

RCA

RECUMBENT CYCLIST NEWS

Issue # 65
Sept/Oct
2001



*HP Velo's Paul Hollants riding his
Speed Machine on Mallorca*

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■ **On the Cover...**

Here is a picture of Paul Hollants riding the Speedmachine at the Spanish island Mallorca.

■ **In Our Last Issue...**

RCN#64 July/August 2001— It has a blue cover with cover photo of Piero Tassinari from his touring article.

■ **Our next issue...**

RCN#66 November/December 2001 — you should have your copy by the end of November.

Guest Editorial

Is Velorution Impractical?

by Amy Babich

Amy is a bicycle advocate, recumbent dealer and author from Austin, Texas. She wrote the editorial "Velorution" for RCN#60. RCN reader Glenn Garret responded in RCN#63. RCN#60 is sold out. We have ad-free reprints for \$8.

I would like to reply to Glenn Garret's allegation that it's "totally impractical" to work to change the transportation system in this country. It seems to me that it is much more impractical not to. Oil is running out, and no one is trying to conserve it. People seem to be trying to burn it all up as fast as possible. The world is heating up; plant and animal species are dying out; humanity is an endangered species. And much of the cause lies in people's ridiculous attachment to cars and airplanes. Cars and airplanes give you a thrill with their speed, but they take away your real wealth. People build homes in the country and drive every day to the city, erasing the landscape in between and replacing it with toxic road junk. Our culture becomes trashy, the air becomes bad, pleasant walking space gets farther away from where we live. We have outsourced our food supply, a very stupid thing to do. The people of the car culture are behaving in a deranged and suicidal manner.

I don't think it's impractical to offer an alternative. Velorution may not happen overnight, but it can happen. After all, scaling down our ridiculous and unnecessary consumption of fuel isn't impossible under the laws of physics, chemistry, and biology. The main obstacle to Velorution is people's attitudes. And attitudes can and do change.

The case of Enrique Penalosa, former mayor of Bogota, Colombia, is instructive. Penalosa has led Bogota on a fast track to mainstream bicycle use. In a referendum held last October, the citizens of Bogota voted to hold a city-wide car-free day every year on the first Thursday in February. And beginning in 2015, driving a car during rush hour in Bogota will be punishable by a fine. In the past five years, cycling as transportation has increased eightfold in this city, and 300 kilometers of cycle paths have been built. Every Sunday from 7 AM to 2 PM, over 100 kilometers of city streets are closed to motorized traffic, so that the public can

bicycle, rollerskate, and walk for recreation. Is this impractical? Some people regard whatever behavior is mainstream as reasonable. History shows us that there are problems with this assumption. Often later generations look back and are shocked at how their ancestors behaved. I don't know whether people will become extinct in the near future, or what will happen. But I think that whoever is alive 50 years from now will be puzzled as to why people who knew what they were doing went on heating up and poisoning the air, destroying animal and plant life on a huge scale to build roads, and burning up all the fuel when they knew it was running out. When I find a particular sort of behavior insane, I try not to participate in it. I think that this is the only course that makes sense. I can't pretend that there isn't an environmental and cultural crisis going on, and instead focus on "training." I'm not training; I'm living my life. I'm 48 years old. I'm not rehearsing. This is it, the big event, my life, and it's important to me. The mainstream attitude toward large environmental problems caused by our car-and-airplane culture is one of fiddling while the world burns. I think that Americans use "training" as mindless distraction. I love riding my bicycle. I like physical exertion generally: it gives me an animal satisfaction in living that I really need in the discouraging culture I live in. I love riding my bike and I don't like cars at all.

I live in Texas, in the southern USA. This used to be a cheap place to live because you don't need to burn oil to survive here in the winter. It used not to be overpopulated, because a lot of people dislike the extremely hot summers. Now air conditioning and cars have brought overpopulation. I'll do without them, thanks.

Right now I am trying to bring about Velorution in stages. Austin has a downtown which is becoming more urban and full of cars. I ride through downtown all the time, on my way to one place or another. One day recently, at a stop light, I looked around me. I had the city bus on my right and an 18-wheeler on my left. In my rearview mirror I could see an SUV behind me. It came to me all in a flash that this is why most people won't ride bikes in downtown Austin.

I would like downtown Austin to provide separated, car-free bicycle space, as is done in Amsterdam, Munich, and other lucky cities. I think that this is important. Here in Texas, every meeting of the state legislature introduces bills to ban bicycles somewhere or other. The roads belong to the cars and the sidewalks and trails to the pedestrians. We bicyclists are faster than pedestrians and slower than motorists. We are a separate category. This is recognized in Amsterdam and Munich, and these cities have a much larger percentage of bicyclists than we have in Austin, Texas. I think that we should try their system.

I am involved in some discussions of this subject, because I am a member of the Citizens Advisory Group for Austin's Great Streets project. I am one of three bicyclists in the group. Velorutionist Tommy Eden got us appointed to the project. We get to go to meetings at 7:30 AM one Wednesday a month. These meetings have

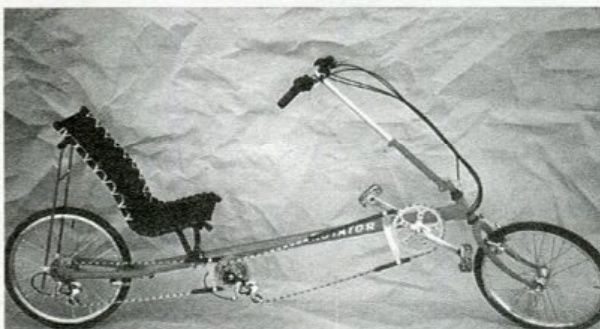
been surreal. At the first meeting, the planners defined the Great Streets "vision" for us as follows. On a Great Street, the pedestrian comes first, the bicycle second, the bus third, and the private car last. Then they told us how much space the cars would require (nearly all, of course). Every time we tried to find out how bicycles would be accommodated on these streets, they said that bicycles would be discussed later, and that the question of what color to paint the street lamps was vitally important. But we have gone to every meeting, and have continued to raise the question of bicycle accommodation on Great Streets. And possibly something will come of it. A member of our City Council has actually expressed interest in learning how bicycles are accommodated in Amsterdam. So who knows? I'd rather live in hope and swim against the tide than give up and join the mainstream, go for "rides" with a club, fly my bike to Europe for vacations, and "train." This is the only life I have. I want

it to have dignity and meaning. It is not reasonable to ignore impending catastrophes and pretend that I'm training for the Olympics. The bicycle is a safe, quiet, nonviolent, nonpolluting, enjoyable and efficient means of transportation. To me, this is much more exciting than an expensive toy. The only thing standing in the way of the Velorution is people who say that it's just not practical. I find it much more practical to work for the Velorution than join the headlong rush toward societal and climate collapse. ♦

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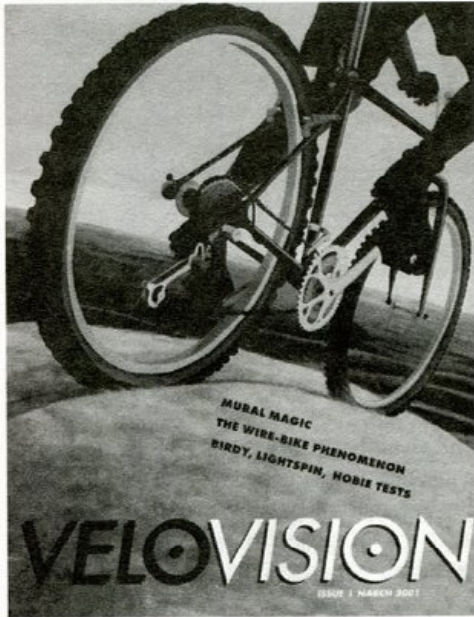
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Recumbent News



Easy Rider Club in Oceanside, California

Recumbent bicycling is starting to catch on in San Diego and I would like to thank Alan's Family Bike Shop in Oceanside and the Easy Rider Recumbent Club of San Diego for helping to make this possible.

I attended one of Alan's group recumbent rides last Saturday, May 5 (see enclosed photo of the group that I took on the Strand in Oceanside). The group consisted of many different brands of recumbents. Some of the recumbent manufacturers in attendance were Rans, Easy Racers, BikeE, Burley, Vision, and Ryan.

The age of the group ranged from 12 years old to 77. Everyone had a good time and prizes were given to the youngest and oldest riders and also to the person who drove the furthest to make the ride. Refreshments were served prior to the ride. Power Gel was given to each rider for the ride itself. Then a bar-b-que was waiting for all the riders upon returning from the destination of San Onofre State Park. It was about a 40-mile ride round-trip from Alan's Family Bike Shop in Oceanside. This was what BIKE SHOP SUPPORT and RIDER CAMARADERIE are all about!

I have been riding traditional bicycles for many years. Only since I started riding a recumbent has the effort been true fun. Particularly on the longer rides. Don't get me wrong, I still own and ride a mountain and road bike because I like variety. But only on the recumbent do I consider myself relaxed and getting a good workout at the same time.

I know there are thousands if not millions of riders out there that have never had the pleasure of trying a recumbent. Some because they have never seen one, others because there are no recumbent dealers near them, some because they think recumbents are for old folks and that you have to have a bad back or neck to justify riding one. Some riders think you can't get a good workout on a recumbent and still others just think they don't look cool. Whatever the reason for not trying one, it's not good enough to outweigh the benefits.

Don Harpold, Carlsbad, CA

Buddysport Buddycycle

Buddysport has introduced the new Buddycycle. This new side-by-side SWB quad recumbent comes in a 3 spd or 7 spd with a price range of \$2000-\$2300. Electric assist is also an option.

For more information, contact: 800-251-6089 or www.buddysports.com



New Bicycle Culture Magazine

Velo Vision is a new, quarterly cycling magazine which will celebrate cycle culture worldwide. It will be a magazine for those passionate about cycling, but whose interest is in the practical applications of cycling, bikes as a transport solution, and cycling as a bridge between like-minded people across the world. It will build on the editor, Peter Eland's work on the late lamented Bike Culture Quarterly. It will contain technical material, intriguing stories of cycling people and communities from across the world, cycling art, history and literature, and of course the latest from the world of cycle design: workbikes, recumbents, folders, family cycling, and more.

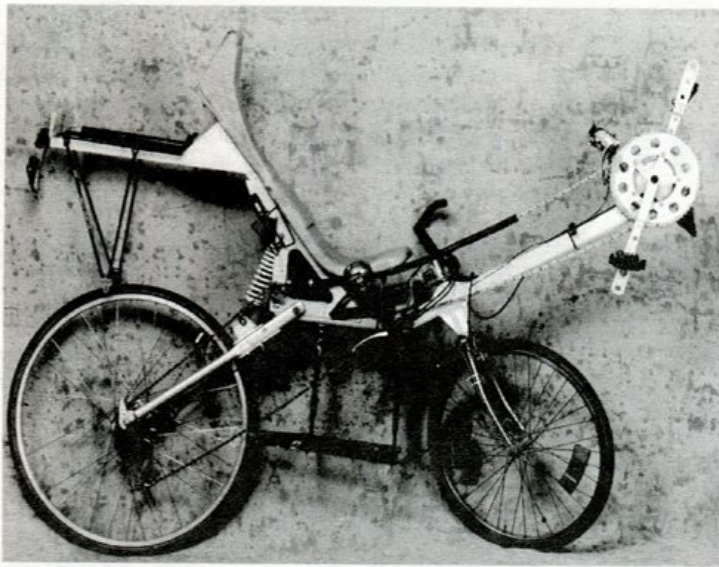
Velo Vision will be same format as the former Bike Culture. There will be four 52-page issues per year. Velo Vision will be available from select recumbent shops or by mail order from the publisher.

Prices for Velo Vision single issues and subscriptions are as below, including postage: 4-issue subscription (Rest of World): £32.00; 2-issue subscription (Rest of World): £16.50; Single issue (Rest of World): £8.50.

Contact: Velo Vision Tel. +44 1904 438 224, email: peter@velovision.co.uk or www.velovision.co.uk

Toxy Lowracers

Toxy has a new English language website at www.toxy.des



Italian Dolcevita SWB & Crank Lengthening Kit

Observing any recumbent bicycle design, we often consider if there are any simple modifications one can do to increase performance. Italian artisan recumbent manufacturer Andreola Antonio, owner of Dolcevita, thought two novelty not yet present in the international production: the lengthening of the crank arms. Examining the question about lengthening, it starts from the rise position of the pedals and from the almost horizontal position of legs. To length the pedals means to increase the motor couple, with the same force, with evident advantages. Andreola tested this solution gradually, with pedals arrived to 27 cm, for over 9.000 km, in 5 years, in every conditions, with climbs at 20% and long travel with luggage. He had no physical problems. The lengthening of pedals, increasing the circumference of the pedaling and reduces the frequency, but this isn't a problem, because you can push ratios very long: you can do the speed cruise in your highest gear. The best recumbent design to experiment with this is the SWB (with high bottom bracket) and USS, because allows maximum freedom about movements. But, generally, every recumbent bike can adopt pedals longer several cm. Dolcevita offers this possibility to everyone, owner of recumbent bike, that desires to increase performances, throw a proposal that considers: Recumbent design, Cyclist height and Seat recline angle

These parameters supply the indication for the maximum recommended measure and about the other holes, to arrive gradually. Dolcevita sells a crank lengthening kit. The job consists to cut the original pedal and to add the extension, with aeronautic pieces. The kit price cost is about \$236 US. For more information, check out the Dolcevita web site: www.dolcevita-bike.it

Source: Press release; we cannot advocate this riding position, or ultra long crank arms for everyone. They can be quite rough on the knees for some riders, though we have heard of performance gains from other sources as well.

Do You Have Stuff For Recumbent News?

A Product Review? Product News?

An Event? Club News?

Have you bought or built a new bike?

Do you have shop news or new product news?

Do you have news from your recumbent factory?

Please send info to: RCN, POB 2048

Port Townsend, WA 98368

bob@recumbentcyclistnews.com



Burrows Ratcatcher

Mike Burrows is back in the recumbent business. The Ratcatcher 9 has 9 speeds, weighs 12 kilos, has two Hope Disc brakes, an integral tailbox and costs £2150. For those of you who do not recognize the name, Mike is the designer of the Windcheetah trike, though from what we understand, he no longer has anything to do with the company building it.

Contact? We're not sure if Mike will send information on this new bike to the USA, but you can try. Mike Burrows Engineering, Bunkell Road, Rackheath, Norwich, Norfolk, NR13 6PX, England Tel./Fax +44 (0)1603 721700. Large SASE + postage required.

NOTE: We're not sure if Mr. Burrows will ship info, or bikes to the USA. Sorry, no email or website given.

RANS FORK RECALL—July 13, 2001

PRODUCT: RANS Inc. of Hays Kan, is voluntarily recalling 4000 RANS recumbent style bicycles and framesets. The RANS Stratus, Stratus XL, Nimbus, Response, Wave, Gliss and Tailwind assembled prior to March of 2000 are affected. This includes all bikes of these models except those with the serial number string 0700 or 0301 after the two-letter prefix. RANS bike dealers sold these models from 1993 onward at prices ranging from \$700 to \$2000. Serial numbers are stamped into the bike frame—either beneath the bottom bracket or on the inside rear-wheel dropout.

PROBLEM: A misalignment of parts inside the fork steer tube may cause cracking or breaking of the fork, leading to loss of steering control.

INCIDENTS: RANS has received reports of eight incidents where forks have broken. No falls or injuries have been reported.

WHAT TO DO: Consumers should stop using these bicycles immediately, and return them to the nearest RANS Authorized Dealer for a free inspection, and, if necessary, repair. For more information, call RANS toll-free at (877) 990-7267 or visit www.rans.com/recall.

New Sales Account Manager Comes to BikeE

We are pleased to announce that BJ Strass has joined BikeE Corporation's Sales Team. BJ comes to BikeE bringing 20 years of bicycle touring experience and 6 years of owning and managing bicycle retail stores. He is the former owner of Introspect Cycle in Sacramento, California and most recently the manager of Florida's Atlantic Bicycle. BJ also is an avid writer and has written for *Bicycling Magazine*, *Fitness Cycling* and *Recumbent Cyclist News*.

"More and more I have considered the BikeE to be the best bike on the market," said BJ, "I have been a fan and rider of the BikeE for many years and have sold hundreds of them."

"Though BikeE has been a friend of BJ's for years, he really got our attention when within 1 year he grew the sales of BikeE over 500% at Atlantic Bicycle," said Doug Oxsen, BikeE Director of Sales.

"Selling BikeE is easy because these bikes have all the benefits with none of the drawbacks. People love these bikes. I believe that every BikeE dealer can be as successful as I have been," said BJ.

BikeE Corporation, based in Corvallis, Oregon, is the world's leading manufacturer of recumbent bicycles. BikeE's bicycles are fun and comfortable to ride, and put the rider in an upright position on a padded, contoured seat with back support. The company's patented Comfort Tech, Air Tech, FX, E2 and the new RX lines set the standard for comfort, control and performance in the rapidly growing comfort and recumbent bicycle markets.

Source: BikeE

Note: BJ Strass had completed his BikeE RX road test for RCN#64 prior to his accepting the new job at BikeE. We wish BJ the best of luck!



The Bacchetta Strada prototype—Mark Colliton



The Bacchetta Giro prototype—Mark Colliton

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Keyed "BACCHETTA" Recumbents spotted!

Keyed Design is Mark Colliton and John Schlitter. John held various positions at the RANS Company before leaving this past year. Mark Colliton has co-designed the RANS V-Rex, Barcroft SWB and the Angletech MC2. The pair are currently producing mid-ship mounted racks to fit RANS recumbents and new for this summer is an Easy Racer rack. The prototype SWB recumbents are the Giro 26/20 and the Strada 26/26 and have above-seat steering. The prototypes to have RANS seats and ASS, though production models will not. The tube set will be a custom drawn CroMo and the frames will be built in Taiwan. Prices are expected to be \$1500-\$2000, and maybe more for a top of the line performance model. Bikes are expected for the 2002 season. The prototypes have been seen in the upper Midwest (recumbent rally), Washington, DC and around Hays, Kansas. Contact: 785-625-5685 or bikedepot@ruraltel.net

IMPORTANT NOTICE:

Snow Bird/Season Address Changers

Your RCN issues are NOT being forwarded. We end up paying a fee to the USPS to get a message that you are, "Temporarily Away" and to mail your issues. If you move seasonally and place a forward order with the USPS, please notify us. We now have the ability to keep two addresses on file and can do manual season address changes for you. Please send us email or mail us your seasonal address information ASAP.

Events Calendar 2001

August 25, 2001
Recumbent Rally
www.recumbent.com

August 25th, 2001
BAS Ride
Milwaukee, WI
<http://storeyfoundation.org/> HPV

September ?, 2001
WISIL HydroBowl (Boat)
Rockford, IL
Contact: bikeguybob@aol.com

September 8, 2001
Michigan Recumbent Rally—West
Western Michigan University
(Kalamazoo). www.lmb.org/wolbents, 616/353-0125 or Paul.Pancella@WMich.edu

September 15, 2001
Fall Recumbent Rendezvous
www.lmb.org/wolbents, 734-487-9058 or bobmich@compuserve.com

Other Events/Contacts:
Seattle Area Homebuilders
Now called SeaWheels. Nick Hein is starting up the group again. Get on their mailing list at www.bikelist.org/mailman/listinfo/seawheels or give Nick a call at 425-255-7560.

HPRA Race Events: <http://recumbents.com/hpra>

IHPVA (HPVA) Race Events:
www.ihpva.org

HPB (boat) events:
www.humanpoweredboats.com

November Rally in Louisville

The third annual Louisville Recumbent Riders Recumbent Rally will be held Sunday, November 4, 2001 at the Water Tower, (River Road and Zorn Avenue). Rides of varying lengths from 11:00 am till 5:00 pm, rain or shine. This is an indoor facility large enough to accommodate all expected riders and their bikes. For more information contact Tom Armstrong at 502-253-1746 (bikeolounger@prodigy.net) or Harry Jacobson-Beyer at 502-634-1103 (harryjb@bellsouth.net). Online at <http://pages.prodigy.net/bikeolounger>

Kinetics in Port Townsend, Washington

October 6 & 7, 2001

Don't forget about the big human powered party in Port Townsend. Don't miss the Saturday parade, brake-test and floatation test and the wacky race on Sunday. For more information see www.ptguide.com

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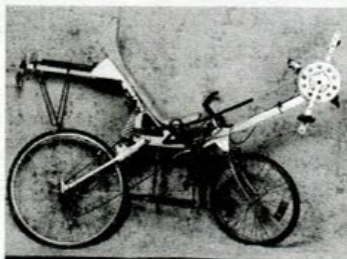
Please email your event information to: bob@recumbencyclistnews.com or mail to: RCN, PO Box 2048, Port Townsend, WA 98368.

2001 RECUMBENT CENTURY

The North Texas Recumbent Bike Enthusiasts (RBENT)

We invite recumbent cyclists to celebrate the New Millennium by biking a Century on October 27, 2001, starting in Crandall, TX at 8 am through the beautiful countryside of Kaufman County. Or, ride our 30-mile or 60-mile routes if you don't feel up to biking a century. For a detailed description, map to Crandall, places to stay, check out our web site where you can print your own brochure: www.bicycle-stuff.com/_rbent

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RCN INFO

Contact

RCN has one full time person. There is not always somebody to answer the phone. The best way to get our attention is by sending email (bob@recumbencyclistnews.com) or leave us a voice mail message (360-697-4651).

Back Issues

We have the following issues in stock: RCN#64, 63, 62, 61, 59, 58, 52, 51, 48. They are \$7 each or \$18 for three or \$30 for six. We will also reprint certain articles on request (email for availability & costs).

When to Renew

To continue receiving your RCN subscription without interruption, please renew two issues prior to your expiration date/issue. The reason for this is that while you are reading this issue, the next issue and database information are at the printers. If you wait until your full year is up, you will miss the next issues mailing.

Deciphering Mailing Label Information

"64 LAST ISSUE" means that RCN#64 is your last issue. We will send you one renewal notice when it is time to renew.

Change of Address

If you move, don't forget to send in your new address! We actually need 60 days notice so you don't miss an issue. Our costs to process a new address after the fact (and remail missing issue) can be up to \$4.

Missed Issues

RCN is published six times per year. You should receive your issue by the first day of the second calendar month of the issue. Check your address on your mailing label from previous issues to see if there is a problem. If not, assume that it is a US Postal Service error and drop us an email or send us a card and we'll send a replacement. Thank you for your support.

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Recumbent Mail

If you have something to say, a differing viewpoint or experience—we want to hear from you! **Please limit letters to 300 words.** No charity ride sponsorship request letters. RCN reserves the right to edit submissions for clarity, content and space limitations. bob@recumbencyclistnews.com or RCN, PO Box 2048, Port Townsend, WA 98368

Cool BikeE Fairing

Enclosed is a copy of my coroplast BikeE fairing. I have access to seven colors of 5mm coroplast in 4x8 sheets, as well as 6 and 10mm in white. The 6mm is great for tailbox bases and the colors make up into great fairings. The BikeE fairing now sports two big eyes and a mouth made from the reflective lime/green sign material found on pedestrian signs. It looks like a jack-o-lantern coming down the road and people love it.

Dave Atwood

Dangerous SWB Update

RCN#63 arrived—what a great magazine! Thanks for your effort and to all of the contributors for all of the interesting stuff. I wrote the letter (RCN#60) after the Blackbent tried to kill me. Here is an update to the story. My knee is completely healed. My opinions of SWB haven't changed, but I was intrigued so much by Denny LaDue's story and his homebuilt LWB recumbent that I ordered two of his kits. The first one was exactly like he had them laid out and works great. I realized that I needed to make some changes on the second one, so I lowered the BB, changed the head angle, etc. and came up with a geometry similar to a Tour Easy. This one works and fits even better. We have had a great time riding our homemade 'bents around our little Ozark town.

The home-builts taught us enough to realize that there was only one bike on the market that really fits our needs and that we could afford—the Rans Stratus. So we sold our 4x4 gas guzzler and bought two Strati last September. Since then we've been very happy LWB ASS low BB recumbenteurs.

Bob, I have found every observation of yours which I've been able to test to be spot on. Per your recommendations, we have equipped our bikes with fat tires and fenders. This has really made a big difference in the handling. They were stable before, but now they're really stable and in all conditions. We put 1.5" Avocet Cross tires on the back, and 2.0" Specialized Casino BMX tires on the front. The front tires barely fit under the front fender, I wish Rans would provide more clearance. I've also noticed that Rans has been listening to you, we saw a 2001 Stratus, and it had 1.75" "fat" Primos on it.

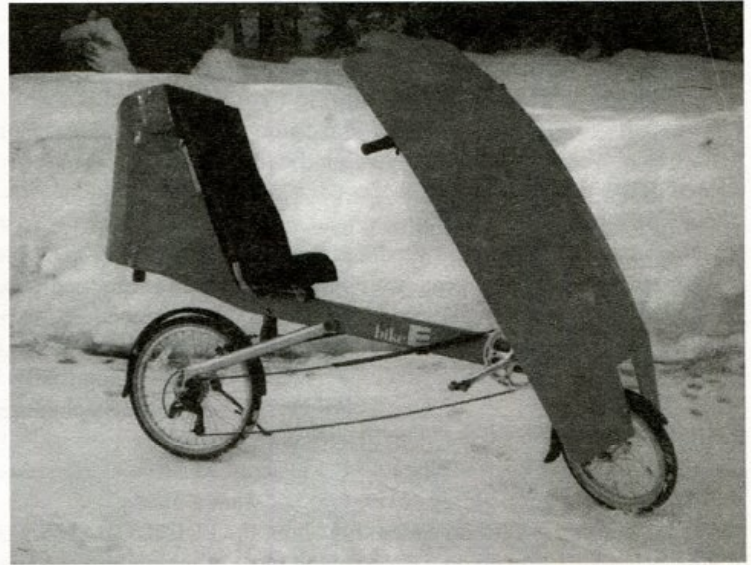
My assessment of these bikes is they are exactly what they are supposed to be: smooth, strong, fast and very comfortable. No more numb hands, no sore butt, no stiff neck, no sore back or visits to the chiropractor. Thanks for the great magazine full of accurate info.

Chris Foss

Missing Manufacturer

April has turned out to be a great month! RCN arrived, along with the *Easy Rider Rider Club* magazine and *Adventure Cycling*. My wife completed grad school and picked a BikeE AT for her graduation present. We're getting in some nice rides together. The only sour note is finding out that Haluzak will no longer support RCN. It's a shame, since they were my favorite swb.

Now I know that I haven't agreed with everything you've published in RCN and I've written you to let you know. So far, you haven't told me I can't subscribe anymore because I disagree with you, and I haven't cancelled my subscription. Why? Because you respect your readers and I respect your magazine. It sounds like



Haluzak doesn't respect RCN, and by extension they don't respect your readers. If they're going to react negatively to a #9 all time rating (hard to believe, isn't it?) how are they going to react if I have a problem with their product? I don't think I care to find out. For myself, I'll stick with RCN and my Tour Easy. For those new riders who ask for advice, I'll have to find a different SWB to recommend to them. I think I'll start looking through your advertisers.

Marc Thompson
mthompson@isg4results.com

Lightning Article Response

I was very interested to read Chung Kay Lam's reader road test of the Lightning P-38. I've had my own P-38 for just one year. While I'm in general agreement with what he wrote, I would like to respond to a few points in his report.

Dr. Lam's size large P-38 with the alloy boom weighs 25.5 lbs. My size XL with the extra length steel boom weighs 29 lbs.

Despite repeated tightening of the seat frame mounting bolts, I always hear rhythmic creaking sounds from the seat frame. This is most noticeable when pedaling up hills. I'm happy to learn I'm not the only P-38 owner with this problem.

Dr. Lam's P-38 was spec'ed with the excellent SRAM PC-59 chain. My base level P-38 came equipped with the KMC chain. After just 2000 miles, it showed considerable wear and exhibited poor shifting characteristics. I've since replaced it with a PC-59. The drivetrain is quieter, and shifts are quicker.

I ordered my P-38 with the "performance wheel option" which included Sun CR18 rims, narrow Conti tires, a narrow fork, and Shimano sidepull brakes, front and rear. At that time I didn't know that the narrow fork would preclude my using a front tire wider than the Conti 28-406. The narrow front tire was unstable in gravel, sand or mud. When riding over even a small piece of gravel on otherwise smooth pavement, the jarring could be felt throughout the bike. And at speeds above 30 mph, the front end seemed to "float" in a most

disconcerting manner. After purchasing and installing a standard forklift and Odyssey A-brake from Lightning, plus a RANS(!) factory-built front wheel with a Tioga Comp Pool tire, my P-38 now handles far more securely in all conditions. In fact, it inspires almost too much confidence!

Given the above, it's clear to me why my P-38 has an Odyssey A-brake on the front, and the less than adequate Shimano sidepull on the rear. But, as the LCD web site clearly specs A-brakes front and rear, I don't understand why Dr. Lam's bike is spec'ed in the same unbalanced manner as mine is.

Following two rear tire-destroying blowouts on the factory issue 700c x 25 Contis, I ran a Kevlar belted Panaracer during the winter. I am now using the recently discontinued Conti Grand Prix 3000 28-622. It was an excellent tire.

Were I to order this bike again, knowing what I've learned in the past year, I would certainly have A-brakes mounted front and rear. Also, I would seriously consider having the rear brake braze-ons welded in position for a 26"/559 rear wheel. The slightly smaller wheel would be lighter and stronger, and would allow a wider choice of rear tires, perhaps a Vredestein S-Lick.

After spending nearly a year getting the P-38 suitably equipped and dialed in, I cannot imagine riding a finer SWB recumbent. But then, I've not spent any time on a properly fitted Barcroft Dakota!

Norman Smith
Akensmith@aol.com

Haluzak Woes I

Just some remarks I want to share with you about RCN.

First, I do not want a glossy cover, I do not want a glossy magazine, but you should do something about the PRINT QUALITY of your magazine! I received RCN#63, and most of the pictures and even some advertisements are simply NOT CLEAR! I noticed this for the first time in RCN #61, but it's getting worse!

As far as the HALUZAK BICYCLES not wishing to go any

further with RCN, I'd say: screw them! If they cannot stand criticism and as a reaction drop out advertisements in your magazine, who needs them anyway?!

It seems that more and more readers are writing a recumbent review. That's fine with me, as long as you'd still write your own. And lately there have not been many reviews by you! I've always relied on your opinion (although we do not agree if it comes to trikes) and I still regard you as DR RECUMBENT, so please, write more reviews!

Tihamér
Ravels (Belgium)

Editor Comments: Haluzak never did receive a negative review from RCN (that I can recall), they were #9 on my 2000 Top 10 list, which is an honor as far as I can see. As far as test bikes are concerned, I am offered fewer test bikes these days, however, you should see, on average, one Bob Bryant road test per issue.

RCN #64 July/August

I've been blown away by the latest issue. It's almost like the publication has undergone a major transformation. The articles are superb, especially the touring 'story', the Modern Recumbent Bicycle Development article, and the Recumbent Evangelism story—Bob Hicks can really WRITE! His article just flows.

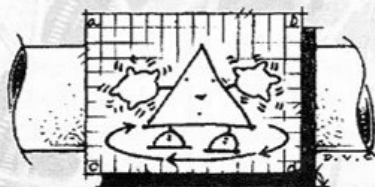
Here's what I think the recumbent industry should do before it's too late: set a date and time for all recumbent-related businesses to cease using the name "RECUMBENT" and replace it with "COMFORT BICYCLES."

The upright bicycle companies are eventually going to secure that designation for their products the more they use it. In reality, they're stealing it. This type of thing has been done before.

I have to admit that I enjoy reading the *Bent Rider Online Magazine*, but I must also admit that I enjoy RCN more. Why? Well, I can take RCN to bed with me; can sit and read it while on the pot, and repeatedly look back to find articles that are currently

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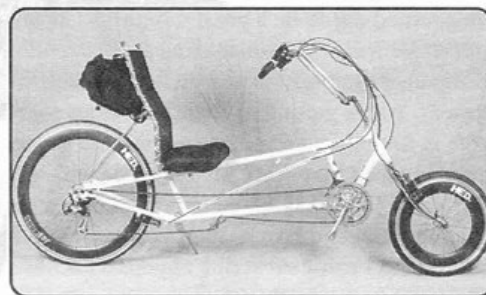
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important to me, and take my time doing it.

Please keep up the good work. I know you've had thoughts of expanding your magazine to include a wider view of bicycles, i.e., Comfort Bikes. Using introspection as I write this, I'm not sure I'd feel the same about your magazine if you were to do this. Is it because I would no longer feel special as a 'bent rider while reading it? On the other hand, the upright riders may feel better after having been included.

I do know that you're held in high regard. Probably whatever you decide will be all right with your fans. One last thing...please don't give up the printed version of RCN.

DonRPeters@aol.com

Haluzak Woes II

With the last issue of RCN I noticed for the first time that Bill Haluzak has apparently stopped supporting RCN.

I sense from time to time that you must get very frustrated dealing with all the ups and downs prevalent in the recumbent business...particularly manufacturers who support RCN one minute and then drop out of sight the next. It must also be very frustrating dealing with all the trivial criticism that I have seen come your way in some of the reader letters you print in RCN. I think I probably speak for thousands of RCN readers...we highly value what you do in and with RCN. I have always appreciated what I have perceived as nothing but your honest effort to promote and improve recumbency...and I, for one, salute your efforts. And despite the subscription cost, something I know is acutely on your mind as well, I have always considered that cost as well worth the sacrifice.

William Scales

Sat R Day

Your magazine has been invaluable in educating me on recumbents. I particularly liked Wilson's article on recumbent design.

Your review of the Bike Friday's Sat R Day 'bent left out a couple of things that some of us noted at their recent demo at Seattle's Green Lake. (Couldn't have picked a worse location with too many walkers on the path and no space in the crowded parking lot). Two of us noted that there was interference between your knees and the handlebar. The bar will adjust in angle but not in length. Perhaps a shorter frame (beam) would put the seat location further back for proper leg length, thus lowering your knees. We (those of us interested in the Sat R Day) noticed that the rear chain must be removed to store or pack the bike. Putting it back on was tricky, especially if you get the chain looped. Also your hands get greasy. Backpedalling to get your foot in the right location for taking off resulted in the rear chain coming off every time. Not very

good for a demo.

Don Olson
bdo@gte.net

Editor Comments: I did not have a problem with knee clearance with the Sat R Day ASS. This is something that Greengear can address upon order. I'm sure that if need be, the ASS unit can be custom sized. The other option is USS, you won't have this problem at all.

The chain removal is just something to live with in the world of folding recumbents. If you don't want to deal with it, buy a Brompton or other very compact folding wedgie. Even our new folding HPM Phaser SWB requires front chain removal. You are correct that it can be a messy job.

Uncomfortable Recumbents

I am also concerned that I have seen several novice recumbent riders who sell their bikes after only a few hundred miles. People are not finding what they want. I don't know what can be done, but I think manufacturers should consider the problem—preferably together. I have most RCN issues and see very little evolution—especially in comfort. I know riders who stop every 8-10 miles. Most new seats (Easy Racers, Rans and BikeE) seem to be designed to impress new buyers with 2-5 mile comfort.

Butch DiLorenzo

Editor Comments: Finding the right recumbent the first time out can be very tough. As you become a better rider, what you want out of a bike may change. The sad part is that our industry does not do enough to help riders find the correct bike. There is more sales hype than ever before. Back in 1990 it was our mission to help riders find the right bike by offering honest reviews. This mission has become more difficult in the age of the Internet.

V2 Feedback

I also purchased a new Rans V2 from Valley Bikes last August. I have found it to be very comfortable except for those flexy handlebars. Really like the seat and the slightly higher bottom bracket. I did a couple of 20 mile tests comparing it with my Gold Rush (fairings on both, but body sock removed from GRR) and the V2 was about 1.5 mph slower. I also had to fashion a couple of aluminum tubes to triangulate the bottom attachment points on the fairing to keep it from loosening and making popcorn popper sounds on the top of the fender. The only other problem has been the headset loosening, but I seem to have that under control. So from my perspective, it's a comfortable, great looking bike, but if you want to go fast, get the GRR and body stocking.

Hal Barnhart,
Barn12@aol.com



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Letters continued on page 40k

The HP Velo Speed Machine

Performance bikes for the new millennium

by Simon Moray

Having been the satisfied owner of an HP Velotechnik Street Machine GT for two years I was very interested when I heard that they were going to add a full suspension lowrider to their range. I was fortunate enough to be able to put in quite a few miles on the Speed Machine before committing myself to getting one.

SYSTEMS

Frame and forks—The Speed Machine is a full suspension above-seat steering recumbent. The main frame and front boom are aluminum while the forks and rear triangle are CroMo. The front suspension is tidily enclosed within the head tube. The rear suspension is “no squat”, which is HP’s term for no reaction with the pedaling, which comes via a swing arm with an adjustable gas shock. The quality of the welds is high as is the powder coat finish.

HP Velotechnik claim a weight of 33 pounds but with rack and Schmidt dynamo hub mine comes in at 38.

Steering—Being very different to what I was used to I initially found that the long handlebar stem made the bike feel a bit too twitchy for comfort but I soon found that the leverage just means that a lighter touch is needed which makes the steering effortless once mastered.

Drivetrain—I already own an HP Velotechnik Street Machine GT so I was expecting a smoother than usual chainline and certainly was not disappointed. The SRAM Rocket shifters are the best that I have used from the SRAM range. They have a very efficient action, which I think is a necessity given the lightness of the steering. The triple front chainrings (52/42/30) coupled with the nine-speed Shimano block provides an ample range of gears.

Brakes—Magura Louise discs front and rear. When you are on a recumbent that goes downhill as fast as this one, disc brakes feel less like a luxury and more an essential piece of kit. In less demanding situations these are still a pleasure to use, the extra power at your fingertips affords very smooth controlled braking. These are an integral part of the bike’s easy handling characteristics. The Magura Louises are one of the cheapest disc brakes on the market, having a piston on only one side which pushes the disc on to the opposite pad, but they have so far not given us any problems; once set up there is no rubbing on the pads and we have never needed to bleed them. Maintenance should be fairly straightforward, the pads are easily replaced and can be adjusted in from both sides.

Wheels—With a 559mm rim at the rear and a 406 at the front there is a wide choice of replacement tires available should you wish to replace the very light and narrow Continental Grand Prix that come as standard. I prefer Vredestein S Slicks especially for undertaking any serious touring. The rims are a narrow section lightweight V-section which should provide a good compromise of weight and strength.

COMFORT

This is the Speed Machine’s forte. There are four sizes of seat available, enough to fit just about anybody. I already knew what size would fit me, but if you make a mistake the seat is removed with two quick-releases, and most dealers should be happy to let you trade

in. It is moulded from carbon fibre with a pronounced curve for lumbar support and a nice recess down the centre which is double padded to provide a bit of extra comfort for your spine. The seat angle is easily adjustable with the same two quick release levers although even at its most upright position this is still an extreme bike by American standards. European riders tend to favor this kind of riding position as it spreads your weight over the largest area of your body, and means that your Gluteus Maximus is free for pedaling efficiently. In North America there seems to be a concern that this can cause discomfort to the neck, which can be an issue at first although you tend to get used to it, and a well designed seat will keep your head well supported.

I highly recommend upgrading the standard foam seat cover to the ‘airflow’ version, which wicks sweat very efficiently away from your body and provides a bit of extra cushioning. Handlebars are rather wide for aerodynamics but seem to be very well positioned for comfort. My hands just fall naturally onto the bars when my elbows are resting on the back of the seat. If you wanted to race this bike it might be worth experimenting with handlebars which are a little narrower and provide more stretch for the arms.

I know that HP Velotechnik takes suspension very seriously and has spent a lot of time getting it right. In fact the only other recumbent that I have ridden that can match the level of comfort afforded by the suspension is the Street Machine GT, also made by HP Velotechnik. It wasn’t comfort that sparked my initial interest in recumbents but it has been a very significant factor in keeping me riding them over the years. If you work hard all week on a building site you are constantly jarring your upper body. The last thing that you want to do on your ride home or in your leisure time is to continue punishing your body in this way. The Speed Machine seems to glide along even the harshest of roads.

RIDE/HANDLING

Stability—One of the advantages of the low centre of gravity of a lowrider is cornering. You can really lean this bike over. It doesn’t seem to matter what I do it always feels unbelievably solid. Sometimes I find myself speeding up for the twisty bits just because they are so much fun! The suspension helps out here as well; nasty bumps that would normally throw me off line are simply not a problem.

Tracking—This is a very well balanced bike. You gently point it in the direction that you want to go and it goes there.

Maneuverability—Improves with speed. The tiller effect caused by the long handlebar stem means light touch is required at low speeds, but with practice I found it was possible to swing the bars right out for really tight turns. After two or three rides you no longer notice anything odd. At high speed the bike is very responsive and easy to control. I found the handling took a bit of getting used to at first but now I like it a lot.

Speed/Efficiency—Well it is a Speed Machine! Obviously it is designed to be fast and it is. HP Velotechnik have something that they call no squat suspension. What this means is that instead of your pedaling action being absorbed by the suspension and bouncing you up and down it is used to drive you forwards. This makes

for a very fast and efficient full suspension recumbent.

User-friendliness—I would not describe this as a beginner's recumbent. I haven't spent this much time riding a lowrider before. However I feel that my small investment in time learning to ride this bike has been well worth it. The Speed Machine is a very sophisticated piece of engineering that has obviously been designed around the human body. The comfort of the riding position and the suspension combined with the light touch needed on the controls add up to an exceptionally rider friendly recumbent.

The Ride—There are some bikes that want to be ridden in a certain way. The Speed Machine seems to want to be ridden fast although I am not sure if it is just because it does it so well that I want to ride it fast! Your pedaling action is the only thing that requires any effort but because of the extremely small frontal area it does a lot more with the effort that I put in than any other bike that I have ridden. Because of the lightness of the controls you should not try to force it to do anything but when the bike will do anything that you want with a gentle touch, why force it?

Fun Factor—If your idea of fun is throwing a recumbent around at high speed then you will enjoy this bike at least half as much as I do. If you also like clocking up a lot of miles without feeling like you have spent the day in a cement mixer you are guaranteed to have a lot of fun on this bike.

Versatility—Despite the high performance capabilities of the Speed Machine it is also designed as a touring bike. High mileage riding is almost luxurious. Strength and reliability are important considerations for me when choosing a bike for eating the miles. I thought that anything more than day rides would be beyond the Speed Machine but it has proved itself to be ideal for light touring as well. The only limitation for heavily laden touring is the one rack, which means that I don't have anywhere to put my tent, or the kitchen sink! It is also a demanding bike, so if you want to last the distance you have to resist the urge to go like the clappers from the start off. I commute on it from time to time but am still wary of its low height in rush hour traffic. This can be an advantage though, as the novelty factor makes you stand out from the crowd and people seem to be afraid enough of an unidentified high speed object to give you a pretty wide berth.

Quality/Durability—The overall quality and attention to detail is very high. This is the kind of bike that you could own for life.



All the components are of a high specification and work well together. Although it hasn't been around for very long, so cannot really be said to have stood the test of time, robust engineering of this quality can be relied upon, barring accidents, to keep on working for years. When you see the extraordinary level of engineering refinement that has been achieved you will appreciate why the Speed Machine costs what it does.

We asked USA dealer Zach Kaplan about the quality of the HP Velo Speed Machine, "Excellent, as good or better than the best US manufacturers."

Options and Accessories—Fenders, rack and kickstand are available, the rack is made from 12mm welded aluminum and is incredibly light and strong. It is mounted to the suspension pivot point. There is a superb dynamo lighting system, consisting of Schmidt's original hub generator, specified specially for the Speed Machine with mountings for a disk brake, front and rear stand lights and twin core co-axial cable routed through the frame. The latest models feature a light-sensitive switch which switches the system on when it gets dark.

For the really sports oriented there is an aerodynamic rear fairing with integral seat. This adds about 1.4 kilos over the weight of a medium seat. There is only one seat size which seems to be well shaped for most medium to large people. There is space for about 20 liters of luggage in two narrow but slightly inaccessible panels on either side of the wheel and accessed through a panel in the back of the seat. HP will provide this separately from the bike so you need to be confident of your skills in mounting it, although it is fiddly rather than extremely

technical. Once it is on you lose the ability to quickly adjust the seat.

We asked Zach Kaplan how Street Machines are being fitted out in the USA, he had this to say, "So far they have all ordered the Shimano 105 crank upgrade, Airflow seat cushion, rear rack, fenders and lighting system with Schmidt hub. People are buying them for sports touring type riding."

ANALYSIS

Value/Depreciation—Not cheap but excellent value for money. This recumbent has been designed to be as good as it can be rather than being built down to a price. It hasn't been around for very long so it cannot really be said if it will stand the test of time. However robust engineering such as HP Velo uses is a good indicator. The bike is too new to be on the used market yet.

Market/competition—Yellowbikes and M5. HP Velo has more dealers in the USA and the bikes are easier to find.

Verdict

I wanted to have a lowrider just as a fun fast bike but have found the Speed Machine to be so versatile that I use it more and more. Over the years that I have spent riding bikes I have slowly progressed from owning old clunkers to learning to appreciate finely crafted machines and in my opinion they don't come any finer than this. ♦

Rating/Summary

Comfort—A
Design—A
Drivetrain—A
Chain Management—A
Brakes—A
Finish/Quality—A



This is the Speed Machine "Race" with tail box. A new Tour version has just been introduced and has the Euro style "U" bars which are like large cruiser style bars and allow easier rider mount and dismount (good for larger riders).

Pros

Comfort comfort comfort
 Robust enough for anything
 Quiet and very smooth to operate
 Rock solid handling
 Overall level of refinement and attention to detail

Cons

Lack of dealers; demos in the USA
 Price
 Not a beginner's recumbent

Heavy compared with non suspended bikes
 A bit low for traffic
 Needs to be ridden hard
 Tight cockpit

ACCESS

HP Velotechnik (Germany)
 Tel. ++49 (0) 61 924 10 10
mail@hpvelotechnik.com
www.hpvelotechnik.com

Specifications:

Model—Speedmachine; Type—SWB Lowracer
 Steering—ASS; Bar/stem or U-bars— TIG welded CroMo; Wheelbase—NA; Seat height—NA, BB height—NA, Weight—Zach Kaplan has this to say, "I weighed a Speedmachine with size large seat, front fender, Schmidt hub, Lumotec headlight and Bebop pedals at 15.65kg (34 lbs. 8 oz.)." Frame—TIG OS Aluminum; Suspension swingarm—CroMo; Finish—Powder coat; ; Rear suspension—Ballistic oil damped coil spring; Front suspension—head tube shock; Seat—Moulded carbon fibre; Fits Riders—5'7" and up.

Components

Crank—32/42/52; Drivetrain: Shimano Deore 27-speed; Rear Cassette—11-30; Shifters SRAM 9.0; Brakes— Magura Hydraulic Disc Front wheel— 20 x 1.25 (406); Rear wheel 26 x 1.25 (559); Tires—Continental Grand Prix; Pedals—Clipless compatible
 Price: \$2595, easy to get over \$3,000 with options.

About the Author

Simon Moray is an ex-builder and now Pedicab rider who live in South East London. He is famous among the cyclists of London for his prodigious appetite for cake and soup. When not pedaling a rickshaw, he rides an extremely heavy touring bike and an HP Velotechnik Street Machine GT, which he bought when plastering the walls of Bikefix. His leisure riding consists of long, nocturnal rides through the lanes of Kent and Surrey.

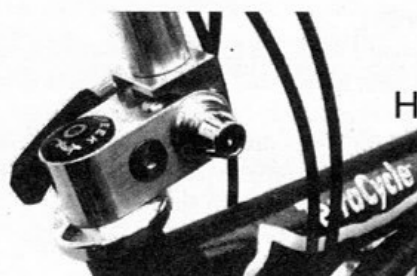
Editor Comments: From what we can tell, this is an incredible new performance machine. The quality, design and performance are all state of the art. We have heard that these types of recumbents have tighter cockpits that are more difficult for larger riders to access. There are some new options such as the "U" touring bars that have just become available. It is our experience that some riders will experience neck pain from these extreme types of recumbent bicycles.

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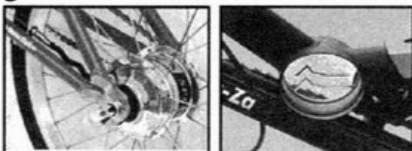
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The EZ1 SC Lite

A Bargain CLWB Speedster

by Bob Bryant

The EZ1 has become a very popular entry level recumbent. For 2001, Sun Bicycles/J&B Imports has added an aluminum frame, some lighter wheels, seat, skinnier faster wheels and an optional fairing. This has transformed the previously homely EZ1 into a mini Tour Easy. Easy Racers' Gardner Martin was involved in refining this new model and bringing it to market, the bike is built under license by Sun Bicycles/J & B Imports.

SYSTEMS

Frame—The frame is built in Taiwan over oversize rectangular aluminum. The finish quality and paint are quite good. The bikes arrive stateside boxed, but light on the packing material (typical of Taiwan bikes)—watch for scratches. The paint finish is otherwise very nice.

Fork—The fork is a Taiwan-made Hi-Ten unicrown—the same as the standard EZ1. It is painted to match the bike.

Steering—The EZ1 SC Lite has the same wonderful handlebar design as the famous Tour Easy. These bars are user-friendly, ergonomically excellent, and make riders feel at home the minute they climb onboard. The handling is refined trademark Easy Racers LWB—and near perfection.

Weight—It is a bold move to call your 35-pound bike "Lite." However, let's face it, most recumbents are heavy, and this one is no exception. It is 4-5 pounds lighter than the standard EZ1, and about the same as a reasonably equipped Tour Easy.

Drivetrain—If you are looking for fancy group names, look elsewhere. The EZ1's drivetrain works better than expected. However, we were shocked to see the Sun Race shifters and a KMC chain on a bike designed by Easy Racers. The EZ1 SC Lite shifted fine, just as Gardner said it would. The final word will come when the bike is a year old after owners have ridden the EZ1 hard for a season. The EZ1 gearing is on the low side at 21-96 gear inches. This is on the low side for a performance oriented CLWB.

Braking—The Tektro V-style brakes make the EZ1 stop exceptionally well.

Wheels and Tires—The 406mm 20" rear and 305mm 16" front wheel combo is ideal. These are relatively light duty tires. They feel light and quick, while also offering good stability. 16-inch wheels on the front of a CLWB have proven virtually trouble free, however, they are not as fast as their 20-inch counterparts, as they must roll farther to cover the same distance. The tire selection is not as vast as with other sizes. We recommend owners keep a set of spares.

COMFORT

Seat—The EZ1 SC Lite has a comfortable Taiwan-made version of the Easy Racers' Kool Back seat. The seat base and base mounts are more crude in comparison. The base mount is a large and heavy aluminum piece that locks the seat base to the top frame tube via two quick-releases. The system is not as refined as BikeE's, nor does it adjust as easily, though it worked well and did not slip.

The seat back is very similar to the Kool Back. It has a more "production" look to it and is probably heavier. The entire seat

seemed to be heavier than other seats. A pair of telescoping seat braces that lock via ball-detent pin/clips works fairly well. The adjustment appears to be vast, but the fact remains that Easy Racer designed bikes seem to beg for an upright position.

The adjustability range is welcomed, as the bike fits many rider sizes. I felt perfectly comfortable riding this one-size-fits-most frame. I also had both my 8- and 12-year old kids riding this bike with ease (and within a minute or two). The lower pedal/BB riding position makes the rearward c.g. (center of gravity) less of a concern. This BB position actually keeps the c.g. more forward. We also experienced this phenomenon on the old Rans 16-inch Wave (vs. Tailwind with a 20-inch).

Ergonomics (seat height in relation to pedal/BB height)—Ergonomic perfection? For most newbies and many seasoned recumbent riders, the relatively upright seat position with low pedals/BB position is ergonomic perfection. Yes, some may complain about recumbent butt. This is no fault of the seat, but a possibility for this design just as toe numbness is to a high BB, or neck fatigue to an ultra-laid back low racer.

RIDE/HANDLING

Stability—The EZ1 SC Lite has most of the good handling traits of the Easy Racer Tour Easy and Gold Rush. The tracking is spot on, it is very maneuverable, performs well and is a blast to ride. One-handed riding is easy, and low speed maneuvers are easier than nearly any other recumbent. The reason for this is the low pedals/BB and short(er) wheelbase that allow confident low speed maneuvers.

The EZ1 SC Lite has a light, agile feel. The small wheels make the bike feel lively and quick, yet the trademark Easy Racer handling, ergonomics (+ low BB) instills confidence.

Generally, CLWB perform best at bike trail speeds. The small wheelset and more heavily loaded rear end do add some quickness that you don't find with the Tour Easy or Gold Rush. However, the EZ1 is more user-friendly and definitely more maneuverable.

OWNING/PURCHASING

Versatility—The SC Lite will be at home in any use, from a utilitarian commuter, to sport touring, loaded touring and even century rides.

The EZ1 SC Lite is an ideal first recumbent, or for the less serious, or more cost conscious buyers. For you cheapskates who've always wanted an Easy Racer, this is THE bike.

Shipping/Assembly—EZ1 SC Lites are built under license from Easy Racers Taiwan Sun bicycles. The bikes are then distributed by a National wholesale bike parts distributor J & B Imports. The bikes are shipped from Taiwan to Sun Bicycles in Florida and then on to dealers.

QUALITY/DURABILITY

We were impressed with the quality and durability of this bike. The only flaw that we found was a stripped-out water bottle cage handlebar mount. Apparently, we were not alone in finding this flaw. Easy Racers sent along a replacement screw to as a solution.

The EZ1 SC Lite comes with a lifetime warranty on the frame and fork and a one-year warranty on the components. This is better than the competition's 5-year frame warranty (BikeE), though BikeE's



Amy Bryant rides the SC Lite

warranty coverage or service has never been a concern (excellent and proven track record).

Cost/Depreciation—You can't go wrong with this bike. It is the best bargain performance recumbent we've ever tested. However, once loaded up with options and shipped to you, the price will exceed \$1000—and still be a bargain.

Options & Accessories—Easy Racers offers logo water bottles and cages and a new model of Zzipper fairing that comes down to the top of the front wheel is \$225 with mounts (recommended). The fairing is small, affordable and works very well. We did a coast down with and without, and with the fairing the bike rolled noticeably farther. The fairing is small, compact and effective. Our only minor complaint is a fold in the Lexan to attach to a lower reflector-type mount. The plastic edging at this fold was coming loose.

Easy Racers offers a 20/16 plastic fender set for \$29; a wind trailer for \$129 and a rear rack for \$29.

Market Competition—J & B/Sun has the \$550 EZ1 standard model, and BikeE has the \$549 CT. At \$750, there is really no competition for this entry level performance recumbent.

The 2001 BikeE CT is a more refined looking product than either the EZ1 or SC Lite. The finish and build quality, and even component selection all look and feel better, but the EZ1 SC Lite has the trademark Easy Racer ride feel inherent in all of their bikes.

MY ANALYSIS

Verdict—We've always enjoyed Easy Racers-designed recumbent bicycles—they definitely can be considered RCN favorites. The bikes perform well, are nearly trouble free, and Easy Racers/Gardner Martin and company is a pleasant company to deal with. However, you don't get to deal with Easy Racers with the EZ1 (unless you buy one from them direct). We're not sure if Sun is up to dealing with recumbent enthusiast questions.

The previous version of the EZ1 was a bit on the lame side. The marriage of J & B Imports and Easy Racers seems to be a good one. The value of the EZ1 and SC Lite are excellent. It is the most enjoyable CLWB ride that I've experienced in some time. What I really liked about it was the 3x7-free drivetrain, user-friendly upright riding position and low pedal/bottom bracket height, and a slick small Zzipper fairing that makes the bike go even faster. Newbies and experienced recumbent riders will love the Easy Racer ergonomics: the wide comfy seat base, the breathable seat back, and those chopper-like pull back bars that remind me of my dad's old Harley or my Schwinn Stingray.



2001 Easy Racer designed J & B/Sun EZ1 SC Lite

The downside of the EZ1 SC Lite is that it has some rough edges when compared to a BikeE or Rans Tailwind. We're not thrilled with the seat base/sliding mechanism, or the "chopped off" look of the rear end of the bike and some of the parts are heavier than they need to be, despite the weight savings over the stock EZ1.

The EZ1 has a bit quicker handling than a Tour Easy. It maneuvers, stows and transports easier. Just about any recumbent dealer can sell the EZ1. If you don't have a recumbent friendly dealer, you can order one from Easy Racers, Inc. (retail customers). The EZ1 SC Lite is a very popular new entry level model. We think the EZ1 SC Lite is a winner and should be very popular. Everyone who climbs on this \$750 speedster will have a good time. ♦

Rating/Summary

Comfort — B+
 Design/Style — B+
 Drivetrain — C+
 Chain Management — B
 Brakes/Braking — B+
 Finish Quality — B

Pros

Best bargain recumbent we've ever tested
 Fast CLWB (watch out BikeE owners)
 User-friendly and very easy to ride
 Affordable speedster
 Best CLWB handlebars
 Excellent seat

Cons

Seat slider mount needs further refinement
 Heavy seat
 Not built in Freedom, CA (like other Easy Racers)
 Lite bike is still a bit heavy
 Not as refined as competition

ACCESS

Wholesale: Dealer s contact J & B Imports Miami.
 Retail: See your local recumbent dealer or Easy Racers, Inc.

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Specifications:

Model—J & B EZ1 Supercruiser SC Lite (designed by Easy Racers)
Type—CLWB ASS
Steering—USS OSS/ASS
Wheelbase—56.25"; Seat height—23.25", BB height—15";
Weight—36 pounds (with Zipper fairing); Frame—TIG aluminum
Seat—Mesh back/foam base; Fits Riders—5'1-6'3"

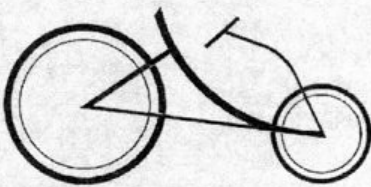
Components:

Crank—Tracer Triple; Bottom bracket—Shimano; Headset—HST alloy; Derailleur (s)—Shimano Acera (f), Shimano (r); Cassette—Sunrace 8-spd.; Chain—KMC; Gear-inch range—NA; Pedals—Wellgo LU 982; Wheels—406mm 20"/305mm 16" front; Rims—Alloy; Tires—Primo Comet 1.75/1.35; Hubs—NA; Brakes—Tektro V; Colors—Midnight blue.



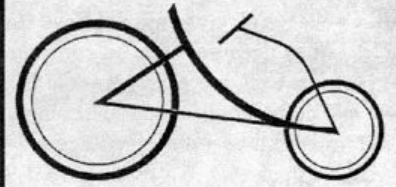
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The HPM Phaser

A Full Size SWB that Travels in a bag

by Bob Bryant

The Human Powered Machines Phaser is a compact SWB that folds into a travel bag.

HPM has to be one of the most unique recumbent manufacturers there is. HPM is a nonprofit organization, part of the Center for Appropriate Transport (CAT) located in Eugene, Oregon. HPM builds all their models in Eugene, while training local youth in all aspects of bicycle construction.

Jan Vander Tuin is the founder of HPM. Over the years we have tested many of his models. Each one is unique, and a distinct hand-built bargain in this new world of mass produced recumbents built in China. Besides building and selling cool bikes, HPM has a greater good in mind—making our planet a better place and building community working with youth in and around Eugene, Oregon.

SYSTEMS

Frame & Fork—The frame is TIG welded of various sizes of CroMo tubing. The frame has four parts: the mainframe, boom, seat and rear stays that pivot under the seat (connected to mainframe). The mainframe consists of the top tube, head tube and boom connection. The small diameter boom mounts and removes easily (however, must be properly sized). The mainframe connects to the rear stays at an upright style seat tube. When you insert the Phaser's seat and a real upright-style seat post into the frames seat tube, it locks the mainframe and rear stay pivot into place (remove the seat, and it is allowed to scissor/fold). An added benefit of this design is that the seat post allows for a vertical adjustment of the seat to suit rider preference. This is proven technology, as the entire bike was inspired by HPM's upright Swift folder (I have owned one of these as well).

The fork is a typical CroMo unicrown 16-inch size. It is painted to match the bike, and our USS model had a welded-on steering rod tab.

The paint is your choice of powdercoat colors. Our test bike was a pleasant medium blue.

The Phaser comes in your choice of USS or ASS. The USS is more compact and the bars quick release off the frame. However, the indirect USS linkage does not quick release and must be removed by disconnecting the bolt.

Our Phaser weighed in at 32.5 pounds with fenders and our platform pedals with SCOR Kneesavers and without the optional lowrider pannier rack.

Drivetrain—The SRAM shifted 3x7, 21-speed drivetrain worked flawlessly. This system is a bit retro these days—but still works great. The bike has a two-chain system with a cross-over gear at the frame's main folding pivot point. The rear chain goes back to the derailleur, and the forward chain out to the boom. These small cog cross-over systems are less efficient than one-chain systems. This is combined with the added internal friction of the 3x7 (internal 3 speed + 7 derailleur gears). We've heard of a few 3x7 failures over the years, but mostly they are dependable. The only real hassle is rear wheel/tire changes (bolt on axle).

The Phaser is geared low, which is good for my hilly test course. The bike ran out of gears in the high end when speeding on the flats with a tailwind. 20-inch drive wheel gearing is just not as wide or versatile as 26-inch or 700c, however, both of these are much less compact.

Chain Management—The small cog, two-chain crossover drive did operate without problem. The one potential problem is that the boom is not infinitely adjustable for all riders as chain links need to be added or removed and the boom set to find the correct x-seam setting. Boom adjustments can only be made in chain-link size increments. Raising or lowering the seat may help, but some riders may not be able to achieve boom setting/leg length perfection with this set up. Tandems have this problem and often use an eccentric bottom bracket for fine-tune adjustments. The BikeE RX and E2 have a sliding mid-drive. It is not easy to set, but it solves the problem. I also wondered if a set of chain tubes replacing the mid-drive would be simpler and more elegant solution.

Braking—The brakes are Shimano V-brakes and levers. The stopping power is excellent without being overbearing. Stops were controlled, yet no scary light rear wheel lock/skid tendencies. The 41.5" wheelbase and smaller wheelset make the center-of-gravity about as ideal as it can be for a SWB.

Wheels and Tires—The 406mm 20-inch rear wheel and 349mm 16-inch front wheel and Primo Comet tires work well with the design. The one downside to the 349 size is the limited tire availability, though this is changing.

COMFORT

Seat—The HPM seat is one of the finest designs made. For all of us who have settled for a composite base because our SWB are too tall for a full mesh seat, the full sling mesh seat becomes the "holy grail" of recumbent seats. The Phaser seat has a durable CroMo frame with a high quality mesh. The mesh straps are adjustable and have quality snaps (removes in a minute). Gone are the flared seat base rails and there never has been a seat horn on the HPM seat. The seat back and base are large enough for my XL size body, yet it is not an "over-size" looking seat. This is an exceptional recumbent bicycle seat.

An added bonus about the HPM Phaser is that this wonderful seat also comes on the HPM Roadster (dual 26 LWB ASS), Trick (SWB), and Tritan (LWB delta trike).

Ergonomics (seat height in relation to pedal/BB height)—The Phaser's ergonomics are excellent. The seat has allen-bolt adjustable telescoping seat stays, as well as a real seat post (under the seat base) that allows a 2-inch +/- seat height adjustment.

The handlebars are a shallow V which allows the most amount of rise possible. Each handlebar bar-extension has an adjustable angle (like a MTB bar-end). Riders should find a closer control reach than on most other SWB USS models. We were not able to try the ASS option on the Phaser. When we tried it on the HPM Trick SWB, we felt that it did not have enough steering riser recline adjustment.

RIDE/HANDLING

Handling & Stability—Recumbents with indirect rod-steering are usually less maneuverable and can even have a "slow" handling feel. The USS Phaser definitely does not have slow handling. The Phaser is a light, quick and sporty handling SWB—without feeling like a "mini" or folding bike. The bike tracks well, however, the 16-inch front wheel matched with USS requires more attention to the road than a SWB with a 20-inch front wheel and ASS would. I could

ride for brief periods of one hand, but I wouldn't want to do it too long.

Speed/ Efficiency—The Phaser performs much like other SWB USS recumbents. We generally find these bikes are all about equal. With the Phaser's 3x7 hub, cross-over two-chain drive and smaller wheelset, we would expect it to be slower (less efficient drivetrain). With this in mind, the Phaser performs better than expected.

User-friendliness—As folding bikes go, this one is easy to figure out. As a SWB, it has very user-friendly handling and no negative handling traits. We don't profess that SWB are for everyone, but the Phaser receives high marks for user-friendliness. The only trait worthy of note is the potential for heel overlap with the front wheel. This depends on the rider size/height.

FOLDING

The Phaser doesn't fold like a Brompton or Dahon, nor does it fold as quickly or as compactly as a Sat R Day (nor will it go into a suitcase/that we know of). So it is not the answer to your James Bond pocket recumbent dreams.

As described above, the main folding pivot is unlocked by removing the main seat mount. The rear mounts (telescoping seat stays) must be removed by allen bolt. The same goes for removing the boom and forward chain. The Phaser can get as small as 12" x 21" x 30".

I would not want to have to quick fold the Phaser to carry onto a commuter train. The take-down and set-up are too involved for commuters doing it daily (for my impatient self). If it were me, I'd opt for the upright, no-tools, < 1 minute fold of a Brompton or Dahon. However, if you want to own what feels like a full size recumbent—that folds, they just don't fold down as small.

OWNING/PURCHASING

Versatility—The folding ability of the Phaser makes the bike versatile in a way few other recumbents can be—you can travel with it. The ergonomics and comfort make it suitable for serious loaded touring. The only possible drawback from a versatility perspective is the tire selection. You can get any size of 406mm you want for the back, however, finding a fat 349mm 16-inch tire will be tough. It might be possible to build the bike with a 305mm 16-inch (BikeE size front wheel).

Shipping/Assembly—The Phaser's set up is very self explanatory, however, as is usual with small builders, documentation is left at a minimum. After an x-seam test bike sizing glitch was resolved, our test bike was road ready in 15 minutes. Proper sizing and x-seam/inseam seems to be more important on



Our test Phaser—this compact bike is very comfortable and rides like a full size SWB

this bike. As long as the sizing is done correctly, the biggest hassle a new owner will deal with is chain sizing (to fit rider). A chain tool and some patience are necessary.

Quality/Durability—The quality of all HPM bikes are excellent. They are hand-built, one at a time in Eugene, Oregon. HPM also builds a line of cargo bikes, so everything is built with utility and durability in mind, while maintaining reasonable bike weights.

Cost/Depreciation—The HPM recumbents—all of them—are supreme bargains for what you get. However, the depreciation is greater than many other models. Outside of customers who know about HPM's cool and original models, and outside of Eugene, Oregon, many people do not know enough about the bikes. Hopefully this will change soon. Perhaps this article will help.

Options & Accessories—The primary options are the upgraded 3x7 21 speed drivetrain, fenders, lowrider pannier rack and the travel bag.

Unless you ride only on the flats, opt for the 3x7 21-speed drivetrain. The fenders are modified 20-inch fenders and work fine. They are not the best we've seen, but certainly not the worst. They do impede compatibility and are not as easy to remove as the Sat R Day's one-bolt fenders (we've broken several of the one-bolt fenders). The rack is hand made of sheet and tubular aluminum. There are four threaded bolts on the chainstays, and the rack mounts in a few minutes. It is a bit crude by appearance and

in contrast to other similar recumbent racks (Vision and X-eyed). The rack did work well. The travel bag is a must. It is well thought out, and it's easy to get the bike back in the bag. The Sat R Day folds smaller, it takes practice and is time consuming.

Market Competition—The market competition is the Bike Friday Sat R Day and to some extent, the Angletech Altitude. The Phaser is much closer to the Sat R Day, it has a superior seat and a 20-inch drivewheel (makes a difference).

ANALYSIS

Verdict—This is the best and most refined HPM recumbent that we have tested. None of them have received rave reviews from RCN, though Jan Vander Tuin continues to send us test bikes. He listens to our criticisms and each new HPM test bike is better than the last.

The only real downside to Jan Vander Tuin's HPM is the lack of slick marketing finesse (possibly also described as Buzz, Jolt and Hype). It takes some effort to get the information that you will need to buy a bike from HPM (especially long-distance sales). Since the bikes are custom built, the waits can be long. The scheduled delivery time for a 2001 Phaser order is 10-12 weeks. Our test bike took five months to get here (longer than normal or expected). Patience is the key word. Our test bike did not fit initially. After x-seam and inseam measurements, the boom was 1.5 inches too short. HPM took 2 weeks to supply us with a new book.

In this day of mass produced recumbents built in far off lands, recumbents built by



The Phaser folded with seat removed. This can be done in less than one minute. Note the seat post. The post fits into the head tube at the end of the mainframe/boom and then into the swing arm where it locks the frame sections into place. The bike will not fold until the seat post is removed.



Phaser pannier rack

real craftsman who know how to light a welding torch are rare and special. If you are like me and have a lot of respect for these craftsman who build there own stuff—you'll love the originality of the HPM recumbents. ♦

Rating/Summary

Comfort — A
 Design/Style — A-
 Drivetrain — B
 Chain Management — A
 Brakes/Braking — B+
 Finish Quality — B

Pros

Big bike feel
 20-inch drivewheel
 Folds easily back into bag
 Excellent handling
 Wonderful full sling mesh seat
 Excellent telescoping seat recline adjustment
 Custom build quality
 Heavy duty travel bag and components
 pockets and bags

Cons

USS bars are fairly rearward
 No seat bag
 Rear wheel has no quick-release
 Lots of fender/heel interference
 Won't fit into a suitcase
 Not a compact fold

ACCESS

Human Powered Machines
 455 West First Street
 Eugene, Oregon 97401
 Tel. 800-343-5568
 Email: cat@efn.org
 Web: www.efn.org/~cat/html

Specifications:

Model—Phaser; Type—SWB Folder
 Steering—USS indirect (linkage); Wheel-
 base—41.5"; Seat height—23-24"; BB
 height—23"; Weight—32.5 pounds/with
 fenders; Frame— TIG CroMo 4-piece frame
 (main frame + swing arm + seat + boom)
 Suspension—None; Seat—HPM aluminum
 frame with sling/mesh cover; Fits Riders:
 5'6"-6'4" (varies by x-seam); Folded
 dimensions: 12" x 21" x 30".

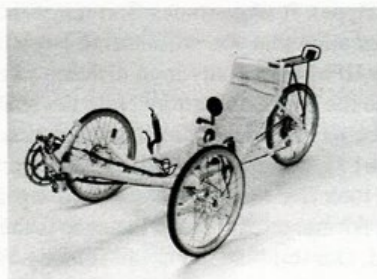
Components:

Crank—Cpi or Dotek alloy single; Bottom
 bracket—NA; Headset—Shimano or Tioga;
 Derailleur—SRAM ESP Neos; Cassette—7-
 spd.; Chain—SRAM; Gear-inch range—27-
 118; Pedals—Wellgo LU 964; Wheels—
 406mm 20" rear/349mm 16" front; Rims—
 Weinmann 4019; Tires—Primo Comet;
 Hubs—Shimano STX (f) SRAM 3x7 (r);
 Brakes—Shimano V-brake (r); Warranty—
 5 years on frame; Colors—Custom (owners
 choice).

Price as tested:

Bike:	\$1400
Fenders	\$30
Travel Bag	\$55

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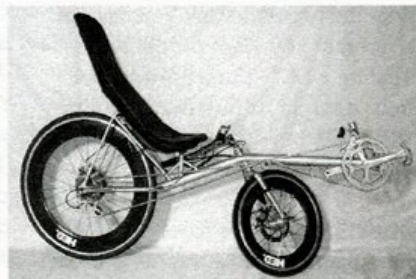


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A Lowrider Delta Trike

by Dick Shelton

Several years ago I was slowly climbing a very steep and long hill on a century ride in Western North Carolina on a 39-pound recumbent. I thought to myself, what a delight it would be to do this climb on a lightweight, fast trike without having to struggle to stay upright and be able to go faster than the 3.5 mph that I had done previously up that hill.

Design Goals

I know that there was no production version of what I wanted, so I decided to design and build my own trike. To accomplish my design goals, I needed the following features on my trike:

- Light weight
- Low center of gravity (c.g.)
- Simplicity of components
- Compactness
- Strength
- Aerodynamics for speed

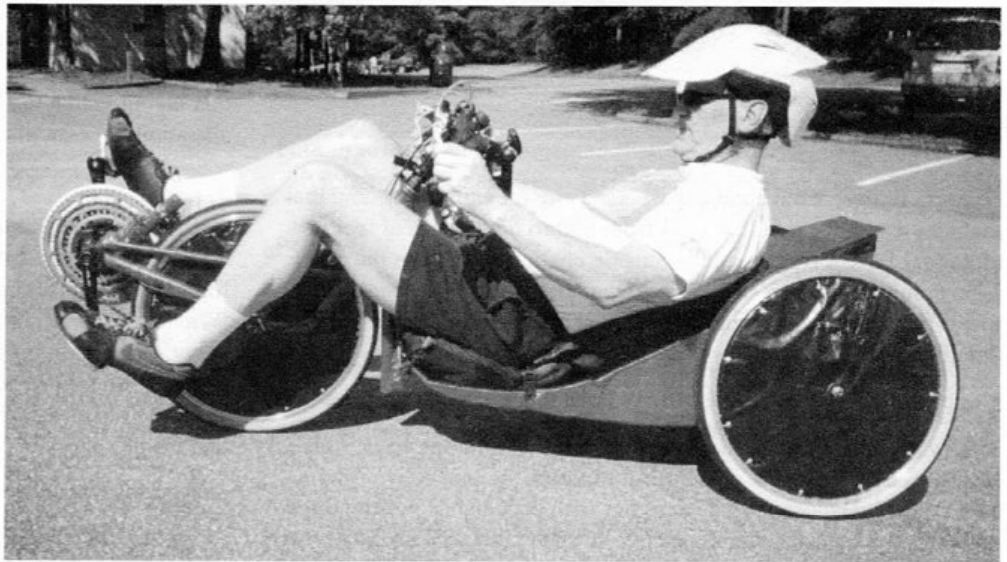
History

Over six years I had built several trikes based on ones I had seen in RCN and the IHPVA publications, along with my own moments of madness. I am not an engineer, machinist or even fairly competent at putting things together (my favorite tool is a sledge hammer). The majority of these trikes end up in the dumpster. I am now very knowledgeable in how NOT to build a trike. Going downhill at 40 mph on a wooden trike that was nailed together with rear-wheel steering was a near rapture (or rupture) experience. Another time (I do not learn quickly), going down the same hill, I had the two rear wheels decide to go opposite directions at the same time. At least the front wheel stayed straight, and the children in the neighborhood were amused.

Success

I now have a trike that I built that weighs 30 pounds. When I first completed the worked, it weighed only 28.5 pounds, but I added some additional support and welded additional items that brought the weight up to 30 pounds.

The layout is one wheel in front (front wheel drive-FWD; power wheel) and two in the rear. In building this trike, you can spend as much money as you want, but I chose to buy used equipment from bicycle dealers. The trike was put together for about \$800. With my black wheel covers and red partial



fairing, it looks like nothing else being ridden in this area. I have ridden this trike for over two years now with only minor adjustments. I have also completed another similar trike for touring (which appeared on Irish TV; but that is another story).

Frame

For strength I placed two pieces of steel tubing together (parallel) and spot welded them to form a backbone of the trike. I shortened both ends of a mountain bike handlebar to make the rear axle. Inserted into the bar ends are 1/2" coupling nuts which receive the bolts that hold the rear wheels on. The axle is attached to the frame by means of a handlebar stem inserted into the end of the frame and welded into place. The rear wheels toe-in slightly which help in cornering. The wheelbase is 44 inches which enables me to climb very steep hills with my FWD. I have built one trike with a 30-inch wheelbase and found too little weight on the power wheel with the result that the power wheel would slip going up hills. I transport my trike on a regular bike carrier with rear wheels and fairing removed.

Seat

The seat frame is PVC pipe with holds drilled and nylon rope inserted and woven to form a tight hammock style seat with 1-inch of foam cut and placed with zip-ties at strategic places: to fit the curve of my back and to try to get a feeling of being held into the seat (like the bucket seat of a sports car). To hold the seat to the frame, I cut lengthwise a piece of frame tubing into two parts, welded them perpendicular to each other to form a cross. One side of the cross fits onto

the frame and is held by hose clamps. The PVC seat fits into the other part of the seat at the cross. Early on I discovered that PVC squeaks, so I have cut up several used bike tubes and made rubber washers. After experimenting by doing long rides, I have eliminated all of the squeaks.

The seat back is 30 degrees (from horizontal) for aerodynamics and thus speed. Also the low angle turns out to be very comfortable and less fatiguing than any other bike seat that I have tried. The low center of gravity provides stability, and leaning into corners is needed infrequently. I have added two self-inflating air bags on the seat back so I can adjust one side or the other for road angle on long rides or to absorb road shock.

Drivetrain

I like FWD for simplicity and weight savings. After a lot of experimentation, I have found that with zero trail on the front wheel, the side-to-side movement of FWD is minimized. The little effort I expend to keep the trike in a straight line is a lot less than the effort I used to put into holding myself upright on regular bicycles.

I built two different trikes—the first with a 78-degree head angle, and my current one with a 58-degree head angle. The 58-degree angle allows me to ride at certain cadences hands free (for short periods of time). I have added "Knee Savers" to the pedals which puts my feet further away from the frame to make sure my right heel does not hit the rear derailleur. I have the bottom bracket only 15 inches from the ground in order to get my legs lower in relation to my seat. At this height, I can still pedal even when turning



corners. To date, I have not experienced any toe numbness, and that includes a century ride that goes from 600 to 6500 vertical feet in altitude. I have a frisbee on the outside chain ring to keep the chain from coming off when shifting into the largest gear. The reason for this is that I try not to spend a great deal of time adjusting touchy derailleurs.

Brakes

Two brake levers feed into one center pull brake on the front wheel. I tried brakes on the back wheels, but found them ineffective. The center pull brake is an old design, but with both hands pulling on two brake levers, the trike stops in about the same distance as the average upright bicycle.

Wheels

I'm riding on 451mm (Tour Easy SS size) 20-inch Sun rims with 36 spokes on the power wheel. No adjustments have been required in two years of riding. I started out using Roadlite EX 1-1/8" 100-psi tires, but wore them out on a regular basis—especially on the front wheel. I switched to Primo Comet 1-3/8 inch 85-psi tires which do

last longer. Also my average speed increased slightly with wider tires. The wheel covers are black plastic (4-6 mil thickness) over a donut cut of coroplast (plastic cardboard). All this is held together with small zip-ties. The weight of the wheel covers is almost nothing, and the same covers have lasted for over a year.

Handlebars

I used a curved mountain bike bar that is cut off at both ends. Then I added a set of bar ends that are parallel to the ground and point in the direction of the front of the trike. Then I added a second set of bar ends onto the first set which I pointed to the ground. The purpose of this layout is that the handlebar now curves around my legs and allows me to extend my arms so I do not feel cramped up.

Track

The track width is only 24 inches with the wheels toe-out. At this width it will go in and out of close places easily. With wider tracks, I found them very clumsy to get in and out of my apartment door. When turning corners I generally do not even have to lean into the curve, depending upon my speed and sharpness of the curve. I have had it up on two wheels a couple of times in the past, but have not yet turned over; however, the neighborhood kids are eagerly awaiting that event.

Fairing

Coroplast and zip-ties help form a nice storage unit behind the back seat. Putting the fairing and my wheel covers together on a scale comes out at 1 pound. I tried a full body fairing, but did not like the looks of it. It reminded me of a small blimp when what I really wanted was the look of a Formula 1 racer. Also I discovered while on a century ride on a hot summer day that the heat build up inside the fairing was amazing—so were the leg cramps I was getting from being overheated. I have constructed several front fairings, but have not come up with anything I like yet.

Performance

On level ground I can average over 20-24 mph for long periods of time, and I consider myself to be an average rider. At 15-20 mph riding with upright bikes I find I am just not working as hard as they are. On hills the 31-pounds enables me to keep up with upright bikes whose riders are about my age and size (age 58, 190 pounds).

Fun Factor

This trike gets a lot of attention and questions. It does have a tendency to cause traffic to slow down to look at it. Kids love it. Dogs are confused by it. Horses either stare at me or run from it. Alas, I have not yet been attacked by beautiful women. ♦

Note

Many thanks to Easy Racers' Gardner Martin who over the years has given freely of his time and ideas, and to my wife, who makes rash threats when I even think about building another trike.

Specs

Type: SWB/FWD Trike; Wheelbase: 44"; Track: 24"; Seat height: 9"; Seat back angle: 30 degrees; Bottom bracket height: 15"; Head tube angle: 58 degrees; Derailleurs (front): Suntour XC Expert/Shimano Altus (rear); Shifters: Shimano bar-con (bar end) Gearing: Deore LX 28/38/48/62 quad with an 11-30 cassette Tires: 451mm 20-inch x 1-3/8" Primo Comet; Rear hubs: Phil Wood wheelchair; Frame tubing: Reynolds 531

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Coroplast Tailbox Construction

How I designed and built a tailbox for my P-38

by Jeff Wills

A tailbox is what its name implies—a rigid box that sits behind the rider, usually intended for carrying cargo. As a side benefit, it can improve the aerodynamics of the bike slightly.

I was inspired to use Coroplast by Bill Volk and his Coroplast Crazy page (<http://www.ihpva.org/Builders/WVolk/#anchor32528230>) and Ed Gin's Fairing Seminar (<http://www.mcs.net/~gkpsol/fairingseminar.html>). What I discovered is that Coroplast is an incredibly easy material to work with—it's cheap, easy to cut, tough to goof up, waterproof, easy to clean, and available. Since it's commonly used for outdoor signs, most sign making shops will have it in stock. If you're really cheap, wait until the next election and volunteer to clean up candidates' signs afterwards. This usually yields many useful large pieces at no cost. You can use these for interior panels (like I did) or, if you don't mind the printing or the colors, on exterior panels.

The one deficiency of Coroplast is that it can't be glued easily. Epoxy, silicone, hot glue, and rubber cement have been tried with varying success. Coroplast's Website has some good information on what works and what doesn't at Bonding and Adhesion of Coroplast (<http://www.coroplast.com/Brochures/Bonding and Adhesion of Coroplast.htm>). Since the tailbox's parts move and vibrate, most bonding methods will fail in short order. My building method is to stitch the edges together with plastic zip-ties. These are cheap, easy to find, and strong but not particularly elegant.

The dimensions on the following pages will allow you to build a similar tailbox. It's designed to fit a Lightning P-38 with a rear rack. In fact, I built the original simply by eye-balling most of the pieces—I didn't have any detailed dimensioned drawings before starting. The curved sides give it rigidity and keep it pretty quiet. With some thought and ingenuity, it could be adapted to most recumbent designs. Heck, with a little reworking, it could fit an upright bike!

Here's what you'll need to build my tailbox:

Materials

Coroplast: 1 (one) 4' by 8' sheet of 4mm thick Correx (trade name)/Coroplast. This is standard sign-making material, available at sign shops in a variety of colors. I chose yellow for visibility.

Zip-Ties: About 100 8" plastic zip-ties. I got yellow to match my Coroplast. I have been told that the black ones are more UV-resistant.

PVC pipe: Roughly 36" of 1" diameter Schedule 40 pipe. This is used to create bracing for edge-to-edge corners.

An old toe strap or two: Used for latching the lid.

Tools

1. 6" tapered reamer to create the holes for the zip-ties. Get one with a sharp point on the end.
2. Sharp utility knife for making the majority of the cuts.
3. Sharp scissors for fine trimming.
4. Fine-tooth saw to cut the PVC pipe.
5. 36" straight edge for layout and creasing the Coroplast. This can be wood or metal—I used a 1/8" x 1" aluminum strip from Home Depot.
6. Duct tape for temporarily clamping sheets in place.
7. Tape measure.
8. Sharpie permanent markers to lay out your cuts and to sign your work once it's finished.
9. Bike stand or trainer to hold the bike upright and allow you to

work on all sides of the bike.

Building the base

First you need to create the interior of the box. This is a single piece that forms a saddle over the top of the rack, the interior sides, and the bottom of each compartment.

Tip: You can make very straight bends by laying the straight edge on top of the Coroplast and pulling the excess upwards. This puts a bend or crease all the way across your piece. This works best with the grain or across the grain—diagonal bends are pretty difficult. Fortunately, all the "creased" bends for this tailbox are with the grain.

Cut a 24" x 36" rectangle so that the grain or flutes are parallel to the short edge. Crease and bend the two sides so they go down the sides of the rack. Crease and bend upwards 5 1/2" from each side. You should end up with a piece that looks like an "omega" sign:



Make two cuts through the middle two creases 9" long from the front edge of the piece. Crease and bend the center tab so it sticks up at right angles to the rack. This should allow you to slide then piece forward until it hits the back of the seat. Make rough cuts (scissors work) where the Coroplast hits the seat until you can slide the piece all the way forward on the rack.

Back the piece up about 1 inch (so there's space between the "tab" and the front of the rack) and temporarily hold it in place with duct tape. Using the outside surface of the wheel as a guide, mark an arc on the inside surface of each side, roughly 1/2" to 1" outside the diameter of the wheel. Remove this piece and cut away the excess, leaving a smooth arc along the front edge of the piece.

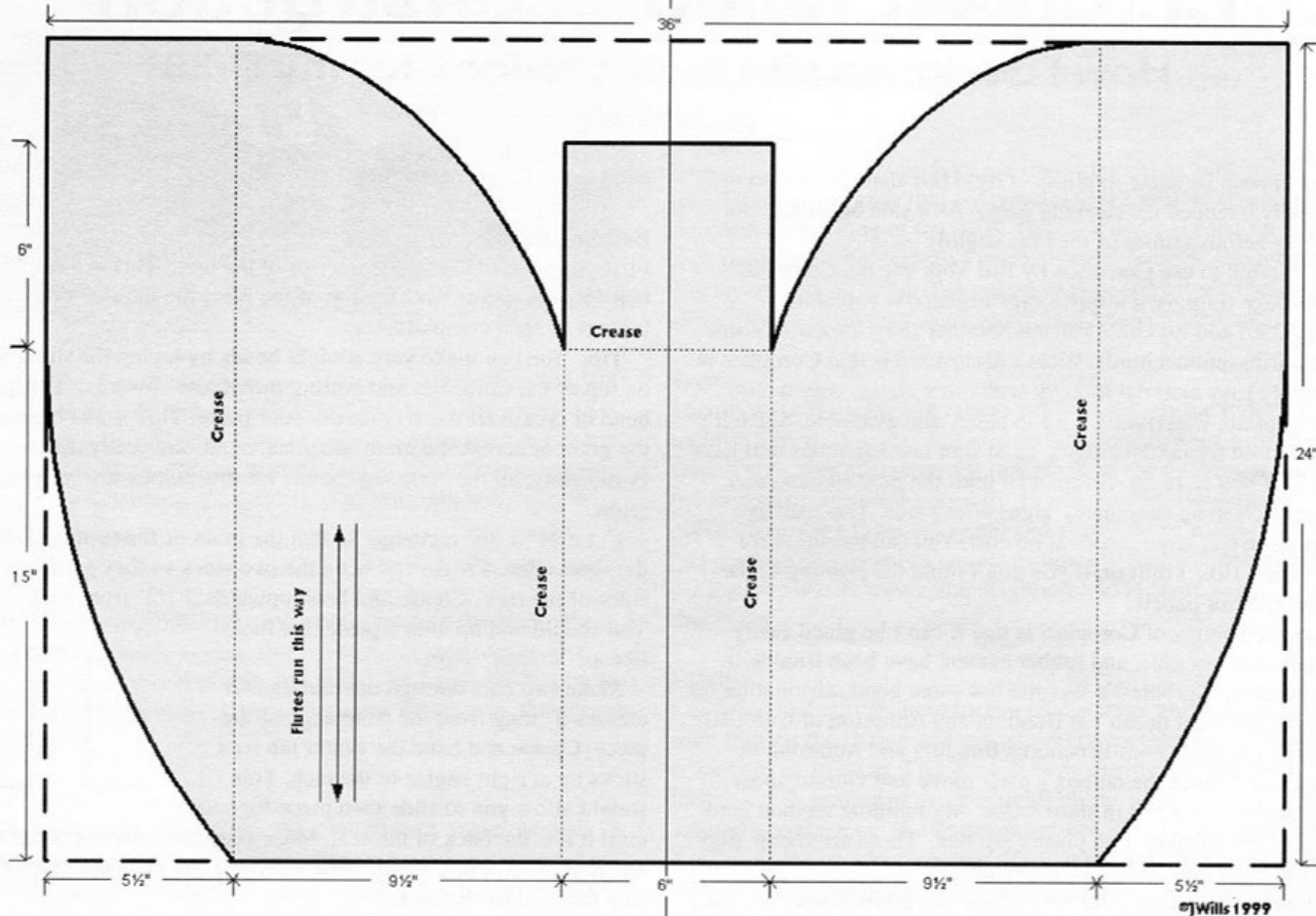
On the "bottoms" mark arcs from the outside edges 15" from the rear corner to the corner where the bottom meets the interior side. It's easier to see if you look at the plan. The radius of this arc is optional, but since the sides need to bend around it, gentle curves are recommended. (See plan on next page.)

*The piece, cut, creased and placed on top of the rack.
Note that the bottom tapers are not yet cut.*



Recumbent Tailbox piece 1 (1 needed)

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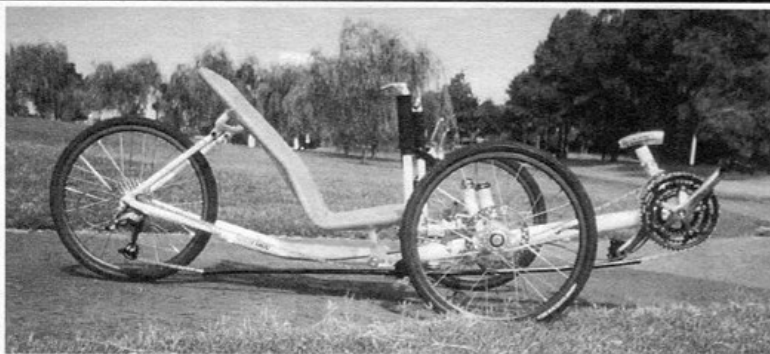
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Building the front:

Now you make the front piece of the tailbox. This is where you'll start attaching one piece to another. Careful alignment now will pay dividends with the finished product.

Tip: Attaching one piece to another with zip ties requires that enough Coroplast remain between the hole that the zip tie goes through and the edge. This distance is about $\frac{3}{4}$ ", enough to keep a taut zip tie from pulling through.

Tip: Making smooth curves across the grain can be difficult. When attaching pieces along an arc, work systematically from one edge to the other.

This piece fits between the tire and the rear of the seat. If your bike is like mine, there's very little space to play with here. Careful eye-balling of the various surfaces before all the zip-ties are tightened will prevent egregious errors.

Cut a piece of Coroplast 17" x 23" with the flutes or grain running parallel to the short side. Cut a 6" wide x 7" deep notch centered on one of the short sides. This forms "horns" which will be at the top of this piece while the opposite edge will get attached to bottom-front edge of the interior piece.

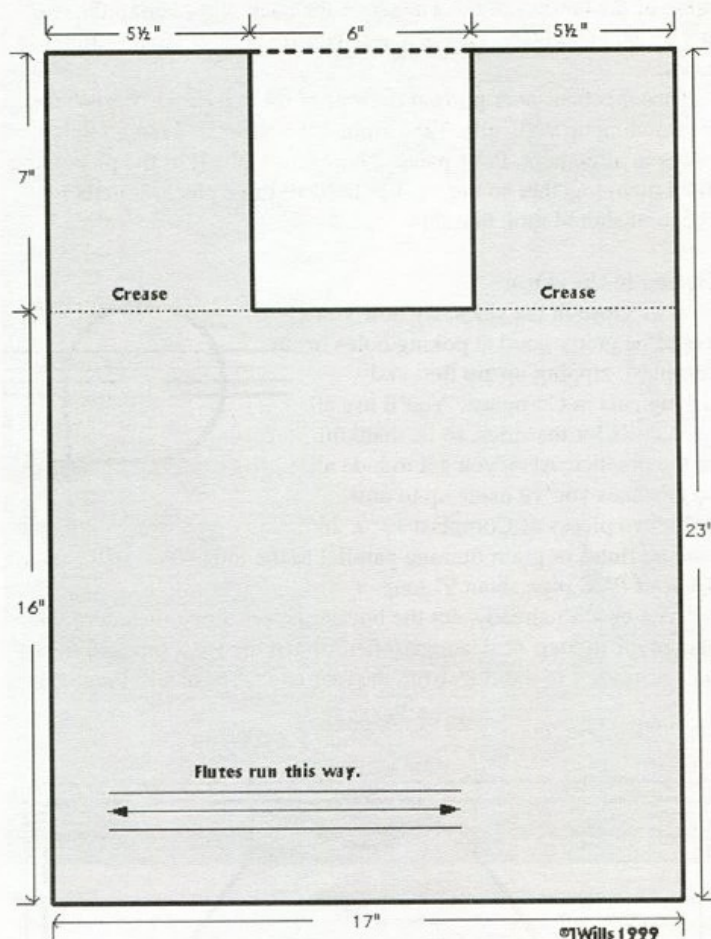
Stuff this piece between the seat and the first piece of Coroplast. This will take some tweaking, and you'll probably end up creasing piece #2 a bit. Don't worry, it'll smooth out.

With the tapered reamer, poke three holes in each bottom tab of piece #1, spaced about 2" apart and $\frac{3}{4}$ " from the front edge. Poke corresponding holes in the bottom edge of piece #2. These holes should be lined up so that outside corners meet each other.

Cut two pieces of PVC pipe 5 $\frac{1}{2}$ " long. These will be the braces for the right angle joint formed by pieces #1 and #2.

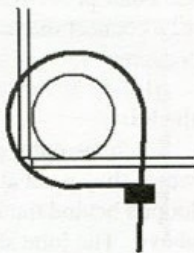
Insert the zip-ties from the front, down through the bottom and attach them loosely. Put the pieces of PVC in the corner formed by the Coroplast pieces, inside the loops formed by zip-ties. Pull the zip-ties tight so the "zip" end is underneath the bottom. It should look something like this:

Recurrent tailbox piece #2 (1 needed)



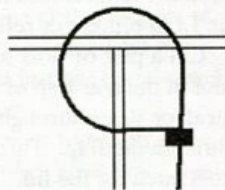
Trim off the excess zip-ties.

With duct tape, temporarily bend down this piece so it ends up pointing its "horns" rearward. The next step is to stitch the two pieces together in a "Tee" joint. You can do this with the pieces on the bike (which improves accuracy) or off the bike (which eases access). Probably the best method is to do the first two or three zip-ties on the bike, take the pieces off the bike, and finish stitching.

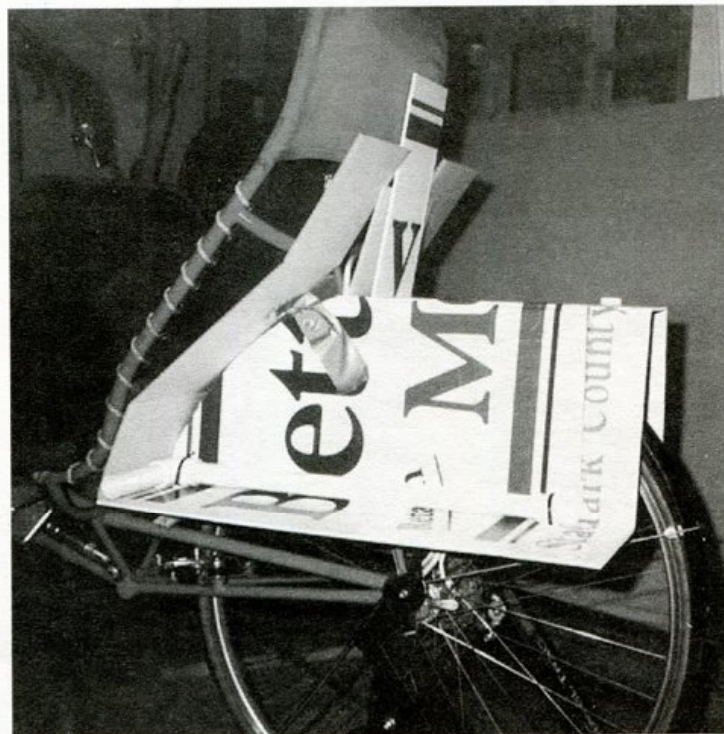


Here's how it goes: with the reamer, poke two holes through piece #2 about 2" from the bottom, lined up so there's one on each side of the vertical panel of piece #1. Poke a corresponding hole in the vertical panel about $\frac{3}{4}$ " from the edge. Thread the zip-tie through the vertical panel, forward through the first hole in piece #2, and back through the second hole. Pull this taut so the pieces form a tight "Tee", like this:

Repeat for the other side, always threading the zip ties from between the two vertical panels. (I'm not doing that to be difficult—after the zip-ties are trimmed off they have pretty sharp ends. Doing it this way keeps the sharp points hidden.) Working from the bottom, continue stitching the two pieces together until you reach the top. There should be a rectangular gap between the top of piece #1 and piece #2. This is where the seat supports go.



Once all of the stitching is done, crease and bend the "horns" of piece #2 up so they are in the same plane as the "tab" of piece #1. Cut off the tops of the "horns" or the "tab" so their top edges line up.



Piece #2 (partially completed). Note that the front is temporarily attached to the interior by duct tape and that there's a big crease just above the bottom. This smooths out once the zip-ties are installed and tightened.

Building the lid:

Now you make the lid of the tailbox. This step also binds the interior piece and the front piece together on top of the rack. Cut a piece of Coroplast 17" x 22" with the flutes or grain running parallel to the short side. Put a crease across this 7" from one end. You should also

taper the lid towards the back. The curving taper should match the curve of the bottom panel. The tab at the back will overlap the rear end by about 1-1/2". This is where you'll put your latch or tie down.

Place this bent-over portion in front of the "tab" and "horns" that are standing up vertically. Tape around the edges to keep all the pieces in alignment. Poke pairs of holes through all of the pieces and stitch them together so the zip-ties hold all three pieces together. The joint should look like this:

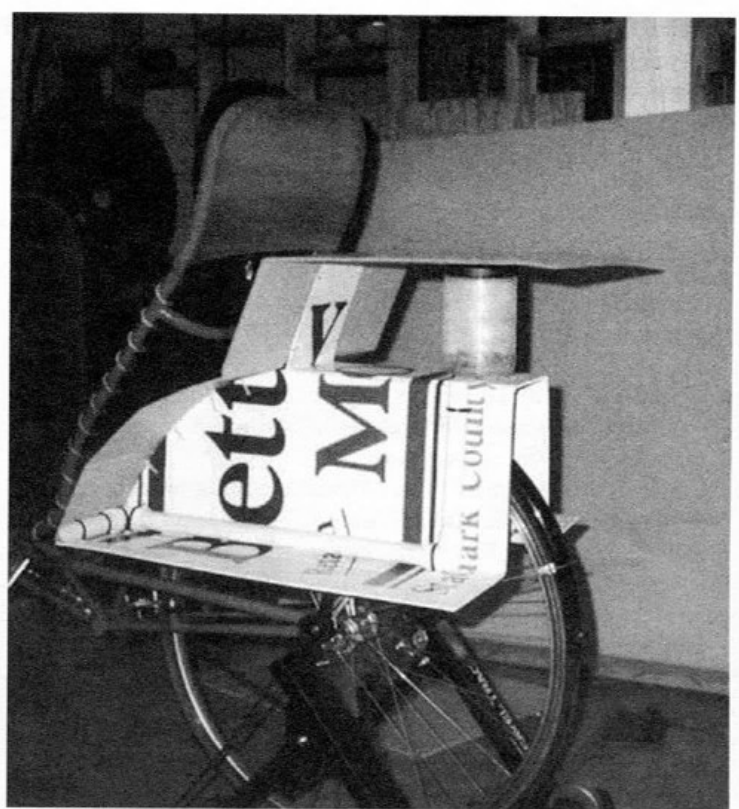
Closing in the sides:

Now we close in the sides. By now you should be pretty good at poking holes in Coroplast, zipping up zip ties, and making cuts in Coroplast. You'll use all these skills for the sides, so be thankful for the practice. Also, you get to hide all the mistakes you've made up to now.

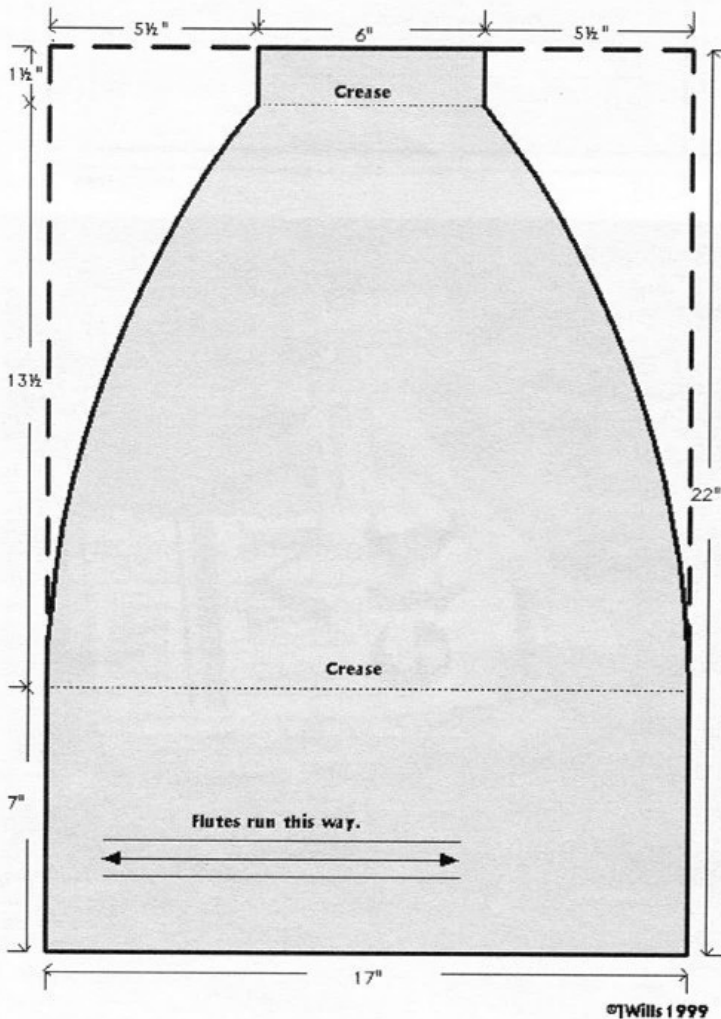
Cut two pieces of Coroplast 17" x 26" with the flutes or grain running parallel to the long side. Also cut two pieces of PVC pipe about 9" long.

If you haven't already, cut the bottom pieces along the curve you marked off in Step #1. Using zip-ties, attach the PVC pipes to the sides of piece #1, about 2" from the rear edge. These will brace the

Recumbent tailbox piece #3 (1 needed)



Here's what Piece #3 looks like. Note that the lid and the "tab" and "horns" are now firmly attached to one another.



bottom edge of the outer panel, like this:

Once the zip-ties are pulled tight, the outer panel will curl under the bottom panel, forming a continuous seam. Where the outer panel meets the front panel (piece #2), connect the pieces with zip ties forming "Tee" joints:

Also do this where the outer panel meets the lid.

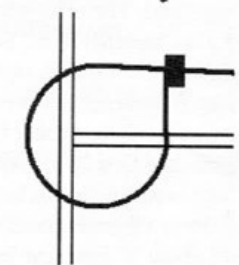
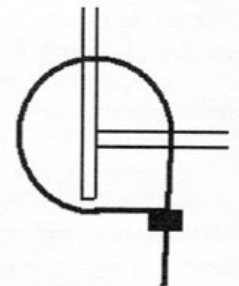
Stitch the outer panel to the inner panel where they meet at the rear, using zip-ties looped behind the PVC pipe you attached above. The joint should look like this from the rear (see next page).

Pull everything tight and trim off all of the excess zip ties. Repeat for the other side. Trim off the portions of the outer panels that stick out in front of the seat.

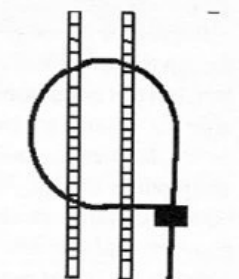
Cut a piece of Coroplast 6" x 12" with the flutes running parallel to the short edge. Crease this 3" from each short side and stitch it in place at the rear to fill in the gap between the two outer panels. This is where the latch mounts. This is also a good place to mount an LED blinker or reflector.

Cut a pair of slots in this piece and another slot in the rear flap of the lid. Thread the toe strap or straps through the rear piece and out through the flap. This makes a secure, low-cost latch for the lid.

The top mounting bolts for the seat frame are removed and the front surface can be slid between the supports and the frame. This requires a little dexterity, but you probably won't want to do it often.



Stitch joint



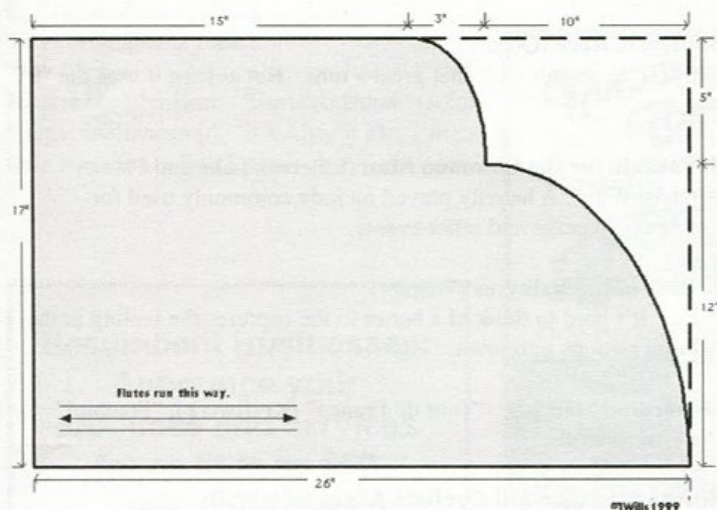
rear edge, so they should end up sandwiched between the inner and outer surfaces.

Line up the outer panel so that its lower edge protrudes about 1/2" below the bottom (horizontal) piece. Starting from the front, stitch the outer panel to the bottom panel, wrapping the zip-tie under the

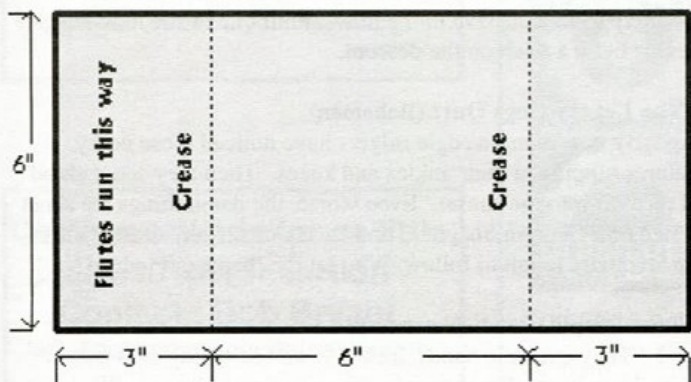
At first, I built the tailbox with my rear fender in place. However, switching from a 700 x 28C to a 700 x 32c rear tire created clearance problems: when I pushed back on the seat, I felt the Coroplast through the seat fabric. I found that if you remove the fender, you'd have a little more room between the seat and the tire. The Coroplast on top of the rack and between the tire and seat form a very effective fender. This brought on another problem: I found that any weight in the front of the box caused it to tilt forward and rub on the tire, so I attached the box to the rack with a couple zip-ties near the rear of the rack. This slows down the removal process a little, but not by much.

I usually carry my stuff in waterproof stuff sacks, commonly available from sporting goods stores. I have one that carries my

Recumbent tailbox piece #4 (2 needed)



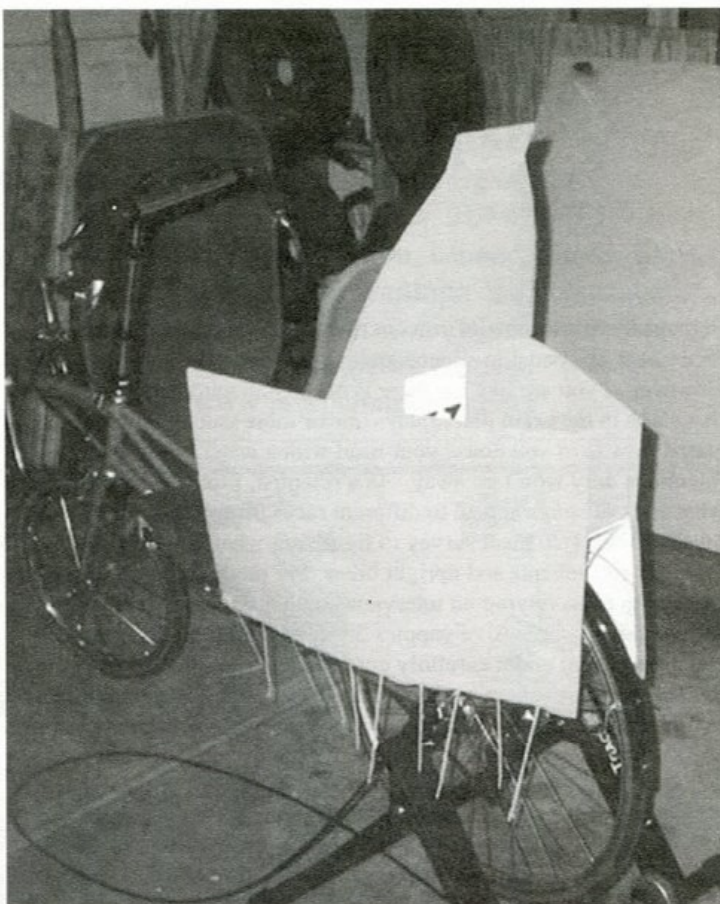
Recumbent tailbox piece #5 (1 needed)



spare tubes; patch kits, tools, Powerbars, rain jacket, sunscreen, and assorted other impedimenta. I find that this size box will carry all of this, my work clothes, and my lunch easily. If I need to carry more, I can stuff it in or simply let it pile high. In fact, one of the dangers of having all this storage is that you forget to empty it out: I kept my lock and rain jacket in it throughout the summer, just because I was too lazy to take them out when I didn't need them.

Now that you're finished, you can customize your box with reflective tape, stickers, fake fur, or whatever strikes your fancy. Just remember that most paint won't stick to Coroplast stickers are the way to go.

I've ridden with this box for almost a year, and I can't imagine why I didn't build it sooner. It's just about invisible behind me, except when I hit a good size bump. When that happens, the top thumps on the sides. This was startling the first couple times, but I came to expect it. Otherwise, it's remarkably quiet. ♦



The nearly finished product. This is with the bottom and rear edge tied in place, but before the front portion of the side panels are cut away. The front edges of this panel will end up about 1" behind the seat frame.



Here's what the final product looks like. Depending on your skill, you'll either have a couple small gaps or a few big ones. No matter, it wasn't designed to be waterproof to begin with.

Songs for the Road: Essential Cycling Tunes

by Bent Ted (aka Ted Sommer)
jsommer@mother.com

Perhaps there are some of you out there that can hop on your recumbent and pedal in silence, quietly watching the scenery roll by. However, if you are like me there is usually an automatic tape loop that starts in the brain that replays one or more catchy tunes. No matter how hard you douse your head with a water bottle, the infectious ditty won't go away. As a scientist, I took to wondering what sorts of songs appeal to different races of cyclists. To this end, I performed a statistical survey to figure out what are the essential tunes for recumbents and upright bikes. My methods were, of course, highly rigorous, relying on interviews with a sizeable, demographically diverse sample (five yuppies 38-42 year olds and the author's two 4 year olds) under carefully controlled conditions (adults were limited to a six-pack apiece). The bias was toward 60s and 70s rock as this is the last time period that song lyrics were at least occasionally comprehensible. However, a smattering of other styles were included, helping to illustrate that cyclists are aware of the existence of at least a few other musical styles. But hey, they call it rock and ROLL for a reason—these tunes were made for the road. Note also that our results for upright bikes were primarily for “switch hitters,” cyclists who ride both road and mountain bikes. We did not include preferences of mountain bike hardcores as they, like the self-destructive musicians they listen to, have relatively short life spans that make it difficult to assess reliable patterns. These adrenaline-crazed deviants seem to favor bands with names like “Suicidal Tendencies”, “Rancid” and “Jello Salad”. For the rest of us, here are your songbooks.....

Essential Songs for Recumbents

1. Born to be Wild (Steppenwolf)

Why? Is there anyone who didn't start hearing “Born to be Wild” when they started riding recumbents? This is the quintessential ‘bent song.

2. Low Rider (War)

Why? Too low and too cool. Yes, it is a car song, but the tune is also a great anthem for the ‘bent school.

3. King of the Road (Roger Miller)

Why? Is there any doubt that recumbents are the kings of the road?

4. Trucking (Grateful Dead)

Why? The author is not much of a Deadhead, but there is no denying how infectious this song is for those long miles on the road.

5. Peaceful, Easy Feeling (Eagles)

Why? The title says it all.

Honorable Mention: “Sittin’ in Limbo” (Jimmy Cliff), “Like a Rolling Stone,” (Bob Dylan) and “Ramblin Man” (Dickie Betts).

Essential Songs for Upright Cyclists

(Had We Actually Interviewed Any)

1. Back in the Saddle (Aerosmith)

Why? Loud, raunchy and saddle happy. A great way to get the wheels churning on a cold, rainy day.

2. Fly Like an Eagle (Steve Miller Band)

Why? The song is flighty and free. The song is even catchier after being used as the soundtrack for a U.S. Postal Service ad featuring road god Lance Armstrong.

3. Bicycle Race (Queen)

Why? OK, so this isn't that great a tune. But at least it uses the “B” word.

4. Fanfare for the Common Man (Emerson Lake and Palmer version)

Why? A heavily played melody commonly used for Olympic coverage and other events.

5. Ride of the Valkyres (Wagner)

Why? It's hard to think of a better to the captures the feeling as the peloton swoops into town.

Honorable Mention: “Tour de France” (Kraftwerk), “Freebird” (Lynyrd Skynrd)

Songs that Upright Cyclists Associate With Recumbents

1. Fool on the Hill (Beatles)

Why? All upright riders know for a fact that recumbent riders absolutely cannot survive in the hills...until one of the little buggers screams by in a flash on the descent.

2. Who Let the Dogs Out? (Bahamien)

Why? By now many wedgie riders have noticed these pesky creatures nipping at their ankles and knees. Then they scoot ahead and race off into the sunset. Even worse, the damn things are about the size of a German Shepherd and hardly create any draft at all, so they are really tough to follow. Who let the ‘bents out indeed?

3. Short People (Randy Newman)

Why? “They got little hands, little feet and little tiny (low bikes) that go beep-beep. Short people got no reason to live at all.”

4. Slow Ride (Foghat)

Why? Many upright cyclists are convinced that recumbents are slow, otherwise they would be used in the major cycling events like Tour de France. Of course, this argument conveniently ignores the fact that recumbents were banned from mainstream racing in the 1930s because they were winning too many races, but we won't go there....

5. Can't Find My Way Home (Stevie Winwood)

Why? Anyone silly enough to ride one of those goofy bikes is unlikely to be able to find their way home.

Honorable Mention: “Hit the Road Jack” (Ray Charles), “Suicide is Painless” (Mandel and Altman).

Songs that Recumbent Riders Associate With Upright Cyclists

1. Satisfaction (Rolling Stones)

Why? Cuz most of us can't get no satisfaction on an upright bike.

2. Comfortably Numb (Pink Floyd)

Why? This is about as good as it gets for uprights on long rides.

3. Toys in the Attic (Aerosmith)

Why? Too many uncomfortable wedgies end up sitting in garages or attics because their owners are tired of being tenderized by speculum-sized saddles.

4. Black and Blue (Rolling Stones)

Why? Most of us don't even want to talk about the body parts that turn this color after cycling (on a wedgie).

5. King of Pain (Police)

Why? You get the idea....

Honorable Mention: "Hurts so Good" (John Cougar Mellencamp), "It's Alright Ma, I'm Only Bleeding" (Bob Dylan) ♦

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The Development of Burley Recumbent Bicycles

By John Morris
design@burley.com

If a modern history of recumbent bicycles is ever written, it will undoubtedly be filled with innovative characters motivated as much by a passion for building their creations as riding them. As a niche within the subculture of bicycle enthusiasts, classic recumbent types appear to be a fraternity of do-it-yourselfers for whom thorny engineering challenges are like icing on a cake. Unconventional solutions abound and probably enhance the image of nerdiness that has sometimes been attached to recumbents in the past. Many of the recumbent bicycles on the market today grew out of machines created for their inventors. These have been refined over time to suit the needs of a wider population. As the recumbent market grows out of its enthusiast's core, some of the unique bikes, memorable events, and colorful characters have become the stuff of folklore. With the variety of recumbent bikes currently available there may be less incentive for the home builder to take up tubing and torch, though I hope this colorful side of recumbency carries on.

As a worker-owned and managed business, Burley Design Cooperative has more than its share of innovators and colorful characters passionate about bicycling, even if recumbents are a relatively new expression of that passion. For decades Burley has been known for trailers, rainwear, and tandem bicycles. Burley's interest in alternative pedal-powered vehicles has always been high, and back in 1998 recumbents seemed poised for mainstream acceptance. But convincing eighty plus co-owners to gamble on an unknown product category would require demonstrating clear potential for growth. That meant developing a recumbent bicycle that would be readily accepted in the larger world of independent bicycle dealers.

With business plan approval early in 1999, the mission became to design a bike that would appeal to new recumbent riders and experienced enthusiasts alike. Everyone on Burley's R&D team at the time fell into the former category, though there were a few recumbent owners elsewhere in the cooperative. For years Dick Ryan produced his *Vanguards* just down the street from Burley's factory in Eugene, Oregon. Many of us had ridden his bikes and were familiar with his basic diamond frame construction. Our very first recumbent attempt employed some scavenged sub-components from a *Vanguard*, but wasn't anything Dick would have recognized. For a variety of reasons, that first bike never became very rideable. With the guidance and expert assistance of a key dealer or two, we then rode every recumbent we could lay our hands on. We also reviewed our extensive library of *Recumbent Cyclist News*, and the former *Bike Culture Quarterly/Encyclopedia* publications dating back to the early 1990's. Burley members who had never ridden a recumbent, some who had retired from active cycling, as well as a core group of designers and engineers tried to identify the best of what was available. It became clear early on that there was little agreement on the ideal basic shape of a recumbent. Particularly impressive was the broad range of handling characteristics exhibited by the competition.

Burley was convinced that to appeal to a larger market we would have to offer handling that was predictable, self-correcting and confidence-inspiring in all conditions for riders of different experience levels. This sharply contrasted with some of the bikes we were test riding. There were models of recumbents being sold with handling and ride characteristics that, in our opinion, wouldn't be tolerated if they were upright bicycles. Wheel to heel overlap, handlebar to seat interference, wheel flop, 'tiller' effect steering, low

speed instability, high speed shimmy, etc., made test rides into an adventure. It seems that once a rider gets accustomed to the handling characteristics of the recumbent of their choice they can learn to accept and even prefer those characteristics, however quirky they may be. A knowledgeable and enthusiastic dealer can do a lot to coach first time riders, and if you look for the most successful dealers in the country, you'll find they share a passion for recumbents that goes well beyond simply making sales. Still, a negative first ride impression is likely to dissuade some potential new recumbent owners.

Though recumbents have been around for a long time, they haven't reached the level of development and standardization found in upright bicycles. Recumbents are not only far less common, but the number of conflicting design considerations results in necessary compromises. One such area of compromise has been handling. "Handling" is not an objective, easily quantifiable entity; it is more a case of "feeling" and involves some personal preference. Fortunately, Burley had experience assessing handling using adjustable head angles and fork offsets over the years of developing our tandem bicycle line. Designing a new tandem model typically meant involving a handful of experienced riders in test rides over a set course using bikes with a small number of head angles and fork offset variations. To eliminate preconceptions, riders wouldn't be told which variation they were riding. Following a number of test rides, usually including some smoking descents, testers would get together to trade impressions.

For our second recumbent bike, dubbed the Mule, we stayed with a diamond frame (using stout tandem tubing) and a medium wheelbase, but fabricated a front section that permitted altering the head angle by 10 degrees and fork offset by 6 inches. The bottom bracket location was adjustable over a range of 8 inches. I knew of a section of new road with a moderate slope, prevailing tailwind and a long sweeping curve that ended in an ample cul-de-sac. We evaluated nearly fifty combinations of rake, trail, seat to bottom bracket relationship and weight distribution alternatives. Following two runs through the half mile course, each combination was rated on a scale of one to five for high-speed slalom, hard cornering, u-turns, slow speed maneuvering and hands-free riding. The total of these ratings provided a handling "score" for each setting.

To our surprise, every combination was rideable, but after settling on a bottom bracket height, we narrowed the list of possibilities to four head angle/offset settings. With under-seat steering the Mule was immune to the medium wheelbase bugaboo of a long offset stem (tiller) for bringing the controls within reach, which made the job much easier. The preferred geometry choices, which fell within the middle of the range of possibilities, all felt at least as good as anything thus far ridden from the competition. But this was on a good surface, new blacktop, and a very limited selection of riders. The next step was to expand the group of test riders to include different body types and experience levels and run the test over less ideal road surfaces. Out of this test we were able to build the next prototype, the Love Barge. We went to a single large diameter main frame tube, fixed head tube angle, and a front derailleur, which expanded the gear range and gave us more options for terrain and length of test ride.

The Barge also featured above-seat steering, via linkage, and rear suspension. We made a new fork with an offset adjustment range of about half that of the first version, which reduced fork flex and

permitted use of a front rim brake in all settings. The Barge was no lightweight, but was in near constant use by members, many of whom had test ridden a fleet of competitors and filled out two-page questionnaires on their experience. The Barge was a decidedly quick handling compact long wheelbase model with an upright seat position, one-to-one ratio indirect steering and zero tiller effect. With no offset between the axis of the steering pivot and the handlebars any steering input felt amplified. To some of us this felt rock solid, but to others it was over-responsive.

The indirect steering system consisted of an adjustable linkage arm connected by rod ends to short lever arms at the fork and aft steering pivot tube. Experimenting with differing lengths of the lever arms at the fork and the rear steering pivot changed the ratio enabling us to wheel, longish wheelbase, uncompromised head angle and fork offset values and a higher seat height resulted in a bike that handled with the sureness and predictability of an upright bicycle. Like a quality upright bicycle, the handling characteristics that worked well for accomplished riders gave confidence to new riders. I spent time banking off the walls at a local skate park and quickly learned to ride hands free. That was a first in my recumbent riding experience. Hands free riding has been an informal criterion for judging the handling of Burley products including our child trailercycle and our tandem bicycle line. We can't recommend it to others, but it's an exercise in faith and trust to ride as a tandem stoker or "child designate" on a trailercycle behind a "captain" riding hands free down the street.

The single, large diameter CroMo tube frame has many advantages for a recumbent. It is relatively straightforward to attach bottom brackets, seats, head tubes, etc. With above-seat indirect steering a second head tube (or its equivalent) for mounting the steering mast must be fitted to the frame between the seat and the head tube. Throw in rear suspension and overall height must increase to allow for suspension travel. The result is a bike that can be difficult to get on and off because you have to lift your leg over the frame and between the seat and steering mast. We had a target for the height that a rider had to lift his or her leg to get on our recumbent and it became obvious that the only way to satisfy all the criteria was a bent main tube. Not many people in our industry try to bend large diameter, thin wall CroMo tubes, and we now know why. Accomplishing the bend in the main frame tube challenged our engineering, our tool making, and our patience, but did provide for a low spot where riders stepped over the frame to get on the bike. It also resulted in an angled seat attachment track that placed shorter riders nearer to the ground.

The final prototype in the series, the Worm Burner, featured a more laid back seat, more room between the seat base and the steering mast, lower step-over height and a pivoting steering mast that brought the controls closer to the rider. With an adjustable, "flip-it" (RANS term) style mast we realized the benefits of having some amount of tiller. Nearly all upright bikes feature some tiller in the form of offset in the stem. This has a stabilizing effect on steering. With greater freedom to place the aft steering pivot (in this case a second head tube), we made the happy discovery that the front fork could be placed in either the forward or aft head tube. The medium wheelbase recumbent could become a short wheelbase with the steering mast attached directly to the fork's steerer tube. Ride and handling characteristics that we preferred for the shorter wheelbase option were accomplished by adjusting the angle and placement of the aft head tube where it pierced the main frame tube.

Having one recumbent bike that could be ridden in either a medium or a short wheelbase would allow the owner to easily use the same bike for loaded touring, daily commuting or recreational rides. Some of us came to prefer the ride characteristics of the short wheelbase version due to the quicker handling and shorter turning radius it provided. The R&D group held a final round of test rides with the bike in each wheelbase configuration with the adjustable



ABOVE: The Burley SWB Hepcat/Django
BELOW: The rear suspended Burley Limbo



offset fork, including some favorite bikes from the competition for comparison. After this test we felt confident that we had the steering geometry that we wanted. The Worm Burner eventually became the victim of pre-production destructive testing. In these tests we subject our bikes to a variety of controlled stresses and loads in accordance with industry recognized standards. After passing the threshold for acceptable performance, we frequently continue the test until failure. It is a curious and amusing exercise to explain to fellow Burley members (all of whom are co-owners) that a test bike was destroyed in testing. The assumption is usually that the bike must be somehow inadequate because it hadn't held up, even if the loads exceeded the test standards by factors of three or more. I don't know how common it is for recumbent manufacturers to have in-house testing capability. It is always instructive to see how frames and subassemblies ultimately fail, something you miss if the work is contracted out, or never done at all.

The Worm Burner went into production as the Limbo and was first seen in bike shops in the spring of 2000. Even as we filled orders for this, our first offering in a recumbent bike, we were looking at what we could accomplish with a second model and noting the ways we would like to make the Limbo an even better bike. With the growing number of bicycle dealers willing to carry recumbents, more people will have the chance to try a variety of bikes and find the one that works best for them. I think that a test ride on a quality recumbent may be the one of the best ways to keep people riding bicycles. For recumbents to gain wider acceptance a number of things need to happen, but key among them is for prospective buyers to have a good first experience on a fun, comfortable, good handling bike. Everyone in the industry benefits when that happens. ♦

For more information, check out www.burley.com. Watch for our upcoming Burley SWB road test. We're also hearing rumors of a new CLWB or LWB due out for 2002.

An Interview with Peter Ross

by Tim Noe
noebent@hotmail.com

Under a pair of distinguished white eyebrows, Peter Ross' sparkling blue eyes survey the recumbent landscape with the firm knowledge that he has made his mark. His signature designs—the Trice, Speed Ross, Festina and Gem—have achieved lasting distinction as recumbent classics.

The best evidence of this can be found now, as Peter leaves the task of production behind. Talented people are ready to continue development of each of his models. This transition marks an excellent opportunity to review the history of Peter Ross and his bicycles.

From the Beginning

Many people will tell you that much of what we do as adults is rooted in the events and impressions of our childhood. Peter's story would seem to confirm this point of view.

He was born on the 5th of September 1929 at Saffron Walden in the County of Essex, England. According to local legend, the Saffron Walden monster was a Cockatrice, a wicked bird hatched from a cock's egg by a toad, with the power to kill with its glance. Fortunately, a clever knight using mirrors disposed of the Cockatrice before Peter's arrival. Peter powered his first HPV, a four-wheeled pedal car, on the paths around his family's house without fear of the fowl's fatal glance.

A move to Battersea, near London, in the middle of the 1930's placed his family's dwelling opposite a quiet park, which he prowled on a delta trike. "I received my first bike when I was about age 10," recounts Peter. "I used this a lot at my two boarding schools, mainly to visit aerodromes to see the many aircraft engaged in the war. By the time I was 14, I would think nothing of a round trip of 50 miles, plus aircraft spotting on arrival." The airplanes offered an enchanting thrill amidst the deprivation and devastation of World War II.

The excitement of aviation struck a chord with Peter, and in 1946, he became an engineering apprentice at the de Havilland Aeronautical Technical School. His avionics career included time with The Royal Air Force National Service, British European Airways Engineering and 20 years at British Airways Ground Operations. He retired from British Airways in 1987.

From 1953 to 1959, Peter used his spare time to serve as a design assistant to Colin Chapman of Lotus racing cars, from the MK VIII to the Lotus Fifteen. He even raced his own Lotus Eleven for a couple of years.

Throughout the years, cycling remained a part of Peter's life. "I have always used a bike for local short journeys to the shops, and for many years commuted by bike to work at London Heathrow Airport, a 12-mile round trip," Peter reports.

Inspiration

If not for the greed (or shrewd business strategy?) of a handful of oil producing countries, Peter Ross may have simply become your typical retired person, vacationing and puttering in the garden. Instead, during the 1970's oil crisis, he began to think there should be an alternative to roadways crowded with single-occupant, gas-slurping cars.

After investigating a variety of current human powered vehicle designs, Peter decided to build one himself.

In April of 1983, Peter visited an HPV day organized by Richard Ballentine, of *Richard's Ultimate Bicycle Book* fame, with his first recumbent tricycle in tow. Peter's first recumbent was a trike

because, at the time, he "could not see a practical way to build a streamlined two-wheeler."

The first Trice followed soon after, built with a space frame chassis and fairing. Next, in response to a lack of commercially built recumbents, Peter decided to go into production. He selected the name Crystal Engineering for his company because, he says, "Crystal is pronounced the same in English, French, Italian and German, and these were the markets I intended to reach."

With a backbone frame, the 1986 Trice came with a set of square tubes, a 20" rear wheel and 16" front wheels. The seat was fiberglass with lumbar support.

Peter kept a database of every inquiry he had received during his production start up. In 1987, he used this mailing list to conduct market research. The responses to his questionnaire led to changes in the Trice design. Wheel diameters increased, frame weight reduced and sales climbed. "The Trice has been my best selling model in both the UK and US," notes Peter.

For a while in the early 1990's, the Trice was made under license in the US. "The idea was to have the Trice built as far as possible in the USA to avoid the cost of shipping from England," says Peter. The main drawback of the arrangement was that the US Trice dealer was unable to devote the time required to keep his version of the trike up-to-date.

Fueled by the encouragement of Trice sales and feedback from his survey, Peter's next action was to introduce a two-wheeled recumbent. In 1989, production of the Speed Ross began. Using many common parts with the Trice, the new two-wheeler came with a mesh seat for a cooling airflow. As its name implies, the Speed Ross was designed to be fast. The Speed Ross frame is elegantly simple. Lacking any curves or bends, it moves in a straight line from the rear wheel dropouts to the bottom bracket. The bottom bracket rises several inches above the seat bottom. This approach creates a lightweight recumbent with an aerodynamic riding position. However, it also creates a riding position that will not appeal to individuals prone to foot numbness.

To achieve even higher speeds, the Festina lowracer was introduced five years later. Peter notes, "I think when you build something as low as the Festina, it will be fast." Riders report the Festina to be one of the best handling, most comfortable lowracers. Unlike the hard seat found on the average lowracer, the Festina uses the same comfortable, mesh seat as the rest of the Ross stable.

In 1996, Peter's focus shifted from speed to practical transportation, and the Gem was born. The Gem is a sociable, two-seat recumbent bicycle. Sitting side-to-side, the riders are able to converse more easily than any tandem. In addition, each rider has an independent drive to the rear wheels, allowing the riders to maintain their preferred level of effort. There is also room for cargo or kids in the rear, the long-term goal being to place a Leitra-like enclosure around the Gem. According to Peter, "I am probably most proud of the Gem, which has the potential to replace the family second car." So far, only a limited number of Gems have been produced, but plans are being laid to change this.

In addition to his production models, Peter has many designs that have never been commercially produced. He believes his most ambitious design is a rear steer, FWD trike with the seat 1/2" off the ground. "My cycle designs came as fulfillment of my original and thwarted desire to design airplanes," notes Peter. "I find it much more interesting to design something to be as light as possible and go fast, rather than fit an enormous engine."

One important design principle has been to make affordable bikes. In this regard, Peter says, "Colin Chapman's influence on the design of my bikes has been considerable, in particular the importance of using, or adapting, an existing component, instead of starting with a blank sheet of paper."

Passing the Torch

At the start of 1999, Peter turned the future of the Trice over to Inspired Cycle Engineering (www.ice.hpv.co.uk). New variations on the Trice theme, including a tandem, have sprouted up at an almost magical rate. The name of ICE's workshop location, Tregonigge Industrial Estate, does sound as if Harry Potter could be working there, but more likely, we are seeing the combined efforts of Chris Parker and Neil Selwood.

In 1992, the Speed Ross temporarily landed in the hands of Orbit Cycles; a Sheffield, England based bicycle manufacturer. They ended up producing an arguably inferior recumbent called the Crystal. Peter took back production of the Speed Ross in 1995.

He is now happy to report that production rights for the Speed Ross have been purchased by Kinetics of Scotland (www.kinetics-online.co.uk). Ben Cooper, at the helm of Kinetics, is the innovative

creator of the Trailerbent, a recumbent trailer bike for children. In addition to the Speed Ross, he plans to introduce a single speed child's version with a 20" rear wheel and 16" front. Scottish production should be up and running later this year.

Peter also reports that a company is being formed to take over production of the Gem, and rights to produce the Festina may be purchased by a US firm.

What future does Peter foresee for recumbents in general? "I see the two-wheel recumbent market as gradually merging with the mainstream, but I think recumbent trikes will remain a niche market for relatively wealthy enthusiasts," he states.

In any case, Peter's goal is to balance the next twenty years between flying above neighboring rooftops and fields in his two-seat motorized glider and traveling. Of course, he will still be running errands in the hilly Cornwall countryside on one of his recumbents. ♦

For more information, visit Peter's website: www.cycling.uk.com/bikeshop/ross.htm.



Peter Ross (left) and Chris Parker of ICE (right) ride the GEM

About the author: Tim Noe has been an avid recumbent cyclist since 1993 and is a former bike shop owner. His collection of recumbents includes a Trice XL narrow-track, Speed Ross, Culty, Velocity 2, Saber, V-Rex, M5 Shockproof, Screamer and, most recently, MIC WIC Delta.

The Ultimate Touring Trike!

History

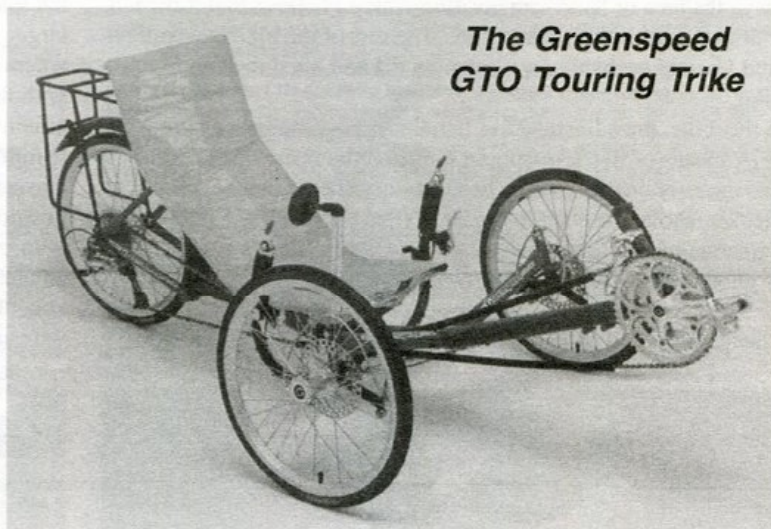
The first Greenspeed Touring Trike, GRT 20260001, was built in 1990, and was used on the 1990 Great Victorian Bike Ride, from Bairnsdale to Melbourne. Orders followed immediately, and in 1993/4 Val Wright and Eric Butcher rode their Greenspeed GTS trikes right around Australia. In 1997/8 Jeff McLean rode his early model (1991, #10) GRT trike from China, through Asia and Europe to London, U.K. Our GTR Touring Trike was selected as "Best Trike" by Recumbent Cyclist News in 1996, 1997, 1998, 1999, 2000, and 2001.

Development

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Easy Racer Tour Easy vs. RANS V2: A Comparison

Thom Remington
remingtf@concentric.net

If you read the 'bent cycling press, you're likely to get the impression that the Easy Racers line Tour Easy, Gold Rush, and TiRush comprises the pinnacle of LWB ASS bikes. Gardner Martin's machines have achieved a well-deserved reputation as being fast, fun, and comfortable, which is what riding a recumbent is all about.

When you're at the top, you're bound to encounter competitors who want to join you at the top, or even displace you. With the Velocity2, Rans has mounted just such an attempt. How close did they come? Read on!

When we get on a bicycle, we have three kinds of contact points: seat, pedals, and handlebars. Serious cyclists of all stripes are generally looking for speed and control; recumbent riders add a desire for comfort into the mixture. We want our comfort along with speed and the ability to control the bike.

The Velocity2 itself is a fine-looking machine. As is true with Rans products in general, the workmanship is excellent. The components on this bike are first-rate. The seat? It's a Rans seat. That says it all.

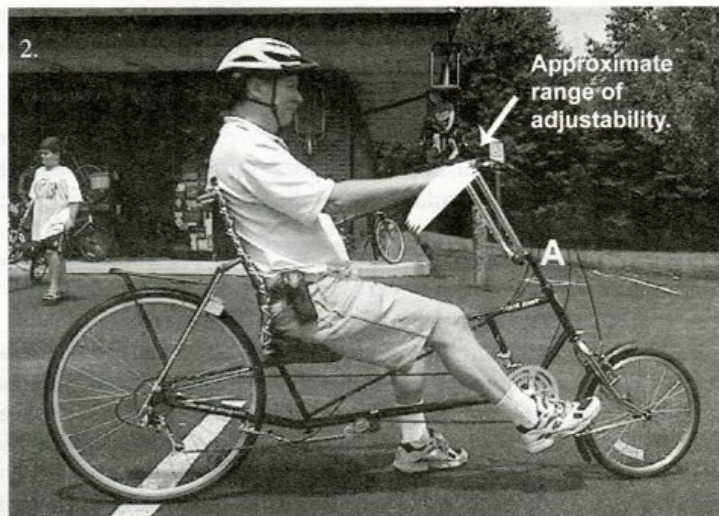
On the road, it's responsive and very fast. The handling is superb, the ride is smooth. In short, they did almost everything right.

For me, however, there was one fly in the ointment, and that has to do with hand/arm position. When I ride, hand/arm position is crucial both to comfort and control. If I weren't interested in comfort, I'd be riding a wedgie; if I weren't interested in control, I'd probably be dead by now. Being alive (at least I was the last time I checked), and not having ridden a wedgie in more than two years, we can safely assume that I'm interested in comfort and control. Much of my riding is my commuting; I ride in heavy traffic. Control is essential.

It is in the area of hand/arm position where I believe that Rans fell short of the mark with the Velocity2. The rest of the bike is wonderful, and I would probably own one now if I had liked the hand/arm position.

On this bike, the adjustment of handlebar position is accommodated by means of two telescoping joints on the riser. One is at the base of the riser, just above the headset; the other is just below the handlebars, above the bend in the riser. (See photo #1: the telescoping adjustment points are labeled "A" and "B.") There's a white area in the photo that shows the approximate range within which the handlebars can be adjusted.

In the photo, I had adjusted the bars to be as low and as close to

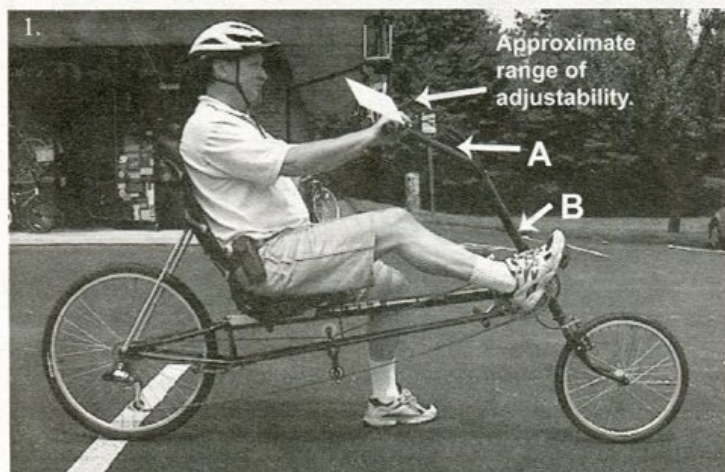


me as I could make them. I felt as though I was reaching out and up to hang onto the bars. As well as this bike handles, the placement of the bars got in the way; I didn't feel as much in control as I'd like to be. I couldn't keep my upper arms at my sides, and reaching out made it feel less stable, less surely in control.

I believe that the handlebar position was designed the way it is to avoid any "tiller" effect, any side-to-side motion of the handlebars. They avoided tiller effect, but they put the bars out of my comfort zone in the process.

In photo #2, we see a Tour Easy. The handlebars are in essentially the same position for the rider, but the range of adjustment is much larger. Easy also allow adjustment by swinging the yoke up or down where it clamps in the top of the stem. Photo #3 shows the Tour Easy with the handlebars adjusted where I like them. I get some tiller effect, but my elbows are at my sides and my forearms are roughly parallel to the ground. As I sit here and type, in my ergonomically correct working posture, my hands and arms are in virtually the same position.

In my view, the crucial element that's missing on the V2 is adjustability. The handlebars are limited to a fairly small adjustment zone. Being a Rans fan (the LWB replaces a Rans Rocket, and my wife and I ride a Rans Screamer), I had high hopes for the V2.



However, when you spend \$2,000 or more for a bicycle, you expect it to be exactly what you want and need or at least as close to being exactly what you need as is possible.

Letters printed in RCN have included several from folks decrying the change in the Rans Stratus from the old "C" handlebars with built-in partial fairing to the new T bars. The old handlebars would probably have made the V2 just what I wanted. They could be adjusted in just the same way as the TE bars.

Finally, an unabashed plug for my 'bent dealer. A really good bicycle shop is something that should be treasured; I'm lucky to live within only a two-hour drive of one of the finest, Mt. Airy Bicycles. Larry Black, owner of Mt. Airy, showed the patience of a saint as I went through my recumbent search. ♦

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- ▲AZ **Phoenix Area:** BRAG Bent Riders of Arizona: Recumbent Central
- ▲AZ **Tucson Area:** Bruce Tucker ☎ 520-299-7146 BentOne@aol.com.
- ▲AZ **SW AZ Recumbent Riders Montage (SWARRM)** Meets in Sonoita, AZ, once/mo. Robert Miller: n4nrk@theriver.com William Sykes: wdsykes@juno.com
- ▲CA **Fresno Recumbent Society:** Bill Bruce, 923 W Santa Ana, Fresno, CA 93705 ☎ 559-225-3551, bilbyke@psnw.com
- ▲CA **LA Area:** 3rd Sun/Mo 10 am @Burton Chace Park, Mindanao Wy, Marina Del Rey. Chris Broome ☎ 310-823-2464, cbroome@usa.net
- ▲CA **San Dimas:** Larry Scheetz: lscheetz@access1.net and Ed O'Donnell: eodonnell@earthlink.net
- ▲CA **San Luis Obispo:** Carole Leone ☎ 805-466-4111, translo@fix.net
- ▲CA **San Diego:** Last Sat/Mo Mission Bay Visitors Center Bill Volk, bvolk@inetworld.net
- ▲CA **San Diego:** Easy Rider Recumbent Club—Rides Tues, Thurs and 2nd Sat. Richard Parks ☎ 619-235-0854, r2parks@earthlink.net or Jim Rudolph ☎ 760-941-0367; bentcycler@aol.com; <http://home.earthlink.net/~r2parks>
- ▲CA **Sacramento:** Rides along the American River. 1st Sat/Mo. Dave ☎ 916-483-4435 or SacBent@aol.com
- ▲CO **Boulder:** Front Range Recumbent Riders, 3rd Sun/mo. Greg Poole, gpoole@att.net, ☎ 303-402-1248
- ▲CT **Yankee Pedalers:** 2nd Sun/Mo @ 9am. Dave Tipping ☎ 203-484-2937 or nz1j@juno.com
- ▲GA **Atlanta Recumbent Cyclist:** 1st & 3rd Sat starting in May. Ride leaves from the Busch Brewery in Cartersville at 9:00 am. the first and third Saturday of the month beginning in May. Contact: Ben Watters contact BPWatters21@aol.com. or ☎ 770 578-9380.
- ▲HI **Hawaii:** The Hawaii Rainbow Riders meet every Sunday for a ride on the island of Oahu. Extra bents available for visitors. Contact Lynn Miller millerL004@hawaii.rr.com 808-456-5707 98-1382 Hoonouua St. Pearl City, HI 96782
- ▲IA **Des Moines:** Team Romp (R'bents out Mega Pedaling) meets Sat. 9am Apr.-Oct. Botanical Center, 909 East River Dr., Lori Leporte ☎ 515-287-5556 or greenbikespike@home.com
- ▲IL **Chicagoland R'bent Riders,** www.mcs.net/~gkpsol, Schedule & locations www.mcs.net/~gkpsol/ridingschedule.html, Ed Gin ☎ 773-237-6624 rides year round.
- ▲IL **Champaign/Bloomington/Peoria:** Central Ill. R'bent Community (CIRC), <http://my.ispc.hannel.com/~billw1/circ1n.html>, billw1@ispcchannel.com, Bill Webster. ☎ 309-274-4234
- ▲IN **Ft Wayne:** Wendell Brane ☎ 219-749-5610 or WBrane@Ctinet.com (51)
- ▲KS **Lawrence:** John Dreiling, Box 1342, 66044-8342. ☎ 785-832-9757 (53)
- ▲KY **Louisville's:** Relaxed Recumbent Rider's Group. Rides 2nd Sun & last Sat.; Mike Reilly ☎ 502-491-0328 or <http://pages.prodigy.net/bikeolounge>
- ▲MA **North Shore + SE NH:** 2nd Sat. Recumbent Riders Bob Hicks ☎ 978-774-0906
- ▲MA **Boston:** 2nd Sat/Mo 10am at Herter Park public theater, 1175 Soldiers Field Rd., George Reynolds ☎ 603-432-7327
- ▲MD **Washington DC: W.H.I.R.L.** 8am Sat (9am-winter) @Viers Mill Rec Center. www.recumbents.com/whirl
- ▲ME **Portland** area call Michael 781-637 races this fall sprints and time trial.
- ▲MI **MHPVA:** Wally Kiehler 533 Hawthorne, Grosse Pt. Woods, MI 48236 or Kiehler@aol.com, www.lmb.org/mhpva
- ▲MI **SE: Wolverbents Michigan SE (southeast):** Wolver-Bents monthly rides, 2nd and 3rd Saturday (Mar-Nov). www.lmb.org/wolbents, Bob Krzewinski, wolverbob@cs.com, ☎ 734/487-9058.
- ▲MN **Minneapolis: MnHPV Minnesota HPV Assoc.** 2nd Wed @ 7pm Lk. Nokomis Com. Ctr. Ride 6pm - Mar.-Oct. Mark Stonich ☎ 612-824-2372
- ▲MO **St Louis: SLABS St. Louis Area R'bent Society,** John Werner ☎ 618-931-0557 or bentrus@usa.net
- ▲NC **North Carolina R'Bent Riders Assoc.** getbent@jahoop.com
- ▲NJ **NY/NJ/PA/CT MARS Metro Area R'bent Society:** www.recumbents.com/mars
- ▲NY **Hudson Valley:** looking to start a rider group. Contact Justin Horowitz ☎ 845-658-3401 or dandjhorowitz@cs.com
- ▲NY **Long Island:** Looking to start rider group. Contact Artie Johnsen ☎ 516-325-3516
- ▲NY **Rochester:** R.A.R.E. Weekly rides. Hank Walck ☎ 716-217-9450/Michael Berisson ☎ 716/461-5084/Dave Larson ☎ 716-235-4116 /Brian Managan ☎ 716-872-1751
- ▲NY **Western:** www.bluemoon.net/~padelbra/the_recumbenters.htm or Paul Bigelow ☎ 716-896-1626; Ed Weiss ☎ 716-634-9660
- ▲OR **Portland/Vancouver (WA): PURR Portland United Recumbent Rides,** 1st & 3rd Sat., 9am, various locations, Connie McAyeal ☎ 503-647-2438 or oh:yesbent@hotmail.com; Jeff Wills ☎ 360-254-3736 or jwills@pacifier.com
- ▲PA **Philadelphia Area:** Contact: ☎ 1-888-998-7010
- ▲TX **North:** 4th Sat/Mo www.rbent.org
- ▲TX **Houston:** 2nd Sun. @ Katy HS. Pat ☎ 281-347-3627 (D)
- ▲TX **Refugio (South):** R-BEST R'bent Bicycle Enthusiasts of South Texas. Bob Dillard ☎ 361-526-2977, wildlife@writeame.com, <http://pages.prodigy.net/bobexotic>
- ▲WA **Snoho Co. AARC:** (All R'bent Riders Club) 3rd Sat/Mo Harvey Field in Snoho City. ☎ 206/632-6955 or bradrick@serv.net ☎ 206-632-6955
- ▲WA **SE: WRTW?** Two Wheeled, Recumbent Riding Trombone Teachers of Walla Walla. Bill Gilbert VonBruno@bmi.net
- ▲WA **SeaWheels (bike Builders):** Subscribe at www.bikelist.org/mailman/listinfo/seawheels or call Nick Hein ☎ 425-255-7560.
- ▲WI **Milwaukee:** SE Wisconsin Recumbenters www.recumbenters.com Tony Hunter ☎ 414-475-9081 Rides generally start in the suburban Milwaukee area.
- ▲USA **Human Powered Vehicle Association:** Contact: www.hpv.org mail to: president@ihpva.org ☎ 877-333-1029 (toll free)
- ▲CAN **CANADA—Calgary R'Bent Rider Group:** Sol Candel ☎ 403-250-7588 or mail@moviepostershop.com
- ▲CAN **CANADA—Toronto:** HPVs of So. Ontario (HPVSO) www.hpv.on.ca, Bruce Buttimore, bruceb@inforamp.net ☎ 416-449-6731 Ext. 289 6pm to 8am EST

▲Recumbent Shop Rider Groups
Several recumbent shops support rider groups. Check with your RCN advertising local recumbent specialist to help you find your local recumbent riders.

Do you have a rider group or are you scheduling a recumbent event? Non-commercial listings are free of charge—please send to: bob@recumbencyclistnews.com.

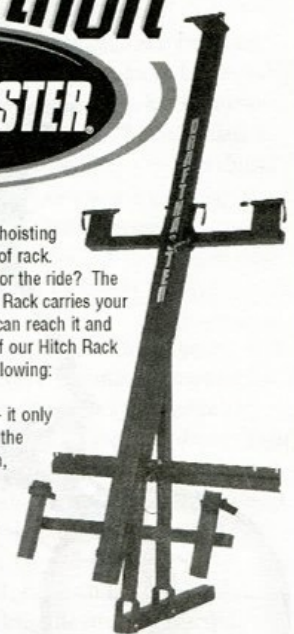
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The Final Days of the Trek R200 SWB

by Bob Bryant



From the start, Trek seems to have had a difficult time dealing with their entry into the world of recumbent bicycles.

Their interest in recumbents had been rumored for years prior to the official unveiling of the R200 SWB in 1998 at the Interbike tradeshow (1999 model).

This past June, we have seen what appears to be the Trek's exit from the world of recumbent bicycles. A situation that, while offering 160 customers a half price recumbent, it has created problems for customers, dealers, Trek's reputation and the future of recumbents (as mainstream manufacturers go).

In mid June, Trek sold approximately 160 bikes, what is rumored to be the last of the R200 recumbents, to Dave Doty of Valley Bicycles in Crawfordsville, Indiana. Valley priced them at the closeout price of \$600—which is below dealer cost. This was quite the deal, as the original retail price was \$1650. News of the blowout price spread like wildfire across the Internet.

As of late, the R200 had become a bit passe. Some didn't even know it was still available, though it seemed to be selling best to loyal Trek customers going on the name brand recognition. At the Trekcent yahoo group, much of the bandwidth was spent discussing R200 problems or the rumored demise of the bike (dating back to last fall). That is until 160 were dumped onto the market at 36% of their suggested retail price. This type of product dumping is quite common in the wedge world—though I

can't recall seeing it happen in the 15 years that I have been around recumbent bicycles. This maybe Trek's final insult to the recumbent world.

From the best that we can tell, upset dealers started to call Trek and complain about this mail-order Internet blowout. Perhaps they still had bikes in stock at the old price, or missed their chance to buy the bikes. The way in which the bikes were shipped apparently violates the dealer agreement. Each day on the alt.rec.bicycle.recumbent newsgroup, there was more and different news in the blowout saga. Eventually all of the bike sold by Valley Bicycles.

TREK R200—A QUICK HISTORY

In the mid-1990's we heard ongoing rumors that Trek was considering a recumbent. Trek mostly denied the rumors.

Trek had an engineer by the name of Bob Reed who was a recumbent enthusiast and he pioneered the project. Unfortunately, Bob died unexpectedly in a car crash. The project was taken over by Trek's Brad Wagner, then another engineer who since has left the company, and then later by Jeff Small. We had cordial dealings with the latter three, however, our test experience with Trek left a lot to be desired.

A year (or two) before Trek introduced the bike they showed a prototype at a recumbent rally in the Midwest. The Trek had lots of RANS-like SWB ASS features and an actual RANS seat. The main criticism seemed to

be the bike height. Rather than go back to the drawing board, Trek apparently decided to nix the front suspension to lower the bike (though it is still a tall SWB and still has no front suspension).

WHY THE TREK R200 DID NOT SUCCEED

The bike wasn't all bad. In fact, it had the possibility to be one of the better American-style SWB ASS bikes. It had the very comfy RANS seat, some say a better slider mechanism that RANS'. The oversize aluminum frame was very good quality, and the components were fine. The biggest problems with the bike are:

1. The mid-drive drivetrain/chain management: Trek obviously didn't count on this system being so difficult to make workable (I recall a distinctly cocky attitude about this system when it was unveiled).
2. Lack of front suspension: Most every other SWB gets suspension in the front end first. This makes sense, and is the way that both Vision and RANS do it.
3. Very lame marketing, dealer support/training and PR.

There was a question from the beginning as to whether Trek could handle dealing with the recumbent niche. Apparently, they could not. Relying on their dealer's ability to learn to sell this bike on their own was a mistake. Trek has not done well with niche products in the past. Both their tandem upright and electric bike forays were problematic. Trek never did market the R200 with any zest. We continually heard negative comments from both Trek dealers (who didn't sell the bike) and from Trek reps.

ARE THEY REALLY FINISHED!?

We submitted this question to Trek (again) on July 2, 2001 and did not receive an answer other than a form letter stating that they had received our email, and that was it.

The rumor of the demise of Trek's recumbent project has been floating around since last fall. We heard it from a few different dealers who had heard it from their Trek reps. Bryan Ball of Bentrideronline.com had to say in his November editorial, "I guess we all new that it was too good to be true. The first major manufacturer to enter the recumbent market is now the first to leave it. The 2001 Trek R200's sitting on your local dealer's floor are actually left over 2000's. When they're history, so is Trek's little three-year venture into the wide world

of recumbency. The powers-that-be at Trek have decreed that recumbents are just not worth their time." Bryan took some flack for his editorial and Trek continued to deny the rumor.

We did find the following comment at a Trek dealers website, "Trek has recently discontinued the R200... 07/02/01 --Mike--," found at: www.chainreactionbicycles.com/recumbentride.htm.

Within days of the 160 Treks being sold, they started popping up for sale on eBay and the Internet recumbent list.

THE FUTURE

Suffice to say that we probably won't see an onslaught of wedgie builders coming out with recumbents anytime soon. Apparently Trek has left, and ReBike (Huffy) quietly ceased production a while back (after a unsuccessful attempt to sell recumbents at Sears). Many in the wedgie world are writing off recumbents in favor of "Comfort Bikes." You know, those stylish cruisers with very upright positions. We have heard that Vision is working on an upright "Comfort Bike" for 2002. How do you market those, along with recumbents? I guess we'll soon find out.

The Cannondale recumbent rumor surfaced again this summer. We received one tip that a fat aluminum tubed, Headshock equipped CLWB and a delta trike prototype exist, though no official word has come from Cannondale. A Cannondale recumbent rumor is kind of like a Bigfoot sighting these days.

In previous weeks the buzz had been from Recumbent Barn customers who had received notices of the barn's bankruptcy in the mail. Apparently, anyone with an outstanding parts or bike order was listed as a creditor. The Blackbent was a horrendous SWB USS based upon the original Hypercycle. S & B built the first Blackbents, and then Recumbent Barn cut them loose to do it their own way (BB III's were the worst).

We may have lost Earthcycles as well. We lost contact with them several months ago. Also according to the US distributor, the Peugeot recumbent is no longer available.

The recumbent business got a little smaller this year. The upside to these negative situations is that there is more opportunity for honest small craftsman to hang out their shingles and sell some bikes. It seems like there are some particularly good opportunities for LWB ASS, LWB USS and trike manufacturers.

If this isn't all crazy enough, one of my sources still tells me that Trek may have yet another recumbent coming down the pike. After this debacle, let's hope not.

PAST & PRESENT R200 PROBLEMS

Many of the Treks being sold do not have the upgrades that they will require to make the drivetrain work correctly. Here is a list of

the R200 problems that we know of:

1. Chain: The early bikes had a very poor quality chain. We believe this may have been corrected. Owners should make sure they have a brand name chain on their bikes.
2. Mid-drive: The cassette floats (moves sideways possibly because the axle was cut too long). There is a fix available in an "as needed" basis from Trek dealers. From the best that we can tell, Valley sale Treks did not have this fix completed. "I tried to go directly to Trek and they gave me the run-around," said one Trek owner. Another said, "the drivetrain issues are serious, I must admit that I haven't had a chain jump since I installed the fix. Previously, I had a chain jump at least once on every extended ride. I'm sure it's just a matter of time before the front chainring loses it, as that's not been fixed in any way." Yet another report stated, "I received their 'fix' it's two spoke guards on either side of the innermost cog. It works about 90% of the time, but with certain gear combinations, the chain still falls off if you hit a bump." This is a real problem, there are countless reports about it, though some bikes seem to be okay. Another comment from the Trekcent Yahoo group said, "I think it is time that R200 owners who have drivetrain concerns work together to bring about a resolution. We can go to the Consumer Products Safety Commission."
3. Chain falls off the front chain idler: Owners affected by this seem to be adding something to the outside of the idler to keep the chain from falling off. From the best that we can surmise, Trek has not come out with a fix for this.
4. Front chain may derails when going over a bump: A chainguard needs to be placed on both the inside and outside of the single chainring front crankset (see BikeE crank).
5. Lack of spare parts: This bike has a special proprietary mid-drive cassette (Sunrace) and shifter (SRAM?). Wheel & Sprocket has set up some R200's with drop bars and Shimano bar-con bar end shifters with the mid-drive shifting in friction mode. We're not sure what to do about replacing mid-drive cassettes.
6. Seat Problems: Certain R200s may suffer missing parts, premature seat mesh and cover wear, etc. The warranty service on the Trek seats is being handled by RANS (according to Trek). It's funny, I recall making a comment to a Trek engineer about the RANS seat. His response was, "How did you know?" Somebody had removed the RANS logo from the Interbike show bikes.
7. Folding ASS: Unit folds forward very easily. I read this on the Trekcent list, though did not experience this.
8. Back pedaling problems: It is possible that when back pedaling the chain will fall off a cog and lock up the drive train.
9. Kickstand: none available.
10. Rack availability: a proprietary rack is/

was available (but for how long)?

Note A: Harry Wozniak at Wheel & Sprocket says they replace the chains, do the mid-drive fix and add the front chainguard.

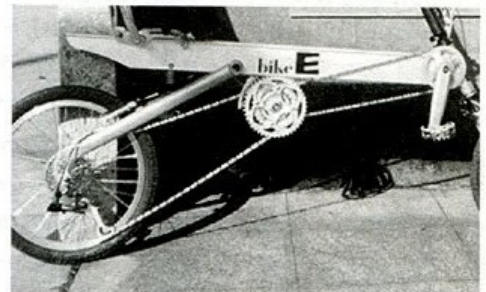
Note B: The owner comments came from the Trekcent mailing list at Yahoo.

Not all Trek R200 owners are experiencing the problems, and there have been many happy reports from new Trek R200 owners. Dick Ryan had this to say, "I don't think it will be as much of a problem as you think, there have already been some postings from people who bought the bike and are happy with it. I think that most of the people who are buying them are probably pretty knowledgeable."

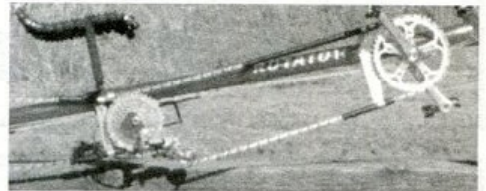
If the proprietary replacement parts disappear, a talented recumbent mechanic should be able to find a way to make the bike work even without the mid-drive. Your options are:

1. Replace mid-drive with a 3x7 rear wheel.
2. Make it an 8-speed or manual shift (no front derailleur) 16 or 24 speed.
3. Go to bar-end, bar-con friction mid-drive shifting and build your own mid-drive replacement cassette from cassette parts (We recommend doing this ASAP).
4. Build a Rohloff 14-speed hub wheel
5. Install a Schlumpf 2-speed BB.

Unsuspecting Trek and recumbent dealers/mechanics may be called upon to make the necessary upgrades to the Trek recumbent.



The BikeE RX front derailleur shifted mid-drive with BikeE custom crankset shifts great



Rotator's rear derailleur shifted mid-drive works well and continues to improve

ARE ALL MID-DRIVES BAD?

Absolutely not. Steve Delaire at Rotator has been building them for years. He's working on a sealed bearing 8x8 mid-drive set up for 2002. The current very refined Rotator mid-drives are 6x8 gearing. Like the Trek, Rotator has a rear derailleur to shift the mid-drive cassette cogs. The BikeE RX, FX and E2 all use a mid-drive gearing utilizing a custom crankset amidships, shifted by a front derailleur. Our latest RX shifts exceptionally well.

DICK RYAN COMMENTS

Trek sure didn't seem to give the R200 recumbent any support. When I attended the Interbike trade show in 1998, Trek had one of the bikes leaning against a wall with no information displayed and the sales people knew nothing about the bike.

When one of the local Trek dealers in the Boston area got one of the bikes I went and test rode it. The bike was hidden away in a corner and was already discounted \$200. The sales person knew nothing about the bike. Another local shop has had one sitting on the floor for 2 years. I also called a number of other Trek dealers in the area, when asked about the bike the usual response was usually something like "Oh, no one is interested in those things." I think that Trek apparently did very little to educate their dealers about the bike. But perhaps they found that there was so little interest in the bike from most of their dealers that it wouldn't be worth the effort.

Even after twenty years of effort on the part of recumbent manufacturers most bike shops still want nothing to do with them. Some of you may have read my rants in the past about the influence of the racer types on the bike industry, I'll stand by my opinion that the .03% of cyclists who race bikes have a negative influence on the bike industry. A large percentage of them work in bike shops and have a negative view on recumbents. Over the years we had a lot of shop owners who wanted to sell our bikes but found that their employees wanted nothing to do with them. I doubt that after Trek's experience that we will see another effort by a major manufacturer to market a recumbent. Also, although the bike shops have had a couple of decent years, the manufacturing end of the industry is in free fall. It's starting to look like we will be left with 3 or 4 major brands and a few smaller companies.

The above comments aside, on the plus side of things recumbents are seeing a slow but steady growth. One of the results of the lack of interest from the upright bike shops is the opening of new shops that specialize in recumbents. I think that the future for recumbents is very good. Good enough that I might get back into the business, (after my own private business fiasco which put me out of business).

Dick Ryan, Ryan Recumbents

(Vanguard LWB USS & Duplex LWB USS tandem) ♦

Trek R200 Road Test Note: Our Trek road test came out in RCN#55. It included comments by owners and a counterpoint by a mystery recumbent dealer going under the name of "Bentan Pist." If you are interested in a reprint of our story, the cost is \$4, to: RCN, PO Box 2048, Port Townsend, WA 98368


Slipping Rans Seat

I am writing in response to John Riley and his folding RANS Wave article in issue #61 of RCN. John mentioned that he had a problem with a slipping RANS seat. I have had the same problem. I would like to think I have come up with an elegant solution to the problem. The frame "rail" is attached with two screws. The rear screw sits right under my seat preventing it from sitting tight on the rail. I removed that screw. I then noted where the rear of my seat sits on the rail. At that point I put in a new screw. This screw is that type used on many bikes to hold on water bottles. It has an allen head and the head is about 3/16 inch high. The seat now butts up against the screw and can't go any further to the rear. One screw does the job. Granted this means that it is only good for one seat position but that covers me just fine.

Dick Anderson

ander03@email.msn.com

Arizona Ride

You last mag was terrific. The only problem with the magazine is that it is not long enough. Either that or I read too quickly. Anyway, keep up the good work....

Recently, I participated in a great ride in Tucson, AZ, a little up the road from my normal haunts of Sierra Vista, near Fort Huachuca. We arrived early and stretched and warmed up a little prior to 0630 as the ride starts at 0700. I was riding with a friend of mine who rides a very nice upright bike. I have no idea what kind of bike it is, he usually keeps up so I figure it works for him. There were many bikes there, including a very slick handcycle powered by a monster of an engine. His biceps were almost as large as my legs. We took a place at the rear of the pack, I have a problem when I am surrounded by bikes, I worry a lot about someone taking my large chainring in the leg or even worse, having one of them fall on me. I was riding my Turner T-Lite 700/20 wheels, with tailbox. I have been riding a lot lately—mostly hills, more hills and even more hills. I figured I was ready for this. At 0700 give or take a second or two they started the ride. It took me almost ten minutes to get to the start line, and then we were off. Too bad that ten minutes was not reflected in my time at the end...but Oh....well. The handcycle pilot had maneuvered himself up towards the front right behind the platinum riders. I saw him crest the hill almost a half mile away before I even hit the start line. That was the last time I saw him so close. Like I said, he was a monster. My buddy and I had decided due to some intestinal difficulties that we were going to take it easy this year. That lasted till the base of Ajo Hill. Look up Ajo and you will see it means High.

Yessirree. I had to stop twice up this hill due to further intestinal difficulties, but by the time I made it up the hill, about the eight mile point, I was feeling better. I was ahead of my buddy by about ten minutes at this point. We were in contact using FRS radios. He

yelled at me when I told him I was on top of the hill, and told me to go on without him, as his stomach was acting up again. I started to argue, but decided to go ahead, and so from that point on, I gave her the gun. I started reeling in all the riders who passed me coming up the hill, including a couple of brightly clad fellows who had wryly commented as they passed me that this was the reason they did not ride recumbents. I did not see them again on the ride until 45 minutes after I finished. I hit the first sag stop with an empty Camelback. I filled up, utilized the facilities for good luck and took off again, feeling pretty good. I continued to reel in bicycles until the back half of the ride.

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A long ten miler across the backside of the mountains where the wind was hitting all and sundry in the face. I didn't gain on anyone, but neither did anyone gain on me. I stopped at all the sag stops and attempted to contact my partner, but other than some static I didn't get anything. Hitting the turn towards home at the 40 mile mark (this was a metric century) I also hit the mountains again. I managed to pass a few more riders going up the hill until I too was down to 5 mph up the last steepest stretch. At the top were some people cheering us on, and that helped me climb the last few hundred yards and was able to catch my breath on the short down hill before another hill less steep, but longer. This continued till the next and final for me sag stop. I had filled my Camelback up every stop, and this time was no exception, but this stop had ice cold water and water melons. I drank a couple of glasses of water and ate a couple of slices of water melon and took off on the final towards the finish. There were some characters on this ride, and a couple of the nicest that I met were an older gentleman about 70 and his wife about 55 or so. They were super fit, and managed to pass on the hills and I caught them on the flats or nearly flats. Another gentleman, and I call him that only to give him all the benefits of the doubt, had been pacing us as well. He would not talk or even acknowledge our presence, but when passing, would cut back in with no room to spare, and would not move to the right when being passed. The older couple and I had met again and we were riding up a fairly flat road together talking and taking it easy, when the rude dude passed us. The older gentleman was ahead of us and as the rude dude passed, he happened to see someone he knew broke down on the side of the road. He cut in front of our crew, catching the front wheel of the leading rider with his rear wheel. The older gentleman went down.....hard. I managed to stop to keep from running over him, and I move his bike and my bike out of the road, but he wasn't moving. He was conscious, but every time

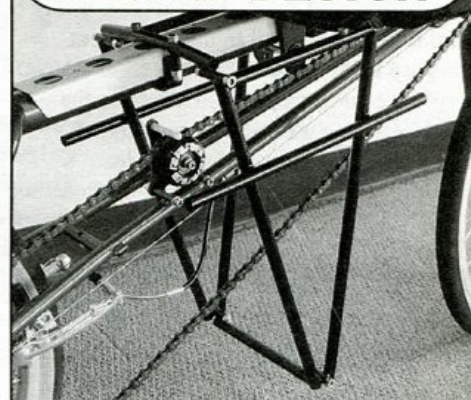
he moved his hip would hurt him very bad, so he was staying put. I got on my bike and rode up the road to the nearest intersection where there were police-man directing traffic. I told them of the problem and they called an ambulance. I went back and waited for the ambulance with them, and left on the ride again. The rude dude did not apologize or even acknowledge his part in the accident. I gave the ride official his number and my account of the accident, and hopefully he was disqualified, but I don't know. Any way, back on the road I continued with no other problems for the rest of the ride, finishing in 3 hrs 49 min. I could have been a contender. The Handcycle dude did the ride in 3 hrs flat. I would have come close, but I was satisfied. I waited for my buddy who showed up about an hour later, and in the meantime I met up again with the couple involved in the accident. He was all stoked up, but the medical folks felt that he was okay. The ride officials gave him a medal even though he did not finish. I did not see the rude dude finish, if he did, so maybe he did get kicked out. Next year I am

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going for the gold, with a new bike now being completed, a sub-30 lb. Turner LWB. I did finish 1st overall in the recumbent category for the metric century. I got a nice certificate and a trophy and a kiss on the cheek from the wife of the gentleman I helped. Over all it was a great ride.

Bob Miller
n4nrk@theriver.com

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Rowingbike tour de France update

Hereby we send you the latest news from the Rowingbiketour de France that is driven now by Derk Thijs on Thys Rowingbikes. Derk has started his Rowingbiketour de France on June 13, an extreme tour over 3500 km and during 21 days. He follows the exact route of the 'real' Tour de France, except where safety doesn't allow it. Sometimes he has to make a small detour to avoid the busy traffic in some cities. The real challenges of the tour are of course never ignored. After a week on the rowingbike and around 1500 kilometers, Derk has coped with rain, cold, wind, bad road surfaces.

The special gearing has proven it's role in the Rowingbiketour. It provides a small enough gear range to climb even the steepest slopes.

The technique is working fine and so is Derk: during the days he gets more and more in the right rhythm. At the end of the day it's

sometimes hard to get him off his bike!

For more information en reports, see:
<http://www.rowingbike.com/english/tourdefr.htm>

Another Slick Solution

Letter from reader Carl Jackson (#62 p9) offers an ingenious albeit complicated solution to a similar problem I had with my backside sliding on a Tour Easy seat. I switched from Lycra to cotton shorts. Problem solved.

Bernie Rosen
triker77@webtv.net

Rans Sliding Seat Fix

I have a solution for correcting the slipping Rans seats. The next time you're out on a ride and see half of a dead tarp strap-sort of a black rubber bungee cord--pick it up. Cut a chunk of it to fit crosswise between the seat base frame and the frame of the bike. Use a flat-blade screwdriver to jam it in there, and you're done. It is easy, free, and uses recycled materials, too!

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Recumbent Heaven

I am writing this in response to your plea for feedback from users of the Euro style of recumbent. My current bike is a German HP Velo Speedmachine. This is one very fine road machine.

My first recumbent, purchased last year, was a Euro style dual 20-inch wheeled SWB. Having never ridden a recumbent before I wanted to use it for riding the UK "End to End" route from Lands End in Cornwall to John O'Groats in Scotland. That first bike was taut and precise and an excellent race machine. It has a low riding position, stiff frame and small wheels. It looks very sexy and goes very fast as long as the tarmac is very smooth but it can be slow over rougher ground and, even with suspension, can give the rider a relatively harsh ride.

The bike taught me something that you don't get to hear much about when people discuss recumbents—bigger wheels go faster.

I had my first suspicions when I found I could hold a steady 27 mph on dead smooth, absolutely flat tarmac. Not for long mind you but pushing hard I saw it on the speedo for long enough to establish it as a bench mark. Later that same day, down a long hill on typical UK tarmac I found that I could only see around 23 mph (yes, downhill). I say "see" but in reality my brain was vibrating so hard against the inside of my skull that I found it hard to see the speedo at all let alone read off the speed accurately. Anyway, it set me thinking about road surfaces and how they seemed (on a small wheeled bike) to affect not only the comfort of the ride but also both the road speed and the amount of effort required to propel the bike along the road.

So, after three months of riding my first recumbent bike I decided to try out my theory on the new HP Velo Speedmachine. I had rejected this on my earlier trial of recumbents because I had found the handling twitchy and difficult. My thinking at this point was to try out a recumbent with a larger back wheel and full suspension to see if I could detect any difference in the performance and ride. So I went back to London and tried out the Speedmachine again.

What can I say that will do it justice? It was amazing. I found that I could pedal faster because I could ride just where I wanted.

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Potholes and bumps didn't matter any more. I could ride along cobbled streets without my vision blurring and my balance failing. What's more, I could even say that I could ride cobbled streets comfortably. I could ride straight at traffic calming bumps without



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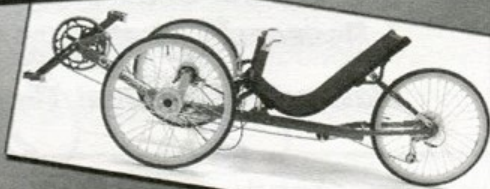
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fear of being catapulted off. To my amazement I found that the previous feeling of "twitchiness" which had put me off originally had disappeared altogether. All of this on a short wheelbase recumbent with high-pressure 20" front wheel, 26" back. Best of all I found that typical average UK tarmac didn't slow me down as much—the suspension front and rear soaks up the bumps and lets you glide over the road. I was totally astonished at how good it felt.

So I bought one. I had an appalling time with the UK dealer and the bike (built up from a framekit) was very poorly assembled but after I got it home and sorted properly I started taking it out for longer rides. I am now able say that this bike is definitely faster over a given course and I cover the same distance with less effort. Some of that is down to the suspension of course and some of it is down to the geometry of the frame and wheelbase etc. But I think the most important ingredient is that 26" rear wheel.

Try one and you'll be amazed. Yes, it is expensive but beautifully designed, made and thought out.

Mike Richards
New Forest, UK

BikeE RX Ride Report

I thought, since I just finished the 320 mile GOBA ride in hilly, southeastern Ohio, and am approaching 800 total miles on my xl BikeE RX that you'd be interested in my observations.

1. My bicycle, a rear suspended only version in the unique silver anodization, performed flawlessly. Other than lubricating the chains and some minor cable stretch, there were zero issues; no flats, no squeaks or creaks, no mechanical snafus. This is my kind of machinery! Heavy duty, stiff, and built to last...
2. It fit on my Rhode Gear bumper rack easily (seat off and rack arm in front of the-swing arm). Therein lies the only caution: when "snapping" the seat off, fortunately at the end of GOBA, I broke one of the four delrin block clamps that grip the seat to the frame. This could have ended my tour. Luckily my local Bike E LBS sold me this \$3 part (and a spare) and told me that BikeE would certainly cover the expense.
3. I experienced no pain, strain, or migraine! By dialing in the seat, (adjusting the seat bottom to back distance, the minimal angle adjustment by relocation the front skewer in the bottom holes, and the distance to the cranks,) I experienced very little recumbutt, even after two/three hours of riding nonstop.
4. Regarding speed: On downhills, I was faster even than the tandem teams. On the flats, I was competitive, averaging about 17-18 mph. On uphill, I was the Tortoise, but, at least the 17" granny gear enabled me to crawl up long, steep Appalachian hills without ever walking. (That was a personal, middle-aged goal of mine).
5. Clipless pedals (I use Bebops) are the way to go. As I crested hills, I was able to "give it the gas" and scoot away from the other 2999 riders behind me! (my son finished an hour ahead of me!)
6. Using White Lightning, I find that I must relube the chains every 150 miles or so.

Normally, when I buy something, I can't help but think of what the next step might be. With the RX, I feel I've arrived at a stopping point: it is the right combination of comfort, speed, durability, and the "weirdness" factor we 'benters enjoy. LWB bents such as the Gold Rush, and tadpole trikes used to intrigue me but, I can now see their limitations, too. I've also lost a lot of adipose; there is a direct correlation between acquiring my BikeE and becoming fit again. Now, about that E2....

Jay Singer
JSingerFam@aol.com

Editor Comments: The RX is a very cool bike. Since the RCN#64 test was printed, we've taken on an RX XXL full suspension as well as an RX XL front suspension test bike. The XL didn't fit me well enough (6' tall/44.5" x-seam) The XXL frame is just 1" longer in wheelbase than the CT/AT XL size, and fits me perfectly. So be care-ful when sizing an RX. We'll discuss this more in a future issue. ♦

The Inflator

Air without a bike pump

by Bernie Rosen
triker77@webtv.net

I don't like to inflate tires. I didn't like doing it on two-wheelers, and I like it less on a trike. It's a chore that poops me out.

About five years ago I invested in a \$50 Zefal hp Double Shot. The most efficient hand pump I could find. I could not avail myself of the pump's capability because I lacked the strength to compress full strokes. It worked better than other hand pumps, but still was tiring.

From time to time I would check out auto supply stores for a power inflator. The item is not sold in bike shops, nor do Performance or Nashbar carry one. I was not impressed by what I saw in the stores. A reading of the fine print warned of overheating and the need to inflate in installments. They certainly weren't meant for 100 psi+ tires.

A few months ago my friend Ralph who rides a Yamaha told me about a problem he was having inflating his tires. It seems all the service stations in our area had converted from right angle to straight line air nozzles. His valves lacked clearance, so he bought an inflator.



The inflator is made by Campbell Hausfeld and sold by Wal-mart. Ralph has the \$20 model which plugs into a car cigarette lighter socket as a power source. I opted for a rechargeable and portable model which costs \$45. Maximum inflation pressure is 230 psi. (pounds per square inch).

I've had no occasion to test the maximum. However 100 psi is no problem. You can bring your tires up to that pressure in about 20 to 30 seconds. My unit weighs ten pounds and has a comfortable carry handle. It comes with three adaptors but no Presta/Schraeder for the Schraeder nozzle. Bike shops have adaptors for about a buck. The clearly visible pressure gauge goes up to 300 psi.

My model CC2300 has an outlet to power 12v lights or appliances. It's rechargeable with house current or in the car. As of this writing I've had the inflator about three months and am still on the original charge.

From what I have seen, the \$20 and \$45 models both work fine. Either one is money well spent. ♦

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Easy Racers: Our Customers Speak

SUBJECT: How Does That Thing Climb? April 4, 2001

Just a quick update on the Gold Rush Replica that I purchased about two months ago. Great!!! The weather in Cincinnati is just starting to break. I have over 900 miles on my trainer since February, and about 120 miles on the GRR. With the weather breaking the GRR should see about 150 miles a week.

The GRR becomes more of a blast the more I ride it. I did my first climb out of the river valley where our major bike path is located. Everyone warned me that I would be in trouble on a climb. So I was somewhat apprehensive as I started the 1.5 mile climb out of the valley.

First, I never got out of the middle chainring. I think I could have stayed in the large (53). I held between 13 and 17 mph for most of the climb. I never dropped below 11 mph. I was very impressed. I have climbed this hill hundreds of times on my Trek OCLV and felt far worse at the top of the climb than on the GRR.

As a matter of fact, I felt great on the GRR!!! No back pain; nothing. The ride back down was a hoot. I had a friend with me (about 5 minutes behind me up the hill) as I descended down into the valley. I was hitting 40 mph without moving my legs, and using the brakes into the turns because I was not sure what to expect from the GRR at speed around the turns. My friend had to peddle like a mad man and he still couldn't keep up. The



The Gold Rush Replica Black Gold—RCN#45

GRR felt like a sports car going down the hill. What fun!!! I wish I had started this 30 years ago instead of my mid fifties!!!!

Best regards,
Doug Pendery

**SUBJECT: GRR Update
April 25, 2001**

This past Saturday I rode with a few friends that have conventional racing bikes (Wedgies; I think you call them). We climbed out of the valley up the Route 48 hill. This climb goes for about 1.5 miles. I pulled my friends up the hill at about 18 miles per hour and crested at over 20 mph. Needless to say they were out of their saddles trying to stay up. I must say I was winded, but so were they. Their comment was, "I guess your recumbent doesn't have a problem going uphill."

In my younger days (about 8 years ago) I would have pushed myself to my limit to go 18 miles per hour up this hill on my Trek OCLV. My point is the GRR is a great recumbent. I enjoy going up hills on it more than my OCLV. I am more relaxed, my back doesn't hurt, and my legs aren't killing me from being out of the saddle trying to lever the OCLV up a hill.

By the way, we had a tail wind on one stretch of the ride. I managed to get up to 36 mph in the flats. Nobody passed me....It was a real hoot!!!

Best regards,
Doug Pendery

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