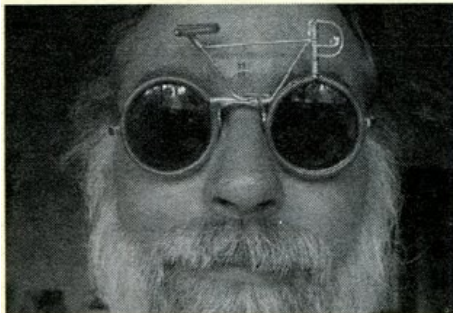


Recumbent Cyclist News

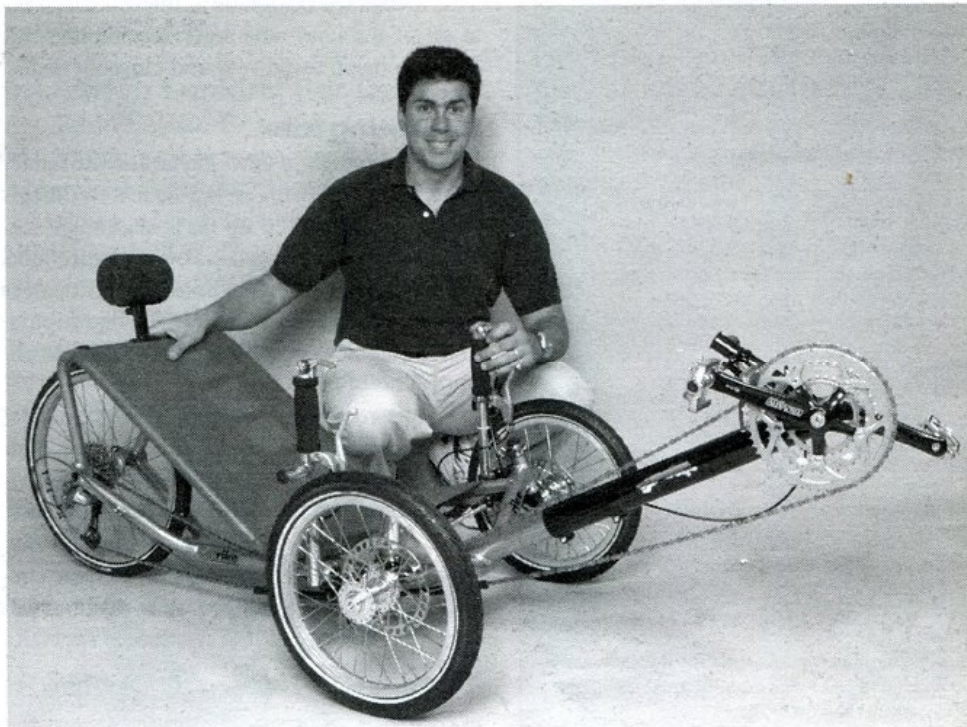
RCN 078 A Publication by and for Recumbent Enthusiasts Since 1990 Sept./Oct. 2003



Dr A.J. Zelada and his stories of bicycle touring. See page 22



We review the Hase Kettwiesel delta trike. All of these trikes are linked together in a trike-train. See page 8 for our review



RCN ROAD TEST Catrike Speed — The Affordable Micro Trike

By Bob Bryant
bob@recumbencyclistnews.com

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Be sure to check out our new website at www.recumbencyclistnews.com

The Catrike Speed is the latest offering from the relatively new trike manufacturer, Big Cat HPV. The Speed is an affordable micro (20/16 wheel combo) performance trike designed by Brazilian Mechanical Engineer, Paulo Camasmie. Catrike's are built in a new production facility in Orlando, Florida. The Catrike is light, quick and a fantastic value — and they are selling well and becoming quite popular.

Systems

Catrike has done a great job with this trike. It's very simple in design. Big Cat has invested heavily in equipment to build the Speed — the quality look and feel of the trike is quite evident. The Catrike frame is beautifully made from 6061-T6 aluminum. The

aluminum boom slides over the top of the mainframe. A plastic liner fits nicely in between the two tubes. The way the boom worked was on par with trikes we've seen that cost twice as much.

Catrike's aluminum frames are *not* heat treated. Some builders say you must do it (or the frame may fail). When you weld aluminum (and don't heat treat it), the welded area weakens. The frame could be heat treated — it's just an added expense and one more step in the fabrication process.

We asked Catrike's Paulo Camasmie and here's what he has to say, "The frame is not heat treated but we stand behind our product. Considering the frame's design and dimensioning we decided that heat treating

Continued on page 12

Recumbent Cyclist News

Subscription Information

A newsletter by recumbent bicycle enthusiasts, for recumbent bicycle enthusiasts, since 1990.

Recumbent Cyclist News is published eight times per year. US subscription rates are:

| | |
|------|-----------------------------|
| \$32 | 1 year, 8 issues* |
| \$45 | 1 year first class mail** |
| \$60 | 2 years, 16 issues |
| \$80 | 3 years, 24 issues* |
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* 3rd class mail is *NOT* forwarded by the USPS. If you move, there will be an additional charge to resend issues.

** Recommended for those who've had trouble with their mail, move often, or have two seasonal addresses.

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Tel. 360-379-5607 Live & VM 9-3 pm PST

Schedule

RCN is published eight times per year. For the 2nd half of 2003, expect issues in July, August, Sept./Oct. and Nov/Dec.

When to Renew

Please renew 60 days in advance if you can. By the time you read this issue, the next issue and database have gone to the printer.

Your Mailing Label

"EXPIRES W/RCN 076" means that RCN 76 is the last issue of your current subscription.

Address Changes

Don't forget to send us your new address when you intend to move. Please allow 60 days' notice for address changes.

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RCN is mailed USPS 3rd class — which the USPS doesn't forward. You are responsible for keeping us aware of your current mailing address. If you miss an issue due to an RCN or USPS error, we'll send a free replacement. If you miss an issue because we don't have an up-to-date address (at mailing time) — the replacement must be ordered and paid for by you. The cost is \$4 or (-1) issue on your sub.

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What's New

by Bob Bryant

bob@recumbencyclistnews.com

It seems like we blinked and the season is over. I guess it hit me when I started seeing closeout ads on TV for the 2003 model cars. The 2004 models are coming — Wow! This means we'll soon be at Interbike looking at all of the cool new stuff. Remember, this can also mean some year end closeout deals.

Marketing Idea

I recently bought a new kayak for the family to play around with at the beach. With this experience, I picked up on a marketing scenario that has kayak makers offering discounts (perhaps 15-20% off wholesale) to dealers who'll stock a certain model. The one stipulation is that the "demo" kayak can't be sold until the end of the season.

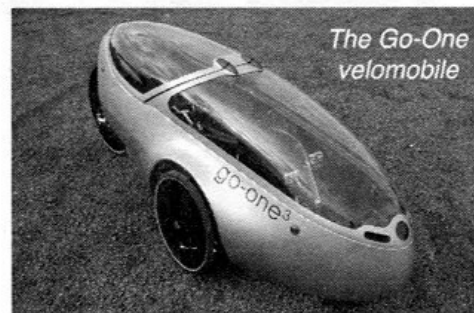
I think recumbent makers should consider offering a similar "demo" discount to their dealers. If they did, more difficult to find models could be available to test ride and purchase. After the season, dealers sell them at a discount — passing the savings on to their customers. I've also advised new manufacturers to get their bikes into recumbent specialty shops any way they can.

RCN Trike Mag

Lucky us, we've had several trikes here to play with this season. We do hear from many riders who are looking into making the move to a trike. Often it has to do with the fact that trikes don't require balance to ride — which helps on stops/starts and hill climbing. We still love two-wheelers. Look for more two-wheeler stuff coming soon.

Customization Articles

We're actively seeking recumbent upgrade and customization articles. Do you have a better idea, have you found a neat aftermarket or non-recumbent part that works great on your bike? We need articles that are 750-2000 words with a few pictures (35 mm or jpegs — see website



The Go-One velomobile

RCN business, writer guidelines for more info). A full article is worth a 1 year comp RCN sub if printed (less if just a small blurb).

Touring Articles

We'd like to find readers who'd submit articles on touring the Maine, Carolina or Gulf coasts, Katy Trail, Natchez Trace or other scenic locations by recumbent. Do you know any great low traffic, bike trail, rail-trail routes? Even if you don't want to write the article, give us the heads up on your secret destination.

We'd also like to have an article about recumbent pannier vs. cargo trailer; shipping (and box storage) on bike tours; and most of all an article on light-weight and compact camping gear (I know you equipment geeks are out there).

Coming Soon

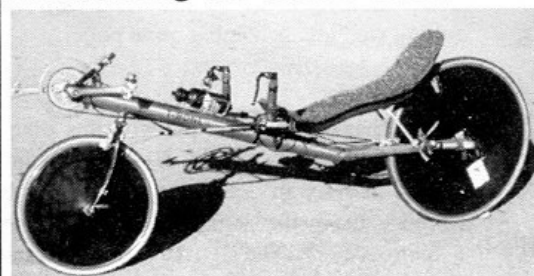
We just completed our testing on three LWB bikes: a 2003 Easy Racer Tour Easy, RANS Stratus and V2. Also watch for our 'bent on the new \$3,000+ BiGHA "cycling appliance." These road tests are coming soon. We also have a 2004 Marxarya full suspension 20/20 CLWB OSS review coming soon.

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Check out our newly updated website at www.recumbencyclistnews.com.

Viva Recumbency,
Bob Bryant ♦

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Recumbent News

No Way-Out — Debt Bondage in Taiwan

From the lead article of the January 8, 2003 *Fortune Magazine* comes a story about workers in Taiwan, working 12-hour shifts, seven days per week in a factory making plastic cell-phone casings. The worker will be in debt for years for the privilege of working in the Taiwanese factory. Workers pay labor brokers to get the jobs for them. One such worker from the Philippines had to borrow \$2,400 to pay a native labor broker (at 10% interest per month). A second broker in Taipei charged \$3,900 to deliver her to the new job. She must pay \$215 per month of the \$460 per month that she makes. She also has to pay \$91 for Taiwanese income tax, \$72 for room and board in a factory dorm and \$86 for a compulsory contribution to a savings bond she will get after she completes her three-year contract. The Taiwanese broker will be repaid after 18-months, but the interest still mounts on the Philippine debt.

We were alerted to this story by a letter in the July 1, 2003, *Bicycle Retailer & Industry News* (trade magazine). The letter was from Kipchoge Spencer of Xtracycle Sport Utility Bicycles who had recently discovered that their Taiwanese vendors might be participating in these labor practices. Xtracycle's trading partner toured potential factories keeping an eye out for signs of environmental abuses. He questioned factory owners on anything he could. He came away convinced that working conditions rivaled those in the US, and that factory workers seemed to earn a very respectable middle-class wage. Also noted was the fact that they were told that no other client in 15 years had asked about labor or environmental issues.

There are many recumbents being built in Taiwan these days. I've heard the stories about modern factories where workers earn a middle-class wage. Lets hope recumbent manufacturers are not participating in the above practices.

Folding Bikes Getting More Popular

We've heard that former mountain bike racer and respected mountain bike designer, Joe Murray, will work with Dahon to build full-size portable mountain bikes. The first models are scheduled for release in 2004. Dahon offers many different folding bicycles in 16-inch, 20-inch, 26-inch and a full size road bike designed by Tom Ritchey.

Brompton Looking For Dealers

The famed English Brompton, arguably the best folding bicycle in the world, is looking for new dealers and distributors for their high end folding bikes. Bromptons sell for \$605-\$1010 (retail USA). They are expecting to be able to produce 10,000 units per year and want to open up the US market. Previously, Bromptons were sold retail customer-direct by one agent in California. Bromptons have an extremely loyal following.

A new folding bike maker, Bazooka (www.bazookasports.com) is also coming into the US market and looking for dealers.



China Mascot SWB

China Mascot Recumbents

A US company, ActionBent Recumbents, is importing China Mascot bikes to the US; they're here now. There are currently three models, all SWB in USS or OSS. Prices are from \$665-\$1100 USD (retail). For more information, see: www.actionbent.com.

Go-One Trike Soon to be Available in USA

The *Go-One* is a Velomobile designed by Michael Goretzky (involved in the development of Daimler Chrysler's SMART car). The *go-one* is a new type of vehicle that combines conservation, frugality and fitness in a way that is provocative, engaging and fun!

The *Go-one* is more than an enclosed tri-cycle, it's a "Human Powered Vehicle" (HPV), complete with headlight, taillight and turn signals. By the end of this year these electrical conveniences will be expanded to include an optional 800 watt electric assist motor.

Why settle for a mundane, 3,000 pound behemoth, even if it has an electric or hybrid power? What other vehicle can you "recharge" with a sports drink and a power bar? The *Go-one* is truly a next-generation vehicle that you can own and enjoy today and not worry about where you are going to refuel it, how long it will take and how far you can go. The *Go-one* is virtually limitless!

You can now stop dreaming about the *Go-one* and start riding it! We're accepting reservations now and will soon provide detailed configuration options and pricing. For more information, contact: Tel: 408-390-8836 or salesusa@go-one.biz

Source: Press release

Note: See photo on page: 24 this issue.

Shimano Small Wheel Cassette

Shimano now offers the Capreo 9-26 and 9-32 9-speed cassettes and hubs. The parts package can include shifters, crank, hubs and bottom bracket. At least one recumbent manufacturer, ICE in the UK, will be offering the new components. For more information, see: www.ice.hpv.co.uk/news_capreo.html.

Maxarya CLWB Goes 20/20

Check their website for more information: www.maxarya.com. ♦

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RCN Calendar

August 1-3, 2003

10th Annual Midwest Recumbent Rally

Stevens Point, WI

Contact: 1-800-233-4340

www.hostelshoppe.com/recumbent_rally.php

August 15, 16, 17, 2003

2003 Recumbent Retreat

Fort Stevens State Park

Warrenton, Oregon

Contact: jjoyful1@aol.com and www.ohpv.org

September 6, 2003

Michigan Recumbent Rally West

Kalamazoo area. Recumbent displays, socializing.

Numerous ride options. 10a.m. - 3p.m.

Contact: www.LMB.org/wolbents, Paul.Pancella

@wmich.edu or tel. 616-353-0125

October 10-14, 2003

Interbike and Dirt Demo

Bicycle Industry Trade Show

Las Vegas, NV

Contact: <http://www.interbike.com>

September 20, 2003

Fall Recumbent Rendezvous

Northern Detroit area. Recumbent test rides,

group rides, displays. 9am - 3pm. Stony Creek

Metropark Eastwood Beach shelter.

Contact: www.LMB.org/wolbents, wolverbob@cs.com or tel. 734-487-9058.

September 29, 2003

Worlds HP Speed Champs/.decimach 2003

Battle Mountain, Nevada

World Human Powered Speed Championships

and .decimach Challenge. Racing occurs daily 9/

29 -> 10/4. HPRA racing the last two days. Will

somebody break 82 mph and win \$24,000!?

October 1, 2003

Ohio HPRA HPV races

Columbus, Ohio

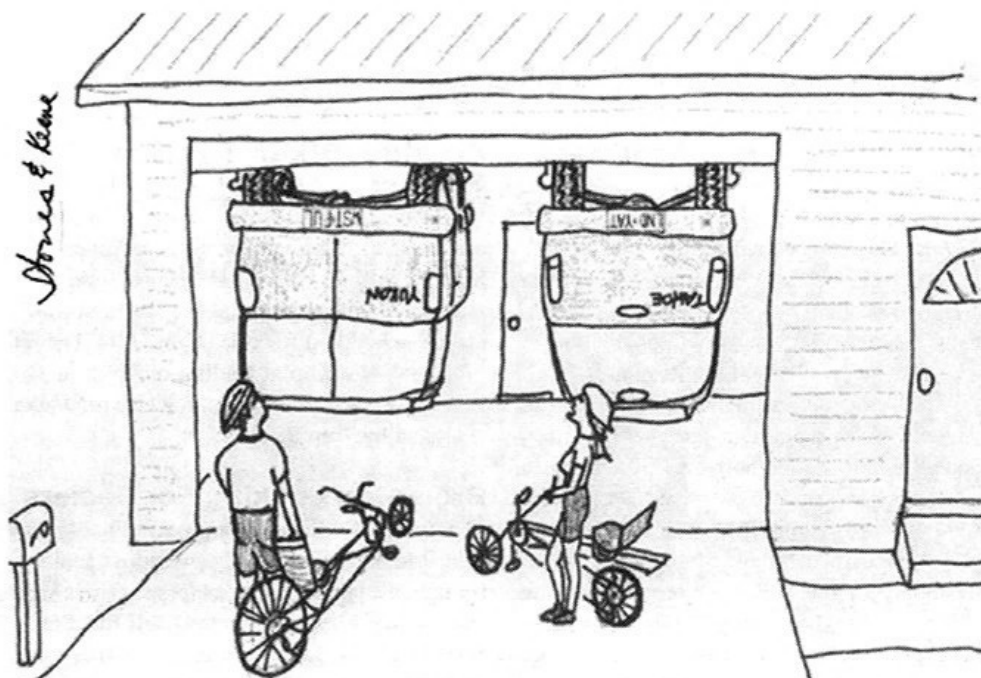
Two days of HPV racing, probably at the

Columbus Motor Speedway.

For the most recent updates on HPRA races, see:

www.wisil.recumbents.com/wisil/events.htm and

www.ihpva.org.



They looked so cool in the ads, but they're just not practical for commuting. If we're not going to use them, maybe we should just get rid of them.

Cartoon by Martha Stone, John Keane and Andy Stone

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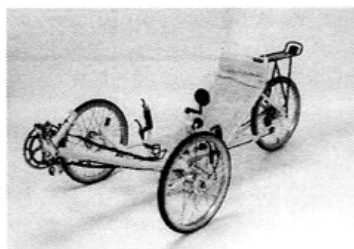
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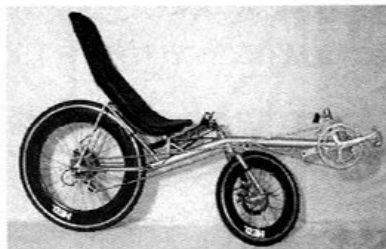
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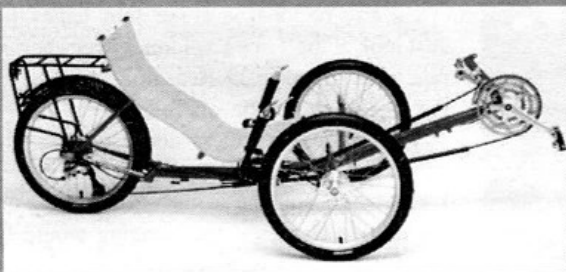
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Research indicated that even with our centrepoint steering, there was some toe-out under heavy braking with the optional hydraulic disc brakes. Thus the steering has been re-designed to give a small amount of stabilising toe-in under braking. The difference in single wheel braking from high speed is quite marked. To line up better with the new kingpins, the handlebars have been moved to the top of the main tube, giving better ground clearance, and shorter bars. Plus they have been given more rake, so that they fit the hands better, yet are still in line with the pivot, eliminating any tiller effect.

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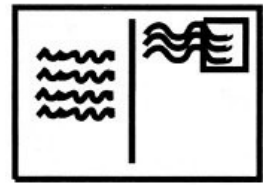
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Letters To RCN

Write RCN . . . Write Soon . . . Write Often . . .
bob@recumbentcyclistnews.com



Recumbent Unicycle — Al Brody

Recumbent Unicycle

The stimulus for this brainstorm idea was the severe pain I experienced after a 25-mile ride on a standard unicycle. It was 1982 and I'd never seen a recumbent bike but I knew there must be a way to avoid what was then called the *Bozo disease*, what we now call perineal nerve damage.

Making the transition from bicycle to unicycle is simple because you already know how to not fall sideways so the only challenge remaining is to avoid falling frontwards or backwards. The transition from standard cycle to recumbent is basically the same. You already know how to ride so the only thing to adapt to is the new sitting position. It takes a few hours of practice but the change isn't all that hard to overcome.

Beginning recumbent riding on one wheel makes it easier to adapt to all other recumbents. The bottom bracket height continuously varies, there are no handlebars, cables, brakes, or shifters to complicate the riding experience, just the beauty of all wheel drive and pure seat of the pants steering.

Al Brody

RCN New Look

RCN 076 looks good, barring some miracle. The new front cover format looks good. Several pictures and the contents list gives some excitement without relying too heavily on a good cover photo. There weren't any glaring formatting errors either. Nice job.

Mike Librik

Easy Street Recumbents
mlibrik@earthlink.net

Editor Comments — Thanks for the comments. There were some glitches. We spent too much

time tinkering with the layout and design, and not enough proof reading. We're getting there.

Kudos on New Format

Love the new format! A reader can get right into the issue from the first page. Of course since I did "get right into" it, it was another sleep-deprived night, and what sleep there was riddled with visions of a Ferrari-red Trice Explorer carrying me smartly along roads less traveled. Sigh . . . It must be hard to give up some of those test machines you get.

Carl Rush

Lightning, Easy Racers, Trikes and Titanium Hose Clamps

I enjoyed Bob Rose's Lightning Phantom report in the July RCN. I enjoyed his writing style — insight with humor. I almost bought a P-38 twelve years ago. It came down to that or a Tour Easy. The combination of Easy Racer's chopper looks, some good insight from

RCN, and several contacts with Gardner Martin, and even some input from Fast Freddy caused me to go this way. The Tour Easy has been totally trouble free and is still a blast to ride at speed. It seems to come alive in the mid-teens and keeps building speed. I've had it up to 50 mph downhill.

My bike is old stock with a 27-inch rear wheel, 451 mm front wheel, and 7-speed Suntour bar-cons. My Super Zzipper is getting hazy with age. By-the-way, I found that you can stop the cracking around the mounting holes by using glueless patches and put them on each side of the holes, and cut out the hole with something very sharp, like an Exacto knife. Perhaps you could do this when the fairing is new to prevent cracking.

Anyway, I think the P-38 is the best looking SWB bent and the Phantom has enough of the lines to attract buyers. The dealer I bought my last 'bent from two years ago did carry Lightnings. I called him with the intention of test riding a Phantom. He said that he'd stopped handling the bikes. He said that he had trouble getting glitches corrected. I recall similar statements over the years from others (and RCN — ed.). Lightning's Tim Brummer seems to have the attitude of, "here's my product, take it or leave it." Nevertheless, the P-38 and its family have a cult following and Tim has a wall full of cycling race records.

I'll also be looking at the delta trikes, too. Just look at the Trice Explorer's overwhelmed rear wheel on page 23. Reasoning tells me that the wheels should be where the weight is!

You and some others decry the fact that some Lightnings and Rotators use hose clamps. I wonder if someone would start making titanium hose clamps if the whining would become drooling oohs and ahhs?

As long as you have a mag — you have my subscription.

Roger Fuller

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Editor Comments — I also came very close to buying a Lightning several times. It's the one that got away. I just couldn't bring myself to do it — too many negative experiences (both personal and with problematic RCN test bikes). They are great designs. The company attitude is a shame. One of the bike's I'll probably never ride is an F-40. The Easy Racer Tour Easy is a timeless bike. I bought my first in 1987. Our 2003 test bike is also wonderful. Gardner Martin and Easy Racers is are an absolute pleasure to work with and the bike's have to be THE most dependable recumbents there are.

Delaire an email telling him that I wouldn't criticize them any more. I've seen enough problems with slipping seats, ovalized booms, broken boom bolts, etc. Hose clamps are simple, cheap and serve their purpose. You can even find them on the Easy Racer Koolback seat. The key is to make sure that you have decent quality hose clamps (I've had them fail on me), and carry a few extras if they're used for holding the seat onto your bike. Some may get the wrong idea about my recumbent preferences. Though I like testing fancy bikes, I don't own any \$3000 bicycles and I don't profess that's what everyone should buy. I'm quite happy that there are options at all price points. I'm also a big fan of home-building, and actually have plans drawn for two LWB OSS recumbents myself. Keep an eye on my writing. If I ever start sounding like an elitist recumbent salesman pushing \$5,000, please let me know.

BMX Pedals

I've been fighting foot pain (severe hotspots) for years without a good solution. When I'd use SPD cleats, I'd get the hotspots, yet the shoes were great to walk in. When I would use road cleats and shoes, the pain was better but walking was not. Last winter I was talking to a friend who suggested trying the BMX platform pedals with small pins protruding on the pedal. Wow — no more pain and I can FINALLY ride in sandals. Yes, I can't pull around the full pedal circle, but I rarely did anyway (except on hills). I now have great comfort for 98% of my riding. I'd strongly suggest that recumbent manufacturers supply these with their bikes instead of the cheap quill pedals (and toe clips) that come on many. One caveat — these are much better suited for long wheelbase bikes, since it is easier to stay on the pedals.

Peter Lewis

Editor Comments — I ride with a similar set up. I have SCOR Kneesavers on BMX bear trap pedals with lots of sharp teeth to hold my foot onboard. The pedals I use come from Rotorator and are what Steve Delaire rides with. I find them comfortable, safe and very user-friendly. Perhaps they'll work best on low BB/pedal height bikes, but pedal consideration is something that one should think about before they select a bike.

LWB Crash

Last August while returning home from a ride on my Easy Racer GRR I was on a very bumpy road and decided to pull over to the side and walk. I made a right hand turn and hit some loose gravel where upon the bike went airborne. I was using Look pedals and Sidi shoes. The right shoe disengaged, the left shoe didn't causing the bike to twist my left leg as my left hip hit the ground. I broke my left leg

had to have emergency surgery. I'm still in rehab and have a metal plate, 6 screws and a hydraulic pin in my body. I was going less than 10 miles an hour. In the 15 years that I've been riding as an adult I've had a number of falls on this bike, road and mountain bikes at faster speeds with only bruises and road rash resulting.

Based on my experience having quick release pedals didn't help prevent the injuries.

Garry Longaker

Speed Measuring Stick

I've been an RCN reader and a recumbent cyclist for the past two years. A hip replacement sent me to the recumbent rider world. I must say I do enjoy it. But I do need some input here. I ride a RANS V-Rex and in two years I had logged 4,500 miles on it. My average speed in early spring is about 15 - 16 mph and I will finish the fall season averaging 17-18 mph. I ride in the mountains of Easy Tennessee and my riding rangers from 1,700 feet to 5,600 ft. In RCN I read of how fast or slow or mid range the recumbents and their recumbent riders are. What I'd like to see or know is what is the mph range of a fast, average or slow recumbent rider. At 15-17 mph on a Rans V-Rex in the mountains of East Tennessee is that fast or average or slow. I'd like to see some kind of chart that explains what is meant by the terms when either riders or testers review a recumbent. The reason for this is that I'm thinking about upgrading to either a Bacchetta or a Volae as per your article. I'd like some input on this one.

Thanks
Bob Gay

Editor Comments — Actually labeling a speed number to slow, average, fast will be impossible since testing is done in different locales by different testers, AND we're not talking about Corvettes and Miatas, but human powered vehicles. In saying this, I'd say that most would agree that a 20/16 CLWB (like a BikeE), is a relatively slow bike, a classic style SWB like a V-Rex is about average, to perhaps better than average, and a highracer or LWB OSS with a front fairing would be fast for some, but not for others. At 15-17 mph in hilly country, I'd say you're a fairly fast rider. This is about what I ride in hilly northwest on a V-Rex the last time I checked. Incidentally, I could ride the same course on my Gold Rush at over 20 mph. For me, the highracers aren't as fast because my body does not acclimate to the riding position. I'm faster on a LWB OSS

Off-Road Recumbents

I'm interested buying a recumbent. I wanted to know if I can go trail riding and/or mountain biking with it? I'd appreciate your help.

Thanks
Kelly

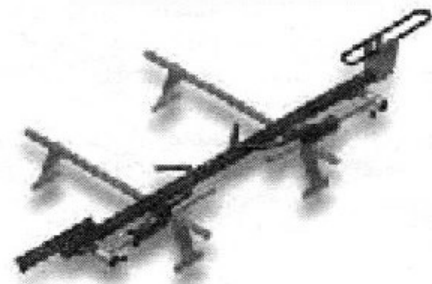
... Letters continued on page 28

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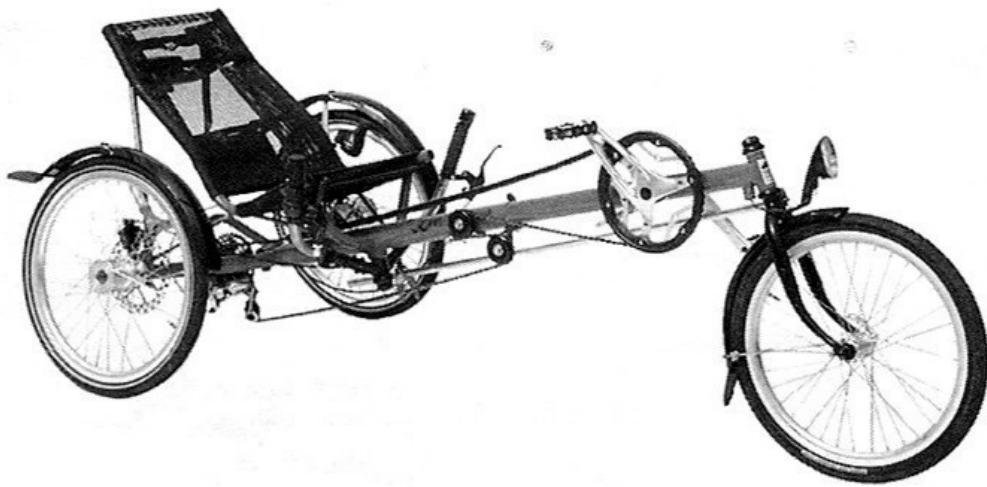


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RCN ROAD TEST

Hase Kettwiesel — The Sporty Delta

By Bob Bryant

bob@recumbentcyclistnews.com

The Hase Spezialraeder Kett Wiesel (KW) is a very unique trike — a lightweight, performance delta recumbent tricycle built in Germany. The KW has a low performance oriented stance. The Hase company is an impressive outfit. They've been building trikes for a decade. Their options list is extensive. We found both the Lepus and Kettwiesel to be refined and elegant trikes and the Hase crew we met at Interbike very knowledgeable about their products.

Design

Many deltas are based on LWB OSS/USS two-wheelers with a trike rear-end added. The Hase KW is one of a just a few designed to be a sporty low delta trike. The design is well thought out to be as simple as possible.

Systems

Frame — Like the ICE Trice, the KW's frame comes in multiple sections: The seat frame/stays connect to the main (rear) frame section and cross-member. An aluminum (or Titanium) boom that houses the bottom bracket, head tube and front fork — slides into the main-frame. A double idler chain management system acts as a centering device between the main (rear) frame and front boom.

The mainframe is a mix of Hiten and CroMo steel with an aluminum boom (front end) or optional Titanium (on our test trike). The front fork is also CroMo.

The KW frame is a one-size-fits-most (telescoping boom), though I'm sure custom boom

lengths are possible. The KW comes in red, and ours had the natural Ti boom.

Steering — Hase USS steering is exceptional. They've invented a quick-adjust steering rod so that riders of different heights can share a trike and not have to spend all afternoon adjusting seats, steering rods or booms. Connecting the handlebars to the steering rod is an inverted "V" clamp. The open ends are squeezed together to release steering rod tension — and reset the steering rod. This is the most simple and elegant system available today. We'd like to see it licensed to other builders. The Hase systems are unique and modular.

While all is not perfect, the KW has a unique chain tensioner device which is set up by rider size and may need to be adjusted if you go from a short to tall rider.

Weight — Specs call for a 34 pound trike. Our KW weighed 40 pounds on our scale — with the generator, and fenders [also Titanium Boom (1 pound lighter) and Speed Drive options].

Drivetrain

Components — The component mix is very European: An Oprimax headset, Wipperman chain and a few other items I haven't heard of before see brakes and rims). The crank on ours was the optional Schlumpf Speed Drive that shifts a 9-speed cassette via one Shimano Ultegra Bar-Con (bar-end). The rear derailleur is a Shimano Tiagra. We had some minor problems getting our indexed gearing adjusted per-

fectly. Eventually we found the sweet spot.

Gearing is an interesting topic with 20-inch drive wheels. You can almost never get a proper high end gear without sacrificing shifting performance (or going to something slick like the Schlumpf Speed Drive), but you can get a reasonable recreational gear range. The stock 9-speed KW has a gear range of 28-92 gear inches in a very simple 9-speed. Wouldn't it be great to do this on a low priced CLWB! When you add the Schlumpf, the Speed Drive's 2-speed bottom bracket increases the gear range to 20-103 gear inches.

The Speed Drive is a miracle machine in itself. It shifts easily and works flawlessly. On the KW, the low gear is the equivalent of a 36-tooth, and the high gear of a 60-tooth. While pricey, the Speed Drive should be an option on every recumbent with a 20-inch (or smaller) drive wheel.

Chain management — The KW drive is well designed and works smoothly. There is a chain tensioner that adds some friction, as well as a standard chain tube (keeps calves clear of grease).

Braking — The stock brakes are Formula discs. We haven't seen these before. I'm not sure if it was the luck of the draw, or what, but they took more fussing with than the Tektro, Shimano or Avid's that we've had lots of experience with. With this in mind, I recommend upgrading to the optional Magura hydraulics.

Another unique aspect about KW braking is that the trike has two independently operated rear wheel brakes — and no front brake! In contrast, the Lepus has Magura hydraulic rim brake on the front and disc on the rear. While I can't recall a situation where I might have needed a front wheel brake, I still wanted one.

Wheels and Tires — The rear hubs are wheelchair (one-side mount) proprietary Hase sealed bearing hubs. Independent axles hold each rear wheel on. The front is a SRAM 9.0. The rims were Schurmann Reflex (haven't heard of these) alloy rims riding on 20 x 1.75 Continental Top Touring tires (50 psi). While wonderful tires, not exactly high performance.

Comfort

Seat — The seat frame is CroMo with a full mesh back and base (separate pieces). The seat width is narrow compared to most North American seats (base: 17" T x 7.5 W; back 17" x 17" tapered to 17" x 14"). An optional wider seat base for the American market is available. Our test trike had the standard European seat.

Ergonomics — As delta trikes go, the KW has a rather aggressive riding position. It appears to be fairly recreational, but when you look at the numbers, the bottom bracket is 4.5 inches above the seat height. The seat back recline is adjustable. An optional lower bottom bracket boom is available, though prima-



KW's in tandem touring in Germany — Hase Spezialraeder

rily intended for special needs (Hase has several special needs options for their trikes and tandem bike).

User friendliness — The KW is a very user-friendly delta trike. In basic form, it comes as a 9-speed with just one shifter. The optional upgrade adds a Schlumpf Speed Drive (2-speed bottom bracket), that you click with your heel to shift.

Ride and Handling

The Hase KW tracks effortlessly straight and maneuvers better than any trike I've tested. It literally turns on a dime, can spin tiny circles and maneuver incredibly through traffic.

Performance — The KW feels quite light and fast. While delta's aren't known for their performance prowess — the KW is a cut above most others we've tried. The KW seemed very quick. It also offers a unique and distinctive ride. Having the center-of-gravity (c.g.) so far back on the trike was a bit odd at first. I was concerned about how far I could push the trike into the corners. I never got as ambitious with the trike as I am with a performance two-wheeler or tadpole trike.

Lately I've been considering safety more in my tests. I seldom take my test bikes up above 30 mph (like I used to; 52 mph on an Easy Racer once). With its rearward c.g. and light front end, I wouldn't want to be on this trike at high speed. Don't get me wrong, I think its capable of more — perhaps in flatter country, a place with better roads (smoother surfaces) or even more time on the trike.

Hill Climbing — This is the single biggest concern I have about the KW. With its one drive wheel and light front end (and we forgot to order the front pannier rack and put a few bricks into it) — the KW is a poor hill climber. What happens is that you lose traction, one tire spins, and the front wheel has the potential to bunny hop off the ground and you get stuck. On some steep hills around my house, I actually had to turn around. This has only happened on one other recumbent trike, a Comfort Cycle

delta. The Hase brochure offers a front pannier rack for touring. My guess is that a touring load on the front is all you need to solve this problem. However, performance riders looking for a light delta trike won't want to haul a load on the front for this reason.

Owning

Utility — I've long been a fan of delta trikes. They are primarily best suited for work and transportation more than sport. However, when you see the Hase brochure, the KW is a versatile trike. It's shown being ridden by kids, in tandem, towing a BOB trailer, loaded with panniers or scooting around town with a fairing on the front. With this trike, you cannot generalize.

Options & accessories — The Radical 30 liter pannier/seat bag looks really slick. It works pretty well, too. However, not as good on the KW as on other recumbents. The problem is that the bag mounts to hooks on the seat stays. We found that the bag likes to bounce off the hooks. In most cases, I'd lash it down with zip ties, but in this case, couldn't make it work.

In our testing of the Euro HP Velo Spirit and now the Hase, I was able to play with integrated (generator) lighting systems of various costs and qualities. I found them to be a bit of a pain. I never got the Hase generator working perfectly, and found the added noise and friction annoying. I also ended up messing with internal wiring and connectors (added complexity). The HP's hub generator is a bit better, but not worth the cost in my humble opinion. I much prefer my durable Nightrider system or perhaps LED lights.

Other options — A front fairing is available; there is a tandem connector (mates two KW's); a child boom (shorter riders) as well as the 'Trets' two-wheeled trail-a-KW (child's trike adapter); The KW fenders worked well, are simple and mount easily.

INFO AT A GLANCE

Specifications

Model — Hase Kettwiesel
 Type — Delta trike
 Steering — USS
 Wheelbase — 58.5"
 Wheel sizes — 406 mm 20"
 Seat height — 14.75"
 Bottom bracket height — 19.25"
 Width — 33"
 Weight — 34 pounds (factory weight)/40 pounds w/ light, fenders, Speed Drive & Ti boom

Frame — CroMo and Titanium
 Seat frame — CroMo
 Seat material — Nylon mesh
 Seat recline angle — Adjustable

Components

Crank — Schlumpf
 Bottom bracket — Schlumpf
 Derailleurs (rear only) — Shimano
 Shifters — Shimano Bar-Con
 Gears — 18-speed
 Cassette — SRAM 11-32 9-spd.
 Chain — SRAM
 Gear inch range — 28-92
 Optional Schlumpf 20-103
 Pedals — Platform
 Rims — Schuumann/Reflex Germany
 Tires (f/r) — Conti Top Touring 56 psi
 20" x 1.75
 Hub (f) — SRAM ESP 9.0
 Hub (r) — Hase
 Brakes — Formula disc (2 x rear)

Incidentals

Price — \$See article
 Colors — Red/Titanium
 Accessories included — safety flag.

Pro

Beautifully built
 Very high quality
 Light and sporty delta
 Extensive options

Con

Price — expensive
 Small seat
 Set up is intense
 Formula disc brakes (upgrade; we suggest the Magura upgrade)
 Climbing — steep hills (rear wheel slippage/ front wheel bunny hops)

Contact

Hase Spezialraeder
 web: www.hase-recumbent.com

Market competition

Comparison — For custom applications, hauling and pure brute strength, the Lightfoot delta's are king. They cost about the same, though can go higher with custom options

Lightfoot offers a remote linkage OSS option as well). Penninger builds a very nice delta as well. Both are built in the USA — but shipping is (and crating on the Lightfoot) are additional. For those on a budget, the hot delta trike new aluminum EZ3 with 3 disc brakes, three 20-inch wheels (rears canted). This trike is not yet available and isn't really in the same league — but is worth looking at and could be the best delta value there is.

The more utilitarian Hase Lepus has improved brakes (Magura rim front, disc rear), an elastomer rear suspension, a cargo bed and the trike folds. It's not as performance oriented as the KW, but will be better choice for many. Though it has a higher initial price, the bottom line for a similarly equipped trike is out about the same as our test KW. An RCN reader from Colorado has told us that all three wheels stay on the ground during climbs.

Value — The Hase is expensive, but it's a hand-built German trike — perhaps the Mercedes of delta trikes.

Shipping & Set Up

Because of the modular nature of the KW trike, it ships in a remarkably small box. This is a fine idea to keep shipping charges down. Assembly was time consuming. While there was decent instructions, and everything is crafted well and fit properly, it still took several hours of careful assembly to get the trike road ready. By the time everything was dialed in (with some brake adjustment woes), the better part of a day had passed.

The most difficult aspect of a long distance trike purchase is assembly. Even for experienced industry writers, the task can be daunting. Trikes are costly to ship, so the boxes get small — which means lots of assembly. Hiring your local dealer is not always as easy as it sounds. Often they might make a quote based on a mountain bike, and be upset when it takes all day. And/or they might not be as careful as you would be with your new \$3500 trike. It's a tough call. Needless to say, taking delivery of your KW from a local dealer, or at least one where you can pick it up assembled — would be the best option.

Price as tested

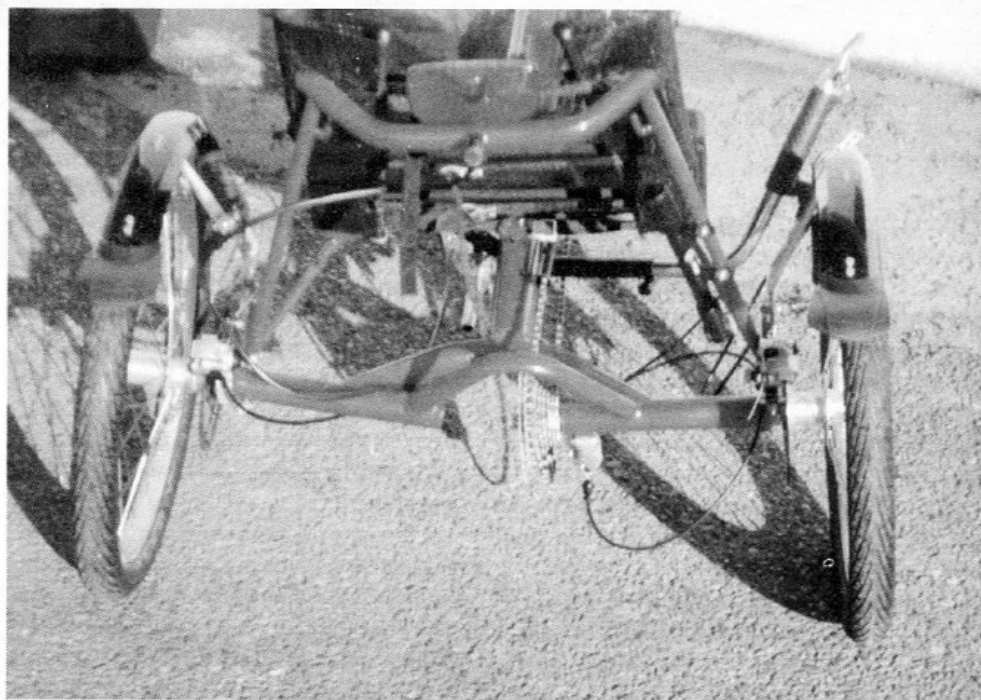
| | |
|------------------|----------------|
| KW 9 speed | \$2590. |
| Speed Drive | \$0460. |
| Bar-Ends | \$0089. |
| Ti front boom | \$0199. |
| Radical seat bag | \$0130. |
| Subtotal | \$3468. |
| Shipping | \$Incl. |
| Total | \$3468. |

The above prices doesn't include US Customs duty or assembly.

We'd strongly recommend that buyers consider the Magura brake and front pannier rack



A KW rider who forgot his helmet ; -) — photo courtesy of Hase Spezialraeder



Note the KW's canted rear wheels and two piece driveshaft and disc brakes

options, which would raise the price to \$3753.

The wider (3-inches wider) seat is an additional \$240 Magura hydraulic disc upgrade is \$220 and a front pannier rack is \$65.

Interestingly enough, the seat-suspended similarly equipped Lepus is about the same price once options are considered.

Verdict

The KW is an exceptional delta trike that is exactly as stated — a lightweight, yet versatile, performance trike. Whether this is what you need is up to you. This is almost the ultimate lightweight delta, and there isn't much competition in the performance delta market segment (though this may change soon with

the EZ3 aluminum trike that's coming soon).

I'm guessing that the KW would perform better with some weight on the front end. The KW would be ideal as a commuter or tourer with the optional front panniers.

Some may find the Lepus or other more substantial deltas suit their needs better. There are several very nice delta trikes. The KW can't compete at price-point, but it can for high quality. Unfortunately, with the suggested options, this is one expensive delta.

There are many high points to this trike, though some aspects were a disappointment (brakes). The Hase Kettwiesel has the potential to be the best performing, lightest, and sleekest of all delta trikes. If this is what you're after — this could be your trike. ♦

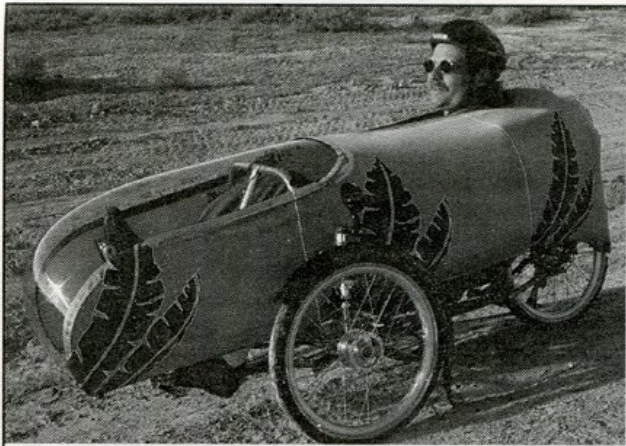


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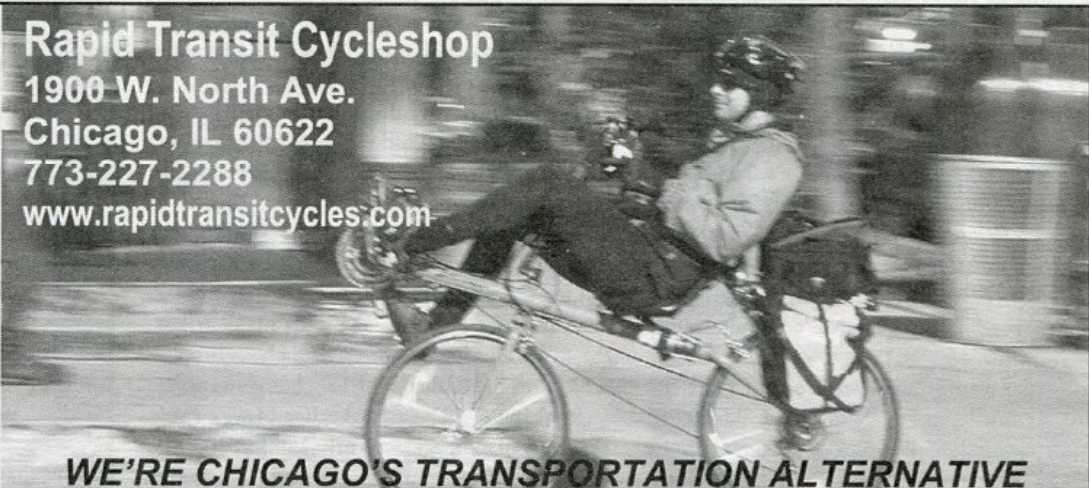
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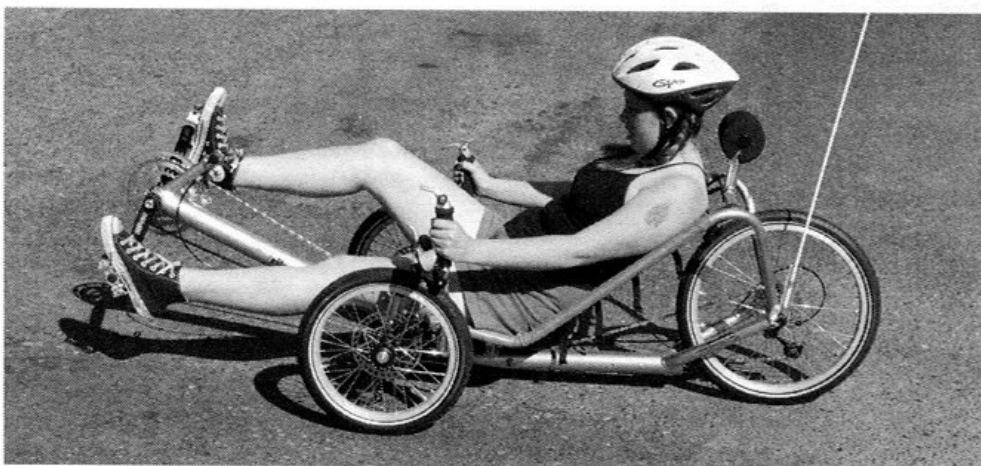
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Amy Bryant rides the Speed. Note: West Coast Choppers tattoo (temporary ; -)

wouldn't be necessary. On top of that we want to keep the price around \$2,000. We will, if necessary, replace any parts or even the whole frame promptly within the 5 year frame warranty period. A 10 year warranty is optional. So far the frames have been very dependable. There were a few glitches with the first batch that were mostly corrected by dealers."

The Speed frame has a bolt on derailleur hanger which is custom CNC'ed of aluminum for Big Cat.

Catrike frames are one-size, but there are three boom lengths. A small fits 35-40" x-seams; a standard 40-45" x-seams; and a long 45"-50" x-seams. My medium fit me perfectly.

Steering — The Catrike has side-stick USS steering that is quite effortless to steer. The steering system is amazingly simple and unique. Each front wheel, axle, brake assembly, steering knuckle/kingpin (looks somewhat like a fork without blades; made of CroMo) and steering side-stick (one of two; made of aluminum) mounts as its own package and to the frame via a headset (nice touch, we like headset kingpins). A simple crossbar type linkage connects the two wheels.

Weight — The Catrike Speed is very light — weighing in at an incredible 30 pounds — and this is with my heavy platform pedals and the a safety flag. Having tested so many recumbents that were overweight, it's a pleasure to find one that is actually underweight.

Drivetrain

Components — The components on the Speed are better than you'd expect at this price. The Shimano Deore/Tiagra derailleurs, Dura Ace Bar-Con shifters and Truvativ crankset (165 mm) look and work great. The trike even has a SRAM chain. There's a lot of value with this trike. The only concern might be lack of an adequate high gear (20-inch drivewheel).

Chain management — The Catrike's chain management is better than I expected. However, Big Cat has upgraded from 52-tooth to the 55-tooth large front chainrings since our

test trike was delivered. This will add some more chain slack in some gears.

The upper chain rolls under an idler with an "L" bracket metal guide. This guide moved on me — though can be easily be tightened. The new owner of our test trike thought the drivetrain was a bit noisy and wondered if a larger diameter idler would help. Perhaps it would, but the Catrike is fairly low and ground clearance may be an issue. As with many trikes, the lower chain goes through a chain tube — which has the typical muffled chain tube noise.

Braking — The Catrike has Hayes cable actuated disc brakes. While I didn't like the adjustability as much as the Avid discs I've tried. The Hayes brakes work fine and have all the stopping power you'll need. In fact, maybe too much. If you shift your body weight forward in a hard braking situation, it's possible to lift the rear wheel off the ground. Designer Paulo says the Hayes disc brakes will be updated for 2004.

Wheels and Tires — The wheels on our test bike are a 406 mm 20-inch rear/ 305 mm 16-inch front. For 2004, the Speed will have 349 mm front wheels (folding bike size) and perhaps a 451 mm 20-inch rear wheel.

The front hubs are Bitex trike hubs with upgraded bearings spec'ed by Catrike for the Speed. The rims are Alex "X" with Schwalbe Marathon 16" x 1.5" kevlar 100 psi tires. The rear wheel is a 406 mm 20-inch wheel with a Shimano Deore hub and a Marathon tire that matches the front tires.

Comfort

Seat — The seat frame is an integral part of the trike's frame, and therefore is also aluminum. The seat frame is larger and wider than you might expect — I suppose this is better for the typical wider American hiney. The mesh is a nylon variant called Phifertex. It tightens with straps and buckles — and held my XL-sized body without problem. The seat is quite laid back (38 degrees).

Ergonomics — Can you say "extreme

INFO AT A GLANCE

Specifications

Model — Big Cat Catrike Speed
Type — Tadpole Micro
Steering — USS side-stick
Wheelbase — 36"
Seat height — 7.5"
Bottom bracket height — 14-17"
Boom sizes — Small, Standard & long
Weight — 30 pounds (w/platform pedals & flag)
Weight limit — #300

Frame — 6061 T6 aluminum (not heat treated)
Kingpin/Knuckle — CroMo
Steering — Aluminum side-stick
Handlebar — Aluminum
Seat frame — 6061 T6 Aluminum
Seat material — Mesh

Components

Crank — Truvativ 30/42/52 165 mm
(Current spec is a 30/42/55)
Bottom bracket — Truvativ ISIS
Headset — Shimano STX (2)
Derailleur (rear) — Shimano Deore
Derailleur (front) — Shimano Tiagra
Shifters — Shimano Dura Ace Bar-Con
Cassette — Shimano 11-32 9-speed
Chain — SRAM
Gear inch range — 18-90 (see above, crank)
(Current spec is 18-95)
Wheel (rear) — 406 mm 20"
Wheel (front) — 305 mm 16" (349 mm for 2004)
Hubs (front) — Bitex trike w/oversized bearing
Rims — Alex X
Tires — Schwalbe Marathon 1.5 100 psi
(Stelvios will be standard for 2004)
Brakes — Hayes cable actuated disc
Brake lever — Hayes
Pedals — Rider supplied

Incidentals

Priced from — Trike \$1995
Rack \$50
Headrest \$95
Warranty (frame & fork) — 5 years
Colors — Silver with blue mesh seat

Pro

Very good build quality
Exceptional value
Great components
Friendly company

Con

Rough ride
Very short wheelbase
Aluminum frame not heat treated
High gear is too low (95 gear inches)

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trike." The Speed is low, the seat is laid back and the BB/pedal height is high. A headrest helps to tame the position and the wide seat makes it workable for us XL-size types. Here's my usual disclaimer: this position can cause both neck fatigue and toe/foot numbness in some riders (10-20%). I experience both, and have a difficult time riding an extreme recumbent for more than an hour at a time.

User friendliness — As extreme recumbents go, this one is fairly user-friendly. Any balance concerns from the rather laid back seat and/or high BB/pedal height disappear when you add that 3rd wheel — as balance is a non-issue.

Ride and handling

The Catrike Speed's aluminum frame and 16-inch wheels give it a rough ride — much more so than other trikes we've tested recently (bigger wheels and CroMo frames). This is no surprise, after all, this is a performance trike.

The Speed is reasonably stable ride at low and medium range speeds. With the very short wheelbase and 16-inch front wheels, the trike can be a handful at higher speeds. This is par for the course and to be expected. The trike is stable due to its low stature, but it controlling it at high speeds might be an issue for some. I wouldn't take it down my 40 mph hill that I regularly ride on my LWB OSS (rough country road).

The Speed is about as maneuverable as you can find in a trike. It turns on a dime.

Performance — The Speed is a sporty micro trike that performs well. It isn't as fast as a fast two wheeler, but for most will live up to its name. I found gearing to be a limitation. Our Speed spun out early with a 90 gear inch top gear. The newer models (55-tooth big chainring) will have a 95 gear inch top gear.

Safety — The Catrike Speed is very low. It comes with a safety flag. While it may seem that a low trike might be unsafe in traffic, we've received more respect on the road while riding low trikes than any other kind of recumbent. I'm absolutely not professing that you ride in downtown traffic — I wouldn't do that. Just how safe you'll feel on this ultra-low trike is up to you. Consider this in your purchase decision.

Owning

Utility — You can use a Catrike Speed for just about anything. As the name states, this trike is meant for performance. It wouldn't be the best choice for commuting, touring, or riding in urban traffic — but you could do it. The best use for the Catrike Speed is fast sport touring rides, perhaps on really smooth bike trails or quiet (and smooth) lightly traveled roads.

Market competition/Value

Value — The Catrike Speed gets our highest marks for value. The Brit and Aussie micro-trikes cost more than twice as much.

The WizWheelz 3.4 is the price-point competition for the Speed. The WizWheelz 3.4 is a more user-friendly, more recreational, and has more comfortable ergonomics and ride. Both are exceptional buys and offer lots of fun for the buck. The trikes are different enough that a decision shouldn't be that difficult. The WizWheelz is more of an all-around design

— though I'm not sure if it's any slower (we didn't have a chance to try them side-by-side). We're hearing rumors of a new Greenspeed coming out for 2004 that will compete with both of these trikes.

Buying — The Speed has become very popular. New dealers are coming onboard and should be fairly easy to find one to ride regionally. Catrike sells direct as well. We found them easy to deal with and the trike was easier than most trikes to assemble.

Options & accessories — There are only a few options at this time. A headrest is available and recommended. It clamps to the seat top tube and is fairly effective. Headrests never work as good as they should because rider's must wear helmets.

Reader analysis

Verdict — Big Cat is a new company and this is a new model. Anything can happen. This is the 3rd trike model to come out since 2000. The first was a version of the Rotator Comfort 3 trike. The second was the Catrike Road, reviewed in RCN 072. These previous models are no longer in production.

Our Speed was almost completely trouble free. There are a few items we'd like to address:

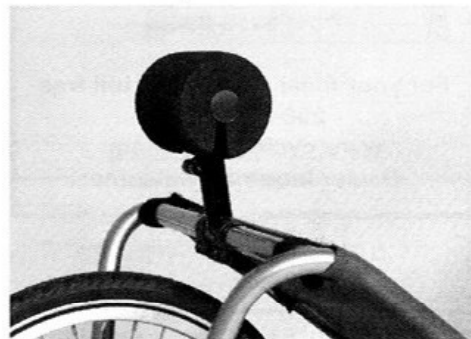
The Speed also has limited gearing with the 20-inch drive wheel (and no DualDrive or Schlumpf to boost up the high gear). There are a few nit-picky design items to criticize: There are no real cable stops, just a few cable holders; there's no naked cable on the Speed — though most of the cable runs are short. If you have any interference (which we didn't have), you can fix it with a few cable (zip) ties. The 165 mm crank arms were too short for me. I'd have rather had my usual 175 mm cranksets.

While I think the micro-trike approach is great, it's not the right trike for everyone. Some may find that there isn't much advantage to this low performance trike to compensate for the trade-offs. The little 16-inch front wheels are smaller, not as stable at speed, and a bit more hassle (we seem to have more 16-inch flats; finding tires and tubes is more difficult. Most of all, the aluminum frame and small wheels offers a very stiff ride. This combined with the laid back seat and high BB/pedal height, this isn't your average, recreational, sport touring trike.

There's been some internet chatter about the Catrike's high speed stability. I'm not sure what folks expect from a micro trike with 16-inch front wheels and a 3-foot wheelbase. I didn't particularly care for its high speed handling (compared to my LWB). Riders must understand that recumbents traits are like a list of attributes that once selected become compromises. So maybe it's not the most stable trike at 30 mph. I don't actually know, the handling felt great to me, but I didn't ride it at 30



Catrike chain management
Photo by Isaiah Charlton III



Catrike optional headrest
Photo by Isaiah Charlton III



Hayes disc brakes, 16-inch front wheel,
headset and aluminum frame
Photo by Isaiah Charlton III



Catrike Steering assembly
Photo by Isaiah Charlton III

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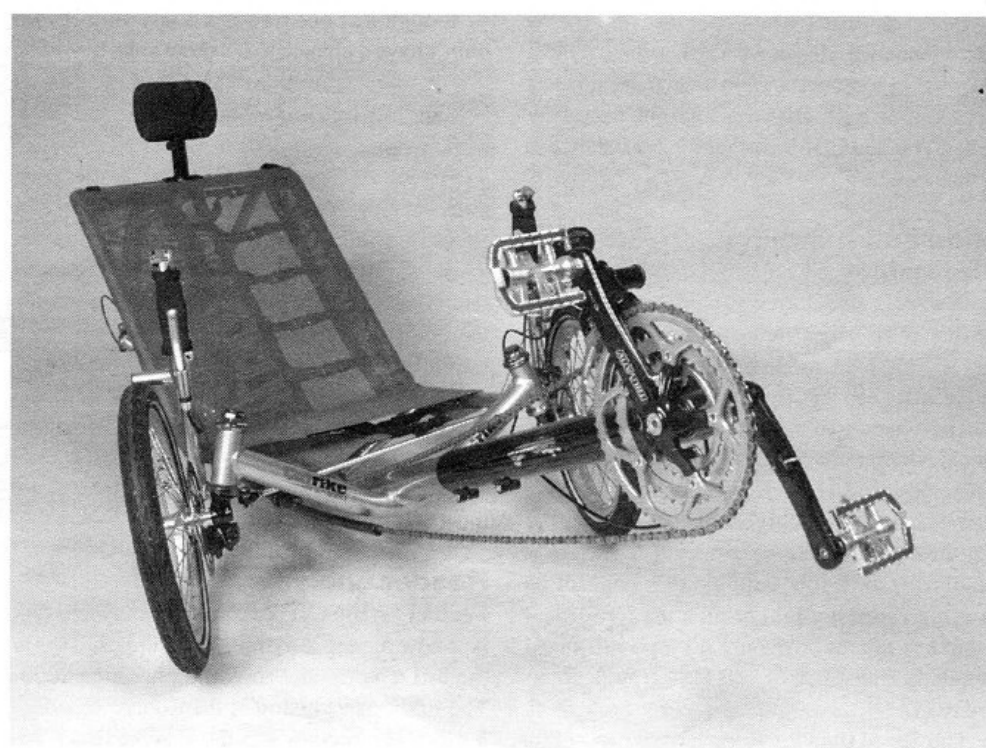
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*The sleek Catrike Speed — the best bargain in performance triking
Photo by Isaiah Charlton III*



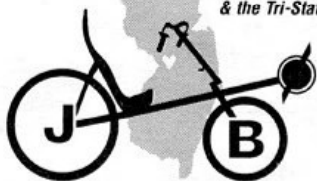
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mph. Designer Paulo Camasmie offers this advice, "I can ride no hands at 30 mph. Remember to tighten those headsets real nicely, to adjust toe-in. Isolate your upper body while still resting the weight of your arms on the handle bars. The Speed is sensitive up to 10 mph but at 10 mph that good caster angle kicks in and it's a solid ride, especially considering its solid (stiff) platform. As you go at higher speeds and lower cadence it is very stable. Even though it has a very narrow track you won't lift a wheel unless you want to."

Luckily for us trike enthusiasts, there are several new models to choose from. Some are more recreational riding/touring/commuter oriented, and some are performance oriented. The Catrike Speed is meant as a micro performance trike. It's good for speeding around on smooth pavement and having a good time. It doesn't require as large a financial commit-

ment compared to other micro trikes — and has good resale (our test trike sold in one day for 85% of its original price).

The price is attractive and owners seem to like them. It takes years to earn a reputation like Greenspeed or ICE. But these trikes cost a lot more — another compromise.

Paulo and Big Cat have been wonderful to deal with. The trike arrived on time, the assembly was a breeze and when we required a response to any question, concern or even a part, it was taken care of very quickly and usually handled beyond the call of duty.

Big Cat HPV, Catrike and Paulo Camasmie is a welcome addition to the recumbent bike/trike world. The Speed is a good bargain. We asked about updates for 2004, Paulo said, "prices might increase." Get them while they're hot . . . and affordable (as recumbent trikes go). ♦

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Mike Stern checks out a Rocket at RANS

Recumbent Journal

My 'Bent Vacation

by Mike Stern

My wife (Joan) has some great ideas. Six years ago, close to the onset of middle age — she asked for a bike for Mother's Day. A silly idea since she hadn't ridden in 30 years. But being a great guy (pushover) I bought her a new bike. That was nine bikes ago. For the last four years, it's been recumbents for me and uprights for her. Joan suggested we consider the tandem so we could ride together. We now tandem 300 miles a month. Our Barcroft Columbia has become our main bike.

Three months later, she had another strange idea: we should take our bikes on a road trip — drive 3,000 miles in ten days. She explained that we could ride in the morning, travel later in the day, and really see the country — and this is exactly what we did. It turned out to be our best vacation ever. Here is how we did it and some of the experiences we shared.

Preparation: The internet was the key to planning this trip. I found plenty of sites for bike clubs, shops, local rides and other cycling connections. I emailed bicycle clubs, organizations and shops in cities we were passing through, determining our itinerary in part from which community offered the most appealing rides.

Equipment: We traveled in our Ford Conversion van with the rear seat removed. We took our Barcroft Columbia tandem, my Barcroft Virginia SWB and my RANS V-Rex (Joan was learning to ride it).



Terry Walden's GRR

Springfield, MO

Springfield is 230 miles from our home in St. Louis. It's the gateway to the Ozark mountain region of southern Missouri and northern Arkansas, an hours drive from Branson. Leaving St. Louis on Wednesday afternoon we arrived early that evening. Terry Walden met us the next day at 8 a.m. on the outskirts of town. The temperature was 58 degrees, a real bonus for August 8th in southern Missouri. Terry is quiet, friendly, and one of a few recumbent riders in the local bicycle group. His Gold Rush Replica sports the add-ons of someone who includes his bike in his daily life: Front fairing, lights carefully installed, rear rack,

American flag body sock, Frog Speedplay pedals, and a host of other add-ons which enhanced the utility of the bike. He took us on a ride south and east of Springfield through Rogersville and back. Twenty-four miles of scenic suburbs, small farms, pasture land, forest, and then back to suburbs, all through rolling hills. Green and orderly, minimal traffic, bright sun in the clear blue sky, it was a nice opener for the trip. On the way out the ride took us gradually upward. We would descend a hill only to climb a little higher, then down and a little higher and so on. This made the ten mile return a real kick as we rode the general descent. The ride wasn't flat like central, Illinois, nor hilly like Lexington, Kentucky, but a nice compromise. The road surface was excellent, not the rougher chip and seal farm roads we find locally. There was enough climbing to give you a workout, plenty of descents to up your average, and a number of situations to test your skills.

On a tandem — especially a recumbent tandem, the uphill are not a lot of fun. You gear down, spin, and slowly make your way to the top. But the downhill are incredible. When we get our Columbia up to speed on a descent no one keeps up with us — upright or recumbent, we pass them all. But Terry and his Gold Rush gave spirited chase. He's a strong, skilled rider and with the improved aerodynamics of the fairing and body sock, he sliced through the air. We set a new personal best of 41 mph down a short descent. He came close to matching that. On the flats he could really scoot. And he took the uphill with ease.

Oklahoma City

We pushed on the 300 miles to Oklahoma City for the evening ride. The ride met in front of a local bike shop. The weather was hot and Joan wasn't up to another ride so I took my Barcroft Virginia. The ride promised two groups. The fast group (18 - 22 mph) would do a 30 mile trip, the slower group (13 - 16 mph) would choose the distance (up to 30 miles). The slower group had a no drop policy. My single bike average city ride is under 16 mph, so I was a slower group candidate. That was the idea anyway. Everyone who showed up (except for me) were upright Tour de France wannabes. As I had the only recumbent they seemed hesitant about me joining. When they couldn't figure out who would stay behind and run the slower group (me), I decided to bag the ride. They didn't put up an argument. I learned a lesson. In making arrangements be sure you have a local contact you can join up with who knows you ride a recumbent.

Albuquerque #A

Driving 550 miles we arrived by mid afternoon. We visited Two Wheel Drive, a local bike shop who is expanding the recumbent part

of their business. Albuquerque used to have Absolutely Recumbent, one of the early all-recumbent shops. They recently closed leaving a gap in the local scene which Two Wheel is trying to fill. On our last Albuquerque trip we visited the shop and talked to them about recumbents. They asked for and we made suggestions as to what we thought they should carry. They are now a RANS and Vision dealer and looking for more. The shop is staffed with experienced mechanics who showed a real interest in the Columbia. It's always nice to talk recumbents with people who know what they're talking about.

The next day we met the Chili Pedalers in east Albuquerque. They are a local tandem group who usually sport at least one recumbent team (normally a Screamer couple). The other riders were great, open, friendly, and helpful, a pleasant change from our Oklahoma experience. Each month a member team will organize a ride. This month we were to do the east mountain loop, a ride which took us east on Old 66 over the Tijeras Pass to the town of Tijeras, around a few loops and then back again. The ride goes from 5,500 feet to 7,800 feet. Total ride could be 38, 44 or 52 miles. Old 66 gets some traffic but most vehicles take I-40 (which runs parallel) so while we had to contend with few cars, the wide road shoulders made riding safe.

Funny, but no matter how carefully I plan, I always overlook the obvious. Hill climbing on a recumbent tandem isn't easy. We attacked each hill by gearing down and keeping our cadence up. What we hadn't considered was the altitude. Frankly, it kicked our butts. We got half way up the Pass and couldn't breathe. We gave it our best but we just weren't acclimated. So, halfway up we turned back. But even in concession there is glory. We set our new speed record as we broke 50 mph on the downhill.

Safely out of the mountains, we turned north on a bike path parallel to Tramway Road.



Carl Smith and his Bacchetta Strada

Tramway runs along the eastern edge of Albuquerque before turning west. It serves as the city's eastern and northern boundary. It's a long steady climb with about an 800 foot altitude gain, but more gradual than the Tijeras route. The rise taxed our Midwesterner lungs, but not to the extent the mountain loop did. The well maintained paved trail weaves among desert subdivisions and open parks. You feel you are riding through a desert garden. At the highest point on Tramway, we had an expansive view of the city below and the wide plains to the west ending in the mesas which provide so much of this region's beauty. If you like open areas, New Mexico is it. Gorgeous vistas, beautiful skies, dry air. For the return we left the path and rode down Tramway's wide shoulders back to the beginning. Twenty-six miles total and a high altitude work out.

Along the way we passed (or were passed) by many cyclists. We saw a Haluzak, a BikeE and a Vision — all riders were friendly. We all shared the universal language of cycling.

Albuquerque #B

I met Carl Smith in early 2002 when he and I both attended a Bacchetta open house at Angletech in Woodland Park, CO. Kelvin Clark and I had discussed bikes and how to

build up my V-Rex. He suggested I consider the Giro. I was looking for more performance. I learned that the V-Rex all around performance and was not easy to improve on.

I'd ridden many other highly thought of recumbents but found little I liked better. So, in the middle of March I found myself at 8,000 feet in 40 degree weather, with the snow melting, talking with John Schlitter of Bacchetta and riding his prototypes. So was Carl. You really have to be dedicated (or obsessive) to travel the distances we did just to test ride bicycles. Carl, who has lived in Albuquerque for years, is more technical and mechanical than I. He owned both a V-Rex and a Haluzak Hybrid Race at the time. We tried both the Giro and the Strada. He was impressed with the bikes. They didn't fit me well. I made the decision then to get the Barcroft Virginia (the only bike I had tested which I liked better than my V-Rex). Carl later ordered the Strada. We kept in touch and when I mentioned our upcoming trip he graciously offered to be our guide in Albuquerque.

Calling Carl a guide is probably a misnomer. He is an excellent recumbent rider. More than that, he is an incredible trail finder. He'd planned two rides for us. The first one was his Tour de Albuquerque. We rode the tandem, he rode his Strada. I remember the ride well but can't tell you all the ins and outs of our route. Carl's knowledge of the city streets, paths and byways was impressive. I swear we saw parts of Albuquerque not seen since the Conquistadors.

We started on the Bosque Trail, a paved bike and hiking path that runs north — south along the watershed of the Rio Grande River. Forest preserves and wildlife areas surrounded us. We passed homes built in harmony with the scenery, not in contrast to it. The entire trail runs for 20 + miles and is a well used path for cyclists and hikers. We eventually found ourselves south and west of the airport in a largely undeveloped area. Then, east and north up the

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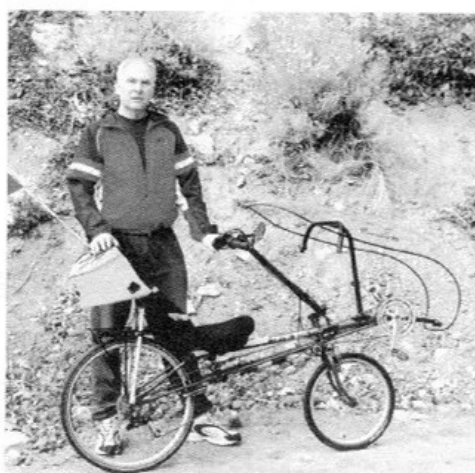
first killer hill, huffing and puffing to Gibson Road. where we skirted the airport heading east on the roads, lanes and paths to Tramway. We rode from the western to the eastern city limits. Then northward up Tramway, steadily rising until the turn westward at its apex and along the city's northern boundary. On one side was the Sandia Indian reservation, on the other the city limits. Then west down an incredible six mile downhill towards the Rio Rancho area until we again hit the Bosque Trail turning south to home. We didn't let the tandem run free on the downhill, choosing to keep our speed around 40 on the descent. But the long ride down with the warm desert wind in our face was glorious. We passed the Sandia Casino, a buffalo herd grazing on the reservation, under I-25 and back to the nature trail. Along the way we saw roadrunners (the birds not the recumbent), the aforesaid buffalo, lizards, snakes, prairie dogs and plenty of wide open spaces. We also met two Haluzaks, a BikeE a Vision and a Rocket.

Carl can climb like a mountain goat on his Strada, but was no match for us on the downhill. The guy never seemed to breathe hard, seldom sweated, and seemed to drink sparingly, a truly acclimated desert rider. He just seemed to be able to ride all day, impervious to the thin air and bright sun. Maybe a dose of our midwest humidity would soften him up, but in his element he is one strong rider.

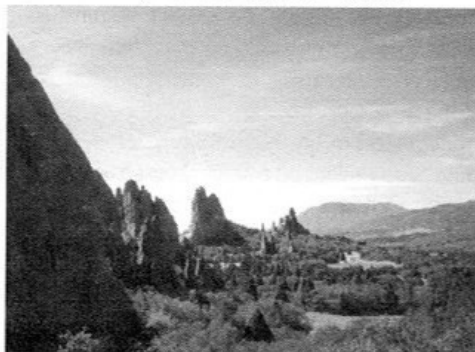
The total trip was 50 miles. More memorable was that for the remainder of our stay we could look east to the Sandia mountains or west to the plains and mesas, north to the hills and south to the flat land and know that we'd biked there, all of there. It was our best ride of the trip. And we turned 1000 miles on the tandem.

Albuquerque #C

For our second Carl Smith ride, he chose the west mesa. Again we rode the tandem, Carl his Strada. Still largely unpopulated, we rode up to a recreational area in the middle of nowhere off of Vulcan Road. That saved us a miles long steep incline which we thought



Marty Levine and his V-Rex



Garden of the Gods

would be a problem with our unacclimated lungs (people in high places have to have lungs the size of refrigerators). We headed north toward three volcanic cones. Surrounded by wide open undeveloped spaces and minimal traffic, we were buffeted by a strong wind from the west. The ride was steadily but slightly upward at a modest incline, not like the two previous rides. Then, past the volcanoes, a turn to the east and northeast and a gradual descent which became more rapid. The harsh westerly crosswind now became a comforting tailwind on the descent, which seemed to go on forever: 25 mph, 30 mph, 35 mph, 40 mph, ever onward until we hit a long straightaway to the east. We were in top gear now, motoring along in the mid thirties on the flats until we returned to civilization at Coors Road. Again pioneer Carl took us through the back streets

until we found ourselves on the Bosque Trail for the ride home — a total trip of 25 miles.

One of the things that impressed me about Albuquerque is its bicycle friendliness. The community has made a concerted effort to obtain federal funds to improve the roads and recreational paths to accommodate cyclists. Bike riders have the same rights as motorists. Most roads we traveled have bike lanes or wide shoulders and the drivers tend to be non-territorial. St. Louis has little of that, perhaps because the city core is older. But it was nice to dodge the glass on the road instead of the drivers. And with a number of bike trails throughout the city, it was impressive to see what a little bit of urban planning and forethought could do. But Albuquerque does have one thing St. Louis doesn't, goat head thorns. These tiny little critters did their thing on our front tire, our first flat on the tandem. But, if you are going to get a flat, Carl is the guy to be with. In the time I would take to consider the situation and decide on how to change it, he already had the wheel off, the old tube out, new tube in, and was pumping it back to rideable pressure. He'd encountered the mighty goat head before.

Colorado Springs (Garden of the Gods)

Our first major tandem trip was to Lexington, Kentucky for the Horsey Hundred over the Memorial Day weekend. It was a great ride, through beautiful hilly (emphasize hilly) country side. Like most riders, we stayed in the Georgetown University dorms. When we first entered our dorm building there in the lobby was the nicest RANS V-Rex I'd ever seen. It sported a fairing, flag and a bright yellow RANS aero bag. All the add ons blended into one sweet package. That bike, I discovered the next day, was owned by Marty Levine. He and his wife Debi were living in Indianapolis but shortly thereafter they returned to their previous home in Manitou Springs, Colorado. They agreed to be our hosts for our Colorado Springs rides. Debi, an excellent rider, had one defect. At the time of our visit she rode

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an upright. But there was hope. Shortly after our return home she took delivery of her new Tour Easy.

They planned a ride for us through the Garden of the Gods, one of nature's marvelous sites, containing bright red rock formations, massive outcroppings, pleasant vistas and limited traffic. Marty commutes to work by bike (as do a lot of Colorado Springs residents) through the Garden of the Gods (tough assignment). The ride from their home through the back streets of Manitou along Pikes Peak Road to 31st Street to El Paso Road and into the Park took us by older plank and log homes built under stone ledges (this is mountain country), and tranquil neighborhoods overlooked by rocky cliffs and pine trees. We had to take a dirt path about 100 yards into the Park proper and as the dirt became thicker and looser our traction became less and less, resulting in our first ever tandem fall. Unhurt, but not liking this kind of attention (ride a recumbent tandem and you are always the center of attention), we pushed on. Again the altitude took its toll as the long uphill had us gasping. The downhill was great except we wanted to spend more time looking at the scenery. We retraced our route up the streets we had come down, with frequent rests, to the start. What we found is that in Colorado nothing is flat. You are always moving up or down. While the total mileage for this trip was 15 miles, it felt like 50 with the climbing at that altitude. And a new record low 10.8 mile average for the ride.

The day before this ride, as we arrived in Colorado Springs, we went directly to Angletech in Woodland Park (about 20 miles from and 2,000 feet higher than Colorado Springs). Kelvin Clark had upspec'ed my Virginia and I was troubled with a noise from my bottom bracket. He immediately sized up the problem, adjusted the position of the front derailleur, and no more problem. Since we had the V-Rex with us he sized it properly for Joan and shared with her some recumbent riding tips. Kelvin had never ridden a Columbia tandem, we took him for a spin. It was

fine when he was the stoker, but when he captained I found it bothersome since I was used to being in control. But one thing was obvious. When you deal with an experienced recumbent bike shop you, first, get someone who knows what they're doing, and second, you get service. While many bikes today are sold as commodities from discount stores and high volume outlets, and unfortunately some recumbents are sold from bike shops with little knowledge of the product, buying from a tried and true recumbent bike professional, even at a higher price, is worth it in my book. Kelvin spent two hours with us, without the hope of a sale, and never charged us a dime. How can you beat that? And best of all, we talked recumbent talk. We exchanged thoughts about models, why he thought the Rocket with the higher bottom bracket wasn't as good a choice for Joan as the V-Rex, advantages and disadvantages of larger vs. smaller wheels, and other subjects. Our own private recumbent discussion group.

Colorado Springs

The old adage about if you don't like the weather wait a few minutes and it will change applies to Colorado Springs. We awoke to 50 degrees, sunny skies and 40+ mph winds. You could barely stand upright, much less ride. We'd planned to go with Marty and Debi up to Woodland Park and ride the paved forest trails. No such luck. But when we got to Manitou Springs the wind had calmed and the temperature was in the 70s. What it would be doing further up the mountain was anybody's guess. So, Marty and I changed plans while the women went shopping and decided to ride the Monument Valley Trail. For the first time on this trip the Virginia made it out of the van.

The trail runs north — south through Colorado Springs, for the most part following Fountain Creek. While you may be in the middle of the city you wouldn't know it as you're surrounded by trees and foliage. Towards the northern end is Criterium Cycle, reputed to be the city's best bicycle shop, although the only recumbent it handles is Cannondale.

The trail runs slightly uphill as you head north following the river. To call the trail paved exaggerates. Part is hard packed dirt, part looser dirt, part rough pitted asphalt, part smooth asphalt and part crushed limestone. If surface variety is for you, this is the mother lode. But the scenery and the wild life, even in the middle of town, makes up for the road quality. We saw deer, all kinds of birds, squirrels, chipmunks, rabbits, snakes, possums, raccoons, but no bear. Given the inconsistent surface, the ride tested your skill at handling a variety of situations. It reminded me more of a mountain bike ride. Marty's wider tires on the V-Rex handled the ride well. My Barcroft, with its tighter tolerances, is made for the open road. It was not as well suited for this terrain. The narrow Schwalbe Stelvios made some maneuvers a little dicey, but I got through without mishap. And, when we would hit smooth asphalt, and I would accelerate from 10 to 24 mph in a few seconds, I was reminded why I have this bike. It got me through even though it was not in its element. When it hit the paved road, it flew.

We tried an informal coast down test between the faired V-Rex with the 200+ pound rider and the unfaired Virginia with the 160 pounder. Marty cheated by riding the divider paint stripe (smoother surface) while I had to ride the rougher road, but the coast down was about even. It reminded me that finding a faster or better performing bike is an individual quest dependent not just on the bike style and components but the rider style as well. To compare the capabilities of the V-Rex with its rider to the Virginia with me is trying to compare grapes to donuts. Nothing was controlled about our comparison, no standard for testing was used, so whatever the results were would prove nothing. Downhill, the heavier bike and rider should win as gravity takes over. At level, aerodynamics should help the lower more laid back bike (but of course the taller one had a fairing) as less wind resistance means better performance. An unscientific test if there ever was one. And even if I was faster, that doesn't mean that my bike would be a better choice



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for Marty. The best recumbent advice I've heard is to ride all you can and pick what feels right for you. Our competition enforced that idea as each of us have different riding styles, biking needs and goals. It's nice there are so many recumbent choices.

The total trip was only 15 miles but because of the surface problems the average speed was again only 10.8. But with the controlled climbing of a steady subtle incline as opposed to a mountainous pass, breathing was not a problem. And the variety of riding situations was interesting.

Hays, Kansas

Hays, Kansas is a town of 17,000 on Interstate 70. It's not a tourist hub but it's the home of RANS. I own a RANS. My two main bikes now (Columbia and Virginia) use the RANS seat and steering system and the Virginia was co-designed by Bacchetta's Mark Colliton, who also co-designed the RANS V-Rex. I felt like I was a pilgrim visiting the holy land. This was truly a recumbent trip to Mecca.

We got into town in the early evening. We'd heard of a daily morning ride so we sought out a bicycle shop to confirm the details. We found Sportsman Supply, an all purpose sporting goods shop, who carries RANS products. They confirmed the ride which started at 6 a.m. The time wasn't a problem but riding the first half hour in the dark was as we had no lights. The owners gave us a map of the city and charted out the route so we could do the ride after sun up.

What we noticed the next day as our ride started was the humidity and the lower altitude. You may not like sweating but I'll take



The RANS factory in Hays, KS

sweat over lack of oxygen any day. Our route took us north out of the city on Vine, west along the I-70 service road, then north on Hall Street, which then circled around to HWY 183 which we curved past Fort Hays State College, the historical Fort Hays army post, buffalo herds, farmland and most importantly, the RANS factory. Then eastward into commercial areas until we hit Commerce Parkway which we took north to 27th Street and then west, past the Sternberg Natural History Museum and back to the hotel.

Our trip around Albuquerque had been 50 miles. Our trip around Hays was 16 miles. For a short excursion this trip offered a lot. Despite what people say, Kansas has hills and one was challenging. And it also has scenery, urban to rural, well kept farms to unkept pasture, housing developments and isolated trailers. Most of the main roads have wide shoulders to ride on. It also has courteous drivers. And one other thing you can always find in Kansas, wind. Of course we got the looks with our Barcroft tandem. It's smaller than the Screamer, the home town product. Curiosity turned to smiles and waves. They know

recumbents here and appear to appreciate all kinds. It was nice midwest riding, flat to rolling, a few hills, humidity and air to breathe.

After the ride we took a quick shower, packed up, and then went to the RANS plant. We'd called the day early to tell them we were coming. RANS is one of the big names in recumbency. I was surprised at the size of the RANS factory. It isn't a mom and pop operation, but I expected General Motors. It appeared to as a group of prefab buildings on the edge of town, nothing compelling about its architecture. But it employs friendly approachable people who seem to love their jobs and the products they produce.

Kim, our informal tour guide, took us through the whole plant. The only bicycle assembled on site was the Screamer. All other RANS bikes (excluding prototypes of new designs) have parts produced (and partially assembled) elsewhere and then sent to Hays where they are packaged together and shipped to the various dealers. Except for the Screamer your dealer will have assembled your RANS product. We saw their product lineup including some prototypes. I saw a gorgeous fancy Rocket with fairing, carbon cranks and larger chain rings that had me drooling.

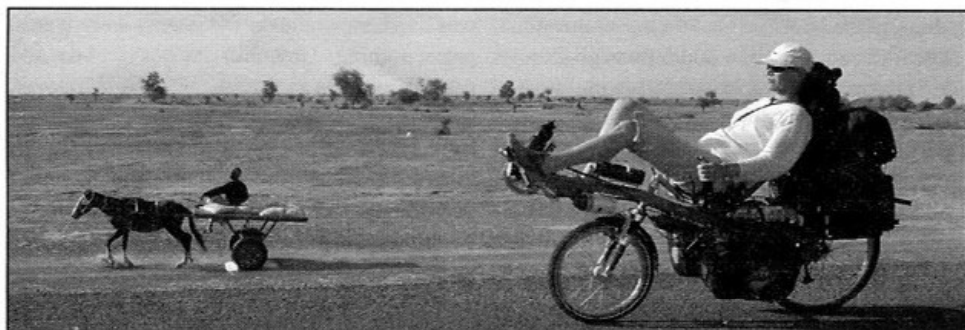
Impressions

We like rides with some organization. SAG support, rest stops and road markings are nice additions to an aggressive road ride. But I tend to forget what adds to the enjoyment of biking — the people. Before this trip had I predicted our two best rides I would've been the ride in Oklahoma City with the club that had the no drop policy and the Chili Pedalers ride in Albuquerque. As it turned out, neither of those rides were up to my expectations. The rides I thought might be iffy, the ride in Springfield, MO. and later, the one in Hays, Kansas, were wonderful. And along the way we met so many great people. We've all experienced the upity wedgie hard bodies who turn up their noses at anything that avoids saddle sores and ulnar nerve damage. But we forget about all the truly nice bicycle enthusiasts, upright and recumbent, who are glad to greet you, direct you to a ride, and show you routes you could never find on your own. All you have to do is be willing to look. The more open I was to the situation the better the results were. The end result was a trip with great cycling memories.

Trip Planning

Here are some guidelines I'll follow when arranging our next trip:

- Maximize the internet to contact clubs and recumbent shops where you would like to visit.
- Try to find a local recumbent rider who's willing to ride with you. Spend some time on the alt.rec.bicycles.rec-



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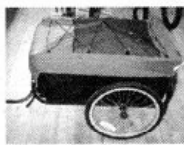
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-umbent newsgroup or hpv mailing list to meet riders from all over the USA.

- Try to find about any unusual riding conditions where you plan to ride (altitude, steep hills, traffic, etc.)
- Don't be a slave to your plans.
- Don't tie yourself to a specific distance. Most of our rides were short. At home I consider anything below 35 miles to be a short trip.
- Meet the local riders and check out the bikes.
- Have fun. We had the best vacation ever. For having such silly ideas my wife has some great thoughts. ♦

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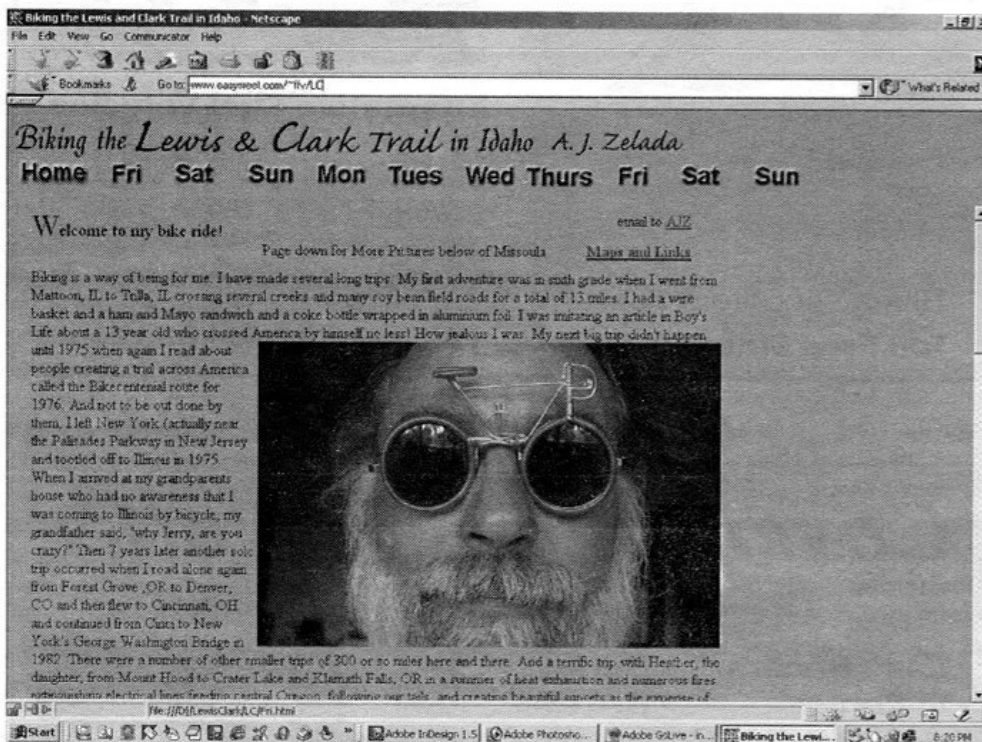
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navigate. I used Adobe's GoLive 6 in order to organize the pages and keep all the mechanics of web building together. I used a second program, WS-FTP, to copy the files from laptop to the web. Once transferred I checked the pages with Netscape, Internet Explorer and Opera browsers to make sure the site had a cohesive look. I created an account with my local ISP provider (Internet Service Provider) so that I could access my account with an 800 number from any phone. I anticipated that I would be using Photoshop Thumb-sPlus in order to manage the pictures from the digital camera after a day's shooting and riding. My camera uses simple compact flash cards and it is easy to plug the card into a slot in the laptop and transfer the images to the hard drive. I backed up absolutely everything I did not want to see lost before I got home.

My girlfriend helped me box up my recumbent bicycle and gave me a kiss as I left for the security line at the airport in order to fly to Missoula, MT. Another change of the twenty years: no tent or sleeping bag but a laptop, batteries, chargers for the panniers.

So I biked from the Missoula airport downtown Missoula and around the neighborhoods, checked in at the old Bikecenter office (Now called *Adventure Cycling!*), checked into a motel. I transferred the pictures from the camera to the laptop, resized them into smaller more web friendly images and arranged them on the web page with my own commentary about how cool Missoula was, and uploaded the new pages easily from the motel room. It worked. I broadcasted an email to my family and friends. And the next morning, there were even salutations from people. How fun. My trip twenty years ago had about 8 mail stops across the country (places like Paris, Ohio; Glasgow, PA) and people even sent me Payday candy bars! The immediacy of an electronic response was what the web reinforces. But in a way the anticipation and hope of "hearing" from friends and family was no different from pulling up to the General Delivery window of a post office and asking, "is there any mail for me?" I had shared the trip in 1982 with all sorts of Jack-a-lope postcards and often odd, unique postcards to friends and now I was sending little bits and bytes with the same desire to share.

The second night the motel room had no phone. The third night the cabin had no phone. The fourth night was different. I searched for a motel with a phone in Orofino, ID and checked into one after the manager said he had phones in all rooms. While waiting for the room to become available, I checked my messages in the local library. Lots of messages

Panniers: Carrying the Past Into Today

by Dr. A.J. Zelada

Time to Go Traveling

My friends made fun of me when I mountain biked because I was the one who had panniers. Well, only one pannier, most of the time. I've spent a lifetime of biking since the 2nd grade. Since my first big bike trip in 1975 from New York City to Illinois, panniers have always been just part of my bike. I spent the entire summer of 1982 crossing the USA (Oregon to the George Washington Bridge) on an old Motobecane bike with two panniers and my 12 dollar red sneakers. To celebrate the 20th anniversary of my 1982 ride, I decided to make one more solo trip.

What a difference 20 years makes: Then I was a student who could take 3 months off; I had black hair instead of gray surrounding an island of disappearing hair seedlings; the blood pressure was lower; I had all my cervical discs and was without a titanium plate with screws holding two vertebrae in alignment; and my Ideale leather seat of 30 years had been retired for a lawnchair seat on wheels (recumbent bike). Etceteras!

So all my coffee friends, staff, and family were concerned that I had chosen a route from Missoula, MT to Lewiston, ID which was reported to have no shoulder. But hey, let's be positive! I really only had 8 to 10 days to be gone from my practice. Undaunted Courage

(Steven Ambrose) and Tod Rodger's Bicycle Guide to the Lewis & Clark Trail called to me to follow the road across Idaho. I figured five easy days of exploring and being a total tourist would suffice. I'd talked two friends into picking me up and perhaps enjoying a little Snake River rafting at the end of the 250+ mile bike ride. But the real question was how to communicate? Postcards and phone calls seemed passe'; the web seemed the simple answer.

The Road

Of course the Lewis and Clark route has two components in Idaho: the real Lolo Trail which is asymptotic to Lewis and Clark's footsteps and alternatively the automobile highway of Route 12. The Lolo trail was about 140 miles and I really needed a support vehicle in order to traverse that alone. I knew I couldn't carry enough supplies and water. Plus I didn't have to prove anything to anyone, I wanted to simply ride everyday, meet locals, and be outdoors for a whole week. I chose the highway.

The Preparation

Before flying to Missoula I created a bare bones website for my projected trip. Each day had its own page and at the top of the site was an index of clickable days for the viewer to

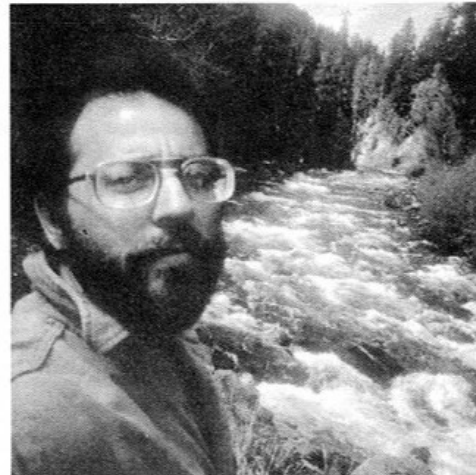
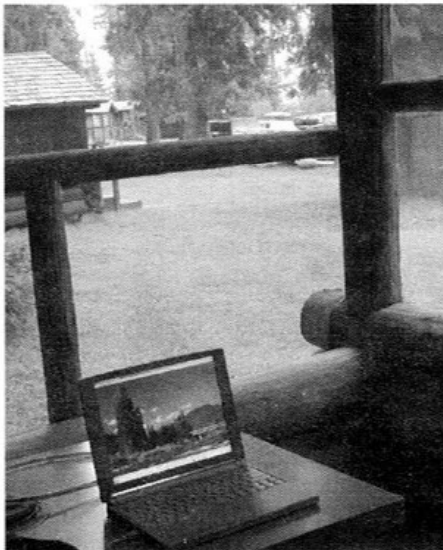


My recumbent tows a heavy touring load



Behind the windscreen of my RANS V2

people wondering what happened to me over the past three days. After checking and connecting the computer, I spend about 30 minutes trying to connect to the web. Frustrated, I called the ISP help and for another 30 minutes, they could not help me and suggested that the laptop connection was faulty. I asked the motel manager about the difficulty. He said, "oh yeah, I only have one room that a modem will work in. All the other rooms only have old two wires for the phones." So a phone line is not a phone line. Then he offered the use of his fax line. He said the Pepsi man uses his fax line to report his inventories with his computer. I said, "great!" I trundled back to my room and created the past three-day's worth of pages. I then brought the laptop to the office, plugged into the fax line and up and away the files went. I sent another broadcast message. Feeling satisfied I biked up a steep grade to the top of Dworshack Dam (America's longest straight-line dam) and then whizzed down in the top thirties mph beating the quick rain storm to town by minutes.



Me back in 1982

The final night on the road in Lewiston, ID was with an Internet friendly phone. Everything transferred smoothly! Plus the room was air conditioned from the 109-degree weather.

So 20 years later: the postcards of 1982 became electronic web pages of 2002; the evenings of just watching the sunset were interrupted by an hour of reviewing images and the mechanics of laying out images and words; the sparse mail stops with only a few envelopes of news became a number of emails full of suspense, interactions and medical news of a friend diagnosed with cancer; the twelve dollar sneakers were now 69 dollar sneakers. And me now twenty years later: Still loving that glide down the road, that change of gears, that serendipity of meeting people; that silence of being visual all day; and that fun of sharing all these images and thoughts with others so directly. And hopefully it was more than just being narcissistic! And I was very happy to see my friends after their long drive to pick me up but I admit that I was wondering if I had declared that this was my last solo trip just a little too soon.

Technical Notes: I used a Nikon camera with Sony Vaio Laptop and a slim HP CD Recorder. The web site created is online at WWW.easystreet.com/~ffv/LC. Dr. Zelada has a private practice in Portland, Oregon. He is happy to answer any questions. ♦

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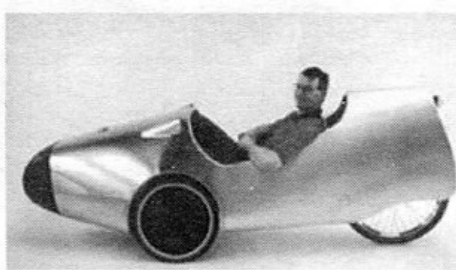
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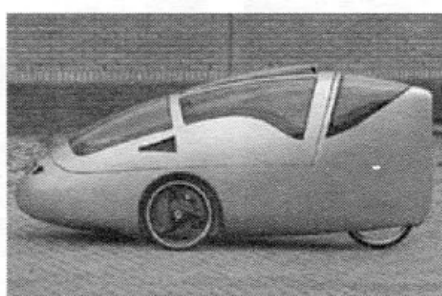
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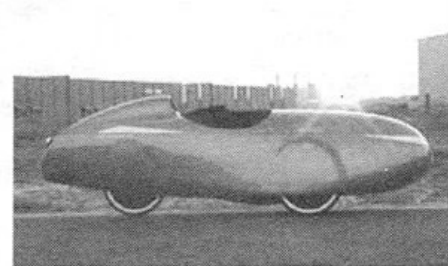
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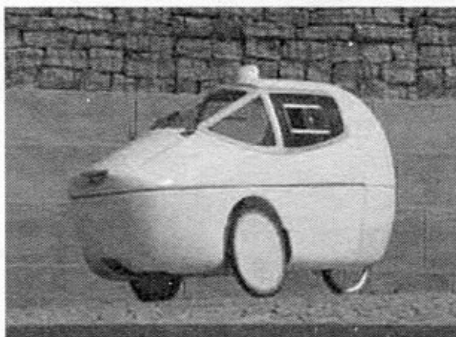
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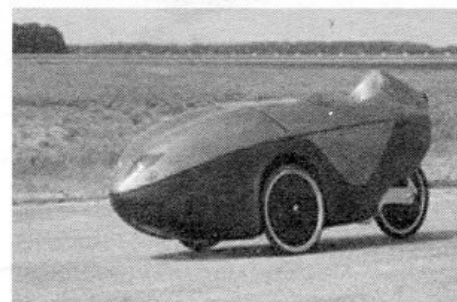
The Conquest



The Cabike



The Go-One



The Versatile



The Leitra

Commercially Available Velomobiles

by Ethan Davis

At some point you may have found yourself thinking, "there must be a better way," as you were pedaling your cycle through unpleasant weather. When I was growing up, I used to ride my ten-speed in such conditions on the way to High School and I often felt this way when cycling in lousy weather.

My imagination was stirred after I read an early 80's article in *Scientific American* about fully enclosed human powered vehicles (HPV's) for racing called streamliners. I thought that perhaps fully enclosed pedal powered vehicles similar to these could offer a viable, more environmentally responsible alternative to the internal combustion powered automobile. It wasn't until easy access to the internet became available in the mid-90's that I found out about Velomobiles, though.

What constitutes a velomobile (VM)?

Most would agree that weather protection provided by a substantial degree of fairing is the primary defining feature of a velomobile and is what distinguishes a VM from other recumbent bikes and trikes. Most of these vehicles are three wheeled, and full suspension is usually provided to handle the higher speeds that can be attained due to the fairing.

The majority of velomobiles are currently produced in Europe, with the epicenter of VM development and use falling in the Netherlands. The following table is intended to present what I felt were the most important

pieces of information about a number of the current crop of commercially available velomobiles much more information can be obtained by visiting the manufacturer's website. Prices are shown in Euros, and at the time of writing, the Euro was worth about 1.18 US Dollars (see www.xe.com for an on-line currency converter). All velomobiles in the table are tadpole (two wheels in front) configuration and all have full suspension.

It's my hope that at some point in the near future, VM's will gain acceptance and wider usage in North America and that such machines will be designed and built here in the USA. Currently, most VM's are built and used in Europe. With this in mind, I've put together a website that offers additional information to the individual interested in obtaining one of these vehicles for their own use (www.velomobiles.net).

Update

Since I initially wrote this article, the situation has improved somewhat with respect to VM availability in the US. David Eggleston of VelomobileUSA, located in Midland, TX (www.velomobileusa.com) has obtained the license to build the Alleweder Velomobile produced by Flevobike up until 2000 and is offering this vehicle as either a kit or a completed machine. He also produces the Allight variation of the Alleweder. I'm pleased to write that David and I are working together on this project. ♦



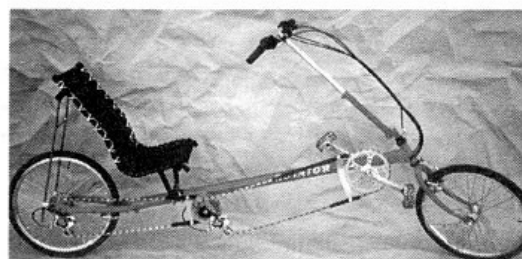
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|-----------------------------------|-----------------------------------------------|--------------------------------------------|--------------------------------------|----------------------------------------------------|------------------------------------------------|-------------------------------------------|-----------------------------------------------|
| Manufacturer | Aerorider | Alligt/Lohmeyer | Cab-Bike | Beys | Leitra APS | Velomobiel.nl | Flevobike |
| Country man'd | Germany | Netherlands | Germany | Germany | Denmark | Netherlands | Netherlands |
| Length (ft/in) | 9'-1 1/2" | 8'-2" | 7'-10 1/2" | 7'-10 1/2" | 6'-7" | 9'-4"/8'-4" | 8'-0" |
| Width (in.) | 31.5" | 31.5" | 30" | 30" | 35 | 30.1"/29.75" | 30 3/4" |
| Height (in.) | 45.25" | 35.5 | 47.2 | 30" | 47.2-51.1 | 35.4" | 37" |
| Weight (lbs.) | 132 lbs w/battery | 73.7lbs. | 70.4 | 66-70 lbs | 59.4/70.4 lbs w/fairing | 71.25/70.4 | 79.2 |
| Fairing Style | monococque | monocoque | monococque | monocoque | fairing over disassemble-able frame | monococque (Al subframe) | monococque (Al subframe) |
| Wheel sizes | 20" (406) all 3 | 20" frnt/26" rr | 20" (406) all 3 | 20" frnt/26" rr | 20" (406) all 3 | 20" (406) all 3 | 20" (406) all 3 |
| Convertible head in or out | head in | head out, comes with fabric cockpit cover. | modular/convertible | convertible | convertible & fairing removable | head out, comes w/foam cockpit cover | Head out but plastic roof available |
| Method of entry | Tip cockpit cover forward and step over side. | Climb in thru cockpit | Tip top half to side, step into tub. | Rear half of canopy hinges forward, step into tub. | Tip front fairing forward and step over frame. | Climb in thru cockpit | Tip cockpit cover forward and step over side. |
| Luggage space (l) | 80 | 80 | 150 | N/A | 80 | approx. 120/75 | N/A |
| Fairing material | Glass fiber w/ carbon reinf., polycarbonate | Pop-rieveted aircraft aluminum | fiberglass | carbon fiber | fiberglass, carbon fiber, polyurethane, glass. | Glass fiber/epoxy with aluminum subframe. | Twintex recyclable fiber reinforced plastic |
| Suspension type | spring/oil all wheels | Macpherson frnt/ swingarm rr | Macpherson frnt/ swingarm rr | Macpherson frnt/ swingarm rr | carbon fiber leaf springs | Macpherson frnt/ swingarm rr | Macpherson frnt/ swingarm rr |
| Turning circle | 24' | 23' | 23' | N/A | 7' | 23' | 17' |
| Base price (Euros) | 6500 | 3500/kit:2100 | 5300 | 7000 | 6400 | 4595/3645 | 4845 |
| Website URL | www.aerorider.com | www.alligt.nl or www.alleweder.de | www.cab-bike.com | www.go-one.biz | www.leitra.dk | www.velomobiel.nl | www.flevobike.nl |
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Pantour's new rear suspension hub is scarcely larger than a standard hub.

RCN Product Update

Pantour Bounces Back

by Dr. Matthew H. Schneps
MSchneps@CfA.Harvard.edu

Last year RCN reported on the world's first suspension hub, the smallest, lightest suspension system able to turn pretty much any bike into a front-suspended bike. Now Pantour introduces a companion rear suspension hub, an engineering marvel that's sure to be a boon to recumbent riders looking to cushion their favorite hard-tail ride. Pantour's rear suspension system, like the version for the front, fits virtually any bike recumbent or upright, and requires no modifications to the bike.

As recumbent riders thirst after greater performance, running ultra-high pressure tires, power-efficient hard shell seats laid way back, the need for suspension quickly turns from a luxury to a necessity. SWB recumbents are especially sensitive, as a hit to the rear wheel can be transmitted up the seat directly to the rider's head, neck, and shoulders, giving your bobbling head and neck a mini-dose of whiplash. After a few hours riding a particularly rough stretch of road on a laid-back bike it's not unusual to experience a light buzz, and in bad cases headache and sore neck are not uncommon.

Pantour's rear suspension takes away the road-buzz, and makes riding even some of the rougher roads a smooth experience. What amazes me is that it really works. The suspension is entirely concealed within the hub — it's almost invisible — and yet it evens out the ride. It makes broken or pitted roads tolerable, and if the road is smooth to start, it feels like you're riding on air. The sensation is uncanny.

The Pantour (think "Panther") hub is the brainchild of Morten Lund who runs the com-

pany with his wife Dena. Morten began his work in the field designing active suspension systems for autos, and left the industry to develop his invention. Concealing the suspension in the hub not only offers solutions for the bike industry (a number of manufacturers are considering offering the hub as an OEM add-on), but also provides options for those seeking to incorporate suspension in other hard-to-reach spots: Pantour is now considering applying their technology to medical applications where smooth rolling and patient comfort are a great concern. You never know where you might see the next Pantour hub showing up.

I tested the Pantour suspension hub on a Bacchetta Aero. I pumped the inch-wide Vredestein Fortezza tires to their max of 145 psi, and took the bike on some of my favorite routes. Even though the Aero's Ti frame is pretty forgiving, getting off the bike after a few hours without the Pantours I feel the familiar buzz. With Pantour hubs both front and rear I had none of the nasty sensation I was used to.

While the Pantour may seem like a miracle, it has its limits. The test hub has only about a half-inch of travel, not enough to absorb the really big hits. A pothole still feels like a pothole, only now the "thunk" is a "thud." If you like to ride the really rough stuff, the Pantour is no substitute for a fully suspended bike. Even with Pantours front and rear, I still had to slow down to 15 mph on a really bad stretch of road. On a fully suspended 'bent, I'd have sailed through that patch at 20 mph. The purpose of the Pantour is to take the stress off riding typical roads, and it does this job well.

Mounting the rear suspension is pretty simple. Just like the front hub, you just pop in the wheel, sit on the bike to note how much your weight sags the bike (it helps to have a friend!), and then adjust the brakes so they hit the center of the rim with your weight on the bike. Since the end cap on the rear hub adds a little extra thickness, the cogs are shifted a few millimeters, and you have to adjust the derailleur as well. Putting on the front and rear wheels takes me about 15-minutes of fiddling in the basement. It's just that simple, but also just enough of a bother that you can't "hot-swap" your wheels. You'll probably think twice about changing into your fancy Sunday-best wheels every time you go for a club ride.

Once the wheels are on the bike, you pretty much forget they're there. I didn't experience any trouble braking, and though the cogs bounce relative to the derailleur, I didn't experience any chain hops or false shifts. All suspensions suffer from some degree of pogo — that's when your power goes into compressing the suspension instead of moving the bike — but the geometry of the Pantour minimizes this problem. I didn't notice any pogo during my rides.

The thing I found a bit disappointing about the rear hub is its weight. While the front Pantour is a featherweight, comparable to even some of the lightest racing hubs. The rear hub is considerably heavier than what you might expect from a good rear hub. Still, when you think that a front suspension fork, a rear pivot, and a shock typically add ten pounds to a bike, this is a minor quibble indeed. The Pantour practically floats.

Unless a hub brake, a hub generator, or a planetary drive already takes up your rear hub, there's no reason any recumbent bike cannot be fitted with a Pantour suspension. The hub can be built into any sized wheel you'd like.

And while the cost might make you hesitate at first, the incremental cost of adding suspension (remember it's also a hub!) is so small, it's probably well worth the price if you've been suffering from the buzz.

If you can afford to buy only one Pantour wheel, should it be a front or a rear? The choice depends on the problem you're trying to solve. If it's largely an issue of comfort, getting a rear hub is the better choice, especially if you have an SWB. If you're more concerned about maintaining control at high speeds, the front is the hub to get. But get both and you will have it all.

Pantour is constantly refining their designs. They recently added a hub for disc brakes that provides an astounding 1-inch of travel, and this is likely to make quite a difference in the ride. They are now prototyping a front design that will offer between 1.5 and 2 inches of travel, and a rear 1-inch design that will incorporate damping. These new designs are talk-

ing serious suspension that will not just deal with road chatter, but handle pretty much anything the roads have to offer. Pretty much any 'bent will instantly convert to a light off-road machine, changing how and where we ride.

Pantour is 'bent-friendly company, they stand behind their product, and do some very creative design. The Pantour rear suspension hub is a welcome addition to their family of products, and provides recumbent enthusiasts versatile options for improving their ride. ♦

Contact: <www.pantourhub.com>.

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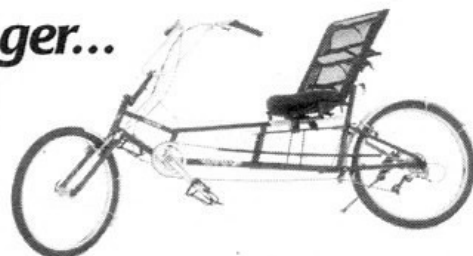


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to anyone else, if this is part of the adjustment, and if there is anything I might do about it.

... broken bones. This accident didn't surprise me.

Editor Comments — I ride recumbents off-road quite often: rail trails, walking trails, single track, jeep trails, etc. I prefer LWB OSS (like a Sun EZ Sport, Easy Racer Tour Easy or Lightfoot Ranger). My friend rides his RANS V-Rex SWB on the same trails. Both styles are equally good, but the lower LWB OSS is better in the off season when the ground is wet (lower c.g.). I can stand up and lift my LWB over big obstacles like logs in the trail. Probably the best bike I've ever tried for off-road recumbent riding is the Lightfoot Ranger (LWB OSS with dual 26-inch wheels).

Editor Comments — I've never heard of this before. We'll see if any readers have.

RecumButt on a Gold Rush

After suffering from recumbent butt on my Gold Rush I got into a discussion with the wizard Harry over at Wheel and Sprocket. He suggested that my seat might be a little too far back, and that might be causing pain because my muscles were just overstretched. I moved my seat up and inch, and voila, no more recumbent butt! At least one local pro shop that is now selling bents is using a "fit kit" to size people on the bents they sell . . . maybe some of the recumbent butt issues would go away if more time was spent on sizing.

I've done test rides on the Tour Easy and Gold Rush and my Gardner Martin designed EZ Sport. With all three of these bikes, I've noted that the front wheel slides out from underneath on anything short of a bone dry, completely clean road surface. The EZ Sport is one of the worst.

On the other hand, my RANS Stratus was solid as a rock or at least manageable from day one. Two years ago I had the opportunity to test ride a Tour Easy and Gold Rush for part of an afternoon. I quickly discovered that the front ends of both bikes were skittish. God forbid your attention wander and you hit a bit of sand on the road.

I know this will be controversial — in that for years, many happy Tour Easy owners (RCN, and other magazines) have sung the praises for the bikes. Well I don't agree. My experience with the bikes leaves me feeling much more in control on my O'Sell and Stratus. My feeling is that Gardner Martin should take a second look at his steering geometry.

Recumbent Urination

About a month ago I bought my first recumbent bike (Lightning Phantom II) and have had a wonderful experience, except one thing: I have to pee very frequently when riding it. I never had this issue on my upright, often going up to 6 hours between. If anything, I don't drink enough. But riding the recumbent, I have to go about every 20 minutes, desperately. It's productive when I go, and the feeling is gone for 10 minutes or so. If I get off, or even stop pedaling, the need subsides. After the ride, everything returns to normal (every few hours). No other activity causes this.

Peter Lewis

Calling it as I see it

I've been a recumbent rider for over 6 years. During that time I've owned a ReBike, an EZ1 and at the present time I own a RANS Stratus, O'Sell LWB (locally built bike) and an EZ Sport.

In RCN 077 there was a letter from Rick Honor entitled, "LWB Crash." Rick's Easy Racer Tour Easy EZ slid out from underneath him on wet pavement and he ended up with

Larry Ripp

Editor Comments — In my 15 years riding and reviewing recumbents this is perhaps the first time I've heard the term "skittish" used with an Easy Racer steering geometry. Now they are different. They use a longer fork and have a different feel than the Stratus, Lightfoot, Rotator or even EZ Sport. I find all of them good handling bikes. I ride LWB OSS recumbents year around in all types of weather (including rain, snow and off-road) and they are my first choice for an all weather/all around commuter bike. I'd even go so far as to say state that I believe them to be the safest type of recumbent (two wheeler) with the least amount of crashes. The laid back geometry gives me lots of security pushing into the corners. I can easily ride mine with one hand and it's a bike I feel rock solid on up to 52 mph (my fastest speed on a Tour Easy).

I don't expect everyone to agree with me on this. I'll be the first to say that I respect others right to choose a bike that works the best for them and where they ride.

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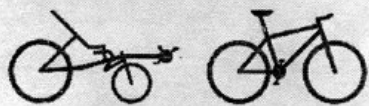
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Giant Revive A Failed Attempt?

I decided to do a little local touring on my Scooterbike and wound up riding to Winter Park. This is a beautiful suburb of Orlando. The town has a bike shop called LoCo Motion. I stopped by and was pleasantly surprised to see that they had several Giant Revives on the showroom floor! They had both the base and the high end model called the Revive DX. The RX (\$800) has the integrated cyclometer on the handlebar, fully enclosed drivetrain, rollerbrakes and a Shimano Nexus 7 speed hub.

One of the shop's employees, Travis, was kind enough to take some time and explain the features of the DX. This young man who is a BMX/MTB enthusiast had a very good recumbent awareness as I call it. He has ridden many bents will here recognize such as several models from RANS, BikeE, Easy Racers, Vision etc.

After showing me how easy it is to make adjustments on the DX, I took it for a spin. Wow . . . all I can say is that this thing is a hoot to ride. It felt much like an upright but relaxed as a recumbent. The pictures of the prototype showed a seat that seemed to be borrowed from one of their beach cruisers — but the one on the bike I rode was much wider — I say at least 12-inches across and cradled my behind quite well. The back rest is also larger than the original. Adjustments were handled by quick releases. I don't believe you can adjust the tilt but then again I could be wrong.

In my short test ride, I determined that in spite of the wide bottom bracket to seat ratio, the seating position along with the back rest allows you to generate quite a bit of power and torque. You get that feel of being "in the bike" much like a full recumbent unlike the "on the bike" sensation when riding a wedgie. Handling was a bit quick but very controllable. Stopping and starting was a snap and very confidence inspiring. This is great while ridding in city traffic.

The only issue I had with the DX is the fact that I felt that the bike was a tad overgeared. Giant uses a pretty good sized chainring in this drivetrain. First gear allowed me to reach 8-10 mph and I was not even spinning the crank very fast. While it won't be an issue for the terrain here in Orlando, anyone who buys this bike and lives and rides in hilly terrain will be begging for lower gears. And besides this is a comfort bike and it should be easy to pedal. Travis explained to me that changing out the chainring for a smaller one is no issue.

Overall I was quite impressed with the DX. The fit and finish was good though the welds were not the best but who cares as long as the bike works good which it does. One of the most recent newsgroup (and RCN) discussions on these Giant semi-'bents had someone say that it is a "failed attempt." My counter to this is, a failed attempt at what? Giant never said that it is trying to reach the audience that is attracted to bikes like the P-38 or the Gold Rush replica. If it were then the Revive would be a "failed attempt." In fact, Giant is not calling these bikes "recumbents," so we're not talking an "apples to apples" comparison here. On the other hand, a high BB SWB machine would be a "failed attempt" in the market Giant has been pitching with it's Revive. These bikes are really very inviting and non-intimidating.

Edward Wong
ewong3@mpinet.net

Editor Comments — This letter originally appeared on the alt.rec.bicycle.recumbent newsgroup. We asked permission to print it in RCN because the author makes a good point.

LWB Crash

I was surprised to read my e-mail about my LWB crash in the July RCN. It's <many> months since the accident. I now use speedplay frog pedals on my Easy Racers Tour Easy EX. I use to use Power Grips.

Rick Honor
rhonor57@juno.com ♦



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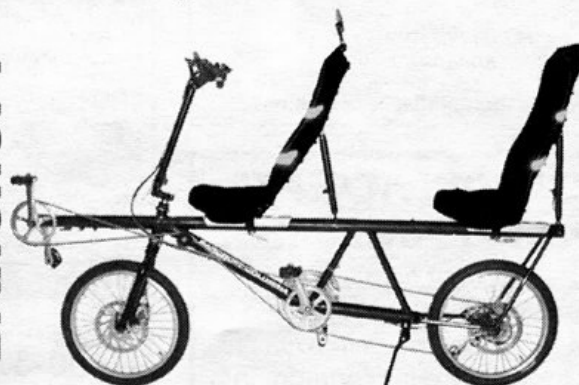
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THE BACK PAGE

Bicycling Tinkering The Respected Science

by Professor Archibald Crusy

Why is it that we're so involved in bicycles? Is it the money? The women? The fame? I think even more than these, it's the sheer status imbued in the position of Bicycle Tinkerer. The envy in the eyes of your fellow scientists, researchers, and discoverers when they learn of your exalted position!

And yet, though, something seems lacking — something to put us right over the top — to show others how Bicycle Research is the crowning capstone of human achievement! To let it be known, for once and for all, how far superior we are to the lesser science!

It behooves us now to peruse the means by which said sciences raise themselves in the eyes of others. Observe the medical profession — “sunburn” becomes “erythema”, “high blood pressure” becomes “hypertension”, and “cross-eye” is “straismus.” On your eyeglass prescription “O.D.” is abbreviated to its initials, in order to minimize the danger that we patient might realize that “Oculus Dexter” simply means “right eye”, not to be confused with O.D., which means “eye doctor.”

Simply put, the short route to the full status and privilege we so richly deserve lies in making ourselves unintelligible to the lay person. Reconstruction of the words and phrases we commonly employ in the bike biz is of paramount importance.

The beginnings of such a trend are already observable; “USS” (under-seat steering) is clearly indecipherable to all but the initiate. However, Bob Bryant's adolescent humor in coining the name “A.S.S.” (above-seat steering) for its counterpart is to be expunged immediately — we professionals do not employ humor; indeed, this writer is barefit of any smidgen thereof.

One term sorely in need of an overhaul is the phrase, “bottom bracket shell.” On a recumbent, what is it on the bottom of? In preference to this, I humbly propose adoption of the term, “anteior crank shaft repositioning receptacle.”

“Rotationally adjusted tensioning device” might replace “spoke nipple”, for “brake lever”, read “velocity retarding mechanism actuator.”

With profuse employment of extraneous verbiages, the sniffing influence of our privilege is assured. Trasnomatic yorgofliers of the fragling is icbnmonic! Sian Zerang!

Tahw ro kcore a siht si! ♦

Signed

Professor Archibald Crusy
Engineering Department — Charles Brown
Institute of Bicycle Research

This article originally appeared in the Michigan HPV Assoc. newsletter. We have permission from the entire CBIBR staff and the newsletter editor to reprint it.

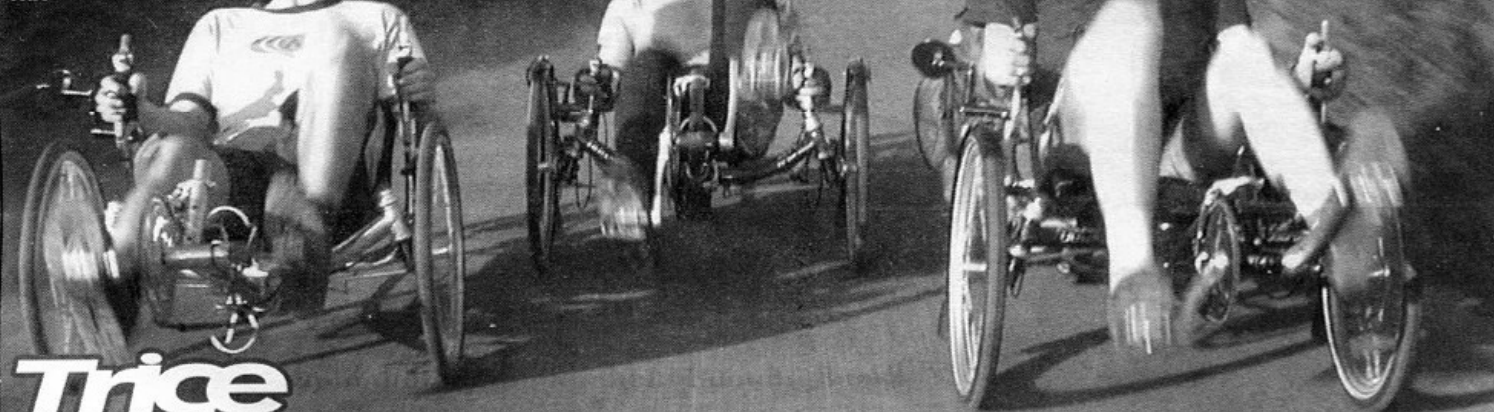
Charles is a long time HPV rider, builder and is best known for his wood recumbent bicycles. We hope to have an update on his most recent experimentations in that field soon.

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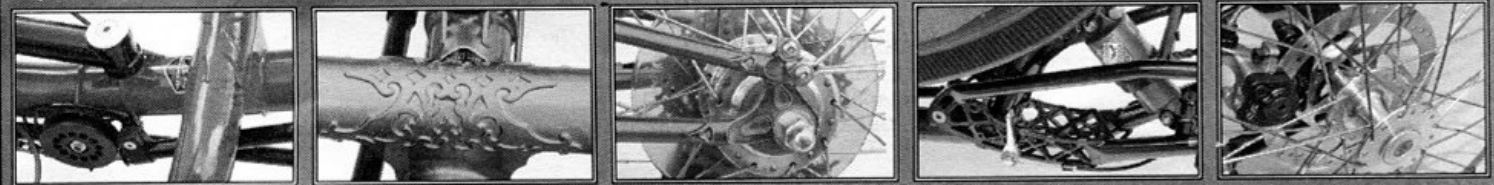
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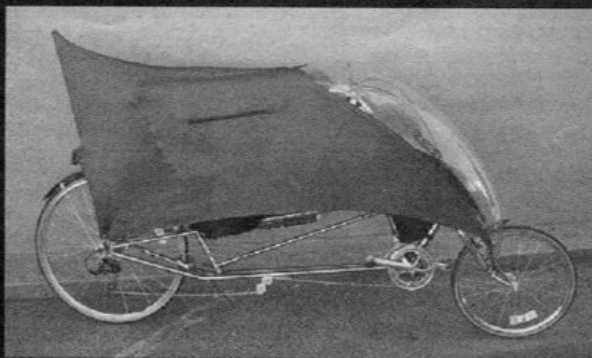
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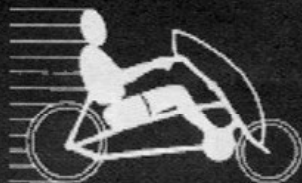


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