As usual with plans, I would have liked to see more anecdotal info, stories, parts sources and more to read...but that is because I am a writer...

The use of square tubing makes building fun and easy. The frame will almost be self-aligning. The only drawback to the square tubes and dual chain drivetrain is that it will be a bit on the heavy side. Designer LaDue says

40-45 pounds, but who cares! The builder can go as cheaply as they like, to as fancy using commercially available handlebars or seats from our laid-back freinds in Freedom, California (Easy Racers).

My hat is off to Denny LaDue. As the recumbent bicycle is mainstreamed, fewer homebuilders are offering plans, let alone kits to backyard builders. The LaBent is low tech recumbent fun at its finest. Oh yeah, and it's approved by the Hells Angels. What other designer can say that? ☐

### HELL'S ANGELS APPROVAL

I built my first bent in 1984, while living in Southern California. I lived only two miles from my office and had an old ten speed that I kept in the office and rode home for lunch. One day, while riding back to work, bucking the Santa Ana winds, I started thinking there must be a better way.

I began doing some research on recumbents. I didn't know what they were called at that time, but I had seen one on a television show. Eventually, I designed and built a bent like the one in this photo. It had to be simple enough to make with the limited amount of tools and space I had at the time. I borrowed a welder and did the work on my driveway and in an 8x10 metal shed that I called a shop. It also had to be cheap. I don't think I invested more than \$50, including the rental price of an angle grinder. I still ride the original, it's the blue one on the home page. I had been riding my shiny new recumbent for several weeks with no incidents, other than the admiring stares of on-lookers and passers-by. Then, while riding home for lunch one day, I heard the distinctive rumble of two Harley-Davidsons coming from behind me. A quick glance told me that the pilots of these two huge choppers were not just a couple of weekend adventure seekers, but some real hard core biker types.

They thundered up and cruised along right beside me. I was afraid to look over at them, knowing I was surely going to die. Finally, I worked up the courage to glance over at them. They were both laughing and each gave me a big thumbs up. Then they roared off, down that long, lonesome highway.

So, you see, my bents do have the approval of the Hell's Angels. That is if they actually were Hell's Angels and if that actually means anything.

Since then I have built several of them and started to think maybe some other people would like to build their own as well. So, I put some plans together and am offering them for sale.

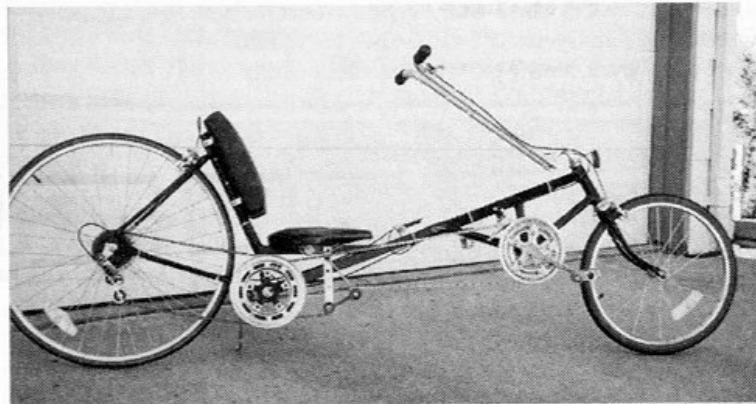
The plans consist of 11 prints and instructions. The kits contain everything you need to build your bike that you can't salvage from the two 10-speeds, that can't easily be made or that isn't readily available in any bike shop.

The LaBent kit includes: plans, the main cross member, the seat brace, handlebars, chain idler sides, idler mount components, misc. screws, nuts, etc. The plans are \$20 and a kit is \$100. Kits are generally shipped within 10-14 days.

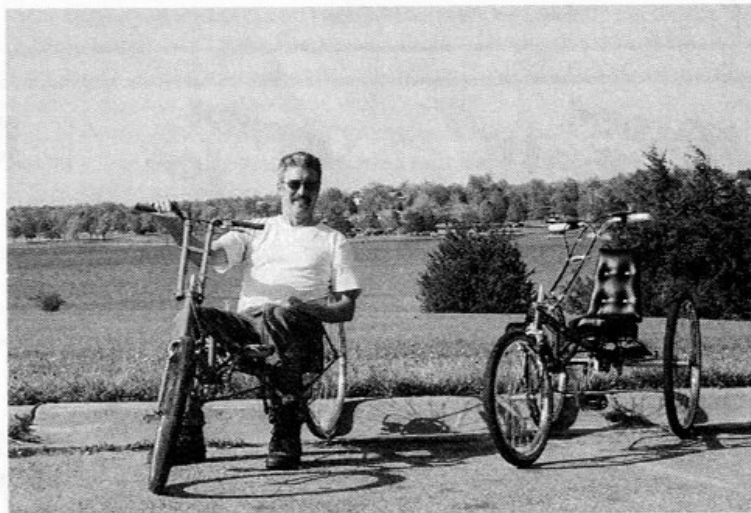
For more information contact LaBent by LaDue. 1607 S 84th, Lincoln, NE 68506. [www.radiks.net/~ladue/](http://www.radiks.net/~ladue/)

### REVIEW

The LaBent plans are no-nonsense plans for the laid-back rider on a budget. This homebuilt project is definitely within the realm of almost



*This has to be one of the best and cheapest ways to "get 'bent" that we have ever seen. We give this bike and info two big thumbs up. You can get that this info will be in our next Homebuilder Special Edition. The LaDue LWB ASS from kit—Denny LaDue*



*Denny LaDue with a LWB and LWB trike—photo courtesy of Denny LaDue*



EMIL AND  
ANNALISE BECK

Dear Bob, Marilyn and RCN readers,  
Greetings from Hawaii! Hope you are  
having a nice Holiday Season despite  
the cold and dustings of snow.  
We enjoyed a 30-mile ride in 80 degree  
weather... Yup, it's nice here.  
We love the new tandem  
(bent #5 in our stable).  
Happy New Year  
Regards,  
Emil & Annalise Beck

## New Wheel-Building CD ROM

J. Gaerlan of Gaerlan Custom Cycles in San Francisco, California has just produced an educational wheel-building CD. "It is no Hollywood production, but very informative," states Gaerlan. It is Gaerlan's first attempt at doing an instructional CD. The goal is to share wheel-building knowledge and at the same time promote his company.

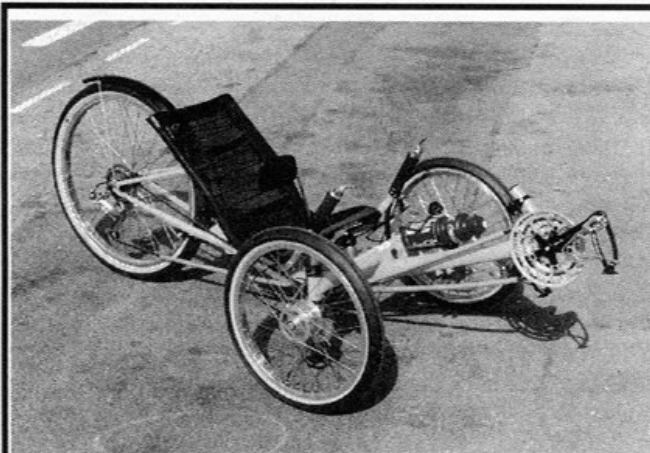
Gaerlan's company specializes in recumbent and small wheel bike parts, frame-building parts and instructional information. Gaerlan also builds small wheeled folding upright bikes and is a dealer for Dahon folding bikes.

The regular price for this CD is \$6.95. For RCN readers, the cost is just \$4.95. The CD works with Adobe Acrobat for both Mac and PC. J. Gaerlan Custom Cycles Tel. 415-362-3866. Email: JFreeWheel@aol.com. Web: www.gaerlan.com. □

## \$25,000 Dempsey-MacCready HPV Speed Prize Announced

A new \$25,000 cash prize will be awarded to the first single-rider human-powered land vehicle to equal or surpass the 90 kilometer (55.924 miles) in one hour. Sponsored by the Dempsey World Record Associates of Santa Ana, CA, the prize will be administered through the Human Powered Vehicle Association (HPVA). The prize was created to inspire innovation in human powered vehicles and to promote ultra-light, low energy consumption, high-speed human powered transportation.

Note that all competitors for this prize must be members of the HPVA. For more information, contact the HPVA web site www.ihpva.org. or HPVA, Dempsey-MacCready Prize Committee, 9539 N. Old Stage Rd., Weed, CA 96094. □



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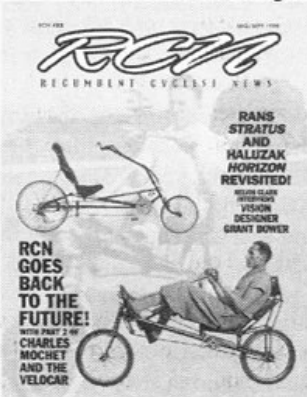
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# The Easy Racer Ti Rush

by Jim Langley

**R**ain or shine, every Saturday in Santa Cruz, CA at 8 am sharp, a training ride for roadies takes place. It's called, appropriately enough, The Saturday Morning Ride and it's been a tradition for over 25 years. I've been on this ride a few times. It's a rush. When the weather's good the group can exceed 100 athletes including Olympic hopefuls and professionals. The leisurely promenade through town gradually becomes an all-out dash fifteen miles down the road. It's difficult and prestigious to win this sprint, a high-speed affair thanks to the big pack and the long gradual downhill at the ride's end.

I was lucky enough to be there the day Freddy Markham came out on his Easy Racers Gold Rush. Most of the regulars were there that morning and none of us knew what to think about Freddy being in the pack on that rolling rocket. There was no sitting in behind him to get sucked along because his streamliner was so low profile, so close to the ground. And it was worrisome to think what might happen if he made an aggressive move in the bunch on such a long-wheelbase rig.

We didn't worry long because Freddy methodically worked his way to the front. And when he got there — he took off. I think we all thought the same thing, something along the lines of, "He's not going anywhere."

We were wrong. Repeatedly, the top guns went to the front revving the pace, in the process sawing off half the group and stringing out the rest. But, even with the hammers trading pulls, we couldn't close an inch on Fast Freddie and he blew across the line many lengths ahead of the first wedgie.

## ▲ MAGIC METAL

It was that image that came first to mind when Easy Racers' founder Gardner Martin offered his newest model, the Ti Rush. I also wanted to be the first writer/rider to test the first production titanium recumbent. After all, there's only one negative to titanium: high price. The Ti Rush, equipped with Super Zzipper fairing and Shimano parts for example, runs a spouse-shocking \$5,279.

But before you decide it's not worth the hassle of trying to convince your significant other that you need it, consider that titanium is an amazing material. It's light, durable, resistant to corrosion, beautiful and wonderfully lively to ride. In fact, my favorite conventional mount, a Litespeed Vortex, which is made of ti has been such an awesome performer that I often tell people it's the only bike I've owned that almost pedals itself.

Easy Racers' Ti Rush has similar ride qualities. You feel the light weight (26 pounds 15 ounces without the fairing) immediately. But more noticeable is the way the frame floats over rotten roads absorbing small shocks that otherwise would vibrate your fillings loose, a feature that translates to much less fatigue on long rides.

There's also the wonderful feel of titanium, which truly seems to help with pedaling. It's almost as if you've purchased a built-in tailwind. I once held a scrap piece of titanium and tried to bend it. I flexed it well past the point that a steel sample would have yielded. Instead of bending, the ti piece sprung back as straight as it had been. I believe it's this resilience that contributes to pedaling. The frame kicks in with a little boost for each foot thrust.

This is noticeable any time you accelerate and every time you climb. And, it's not simply the novelty of riding a new material. Each and every time you get on this 'bent, the feel is there. All the people I let try the bike commented on the surprisingly easy pedaling.

Titanium has other advantages. One of the nicest is that it can't corrode. Pedal the Ti Rush in the rain all you want. Shoot, take it on dirt roads or through the snow. Tie it to your yacht and spin through distant ports. The moisture, mud, sweat, toxic ocean air — conditions that

would trash a steel or aluminum bike — won't faze the titanium at all. And all it'll take to spit shine the brilliant polished finish is a little soap and water. Longevity like this is a super feature, particularly if you've ever retired a bike due to the frame rusting or corroding.

The Ti Rush is built of 3Al/2.5V titanium tubing by Steve Delaire, the same framebuilder who designs, constructs and sells Rotator recumbents. Craftsmanship on the pre-production prototype I tested is very clean. The frame configuration is basically identical to the aluminum and steel Easy Racers designs with a triangular main frame construction and twin bottom tubes adding lateral rigidity and a custom look.

My only gripe is slight difficulty removing the rear wheel. But Easy Racers has already addressed this on production frames by moving the brake bridge forward and reshaping the dropouts to ease wheel removal.

## ▲ LIMOUSINE COMFORT

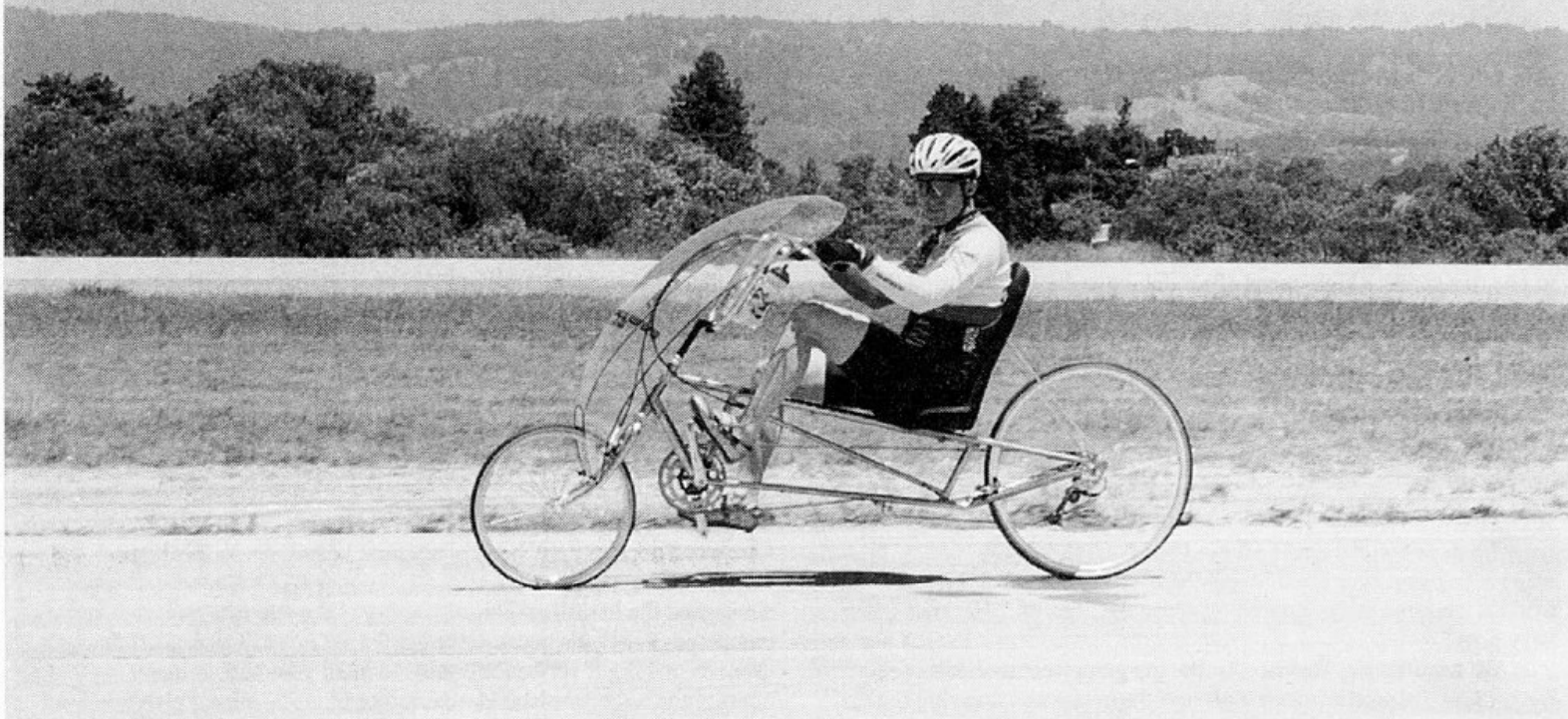
One word pops into my head every time I head out on this bike: civilized. The wide padded seat, the chopper-like wheelbase, the low stance and the luxurious Zzipper fairing make one feel protected and pampered. Partly it's because the cranks are low (13 inches off the ground) making it very comfortable to plant your feet. A major contributor is the windshield, which blocks gusts, bugs and debris from blasting your face and body. It's a treat on cold or wet days or when fighting a headwind. It makes me want to try even more protection such as Easy Racers' full fairing kit. This \$695 option, one of the most popular upgrades offered by the company, includes a special Zzipper fairing, rear rack, rear support and a Lycra "sock" that envelops rider and bike providing free speed. Interestingly, it only adds about 5 pounds and is easy to remove and tuck into the fairing (or a bag) should extreme sidewinds cause handling problems.

In a recent issue of RCN, there was an article about the Easy Racers seat and how it could numb one's bum. I experienced a certain amount of posterior paralysis initially. I'm used to mesh seats and this seat is a multi-ply foam platform with a carbon/Kevlar base. It's easily adjusted by loosening two nuts beneath that allow the seat to slide forward or back (back angle can be adjusted by loosening the clamps holding the rear strut). There are even three sizes of seat bottom available for different shaped riders.

The shape of my seat bottom feels perfect, just wide enough for support without interfering with leg movement. And the padding soaks up big bumps. But sitting on a foam cushion takes some getting used to. I rode with cycling shorts and regular shorts and had minor numbness under my sit bones for the first week of rides. During the second week however, the numbness was less bothersome. I believe that if you ride regularly enough, the numbness will disappear.

A recent option from Easy Racers is the Cool Back, a mesh design seat back (the frame is made of welded stainless-steel tubing) that mates with the standard seat bottom. This option adds \$100 to the bike price. It's cooler than the foam seat and it cradles your back more. You sit in this seat whereas you sit on the other design. The Cool Back offers additional support but the foam back touches less of your body. Plus, the foam back is narrow allowing a rider to apply body English on different parts of the seat to control the bike better when cornering hard. If you're an aggressive rider, you'll probably lean toward the regular seat. If you're more touring or comfort oriented, you may prefer the Cool Back.

Like the seat, the handlebars are quite accommodating (three sizes are available), sitting right where you want your hands and controls to be. Steering is stable so that it's easy to ride one handed if you're inclined to cruise resting an arm in your lap. Shifting can be located on the bar ends with fingertip levers or mounted inboard of the grips with



*Fast Freddy test rides the Easy Racer Ti Rush—photo courtesy of Easy Racers*

twist shifts or thumb levers. I like the two bottles mounted on the handlebars, which are easily reached and watched for checking the water situation on long rides.

#### ▲ RIVETING RIDE

Having most recently spent my time on an ultra-quick short-wheelbase 'bent (Lightning R-84), I half expected to be bored by the Ti Rush. The steering is certainly more mellow. But that's expected from a 69-inch wheelbase. Fact is, you can almost ride this bike no handed, it's so determined to pick the right line for you.

You master the feel of the long wheelbase quickly. You only need to tip the knee on the side you're turning to out slightly to make surprisingly tight slow-speed turns.

If you've ever ridden a tandem, you have an idea how a long-wheelbase bike can excel on descents. Speed increases stability so you sail down hills fearlessly. I've been tearing around corners I've braked around in the past dropping ride partners and on one occasion, a trailing car (gotta love that). Some of this extra speed is thanks to the Zipper fairing, which seems to allow a top end considerably greater than without. But you only feel comfortable at these higher speeds because the Ti Rush road manners are so civilized and manageable. Sweeping through corners, there's total control.

You can really roll up the miles on flat terrain. Again, the fairing cuts down on headwinds and airborne debris so you feel like you're cruising along surrounded by a forcefield. I notice a reduction in wind noise, warmer hands, feet, legs and torso and just feel generally more refreshed at ride's end. Of course, having a wind break adds to average speed and I cruise along comfortably at 17 mph average speed on rolling rides.

Climbing is better than most other long-wheelbase recumbents I've tried but slightly less sprightly than the quickest-climbing short-wheelbase 'bents. I'd attribute the improvement to the lightweight and responsive titanium frame. I attacked several 2,000-foot ascents and was able to maintain a steady pace over the top even overtaking a tourist on a conventional mount one day.

Easy Racers' Gold Rush, which has an aluminum frame has been a great selling model so I rode one to compare its ride with the Ti Rush. I

expect this is a decision many buyers will face. There's a major difference in price but only a slight ride difference. What I feel is increased stiffness, and less liveliness from the frame when you accelerate. This is not to put down the Gold Rush ride. The bike handles superbly as you'd expect from such a popular 'bent. It's just that the titanium frame pushes the performance a notch farther. Whether it's worth the \$2,000 added cost or not only you can decide.

Commenting on the Ti Rush componentry would be irrelevant because my test rig is set up with a mix of '98 and '97 Shimano parts. Easy Racers will build the bike with your choice of components. The frame comes with a pump peg making it easy to bring along an inflator and there are the two bottle mounts I mentioned. I wish for a way to carry some gear so I'd recommend getting a seat or handlebar bag to tote a tool kit, jacket, food etc. (A neat feature is that some panniers will mount directly on the seat struts meaning no rear rack is needed.) I also couldn't seem to keep from striking the chain with my right calf when the chain was on the large chainring (it gets a lot of use on this bike). A friend fashioned a leg/pants protector out of a piece of Cordura and two Velcro straps. He puts this on before riding as a grease catcher. Another approach might be to add a spacer between the pedal and the crankarm to slightly move your leg away or even to adjust the cleat to hold the foot outward slightly.

When you buy an Easy Racers bike you also receive a goody bag, which includes tools for adjustments, spare nuts and bolts, a tube, derailleur cable and assembly video, which includes riding tips. You might consider one of ER's carbon fenders as well if you plan to ride in the rain because it'll protect you from crud thrown off the front wheel.

#### ▲ BUSINESS BOOM

With such noteworthy machines to sell, it's not surprising Gardner Martin and Easy Racers are doing well. I picked up the Ti Rush at the new 10,000-square-foot facility located near the Watsonville, CA airport. Being familiar with Gardner's former digs, basically a spruced up barn, it's great to see such a bustling new factory and hear that production is expected to triple now that they have the space to improve efficiency.

Like any major bike manufacturer, stations are set up assembly-line

fashion, with stock and supplies stored near each step of the build process. On one end are racks with tubing for building the frames and the welding stations where the frames are hand built on fixtures. In another area workers painstakingly assemble the various components that make up the seats such as the lightweight carbon base and the composite foam pads and the Lycra cover that gives the seats a professionally-finished look (it's removable for laundering too).

Two rooms off the main factory floor house the painting area and grinding and polishing station. The wheelbuilding center sports Park Tool Company's new ultra-precise truing jigs, piles of spokes, hubs and rims. Overhead hang a hundred or so frames waiting to be built and shipped to owners around the country and beyond. Workers in the center of the work floor man workbenches and repair stands pulling parts from bins beneath to assemble the various model ERs they happen to be working on.

As you might expect, Gardner has more ideas than he has time to bring them to fruition. He plans to go after another speed record (Martin's bikes were the first to break the 50- and 65-mph barriers); is considering tandems (he's built a few already), maybe a new model (I'm sworn to secrecy) and then there's that airplane on the drawing board. Judging by the success he's had and the stellar performance of his latest offering, I'm certain whatever he launches next will be a huge hit.



#### ■ ACCESS

Easy Racers  
200 Airport Blvd.  
Freedom, CA 95019  
Tel. 831-722-9797  
www.easyracers.com

#### ■ RCN ROAD

TESTER RATING:  
B+

### New For 1999

◆ New model for this year. Also available is the aluminum framed Gold Rush in SS or EX (touring) versions.

#### Pros

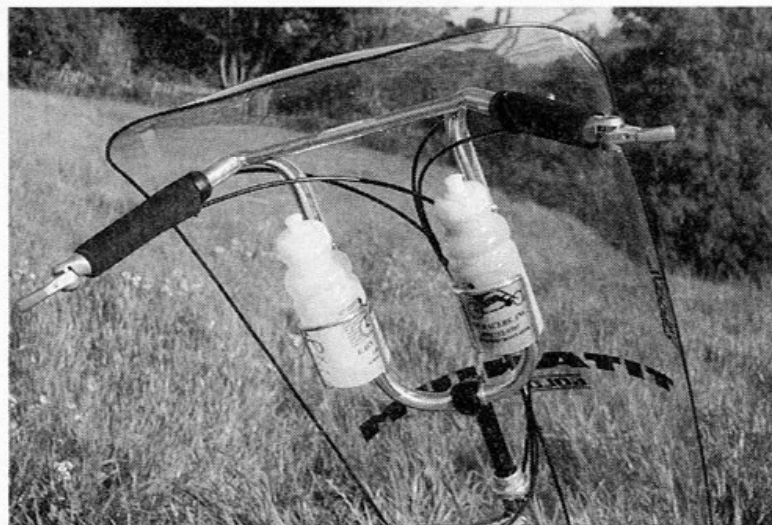
- ▲ BEST LWB ASS/Handling/Performance/Design
- ▲ Choice of two seats (Cobra or Cool Back)
- ▲ Modern 9/27 speed Shimano drivetrain
- ▲ Stable Confidence inspiring SWB handling
- ▲ V-brakes work great (no rear wheel lockup)
- ▲ Lots of options, upgrades and custom features
- ▲ Easy Racer says its 5% faster than an alum. GRR

#### Cons

- ▼ Upright/erect LWB performance riding position—may cause recumbent butt for some riders
- ▼ Still some mediocre components in the bunch: brake levers
- ▼ Chain rubs on your leg (some riders)
- ▼ Limited seat recline
- ▼ Awkward to haul around
- ▼ Very, very expensive. Is it \$2000 better than a Gold Rush?



1999 Ti Rush with Super Zipper fairing and Cobra seat—Jim Langley



ABOVE: Ti Rush Super Zipper and water bottle holders. Note retro bar-cons. LEFT: Ti Rush Cobra seat—Jim Langley

#### COMPONENT SPECS

MODEL.....	Easy Racer Ti Rush
TYPE.....	LWB above seat steer (ASS)
WHEELBASE.....	69 inches
SEAT HEIGHT.....	21 inches
BOTTOM BRACKET HEIGHT.....	13 inches (ground to center of spindle)
WEIGHT.....	26 pounds 15 ounces (without fairing)
FRAME.....	triangulated 3Al/2.5V titanium
Suspension (type/shock).....	none
FORK.....	Easy Racers.CroMo steel Unicrown
STEM/BARS.....	Easy Racers aluminum
SEAT.....	Cobra: carbon/Kevlar base; foam padding; Lycra cover

#### COMPONENTS

CRANKSET.....	Shimano Ultegra triple 30/42/52
BOTTOM BRACKET.....	Shimano Ultegra sealed
HEADSET.....	Shimano 600
DERAILLEURS.....	Shimano Ultegra (front); Shimano XTR (rear)
SHIFTERS.....	Shimano fingertip (handlebar end)
CHAIN.....	SRAM/Sachs
CASSETTE.....	Shimano XTR 11-30 8-speed
WHEELS.....	700C Matrix (rear); 20 inch Sun (front)
HUBS.....	Shimano Dura Ace 32 hole
TIRES.....	Cycle Pro (rear); Continental (front)
BRAKES/LEVERS.....	Shimano Ultegra sidepull/Tektro
PEDALS.....	Shimano SPD
WARRANTY...frame: lifetime; fork: 5 years; seat: 1 year; components: 6 months.	
COLORS.....	polished titanium
FITS RIDERS.....	5' 2" to 6' 4"
SIZE TESTED.....	Large
PRICE.....	\$.5,279 (as tested)

# The New Terra-Za SWB

by Robert J. Bryant

I'm guessing that you are asking yourself who is TerraCycles<sup>1</sup> and what is a Terra-Za. Pat Franz is a masterful and innovative industry newcomer who has been refining this design for several years. If you are from the northwest (especially Oregon), chances are that you heard of Pat. Pat's current claim to fame is a SRAM/Sachs 3x7 aftermarket quick release mechanism (each Terra-Za comes with one).

The TerraCycle Terra-Za is a very unique recumbent bicycle. When designer/builder Pat Franz called to ask for an RCN test, I was hesitant. I looked at the web site and thought to myself... yet another SWB... and this one has a big price tag. After a few conversations with Pat, along with some input from pals in the Oregon HPV group, I decided to test the bike. Pat shipped the Terra-Za to RCN Fedex in its own custom coroplast shipping container.

As a connoisseur of fine bicycles, it only took me a few minutes to realize that this is an exquisite machine unlike any other SWB we've tested. So what makes the Terra-Za so special? Well, here is a list:

- ✓ Unique frame design
- ✓ Odd, but cool logo tube (false BB)
- ✓ Custom designed and built CroMo fork
- ✓ The most ergonomic ASS we've ever tried (and best)
- ✓ 3x7 Quick Release
- ✓ Dual 20" -wheeled SWB ride
- ✓ Passive Suspension
- ✓ Level of finish work better than any recumbent we've seen

## ■ FRAME

You won't find the usual boring frame specs here. This bike is interesting. This is the way we like to see recumbents built, the way more should be built and the way many high-end bikes will have to be built in the future (if the companies want to stay competitive).

Odd is the one word that comes to mind when you first see the CAD designed Terra-Za frame. The seat tube is oversized CroMo (1.5 X .035). The seat channel and rear seat supports both fasten to this mainframe. The rear triangle connects in an open diamond form (with no vertical riser). These secondary tubes (.75 X .035) then come back up, connect to the false bottom bracket (a term that Pat Franz doesn't really care for, this is a large diameter CroMo tube), pass by the headtube and connects to the boom (creating some boom triangulation). This design creates passive rear suspension, a stiff boom, a lower than usual (20" SWB) seat height and an arguably odd look. The question that seems to be left unanswered is if the false bottom bracket is something cool, or should be designed out of the bike.

Pat Franz has a classic road bike view of the level of finish work that should be on a recumbent. Even though the frame is TIG welded, there are hand painted gold accents on the fork, false BB, and fork. Many of the parts on the bike are CNC machined, and you will find the TerraCycle logo etched into many spots on the frame, most noticeably on the base of the steering riser (pivot) and in the false BB. The false BB is painted gold on the inside and has plexiglass covers fixed to either side, with the logo etched on.

The above-seat steering is exquisite. Pat Franz starts out by using a custom-made fork (made by him) with a steerer tube with the perfect height. The fork is mounted to the frame via the finest headset made—a Chris King. A custom CNC machined Aheadset stem holds an aluminum riser that pivots on a quick release. The CroMo handlebar stem is powdercoated to match the frame and mounts over an aluminum riser allowing several inches of vertical adjustment. The stem rises up and then angles back at an upward angle connecting to a handlebar/stem clamp.

Custom CroMo handlebars (again, powdercoated to match the frame) are 21" wide with an outward flair at the end. Due to the ability to raise and lower the stem height, and pivot the bars, optimum ergonomic dial-in will be exceptional for most riders. Feeling the need for more room in the cockpit, I even manipulated the system by turning the stem forward instead of backward (see "RIDER ERGONOMICS").

Our one criticism about the ASS is that the quick release doesn't need to be there. With TerraCycle's CNC abilities, a lighter weight refined pivot bolt should be a relatively easy task.

## ■ CHAIN MANAGEMENT

Chain line and chain management can make or break a SWB design. The SWB can be a complex animal and a well-thought-out chain path is a necessity or the vibration and noise can drive you crazy. Everytime you change something, it affects something else. The Terra-Za is a unique recumbent with an exceptional chainline. The Terra-Za uses machined high quality roller-blade wheels with oversize bearings. We had never seen these on a recumbent before. My kids are really into roller-blading, so I have some amateur knowledge of the wheels, and these are fine examples. They roll smoother and quieter than other SWB chain idlers. The idlers are mounted to the frame, so there won't be any idler mount flex or vibration. The chain path is smooth, quiet and reasonably direct for a bike designed to have a low seat height.

## ■ DRIVETRAIN

At this level of bike, Pat Franz will do anything you like to customize your Terra-Za just for you. Our test bike had was outfitted with a venerable Shimano 105 rear derailleur shifted by SRAM Grip Shift Plasma twist grips. The SRAM Sachs 3x7(8) hub is modified to accept an 8 speed, so the Terra-Za is a 3x8, 24 speed. No need to worry, the bike's rear shifting is among the finest we've tried. Each gear is a smooth click. Our drivetrain was perfectly adjusted from the factory. The 105/Plasma doesn't offer as quick shifting as an SRAM ESP, though it seemed less fussy. Every gear was a smooth and quiet shift and I did not have to attempt an adjustment.

The SRAM/Sachs 3-speed internal hub is at its finest on a dual 20" bike. We highly recommend this application. The reason it works so well with small drive wheels is that the hub has three internal gears: #2 is a 1:1 lockup, #1 is a 73% reduction gear underdrive, and #3 is a 136% overdrive. Our only criticism of the Terra-Za drivetrain is that the use of an 8 speed requires a Plasma 8-speed shifter set that is not meant for use with a 3-speed hub. This means that your internal gears are not indexed and you have to guess or count clicks. Our recommendation would be to use a Sachs trigger shifter to shift the 3-speed hub, and possibly order your Terra-Za with the optional front derailleur shifted by the Plasma front shifter—making for 72 speeds (triple crank). You certainly don't need 72 speeds, but most recumbent techies have at least thought about it if they have experienced or considered the Sachs 3x7 hub.

## ■ WHEELS & BRAKES

Our test bike was Terra-Za production #1. The wheels were hand built by a local Portland, Oregon bike shop (Mt. Tabor Cycle). They remained perfectly true during our road test.

Both rims are Mavic SUP 406 BMX rims with a black finish on the rim face, and natural aluminum on the braking surface. The front wheel is also radially laced, something you don't often see on a SWB recumbent.

The rear hub is a SRAM/Sachs 3x7(8). The front hub is a Shimano 105. The most unique aspect of the Terra-Za wheels is the TerraCycle



*The TerraCycle Terra-Za SWB RCN test bike—RCN*

designed quick release for the 3 speed internal hub which up until now required a bolt-on axle. Well, the bolt on the non-drive side is still there, but the drive-side has a quick release lever. It is not as easy to remove the wheel as on a regular rear wheel, but much easier than messing with wrenches and bolts. Pat Franz currently makes the 3x7(8) quick release one at a time and is searching for somebody to produce them. Ours had a natural finish and looked fairly industrial, though it works very well indeed.

The Terra-Za arrived here with a Primo V-Monster rear and a Comet front tire. The V-Monster adds to the passive suspension effect—and it has a little hum as it rolls down the road. The Comet is a recumbent favorite. A moderately priced, widely available performance tire that is just a bit on the wimpy side. It is most definitely an odd combo—and the bike rides great. This is the tire set that Pat Franz rides on personally. I would opt for a set of Mitsubishi Tioga Comp Pool 20" x 1.75" tires myself.

The brakes are Shimano Deore XT V-brakes and levers. The power and modulation is exceptional. I was able to lock up and skid the rear wheel if I tried real hard. Modulation and control made this less of an issue than on other models where we have incurred this problem. Also, the Terra-Za has a sliding seat and adjustable mast (bottom bracket). I could have moved my riding position rearward on the bike to put more weight on the rear wheel. The reason I did not, is that the seat was at full-recline and would have been more upright had I moved the seat rearward.

#### ■ COMFORT

The Terra-Za currently comes with a Rans seat. Our first production model had an '98 vintage seat. TerraCycles uses the Rans Gliss/Vivo/Screamer rear seat mount which allows you to control the recline with a quick release. I much prefer this to the sprint braces. The Rans seat mounts and

works as well, if not even better than on a stock Rans bike. TerraCycle is working on their own seat, so buyers are likely to have a choice.

#### ■ RIDER ERGONOMICS

The TerraCycle Terra-Za SWB has the most adjustable ergonomics of any SWB we've tested to date. Once dialed in, sitting in the cockpit of the Terra-Za was like experiencing the best of SWB ASS—visions of what I like the most about the Rocket, V-Rex, Counterpoint Presto and Kingcycle ergonomics filled my brain.

The Terra-Za is definitely a comfort-based SWB. It has full recline adjustments to the seat, a sliding seat, a sliding mast (bottom bracket) along with vertical and recline adjustments to the above-seat steering unit. The bottom bracket/pedal height is just slightly higher than the seat. This is necessitated by the quest for a lower seat height (which also complicates the frame design). The seat/pedal relationship is very similar to a V-Rex or a Rocket, but the stand-over height of the bike is better than either.

When I first climbed on the Terra-Za, the cockpit was a bit on the claustrophobic side for me. The ergonomics of this fold-forward steering column are similar to the Counterpoint Presto (or a Vision ASS). I then had this vision of brilliance (these are rare these days, let me tell you). I turned the stem/riser around (stem facing forward instead of backward) and raised it up, and dropped the bars down a bit. The bars adjust via a stem bolt. They flair out and down (similar to Vision ASS bars but wider and the bend is more dramatic). Once I turned the stem forward and raised up the ASS stem/riser, I dropped the handlebar ends lower, thus creating ergonomic bliss for my hands, forearms and wrists. This is true medium ground between the USA style flat ASS bars and the U-shaped Euro ASS bars and reminiscent of the Kingcycle. I scratched my head, got on the bike....and experienced the best ergonomics of any SWB ASS that I've

ridden in years. (See "Frame" for more Terra-Za ASS info.)

One item that should be noted is the Terra-Za riding position. It is similar to a V-Rex or Rocket, with a bottom bracket/pedals that are just slightly higher than the seat.

## ■ THE RIDE

The ride of the Terra-Za won me over in a heartbeat. Well, not exactly. I spent a good 90 minutes fussing with ergonomic adjustments in an attempt for perfection—surprisingly enough, I nearly found it.

The Terra-Za insures confidence in its riders because it has a seat height that is lower than most 20-inch wheeled SWB bikes. The Rans seat nearly guarantees comfort. With the passive frame suspension in the rear, triangulated boom in the front, custom designed/built fork, and trick ASS the ride and steering geometry are wonderful. The ride is smooth and comfy, stable, yet responsive. The bike butt steers (a unique weight-shift responsiveness seemingly unique to dual 20-inch wheeled SWB recumbents) like a Rocket, Presto or your favorite classic road bike. You practically "think it" and the bike is moving in a new direction. This may sound like it is overly quick, but it is not. Designer Pat Franz spent several years with an adjustable geometry SWB recumbent frame and was not tied to crappy off-the-shelf glorified BMX forks—the steering geometry makes the bike and *ride*.

## ■ CLIMBING

Well, I can't tell you that you'll be the first one to the top of Slumgullian. I found the Terra-Za to be a competent performer, but it is not a performance bike per se. It is a sport touring bicycle that could be a competent tourer as well. The bike feels light and lively, though it is a bit on the heavy side. Our scale showed it at a tad over 32 pounds, though TerraCycle says it is heavier than that. The low speed handling is excellent, and you can custom-spec any gearing you require, so hill climbing will be a breeze. Overall performance was similar to most other SWB ASS bikes such as the Rocket, Vivo, Vision, Haluzak and Altitude.

## ■ OPTIONS & ACCESSORIES

A rear rack adapter is an option. Seat bags from Rans, Angletech and BikeE will mount to the back of the Rans seat. A BOB trailer QR won't work with the 3x7(8) custom quick release. BOB users would have to forgo the slick QR and opt for BOB Nutz. Another idea would be another brand of trailer. Certainly any of the rear triangle mounts (Burley) would work as well as the Greengear/Bike Friday style hitch fitting.

Since the Terra-Za is completely custom, anything within reason can be done. Our bike was outfitted with braze-ons for one waterbottle cage on the lower secondary frame tube and the Rans seat will accept two. It is also possible to mount a hydration system behind the seat (and even under the seat bag—tough, but possible).

TerraCycle offers the following braze-on options: front fender, rear fender, rear rack, water bottle, front light/fairing, front derailleur/boom and kickstand.

Terracycle will sell the 3x7 Quick Release, ASS stem/bar/riser and custom forks all separately to those who want to customize their own recumbent.

## ■ VERDICT

TerraCycle is a very small manufacturer. Customers will be buying the attention of a high-tech bicycle craftsman, Pat Franz, who will build a custom bike just for them. It is not price competitive on the low end, but is absolutely on the high end. The finish and detail work on this bike is better than any other \$2500 recumbent that I've seen in the last few years. Even down to the lined shift housing—everything has been thought of.

The Terra-Za is a most unique SWB. You've got to want something different. You have to be willing to pay for a hand-built frame, loaded with custom parts and hand assembled with attention to every detail.

Okay, so there is a downside. First of all, the TIG welds were not the most beautiful that we've seen. They are better than Vision, but not as good as a Rans or Haluzak. As with the frame design, the color takes some getting used to. Our test bike was a textured green powdercoat with gold accents. Terra-Za customers will need to be well versed in what they want to see the benefit in this bike. You should understand gear ranges, passive

suspensions and should be willing to spend an hour or two refining your ergonomics to make what this bike offers seem worthwhile. It is a true enthusiast's SWB—though for average riders—not racers looking for a featherweight performance machine. Another possible concern is that TerraCycle has just started building bikes. This is a brand new company with no track record. Buying a bike like this is more of a risk than going out to your local recumbent dealer and buying a Rocket.

Our Terra-Za was every bit as dialed as the best of the custom-spec bikes and those known for exemplary pre-assembly. Our test bike was in the league of the best of recumbency. The bike was shipped in a custom built coroplast shipping box with all kinds of custom foam pieces.

The ride is fantastic. The tracking is spot-on, the frame gives just enough to make for a comfy ride (without too much flex) and the steering controls (once dialed) may be the best you've ever tried. If you have liked SWB ASS recumbents in the past (especially dual 20" models), this bike is worth a look. Sure, a Taiwan Rocket or a Vision R40 is less than half as much, though the custom details are what you are paying for. Pat Franz doesn't plan to build thousands of bikes. His idea is a few dozen very special recumbents.

Upon first sight, one may think that the Terra-Za has an overly complicated frame design with a peculiar look. This has been a roadblock to some potential customers we've spoken too. However, if you can get over the slightly odd looks, the custom quality throughout, excellent componentry and incredible ride—the Terra-Za is worth the bucks. Up until now, builders like this have been very rare in recumbency. The Terra-Za is custom built for owners. Delivery time is 6-8 weeks.

So, if I still haven't got you hooked, check this out: TerraCycle offers a "3 year satisfaction buyback on all bikes."<sup>2</sup>

## ■ ROAD TEST UPDATES

Pat Franz is now trying the Terra-Za ASS stem/riser/bars faced forward like I rode the bike (to get more cockpit room). He is planning to use a longer seat track and a shorter rear seat support, which will allow the seat to go back farther on the bike, and recline more (and improve c.g.). Pat is also working on his own seat, though the Rans seat will remain available. This Terra-Za has both a sliding seat and boom for ultimate dial-in adjustment that helps out with seat recline and optimized center of gravity.

## ■ ACCESS

TerraCycle, Inc./ Pat Franz  
Address: 3450 SE Alder  
Portland, Oregon  
Tel. 503-231-9798  
www.terracycle.com

1 TerraCycle and the Terra-Za have absolutely nothing whatsoever to do with a midwest maker of entry-level trikes.

2 Info from the TerraCycle web site.

## ■ Rating

- ✓ Comfort — A
- ✓ Design/Style — B
- ✓ Drivetrain — A
- ✓ Chain Management (Noise/Vibration) — A+
- ✓ Brakes/Braking — A
- ✓ Finish Quality (welds/paint/preassembly) — A
- ✓ Rider Ergonomics—Adjustable recline seat with a bottom bracket slightly higher than the seat.
- ✓ Best Use—A wonderful all around performance/sports tourer/commuter. Not a racer, and touring would take careful thought as to how to carry a load.
- ✓ Best Rider Type/Size—This is a standard frame will fit riders 5'4"-6'4" (Custom available). With the ability to turn the stem around, this SWB will fit most sized riders very well. It has passed both our petite rider and XL sized rider tests.
- ✓ Weak Point—Do you like the look of the frame design/false BB?
- ✓ RCN Performance Potential — B +
- ✓ RCN Value Rating — B
- ✓ RCN "Bob" Rating — A +



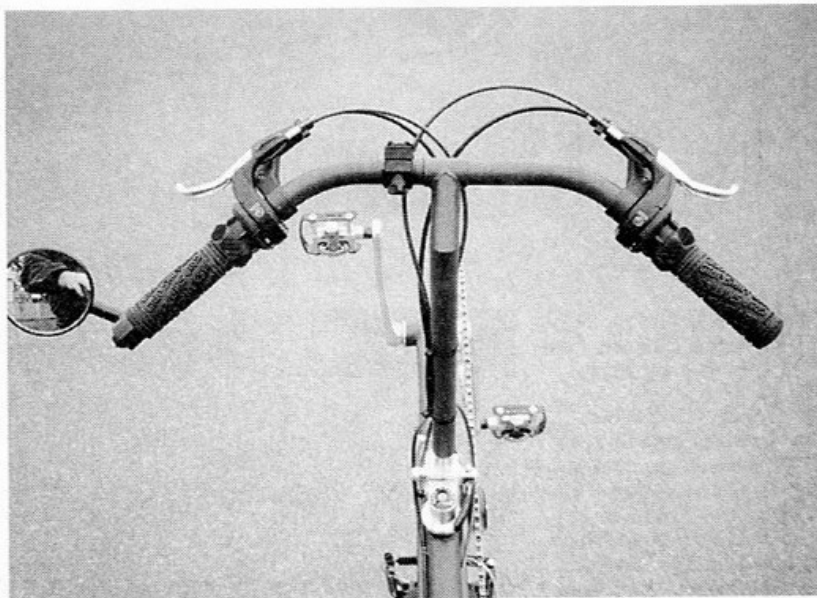
The TerraCycle 3x7 Quick Release works great—RCN



The best fork (custom designed and hand made by Terra) and chain idlers we have ever seen on a SWB.—RCN



The best ASS stem/riser we've ever seen on a SWB—TerraCycles.



The unique Terra-Za bars created ergonomic bliss for this road tester. The stem can face forward or backward.—RCN

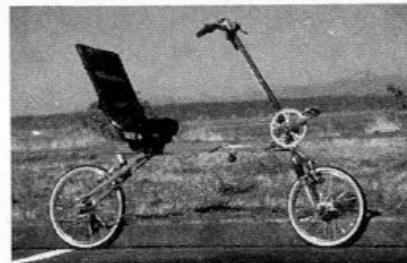


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## ■ ABOUT TERRA-ZA DESIGNER PAT FRANZ

by Pat Franz

I was born in Washington, D.C. in 1959. My father was and Engineer/Physicist for the US Navy. Engineering runs in the family—5 of 7 uncles are Engineers and 4 of 5 brothers are Engineers. I grew up riding bikes and building/fixing all kinds of things in the basement shop. If a neighborhood bike broke down, it usually showed up at our house.

I am a long time bike rider/commuter/tourer. I received my Engineering BSEE/CS in 1980, almost went for BSME also but got a good job offer from Tektronix first. I founded Solution Logic, Inc., a software consulting firm in 1985. I received my first patent in 1986 for the J-Mouse pointing device. I learned CNC machining and received 19 more patents while developing the J-Mouse system.

I noticed recumbents around town in 1989, and was instantly intrigued. I burned myself out working at the high tech "everything has to be done yesterday" pace in 1995. I left In Control Solutions to do the thing I've always really wanted to do—make really nice bikes. I founded TerraCycle, Inc. in March 1996. I decided to focus on recumbents after really hurting myself again riding my old upright on another weeklong tour. In checking out recumbents, I noticed right away that there was a wide range of handling, some good and some bad. I was determined that my bikes would all handle well, and set out to figure out recumbent bike

handling. I built an adjustable geometry SWB in 1997 to test handling in a wide variety of conditions and with a variety of riders.

I put fenders on the bike and rode it every day. When I came across interesting road conditions, I would stop, ride back and forth, and make adjustments to see what helped and hurt the handling. Curious bystanders were coaxed onto the bike. I determined the most stable range of desirable qualities in 1998 and began designing and tooling the Terra-Za. I first introduced the Terra-Za at the March 1999 Portland Bike show. My first bike-related patent is coming out shortly, on 3x7 QR.

My hobbies: bicycle touring, travelling (is preferably in combination!), singing. Married 20 years, 1 child. □

### New For 1999

◆ New model

#### Pros

- ▲ The BEST above-seat steering (ASS) we've tried
- ▲ Great component mix including 3x8 + QR
- ▲ Custom designed and built fork/great steering geometry
- ▲ Unique frame design/looks
- ▲ Very responsive bike, yet stable
- ▲ Very smooth and comfortable ride
- ▲ Fantastic warranty

#### Cons

- ▼ Do you like textured paint?
- ▼ New and relatively unknown manufacturer
- ▼ Odd looks to this unique SWB design
- ▼ Steering might be too responsive for new riders to appreciate
- ▼ Overly complex frame design attempt to lower the seat height
- ▼ Expensive bike

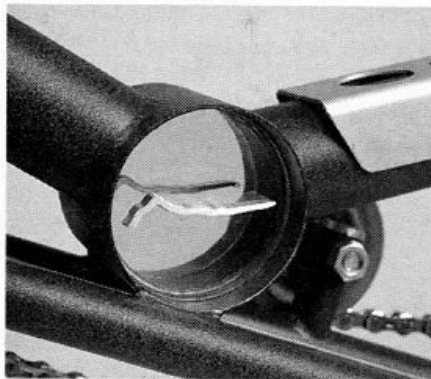


ABOVE: The unique Terra-Za looks kind of goofy, but functions beautifully.

RIGHT: Lots of time-consuming details have gone into this bike. So many manufacturers are after simple, cost-effective procedures—not TerraCycle. This is about custom, high-quality and high-end recumbent dream bikes. This unique rear end actually absorbs some road shock. We're surprised that there are not more custom builders in the recumbent market.



LEFT: Yet another unique feature of the Terra-Za is this "tie-in" tube. It is essentially a false bottom bracket, though builder Franz, doesn't really like this term. It is an oversize CroMo tube, with hand-painted gold (inside tube), with Plexiglas inserts with the TerraCycle logo. I have to admit that I did not like the aesthetics of this, but I love this bike.



#### COMPONENT SPECS

MODEL.....	TerraCycle Terra-Za
TYPE.....	SWB above seat steer (21" wide bars)
WHEELBASE.....	42.5"
SEAT HEIGHT.....	22.75"-24.25"
SEAT ADJUSTMENT.....	12"
BOOM/MAST ADJUSTMENT.....	.4"
BOTTOM BRACKET HEIGHT.....	23.75"
WEIGHT.....	32 pounds
FRAME.....	TIG welded 4130 CroMo
FORK.....	Custom geometry TIG welded/argon backing/ silver brazed dropouts
DROPOUTS.....	Custom
STEM/BARS.....	Custom ASS with height/adj. recline/CNC machined
SEAT.....	Rans Alum./CroMo frame, mesh back, foam covered ABS plastic base with 20° adjustment range.

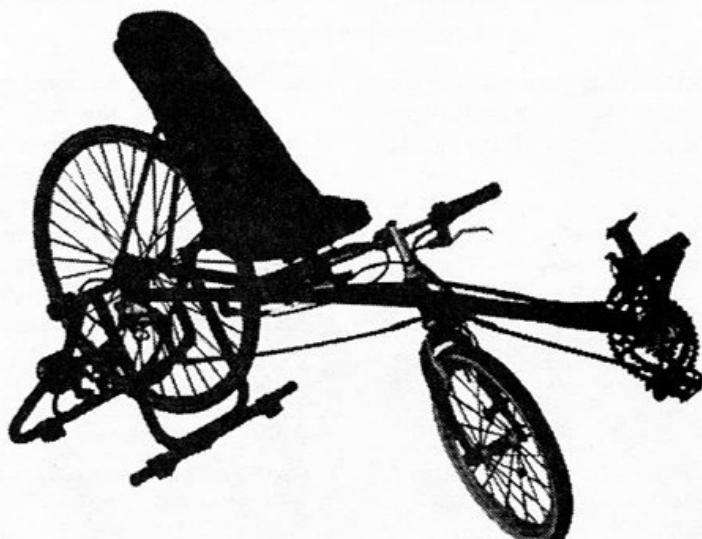
#### COMPONENTS

CRANKSET.....	Shimano 105 Single Chaining
BOTTOM BRACKET.....	Shimano 105 Sealed
HEADSET.....	Chris King
DERAILLEUR-REAR.....	Shimano 105
HUB GEAR.....	SRAM/Sachs 3x7 modified to 3x8 24 speed
SHIFTERS.....	SRAM Plasma 8/24 speed
CHAIN.....	NA
CASSETTE.....	Shimano 11-32 8-speed
WHEEL-REAR.....	406 20" x 1.75, Mavic SUP BMX, SS spokes, Primo V-Monster
WHEEL-FRONT.....	406 20" X 1-3/8", Mavic SUP BMX, SS spokes, Primo Comet
HUB-FRONT.....	Shimano 105 36 hole Radially spoked
HUB-FRONT.....	SRAM Sachs 3x7 (modified to 3x8)
BRAKES/LEVERS.....	Shimano Deore XT V-Brakes
PEDALS.....	Shimano 747 SPD
WARRANTY.....	Lifetime: frame to original owner/10 years otherwise; Components/Seat 1 year
GEAR INCH RANGE.....	Your choice: 27-138; 24-120; 23-113
COLORS.....	Textured Powdercoat with hand-painted gold accents
PRICE.....	\$2495

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# The Lowracer Lifestyle: An Introduction

Article and photos by Alan Thwaits

nomad@praxcomm.com

**W**ould you like to win every coastdown race you enter? Get chatted up by good-looking women of all ages when you stop at traffic lights? And gain the approval of those ultimate arbiters of good engineering design—10 year old boys?

You can have all of the above—and more. It's easy! All you have to do is get yourself a lowracer recumbent.

Lowracers are the sports cars of the recumbent world. Their sexy lines and capacity for speed make them the coolest things on two wheels. After taking on the lowracer lifestyle, you're bound to be bored with anything else.

The basic definition of a lowracer is a bike with a seat height of 12" or less, one that allows the rider to support himself/herself at a stop with a handstand (i.e. without having to unclip).

Production lowracers are few and far between (the Ross Festina, Bram Moens' M5, and the German Kreuzotter and Noll S5 machines come to mind), so lowracer ranks are full of one-off, custom-built designs.

I'm the proud owner of such a bike—an Outlander SWB/RWD/ASS lowracer, designed and built for me by Carey Chen. Carey's a 'bent wrench and designer/builder based in Toronto, Ontario, Canada, and the man behind Outlander Cycle Designs (<http://www.concentric.net/~outlandr/>).

## ■ How does someone get involved in the lowracer lifestyle?

Well, for me, all it took was seeing one on the road, and test riding another. Since then, life just hasn't been the same!

It all started one Sunday last year, when fellow HPVSO (Human Powered Vehicles of Southern Ontario) member Barnett Williams showed up at a club ride on his home-brew LWB lowracer. We're talking long and low here—the bike stretched to 12 feet, with a seat height of only 6 inches. I sat on the beast, but couldn't ride it. I'm a lot shorter than Barnett, and this was a non-adjustable custom-build. But, riding behind Barnett as we scooted across downtown Toronto, I knew I had to have a lowracer of my own!

Later in the season, Carey Chen showed up at another HPVSO event on his custom-built Outlander CR15, a pretty little blue and yellow suspended lowracer.

The hook was in. There wasn't much sense in resisting, so I gladly gave up all pretense of "just looking," and asked Carey if he'd build me something low, quick, and racy. That started a conversation about the design/build process that lasted a couple of months. I told Carey what I wanted—low seat height, reclined seat angle, suspension—and he came back with comments, suggestions, and more questions.

Eventually, all the design parameters were settled, and Carey started building. The project goal was to produce a quick, nimble—yet streetable—lowracer that I could use for fast club rides and centuries. That translated into a short wheelbase (41"), dual 20" wheel design, with a seat height of 12" and recline angle of 35 degrees.

Gearing for a 20" rear wheel involves some number-crunching in order to find high enough gears. Carey's CR15 originally sported a 62-tooth single chainring and an 8-speed freewheel (since upgraded to a MegaRange 9-speed), but I decided to opt for a 52-tooth single chainring and a Sachs 3x7 hub. That's partly because I wanted to be able to tackle all kinds of road conditions (including the steep hills that I sometimes encounter locally), and partly because I'd never used a 3x7 and wanted to see what they were like.

A swept-back aluminum "roadster" style handlebar ensures knee clearance (a real issue on a 'bent that's designed to fit me like a tight pair of jeans), and a mix of PowerGrip and GripShift twisters make the connection between rider and drivetrain. Tektro and Shimano V-brakes

do the needful in the stopping department.

On the first "test-sit" of the partially-completed lowracer, it became clear that I couldn't have both a low seat height and front suspension. The top tubes of the ProForx suspended forks threatened to take out large chunks of thigh with each turn of the cranks, so we decided to go back to an unsuspended front end. The rear suspension remained, though—a clever design comprising two hard rubber blocks, interleaved with a couple of aluminum plates for pre-loading adjustments, that sit between the sloping seat post and the bike's rear swing-arm assembly.

In order to save some money (a freelance journalist's budget being somewhat limited), I opted to give powdercoating a pass, and instead chose to have Carey paint the bike in what he calls "your basic spray bomb paint job." That's three coats of primer, three coats of colour, and three coats of clear paint, in a flashy black and yellow colour scheme. It looks good, and has stood up surprisingly well to the wear and tear of daily riding.

Carey worked at the CR22 (and a few others) through the winter, and finished it in time for me to show it at the HPVSO booth at the Toronto International Bike Show (March 5 to 7, 1999), and I took delivery a short time later. At time of writing (about two months later), I've put about 1,000 miles on this sleek beauty.

## ■ What's it like to ride the Outlander lowracer?

In a word, fantastic. Handling is quick and sure, so that I track through corners much more confidently than on my SWB/USS Vision R-40. The combination of Shimano 700CX 170mm cranks, a single Real Downhill chainring, and the Sachs hub allows me to find a groove that produces cruising speeds in the 20 to 22 mph range. And the seat, made with 1" nylon strap webbing across a chromoly frame, is comfortable enough that it's no sweat to rack up 125 to 150 mile days.

The short wheelbase/small wheel combo gets the lowracer off the mark quickly. Steering is precise and no-nonsense, and steady at speeds all the way from easy to exhilarating (I've reached maximums of 45 mph with nary a qualm). Getting used to the 3x7 hub came fairly easily—it wouldn't be my choice on a racing machine, but it's ideal for all my purposes, from utility riding to day touring to chasing the fast guys on Sunday rides.

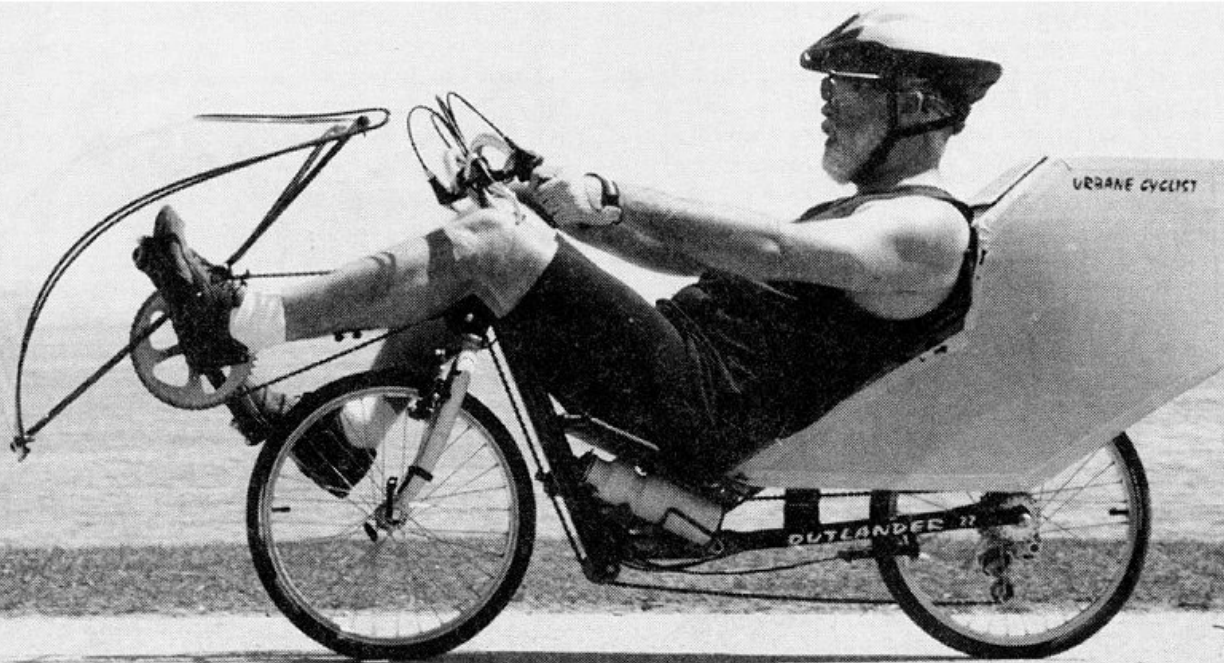
Surprisingly, the CR22's low height hasn't been an issue in traffic—and I've covered it all, from sleepy rural roads to the sport-ute heaven of the suburbs, right down to rush hour in Toronto's downtown core.

The bike is fast, comfortable, and, as a real estate agent friend of mine says, "has incredible curb appeal."

The crucial tests of how good a bike is, in my opinion, are how fast it goes and how much time you spend on it. In this regard, the Outlander lowracer has surpassed all of my expectations. I'm much faster on it than I've ever been on my Vision, and I can ride much further on any given day. For these reasons, it's used for more than its intended purposes—it's become my daily transportation vehicle. I've even given thought to touring with the lowracer and a BOB trailer!

Because there's nothing more personal than a bike, I've added some goodies to make the CR22 just perfect for me. First was a homemade coroplast tailbox—in screaming yellow, with a small glove-box compartment that holds some tools, a mini-pump, and lunch. Next was a Mueller-HP WindWrap fairing, which makes cruising at speed easier and adds to the bike's cool looks. (See sidebar for more info about this fairing manufacturer.) A couple of waterbottles under the seat, and I'm ready for new roads to come!

That 24 hour race is coming up soon, as are a couple of organized centuries. I'm betting that they'll be even more fun on the lowracer than



Author Alan Thwaits rides his Outlander Lowracer.

my errand and club rides.

Do I like the lowracer lifestyle? Well, let's just say I'm having a hard time being adult and responsible about it—all I want to do every day is put more distance on this bike.

In fact, I'd suggest the bottom line is that lowracers are just plain addictive. Once you try one, you'll agree that "Low is Beautiful," and you'll be unlikely to go back to anything that's more than 12" off the ground! ☐

#### ■ ACCESS

Outlander Cycle Design, Carey Chen, outlandr@concentric.net, <http://www.concentric.net/~outlandr>

#### ■ ABOUT THE AUTHOR

Alan Thwaits is a freelance technology journalist, member of the HPVA Board of Directors, and ListOwner of three recumbent-related mailing lists. Alan maintains the Digital Cycling Web site at <http://www.praxcomm.com/>, and can be reached at [nomad@praxcomm.com](mailto:nomad@praxcomm.com)

#### COMPONENT SPECS

MODEL.....	Outlander CR22
TYPE.....	SWB /RWD Lowracer
WHEELBASE.....	.41"
SEAT HEIGHT.....	.12"
BOTTOM BRACKET HEIGHT.....	.20"
WEIGHT.....	.36 pounds
FRAME.....	welded 1.75" 4130 CroMo
FORK.....	NA
STEM/BARS.....	Aluminum roadster style
SEAT.....	Sling/Mesh CroMo frame with nylon webbing

#### COMPONENTS

CRANKSET.....	Shimano 700 CX
BOTTOM BRACKET.....	Shimano UN51 Sealed
HEADSET.....	Chris King
DERAILLEUR-REAR.....	Shimano 105
HUB GEAR.....	SRAM/Sachs 3x7
SHIFTERS.....	SRAM Sachs SRT 400/Sachs Powergrip Plus (rear)
GEAR INCH RANGE.....	.25-121
WHEELS.....	.406 20" 36-spokes rear, 32 spokes front/Sun CR18 rims/Schwalbe Marathon 20" x 1.25" kelvar belted
HUBS.....	Shimano STX/SRAM Sachs 3x7 (rear)
BRAKES/LEVERS.....	Tektro V-brake front/ Shimano Deore XT V-Brake rear
WARRANTY.....	Five years (frame)
PRICE.....	.....\$1800 (CDN)

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■ **Why put a front fairing on a lowracer?**  
Well, you can't get sleek enough, in my opinion. I've been happy with the Zzip fairing I have on my Vision, so, when I learned that Mark Mueller, of Mueller Human Power in Eureka, California, made fairings for lowracers, I decided that I'd like to test one on the Outlander CR22.

Mark's WindWrap fairings mount in front of and slightly beneath the crankset. As well as lowracers, they fit SWB and LWB USS machines. My fairing, which is made of 0.060" thick polycarbonate, was custom-made by Mark according to measurements I sent him.

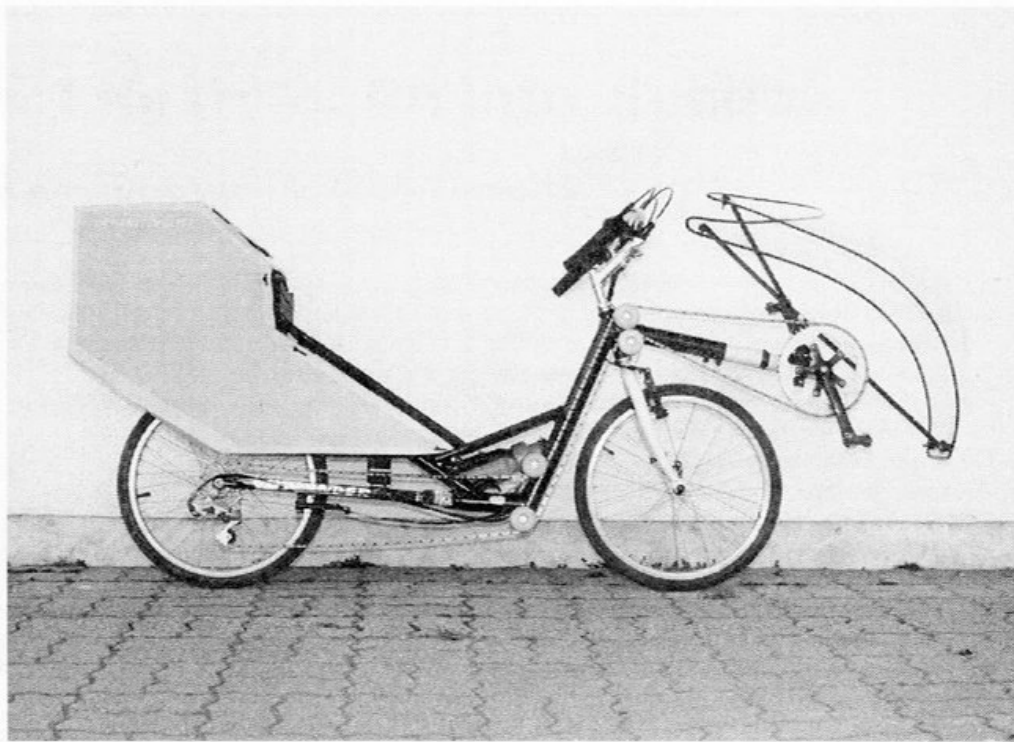
The finished product measures 19" by 42", and sweeps back to just in front of my handlebar ends. It arrived at my door (via good old UPS) very professionally packaged, complete with mounting instructions, nylon bolts, wing-nuts, and washers (including a healthy number of spares), some extra edging trim, and a couple of Mueller-HP decals.

As with all front fairings, its effects are negligible at low speeds. But, when the lowracer and I are moving at more than 13 mph, the fairing helps a lot—my unscientific tests show an average speed increase of about 1.5 to 2.5 mph.

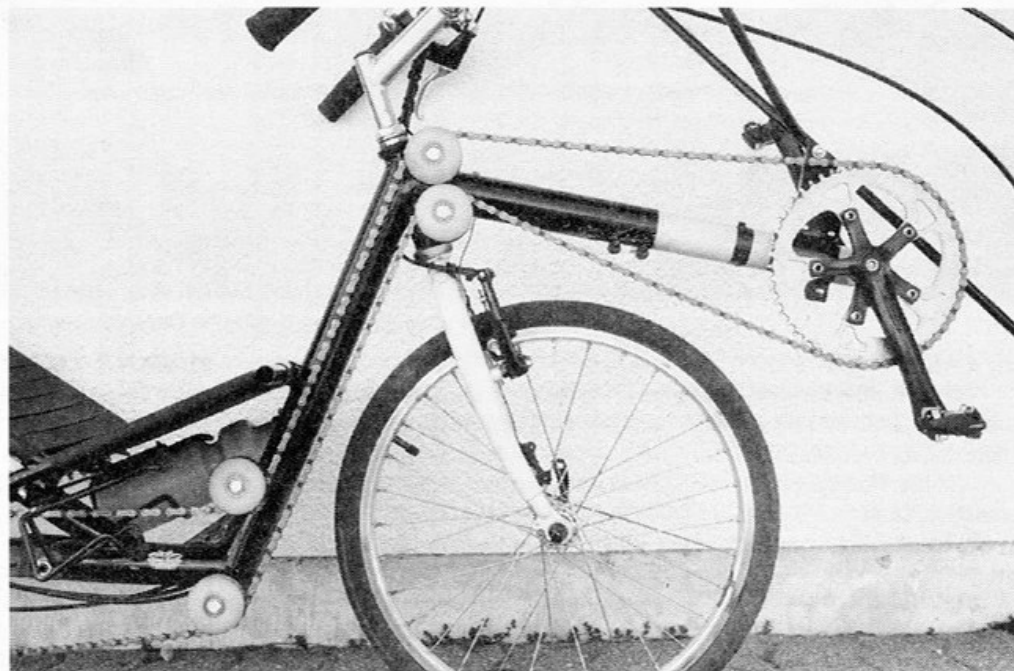
When the lowracer is in its element—in rolling hill country and on fast descents—the WindWrap fairing is worth its weight in gold. It smooths out the airflow to a surprising degree, offering minimal crank/pedal noise and no fluttering.

An added bonus is pricing—Mueller-HP fairings are significantly cheaper than the competition. One caveat is that buyers will have to find or make their own fairing mounts, as this is not one of Mark's product offerings at the moment.

Access: Mueller Human Power  
Web site: <http://www.mueller-hp.com>  
Voice: 707-442-8133



*The Outlander Lowracer with Mueller fairing and custom tailbox*



*Outlander FWD chainline, brake routing, handlebars and fairing mounts.*

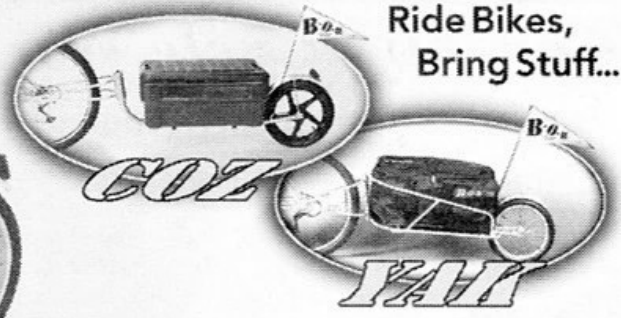
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# A Century of Centuries

Story and photos by Monte Crippen

**H**ey You! Ya, you. All you people that ride centuries. So when do you ride your first century of the year? I would suggest to you that the First of January is the time because it gets the new year off to a good biking start. Of course, your location does affect your plans. Since I live in the western US at 46°+ there is about 8 hours and 39 minutes of daylight and the average temperature is about 30°F. I have to be satisfied with a Metric Century since I don't have the speed for a hundred miles. But 62.1 miles is a lot better than a few or none!

This takes planning. If you do the usual New Year's Eve thing then Plan A starts at about 6 PM on the 31st with a rare prime rib dinner and lots of horseradish sauce, or something else that is equally spicy, rich and difficult to digest. It continues with a loud party somewhere at which you have half a can of raw, smoked oysters, and too much garlic dip on lots of oily potato chips. You wash it down with half a bottle of bourbon mixed with sugary coke and don't get to bed till 2 AM. No matter when you get up, it's too early, your head aches, your tummy is queasy, and you spend a lot of time in the bathroom. By evening, you finally return to some sort of normality.

Plan B also starts at 6 PM with a modest pasta dinner and a glass or two of good wine. Then watch Mark Russell try to make something funny out of the old year's bad news and go to bed at 10 PM. Up at 6 AM on the First, eat breakfast and be on the bike at 7:30 when you have the road all to yourself. Take a mid-morning coffee break even if you don't drink coffee to warm your feet and have an early lunch of hot soup. Finish the 63 miles by 1 or 2, shower and have a micro-brew to celebrate the start of a good bicycling year. After all, you have now logged more miles in the calendar year than anyone else you know, except those that rode with you.

Don't get the idea that I am a complete fanatic. If I look out the window the night before and see snow coming down to accumulate several inches on the road by morning .... well, I can always revert to Plan A.

The first English Century is a little later in the year, typically Presidents Day weekend in mid February. By then there are 10 hours and 20 minutes of daylight, the roads are clear and the temperature's in the 40's. You get to see a lot of countryside and a feeling that no ride this year will be too much for you. After that, you know you can do as many as you want and it's just a matter of convenience.

My serious biking career started in the summer of 1979 and culminated in September, National Bicycling Month, with a Half Century ride on the old Raleigh Sprite. Not spectacular, but a reasonable effort to build upon. Not long thereafter, on Saturday, the 14th of June, 1980, I did my first English Century. Starting from Richland, WA, out through Benton City, and down the Old Inland Empire Highway to Prosser. I enjoyed a splendid view of Mt. Adams and Mt. Rainier a hundred miles away as I came into the turnaround at Grandview, and returning along King Tull Road through Whitstran, Kiona, and West Richland to the starting point at Howard Amon Park. It took a bit over 10 hours but was not excessively hard and I certainly enjoyed the views and scenic farms. A good start on a long biking career.

By the time the 1982 season had started I had bought an Avatar (Serial Number 0076) and had been able to practice on it during the winter months. Having gotten comfortable and efficient there was no stopping me—eight Centuries that summer including a Double Metric.

As of the 1984 season I had also gotten a Counterpoint recumbent tandem (Serial Number 006). Over the years I have put 9000 miles on it with several partners. That machine has carried us on 8 Centuries including the 202 miles from Seattle-to-Portland. In 15 hours and 3 minutes, thank you, which seems good for two old men whose combined ages total nearly a century. It might even have been a lot of fun if it had

not rained the last 150 miles.

After the first few years I did centuries on my own when I felt like I needed a long ride or a new goal. Organized centuries are fine on an occasional basis but they often start late (for me), require loading the bike in the car a couple of times (not a trivial task with a recumbent). And there is a limit to how many T-shirts with artsy pictures on them that I actually need. All it really takes is a spare tube, extra spokes, and a sock full of the standard bike tools. It also helps to start with tough components that last "forever" such as sealed bearings, 48 heavy-gauge spokes in each wheel, thorn resistant tubes, extra wire and Ty-Raps.

In 1995 I replaced the Avatar with a Ryan Vanguard with a Zipper fairing. Not that the Avatar, at 53,000 miles could not have gone farther but I knew it would not last another 53,000. And since I am getting older and slower it has been nice to pick up another 1 mph from the fairing for "free." All you have to do is be smart enough to get one and then use it.

One also needs to invent little sub-goals to keep interest up. One of these was to ride a century every month of the year. March through October can certainly be English centuries but November to January are always Metric efforts.

It is difficult to overrate the importance of winter riding as a part of your training life style whether you do centuries or not. You remember all of those reasons for the summer rides: aerobic exercise, weight control, stress reduction?? Hmmmm... need that aerobic exercise ALL the time, holiday eating makes weight control even more important and where I work the stress season last about 13 months per year. Yes, you need to do what you can do to work around the snow and cold season, but keep at it!

As I am doing this initial draft in January, yesterday's ride was an excellent example of that problem. Snow warnings had been out for a day or so and as of 8 AM on Sunday there was an odd flake or two coming down from the grey sky and landing on bare ground. I decided I had better get going and put the crossword puzzle off until later. I quickly bundled up and launched myself and the Ryan Vanguard off into a 15 mph North wind for a quick loop around the nearby shopping center. The bank thermometer said +13°F going out and +14°F on the return, as if anyone could tell the difference! I did 5.9 miles in about 40 minutes averaging 10.1 mph. The statistics sound pretty wimpy but I felt better and they were Quality Miles that I would not have had otherwise. And for training purposes, 6 miles in January is the same as 12 miles in March is the same as 18 miles in May is the same as 24 miles in July. Oh yes, by dark that night there were 5" of snow on the roads.

There are other variations you can do to keep your interest up. Take advantage of your yearly summer bike tour for Century opportunities. Last year there was a long leg of 85 miles. That's too close to 100 to pass up. So refill the water bottle, go out a side road for 7.5 miles and see the local neighborhood. Turn around and finish the full 100 for an extra Century.

In the summer of 1983 I overdosed. A Deca-Century from 4-13 June. Totaled 1020 miles in 10 consecutive days. And it is as much a mental effort as a physical effort. Several times I found myself at Mile 80ish and thinking that I felt very good and I could step it up a bit and finish a few minutes early. But wait, I don't have 20 to go but 520 to go, so keep the slower, disciplined pace and save your extra energy for the hill tomorrow. And go to bed early so you can be up at the crack of dawn because leaving at 6 AM rather than 8 AM means 2 hours less of riding under the hot sun at the worst part of the day.

Finally, on 13 June, 1998, was my One Hundredth Century which was the sTp. This is Stanfield-TO-Pasco, not the Seattle-to-Portland

ride which is known as STP. sTp is nicer than the STP because its warmer, you don't need Gortex for those rainy July days west of the Cascades, the route is quiet, and you get to see two more mountains besides Rainier (i.e. Adams and Hood).

I did not sleep well the night before, but for most of us that is kind of normal for Night-Before-the-Big-Game. I keep rerunning the ride in my mind as I have a hundred times before (no pun intended). Up at 5:30, wolf down some breakfast, put on a good layer of sun screen, and onto the bike at 6:30. There are about 10 blocks through the neighborhood before hitting the main arterial and UP the HILL. The gain is 1120 feet in 9 miles and I top out at about 7:45; then the easy pedal down to the Columbia River, cross the bridge and enter Umatilla. Take River Road up the Umatilla River for a mixed view. I say mixed because of the dirty, junk shacks (are these really houses?) with the shore greenery and the river in the background. Then I rode past the water treatment plant and the western outskirts of Hermiston. Then I turned onto the I-84 freeway for 6 miles. The view of the valley is splendid but the real reason is a nice rest stop which gives a break and a place to refill the water bottles. In this area one must take full advantage of plumbing because toilets and cold water taps are few and far between. Take the Echo exit and descend into Stanfield at Mile 49 for the official start of the ride. Nothing much there really, the antique store, city hall building, two cafes, one restaurant, gas station and a few houses. Then I rode across the roller hills for a few miles to the eastern edge of Hermiston.

State Highway 207 cuts through an area of farm land that looks like it came from a Norman Rockwell picture. Green pastures with running irrigation water along with cows, horses, and sheep lined the landscape. Since it is late morning the llamas are laying in the shade having finished their morning graze. They think my recumbent with the Zzipper fairing looks as strange as I think the rug that they wear on their backs is weird. And there are several emus at the farm nearest the Columbia; on the Ryan those are certainly standing birds that you can look up to (except for the young chicks, of course).

The flat stretch along the Columbia is a hoot even though I am starting to feel a bit tired. The radio is dead since this is a thousand foot deep cut through the range of hills. But it also focuses the slight breeze into a 10 mph tailwind and it is easy to crank up to 20 mph without working very hard. The views are certainly varied—the many layers of 20 million year old lava, the 20th century railroad and river barge systems, the pelicans, and the sage and grasses. I made the noon time turn at Wallula and water up at the Madam Dorion Rest Stop. I never miss a chance to refill the bottles because I will consume over a gallon of fluid and there were no opportunities to find cold drinking water during the previous 30 miles.

The road passes a rail yard and the Boise-Cascade pulp mill. Their aeration lagoon looks like huge brown lily pads with frothy flowers. Most people don't realize that those 'ugly' ponds oxidize a lot of bad stuff so that the river stays blue and the fish healthy. On past the meat packing plant feed lot and all the doomed cows; I tell them, "Keep eating, because



*The end of the tour at Pasco, WA—photo courtesy of Monte Crippen*

I feel like red meat tonight for dinner." Through the heat I can see Burbank. Just plain Burbank, not the Beautiful, Downtown Burbank of entertainment fame. I filled my oversized water bottle with ice and top it with Mountain Dew, or Coke, or Orange (or what-ever-flavor-I'm-currently-not-tired-of). It will all be melted and gone in half an hour since it is now near 100°F and not a cloud in the sky.

Across the Snake River, into Pasco for the official end of the ride near Mile 95 at the Franklin County Courthouse, one of the prettier courthouses in the state. The crossing of the Columbia River on the Cable Stay Bridge is always spectacular since it is only one of five such structures in North America. I really drag going up the hill on the Kennewick side and toward home from where I can see Mile 99 at 2 PM, in the hot summer sun, and I am beat. Think I will stop at my favorite watering hole for some Grant's Scottish Ale and get a little rehydration.



*The start of the tour at Stanfield, Oregon—Monte Crippen*



*On the road— author, Crippen, rides his Vanguard.*



*A classic Ryan Vanguard with Zzip Designs Ryan Zipper, loaded for touring. The Vanguard was built by Dick Ryan himself. It was truly a sad day when Dick Ryan ceased production and sold this company and the rights to his design. Photo courtesy of Monte Crippen*

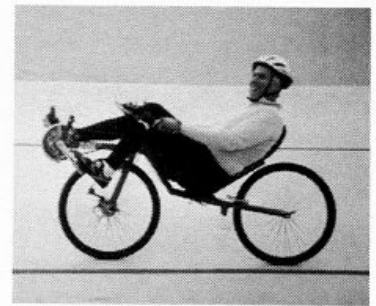
Some salty chips would also help the electrolyte balance. And besides, its a reward for a job well done.

I finish in my driveway at Mile 100.9 with a sense of satisfaction. Truly, a Century of Centuries. □

# **The Lightning Thunderbolt**

Article by **Bill Volk**, [bvolk@inetworld.net](mailto:bvolk@inetworld.net)

Photos by **John W. Stephens**



Bill and the ZOZ 26 from RCN#51

**T**he Promise of Recumbents—At a Decent Price. We've all read the ads. More comfortable, faster, and fun. That's what recumbents are supposed to be. Most of us know something of the history as well. Banned in '33 because they basically "kicked butt." The allure of recumbents is many things. Pain free cycling. The ability to ride faster and farther than ever before.

And you know what. It can be true. But it's an expensive truth. Shell out the big bucks and you can have it all. There's a slew of fantastic machines that will give you that magic ride. Machines like the Gold Rush, V-Rex, P38, and a bunch of others will do it. The only problem is that the ticket can cost well over \$1000, \$1500, or even \$2000. Sure, people spend more than that on the best of the road and mountain bikes. But what do you do if you aren't sure if recumbents are for you ... and you're a rider who cares about performance.

Not that there aren't good and even great recumbents for less than \$1000. This is the best year for low cost recumbents yet. We've got the Rans Wave, the Bike E, and other well made recumbents at well less than \$1000. They are reliable bikes, comfortable bikes ... but can they challenge the speed of a \$700 Cannondale road bike? Do any of the owners complain about the seats?

Well, in many cases they can. I rented a Rans Tailwind for a few days in Florida and it wasn't too hard to keep up with the road bike set. But wouldn't it be great if you could buy a recumbent that had a racing heritage and didn't cost all that much? A bike that was fast out of the box and as comfortable as any recumbent out there?

That's the charm of the Lightning Thunderbolt. At \$850 it isn't the cheapest recumbent out there, but it may be the best "bang for the buck" for the performance rider. It's not quite as fast as a P38, but it's a bike that rewards a good effort. I found it easy to push past 20 mph, and I'm not that fast. The Lightning P38 has always been known as a fast bike with quick handling that climbs well. The Thunderbolt will not disappoint Lightning fans. It climbs amazingly well, in spite of its hefty frame. The handling is quick and precise—which is trademark Lightning.

Then there's the seat. This is a wider version of the all-mesh Lightning seat. The seat has more "ahhh" factor than anything I've ever sat on. I'm a big fan of the Rans seats, and I still love the one on my homebuilt ... but the Thunderbolt's "wide-body" seat is amazing.

Our family's authority on comfortable seats, someone who spends at least 20 hours a day seated in some semiconscious state is our overweight tabby cat Tiger. Tiger has decided that the Thunderbolt's seat is of superior comfort. She's never sat on any other bicycle's seat, but she's claimed the seat of the Thunderbolt as her own. Tiger knows seats.

All kidding aside, this is a great seat. It truly fulfills the promise of pain-free extended riding. It's wider than the standard Lightning P38 seat. It's also an extremely clever design. Most mesh seats have problems with how they are tied together. This is where the mesh starts to fray. That won't happen with the Thunderbolt. The fabric is a "continuous sleeve," like a sock. There are gaps where the seat frame bolts to the mounts with some really beefy aluminum clamps. That allows for the "no ties" seat mesh, and provides the additional benefit of a very serviceable design.

The seat does attach to the frame with controversial "hose clamps" (Bob Bryant hates them) ... but there's little or no stress placed on the clamps. The seat doesn't slide for adjustment, so the seat's frame fits securely in a welded bracket on the frame. The hose clamps don't have to hold the seat against the pedaling forces, the frame does that.

About that frame. The Thunderbolt uses a TIG welded 2" diameter high steel monotube. The chainstays are ovalized 1 1/2" by 3/4"

rectangular tubes. The dropouts are 1/4" thick. Older Lightning P38's were not considered suitable for riders of the heavier set. If you've always wanted a really heavy duty Lightning, this bike fits the bill. I really appreciate the stiffness of the frame.

There are two models of the Thunderbolt. A smaller model (with a 16" front wheel) accommodates riders 5' to 5' 9" tall. The large model (with a 20" front wheel) fits riders from 5' 8" to 6' 6" tall. I'm 6' 3" and there was still quite a bit of boom still inside the frame. My 5' 6" 13 year old son was able to manage with the boom all the way in, and it was the first time he didn't complain about keeping up on our local club ride.

The larger size bike weighs in at 31 lbs. sans mirror, kickstand, and chain disc. With all of the goodies it was close to 33 lbs. Yet, with the closed pedaling position it climbed better than many of the lighter bikes I've ridden.

This great deal has to come from some cost savings. Most of that is in the components. The derailleurs (Shimano Acera back, Epoch in front) actually shift quite well. The V-Brake clones are quite good, better than the Shimano LX V-Brakes I used on my homebuilt. I really prefer the allen bolts for spring tension over the easily stripped Phillips screws on the Shimano brakes.

The wheels pass the "Target" test, in that you can find tires for the 26" 559 rear and 20" 406 front almost anywhere. Both the ACS Edge front tire and the IRC Metro in back are rated for 100 psi. These are decent wide tires that roll well.

My only component complaint is with the Cyclone A cranks. The crank and crank disc combo are just plain noisy. You can't have everything I guess.

Is the Thunderbolt the ideal entry level recumbent? Well, I think that depends on the rider. I'm sure that the CLWB bikes have an easier learning curve. The Lightning is a quicker handling package, and there is the possibility of heel strike while making sharp turns. It's pretty easy to deal with, but could be an issue with recumbent newbies.

For the rider who expects to see an eventual speed advantage the Thunderbolt may be the only entry level recumbent to buy. In addition, the frame looks sturdy enough for a larger rider who will be commuting with a decent amount of luggage. A SWB bike is a must if you expect to use bus and some of the Amtrack bike racks. In any case the first time rider would be smart to give this bike a good look-see and test ride. □

## ■ **SIDEBAR: BILL GOES BALLASTIC**

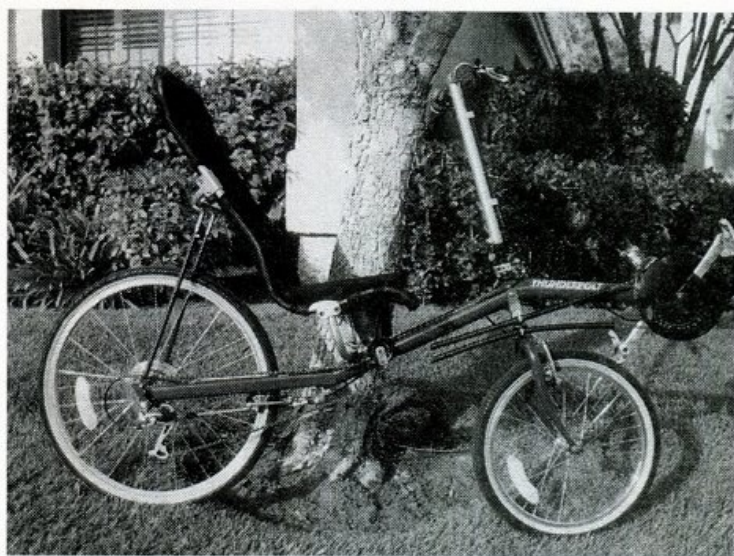
For \$200 extra you can have your Thunderbolt equipped with a Ballastic suspension fork. If you want to save \$200 do the following: **NEVER EVER RIDE A SWB A BIKE WITH A SUSPENSION FORK!**

If you ignore this advice you'll be out \$200. I equipped my homebuilt with this fork for "testing purposes." They can have the Ballastic Fork back when they **PRY IT FROM MY COMFORTABLE RELAXED HANDS**. This fork is amazing. You think you don't need a suspension fork on a SWB? Think again. Try a major descent with less than perfect pavement. What was once a nervous ride glancing at the speedo becomes a pleasant experience where you don't even realize the speed you've reached. White knuckles become a thing of the pass.

If you commute at night a suspension fork can prevent the sort of shocking surprise that can be a real safety hazard. The only problem I had with this fork was the need to switch to thinner brake pads so that my wide Tioga Comp Pool tires would clear the brake pads, even when the brake cable was released. This may only affect the Shimano LX V-Brakes anyway. □







Bill Volk's T'Bolt test bike—John W. Stephens



The T'Bolt ASS—John W. Stephens



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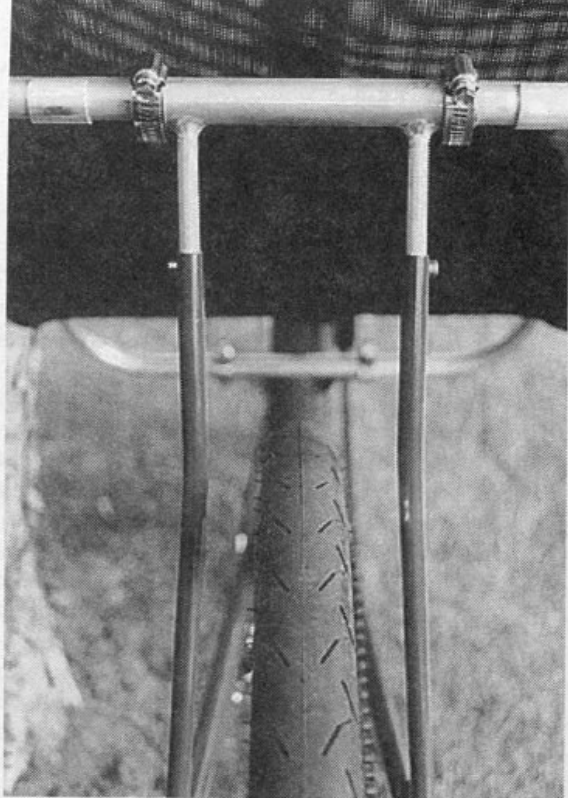
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The Lightning Thunderbolt seat/rear stay assembly—John W. Stephens

<b>COMPONENT SPECS</b>	
MODEL.....	Thunderbolt
TYPE.....	SWB above seat steer
WHEELBASE.....	40-43"
SEAT HEIGHT.....	21-23"
BOTTOM BRACKET HEIGHT.....	23.75"
WEIGHT.....	29-30.5 pounds (suspended fork adds 2 pounds)
FRAME.....	TIG welded HiTen Steel
FORK.....	CroMo (optional suspension fork)
STEM/BARS.....	TIG 4130 CroMo/aluminum bars
SEAT.....	Seat clamped aluminum frame

<b>COMPONENTS</b>	
CRANKSET.....	Cyclone 28/38/48
BOTTOM BRACKET.....	OH 48 Sealed Bearing
HEADSET.....	Dia Tech threadless
DERAILLEUR-REAR.....	Shimano Acera
DERAILLEUR-FRONT.....	Epoch M811S
SHIFTERS.....	SRAM GripShift MRX
CHAIN.....	KMC SS71
CASSETTE.....	Suntour 11-30 7-spd. cassette
GEAR INCH RANGE.....	24-114
WHEEL-REAR.....	559 26" x 1.75, Araya rim, IRC Metro tire
WHEEL-FRONT.....	349 16" or 406 20" Alesa/Wmn. rim/Comet or RL Edge tire
HUBS.....	Shimano Acera
BRAKES/LEVERS.....	Vanguard V-type/Tekro levers
PEDALS.....	Platform
WARRANTY.....	5 years
SIZES.....	Rider Height Range 5' - 5' 9" (S/M) 5' 8" - 6' 6" (L/XL)
COLORS.....	Yellow/ Royal Blue L/XL; Azure Blue Teal S/M
PRICE.....	.\$850-\$1150 (suspended fork)

NOTES.....Kickstand + adapter, front suspension fork

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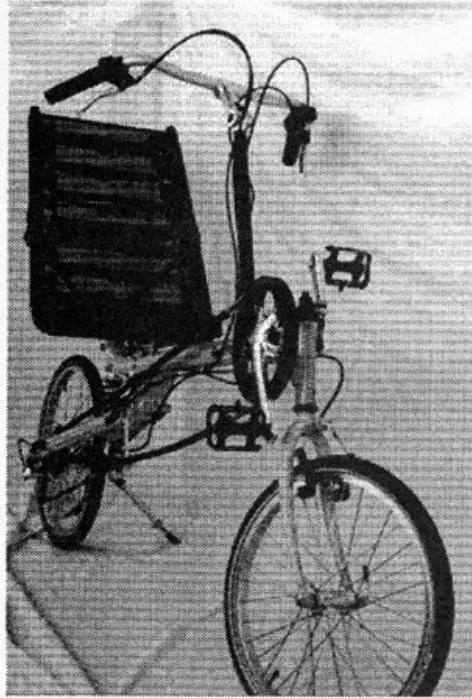
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# The Newbie Blues

by John Riley  
johnriley1@home.com

Sometimes you see it in a rant on an internet discussion list or in a letter to RCN. Sometimes you just see a for sale ad: "Recumbent for sale. Very low miles."

For one reason or another, some people have trouble adjusting to a new recumbent. It is not surprising. Recumbents are very different from other bikes, and they are difficult to buy. Very few of us live near well-stocked recumbent dealers that allow rentals or extended test rides. Some recumbents are easier to jump on and ride than others, but for some people on some bikes, it is like learning to ride a bike all over again. And few of us remember what that was really like. This, combined with the stories of comfort and speed that come from the makers and enthusiasts, may lead some people to have false expectations. Here are some things to consider when considering recumbents that might help minimize these newbie blues.

The three most important things about buying a recumbent are, test ride, test ride, and test ride. Do research, consider what people say, but believe the seat of your pants. This means you have to give the seat of your pants the opportunity to form an opinion. You have to do enough test riding on a bike such that you get over your initial nervousness. Ideally on more than one day.

Test ride some bikes, maybe make some notes on your impressions, and then come back another day and do it again to see if those impressions hold. After you have narrowed your choices down, try to get out on the one or two bikes that you are considering for a long enough period of time to really evaluate the comfort. A seat that seems comfortable for a couple loops around the block might not seem so comfortable after a couple hours.

Also try to include some hills in your test riding. These will probably seem difficult regardless of the bike you are on, since you are not used to riding a recumbent. But you may notice that one style of bike works better than another. This is something you have to discover experimentally, because there is no consensus on which style is better for hill climbing. Some riders prefer higher bottom bracket bikes like the V-Rex and P38 and other riders claim the Tour Easy style is better for climbing.

The scenario I have laid out is an ideal one that might not be available to many people, but it may be more available than you think. Many big metro areas have well-stocked dealers. You might be able to add a day to a business trip, or do a side trip on a family visit or vacation. The less test riding you do, the greater the chances you might end up with a bike that is not the one for you. Travel is expensive. You may decide to take a chance. That's okay, as long as you realize the risk beforehand.

If, in the process of testing bikes, you find a good dealer, one that knows recumbents and provides you with some useful guidance, buy the bike from that dealer. Don't go out shopping price after you decide what bike you want just to save a few bucks. Buy the bike from someone who will set it up properly and will be able to continue to answer your questions after the sale.

After you have the bike, keep in mind that because riding a recumbent is so different from any other activity, it may take a long time to get your muscles used to it. Ironically, people who aren't serious cyclists may often have an easier time of it. They tend to buy bikes that are easier to ride and they have fewer expectations. Just riding a few miles on the bike path may be a real treat for them.

Serious cyclists, on the other hand, often have a lot of expectations. They ride with a computer on regular circuits so they know what sort of pace they usually ride. They ride with the same companions and know

whom they should be keeping up with. They tend to buy bikes with a reputation for performance. Some of these bikes are more difficult to get used to because they have a more radical riding position. In any case, it may be a long time before these new recumbent riders can match or exceed their performance on an upright. Some say it takes them two years. Others say they never match all aspects of their performance on a conventional bike. If you have high performance expectations, be aware that the performance will only come over time.

New recumbent riders might want to consider leaving the computer off the bike for awhile and riding solo instead of with the group. You need to listen to your body. It is important to pay attention to how you feel so you don't overdo it. Also there are many adjustments to be made and few hard guidelines. Even something as basic as seat-to-pedal distance is the subject of some discussion. Some ride with their legs more extended than on a regular bike and some ride with their legs less extended. Most say that the ball of your foot should be further forward relative to the pedal axle. As before, research these things, but listen to your own body.

You need to do this not only to make sure you don't strain your muscles, but also because you may discover biomechanical idiosyncracies. For example, here are some comments that Chicago recumbent rider Eric Vann made on an internet discussion list:

"It turns out that many men and women with heavy thighs may suffer from an external rotation of the femur. You will notice this problem when pedaling because your knees will be slightly splayed. As a result you tend to overuse the gluteus muscles. Strengthening the thigh adductor musculature is the order of the day."

Some riders also choose to use clipless pedals for the first time when they get a recumbent. It can be difficult to get used to clipless pedals by themselves, so getting used to both the pedals and the recumbent at the same time can be quite a lot. It is especially important to ride in a quiet area and practice starting, stopping and balancing until you are comfortable with both the machine and the pedals.

It might seem like a bad idea to get a new style of pedals and a new style of bike at the same time, but especially if one chooses a bike with a higher bottom bracket, it may be necessary. If the rider's foot slips off the pedal, they may lose control or the rider's foot may hit the ground and be pulled back under the bike. If one chooses to go without clipless pedals, it is important to make sure the ball of the foot is ahead of the pedal axle.

Some fairly subtle and complex psychological effects can affect how the new rider feels about their bike as well. When we are engaged in a physical activity that we are used to and trained for, we often get some brain chemicals working that give us a mild sense of euphoria. We feel strong, like we can continue in the activity forever. If we happen to be on a bike at the time, we are likely to have a positive feeling about the bike. But when a person gets on a new recumbent, a bike they are not trained for, they are not likely to reach this zone. This may cause them to feel quite negative about the whole experience, including the bike. The fact that dailing-in a recumbent, getting all the adjustments right, can take some time adds to the negative feelings. Give it some time.

There are probably people out there who bought the first recumbent they saw and lived happily ever after. But you can't count on this happening. The more research and testing you do, the greater the chances that you will end up with a recumbent that will meet your needs well into the future.□



# KMC CHAIN TEST

by Bob Bryant & RCN Reader/Testers  
publisher@recumbencyclistnews.com

**D**uring the last few weeks of December 1998, there was an ongoing string about KMC chains on the internet HPV list ([www.ihpva.org](http://www.ihpva.org)). Well, to make a long story short, word got back to KMC's US rep., Russ Okawa. Russ sent me a very nice letter addressing KMC chain updates as well as sending two new KMC "Z" "Stretchproof" chains (actually 2 x 3 = 6 chains).

Many HPV'ers and recumbent folks will recall Russ from his days running Sachs in California prior to the SRAM merger. Russ Okawa and I spoke about KMC for some time. Russ agreed to supply ten recumbent riders with new KMC "Z" chains for review. Those chosen agreed to ride with the KMC chain and write a mini-review for RCN. Along with the RCN reader testers, I have tested the KMC chain on our 27-speed '99 Rans Stratus as well as a few other bikes this past season.

The following is a letter from Russ at KMC that was included with the chain packages:

## ■ INTRO FROM KMC

by Russ Okawa

Greetings from the KMC office in La Verne, California. Many thanks, in advance, for your help and cooperation working with KMC to establish better communication and hopefully a more favorable perception of our product with the recumbent community.

KMC chain is a continuously evolving and improving product. The new 'Z' model chains have been improved and upgraded from any of the previous SuperShuttle models. The 8-speed chains I am supplying feature our exclusive 'Bull's-eye Pin Riveting.' This produces some of the industry's highest Pin Powers, basically equivalent to the PC-91. Our StretchProof designation is a combination of special connecting pin heat treatment and new upgraded material used in the inner plate. Our tests show that the StretchProof material combination will provide wear and durability that will not be surpassed. The plate profile of the Z chain is designed for smoother and quieter shifting. The KMC 8-speed chains are 7.1mm width chains compatible with IG systems that also work well with 7.3mm HG systems.

The Z72 is our most affordable 8-speed chain. It is upgraded with 'Bull's-eye Pin Riveting' and improved Pin heat treatment. Z72 replaces the 1998 SS71 model. The Z82, Z92 and all 9-speed models all incorporate the StretchProof material combination. Z82 is a nickel and black finish, the Z92 is all nickel. Sachs, now Sram Power Chain, is great stuff, no question. KMC recognizes that Sachs is a benchmark for chain. Not unlike Mercedes or BMW is for automobiles. But, thank God there are Chevys and Fords! I think KMC's strong point is the overall value and broad pricing range it offers to cyclists. The Z82 chain is a good example of a PC41 price but with M91 Pin Power. Another example is the Z51. It is IG compatible, comes with a MissingLink and with a target retail under \$10 (with a full dealer margin). This is clearly not a chain for a racer, but for the weekend recreational rider who rides a \$250 bike. Does this guy really need to pay \$20+ for a chain?

For you old school, chain-tool guys, the reason for the MissingLink to connect the chain is that it is stronger than pushing in a pin. Pushing in the pin only provides friction or interference fit between the pin and the side plate. Compare that resultant Pin Power to a Bull's-eye riveted pin. The old saying...as strong as the weakest link. The MissingLink will provide a stronger connection. Same reason for the Power Link in a Sachs chain. The MissingLink is a single use connector...in other words, it's not designed to be un-snapped and re-used. That's why I've included some extra MissingLinks II as spares. Please note that these are 7.1mm

for Shimano IG or Sachs PC calibrated chains and will not work on 7.3mm HG compatible chains like Sachs SC-40.

## ■ TESTER

Gordon Bryck

Location: San Francisco Bay Area Marin County, CA

Bike: 98 RANS Tailwind

Email: [gfb@best.com](mailto:gfb@best.com)

**Comments:** Both of the bikes I tried the KMC product on have 8-speed Shimano drivetrains. Both are in good condition, with only a few thousand miles on each. My recumbent isn't my everyday bike yet, but its use is growing. Hilly riding mostly paved. I used the KMC Z-81 about 1K miles on each bike.

**Installation:** I could not lock-in the links by hand, but wrestled them close and they immediately clicked into place when ridden. Ease of installing is competitive with other products after the first try. Mechanics without gorilla hands could use external-lockring pliers to snap the links home on the workstand. As a former mechanic I wouldn't want to take the bike off the stand to "set" the masterlink, and then put it back on the workstand to adjust the shifters. Of course all good mechanics test ride their work ;)

I used one Z-81 on my mountain bike, in place of a nearly-new premium Shimano IG chain. That bike has a regular ATB drivetrain w/ XT derailleurs. Only difference in performance was an increase in noise when I shift to larger cogs under power; a frequent occurrence off-road. Shifting ease was equivalent. My shifts to smaller cogs seemed smoother with the Z-81. It's competitive with the Shimano product for ATB use, but I will switch back to the IG chain, so I can try the Z-81 on my commuter bike, where reliability is more important.

Two Z-chains were enough for my '98 RANS Tailwind. I frequently contact the long exposed chain, resulting in a big oily patch on my tights, and occasional snags of the fabric. My tailwind had a stock driveline w/11-32 cassette, and slow-shifting big chainrings. The Z-81 shifts the same as Sachs PC41 on the rear, but *much slower* on the front. I will go back to the PC41 on my RANS Tailwind for faster shifting. I'll try a chaintube for the dirty tights. That's more of an issue for my fiancée anyway. She rides the Tailwind too.

The Z-81 has an advantage unique to recumbent applications. The smooth exterior doesn't snag clothing! Perhaps chaintube users would prefer the Z-chain's smoothness too. Recumbent riders with "normal" chainering sizes may not mind the Z-81's slower upshifts.

I never broke a chain, even on my tandem with guest riders. Still, riveted pins are important for me, because I have found loosened side plates and pins-that-didn't-start-that-way becoming flush with the side plates. I replaced those chains before complete failure. I've worn-out many chains with 30K miles on the tandem, and found Sedis/Sachs chains to be the longest-wearing so far. The aesthetic quality of the Z-81 seems equal to Sachs products.

I have noticed deformation (side-to-side waves) in many chains after use. The KMC Z-81 and Sachs PC41 look straight when I sight along them. That's not as trivial for recumbent riders. We see our chain when riding.

I might prefer KMC Z-81, over PC41 on a mid-drive recumbent, where shifting is less troublesome.

My planned velocar will require yards of chain, some of it twisting for front drive. I would buy Z-81 for that application, where pin-

retention, weight and wear, predominate over shifting ease.

On the negative side, I noticed in KMC's specs that corrosion-resistant chain is not offered for basic derailleur-equipped bikes. It would be a great service to the casual US cyclist if they could get plated chain in their size. I believe more chains are replaced due to rust on those bikes than is ever worn-out, particularly on children's bikes. Of course enthusiast bikes are ridden hard, but never put away wet. Corrosion-resistant chain would nice for my planned amphibious velocar.

**KMC Chain Rating:**

**KMC Z-81 for CLWB: A (Sachs PC41: A)**

■ **TESTER**

**Andy Milstein**

**Location:** Princeton, NJ

**Bikes:** Easy Racer Tour Easy & Gold Rush Replica

**Comments:** I just got a package from KMC. Thank you. With the package is a letter from Russ Okawa. The letter says, among other things, "KMC recognizes that Sachs is a benchmark for a chain. Not unlike Mercedes or BMW is for automobiles. But, thank God there are Chevys and Fords!...This is clearly not a chain for a racer, but for the weekend recreational rider who rides a \$250 bike. Does this guy really need to pay \$20+ for a chain?"

I am sending back my package. I am not a racer, but my Easy Racer Tour Easy and Gold Rush Replica cost a lot more than \$250. I rode more than 4,000 miles last year so I am not merely a weekend recreational rider who rides a \$250 bike. I do not mind paying a couple of dollars extra for the benchmark. I am sorry that I told you that I was interested in participating in the test, but it seems to me that KMC has already conceded.

■ **TESTER**

**Bill Volk**

**Location:** San Diego, CA

**Bike:** Heavy Metal (Homebuilt dual 20")

**Email:** bvolk@inetworld.net

**Comments:** I hate to say this ..... but I feel like quitting the chain test. I did less riding last week than anytime for the whole year (recovering from a cold)... but I'm ready to give up on this chain.

I really really tried to like this chain. It does look good, and I know it's strong... but it shifts like crap. I mean really really bad. It used to be I could throw the Nexave into the big cog ... and no matter what gear I was in ... in a crank revolution or two I'd be sitting in the big cog (the Nexave is a reverse shifting derailleur).

With the KMC, I'm lucky if I get it into the next-to-largest cog in a few seconds... the largest cog takes up to ten seconds.

Funny thing, when climbing a really steep hill... with lots of chain tension... it does shift kinda-o.k... but when you are "soft pedaling" (as

when you are slowing down for a stop) the shifting performance is a joke.

Adjust all you like, it still doesn't work. Upshifting (which on the Nexave means pulling cable to get into a smaller cog) always seems to require a shift past the gear you want, and then back again. Same for down-shifting in most cases. To add insult to injury the chain's side plates are larger than the Sachs and actually rattle against my frame in the smallest cog. So I'll probably go back to Sachs this weekend.

**KMC Chain Rating: C**

A word of warning about using KMC chain with "reverse sprung" rear derailleurs like the Nexave and XTR's. With those derailleurs.... it's a D-. Also BIG WARNINGS about trying to change chain length, it will almost ruin any chain tool and you had better be very strong. Finally, the KMC links are "taller" than Sachs 55 models, and can cause interference problems on some SWB recumbents (like mine) with close chain tolerances.

■ **TESTER**

**John Cunningham**

**Location:** Colorado Springs, Colorado

**Bike:** Rans Velocity2 prototype (Limbo)

**Email:** JCRECLINE@aol.com

**Comments:** Just a brief report on the KMC Z82 chain that I'm testing. So far I've put 1,200 miles on the KMC Z82S Expert chain. I have not ridden through any wet weather as we have had the driest spring in recent history. I clean and lubricate my chain every other ride. I use a clean cloth with very small amount of citrus degreaser on it, I run the chain backwards while holding the cloth around the chain. Then I apply lubricant sparingly, on this particular chain I've used ProLink chain lube exclusively.

The chain is installed on a Rans Velocity prototype, LWB with 8-speed cassette. The installation went smoothly using KMC MissingLinks. The KMC Z chain with 1,200 miles on it still looks brand new, it shows no signs of wear.

My overall impression of this next generation of KMC chain is good. It shifts as smoothly as any other chain that I've used. I think it's high quality chain. It shifts great, runs quiet and is good looking chain. Just as a side note, I am running Shimano DuraAce chain on my wedgies and Sachs on my other recumbents. I like the MissingLink method of assembly. I am looking forward to seeing how many miles it will last.

**KMC Chain Rating: N.A.**

■ **TESTER**

**Eric Bucks**

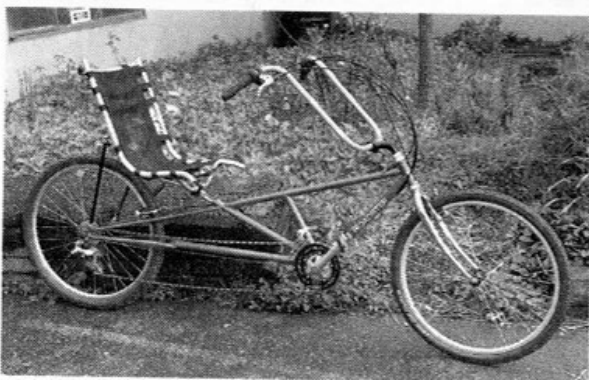
**Location:** Toledo, OH

**Bike:** 1998 Rans Rocket

**Contact:** ebucks@yahoo.com

**Comments:** Installation was no problem. The MissingLink worked as

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advertised to help make installation a snap. I even went as far as to remove the chain for a thorough drivetrain cleaning knowing how easy it would be reattach. I logged around 400 miles on the Z Chain without a complaint and haven't noticed any differences between it and the Sachs PC41 it replaced. It seemed to shift just as well and wasn't any noisier than the Sachs chain. Price-wise I think the KMC Z Chain is a winner. My only complaint is that I prefer Sach's PowerLink, which is reusable, over KMC's MissingLink. I'll take either one over replacing pins though.

**KMC Rating: A-**

The Z Chain offers good value at no discernable loss of performance. Reusable MissingLinks would make it even more attractive (MissingLinks are only good for one application—break the chain and toss the MissingLink).

**TESTER**

**Michael Walker**

**Location:** Tulsa, OK

**Bike:** 98 RANS Rocket 24-spd.

**Email:** mnwalker@webzone.net

**Comments:** I have no particular chain bias. I've used most brands. I rode this KMC chain approximately 1000 miles. I would rate the shifting quality fair to good, but not great. I haven't noticed any wear or "stretching" and I've had no problems. I really like the replaceable links. They relieve most of the pain of removing, cleaning and replacing a long chain. Shifting did not seem as crisp and precise as my Sachs chain and the KMC was noisier.

Overall, my KMC test chain was pretty good on the whole. I do think that KMC has improved their chains a great deal. I will continue to use this one until I wear it out. For me, the small irritations are not limiting factors in its continued use. My next chain you ask? Probably a SRAM.

**TESTER**

**Bob Bryant**

**Location:** Port Townsend, Washington

**Bike:** '99 Rans Stratus, and Gliss models.

**Email:** bob@recumbencyclistnews.com

**Comments:** I rode a few hundred miles on the Stratus with KMC chain. The shifting and chain performance was excellent. I did not experience any problems with the KMC chains. To be honest, it is difficult to say that you can "feel" a difference in the way between the KMC and SRAM Sachs chain shifts. I could not. I did find the chain slightly noisier than SRAM/Sachs. The lack of a re-usable link is annoying—especially for those bikes that need chain adjustments (sliding booms). It seems that bikes with tricky drivetrains, more idlers, upper chain idlers and more severe chain paths may increase the potential for problems as well.

So will I recommend that everyone toss their SRAM/Sachs chain and run out and buy KMC—absolutely NOT! KMC chain is not readily available as replacement chain. It is used mainly by OEM manufacturers.

KMC's Russ Okawa said it himself. The SRAM/Sach is the Mercedes/BMW of chains. And that is what I want on my bike. I've had years of good experience with it, and see no reason to change. I like my recumbent and feel that it deserves the BEST chain. If KMC says SRAM/Sachs is the best, then I'm on the right track. If manufacturers want to put pedestrian chain on their recumbents—maybe that says something about how they view their products. Why NOT use the best? Many recumbent manufacturers still spec SRAM/Sachs.

Would I take the stock KMC chain off of a new Rans, Haluzak or Vision recumbent. No, not unless I was experiencing shifting problems (which I have on one ESP equipped Rans bikes). I would try to wear it out and then reconsider at the time when the bike needed a new chain. If I were having any shifting or chain related problems, I would remove whatever chain I had ASAP.

**KMC Chain Rating: C +**

This is an average grade for chain that is perceived as being average even by its own importer. This aside, our experience with the chain on '99 Rans bikes deserves a higher grade. I just can't get over KMC's willingness to concede the top spot to SRAM. I can't afford a new Mercedes automobile, but find joy in the fact that I can afford the best bike I want. For that "best bike," I want the best chain. And I do not feel that it is made by KMC.

A special thank you to KMC for supplying the test chains and to the RCN readers who participated in the test. KMC does not subscribe to Recumbent Cyclist News, nor have they advertised their chains to RCN readers, though many recumbent manufacturers spec KMC these days. □

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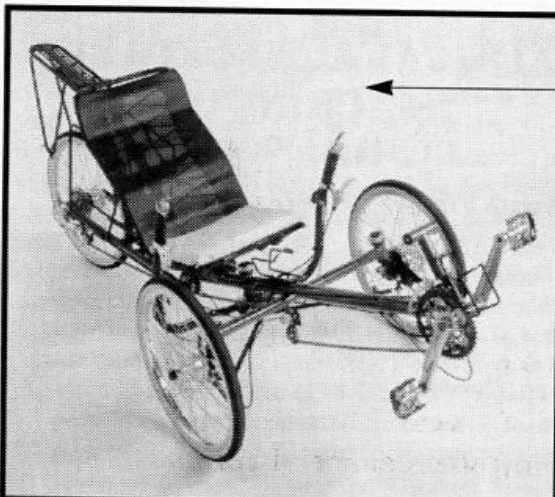
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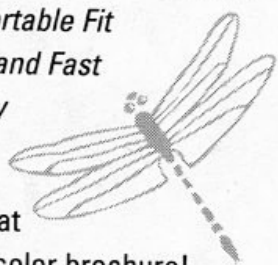
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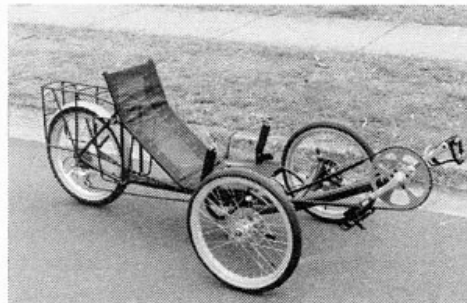
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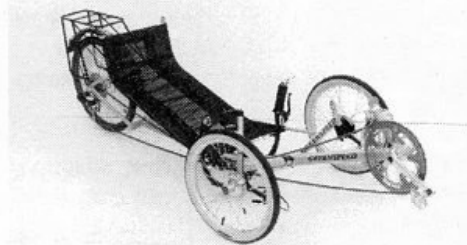
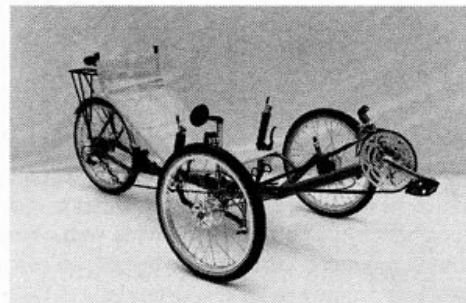




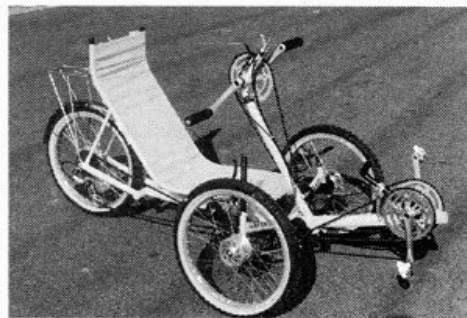
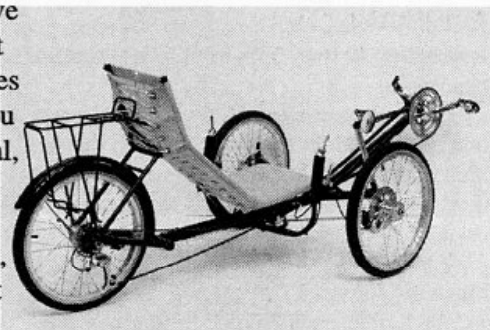
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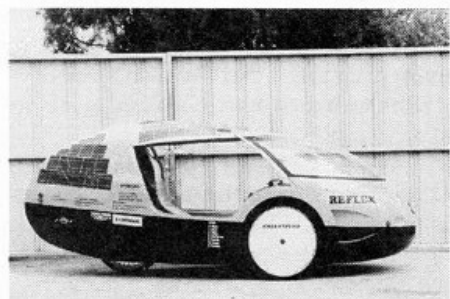
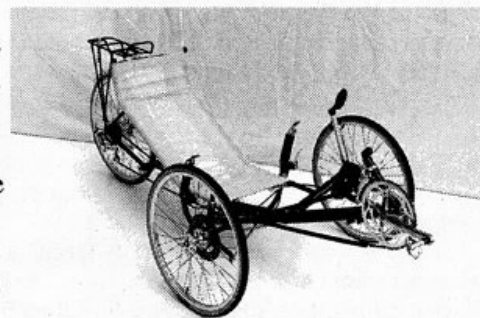
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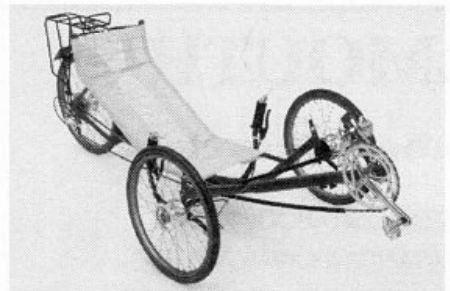
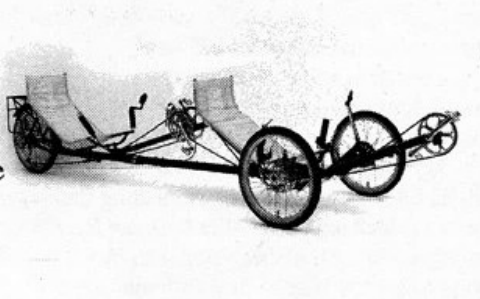
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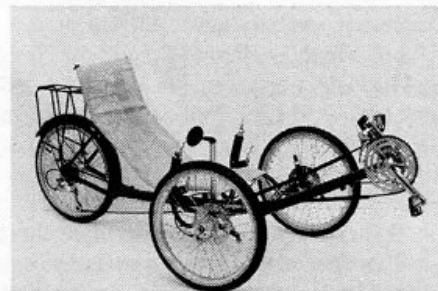
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# King of the Geeks

## Recumbents on the 'Net

by Bryan J. Ball

BandS@infoblvd.net

This column will primarily focus on exposing some of you to a small portion of the huge amount of information that is available to the recumbent cyclist on the world wide web. Yes, with a modem and entirely too much time on your hands you can acquire a cache of useless knowledge almost as large as mine.

In future columns I will focus on such topics as foreign sites, homebuilder sites, club sites, resource sites, and maybe even plug a manufacturer or two. However, let me first start by telling you a little about myself.

Up until approximately a year ago I was a 'benter in denial. I worked at a shop that sold BikeE's and the shop owner had been riding nothing but a Rans Rocket for three years. Every time that I built a BikeE, I took it for a test ride to make sure that everything was in working order and after every ride I wanted one more and more.

But alas, I was a full blown Italophile and could not imagine life without my Campy Ergopower shifters, Shamal aero wheels and sew-up tires. Making the switch more difficult was the fact that I was seriously addicted to smoking my friends (or trying to) on the obscenely steep hills here in the Finger Lakes region of upstate New York and I thought that a 'bent would seriously slow me down on the hills.

Then one day I came up with the brilliant idea of buying a BikeE CT 2.0 for my father! This way I could say that the bike wasn't mine, but I could still ride it every now and then. My plan worked wonderfully. I rode the BikeE with pleasure during the week and went out racing with my friends on the weekends.

There was only one flaw with my ingenious scheme. The weekend racing just wasn't as much fun as it used to be. I was still fast and still occasionally getting to the top of the big climb first, but every time I won a road sign sprint or went home with the day's "King of the Mountain" title, it seemed like a hollow victory. I had tasted something better and wanted more of it.

I began to show up less and less to the Sunday 75 mile torture rides around Keuka Lake and completely vanished from the Tuesday night time trial scene. Me and Dad's BikeE became closer and closer friends.

My wedgie riding fell off more and more and I eventually purchased my own 'bent, relinquishing the BikeE back to my father. I haven't ridden anything other than my Rans Tailwind since and am already scraping together pennies to buy a Tour Easy. After years of trying to get my wife to ride with me, she is finally starting to (Dad's BikeE has another friend). I have come out of the closet with my recumbency and have never felt better.

I named this column "King of the Geeks" because of a conversation I had with my father. He has occasionally poked fun at me because I took a while to give up my road bike, saying that I was just afraid to be a "geek" like him. When I told him about my new found gig with RCN, he said, "We'll you've reached the top now. You're the king of the geeks."

Well, enough about me, and more about the websites?

There are a lot of recumbent message boards and forums out there on the shoulder of the information super highway where 'benters can ask questions to their peers and share their knowledge with their fellow recumbenters. There are dozens out there on the net, but let me highlight three of the biggest and the best.

✓ <http://www.deja.com/group/alt.rec.bicycles.com>

This is probably the biggest recumbent newsgroup/message board on the web. It is frequented by some very knowledgeable and helpful 'benters

such as our very own Bob Bryant and Kent Peterson. There are new messages nearly every time that I log on and the conversation rarely gets stale. Deja.com provides forums on hundreds of subjects from hockey to quilting. All are easily accessible from the recumbent page and there is also a mailing list available if you want all of the info without visiting the site every day.

There is only one real flaw with this site. When you click on a message with more than one posting attached to it, you only get a list of messages and no text. You have to click on each individual response and let your computer download them before you can read them. If you have a slow computer (like me) this can get old pretty quick. A running text version would be preferable.

✓ [http://recumbents.com/viewbook\\_whole\\_message\\_first\\_50.idc](http://recumbents.com/viewbook_whole_message_first_50.idc).

This is the message board on Mark Mattarella's Recumbents.com sight. There are only one or two new messages posted every day, but the sight is host to a huge amount of recumbent information. After browsing the messages and putting your two cents in you can check out such useful tools as an online recumbent manufacturer database, tons of links and a live chat room.

✓ <http://remarq.lycos.com/sports/threads.pi?group=alt.rec.bicycles.recumbents.LAST>.

This is the recumbent message board provided at www.lycos.com (my personal favorite search engine). It is also accessible through www.bikeroute.com. This board and the Deja board feed off of each other so they have mostly the same messages on them. There are, however, a few different ones on each board and at the Lycos board, messages are displayed in a much more readable format.

One of the most amazing things about the internet is the huge amount of information that is available to anyone about almost anything. The fact that we have open forums like the few that I've mentioned in which to share knowledge and ideas with each other is a blessing that we should not ignore. □

**Recumbent web note:** A great place to get started on the web is the new Recumbent Cyclist News website unveiled in June of this year. Please keep in mind that it is RCN subscription sales that support this site and will enable us to expand, update and build up the archives.

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# Recumbent Anthology

Randy Schlitter—Founder of the RANS Company

by Kelvin Clark



Kelvin and the new MC<sup>2</sup> at CABDA

**KC:** So Randy, tell us what's going on at RANS.

**Randy:** There's actually been a very good handful of significant changes and moves. We've been enabled by the fact that the Classic series bikes are the only ones made in the U.S. We categorized everything, which included the new Velocity<sup>2</sup>, which is a new bike for late '99. Probably, the most significant change is that we've gone overseas for more inventory. The big complaint last year was that we couldn't deliver. So we've responded. The samples have checked out. The bikes at the show are Taiwan bikes. That's the big issue, getting product.

**KC:** You've been in recumbents for a long time. So when did you realize this increasing recumbent business was here to stay?

**Randy:** As you know, we've been doing it since 1976 and I kept saying, Yeah, if we're in it this deep, let's drill a little further. It has always been a big drag on us as far as investment. There was a point there when we were going to drop everything, just when Bob Bryant was just starting Recumbent Cyclist News. The show represents a sharp contrast to the last time I was in Vegas, it's been ten years. We did not sell bikes—maybe five or six bikes were sold. You went in our booth and demo'd! (laughs). We were on the edge of an open space. Infinity and Easy Racers were there. This is a sharp contrast. We've got a real landslide. Dealers have come up to us and said one thing that a lot of them experienced when they first got into it is the feeling and excitement.

**KC:** Tell us about Velocity<sup>2</sup>. What's the purpose of that bike?

**Randy:** As the name implies, speed. And it's been John's baby, almost his dream bike, because he wanted to come up with something to compete with the Gold Rush. Stratus was somewhat of a formidable competitor, even more so now because in '99 we've done some changes to the Stratus such as the new handlebar, head angle, and extended top tube for more rigidity. The Velocity<sup>2</sup> represents the next step forward which is changing the bottom bracket a little bit. I was concerned about wheelbase. A fast bike, long wheel base, I guess is okay. The effort to get the aerodynamics better. The Velocity<sup>2</sup> is a significantly faster bike. If you ride side-by-side comparisons you will feel a difference in the bike's speed. That is without the fairing as well. The frame is stiff, fairly light, but the whole philosophy behind it is to build a bike right and very fast. You've had exposure to it during Slumgullian and everybody had a very warm response to it. They like the bike, they thought it was something worth going for.

The biggest challenge with the bike has been trying to get it to be a good stable ride and not get the seat excessively high off the pavement and we finally got that dialed in and in fact if you've had a chance to ride it at the show, a lot of people have ridden it as their first exposure to a recumbent. Just because it's a high performance bike, doesn't mean it's not friendly, which is nice. Where we're going with the bike is we've got enough margin designed into the price that we can trick it out with some very fine components. We plan to make this similar to what Schwinn did with their Paramount and other top of the line bikes, the one that the legend will be built around, so to speak. It kind of does raise a question, what happens to the Stratus, since it is moving into that territory and above it, but I think the Stratus has carved a niche. You just have those guys that like the bottom bracket a little lower verses the ones that want it up high. If you want the speed, you're going to have to get down on your

profile and that is what the Velocity<sup>2</sup> allows you to do.

**KC:** How high is the seat?

**Randy:** 19 inches. The drag reductions are made because the feet are tucked up inside the fairing verses where your Stratus isn't. We may even make more specialized fairings for it too. Something more aerodynamic.

**KC:** So RANS is going to start making their own fairings?

**Randy:** Well we might, if we ever get time. We've always had that capability to do it, we just haven't had the time to mess with it. Right now the most important thing is to get the bike production volume out there and the quality that we have to do it. We could spit them out if we didn't care about the quality. We always care about the quality.

**KC:** Tell us about your general philosophy for frame designs. Your bikes all have a general theme about how you go about it. Where does that come from?

**Randy:** Good engineering is the basis of our frame design. I don't like to do things where we're extremely taxing the materials such as I see a lot of designs that use almost a laid over fork for their rear ends. To me, those are future frame replacement problems.

We delved a little bit into that with the Gliss and the Vivo because we had a couple of cracks on those frames and we're taking care of that, but the overall philosophy is to create a truss steel tube frame to where the stiffness is built into the simplest thing of all, the triangle. That's your lightest, most stiff, and you can control your stiffness by how you place that. The Stratus is a good example of frame design philosophy using triangles that are distorted to control the flex. Where the Velocity<sup>2</sup> is a straight out trussed bridge, it's a pretty hard rail. It'll have a little limberness to it and it's controlled because of the depth of structure we chose on it. If we want the V Squared to be deeper we can do that, or stiffer, we can do without adding appreciable weight. That gives you the ability to dial in the ride. If you go with monocoque structures, they are cool and sexy and all that, but almost anytime you get the cost figured for the benefits you probably could do the same thing in titanium and have a better bike. Mentioning titanium, we plan to do some things with that, too, as we get going, I think we'll see some Velocity<sup>2</sup> as a titanium option. Get the weight down, get the speed up. Simple formula, reduced weight.

**KC:** You do CAD CAM design.

**Randy:** We do it all kinds of ways. We're open minded about design. CAD is just a tool that helps us draw pictures.

**KC:** Is there load testing technology involved?

**Randy:** If you want. You can do what you call Finite Element Analysis, FEA. Even now with the software they have, it's still real pricey to do those to the extent of trusting an FEA analysis. Unless you spend a lot of time and effort, garbage in, garbage out, type of situation. So really, empirical testing still rules. Build a frame, run it, load test it, that kind of thing. At RANS we have the capability of doing strain gauge and transducer. Putting a strain gauge on a triangle and then a transducer to know the load, and the strain gauge then puts us to an equivalency in

materials abilities in certain areas where we suspect. We can do all that and predict fatigue life and characteristics of the frame. That's more empirical than it is FEA. If you go to FEA you just have to worry if you got all your assumptions right, because if you don't then you don't have enough of what they call 'nodes,' data points on the FEA, you don't have much better information than if you just went out and rode the bike. It's a good tool for initial design phase and stuff, to see if your assuming correctly, but again, experience is better than that. Guys that put a lot of frames together and kind of thumbnail it and say, Yeah, that's about the size of tube we need, it works. You don't get caught too often (laughs).

**KC:** How far back did you start? What headed you toward the engineer—bicycle—and the airplane directions?

**Randy:** In high school, we built land sailers. Little vehicles that just strictly sail by wind power. They were a blast. John and I always loved cycling, it represented freedom to us when we grew up in a little town of Russell, Kansas. A way to go anywhere we wanted to in town. It was total freedom. It didn't fly, but that would come later (laughs). In the meantime, my dad was very involved in aviation. He was running a spray operation. Sprayed crops, ran charter, did aircraft maintenance and aircraft rebuilding. We got exposed to the insides of aircraft and we got exposed to someone who took nothing and made it into something, like a pile of tubes and made something out of it. That in itself was good exposure because it taught us that you could create an object that, if you can think of it, you can build it type of attitude. So we grew up with that. Along somewhere in high school, we built some sailboats and some land sailers and then during high school we really got into 10 speeds and riding our bikes, because again, that great freedom it represented. Even though we could drive cars and all that stuff, we never were interested in it. We just got into touring and road racing. I got into more touring than John did and he got into racing more so than I did. So I rode a Bottechia road bike from Hays, Kansas, to Banff, Canada and back. I struggled to afford it, but I did manage to buy the damn thing and complete the trip after I got out of my second year of airplane training school in Tulsa. It was right after high school in '73 actually. I rode with David Nilbrandt. I bugged him about this thing I had in my head. There's got to be a way of making a low to the ground, three wheeled bicycle with a sail on it so we could be sailing down this road right now. So I kept seeing pictures in my head of what this thing would look like and I went back and started designing it. After that summer I went to Spartan School of Aeronautics and tried to see if I could work my way into school extra-credit stuff to build this thing. That wasn't going to be a possibility there. The next year in Wichita, I was able to do it. The instructor was more open to that. So in the sheet metal class I put this thing together—our first tricycle as we called it. It was a two seat recumbent, side-by-side seating, three wheeled bike, it was only 40 something pounds and it had a sail on it about 40 square feet. It went like the dickens. It actually pedaled pretty nice and I was so naive I thought that this would be so popular, you'd see them on the streets of Wichita, people driving to work in them. Here I was thinking the replacement to the car. That's how naive I was. So I continued to refine it and we actually built several models of what we called sail trikes.

John was still into bike racing and we were building hundreds of these sail trikes slowly over a period of years and then somewhere along the line, I think it was in the late 70's or early 80's, we decided to drop one of the extra wheels of the sail trike. I banged together a square tubed bike that would eventually become the Stratus. This thing was heavy, it was 45 pounds, had one derailleur in the back, no front derailleur, a big old plastic bucket seat on it. I took it out and chased after my brother on his racing Colnago and I did pretty good. He was pretty impressed. He said, "Gad dang that thing is pretty fast. We kind of understood why, the drag was reduced and so on. He rode it, he was pretty fast on it and so we proceeded then to go ahead and make seven different prototypes til we finally got it dialed in enough to where we started producing what's now known as the Stratus. Then we learned all about the bike industry all over again because we were already involved in the bike business by going to the shows with the sail trike. We had even less response than early recumbents got. Because it was a recumbent, it's just that it happened to have a third wheel and a sail on it which made it even harder to work it. But it taught us a lot about the riding position that we've chosen that we

call the recumbent riding position. It taught us a lot about how to make a seat. The original seat that we made for one of our sail trikes called the Eagle 4 was a composite bucket with an aluminum frame with a mesh. That is evidenced today in our current seat.

**KC:** So you've used mesh seats a long time.

**Randy:** Oh yeah, a long time. Then we didn't like them because they were too hard to make and gravitated toward this cheap plastic bucket seat we could buy for a few bucks. We put those on our sail trikes and then we went to a fiberglass seat with the same weight. I still like the original fiberglass seat because it had a property I really still think is cool. The original Stratus had the stick shifter stuff right in front of your crotch, your cable lengths were nothing, 18 to 25 inches long, you had a rear and front brake on it and down tube shifters on this tube with a grip. With a soft bump coming up you just grab that stub and slide on the edge of the seat and take it like that. You can still do that somewhat with our seat but it isn't nearly the springboard. It had so much springboard that it actually deflected up and down about three inches. So it's a cool seat, but it wasn't as comfortable as what we ride today. You can tolerate it for awhile longer than you can other seats. I still think that would be a good way to make a really, really lightweight racing seat for a specialty bike. That's pretty much what happened. Then we started going to shows and met people like Gardner Martin and the Infinity guy.

**KC:** So bike manufacturing came before airplane manufacturing....

**Randy:** Yes it did. Because in '83 we decided airplanes would be a good thing. We were a very ecological company and we didn't like polluting. We rode bikes in lieu of cars. In fact, I didn't own a car until '76. I got married in '76 and finally bought a car. We weren't making any money making sail trikes or recumbents, it took a while to get to that point. The joke was that if we built something that we could bolt an engine on we could probably make money doing it (laughs). So I've always been a real fan of airplanes, and liked designing those. In my dreams and stuff, sketch and that. I was always trying to design the ultimate hang glider that you could foot launch. I started seeing these contraptions called ultralight show up at the hang glider field. Boy, what a piece of junk those things were and everybody who was buying land sailers from me were also hang glider pilots. They liked the quality of our goods and said, "Hey, Randy—you make such a good land sailer and it uses all the same things, why don't you just make an ultralight. I said, "Ah, those damn things, go get a license for a real airplane and have some real fun, it's too much of a hassle." I asked myself, "Why am I saying that." And it was because they looked like these oddball contraptions. I said why not design an ultralight that looks like an airplane that I would like. So I started sketching that up and one day a friend of mine walked in the door of my shop and said, "Hey, what's that?" "Oh, a little ultralight I'm thinking of building. I just don't have the money to do it. He said, "Well, how much do you need?" I told him, and he said, "Well you got it." So we formed an ill-fated partnership that soon dissolved. But we're still friends today. It's a good thing to say about that, we survived that. We formed a company called Aeromax which soon was dissolved. I recovered my invention solely because I put all the work and effort in it and he put all the financing behind it and things just weren't balanced (laughs), as often partnerships turn out. We started making the airplane in 1983 and we haven't looked back since. The airplanes gave us the technology and the skill base, the capital that has allowed us to be competitive in the market for recumbents probably at an accelerated rate. We wouldn't have been able to do it without that injection of talent, machinery, technology, and cash unless that plane business hadn't done what it did. We would have been moping along pretty much like a lot of other recumbent companies are. Small time, wishing to be bigger. To be bigger is not the objective, just because we have egos. What we always wanted to do is all these cool things like stampings and injection moldings, extrusions and all these cool things, but we never had the money to do it. The reason we wanted to do it was because we needed it to be better for the consumer. The consumer deserves a really slick product, because that's what they've come to expect. Everything we buy is pretty slick. Highly manufactured, well thought out types of stuff. So that's what being bigger has allowed us to do.

**KC:** Where does the music thing fit in?

**Randy:** Oh, it's a good place to work out stress (laughs). I've always been fascinated with the mathematics behind the music. I'm not a very good musician—just what you call a noise maker. I've put together listenable pieces that we use in some of our videos and stuff. That's kind of my outlet right there for that. I've written lots of songs over the years, most of which are oddball subject matter and stuff.

**KC:** So more than just your instrumental stuff?

**Randy:** Oh yeah, I can write about anything, you know, whatever you're feeling about at the time. But it was never intended to be a commercial thing. I saw right away, music and me, I wouldn't have the stamina to stick it out and make it. I just didn't like the lifestyle that most people had in that business that did make it! When it comes down to it you eventually get to know yourself over time. I guess what I know about myself is I like making something that is actually like an object. The intangible stuff that is kind of like, gosh, I've written a lot of tunes over the years but if I forget them, they're gone. And writing them down, who's going to play them? So music is one of those things that is a piece of time. It's kind of a weird thing to produce. I enjoy doing it, but it isn't a hundred percent of what I'm about.

**KC:** Why Hays, Kansas? Where did that come from?

**Randy:** It just happened to be where the spaceship landed! (laughs) No, my parents have always lived in Kansas. My grandparents came over from Russia and settled in the Hays area in a little town called McCracken. My mom was from a little town called Loretta. They moved around Kansas, but never left Kansas. They lived in different towns like McPherson, Wichita and they gravitated towards Hays I guess. Russell, Kansas actually is where we more or less had our first few years of childhood. The sand streets on little Western Fliers and stuff like that. That's just where Dad had his airport. One day we pulled up stakes and moved to Hays and kept the airport in Russell. So we got a lot of driving back and forth done. That was always the big thing, to see how fast we could ride a bike from Hays to Russell, or sail a sail trike. Set a new record when we started doing commuting, because we had two airports to take care of. We'd drive or fly or ride bikes back and forth (laughs).

**KC:** Bike names.

**Randy:** How the hell did we come up with those? (laughs)

**KC:** You seem to have a gift in that area, so where does all this stuff come from?

**Randy:** That is one of the toughest things, in fact that is why we're limited on our model line. We can't think of all the names! We've got twenty more bikes, but we don't have any names. Same as the airplanes. There is a lot in a name. You have to be careful what you name it, that you're not offending a foreign country.

**KC:** Because you're an international company?

**Randy:** Yeah, the thing we like to do best is make up a word. We've not been doing that too much with the bicycles because those are fairly generic words. Vivo is a musical term to move rapidly through a scale. Gliss is a similar word to move smoothly and whatever, and Stratus is a cloud word, which we felt was real applicable because of the low flat nature of the bike. Nimbus is a little taller cloud, so that was a good name for that bike, and the V-Rex, we didn't even name the V-Rex—Mark Colliton coined that one. And that's a cool name, everyone loves that because it means speed king and we kind of hedged off of that with Velocity<sup>2</sup>. That just seemed like a natural thing. The Wave is just a marketing ploy because we think it's going to sweep across the country like a wave, help the recumbent become known. The Rocket is just the way you feel when you ride the bike. The Tailwind seems like when you're riding that bike you always have a Tailwind. The names reflect the spirit of the bikes and they are often created after the bikes are made. We don't sit down and say we're building X bikes by X name. We did that with a name John coined for the Velocity<sup>2</sup> which didn't work out (Limbo). Since then, we have come up with a new protocol, we have a numbering system like the R311 means it's a RANS, three means it's a long wheel

base and it's the eleventh design. That's the Velocity<sup>2</sup>. So all the bikes have an actual number with the meaning behind it now. We can call it something before we have to name it then. We have the R312 or the R116 which is a short wheelbase base. Sometimes we go to foreign languages for names, like the aircraft, we have two aircraft named in other languages. Secoda is the name of a Japanese woman that was the wife of a guy who bought a lot of planes from us. Shikari is a Persian word that means interceptor. We just looked for cool sounding words that just roll off the tongue and have a little rhythm and spirit. Better than calling a bike the VX2000. That has a lot of character (laughs).

**KC:** That's fun stuff. What do you think of the new players that are coming out to play in the recumbent yard?

**Randy:** Well, the only new player I see is Trek. Actually there are some foreign guys like that Radius thing, and the Bike Friday recumbent.

**KC:** What does it indicate to you?

**Randy:** It definitely makes it easier for us to convince the dealer that this is the real thing now.

**KC:** So it's a helpful thing, not a threatening thing....

**Randy:** It's a helpful thing as long as they, well one of the things that got me into the airplane business is how bad and cutthroat and back stabbing the bike business is. Hopefully, we're above some of that. You can't ask for even ground players, but you can hope for some degree of fairness. I hate to see that happen to an industry when it starts to really take off, it happens in every industry, they all go cutthroat. What the reality of it is, is that there is enough pie for everybody. Just stay relaxed and help each other and we'll all get there. That's the best philosophy. That's what we all would like to believe we're capable of doing. But when it gets down to where you're starving and the other guy is making money, and you think he is doing better because you gave him an idea, then it gets messy. At this point, we feel pretty darn secure because we have a full line of bikes and it's going to take a little bit of time and if we're wise we'll use it to strengthen our position. The number one thing we can do to keep our position strong is probably the opposite of what happened last year, to deliver on our promise. Be able to keep the dealers in our product. They are going to turn to other people because they have to make a living. They can have all the brand loyalty they want, but if they can't get the product they're not going to put any money in their pockets. They're not going to be able to keep doing the cool thing, being a bike shop. We've got to take care of our customers. That's how we'll stay in the game. That's my best advice to anybody in the game, to deal straight with them and deliver more than you promise.

**KC:** You make seats that are of the highest regard. Everybody loves your seat. If you look in the upright bike business you see saddle manufacturers, you see Flite saddles but you don't see them on a Flite bike. So how do you view some of the RANS componentry that's gotten high esteem? Can the RANS seat ever become the Recaro seat of recumbents, then selling it to other manufacturers?

**Randy:** We're happy to sell any piece of our bike to anybody. We do it in the airplane business very successfully. There are many components that we market and sell through the aircraft industry. They have no qualms buying that particular element from an airplane manufacturer. There may be more stigma attached to it when you're a bicycle manufacturer and supply components. That remains to be seen. If it boils down to that, and we aren't a whole bike maker and just made pieces, that's fine too, there are many fine companies doing that like Shimano, Campagnolo, and so on. That wouldn't bother us a bit. The key thing here is to keep in this exciting business. My brother and I love this business, it's like not really having a job. (laughs) Although, there are days when we get situations when it is a job, you know. But most of the time it's fun and the people doing it are having fun. Not only the vendors of the product but the people that end use it. We've gotten so many neat letters from people who have found this to be a bonus to their lifestyle, to be able to ride again, or to enjoy riding again, because they've been an avid cyclist, to be excited again about something that we grew up loving. Again it represents the freedom not only in motion but the freedom with our lifestyles.

KC: So it's still fun for you?

Randy: Oh, yeah! We've had our ups and downs, but when I lay down at night, I think, "Hey, this is a pretty cool life." Being able to provide people with something that actually fulfills their dreams and to have fun participating in it. That goes for airplanes as well as bikes. It's an emotional business. To have a good positive effect on your psyche is much better than a life insurance salesman. (laughs)

KC: Anything you want to raise up that we haven't raised up.

Randy: I think that covers it, make sure you've got a good grip on your handlebars. There will be a lot of things happening. ☐

ED. NOTE: Sorry, no picture of Randy Schlitter was available at press time.

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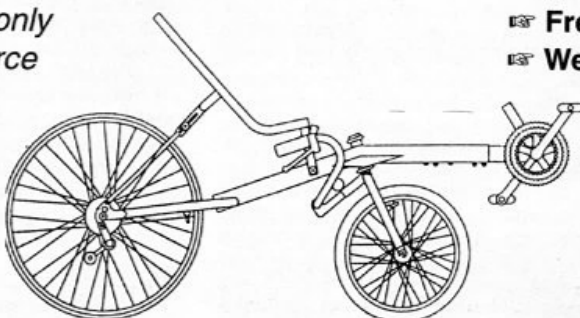
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# Recumbent Mail

If you have a something to say, a differing viewpoint or experience—we want to hear from you!  
**Please limit letters to 300 words.** Sorry, we cannot accept letters/pleas for charity ride sponsorships.  
RCN reserves the right to edit submissions for clarity, content and space limitations.  
publisher@recumbencyclistnews.com or RCN, PO Box 2048, Port Townsend, WA 98368



Amy Babich on her Chaise 3 trike. Photo courtesy of Amy Babich

## AGE OF THE BICYCLE, MOTORCARS & STUFF

In a letter to RCN, Jonathan Lawrence misreports my views. I have nothing against recreational cyclists. I especially like and respect those who also use their bicycles for errands, work, and life in general. I do deplore the practice of putting a bicycle on a car roof to transport it to a "ride." It's wasteful, polluting, unnecessary, and shortsighted.

I live in a beautiful place (Austin, Texas) which is being ruined by excessive motorcar use. Austin's a great place to ride a bicycle. Vastly improved public transportation and human powered vehicles can be a big part of the solution to Austin's pollution and traffic problems. It saddens me when people with strong bodies and excellent bicycles choose to live their lives in motorcars. It seems to me like a bad choice, both aesthetically and ethically.

I love riding my bicycle. It's enjoyable whether I'm riding to work, to buy groceries, to a restaurant, or a movie, to the river to swim or even to the dentist. I do not encounter much hostility from motorists, although I do see some very bad driving. Sometimes I have been very annoyed by an SUV tailing me, only to find that its inhabitants just want to wave and tell me my bike is cool. I find that riding a decorated and highly visible bike, and riding in an assertive and predictable manner make it more pleasant to ride a bicycle amid motorcars.

I don't like motorcars one little bit. I'd like to see them banned from our city streets. I'm certainly not going to drive one myself and join the pollution brigade. It's really fun to live on's life by bicycle, and I wish more people knew this.

Thanks a lot for publicizing my book, *The Age of the Bicycle*, in RCN#51. Several people have ordered copies, and I even had a call about movie rights. Maybe nothing will come of it, but who knows?

I sometimes ride a Comfort Cycle in city traffic and around parked cars. I use 3 tall flags for this, and two bells. When I want to alert cars around corners to my presence, I ring both bells. The driver looks my way and sees the tall flags moving. The car comes around the corner knowing that something is there. This works quite well. Viva VeloRevolution!

Amy Babich  
Easy Street Recumbents, Austin, Texas

## FASTEST BIKE IN ILLINOIS

RCN, Here is a picture of the fastest bike in Illinois in the last year (Lightning F40). I placed 2nd in the 1998 Midwest HPV Race Points Series. At the WIS/Midwest Time Trial Championships my time was 33:39:0 with an average speed of 28 mph. I will be 60 in January. (See photo above right.)

Tyger Johnson  
*Congratulations Tyger! What a great accomplishment and a very cool looking bike—Bob, RCN.*

## RCN WARTS

I was shocked to read that Geoff Drake and Jim Langley had been fired from Bicycling Magazine. Drake was always so eloquent and Langley was a super technical editor. Guess I'll let my subscription lapse, as I have little interest in "gonzo hard core mountain bike" riding. So here is my renewal—you guys are the ones now!

I've really enjoyed RCN over the years, warts and all; heck, the warts give your publication character! I would probably be a little disappointed if you became glossy and colorful. To me, the black-and-white format connotes technicality and no-nonsense. And I love your FINE PRINT disclaimer, that "We are as far from a corporate affair as you can possibly imagine." That is a refreshing statement.

By the way, I have done a demo ride with Amy Babich and see her around



Tyger Johnson's F40—the fastest bike in Michigan—Tyger Johnson

town on her recumbent bikes a bit. She really does ride them everywhere, and she writes fairly regular letters like the one in RCN#51 to the alternative newspaper here. You should try to twist her arm into doing a column for RCN.

Tom Cunningham, Austin, Texas

## A BETTER STRATUS?

Let's see now. The new Rans Stratus has eliminated the 37" frame size, the size most suited to an average 6 foot person. They've eliminated the "durable and stylish" Rans fairing (RCN#39 Stratus test) AND the C-bar (closed-loop handlebar), the steering bar that Robert Bryant said was probably best suited for the Stratus. They've changed the foam cushioning on the seat, which is bothering some people and I suppose the price of the bike, like everything else, has gone up. With all of this, RCN still thinks the '99 Stratus is the best one ever. I guess I'm missing something. I have a '98 Stratus WITH the factory standard fairing and the quick, responsive C-bar steering. I tried out a '99 model the other day at a dealers and frankly I have to say that I didn't like it AT ALL. It's not half the bike the '97's or '98's were. You can see that by just looking at it. The fact that they've eliminated the fairing, which was very handy for storing things, alone makes the new model second rate in my opinion. And the T-bar steering is clumsy, and cheap.

Larry Ripp, St. Paul, MN

*Larry, all of your points are well taken. It seems like Rans has changed the Stratus to be more like a Tour Easy and less like a... Stratus. I can see how previous Stratus lovers may not like the new, more mainstreamed model—Bob, RCN.*

## REYNOLDS LOW RACERS IN RCN

Thanks again for the News Release of the Nomad, and for linking my site. Most of my customers are very informed about bent's because they read RCN. I now have customers in Israel, Japan, Hawaii and across the USA. The Wishbone has been refined and it's a better machine than last year. I'm now spec'ing bar-ends, 78° headtube angle, powerful Odyssey A-brakes, breathable astro-turf seat pad and the seat is longer and curves up at the top, this positions your head more favorably. I've shortened the boom to 9", this positions the rider even further back, & allows shorter riders with 28" inseams to fit properly. It also allows rider to actually use the rear brake when needed the most, i.e.: panic downhill stops.

My USS is more aero & faster than ASS, the endless debate continues. I've redesigned the steering box, added sealed bearings, brought the handlebars back, and now the ergonomics are improved. It's simpler, stronger, lighter & better. It takes a lot of miles and thought to make things simple. Bar end shifters are significantly better than Grip Shift, You were right again. I thought they would interfere w/ my legs, but they don't.

I've been running a Euro-style Tailbox, & the performance gain is impressive + 3 mph average, & + 5 on steep down hills. W/ the tailbox, it's not even close when I'm riding w/ uprights. The Euro boys seem to have put a lot of effort into their tailboxes. I'm sure you've seen the Interlaken 99 pictures, but here's the link anyway: <[www.futurebike.ch/events/wm99/pictures.html](http://www.futurebike.ch/events/wm99/pictures.html)> USS can be faster and cyclists need strong legs to go fast. Thanks again for a great Mag.

George Reynolds  
Reynolds Weld Lab  
reynoldsweldlab@yahoo.com

## VELOCAR 1

I am enjoying your article in RCN very much. The work and research that you have done is to be applauded. If you hear of anyone who might reproduce this bike I would be very interested in it. With today's technology this machine should really



and would give anything out there real truly for the money. Again thank you for your effort in this article.

A Bent rider, Gene

### CHARLES MOCHET AND THE VELOCAR

There is a book which gives a very good survey about the development of recumbent bikes and which I recommend to all interested in the history of recumbency as well as in contests, physics, and also the basics of construction of recumbent bikes. The history in this book goes back even to 1869, but gives also pictures and descriptions of first serial productions in 1914 (France), construction details of the Velocar of Charles Mochet, the Jaray recumbent bike, manufactured in Stuttgart in the twenties and sold in Germany, in the Netherlands and in Switzerland, the Cyclo recumbent of 1934 (Great Britain), the Grubb recumbent bike of 1934 (Great Britain), the LWB Sport Plex recumbent bike (France), the Cyclo Gear SWB of 1936 (Great Britain) recumbent bike in the thirties, etc. A small chapter deals with reasons why recumbent bikes more or less disappeared in the forties. There is only one disadvantage with the book: it is published in German ("Das Liegerad" by G. Fehlau, 3rd edition, published by Moby Dick, Kiel/Germany, ISBN 3-89595-025-4).

Lienhard Huster, huster17@aol.com

### SPEED RECORDS

Has anyone on an unfaired recumbent gone farther than Chris Boardman's 35 miles in an hour on an upright?

Rolf Renner

*We asked Gardner Martin of Easy Racers. Gardner said, "No unfaired recumbent has broken Boardman's record. The best European low racer with a world class rider may be able to come close—give or take 1 mph."*

### R32 KUDOS

I Got a chance to devour the latest RCN cover to cover this past weekend and wanted to say, Good Show! First, the R-32 article was spot on. I had the opportunity to ride that bike for 4 days when I was in Scottsdale, AZ, on business. I hooked up with some HPV folks, and thanks to Richard Belcastro (RCN contributing author) who lent me his R-32 for the duration of my trip, I rode that puppy all about town. It was smooth, stable, comfortable, and remarkably quick for what I would consider a heavy bike. The suspension made going over rough spots a non-issue, and it was easy to maneuver on some of the bike paths we rode on.

The lack of recline adjustability was not a problem for me, as the position was actually what I would have dialed in for myself (I tend to like a more closed position). Even though I'm relatively short (5'5.5" with short legs), I had no problem feeling secure at stops. I'd consider this an excellent commuter-tourer-utility bike for just about anyone.

One other item: I really enjoy pictures which accompany articles, but if you (and your contributing authors) could please find some way to have a picture or two of the bike with a rider in the cockpit, it would make it much easier to view the ergonomics of the bike. I believe it's important to see exactly what position a rider is in on any particular bike. Keep up the great work.

Shari Bernhard, shari.bernhard@mail.ccur.com

*Shari, For 2000, the R32 will have dual 20" wheels, an adjustable seat recline and the stem/bars have been moved closer to the rider—Bob, RCN.*

### GREENSPEED FEEDBACK

I am a Greenspeed GTS owner, and your observations about Greenspeed ride characteristics are quite accurate. On reflection, I don't really care if anyone else likes or dislikes the Greenspeed (Mr. Solomon?). I know from my own experiences that the machine is a supremely fine urban, suburban, and out-in-the-country HPV. However, I am kind of mystified by Bob's editorial response in regards to recent reports of low recumbent and trike accidents. Bob's implication is that the low-profile of these machines somehow accounts for those accidents?! Does Bob think he's safer in traffic on a high-profile machine? If someone doesn't feel comfortable on an extremely low-profile HPV, then they are not obliged to be on one. Safe riding to you!

Leo in Monterey, jck@juno.com

*The trike "lowness" and "handling" debates have been ongoing for years. The comments most recently started in a letter in RCN#49 and the debate has continued all year. Ultimately, the individual rider will have to determine if he/she feels safe on a low trike. There are two factors at work: A. Your actual height on a low trike (or lowracer) and B. The fact that you take up more of the road, which some have argued and certainly varies by trike—Bob, RCN*

### TRIATHALONS

At the sign-up for the Columbia Triathlon (Columbia, Maryland) I asked a Tri-Fed official about letting recumbent bicycles into the Columbia Triathlon and he said that they are banned, but if there is enough interest a separate category could be made and so they would be allowed in. So I'm asking you readers if any of you are interested in being in a Triathlon and showing what a recumbent can do to please contact me. Just to let you know more about it: 1.5K swim, 41K bike ride, 10K run in that order.

John Hamilton, johniii@erols.com

### GEARING COMMENTS

RCN#52 is another winner. I was glad to see your response to Rolf Garthus (Hostel Shoppe). He's a good guy and I wish there was a dealership something like his in the Kansas City area. I do think there needs to be some discussion of the article on gears. While technically beautiful from the computer nerd standpoint, it misses several main points and I guess really does point out that very few personal computers actually pedal bicycles. In the real rider world I'm not aware of anyone who searches for the very next gear ratio in a 21 or 24 speed setup. The real world is that when going downhill or with a good tailwind you are going to be in the big chainring or third hub gear. Most of the rest of the time we are in the middle chainring or second gear. Then once in a while we have to go to the little chainring or first gear. The companies that put gear clusters together are aware of this and design

clusters around this fact, not around some desire to have 21, 24, or 27 distinct gears. It is a complete non-issue. The typical cluster has a certain percentage of gain between gears which means typically 11-12-14-16-18-21-24-28 or something like that. In other words the design is for a perceptible and even jump in the overall ratio which means larger jumps between larger cluster gears. The fact that there is redundancy doesn't matter. Since we left the days of half step gearing with the old 5 speed clusters it hasn't been an issue. With either chainring gearing, or hub gearing you need to be in whatever basic chain or hub gear you need for the hill near the start because shifting the chain ring under much power is inadvisable and impossible with the hub. The even percentage of change in the cluster gears is what is important since those are the ones we use as we lose momentum on a long steep grade. This is why we have 7, 8, or 9 cluster gears instead of the old 4- or 5-speed clusters. (Yeah, at 60 I've had plenty of experience with 4- and 5-speed clusters). There is a major point that isn't discussed very much about the 3x7. That is it actually has 21 gears that can be used. The typical Chain ring setup runs into cross gearing problems rather rapidly and a 24 speed really has only 16 usable gears unless you are willing to go with cross gearing.

As one who rides both a V-Rex and occasionally a BikeE I can't detect any reduction in efficiency with the 3x7 that I see discussed so often. The idlerless drive train makes up for any reduction if there is any. The gears run in light oil so why would there be any reduction in efficiency? I think that is a figment of someone's imagination not proven by real facts. If you want to see reduction in efficiency try the V-Rex in the 52 chainring and the rear in one of the larger cluster gears. You can actually feel the drag of the overly tight chain on the idlers. Try the V-Rex on a bench in the same setup and whip the pedals backwards for the old friction test, and they come to a stop rather rapidly. So if we are going to talk about efficiency, we really need to talk about all aspects. I'm convinced the BikeE is slower because of the small front wheel, greater frontal area, and a less efficient rider position, not because of any differences in the efficiency of the 3x7. It's still more fun than anything else going.

John West, jwwbike@springhill-online.net

### VIVA VELOCAR

I Enjoyed your article about the Mochet machines. I just spent three years in Paris and would ride around Longchamp every weekend on my Vision 45 with the masses of serious cyclists. They were always skeptical, but couldn't deny the "circus bike" was keeping up and often passing. Some older geezers would stop me and say they could remember such bikes around Paris before the war. They were certainly referring to the Vélocar. To those Frenchmen who asked, I would tell them that my bike was a French invention resuscitated by American inventors in the 70's, to which they'd reply "we French invent so many nice things, then don't understand the value of them."

Henri Bigo, hbigob@ibm.net

### RANS STRATUS

I can not put your magazine down!!! Because of your magazine I now ride a 1999 Rans Stratus & will be riding across Illinois.

Terry Hammond  
hammond@worthlink.net

### BIKE FRIDAYS

You are right about Bike Fridays. I've owned two and I'm 120% satisfied with them. On my second bike, they forgot to include a feature I had ordered. When I brought it to their attention, they provided that feature without charging me for it. That bike has served me well on some great off-road tours. I'm a happy camper.

Your editorial didn't mention that each Bike Friday comes with a piece of candy. There were no instructions in proper use of the candy, so I ate it.

Dwight Jones, Dwight@Wrightwood.net

### USS ARTICLE, STEERING STICKS & REYNOLDS

I was reading the editor's notes on the USS article by John Riley in the latest issue. I agree with three of your four points, but am puzzled by your take on one of them: "Steering sticks are positioned skyward" is described as an ergonomic problem. While this is true for bikes that have the bars set well back and under the seat, it is most definitely not the case for USS designs that put the pivot point forward. ("All generalizations are false, including this one! ;- )

I took delivery of Wishbone #31 from George Reynolds two days ago. This bike is a case in point. The ergonomics are outstanding: The bar pivots just in front of the seat base, with the sticks pointing straight up. It has bar-end shifters and brake levers that also point up. The bars in this position allow me to keep my hands as they would be naturally, along the trouser seam, palms inward, thumbs up. It also allows me to pull back on the bars when needed to get a little extra oomph... starting out from a standstill is really easy with this rig, despite the extreme seating position and very high BB on the Wishbone.

Andy Douglas, adouglas@snet.net

*Andy, I was thinking of a Comfort Cycle steering setup when I wrote about skyward facing USS steering sticks. I then considered Vision, Haluzak and Ryan USS—none of which would work faced skyward. It seems that the Reynolds is the exception and not the rule. As long as we are talking about ergonomics and the Reynolds, customers should consider the high BB and ultra laid back seat, BOTH of which can create other ergonomic concerns for some riders (neck fatigue and toe numbness). It is a very cool bike, but I think even George Reynolds would agree that the Wishbone riding position is just a bit "extreme"—Bob, RCN.*

### CURE FOR V-BRAKE WOES!

I have been using a nifty little tool to set up V-brakes as well as cantilever brakes that cures their dreadful chalk board screeching and markedly improve their braking power. It is called, "ToeJam" Brake Pread Adjusting Tool. You can get it through The Third Hand (514) 488-4800 (Item # TJ-BPT) for \$7.00. It is well worth the investment. I can set up V-brakes and cantilevers correctly in about 2 minutes with this little gem. I use the tool on the rim under the rear of the brake pads, loosen the

mounting bolts on the brake pads just enough to adjust their position on the rim, then I take a Velcro pump strap to hold the brake lever down to set the toe on the brake pads and then I tighten the mounting bolts of the brake pads. Brake shoe adjustment is now a slick trick that riders watch me do in awe. It use to be a 30 minute affair at best and often an all night fight to get the toe in just right for the uninitiated. The company that makes it has a website: [www.biketoejam.com](http://www.biketoejam.com) or [www.adventuresports.com](http://www.adventuresports.com) for further info.

I have officially opened a bike shop at our ranch "The Bike E.R." I repair broken bikes that get KO'd on the trails out here. We have been having an increase in our ranch visits and riders on our mountain biking trails and the need for a on ranch shop has grown. A full suspension rental fleet of K2 mountain bikes as well as sales of the same are available. I am looking to add a recumbent bike line in the next year. I will keep you posted.

I loved the RCN#53 issue. The story on the Velocar was excellent, a great history of the birth of the recumbent. UCI has not changed. They are still anti-progress in bicycle development. Just look at their most recent rulings on bike design requirements that guarantees that racers will be further flung backwards to the 19th century design of bicycles.

Keep doing what you are doing, no fluff or ad copy drivle, give the honest facts about the bikes and equipment. On the topic of honest facts, with my rental fleet of mountain bikes at the ranch as well as the 1998 and 1999 models I have sold to my customers, the 9 speed groups are very temperamental, extremely tight tolerances on setup to keep them shifting properly. The least little bit of cable stretch will get the shifting out of whack. The narrower chains are weaker, more prone to brake under torsional loads. I hope to lay in my inventory as many 8 speed groups as possible. The 9 speeds are a pain in the shifter—this time more is NOT better!

Thanks,  
Paul K. Nolan, MD, The Bike Doc

#### MORE MOCHET!

Your decision to devote eight pages to the Mochet legend in RCN#53 clearly illustrates the high level achieved by RCN. Sincere congratulations on this stunning chapter in our history. We now have a remarkably thorough picture of the genesis of "Recumbency."

Equally to be hailed are the four in-depth pieces in defense of underseat steering

(pp. 22-23, 24, 46-47, 48) There are two small additional points that might be of interest. First, while OSS (ASS) advocates like an equally valid claim of a slight energy-saving advantage over USS, they may not be aware of an equally valid claim of a slight energy-saving advantage of USS over OSS (ASS). I have yet to see evidence that disputes the conclusion that the two claims might, at the very least, cancel each other out. It may be possible that there is a net gain in favor of USS.

Secondly, for those who are looking at both steering methods or are contemplating rear suspension (with its added cost and weight), be advised that a brief and moderate down-pressure on underseat bars lifts body weight most satisfactorily off the seat for very effective shock absorption over bumps.

Eugene Villaret, Ft. Lauderdale, FL

Eugene, our "generalization" that ASS (OSS) is more aero and better performing is somewhat shot down when you consider racing trikes such as the Greenspeed and/or lowracers like the Reynolds Wishbone. I will be more careful to qualify my performance generalizations in the future—Bob, RCN.

#### OUTLANDER BUILDING SCHEDULE

I am writing to tell you about how I go about building the Outlanders. I work full time in a bike shop which means that I am employed from the beginning of April to the end of October. I use the time from November to March to build bikes. I can average about 3 to 4 weeks for one bike. Last winter I built 5 bikes of which Alan Thwait's Outlander 22 was one. With the interest his bike alone has stirred up and the current trend with regards to low racers, this year I will be building a tiny run of 5 to 6 low racers with 26/20 wheel configuration. Plus one LWB bike I was unable to build last winter. Of the 5 or 6 lowracers I have 4 or 5 of them spoken for already. Mark Colliton is getting a frameset with a rigid fork, and a removable seat.

As I mentioned on the Dirt Demo Day in Vegas, I build for fun and a bit of money. I don't advertise my services because people seem to find me. Most of the bikes I have built are for local enthusiasts, in the HPVSO there are 6 Outlanders, not including myself. I am currently not set up to build more than 6 bikes a year. Since there are several makes of recumbents available, I prefer to build bikes for which none exist to meet a rider's need. For examples of these you can check my website under bikes/diversions. Because the market is still fairly small I am not going to quit my day job just yet.

Carey (Outlander) Chen  
[www.concentric.net/~Outlandr/](http://www.concentric.net/~Outlandr/) □

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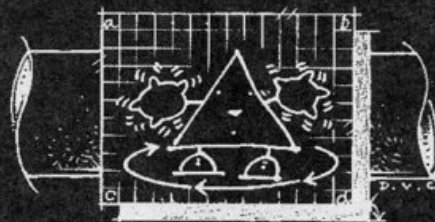
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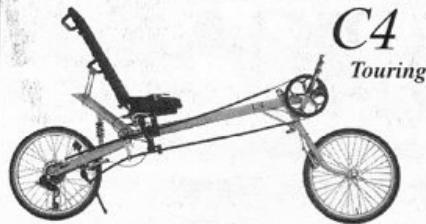
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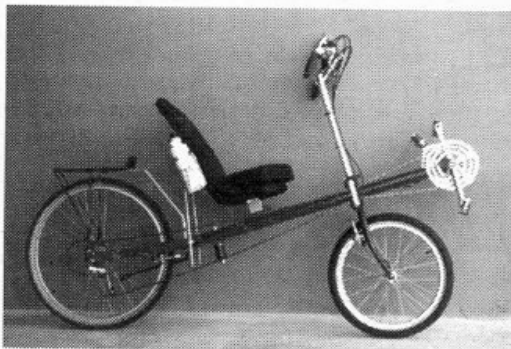
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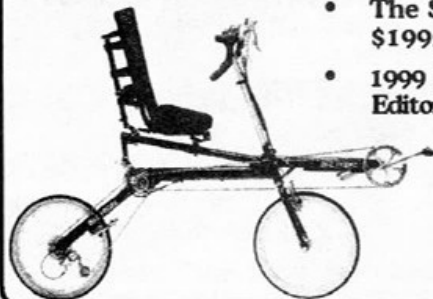
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# RECUMBENT CYCLIST NEWS

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You're pedaling down a quiet country road. The wind gently blows in your face as you slice through the wind with your aerodynamic recumbent bicycle. Your eyes have a direct 180° stereo surround sound view of the scenery—instead of the front wheel. Your body feels good—no pain. Your arms and wrists are totally relaxed—as they do not support your weight on a recumbent. Your neck and shoulders are relaxed—because you are looking straight ahead. Your bike seat offers full ergonomic back support—and total comfort. Your hind quarter wonders what kind of a seat this is and why there isn't pain, chafing and numbness. Could this be real? Could it really be bicycling?

The recumbent experience is totally unique in the bicycle world. There are racers in streamliners, tourists riding across the country, average folks riding for fun or fitness and club rides and somebody's mom or dad getting back on a bike after 20 years. The one thing they all have in common is comfort.

You know that you have hit upon something great when you can ride 5, 25 or 125 miles and be comfortable the entire ride—seated on your hi-tech recumbent bicycle. Bicycle industry designers continue trying to reinvent the upright bicycle—with limited success. Recumbent designers may have different ideas on geometry, style, look and performance—but most know what the bottom-line is—COMFORT!

We don't care who you are, what you do for a living, where you live, what color or sex you are, your height or weight, what kind of a car you drive, how little or how much you ride—we are accepting of all people with an interest in recumbent bikes. And for those that are not—we'll try to convert you in a subtle way—through our passion for recumbent bicycles.

**Recumbent Cyclist News** is the voice of the recumbent world and has been since 1990—more than 50 issues! We publish bimonthly and issues are mailed worldwide. We are a magazine written and produced by and for recumbent bicyclists. Why not let us help you to learn all about recumbent bicycles and stay in touch with the recumbent world!

**In each RCN issue you will find**—44-68 8.5"x11" pages full of the following:

- ✓ **Editorial License:** Publisher Bob Bryant's view of the state of recumbency...as well as his RANTS!
- ✓ **Letters to the Editor:** Have a question or comment? This is your soap box. If you disagree with us, let us know. The more voices we hear—the better!
- ✓ **News, Rumors, Announcements, and Gossip:** The new BikeE Air Tech, \$650 BikeE CT and Trek 'bent... RCN readers heard it first.
- ✓ **Road Tests, Interviews & Critical Reviews:** We are in the unique position to try out and compare all of the different models available in North America today. And we'll tell you all about it—good, bad, indifferent or exceptional!
- ✓ **Recumbent Touring Narratives by Readers:**
- ✓ **Technical Reports and Advice:**
- ✓ **Reader Written Articles:** Bike impressions, road tests, tour narratives, rider-tips and even news and rumors.
- ✓ **Reader How-To Articles:** Fairings, chain tubes, modifications, etc.
- ✓ **'Bent Events Calendar, Race & Rider Group Listings:**
- ✓ **ReCycle Classified & Want Ads:** We have the world's largest recumbent classified ad section.

This is your publication. Tell us what you want. RCN is written by and for recumbent enthusiasts. You are the most educated recumbent bicycle enthusiasts in the world. We accept paid advertising though it is not our primary source of revenue. RCN is bankrolled by us, you (readers) and dealers/manufacturers (who advertise).

RCN is the world's recumbent gossip & rumor monger. There aren't enough printed pages to fill in all that he has to say. Get the straight scoop. Enthusiasts love him and manufacturers fear him...and some don't talk to him anymore.... Though we see and hear all—and report it in Recumbent Cyclist News.

Viva Recumbency,  
Robert J. Bryant  
Publisher Recumbent Cyclist News

### ■ RCN BUYERS GUIDES & BACK ISSUES

Our most recent recumbent buyers' guides/issues were printed in the first half of 1998 with a 1999 update (RCN#49). The back issues below are in stock and available as of May 1999. See prices & packages below:

- RCN#53** Road tests of the Rans Stratus, Haluzak Horizon and Barcroft Virginia. USS: Steering for Laid Back-Riders, Route 66 Tour, Charles Mochet and the Velocar part II.
- RCN#52** Road tests of the Vision R32, Lightning R84; Living with a Leitra (velomobile); Maine to Washington on a Gold Rush; Gearing; Charles Mochet and the Velocar part I.
- RCN#51** Road Tests on the Greenspeed GTS Trike; ICE Trice trike; ZOX 26 FWD; Venice to Rome; and the Cannonball Chronicles.
- RCN#49** 1999 Season Preview—an companion update to our 1998 Buyers Guide Series (RCN#43-46). Plus reviews on the new Vision R40 with updated geometry, the Bike Friday Sat R Day and the new Trek R200 SWB recumbent.
- RCN#46** '98 Buyers' Guide (BG): Trikes/Tandem; Dragonflyer trike test.
- RCN#45** '98 Long wheelbase (LWB) BG; Tour Easy.
- RCN#44** '98 Short Wheelbase (SWB) BG; Rans SWB.
- RCN#43** '98 Compact BG; 1998 Awards; How to buy a....; BikeE AT test.
- RCN#42** Bob's Slumgullian Tour article (Angletech & Rans)

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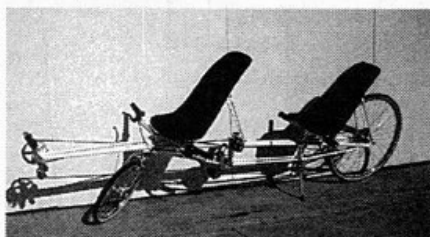
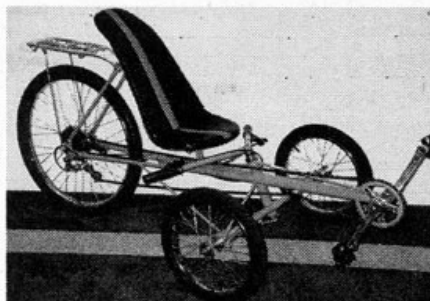
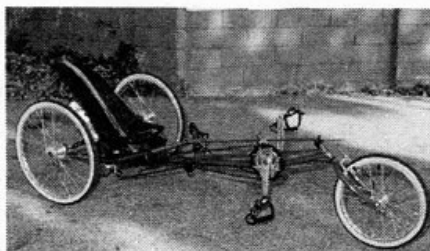
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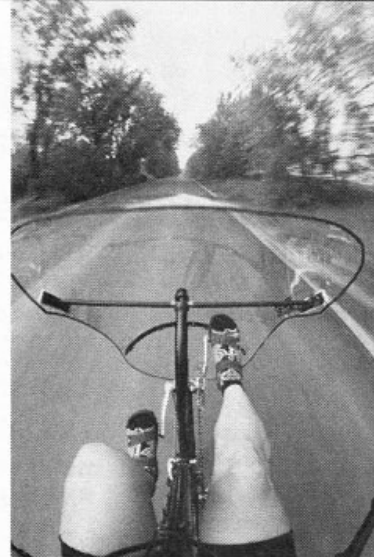
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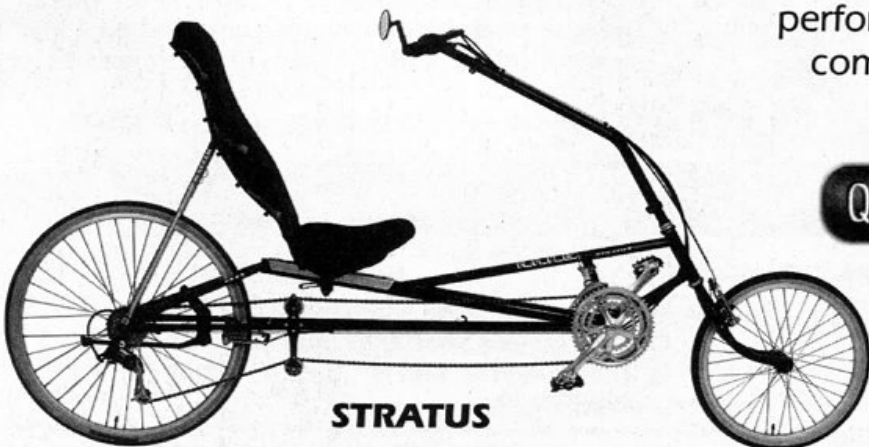
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# People Movers News Vol. 54

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## RECUMBENT BIKES FOR SALE

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People Movers is now Southern California starting point for the National Bicycle Greenway Ride Across America in 2000.

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# Easy Racers: Our Customers Speak

## NEW GOLD RUSH - I'M IN HEAVEN

(Another customer/friend speaks)

This past Wednesday I drove down to Freedom, CA., to pick up my beautiful new white Gold Rush. I have owned a BikeE AT XL for the past year or so, unfair or not, that is what I have as a comparison. I have only put about 50 miles on the GRR but it has made such a strong impression on me that I have to share it.

I have to start with the buying experience. Gardner Martin will treat you royally. He gave me a full tutorial on the bike from adjusting the derailleurs to truing the wheels. Here's probably the biggest name in recumbent bicycles and he is accommodating, friendly, down to earth, and absolutely chock full of recumbent knowledge. He takes his time with you and makes sure that you are completely satisfied and comfortable with the bike.

Ah, the bike. The bike is a revelation, a marvel, one of life's gifts. I knew that it felt good from my test rides but now that I have ridden it on my familiar bike paths I have a much better feel for it. Is it faster than my BikeE? Whoa baby, this thing kicks ass! It feels like the hand of God has come down and given me a push. There is an overpass near my house with a gentle descent. BikeE — 29.5 mph, GRR 33.4 mph without fairing.

The Gold Rush Replica Black Gold—RCN#45



This morning I put on the fairing. I then took a ten mile ride on a very familiar loop where there is a three mile stretch that is flat and straight. I normally ride it at 20-22 mph pushing pretty hard. I spun up to 20 mph on the GRR and was astounded at how easy it was. I pushed a little harder, looked down at the speedo and I was cruising comfortably at 25 mph.


At that point I must have broken the world's record for recumbent grins. I pushed a bit more and was sailing along at 27 mph. Now I am beside myself and even though I knew the Gold Rush was

good I had no idea it was this good. I backed off a little to enjoy the ride and when I got home my average was 20.2 mph. This included a few stops and one small climb and as we all know the computer average is not the cruising average so I am ecstatic. It has been a goal of mine to average 20 and event though this was a short ride I feel good about it.

I am also very pleased by the ride quality of the GRR. It is one smooth bike. I was curious if I would notice more road shock being used to my suspended bike but the long wheelbase soaks up the bumps wonderfully. I have also had no problems with maneuverability zipping around posts and going around sharp corners. The bike handles beautifully.

One final note is how well the GRR climbs. There is one very steep hill that I climb often. It is only 2/10 of a mile but it must be about a 12% grade. I go up it fine except for the part about being near death at the top. The first time up it on the GRR was shocking. I just spun right up and not even in the lowest gear. I was breathing hard at the top but not gasping like I usually am.

A 47 year old stable family man probably shouldn't have such passionate feelings about an inanimate object but if anyone will understand, you guys will.

Posted to [alt.rec.bicycles.recumbent](http://alt.rec.bicycles.recumbent) by Michael Cvetich. 

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