

Recumbent Cyclist News

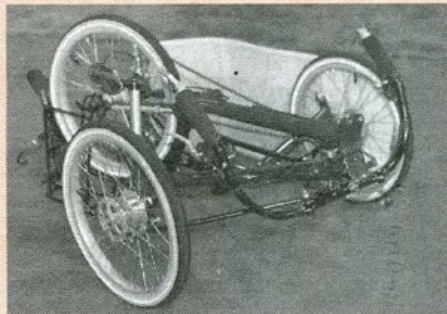
RCN 081 A Publication by and for Recumbent Enthusiasts Since 1990 March/April 2004



The Giant Revive DX; see pg. 14



Sun's new EZ Rider; pg. 16/17



Greenspeed's GT3; pg. 17/18



RANS' New Force 5 Highracer SWB OSS, prices start at \$1,595! (Kim Dopita)

Season Preview 2004

By Bob Bryant
bob@recumbentcyclistnews.com

Interbike was a-buzz with lots of great new products and excited manufacturers showing their wares. There are some hot new trends in recumbency and we're here to dissect them for you.

From where we sit, here are the hot new retail trends as we glide into 2004:

- Highracer SWB OSS
- Affordable Entry Level LWB OSS
- Entry Level "EZB's"
- Affordable Delta & Tadpole Trikes

Highracer Short Wheelbase

The Highracer is the hottest new trend in the recumbent industry. Lowracers are somewhat passé, American style SWB are being neglected in favor of the new "roadie" style recumbent — the Highracer. It seems like the inspiration came from Vision's Saber show bike from the mid 90s. Most will agree that it was Bacchetta who really put the package to-

gether and defined the hottest new recumbent performance trend we've seen in years. The trick is in the use of roadie style parts and big wheels. Here is what you'll find on a high performance Highracer:

- Dual Big wheels (26", 650c & 700c)
- High pressure roadie tires
- Light weights (as low as #22.5)
- Aggressive riding position
- Lightweight or hard shell seat
- The use of roadie parts such as:
- Carbon fiber forks
- Minimally spoked aero wheels
- Lightweight road components

While lowracers flirted with popularity, North American recumbent enthusiasts have mostly found that the lighter weight Highracers are faster on our home terrain. They also don't need front fairings to make them go fast. Most Highracer riders want to keep their bikes

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simple, light weight and fast.

There isn't really anything earth-shatteringly new here, what's new is just putting the *package* together. We'd have to say that Bacchetta's Rich Pinto is the guru of the roadie recumbent Highracer.

While **Bacchetta** was first to offer bikes of this type, **Volae** was quick to follow, now offering high-end, lightweight CroMo models (now built by Waterford in the USA) available builder-direct or Hostel Shoppe only. The clues were all in place and RANS unveiling of the *big wheel & big value* Highracer should have been no surprise. The biggest clue should have been the new hotrod parts offerings for the Rocket and V-Rex. RANS' new Force 5 is the most affordable of the Highracers, and is uniquely different with a truss frame (vs. stick frames of Volae, Bacchetta and **Reynolds**). Reynolds is scaling back their recumbent offerings to just custom-order Titanium dual 700c models.

The strangest part of the Highracer's new found popularity is the size of the market. From what we can see, this market is small, our estimate is 500-600 bikes in 2003 — not much for all the Internet buzz.

Another aspect of the scene we're not too crazy about is the roadie-style elitism that seems to come with these bikes. Our industry and niche is so small, we really all need to stick together and promote recumbent bicycles, not just miniscule niche within a niche. Also it seems like there may be some *friction* between builders. Again, we need to think for the greater good of Highracers in general and expand this market. Expect to see Highracers from more makers.

Volae ups the standard with Waterford USA-built frames. RANS' Force 5 will further vindicate the design and perhaps even double (or more) Highracer sales numbers in 2004, as RANS is arguably the most respected American recumbent brand sold in shops these days. What I'm most excited about is that all involved have pushed the development of the American SWB to the next level. Congrats all!

For those of you who want a lightweight Titanium Highracer style recumbent, but aren't tall enough to ride one, or can't handle the extreme design (laid back seat, high BB, tall bike), Bacchetta has their new Aero Basso with a 20-inch front wheel.

The *American style* SWB is still quite viable, though it isn't getting much buzz lately. RANS is still the king with the incredibly versatile V-Rex and Rocket. Upscale Barcroft and Rotator build fine bikes that fit in between the SWB and Highracer. Vision bikes are currently not in production. The company's website is still up, but phones have been disconnected.

Affordable Entry Level LWB OSS

For year Long Wheelbase (LWB) Over-Seat Steering (OSS) recumbents have had a very



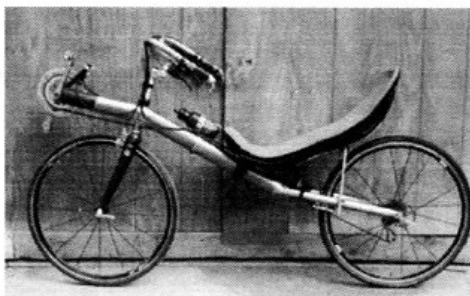
The 24-pound \$3,000 CroMo Volae Team



Prices range from \$1,595-\$2,195 for the new 25-28.5 pound RANS Force 5



The 22.5 pound Titanium Bacchetta Aero is \$3,800



Available on a custom basis only for 2004 with prices starting at \$2,900 is the dual 700c OSS Reynolds T-Bone

loyal following. RANS and Easy Racers have been building them for 25 years. The problem is that the prices have continued to climb out of the reach of the new enthusiast.

Last year Sun introduced the EZ Sports which opened up the entry level LWB OSS market. For 2004, we have Cycle Genius and Burley coming onboard with affordable low bottom bracket (BB) LWB OSS machines that have good performance potential, and are exceptional values.

The new Burley Koosah/Jett Creek has a refined handling feel, a bit of passive rear suspension (chain stay frame flex) and push forward OSS steering. The Burley is built in Eugene, Oregon. Prices start at just \$900 — and bikes are available now. Wow!

The Cycle Genius models have aluminum frames, and come with your choice of RDX 700c/20 at \$1,349 and the LTX 26/20 at \$999. Both have a similar retro style frames with Cycle Genius' mesh back seat. The LTX has Avid disc brakes. We're really excited about these new bikes — and we think buyers will, too.

The 20/16 CLWB market has seemingly not recovered from the demise of BikeE. While there are some good bikes out there (entry level from Sun and Cycle Genius; high end from Cannondale, HP Velo and Maxarya), there isn't much of a buzz surrounding 20/16 recumbents at this time. Most buyers seem more interested in a 20/20, but most opt for a 26/20 or 700c/20 if they can get it. This is quite the opposite of the current trike trend for micro-size (305mm, 349mm and 355mm) wheels.

Affordable Trikes

Trikes are very hot. The Sun deltas are popular with recreational enthusiasts. Performance enthusiasts have several new tadpole trikes to choose from in the \$2,000 range. During 2003, Catrike had the sporting crowd with their Speed micro trike. The number one question that I was asked about trikes is the difference between the Catrike and WizWheelz trikes (best selling tadpoles in the USA), and there was a difference. The WizWheelz is a recreational sport touring trike, while the Speed is a firm riding, small-wheeled hotrod. Just when readers are starting to understand the differences, Catrike unveils their "Trail" to directly compete with the WizWheelz. We expect this cat and mouse game to continue, especially when Sun gets into the game.

To complicate matters even more, Greenspeed will soon start production on the GT3 folding micro trike. This one is slated to be \$2,600-\$2,800. Greenspeed prices are quoted in Australian dollars and the exchange rate can fluctuate until the deal is consummated and trike shipped. You can avoid this situation by buying from a recumbent specialist dealer who has them ordered already or in stock.

So just when you think you've got the market figured out, and you Catrike and WizWheelz have stopped changing their prices every few months, Sun is set to unveil a tadpole that is significantly lower in price than the \$2,000 range. We saw the prototype in Las Vegas. The Sun tadpole has a lower bottom bracket and will be more recreational in nature than any other tadpole we've seen lately.

What's weird for recumbent reviewers is that while the \$4,000 and \$5,000 trikes are better, we must ask ourselves the question how

much better are they compared to the \$2,000, \$2,200 or \$2,500 trikes (which we like very much)? Enthusiasts will need to decide with their pocketbooks.

Entry Level "EZB's"

EZB is kind of a loose-knit term for "Easy Bike", kind of a cross between a recumbent and a comfort bike. We'll use the term to describe these semi-recumbents that have been designed and packaged so that Independent Bicycle Dealers (IBDs) have a laid back, semi-recumbent comfort bike to sell to entry level recreational riders. The best selling point of these bikes is that *NO* learning curve or special instructions are necessary (for owners or dealers). Some might say that these bikes offer the best of both worlds — at least for the recreational enthusiast. And they look like upright bikes, for the most part. The downside to the EZB is that there a few different styles that don't look very much alike:

Flat Footed Cruiser — This style looks like a comfort bike with the seat moved rearward and lower so that rider's can be flat footed at stops. The styling is retro-cruiser which will appeal to many who'd never consider a recumbent.

EZB Semi-Recumbent — This are a cross between a CLWB 'bent and upright bike. We saw them a year ago with the Evox. The new Giant Revive is the media darling EZB, KHS and Worksmen also offer similar models.

Recumbent builder, RANS, offers the Fusion, a model that fits between the two, it has cruiser styling, a big recumbent style seat base, no seat back, and is actually under 30-pounds.

These are all comfortable, affordable and (some are) stylish. Most are too heavy, and don't have wide enough gearing for serious use on anything but flat terrain. They would be ideal for a power-assist conversion, or for urban or bike trail areas that are mostly flat. They are all very user-friendly bicycles and exceptional values in our high priced little niche of recumbent bicycles.

The Market

The past two seasons have been difficult ones for the recumbent world. We haven't seen much growth, and with the inflated sales numbers of a few manufacturers, actual sales numbers seem much lower.

Recumbents are still a miniscule minority niche segment of the bicycle industry. An increase to 1% of bicycles sold would be big news. Sadly, we're not making much headway. While sales haven't been growing as much as we'd hoped, mainstream awareness is at an all time high, as are good, affordable new models to suit new enthusiasts.

Each year I become a recumbent secret sleuth and try to figure out how many recumbents are sold in North America. The

number I'm interested in includes enthusiast recumbent two wheelers, trikes and tandems from \$450 and up. \$450 because that's the lowest priced recumbent with adequate full range gearing. This doesn't include semi-recumbent/EZB, lean-steer beach rentals or flat foot cruisers. The number I've come up with is 12,000-15,000 recumbents sold in North America for 2003. While this number may seem down from previous years, I don't think that sales have declined. I just think our numbers are more accurate.

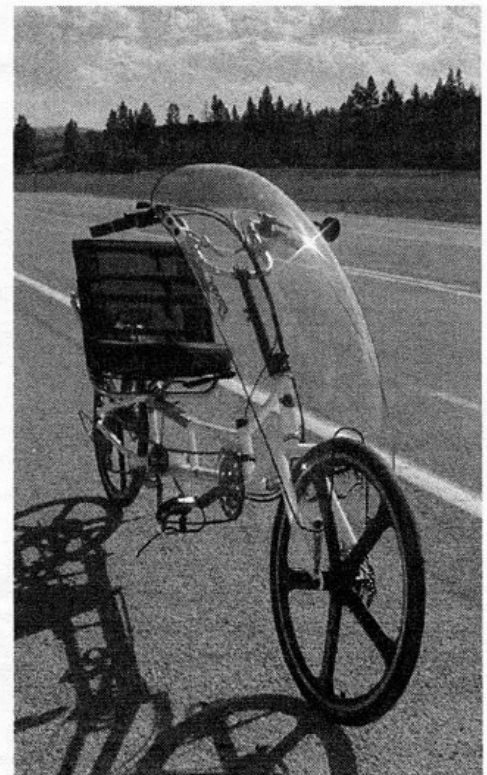
The National Bicycle Dealer Association doesn't track recumbent bicycle sales, but they do list a total number of bicycles sold as 19.5 million (5.9 million of these are bikes with wheel sizes of under 20"). So if we consider that the market for adult bicycles is 13.6 million, recumbent sales are, well lets just say "a bit less than 1%." You do the math . . .

According to the NBDA, the bicycle market in North America is:

- Mountain 33.8%
- Youth 28.3%
- Comfort 20.6%
- Hybrid 9.4%
- Road 5.3%
- Cruiser 2.2%
- Tandem .015%
- Other .385%

The proliferation of the new "value added" enthusiast recumbents has the ability to turn the North American market on it's ear. Some company's may disappear because of it, and others will become stronger. The formula is that if you sell expensive recumbents, have a strong niche, and a loyal following, and do your best to keep them. The situation reminds me of a small publisher I know. For years, you're the only game in town, and then all of the sudden the competition is giving away their product. Perhaps we all need to read the book, *Who Moved My Cheese*.

There is plenty of room for high end niche custom bicycles. A marketing book that I read recently gave this advice, "find your niche and own it." I think this is good advice.



The Lightfoot Ranger (dual 26-inch) with optional Aerospoke wheels, Zipper fairing and mid-drive. This style of LWB OSS can be very fast and is user-friendly. LWB OSS models such as this are the antithesis of the lightweight High-racer. LWB OSS rider's can't be too concerned about weight as LWB are heavier, but still fast. Most LWB OSS riders are more concerned about all around performance and aerodynamics. A bike like this is capable of a daily commute, off-road riding, rail-trail riding, touring or even a fast century.

Lightfoot attended Interbike and the bikes are sold both direct and through dealers.

2004 Reader's Survey

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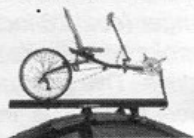
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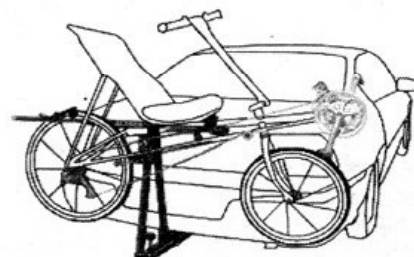
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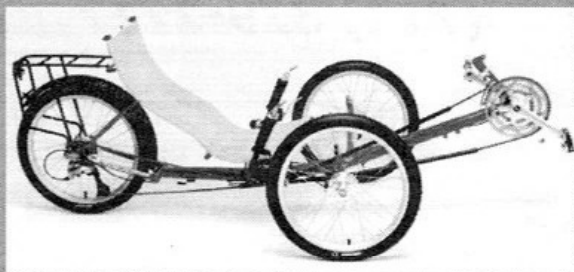


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Research indicated that even with our centrepivot steering, there was some toe-out under heavy braking with the optional hydraulic disc brakes. Thus the steering has been re-designed to give a small amount of stabilising toe-in under braking. The difference 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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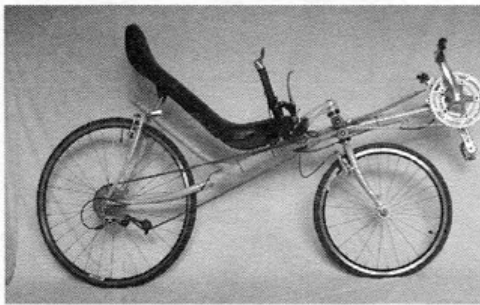
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Recumbent News



ActionBent Recumbents Unveils Affordable Euro Style SWB

I was 48 years old and led a very sedentary life style when I got my first recumbent, a Vision 40 under-seat steering model, in March of 2002. I was never able to stand riding a standard bike for more than 20 minutes, have never been involved in any sports, and did not like working out in gyms, even on stationary recumbents. I've been heavy my entire life, and was 230 pounds and 5'8" when I started riding. I'm a software engineer, and one of my

co-workers was a former employee of Vision, which was how I got the idea to try a recumbent. In that bike, I found the first form of exercise I could enjoy, and began to ride about 10-15 miles almost every day. I now weigh 160 pounds.

I was shocked at how expensive the Visions were, and was even more shocked to learn that they were among the most inexpensive short wheelbase recumbents. I've never been a busi-

ness man, but it seemed to me that if I could find a company in Taiwan or China who made a bike similar to the Vision and imported them myself, I could probably sell them for less than the Vision's wholesale price. I also seemed to me that since so relatively few bike shops carry recumbents, I could probably sell them over the internet.

My wife, who is also a software engineer, is from Taiwan, and everyone (except me) in my family, including my son David, is fluent in Mandarin. I started to surf the web looking for an inexpensive SWB manufacturer. We are deliberately taking it slow until I can learn more, both about bikes, and about running a small business.

I believe there is a huge potential market for recumbents that are reasonably priced, particularly among boomers such as myself.

Randy Schulman
www.ActionBent.com

Editor Comments — Actionbent recumbents sell for around \$700 retail, new. ♦



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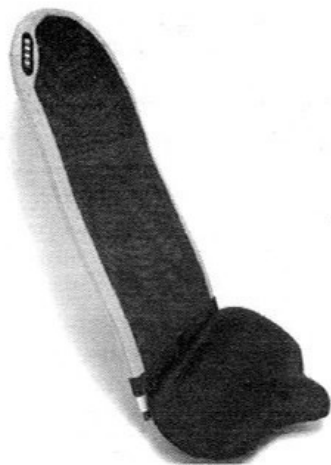
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New Zephyr Seat from RANS

The new Zephyr seat sports graceful lines, low weight and modular assembly to make up one of the lightest seats on production recumbents. The Zephyr seat weighs just 3.65 pounds, including Rad-Loc seat clamp and cushion. This is a 1.50-pound savings over the current RANS seat.

With the turn of a wrench the Zephyr seat lays flat for transport, or adjusts to your exact angle for max comfort. Other innovative features include: non-welded aluminum seat back frame for maximum strength and least weight.

The Zephyr's mesh back has no buckles or zips ties; the mesh simply slips over the frame, with tension provided by three discreet buckles. Top quality Leno Mesh combined with a tough Cordura Nylon edging make up the very distinctly styled seat back.

Zephyr seats will fit most existing RANS models and most other brands with 1.5 and 2" tube seat clamps or mount. The seat will not fit the Screamer oVivo.

The new seat will be available mid January and sells for \$295 complete with lightweight cushion and either the 1.5" or 2.0" Rad-Loc.

Source: www.RANS.com ♦



RANS' Randy Schlitter and the Force 5 Highracer SWB (Kim Dopita)

RANS Introduces Highracer SWB

In late December, RANS unveiled a new dual 650c Highracer SWB OSS recumbent. The new RANS Force 5 will be produced in the RANS plant in Hays, Kansas starting in late February. There will be two versions the XP at \$2,195 and the LE at \$1,595.

"Each will feature the same frame in two sizes and colors, Silver Bronze as shown, and Rush Red. In either form you will find this bike light, fast, user friendly, great handling, and top quality. The goal was to create a dual 650c wheeled bike, similar to the Rocket, apart enough from the V-Rex that would be light, equipped with road bike components, and have cruising speeds at or above the V2 Formula," according to Randy.

The new optional lightweight RANS Zephyr Seat will be featured on the XP version (stock seat on the LE). The seat height is 23" and there will be two frame sizes. Unlike its competitors, the Force 5 will have a trussed

(triangulated) frame, "A lot of thought was put into each frame tube to get maximum performance with as little weight as possible. We sculpted more than half the tubes to accommodate shapes. The seat and chain stays are ovals for better load transfer and chain clearance," says RANS' Randy Schlitter.

The bike shown has a 47" wheelbase version which fits X-seams of 39" to 49" and weighs 28.5 pounds with the stock seat and just over 25 pounds with the new Zephyr seat. The smaller frame size has a 43" wheelbase and fits X-seams from 35" to 45".

According to RANS Randy Schlitter, "The Force 5 has the acceleration of a light road bike. The Force 5 will soon be a new force to reckon with in the lineup of the new breed of racing recumbents."

Our test LE arrives here in March! Rumor has it that RANS is working on a dual 650c V2. ♦

RCN 2004 Reader Survey

Readers Surveys must be postmarked by April 1, 2004

About You

- Name: _____
- Age: 20-30; < 31-40; < 41-50; 51+
- Yearly income: Low; Medium; High
- Recumbents owned: _____
- Cost of most recent recumbent: _____
- Most recent recumbent purchased: (YR) _____
- What influences your recumbent purchase:
 Rider group; Road tests; Newsgroups;
 RCN; BROL; RTR; Dealer; What's
in Stock; Mfr.; Friend; Look/style of bike
- What are the most important features for a recumbent: Comfort; Performance; ; Lightweight; Price; Dealer stock;
- Do you ride with clipless pedals? Y; N
- What accessories have you bought for your bent:

Your Opinion

- Best overall recumbent brand _____
- Best overall model: _____
- Hottest recumbent trend: _____
- Most trouble-free brand: _____
- Best performing recumbent: _____
- Best recumbent suspension: _____
- Best SWB: _____
- Best LWB: _____
- Best CLWB/MWB: _____
- Best Highracer: _____
- Best Trike: _____
- Best Tandem: _____
- I'd like to see more articles on: _____
- Less articles on: _____

Internet

- Do you have internet access? Y; N

- Do you subscribe to RCN? Y; N
- Would you prefer an digital RCN? Y; N
- Would you pay for a digital RCN? Y; N
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Concept 21.5 Pound Trice

We have been working on a new trike that is based on the Trice Monster design but has many weight saving features. It's being produced as a dream trike with no expense spared on frame weight reducing details and the lightest components

available. This trike incorporates some of the ideas that have come from ICE employee, Ben Dickinson's, race success on a modified XXL in the 2003 British Human Power series. It's also fully spec'ed with a view toward full Audax use following the success of ICE trikes in this year's Paris-Brest-Paris 1200 Km ride.

The main frame is built from our normal T45 (steel) to a gauge specification for real world use for a rider of about 6' tall and 168 pounds — Chris is going to test this one to see just how light we can go.

All of the usual Trice features are on the machine such as adjustable seat angle, boom adjustment, and handlebar adjustment, disc brakes, 20-118 gear inches (wide range gearing) and so on. The expected weight for this trike is 21.5 pounds (9.73 Kg). With a special two pannier rack and full fenders it will weight just under 24 pounds (10.9 Kg).

Source: www.ice.co.uk/frameset.html ♦

Rumors in Recumbent Land

Vision: It appears that Vision is gone. We've heard rumors of company bikes for sale on eBay, fabrication equipment for sale and the phone lines are now disconnected, though the website remains up.

Haluzak: Rumors of a reorganization persist. They sent no 2004 information.

This past fall, **Greengear/Bike Friday** ceased production of the Sat R Day and Doubleday recumbents, only to then reinstate them at higher prices. Apparently they are not profitable. Redesigns are possible for 2004.

Communications in all of the above situations has been sadly lacking. ♦

RANS Awarded Patents on Seat

On September 9th, 2003 the United States Patent Office awarded patent US 6,616,164 to RANS INC. The patent covers two important aspects of recumbent seat design both of which are incorporated into RANS seats fitted with rad-loc seat clamps.

The patent covers seat clamp designs that allow the seat to be tilted after the position of the seat is fixed. This feature came about dur-

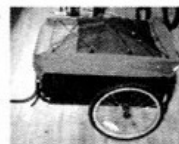
ing the development of the Rad-loc seat clamp, when it became apparent what a great advantage it was to be able to loc the seat in a fore and aft location and then adjust the seat tilt.

The second aspect of the patent covers reflective material for the seat back. The innovation manifests itself when using a reflective thread or material that compromises the seat mesh. All RANS recumbent bikes for 2004 will feature the Rad-loc seat clamp.

Source: www.rans.com ♦

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Nanda Holz with his Bacchetta Giro and our tinted LC Flyer fairing. The LC Flyer fairing is 6" shorter than the Chopper fairing.



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— Nanda Holz

RCN Calendar

WANTED: 2004 Recumbent events dates, times and ride descriptions.

ERRC Smell The Roses (STR)

April 25, 2004 10:00 am
Portland, OR, Water Front Park fountain.
Rain postpones to following Sunday.
Contact: Connie McAyeal, ohyesbent@hotmail.com

Human Powered Challenge 2004

Memorial Day Weekend.
Portland, Oregon PIR Race Track
Contact: www.ohpv.org

Hostel Shoppe Recumbent Rally

July 30, 31 and August 1 2004
Stevens Point, WI
Contact: www.hostelshoppe.com/recumbent_rally.php

Recumbent Retreat

August 20-22, 2004
Warrenton, OR Ft. Stevens State Park.
Premier Recumbent Event on the West Coast!
Contact: www.ohpv.org for reservations.

Rose Petal Challenge

August 29, 2004
Portland, OR
Contact: Connie McAyeal, ohyesbent@hotmail.com

Bentrideronline Rally

August 2004
Upstate NY
Contact: www.bentrideronline.com

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Recumbent Glossary

ASS—Above-seat steering: Handlebars above the seat, knees or frame. A bicycle type of bicycle steering. Also known as over-seat steering (OSS).

Bar-ends: MTB handlebar extensions most often used on USS bikes to bring the controls closer to the rider.

Bar-con: Shifters mounted at the ends of the handlebars.

***Bent:** Slang for recumbent.

Body stocking: A soft full fairing, usually made of Lycra or other stretchable fabric.

Bottom bracket: (BB) pedal axle & bearings

BB: Bottom-bracket or boom bracket (pedal axle).

Cantilevered stays: untriangulated monostays.

CB: Crank bracket; also known as bottom bracket or boom bracket; the frame piece which holds the bottom bracket.

CG: Center of Gravity—usually at ones belly button.

Chain idler: Skateboard or rollerblade wheel that directs the chain through the frame.

Chain management: How the chain is managed, via idlers/tensioners though the chain path.

Chain tube: Flexible tubes used as chain idlers.

Compact long-wheelbase: CLWB, a compact version of the LWB recumbent with a 20/16 wheel combination and mostly low pedal height.

CLWB: Compact long wheelbase.

Coroplast: Plastic cardboard used for crafts and political signs that works great for homebuilt recumbent fairings.

CroMo: Chrome-moly steel used in frames.

Delta trike: Two wheels in the rear.

Dual Drive: See also SRAM/SACHS 3x7/8/9

Fairing: An aerodynamic windscreen designed specifically for recumbent bicycles.

Flip-It Riser: SWB above-seat steering riser that has an adjustable recline angle and folds forward for easy entry and exit (RANS term).

FWD: Front Wheel Drive

Gear-inch range: Front chainring tooth count divided by the number of rear cog teeth multiplied by the actual measured drive wheel diameter. (High: large front to small rear/low: small front to large rear).

Heel interference: When your heel crosses the path of the front wheel.

Hiten: High tensile or mild steel used for entry level recumbent frames.

Highracer: A tall performance SWB that uses full size bicycle wheels.

Horizontal: Another term for recumbent bicycle.

Indirect steering: Steering via rod linkage that connects the handlebar to the fork.

Jackshaft: A non-shifting mid-drive crossover used on some two-chain recumbent drivetrains.

Lowracer: A very low and stretched out SWB racer.

Leg suck: When your feet slip off recumbent pedals and 'suck' back under the seat and bike.

LWB—Long wheelbase: Pedals usually low and behind front wheel, seat can be low or high.

MWB—Medium wheelbase: A design that is in between a SWB and CLWB with the bottom bracket high and at the head tube.

Mid-drive: A mid-ship mounted, two-chain drive gear set (crankset without crank arms or modified cassette gears) shifted by a derailleur.

Mid-wheelbase: Same as a CLWB compact (used by Cannondale).

OSS—Over-seat steering: Over seat steering (same as ASS)

Pedal steer: Pedal-induced steering input that makes the bike more difficult to track straight.

Pedal height: The height of the pedals at the bottom bracket spindle (axle).

Pogo: Unwanted pedal-induced suspension movement.

SWB—Short-Wheelbase: A recumbent style with a higher bottom bracket height. The crank is ahead of the front wheel and higher up.

SRAM/Sachs 3 X 7/8/9 Dual Drive: An internally geared 3-speed hub used in conjunction with a 7-speed freewheel (21 speed total). Gear #1= reduction underdrive, #2=1:1 lockup and #3= overdrive.

Swing arm: The rear frame section that is suspended (on a suspension recumbent design).

Speed Drive: Schlumpf's two-speed internally geared bottom bracket.

Steering rod: A rod that connects the fork to the handlebars.

Stem riser (also known as "mast"): An ASS extension that rises from the stem/head tube raises bars over the legs.

Tadpole: Trike with two wheels in front.

Tiller: A long distance between the head tube and controls can create a feel much like the feel of a tiller of a boat. This effect can be found on LWB & SWB. Some consider this a negative trait, others do not.

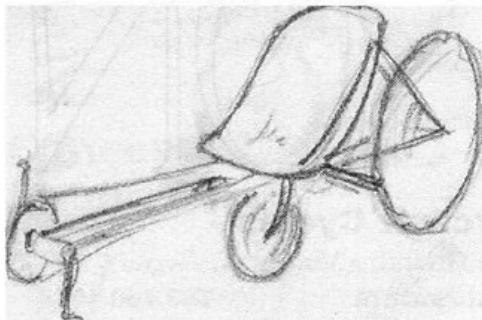
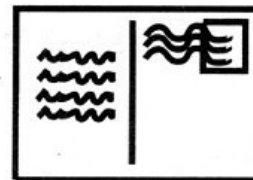
Tailbox fairing: An aerodynamic tail section often used for storage, mostly homemade of coroplast. Fairings are mounted on a rear rack, cut to shape and stitched together using zip-ties, etc.

USS—Under-seat steering: Steering via handlebars beneath the seat.

X-seam: A recumbent fit measurement that simulates the distance from the seat back/base out to the farthest reach of the pedal stroke. Sit with your back against a wall and measure from the wall to the bottom of your foot. ♦

Letters To RCN

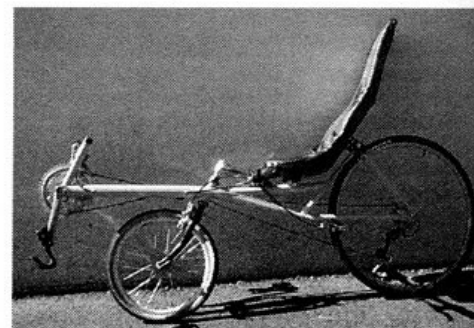
Write RCN . . . Write Soon . . . Write Often . . .
bob@recumbentcyclistnews.com



Hypercycle sketch



S & B's SWB USS



Turner's SWB USS

1980's recumbent

I was hoping that you would remember who made this recumbent? It was in the 1980's (maybe 1985?) and was a heck of a lot of fun to ride. It had a 16-inch front wheel, and a standard 27-inch rear wheel. It had 5-speeds (common in 1980) and the handlebars were directly below the seat. The shifter was a thumb-shifter. I'd like to get/make one, but I am a bit fuzzy on some of the details. The bike was great at jumping off of curbs, and power slides — unfortunately the frame broke under the stresses. The forks also were not strong enough for that abuse. I'd like to get one to modify, strengthen..and again have some fun on. If you have any info or even a lead on one, let me know.

Glenn Norberg
gnorberg@charter.net

Editor Comments — This is most likely a HyperCycle. These SWB recumbents were the first mass produced recumbent. The company eventually failed because of various problems (including frame failures). The bike evolved into the Turner Recumbent (www.turnerrecumbents.com; starting at \$1,350) and S&B Recumbent (<http://home.pacbell.net/recumbnt>; starting at \$700). The S & B looks the closest, though is a better bike than the original Hypercycle. These modern versions have improved weight distribution which was the pri-

mary concern with the HyperCycle design.

Gear Inch Rant

Anyone in any field who can take a technical subject and make it easily understandable to a lay person, deserves accolades of the highest order. Your *Gear Inch Rant* (RCN 079 Editorial License) not only was well presented, you even made it interesting. KUDOS to you and your writing style.

Randy S. Mitchell

RCN 079 Feedback

I just finished reading RCN 079. There was quite a LWB theme to this issue. I thought the reviews were well written and mostly agreed with them. Regarding RANS chain idlers, while the lower idler on the V2 could be replaced with a chain tube the upper idler can not because the upper idler deflects the power side chain down under the seat and upper chainstay. If you tried running the upper chain in a straight line it would be sawing through some tubing. A chain tube can be curved to deflect the bottom (low tension) chain but this can't be done on the top (tension) chain. Although HP Velotechnik uses a chain tube on the top chain this is in addition to a pulley under the seat.

Also regarding the Tour Easy review you wrote on page 17 "The seat frame is polished

aluminum." The standard seat frame is stainless steel. An aluminum seat is optional and saves weight.

Zach Kaplan

Zach Kaplan Cycles

Editor Comments — Zach, thank you for the corrections.

RCN Kettwiesel Review

Thank you very much for the test of our kettwiesel. One item to note is that shipping and duty is included with our trikes, so the price is delivered to your door. Trikes can be ordered without lights which is \$70 less. For 2004, we have changed the brakes to Tektro discs which are much better. 2004 models will also be shipped with Schwalbe Marathon tires. As for performance riding, we just did our first official trike race this past spring during the Spezi Specialbikes Expo. For top speed we have ridden downhill on these at over 90 km/h (56 mph) on a rallye course that is wet and rainy, doing tight turns with eight kettwiesels. You could smell burned rubber in the corners from the rider in front of you. The Kettwiesel behaves very well, feeling twitchy at first but the faster you go, the more stable it feels. Readers can now find information on our bikes at www.hase-recumbent.com, www.hase-bikes.com and www.kettwiesel.com.

Yo Rollenbeck
Hase Spezialräder



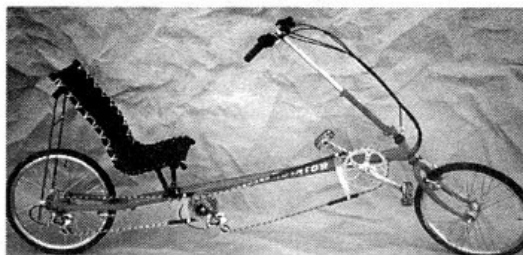
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Chicago Recumbent Riding

The recent letter to the editor about the dangers of riding in Chicago's "middle/outer suburban ring" is overblown. There are many in the area who manage to ride to work. I live closer in and have a 6.5 mile ride to a light rail system that takes me to work in Chicago's Loop. My ride can be entirely on side streets.

My riding is 90%+ commuting (up to 1,500+ miles some years) with no crashes! My closest call was at the intersection of two side streets with no traffic, where a cager decided

to turn left into me. We were both moving slowly and the cager managed to stop before hitting me as I turned right.

For nearly two years all Chicago area buses (Chicago and suburban) have had bike racks that facilitate bike travel. The CTA light rail now carries bikes 20 hours on weekdays and 24 hours on weekends (except on July 3rd when crowds for the lake front holiday concert and fireworks make accommodation of bikes impractical in the CTA's opinion).

At 65, I'm riding a Sun EZ-3 and loving it.
Ben Cohen

V2 Ergonomics

I felt your comments about the RANS V2 in RCN 079 were spot on. After 9,000 miles on a SWB I wanted to try a LWB for a change. After looking around a bit I found the laid back seat and high BB of the V2 made me feel right at home, just as you suggested.

Regarding the ergonomics of the new open cockpit design, I need a laid back seat position to help prevent recumbent butt. When I first test rode the 2003 V2 with the new bar and riser I loved the handling, but found that I could not recline the seat and still reach the handlebar! I figured this could be fixed with the longer riser (B-33) and the wide B-37 double bend bar, so that's how I ordered my 2003 V2. This combination helped a bit, but I still wasn't comfortable with how little I could recline the seat. I'm only 5' 9", with normal proportions, so I was quite surprised to have such difficulty fitting the bike.

I finally ordered the older style top-loaded riser that used to be standard on the stratus and V2 (as shown in the photo on page 8 of RCN 079). Using this riser with the B-37 bar solved the problem, and I am now able to recline the seat ALL the way back, and still control the bike. The resulting hand position is very comfortable and natural, but with a bit of knee interference on sharp turns.

The downside is that I now experience the tiller effect that the new open cockpit design was developed to reduce, but I consider it a reasonable trade-off for a more comfortable

seating position. So if anyone likes the ride of the V2, but is put off by the long reach of the new open cockpit ergonomics, you might consider combining the old riser with the new bars.

Steve Christensen
stevec@dow.com

RANS Stratus

I've done quite a few mods and add ons to my Stratus. My articles are listed on my webpage here: <http://rideitbent.net/stratus.htm>.

I ordered a seat back bag for my Stratus from the Hostel Shoppe. I can't say enough about how well these folks treated me. Their Customer Service is simply fantastic.

Harv
Victoria BC, Canada

Gear Range Rant (from RCN 079)

I'm planning to give added gear range to my Tour Easy. The Mountain Tamer Quad (<http://abundantadventures.com>; click on Mountain Tamer Quad) adds a quad gear up front by piggy backing onto the granny mount holes. In my case, I'm running 23/33/46 with 11-34 mega range 7-speed in back. With the quad, I'd run somewhere around 17/26/36/46 up front. This would allow 14-115 gear inch

range, as compared to my current 19-115.

For the 9-speed world, the most interesting gearing set-up might just be the new Capreo 9 speed 9-32 rear cassette coupled with a front quad, giving 36 speeds. If the front Quad had 17-26-33-42, then the range would be 15-128. The 9-tooth gear gives dramatic high ends with a small front chain rings. In fact, the whole gear train would weigh about the same as current 27-speed set-ups. Additionally, since the front tooth stepping is actually reduced from chain ring to ring, overall gear changes would be easier and smoother than the current front triples. My Shimano 105 derailleur should work just fine with the Quad.

In summary, the quad sounds to solve our current gear rant. The only thing that the quad might need is an elongated BB shaft, depending on which set of cranks are on the bike, but this only helps the "Q" factor. The cost of adding the quad to my triple is not all that bad, and gives the sort of range levels as a mid drive set up, with plenty of gear choices.

I hope to have the quad added in the spring. I will keep you posted.

Bob Cromer
rcromer@nycap.rr.com ♦

Send Letters to the Editor of RCN

If you have something to say, a differing viewpoint or experience—we want to hear from you! **Please limit letters to 300 words.** RCN reserves the right to edit submissions for clarity, content, and space limitations. Please send to bob@recumbencyclistnews.com or RCN, PO Box 2048, Port Townsend, WA 98368

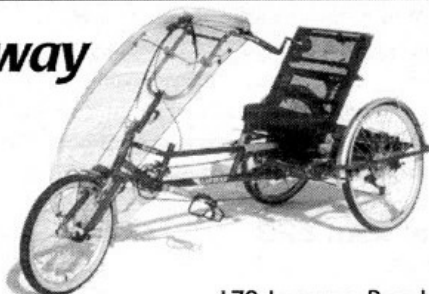
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EZB The Bicycle Industry's Kind-Of-Recumbent

By Bob Bryant
 bob@recumbentcyclistnews.com

There is a new type of comfort bike that allows the rider to sit flat footed at a stop, has no learning curve (for dealers or customers) and many use standard bicycle components. This category called "EZB" is a melding of the best of Comfort and Recumbent styles. For mainstream recreational and urban riders, these bikes make a lot of sense.

While performance recumbent enthusiasts may not see a need for it, we actually do need these bikes. The primary reason is to create a parallel market that will support recumbency. With any luck, we can grab onto the shirt tails of the EZB business as sales climb.

What's An EZB

Easy Bike or "EZB" is a term coined for these comfort cruisers that aren't really "comfort" bikes as we know them, and they're not really recumbents. EZB's meld the cruiser, comfort bike, and recumbent to create a unique new bike style. There are two basic types, the taller semi-recumbent type with a back rest (Giant Revive, KHS, Workman Y3K, and eFun Cool Rider) and the flat footed, more cruiser oriented comfort bikes where the seats are lower (RANS Fusion and Electra Townie).

Why EZB

As I was wrapping up my Giant Revive review and writing this article, an industry contact of mine forwarded me a link to a newsgroup where two bicycle shop owner/managers were discussing the Giant Revive and Electra Townie. Here is what each one had to say:

"If I had a dime for everytime a customer wanted to be put their feet down flat when stopped I could retire! A recumbent style bike is also too wierd for these people." — Bike Dealer A

"On some recumbents it takes terrifying minutes to get used to. The Revive takes off with the feeling of confidence with the first stroke." — Bike Dealer B

The above comments pretty much sum up the difficulty recumbents have had in gaining market share. We know of their superior comfort, but we're all over the map design-wise. Every different manufacturer has a sales pitch that is specific to their design.

We need to face reality that recumbents have always been difficult for the bicycle industry to handle. The learning curve is too involved for dealers and recreational customers. These folks need a quick education. They seem to want a bike with the following traits:

- Simpler than a recumbent and doesn't look like a "contraption"
- Looks more like a bicycle, possibility for trendy style.
- Affordable
- Can be considered stylish, trendy or sexy
- Uses more standard bicycle parts
- Most important — no learning curve for riders

Here is more info about each bike:

EZB Semi-Recumbents

Giant Revive — While some of us may feel the Revive looks geeky, others in the mainstream feel that it's new, trendy and cool. The bike is a complete urban cruiser package with integral racks, fenders, computer, enclosed drivetrain (one model) and futuristic look. They are getting lots of mainstream press. The bike comes in several models and colors. The bike works better than it looks. The seat adjustment and steering stem/riser/bar system would be the envy of the recumbent world. Later this season, we may see electric assist and perhaps eventually SRAM DualDrive 21-speed Revives.

Workman Cycles is a company from New York, USA, that has been building industrial bikes, cruisers and vending carts for years. Their Y3K Easy Glider has been built for some time. It has 7-speeds and is under \$500 retail (www.workman.com). The Y3K is currently being redesigned.

A Y3K and Honda 31cc power assist kit can be ordered as well (www.staton-inc.com).

KHS Recumbent — This EZB has a CroMo frame, 7-speeds, and sells for about \$700 (www.khsbicycles.com).

eFun Cool Rider — This new segment is even more convoluted. The eFun and other EZB's can look very similar to a CLWB or MWB recumbent models. Most are recreational bikes as they don't have adequate full range gearing. These are very affordable at \$532 (www.belizebike.com and www.efun.com). Belize even offers an electric assist version.

A similar bike, the Tortuga, exists, but we don't know of any North American distributors for it.

EZB Flat Foot Comfort Cruisers

RANS — RANS' Randy Schlitter has been tinkering with designs like this for years. Long time readers might recall the Zero-G from the late 90s. The Fusion is just one of several EZB models to come from RANS. Randy sees this style of bicycle as a big part of his company's future. RANS had good luck selling their initial run of their \$775 Fusion EZB. RANS has a dual 26-inch wheel and chopper versions coming. While some might argue that the RANS version are less mainstream, trendy and looking the mainstream EZB part, what the RANS does offer is an excellent recumbent-like seat base, and a reasonable bike weight (our Revive weighed over 50 pounds).

Recumbent riders might ask, "why wouldn't these buyers opt for a real entry level recumbent? Well, the truth is that some do. Sun sells thousands of EZ1 and similar entry level models. However, the Sun bikes are less refined, can be heavier and don't have that main-

-streamed trendy style and simple package that the bicycle industry needs to prepackage semi-recumbents to the general public.

I should also mention that a year ago (RCN 074) I was harsh critic of these bikes and their lame non-recumbent marketing pitch by some manufacturers. A year later, I see them as the future of mainstream comfortable bicycles. A year ago it was mostly I was mostly offended by the disrespectful tone towards recumbents that I've been dealing with for more than a decade. Electra has shown me that marketing can be used effectively and respectfully.

Electra — The Electra Townie looks like a trendy California cruiser. Electra has a ten year history of building affordable cruisers bicycles. The Townie is a true blend of recumbent and cruiser styles — absolute brilliance. The Townie is much like previous Vision V72 with the seat low and rearward. Electra's new marketing campaign calls this new design, "Flat Footed Technology" which refers to the riders' ability to place their feet flat while seated at a stop. Electra offers seven models (3, 3S, 7, 8, 21, 24 speed models and a Big Daddy Ed Roth "Rat Fink" Special Edition) — all at under \$720 retail (www.electrabike.com).

A Kustom Kulture Big Daddly Ed Roth "Rat Fink" edition will appeal to those with a fashion sense. Lastly, Electra has handled the comfort/cruiser/recumbent melding respectfully with their "marriage" ad. It's really too bad that others couldn't have done the same.

So Where Do We Go From Here?

EZB sales should sell far more than all other recumbents combined and perhaps much more. Whether the industry embraces the concept is anyone's guess. Recumbent manufacturers who want to get onboard have a lot of expertise to offer the EZB world, though don't forget that the performance or lightweight is not the driving force of this, and if you're a highracer, LWB, SWB or trike owner, these bikes aren't designed for you. They're designed for your friends, neighbors and family who think you're whacked for being into the "weird bikes." They'll also make a good 2nd (3rd, 4th, or 5th) bike for a recumbent rider.

Comfort bikes hold 20% of the bicycle industry, which is 50-100x more sales than recumbents have in the marketplace. While the recumbent market will continue to grow as a specialized niche, EZB is the wave of the future for comfort bikes. I see it as a positive situation which can only improve the perception of recumbent bicycles. For those manufacturers who introduce EZB's (like RANS' Randy Schlitter), it gets your foot in the door of many more bike shops.

And for those of you who recall RCN 074, yes I'm pulling my foot out of my big mouth, but haven't yet renamed RCN, "EZB News..."



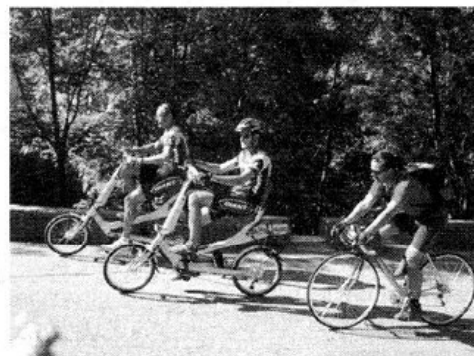
The \$500 eFun Cool Rider folding EZB/ Semi-recumbent is available mail-order from www.belizebike.com



While it doesn't have trendy styling or wide range gearing, the entry level KHS RC 1620 recumbent has a full CroMo frame and fork



Electra's stylish Townie with Flat Foot Technology". There is also a limited edition Big Daddy Ed Roth Rat Fink version. (John Riley)



Two Giant Revive's enjoyably ridden up the legendary Alpe D'Huez climb, created again this year by the racers of the Tour de France

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Hot Bike Of the Month

The Giant Revive

The Giant Revive is a new kind of bicycle that has seemingly invented its own market segment somewhere in between a cruiser, comfort bicycle and recumbent. While it may look geeky to some, it has the potential to be trendy as well. It will look quite at home on University campuses and in front of your local Starbucks.

Systems

Frame — The frame is a unique aluminum step through frame with a steel fork. The steering is an exceptional over-seat steering riser. Flip open the oversize quick release and the stem/riser clicks forward or back, and the bars raise or lower, all of the while still keeping the “straight ahead” steering position. Within the handlebar is a simple cycle computer to tell you how far you’ve ridden.

Suspension — The Revive has a wonderfully cushy rear suspension with three inches of travel.

Details — The build quality is excellent and far surpasses what we’ve seen so far in \$450-\$800 recumbent bicycles. The Revive DX comes in your choice of two different two-tone paint schemes: Blue/Silver and Metallic Brown/Champaigne.

The Revive is a one-size fits most. It can accept riders from 5’ - 6’6” tall, and takes seconds to adjust between riders.

If there is a downside to this trendy bike, it’s the weight. Our DX Nexus version, with no other options, weighed in at 52 pounds. Ouch.

Drivetrain

Components — The drivetrain is a simple Shimano Nexus seven speed internal hub providing a gear inch range of 35.4-86.6. Most recumbent riders will consider the gearing too high. The first hill you ride up will alert you to this. The Revive is capable of climbing, but it’s low rpm climbing like you’d do on a 3-speed tourist or cruiser bike. I planned my routes accordingly and never really had a problem (and never walked the bike up a hill, either). There is an 8-speed derailleur version of the Revive, but it has an even narrower gear inch range (35-70). This version is a bit lighter as well.

One of the benefits to this design in the enclosed chain. Ours was a bit noisy, though the manufacturer and other owners told to us how to quiet the chain down. There did seem to be some added friction in the housing, but some of this was also from the Nexus



The 2004 Giant Revive DX with Nexus 7-speed hub and band brakes

For

1. Refined feel & high quality
2. Very easy to ride
3. Enclosed drivetrain
4. Well equipped
5. Excellent adjustable stem/riser

Against

1. Heavy bike
2. Not aerodynamic
3. Limited gear range
4. Poor climber
5. Limited performance

Why Buy This Bike

A stylish, trendy, easy and fun to ride neighborhood and bike trail cruiser

Contact

Giant Bicycle
Web: www.giant-bicycle.com

Specifications

Model: Giant Revive DX
Type: EZB (semi-recumbent)
Size: One size (5'-6'6")
Wheelbase: 48.25-inches
Seat height: 28-36.5-inches
Pedal height: 11-inches
Weight: 53 pounds
Frame: Aluminum
Fork: Steel unicrown
Suspension: Rear 3" travel
Price: \$799 (starting at \$599)

Seat

Back: Separate back rest
Base: Giant coil spring one-touch adjust

Components

Crank: Alloy 48-tooth
Bottom bracket: N/A
Headset — NA
Drivetrain: Shimano Nexus 7 internal
Cassette: 16-tooth
Shifters: Nexus twist grip 7-speed
Chain — N/A
Gear inch range: 35.4-86.6
Pedals: Platform comfort
Wheels: 406 mm 20" bolt on
Tires: Chen Shin 1.75 40 psi, Slimed
Brakes: Nexus Roller brakes
Colors: Blue/silver or champaign/brown

seven speed internal hub gears.

Options for widening the gearing include changing the rear sprocket from a 16 tooth to a larger version. We've been told that this can cause interference with the chain cover, so be careful. Schlumpf and Rohloff hubs are available but each option will double, perhaps triple the cost of the bike. Your best bet for a wide-range Revive is to wait for the DualDrive version (which is currently available in Europe only).

Braking — The brakes are Nexus roller brakes (like a hub brake). They work well for the intended use of this bike.

Wheels & Tires — The Revive has dual 20" 406 mm wheels with Chen Shin 1.75" 40 psi tires with Slime-filled tubes (a good thing because rear wheel removal on a Nexus equipped bike is difficult).

Comfort

Seat — My initial glance brought a "here we go again" thought. The Giant has a large sprung comfort saddle with a matching, but separate seat back. Both are independently adjustable. With the flick of a long lever the seat base slides up and down the seat track. Positioning the seat base is possible, but requires stacking washers under the base. I didn't find it necessary, but some have done it.

Riding Position — The riding position is very unique, it's truly between a cruiser bicycle and a recumbent. The ergonomics of the Revive seemed very refined, more so than the similar Evox I tried a year ago. The seat was comfortable, and I never got a sore hiney from the Revive.

Ride and Handling Feel

This bike is so user friendly that anyone can ride it with virtually no instruction or learning curve. It isn't aggressive, extreme or performance oriented. It's a coffee cruiser. The Revive has a silly little spring loaded idler (a la ReBike) that works to keep the front wheel pointing straight ahead. You can adjust the handling feel to suit your personal style. The stem riser can be laid back, or outstretched, low or high. I even rotated the tourist style handlebars to further refine my position.

The Revive tracks well, is stable at all speeds that we rode it at, and will outmaneuver just about any other recumbent.

Performance — The first day the bike was here, I jumped on it, and rode the eight mile round trip to town and back. Downhill and on the flats, the bike surprised me, I'd guess I had a tail wind that day as it took me just a few minutes longer than on my fast recumbent. However, coming home, I noticed my uphill or incline speeds to be very slow, sometimes dropping down to walking speed. Also lack of low gears made me perspire. Climbing is only marginal because of the weight and lack of low gears. Plan your routes.

Owning

Utility — If you ride up to 10 miles on mostly flat terrain, prefer user-friendly, stylish and non-aggressive bikes, the Revive is for you. It would be perfect urban transportation in a flat town or on a bike trail commute. The Revive comes with an integral aluminum rack, kickstand, fenders and a computer on the handlebar console.

For neat upgrades and Revive links, visit Derek Leath's www.revivedx.com.

Market Competition

Comparison — See this issue page 12.

Value — The Revive offers excellent value for the cost, but has lots of competition.

Verdict

After quickly dismissing the Revive and similar models back in RCN 074, primarily for their non-recumbent marketing antics, I've come to believe that this is probably the future of mainstream recumbent bicycling. The Revive is a very refined product that will create its own market niche, one that is probably much larger than all of the rest of recumbent cycling put together.

While not lightweight by any means, the Revive is a utilitarian machine. It comes well equipped with the rack, computer, fenders, internal cable routing and even Slimed tubes




RCN reader Derek Leath has a cool website: www.revivedx.com

(www.slime.com; They even have Slimed tubes and a new Presta tube kit).

The Revive is finding its way into shops all over the world. New 2004 (Spring) Revive variants will include a wider gearing DualDrive model and a LaFree electric assist version (perhaps the best use for this platform).

So the question remains, is the bike faster, more comfortable, or does it climb better. The answer is no. Is the Revive easier to ride — an overwhelming yes. ♦

EASY RIDERS RECUMBENT CLUB MAGAZINE

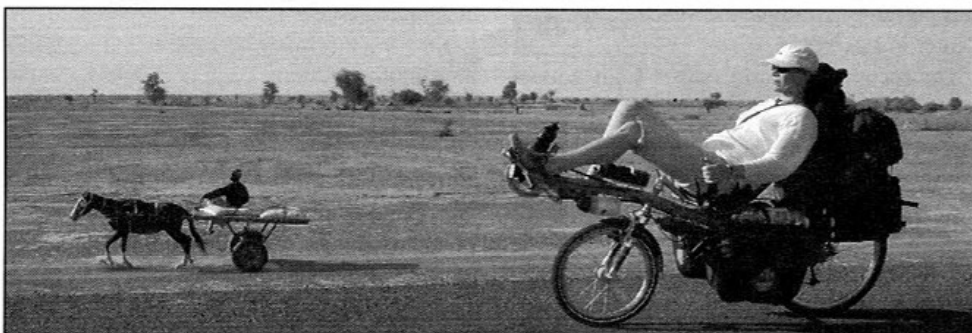


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Maya van Leemput takes her Street Machine Gt for a spin in the African desert. Read Agence Future's story at www.hpvelotechnik.com.

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Sun's EZ Rider rear suspension LWB comes in HiTen, CroMo and alum. (John Riley)

Interbike 2004 Bicycle Party in the Desert

By John Riley

Each October, bicycle dealers, manufacturers and industry folks come together in the desert of Nevada for a most interesting ritual called Interbike, which is the bicycle industry's tradeshow. The show consists of 2 days of demo riding at a mountain bike park in Boulder City, Nevada, and 3 days of tradeshow activity in the Sands Convention Center in Las Vegas.

The recumbent world ranges from go-fast riders on carbon low racers to casual bike path riders on EZ-3 trikes. This year's Interbike saw the introduction of a ton of new models aimed mostly at the middle of that range.

Here is a listing of what's new for 2004:

Sun

Under their Sun bicycle brand, J&B Importers has been dipping their toe in the waters of recumbency for a few years. They have been selling two versions of the EZ1 and the EZ sport, one version of the EZ-3 trike and a tandem. They must have decided the water was fine, because they have now jumped into the deep end of the pool.

At the 2003 Interbike bicycle trade show in Las Vegas, they introduced four new designs, most of which will likely be available in three versions each. Counting a new dual drive version of the current EZ-1, that may amount to as many as 13 new models!

The new designs are the EZ Rider, a curved tube (in the spirit of the EZ Sport) 20" x 20"

wheel CLWB with rear suspension; The EZ-Speedster, a 26" x 20" wheel SWB; the EZ-3 USX, a 20" wheel delta trike with mid-frame suspension and under seat steering; and the 20" wheel EZ-3 Tadpole trike. The aluminum version of the current EZ-3 (\$1,295) has 20" wheels and a higher BB, so it might also be considered a new design.

Keeping this many bikes straight required a new naming system. Each design has a name and each model has a letter code identifying the frame material. AX means aluminum, CX means cro-mo steel, and SX means high tensile steel. Thus, the top model for the new CLWB is the EZ-Rider AX (\$1,400). Next in the line is the EZ-Rider CX (\$999), and last is the EZ-Rider SX (\$600).

The EZ-Speedster SWB comes as the AX (\$1,499), CX (\$999) and SX (\$699).

The under seat steering delta trike is called the EZ-3 USX (\$825).

There was much excitement about the EZ-3 Tadpole. Prices had not been set by show time, but the AX will likely be around \$2,000, the CX around \$1,500 and the SX around \$1,000. This style of trike has not been available in this price range. Many of the new models come with mechanical disc brakes.

Sun now has a very full plate. Some of the new designs seemed to be more developed than others. The Tadpole and the Speedster seen at the show might best be regarded as prototypes. Much could change between the show and the

2004 season, including prices, so stay tuned.

Burley

Burley introduced a new design that will be available in two models. The Koosah (\$899) and Jett Creek (\$1,149) share the same frame, seat and handlebars, but have some component differences.

The new design has direct over seat steering and a layout that would feel familiar to Tour Easy and Rans Stratus riders. But the frame has the unique Burley style, including the cantilevered rear stays that give the bike a bit of passive suspension.

The handlebar riser flips forward, a feature that is unique for this style of bike. With a moving riser, the bars can rest in a low, comfortable position for cruising, but can be raised for better knee clearance when turning sharply. The rear stop for the riser is adjustable. The movable riser would complicate the fitting of a front fairing, but Mark Mueller of Windwrap fairings had a look at the bike and thinks something can be worked out.

The Jett Creek was shown at the outdoor demo with 170mm Truvativ Touro crank arms. Clearance for a front fender would be tight with these crank arms and probably wouldn't work at all with longer arms. The less expensive Truvativ Isoflo cranks on the Koosah look to have a wider Q factor, so they may offer more clearance. (Q factor refers to the lateral distance between the pedals. Some riders are sensitive to this.) In any case, if you want to fit fenders or longer crank arms on these bikes, be aware of the clearance issues.

Burley likes unique names for their bikes. Koosah is a waterfall on the McKenzie river and Jett Creek is the name of a stream. Both are in Oregon, Burley's home.

The HepCat (\$1,999) and Taiko (\$1,999) get paired spoke Velocity Thracian wheels, Continental Grand Prix tires, and Shimano M475 disk brakes. These two bikes continue to use the leather covered Corbin seat base. Other Burley models use a similar vinyl covered Burley seat base that is slightly wider and thicker. Other Burley models now come with Kenda Kwest tires.

Shortly before the show, Burley received a "Best Buy" rating from the UK magazine *Ethical Consumer*. The magazine consider working conditions and environmental impacts for various bike makers. Burley is a worker owned and operated cooperative located in Eugene, Oregon.

Cycle Genius

Burley wasn't the only company with a new LWB. Cycle Genius showed a new aluminum frame design that will be available in two models. The RDX (\$1,350, 32 lbs.) has an aluminum fork, rim brakes and 451/622 wheels.

The LTX (\$1,000) uses the same frame, but has a steel fork 26/20 (406mm) wheels, Tektro disk brakes, and different components. Both have a padded base/mesh back seat.

The ALX -20 Squared (\$950) has 20" wheels, an aluminum version of the Cycle Genius X-Frame, disk brakes, and the Cycle Genius full mesh seat. The STX (\$625) now has 20" wheels, the foam base seat, and the X-Frame in a mix of cro-mo and high tensile steel. The CGX-3.0 (\$450) continues with 20" x 16" wheels, and the X-frame in high tensile steel.

Calfee/Fast Freddy

Fast Freddy Markham was in the Calfee booth showing a new carbon frame LWB that he helped design and that Calfee will be building. The frame bears some resemblance to a Tour Easy frame, but there are several differences. The bike has indirect linkage, over-seat steering. This makes it possible for the bike to have a more upright head tube angle. The chain stays do not angle upward, as on a Tour Easy, but remain parallel to the ground. This allows the seat to be a bit lower. The top tube and seat stays are unsupported from the derailleur post to the rear dropouts. This allows the frame to flex up and down for improved comfort. Beneath the seat there is a rubber tipped post that limits this travel. Bike weight is about 23 lbs., according to Markham. The bike will be available in a range of sizes for about \$5,000. A plain carbon fairing will be available for about \$500, and a similar "double bubble" fairing with a clear insert will be about \$600. S&S couplers will be an option.

A carbon frame SWB bike will also be coming from Calfee, possibly by early Summer.

RANS

RANS' biggest news actually came a few months after the Interbike show with the introduction of the new Force 5 Highracer SWB (see cover and page 5 and cover).

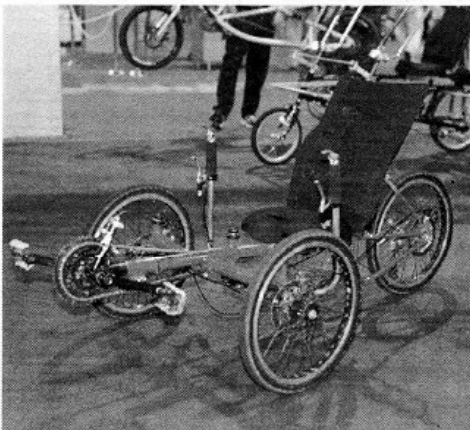
The RANS V2 Formula, (\$3,049) the aluminum version of the V2, was introduced last year, but the bike has not been available until now. With the new Formula XP seat (3.68 lbs. with mounting hardware) and much lighter idler wheels, this bike's weight is down to 26.3 lbs. The Formula XP seat has a narrower mesh back, carbon base, and thinner foam. It has a Rad-Loc mount and will work on any Rad-Loc equipped bike. All Rans seats will have their bases attached with screws instead of rivets, so any seat can be upgraded to the carbon base.

For bikes assembled in Kansas, including the Screamer, Formula, Stratus, and some V2's, RANS will now offer a factory customization service. Buyers through their dealers, or dealers, will be able to specify upgraded seats, wheels, bars, risers, and idler wheels. Options will be listed on the RANS web site.

All RANS bikes will now come with the



Sun SWB OSS 26/20 (John Riley)



Sun's new tadpole USS trike is sure to be a big seller (John Riley)



The long awaited EZ3 aluminum has a bit of a chopper feel (John Riley)

Rad-Loc seat mount. 2004 prices are Tailwind: \$1,049, Rocket: \$1149, V2: \$1,299, and V-Rex and Stratus: \$1,649. The Stratus and V-Rex will now be emerald black in color. In the sun, this color is a sparkly dark green.

Greenspeed

Greenspeed exhibited the GT3, the prototype of a new entry level trike that folds. The trike is expected to be available some time in the first quarter of 2004. At the show, the rumored price on the GT3 was expected to be under \$2,000 US, but with the exchange rate fluctuation, could be as high as \$2,800 (incl. shipping and duty).

The GT3 has 16" (349mm) wheels. Small wheels can present gearing problems, but this trike uses the 9-26 Shimano Capreo rear clus-

ter. The front chainrings are 30/42/52. This combination results in a gear range of 19 to 95 inches.

This machine will have a new version of the old Greenspeed steering system where the tie rods connect ahead of the steering pivots. According to Greenspeed this system has a more "sporting" feel and a smaller turning circle. This system also provides some protection for the hinge, and enables more compact packing. The frame cross member has been stiffened to minimize the handling issues that were encountered with the old system.

All Greenspeed trikes now come with curved Ergo mesh seats. Sports and racing trikes, which have seat back angles of 30 and 25 degrees respectively, have more top curve. The seat back angle on the touring trikes is 40 degrees.

All trikes have braze-ons to accommodate standard hubs, dual drive hubs, or Rohloff hubs. The left dropout is designed such that when the Rohloff hub is fitted, no torque arm is necessary. A fully adjustable head rest is available for all trikes. For improved appearance, the steering tie rods and pulley bracket are now black.

The stoker position on the tandem now has fully adjustable handlebars instead of just bar ends.

Recumbent Panniers

Greenspeed worked with Arkel on the design of some touring bags, but these are not a Greenspeed exclusive. They are available from Arkel as RT 70 bags, RT for recumbent trike and 70 for their capacity of 70 liters (www.panniers.com).

Catrike

Catrike introduced the new Trail model (\$1,995, 31 lbs.) and an upgraded Speed model (28 lbs.). Paulo Camasmie of Catrike says he designed the Trail because it seemed to him that people were buying a Porsche (his Speed model) because of the price, when what they really wanted was a mini-van. Calling the Trail a mini-van seems a bit harsh (it's at least a sports sedan) but the point was made. The Trail has 20" (406) wheels, a more upright seat back (43 degrees vs 38 on the Speed) four and a half inches of ground clearance, chain tubes, and fender mounts. At the show, Camasmie said the price for the Speed would be \$2,350, but a week later the word on the internet was that it had been lowered back to \$1,995. Camasmie is very responsive to the market, so by the time you read this, price and specification may have changed again:

The Speed has several improvements for 2004: The front cross beam has been moved forward one inch for better weight distribution. There is increased ground clearance, more castor, and no brake steer. The steering is now adjustable fore and aft. The 16" front wheels

are now the 349mm size and Stelvio tires are standard. The brakes are Avid discs. The seat now attaches with straps instead of velcro. The rear derailleur is now Shimano Deore LX.

Both trikes have vibration damping polymer bushings instead of headsets for steering and both also have 20mm hollow front axles.

Bacchetta

Bacchetta introduced the Aero-Basso (about \$3,800, at about 22 lbs.). Basso means low. This new bike is designed for those that want the titanium Aero experience but are too short for that tall bike. Designed for riders 5' to 5'8", this 20" x 26" wheel bike only comes in the short frame. The wheelbase is 47". Like the Aero, the Basso's titanium frame is made by TST, in Kennewick, Washington. Components include a custom Carbon Airfoil fork, American Classic bottom bracket, FSA Carbon Pro cranks, Shimano Ultegra front and rear derailleurs, Velocity's Thracian wheel set and an M5 carbon seat.

An aluminum rear rack is now available from Bacchetta, and the underseat rack, previously available in stainless steel, is now available in aluminum.

Bacchetta is also working on a new seat bag that is designed for the M5 seat, but will eventually work on their other seats with an adaptor. The Giro is now available in light blue, in addition to the current green color.

HP Velotechnik

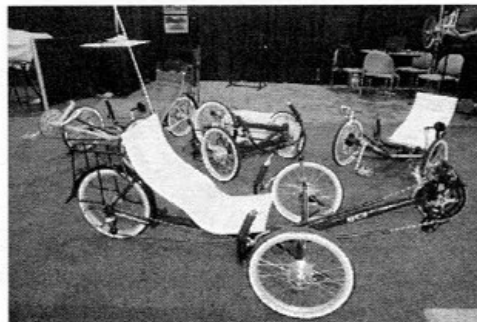
HP Velotechnik introduced a new dual 20" wheel, full suspension SWB called the Grasshopper (\$1990). The bike features their new BodyLink adjustable hard shell seat. The seat has a slotted section in the middle that allows for length adjustment. The seat angle (35 degrees plus or minus 5 degrees), the height of the front seat edge, and the lumbar area are all adjustable with quick releases. For those wanting an even higher front seat edge, HP Velo offers an attachable bump that velcros to the seat. A headrest is also available.

The bike comes standard with above seat steering via a GlideFlex stem, a Meks Carbon II fork and Tektro rim brakes. The frame is aluminum (7005-T6) yielding a weight of 30 lbs. At 21", the seat height is between the Street Machine GT and the Speedmachine. BB height is 26-1/4". As with other HP Velotechnik bikes, there is a wide range of options and accessories, including linkage underseat steering. Two other Meks forks are available, including the new Meks Carbon AC light (this slimline design only works with rim brakes). Drivetrain upgrades, hydraulic rim brakes, and various disk brakes, are also available.

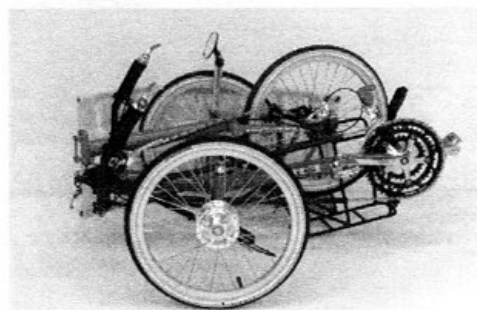
The Grasshopper is not quite the heavy duty tourer that the Street Machine GT is, but a good assortment of racks and bags are available. The bike at the outdoor demo was "dormant apple green" in color, but "steel blue" and "carmine



*Big Cat's Catrike Trail with 20" wheels
(John Riley)*



Greenspeed's folding GT3 (John Riley)



*Greenspeed's GT3 folded
(photo courtesy of Greenspeed)*



*The Sun center suspension delta USS
(John Riley)*

red" are also available. Colors other than these can be had for an additional charge.

There are also upgrades on the other bikes. The Speedmachine gets an aluminum rear triangle (which saves about 14 oz.) and a new kickstand mount. The Speedmachine and the Street Machine GT get a shock upgrade to the DT Swiss air shock, Magura Marta disk brakes, and water bottle mounts on the seats. A carbon head rest and new touring bags are also available.

The Spirit gets Schwalbe Big Apple tires, a new midnight blue color and a scale on the seat rail to make it easier for riders to adjust the seat when sharing the bike. There is also a

new custom designed Radical seat back bag available for this bike.

Lightning Cycle Dynamics

The Lightning P-38 (\$2,700) now has a new tube set that saves 1/2 lb. The new chain stays are tapered. The bottom tube is double butted, the top tube is single butted, and the boom tube is a new custom size. When the bike is ordered with sidepull brakes, the bike comes with a narrow profile sloping fork crown.

The Phantom (\$1,550-\$1,870) now comes with drop bars and the Phantom and T-Bolt (\$880-\$1,080) now come with a double idler system so that the chain length does not have to be changed when the boom is adjusted.

Lightfoot

Rod Miner and company have been building sturdy Lightfoot bikes, trikes and quads in Darby, Montana for some time now. They have been mostly selling direct, but they have decided to make their machines more widely available through dealers, so they were at Interbike for the first time.

Their most well known designs are the LWB dual 26" wheel Ranger (\$2,400) and their various utility oriented delta trikes (\$3,200). The Ranger has a reputation for off-road prowess, but with narrower rims and tires, is reported to be quite fast on the road as well.

Also available for test rides at the show was their LWB dual 20" wheel bike, the Rambler (\$2,400).

Hase

The Hase Pino, a front recumbent/rear upright tandem, is now available with a titanium frame (\$8,890). The Hase Kettwiesel, a delta trike, is also available in titanium (\$6,750). The Hase Trets (\$1,300), a recumbent trailer bike for a child, now has a mesh seat.

Hase has an elaborate special needs kit that enables dealers to set the trikes up for a variety of uses.

With the Hase trikes, the front wheel can be removed and trikes can be joined together. At the Hase booth, they were showing a video of 62 trikes hooked together in this fashion. They were actually able to ride!

Cannondale

Cannondale has been through some changes in the past year, and just before and just after the show, there were some layoffs. But the recumbent was on the floor and is in the catalog in two flavors. The Bent I (\$1,999) has full suspension. The Bent II (\$1,599) has rear suspension only and some component downgrades. The underseat rack that was shown last year is now available and will retrofit to all their recumbents.

Director of Technical Services David Campbell says the company remains committed to the bike and still talks about the possi-

bility of a SWB, if the company can be convinced there is demand for it. Contact Cannondale or your Cannondale dealer if you would like to see such a bike.

Optima

The Optima Hopper has been redesigned. It now has a 20" rear wheel and a 16" front so its design is more in line with other CLWB bikes. It has full suspension, disk brakes and an aluminum frame. Weight is 39 lbs. As of show time, the plan was to have the bike available as a 9-speed for \$1,599 and as a 27-speed with dual drive for \$1,699.

Tartaruga

A Japanese company, Tartaruga, was looking for US distribution for their rear suspended, aluminum CLWB (around \$1,500). The bike has dual top tubes to provide a solid base for the seat. The weight is about 33 lbs. A similar bike can be found at: www.belizebike.com.

Velocity

Velocity is expanding their line of high performance, paired spoke pattern recumbent wheels. The current Thracian wheelset is joined by a Thracian Disc wheel set for use with disk brakes. The rims on these wheels have curved sidewalls instead of flat braking surfaces.

The Uriel wheel set is available in a wide range of sizes: 451/622, 406/622, 571/571, 451/571, and 406/571.

The Thracian set comes with the Aeroheat rim, which is 24mm wide and 22mm high. This contrasts with the Uriel set, which comes with the 19mm wide and 25mm high Fusion rim. These wheels have 20 spokes in the small wheel sizes and 24 inch the large wheel sizes.

Schwalbe

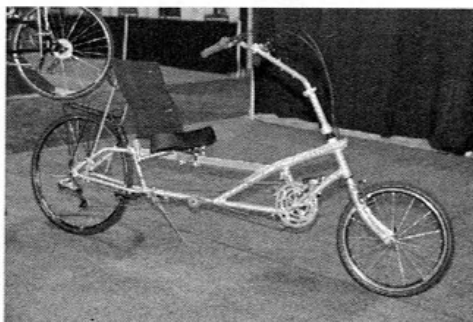
Schwalbe Tire continues their commitment to the recumbent market. The high performance Stelvio is now available in 17 x 1-1/4 (32-369) and as a folding tire in 26 x 1 (28-559). The 20" (406) is available either in folding form or with a wire bead, and will be available with blue sidewalls. The 20" (451) is available with a wire bead only. 16" (28-349) and 18" (28-355) tires are also available in wire bead form. All Stelvios come with the RaceGuard™ puncture protection system.

The two inch wide Big Apple tire is now available in 16 x 2.0 (50-305), 20 x 2.0 (50-406), 20 x 2.35 (60-406), and 24 x 2.0 (50-507). It continues to be available in 26 (559) and 700C (622) sizes. Note: these tires are really wide — you may not have frame clearance.

The idea behind these super wide tires is comfort without sacrificing low rolling resistance. According to Schwalbe, using the same air pressure, rolling resistance with wide tires is approximately 10 watts lower than with a



This is Burley's affordable new Koosah/Jett Creek LWB OSS



Cycle Genius' new LWB RDX (John Riley)



A Lightfoot delta trike at Interbike's Dirt Demo (John Riley)



The Lightfoot Rambler dual 20 LWB OSS at Dirt Demo (John Riley)

37mm wide tire. With a pressure of 30 psi, the Big Apple has about the same rolling resistance as a 37mm wide tire inflated to 60 psi.

The Marathon Plus with SmartGuard™, which has been available in larger diameters, is now available in 20 x 1.75 (47-406). These tires have a thick layer of a highly elastic rubber mixture beneath the tread. This is said to drive sharp objects back out of the tire. It's claimed that the layer does not add rolling

resistance, but it does add weight. In the 20" size, the tire weighs 25 oz. The regular Marathon in the same size weighs 17 oz.

Kenda

Kenda Kwest tires, popular as original equipment, are now available in narrower sizes, including 16 x 1.25 (305?), 20 x 1.25 (406?), 20 x 1-1/8 (451?) and 26 x 1.25 (559?) No ERTO sizes were listed in their information, and they didn't respond to email, but following normal nomenclature, the sizes would be as listed.

Vredestein

Vredestein tires are distributed in the US by Veltec Sports. They are no longer offering 20" S Lick and Monte Carlo tires.

Ritchey

In other news, the new Ritchey Break-Away travel bike system was displayed at both the Ritchey booth and the Dahon booth. On a racing bike, the frame separates into two pieces. The seat post secures the frame at the top, but at the base of the down tube there is a new joining system. The tubes to be joined have a small lip, no more than a few millimeters high. The tubes are butted together and the lips of both tubes are held together by a small collar that clamps over them. It looks too small and simple to work, (it adds just 100 grams) but the system was also shown on a tandem, so it must. No word on whether or not the system would be available to other builders, as is the case with S & S couplers.

Bell Metro

Since most bike helmets got better fit systems in recent years, there hasn't been much new in the helmet world. For utility cyclists, there was some big news at the Bell booth. Bell is introducing the Metro, which is a complete helmet system. Accessories and attachments designed specifically for this model include a folding rearview mirror that is designed specifically for the Metro visor, a rain cover, a rear VistaLite light and bracket, and a winter kit that includes an inside liner and separate ear covers.

There seems to be a new generation of single LED bike lights. Planet bike had one called the Super Spot. Its one watt LED was said to be as bright as a 3.5 watt halogen bulb. Cateye also had a bright single LED light. They also say they have a double wireless computer coming that will measure both speed and cadence and have a 1 meter (39") range. Unfortunately the speed and cadence sensors are designed to be attached to the chainstay of a conventional bike, so they are combined into one unit.

TerraCycles

Designer and parts maker Pat Franz of TerraCycle did not have a booth at the show, but he was seen arriving at the show on a fold-

ing bike that was towing a trailer full of goodies.

He is now offering fully adjustable bars for Tour Easy bikes. They telescope for height adjustability, and hand angle is independently adjustable. An optional attachment can accommodate up to three water bottles on the bars.

He also offers a universal steering riser adaptable to any bike with a riser. Handle bars are available in three widths and four bends.

His Easy Reacher under seat racks come in versions that will work on most bikes, including Tour Easy's, Burley's and Rans bikes with either the traditional seat mount or the Rad-Loc.

Franz has designed a high efficiency power side idler wheel that incorporates a 15 tooth cog. Also available from TerraCycle is a universal tail sock kit that is said to add two to four miles per hour. His GlideFlex riser pivots are available in the original design, or in the OE Taiwan made design, which has a different stem clamp and finish.

Barcroft

(Did not show at Interbike)

Bill Cook did attend and spoke to us on the show floor. For the 2004 season, he anticipates better availability of the Oregon low racer. Three different seat styles will be available for his bikes: the traditional RANS seat, a full mesh seat with an aluminum frame, and a carbon hardshell that will come in two sizes. "The Rans seat weighs nearly 6 pounds, with everything included. The custom seat made by Rotator for Barcroft weighs about 2 pounds. The seat assembly complete is \$450. As an upgrade on a new bike, the price is \$180. The same prices hold for carbon seats. \$450 separate, 180 upgrade. The mesh seat is very light and comfortable. However, with the seat it's hard to mount and dismount. It's not recommended for the Dakota because that bike is just enough higher to make mounting and dismounting difficult." — Bill Cook.

Maxarya

(Did not show at Interbike)

Max Ahmady sent an email from the Hong Kong airport about planned changes for the Ray-1 and Ray-1x. Changes include a new dropout with standard hanger and the use of a tandem style eccentric BB for the first part of the drivetrain. This should eliminate the need for the idler. The seat and rail have been changed to make installation and removal easier. New options include Magura hydraulic disc brakes and a new bar extension for better reach adjustment. Models are available with a 16" or 20" front wheel. The new colors are metallic charcoal gray and copper. New accessories include a new carrier rack, new panniers, and a new accessory clamp that facilitates the use of a headlight and computer in the middle of the handlebar.



*The 2004 HP Velo Grasshopper
(John Riley)*



*Optima was in Vegas. This is their MWB
(John Riley)*



*The awesome Crank It Quad was the
most fun ride in Vegas (John Riley)*

Also look for a new Maxarya LWB design in 2004 that will be available in two models.

Crank-It

(Did not show at Interbike)

The Crank-It Mountain Quad was not on the show floor, but demo rides were available outside the hall by appointment. Several of these machines have been delivered to customers, and the demo machine has been holding up well under hard use. Look for a future RCN review of this unique rig.

Angletech

(Did not show bikes at Interbike)

Kelvin Clark does attend Interbike, but not to show his custom spec'ed and custom built recumbent models which are sold direct to customers.

For Summer 2004, Angletech is offering a Titanium version of the TriSpeeder tadpole trike. The TriSpeeder is the foot crank only version of the Quadraped arm/leg powered tadpole trike. The frame has a full titanium frame and rear stays with a 6061-T6 aluminum boom. The trike will also have Magura BIG hydraulic disc brakes, and a high end mix of complements including Dura Ace shifters, and front derailleur, XTR rear derailleur, Suntour Superbe cold forged crank and a Phil Wood stainless BB. The seat is a heat treated aluminum framed mesh seat with an adjustable lumbar curve and Sew What! full mesh cover. The price start at \$5,550.

Other Angletech News: A USA-built MicWic front/back facing tandem painted in Colorado will soon be available.

Angletech will offer three RANS Force 5 variations, a custom-spec RANS Screamer tandem and a custom-spec Lightfoot Ranger AT81D (dual 26 LWB OSS with SRAM DualDrive).

Angletech also does a custom a Haluzak Horizon SWB USS which has a 2" longer wheelbase, the seat moved back 1", a triangulated rear end, 2" tubing and a 3" shorter boom. Angletech custom spec versions of all Easy Racers models, and Bacchetta Strada and Aeros are available for 2004.

ICE

(Did not show at Interbike)

ICE has a plethora of new models for 2004: The Elf is like a pixie but with a hard shell seat; The Raider is like a Pioneer but with a hard shell seat; The Eclipse is like an XL but with a 26" rear wheel; The Meteor is like an XXL but with a 26" rear wheel; The Classic NT and SNT are narrow and super narrow versions of the Classic; The Leader is like a Classic but with a hard shell seat (also available in NT and SNT). For more information, check out: www.ice.hpv.co.uk.

Hediger (formerly Wicks)

(Did not show at Interbike)

Jerome Hediger, formerly of Wicks, has gone out on his own. His new company is Hediger Cycles. The new venture will concentrate on variations of a tadpole trike (Trimuter & Big Wheel) and a licensed high end version of the Turner SWB USS recumbent (HEDTurner and JT Cruiser).

The latest trike is the new Big Wheel model which has a 26-inch rear wheel. According to Hediger, "The BigWheel seems to be a slight bit more efficient and performs a little better and the large rear wheel absorbs more road shock giving the trike a softer ride." The BigWheel can be outfitted with or without the 3x9 DualDrive rear hub and with drum or disc brakes. Hediger is also planning to offer an electric version of the trike.

Reynolds

(Did not show at Interbike)

Reynolds will concentrate only on his custom dual 700 OSS model. George is expanding into new products including titanium BMX bikes.

WizWheelz

(Did not show at Interbike)

WizWheelz sold over 400 recumbent trikes during 2003. The WizWheelz TerraTrike 3.5 has just been unveiled, according to WizWheelz' Jack Wiswell. "The 3.5 offers a new High Speed Steering System (HSS). The updated steering geometry has more aggressive steering angles and the caster and camber have both been increased. The result of all of these changes is a TerraTrike that handles better at speeds over 25 mph, has a more stable ride, turns tighter, and has a better general feel in the steering."

WizWheelz has also lowered the price of their tandem. The TTR aluminum model has been carried over for 2004 as well. WizWheelz is moved into a new facility in January, which will include a test ride center.

Interbike

Held annually, Interbike is North America's largest bicycle trade show. Preliminary attendance figures for Interbike 2003 indicate that over 21,000 industry personnel attended the three day show held at Las Vegas' Sands Expo and Convention Center. The show utilizes over 660,000 square feet of floor space.

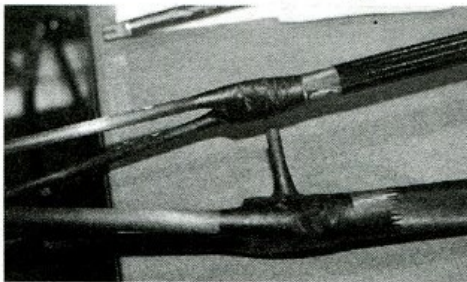
The attendance represents over 1000 exhibiting companies and 9,500 buyers from over 5,500 unique retail storefronts, including over 900 international buyers.

Attendance reached a record high for the two day OutDoor Demo, Interbike's pre-show testing event, which attracted over 6,000 attendees. The Demo was held at Bootleg Canyon park on the edge of Boulder City, Nevada. There are several established mountain bike trails in the mountains there, and road and BMX courses were also set up.

Every attempt was made to be accurate in this report, but availability, prices, and specifications may very well be changed but the time you read this. ♦



Fast Freddy Markham's Calfee Stilletto LWB with linkage steering and lightweight RANS seat (John Riley)



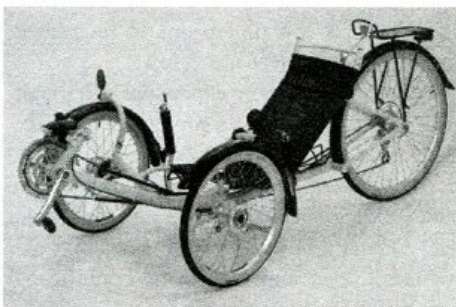
Calfee frame and suspension travel, above carbon post (John Riley)



Barcroft Virginia with new lightweight Rotator seat



Maxarya's 2004 20/20



The Hediger "Big Wheel"



Left: The folding Tartaruga is an interesting EZB/CLWB design that is not available in North America as of yet.

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Cannondale's Bent II is a more affordable rear suspension-only version of the popular CLWB recumbent (Cannondale 2004)

How To Buy A Recumbent 2004

Since you're reading this publication, the odds are good that you're interested in buying and riding recumbent bicycles. There are many reasons to ride a recumbent, here are just a few:

- Superior comfort
- Superior back support
- No neck pain
- No wrist pain
- No back pain
- No numbness or chaffing
- Easier breathing
- Less fatigue
- Better view of the road

There are a few downsides to recumbent bicycles as well. Here are a few:

Recumbents are more expensive, often costing 2-3 times as much as a similar upright bike. Recumbent dealer specialists are also rare and not every town has one. Some recumbents are sold factory direct or have a very limited dealer base. Expect lots of opinions. Selecting and purchasing a recumbent can be complicated as there are several types. The bikes themselves are more complicated than upright bicycles. Education and research are key in finding information about recumbents.

Here are some things to consider before buying a recumbent:

- Your size and weight
- Physical limitations
- Where you will ride
- Skinny or fat tires
- Big or small wheels
- Under- or over- seat steering
- Low BB or high BB
(BB = bottom bracket; pedals)
- Mesh seat or hard shell seat
- 2, 3 or 4 wheels
- Storing Recumbents
- Transporting Recumbents

Your Size and Weight

Large riders need a strong frame, big wheels and fatter tires. Light riders can ride bikes with a lighter, smaller frame. There are a lot of bikes for average size riders (one size fits all recumbents). If you are short, tall, or large, find a good dealer to help you and/or consider a recumbent that comes in frame sizes.

Physical Limitations

If you have toe, foot numbness or neck fatigue issues, a high BB isn't the right bike. If you've

had tailbone, or other issues with sitting down for long periods of time, an upright position LWB or CLWB may not be the right choice. If you have balance trouble, or slow reflexes, you may require a trike or low BB recumbent with over-seat steering.

Where Will You Ride

A performance big wheel Highracer SWB would be ideal riding on a fast century, though not as good on a tour, urban commute or bike-rail trail ride. A Compact is ideal in town, though its lesser performance will become apparent out on the road. If you ride off-road, big wheels, fat tires and a low BB are good. If you climb steep mountain passes, a light weight, higher BB bike may be the order of the day. If you want a "do everything bike," the LWB OSS is a good choice, at least until you have to store or haul it around. If you live in an apartment, an American style SWB or LWB will be a good choice. Just use common sense and consider where you will spend most of your time riding.

Skinny or Fat Tires

Recumbents need fatter tires because de-weighting your seat over road hazards is difficult, if not impossible. The bikes that have super skinny road tires are selling an unreasonable dream. If you ride on real world roads, increase the tire width you would normally use a few sizes. Fatter tires are more comfortable, less skittish to ride, and have fewer flats. Some manufacturers sell skinny tires because it's the "roadie" thing to do.

Big or Small Wheels

The larger size 700c road and touring wheels have more gyroscopic inertia the better and are fastest. 16-inch wheels are the slowest, more difficult to find and wear out quicker. Sizes in between are compromises for various reasons such as bike size, length, or riding position. The most popular recumbent wheel sizes are 26-inch (MTB size) and 20-inch BMX (bicycle moto cross; kids bike) size. Dual big wheels can make recumbents perform better, but makes them less user-friendly. Smaller wheels make a bike more compact, but make for a rougher and slower ride.

Under- or over- seat steering

There are two basic types of recumbent steering:

1. **Over-seat steering (OSS):** This is the more common, user-friendly, and perfor-

mance-oriented (bikes) type of steering.

2. **Under-seat steering (USS):** These are the handlebars that are down at your sides underneath or next to the seat. USS is considered more comfortable by many riders, though it can take more time to become accustomed to. USS adds more complexity to designs because of fork modifications and steering linkages.

While LWB and SWB USS popularity has suffered tremendously in the last few years, it's the most popular steering on trikes.

Low BB or high BB

(BB = bottom bracket; pedals)

Some models have upright seats, others have-laid back seats. Some have low pedals and others have very high pedals (up to 9 inches higher than your seat base). Basic user-friendly ergonomics include a moderate seat height with pedals mounted lower. This design would place the rider in a fairly upright position which places much of the rider's weight on their bottom. For some riders this can put a load on your hind end and create fatigue that we call *recumbent butt*. Riders who rest every hour or two may never experience this, but some do and prefer a higher BB.

As the pedal height is increased, the seat can be reclined more, thus taking some of the weight off the rider's bottom. Often, however, raising the feet can cause foot and toe numbness, may require clipless pedals; it can also take a second or two longer to get your feet to the pedals or back to the ground. When the pedals are raised way up and the seat is reclined way back (what we describe as an aggressive riding position), there can also be neck fatigue, as one has to lower one's chin to look straight ahead. This is usually found on high-performance and racing recumbents and may not be suitable for average riders.

We can't tell you which ergonomic style will work best for you. Low BB is user-friendly. High BB is for more advanced enthusiasts, though there are many low BB riders who've been riding them for decades. You may hear a generalization that all low BB recumbents are slow. This is not true. There are many riders of performance LWB OSS machines who will argue this point.

Mesh Seat or Hard Shell Seat

There are three basic types of seats:

1. **Hammock mesh** offers breathable comfort for your back and bottom. Bikes with a mesh seat base can be more difficult to hold up at a stop due to the side-rail design of the seat. Mesh seats can also pinch the outside the riders buttocks.

2. A **composite shell** seat with foam and cover offers a more firm base to push against, though it may be less comfortable. Euro molded seats have a distinct lumbar curve and are designed to for a very laid-back position.

3. A combination seat includes a mesh back and a molded, foam covered base. This is a good compromise seat. This is the most popular style of recumbent seat.

Most would agree that a mesh back and foam base is the most popular and comfortable kind of recumbent seat. A hard shell seat offers a better surface to push against for power, and can be faster, though at the risk of less comfort.

Seat selection is a personal choice which should be taken very seriously. One seat might not feel good, another might be perfect. Yet another might offer better performance, but less comfort, or visa versa.

2, 3 or 4 wheels

Two wheeled recumbents are the most popular style of recumbent. LWB (and CLWB) are the most popular due to their user-friendliness of the upright position and low BB. They are also generally more affordability.

SWB are less user friendly with higher BB's, some have heel strike with the front wheel, and handling can take more attention to the road. The benefits are lighter weights, smaller size bikes that are easier to store and transport.

Trikes come in two varieties: the delta has two wheels in back; the tadpole two wheels in front. The delta is best for recreational urban transportation, hauling cargo or touring. The tadpole can be a performance trike or touring trike. Most have low seat heights. How low is too low is a choice only the rider can make.

Quads are pedal powered car/trucks for uncongested small towns and country roads or off-road.

Storing Recumbents

LWB, tandems, trikes, quads and even heavy MWB and CLWB models can be difficult to haul and store. The only compact designs are SWB and some CLWB models (that aren't too heavy). Folding recumbents are very rare, and quick folds (like a Dahon or Brompton) even more rare. While seats can be removed, they can be a hassle to do so, and can place wear and tear on the mechanisms.

Transportation Recumbents

Do not under-estimate how difficult it may be to lift a heavy recumbent onto a roof rack. Be sure to look into hauling options *before* you buy a recumbent bicycle. SWB and lighter CLWB will fit on bumper racks. Larger recumbents may require special racks or even a larger vehicle to transport them. If you transport your bike, do this research *before* you buy a bike.

Types of Recumbents

Here are the basic types of recumbents:

- Compact Long Wheelbase (CLWB)
- Medium Wheelbase (MWB)
- Long Wheelbase (LWB)
- Short Wheelbase (SWB)
- Trike (Delta & Tadpole)
- Tandem
- EZB (Easy Bike; Semi-Recumbent)

Compact Long Wheelbase

The CLWB is generally a compacted LWB design with a higher seat and smaller wheelset (usually 20/16). These make fine entry-level, city and commuter recumbents, though performance is not their forte. These are among the most popular recumbents due to affordable entry level models from some makers*. Examples: *Sun EZ, *Cycle Genius, HP Velo Spirit, and Cannondale.

Medium Wheelbase (MWB)

The MWB is thought by many to be anything between a SWB and LWB, including a CLWB. To differentiate it from the CLWB, the MWB actually has the BB at or near the headtube — a SWB style with no boom, per se, which creates a bike nearly as large and often as heavy as a LWB. Examples: BiGHA.

Long Wheelbase (LWB)

These are the long, chopper-like recumbent models. The LWB's pedals are behind the front wheel and often are closer to the ground. They are the most popular and user friendly type of recumbent available today. LWB's are great all-around recumbents and can be used for

most anything. LWB's with over-seat steering (OSS) are great for commuting, touring, day rides, and sport rides. They can also offer exceptional performance, as Lexan fairings are more effective and easier to mount.

There is a newer type of LWB that has a monotube frame, linkage SWB-like steering controls, and higher pedals. These are just as, if not more comfortable, but they do not perform as well (or adapt to fairings) and are not as user-friendly (higher pedals and more reclined seats). It is becoming difficult to find LWB's with under-seat steering (USS).

The downside to the LWB is size, storage, transportability, and weight. LWB's are more difficult to find at dealers.

Examples: Sun (EZ), Easy Racers, RANS, Lightfoot, Longbikes Rotator, and Burley.

Short Wheelbase (SWB)

The SWB takes several forms that are variations of a basic style that places the BB on a boom above or ahead of the front wheel. Due to the compact size, and potential for being light and quick road-bike-like handling, like handling, the SWB has become the choice of the sport riding recumbent enthusiast.

The downside to the SWB is that the SWB can be twitchy and have a longer learning curve. They can also have heel interference with the front wheel during low-speed turns. The higher pedals may require clipless pedals, and there is a greater likelihood for toe/foot numbness for some riders. These models are best suited to more serious enthusiasts. Examples: Bacchetta, RANS, Vision, HP Velo, Burley, and Rotator.

Types of SWB

American Style: BB at or just above seat height, mesh back seat with 26/20, 20/20 or 26/16 wheel combo with OSS or USS steering (mostly OSS these days). An interesting note. RANS are still the most popular of this style of SWB, but their trend is to more of a highracer style with fixed OSS and double bend "U" bars (see RANS website hotrod articles). Examples: RANS V-Rex, and Burley.

Euro Style: 26/20 wheelset, high BB and a

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laid back Euro shell seat. Examples: HP Velo.

Highracer: The Highracer has become the fascination of the sporting SWB seat in North America. The trend was inspired by Vision's Saber prototype dating back to the mid-90s along with Bacchetta's Rich Pinto Aerocycle prototypes and their cutting edge use of light-weight road bike parts. Bacchetta's John Schlitter and Mark Colliton built their company around this "stick bike" that brings together the design aspects of the American style SWB with a big front wheel (dual big wheels), a Euro hardshell seat and a stretched wheelbase for added high speed stability. Examples: Bacchetta, Volae, and RANS.

Lowracer: Imagine being so low that your palms can touch the ground — you're stretched out, laid back with your feet up high. This is the Euro lowracer. Lowracers were originally meant as race bikes for the track. They are based on a lowered and more stretched-out SWB. They were initially only for closed-course racing. More street-rideable models are now appearing. While these were the buzz a few years ago, many North American riders are finding out that the Highracer is as fast (faster or nearly as fast depending on several variables), safer, lighter and climbs better. Lowracers have always been custom and limited production recumbents. Examples: HP Velo, Zox, Optima, and M5.

Trikes

Recumbent tricycles come in two varieties:

Tadpole (two wheels in front): Tadpoles

have automobile-like steering and rear-wheel drive. They are very low to the ground. They are for sport riding, performance, racing, and touring. Examples: WizWheelz, Greenspeed, Catrike, and Trice.

Delta (two wheels in back): Deltas have one steered front wheel, and usually one of the two rear wheels is driven. Their seat heights are of average recumbent height (not usually as low as a tadpole). They are best for recreation, cargo, commuting, and touring (though some can be quite fast). Trikes (and trike dealers) can be more difficult to find.

Examples: Sun, Hase, and Lightfoot.

Tandems

There are double two-wheeled tandems, three-wheeled tandems (trikes), and even five-wheeled tandems (linked trikes). Two-wheeled tandems can be found in user-friendly LWB and more enthusiast-oriented SWB configurations. Be sure that your braking is adequate (consider a drag-brake if you plan to tour over mountain passes). The downside of tandems is storage, transportability, and cost. They also have less carrying capacity than singles do.

Examples: Sun EZ, RANS, and Barcroft. Greenspeed, ICE and WizWheelz offer tandem trikes. Hase offers singles that connect.

EZB

EZB = Easy Bike. This is a morphing of a recumbent and comfort bike into a unique new bicycle design. Look for articles elsewhere in this issue about EZB's. Some are flat footed

cruisers, and others are user-friendly semi-recumbents (with back rests). These bikes will mostly appeal to recreational enthusiasts who find recumbents a over the top for them. Some recumbent riders will prefer an EZB as a second upright-style bike. Be aware of the bike's weight, gearing and hill climbing ability before you buy.

Component Notes

Most recumbents use a mix of road, mountain and BMX components that are, for the most part, readily available. Finding a good internet source for recumbent parts is a good idea. Keep a cache of spare parts, tires, and tubes for your bike. While BMX and kids 16-inch tires are available, the recumbent specific models may need to be ordered from a specialist dealer. An example of this is when a company, like BikeE, goes out of business and leaves customers relying on a few dealers parting out new bikes or acting as 'bent salvage yards.

The long recumbent chains are usually 2+ regular lengths of chains connected with quick-links. The cost more to buy, but usually last longer than a road bike chain.

Most recumbents come with road triple cranksets which don't have low enough gearing unless you live in a flat area (see RCN 079 Editorial). You may think you're tough enough to push big gears up hills; my advice is gear appropriately and take care of your knees.

Most recumbents under about \$1,200 have no-name components. If you want good stuff, you have to pay for it. Look for names like

*The Best Value
In Recumbent Trikes*

 **WizWheelz**



www.wizwheelz.com

Visit the internet's source for Trike information

or call

269-945-5581

Shimano, Deore, 105, SRAM, TruVativ, Avid and others (again, do your research).

Nonstandard parts: Mid-drives, independent pedaling options, disk or hydraulic brakes, or other proprietary parts can complicate your bike and make service and parts replacement more difficult, time consuming, and costly. At the very least keep a cache of replacement parts in case of problems.

Suspension: A cushy ride can be wonderful and may spoil you. It works even better with small wheels (20-inch drive wheel). However, it complicates the bike (fender and rack mounting as well as obtaining acceptable gearing with a small drive wheel), is more expensive, and requires more maintenance. CLWB's and LWB's can best utilize rear suspension. SWB's can best utilize front suspension (first) or full suspension.

Recumbent Performance

Though streamlined recumbents hold most of the human-powered speed records, recumbents are often a bit slower than their upright counterparts. The fastest streetable recumbent models are the lightweight "recumbent roadie" highracers. Partially faired LWB OSS recumbents can offer performance that is nearly as good (for some, equal to or better) as a Highracer. Rare faired SWB and Lowracers are also at the top of the recumbent performance list. The problem is that most of us mere mortals would have to buy one sight unseen.

First Ride

A recumbent may initially feel foreign to you: too sensitive, overly quick, or it may take you some time to get accustomed to the closer-to-the-ground position. This is especially true for the recumbent newbie. The word to remember is RELAX! Lean back in the seat and enjoy the ride. Many problems can be traced directly to the habit of upper-body stiffness from riding your upright. Allow your body to relax

and stay loose. Ride several bikes and decide which design style to choose.

Recumbent Safety

About the safest, most user-friendly recumbent is a LWB OSS low-pedal model. Trikes can also be very safe, though the low rider position and added track width must be taken into consideration (though most riders report these are not problems).

SWB's have a higher pedals, potential heel interference with the front wheel, and a higher center of gravity. USS models can have more forward centers of gravity, which can quicken handling.

Compact and some LWB models can have heavily loaded rear ends and lighter front ends. Sizing a recumbent properly can be crucial. Low recumbents and those with very laid-back seats are more difficult to see from and/or be seen on. Tall SWB's can be more difficult to hold up at a stop (you should be able to plant your feet firmly on the ground at a stop). SWB's, lowracers, and highracers are more suitable to experienced recumbent cyclists.

All recumbent riders should use a rear-view mirror, as turning to look behind you is more difficult on a recumbent than on a diamond-frame bicycle. Riders should also use bicycle safety gear such as reflective clothing, a helmet, a horn, a safety flag, and lights when riding at night.

Dealers and Manufacturers

Take responsibility for your own recumbent education. Don't rely solely on dealers or manufacturers. Read publications, follow newsgroups, attend rides, and join a rider group. Carefully select a manufacturer and dealer. Finding a knowledgeable recumbent specialist dealer can be very helpful, although some wonderful small builders sell direct only. They are known by their reputations. A good recumbent dealer representing many brands is a rare find, since there are only a few dozen in

the USA. While we recommend supporting your local dealer and recumbent specialists, dealers/manufacturers don't make any money unless they sell you a bike. Some of our favorite bikes are from manufacturers with limited dealer bases or who only sell direct.

Internet Bargains

Keep in mind that many recumbent manufacturers don't allow their bikes to be sold on the internet. Some require a store visit, and others void the warranty if the bike isn't set up by a dealer. Despite this, there are no end to "good deals" on eBay. If you decide to buy an Internet bargain bike, do some research and cost analysis before you make your bid. Keep in mind that shipping usually costs around \$80 for a recumbent bicycle, but we recently shipped a LWB OSS that cost \$145. If the bike doesn't meet UPS size limitations or is shipped assembled, shipping can cost hundreds of dollars. On the flip-side, the more a bike is taken apart for shipping, the more reassembly is required. Expect to pay \$50-\$100 for an average recumbent assembly, and even more for tandems, trikes and bikes with lots of options.

Used Bikes

While used bikes can be a good bargain, be sure to consider the shipping and set up of the bike, and also repairs, parts replacements and maintenance that may be required. An overhaul with parts replacements can run as high as hundreds of dollars. Be sure to price tires (\$15-\$30, cassettes (\$25-\$75), chains (\$15-\$50 x 3 lengths), brake pads (\$10-\$20) and tune-up labor in your used bike cost analysis. Many bicycles don't get proper maintenance.

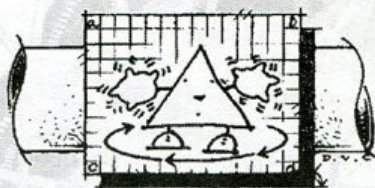
In closing, the most important aspect of buying a recumbent bicycle is your education. Take the time to learn about recumbents, read road tests, join a newsgroup, test ride as many bikes as you can, and then ride them all again. Most importantly, you'll find they're fun! ♦

Bike Technology From A Different Angle

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Recumbent MiniReviews

Compact Long Wheelbase (CLWB)

Medium Wheelbase (MWB)

BiGHA — This premium quality USA MWB recumbent is brought to you by the same folks that brought you the BikeE. It's tall, heavy, and has a trick integrated electronics package that's beyond belief. The bike comes in the biggest recumbent box we've seen, is sold mfr.-direct and they have a 60-day money-back guarantee.

Cannondale Bent I & II — While the 20/16 CLWB is not the most popular style these days. The C-Dale is the finest quality CLWB you'll find. It's heavy, and not the best performer, but has a silky smooth ride thanks to C-Dale's awesome suspension. C-Dale's are built in the USA. The additional new 'Bent II model deletes the front suspension.

Cycle Genius CGX/STX/ALX — CG is known for their excellent values. They're built in the same Taiwan factory as the Sun bikes. The unique MWB design rides like a SWB without a boom. Cool bikes at very affordable prices. The downside is the weight and extended arm position (taller riders). The CGX has chopper style bars and is heavier. It's an entry level cruiser similar to the Sun EZ1.

HP Velo Spirit — The HP Velo Spirit is the finest riding and best handling 20/16 CLWB recumbent we've reviewed. It's built in Taiwan, assembled in Germany and shipped to North America. It's not cheap, but there are lots of cool options to personalize your bike. It's the ultimate urban commuter recumbent. The downside is the price, weight, and the 305mm 16-inch front wheel.

Sun EZ1 — The EZ1 is a fine riding entry level, built in Taiwan, 20/16 CLWB that comes in either aluminum or square HiTen. A SRAM DualDrive is now an option for the aluminum model. This square tube Sun model isn't the most stylish bike, but is affordable and fun. The downside is the weight, entry level parts and the 16-inch front wheel.

Long Wheelbase (LWB)

Cycle Genius — These are two new and affordable LWB models, built in Taiwan models from CG. They are a fine affordable choice for an entry level LWB.

Burley Koosah/Jett Creek — This is the most exciting new LWB OSS recumbent of the year. It's affordable, built in the USA and is as light as LWB's costing twice as much. The bike has built-in passive suspension (monotube frame) and a fold forward steering and optional seat struts (to stiffen the ride). The only downside may be the tight crank to front wheel tolerance (for fenders or longer crank arms). Also, we hope a fairing will fit.

Burley Taiko — This higher BB LWB has linkage steering and is a pleasant riding and handling entry level LWB. Burley recumbents are affordable and built in the USA.

Cambie Recumboni — This is a very long wheelbase OSS recumbent that's custom built in Cambie Cycle's shop in Vancouver, British Columbia, Canada. The quality is excellent, and the bike's are generally a good buy with the exchange rate. The only downside is the size, weight and perhaps the fiberglass shell seat (RANS seats are optional). Our apologies for forgetting to list them in our RCN 079 "Choosing a LWB" listing.

Easy Racers Tour Easy/GRR/TiR — The Easy Racers are among the finest LWB OSS recumbents made in the world today, from the most respected builder. Each model is exceptional in its own way. The Tour Easy (steel) is the toughest (and heaviest), the Gold Rush and TiRush are lighter, faster and offer a smoother ride and upgraded components. The only real downside is the weight and cost.

Lightfoot Ranger — This is the SUV of LWB OSS recumbents. This bad boy has a long CroMo frame built just for you, two big 26-in. wheels, and a seemingly endless list of options and custom features. The downside is the size, weight and cost.

RANS Tailwind — RANS is the most popular dealer-sold enthusiast brand in North America. The bikes are well thought of and are excellent values. The Tailwind is a more compact LWB, or a CLWB with a larger (20-in.) front wheel. It's a pleasant riding recumbent that will do most anything you want it to.

RANS Stratus — The beautiful Stratus is the classic flagship of the RANS line. Celebrating it's 25th year in production, it's a very popular bike. With RANS hotrod options, you can personalize this model as well.

RANS V2/Formula — The V2 offers a stable long wheelbase platform, combined with a higher BB and double bend "tweener" style bars. In it's steel form, it's the best performing, best LWB buy in the RANS line. On the high end, The Formula model has a light aluminum frame and many upgrades making it the hotrod LWB flagship of the line.

Rotator Pursuit — This bike was passionately designed by company owner, Steve Delaire. It has a simple monotube frame and trademark mid-drive offering the widest stock gearing of any recumbent we know of. In it's Titanium form, it's also the lightest LWB we know of. It can be ordered in at least three component levels, with fairings and other custom options. Pursuits can be built with 26-in., 700c and 20-in. wheels.

Sun EZ Rider — The EZ Rider is a new 20/20 LWB OSS recumbent that's a cross

between an EZ Sport and EZ1, and has rear suspension. The new bike will be offered in HiTen, CroMo and aluminum. We think the mid-range CroMo version looks like the best choice, until we see actual weights (to see if the AL is actually lighter and worth the extra bucks). We're excited about this new model.

Sun EZ Sport/Limited — The EZ Sport and Limited have a curvy tube cruiser-style frame combined with the classic LWB OSS looks of an Easy Racer. The seat's a bit taller than a Tour Easy. The bike rides smooth and it's a stylish, confidence inspiring ride. The HiTen steel version is a bit heavy, the aluminum is lighter. One downside to the Sun bikes is the seat quality. The base is wood, and there too many rattling parts. A patient mechanic or owner should be able to correct this.

Short Wheelbase (SWB)

ActionBent — This affordable new Euro style SWB is built in Taiwan and imported by a small NW company, and mostly sold on eBay or importer direct. We haven't reviewed one yet. Owners on the Yahoo group seem mostly pleased with the bike.

Bacchetta Giro — Bacchetta's Giro is a 26/20 version, CroMo of their Highracer Strada. This model built in Taiwan and has the trademark Bacchetta "tweener" style OSS bars. This is the most affordable Bacchetta. The bike is a bit more extreme in nature than a V-Rex, but still a capable all around SWB.

Bacchetta Strada/Corsa — These are Bacchetta's dual big wheels, built in Taiwan Highracer models. The Strada has the mesh seat and Corsa an M5 shell seat. Both are fast and fun Highracer SWB machines.

Bacchetta Aero — Based in the Rich Pinto Aerocycle, the Titanium Aero is a roadie recumbent riders dream. This is one of the most attractive recumbents ever built, with performance and handling to match. This is perhaps currently the most sought after recumbent.

Barcroft — This is a stretched and laid back version of the American style SWB OSS. Built by Rotator, buyers of this fast SWB will have the choice between a RANS seat or a Rotator seat. We hear nothing but good things from Barcroft owners.

HP Velo Street Machine — This is a refined European sport and touring SWB with USS. It's built in Taiwan and assembled in Germany. There are many options to customize this bike to suit your needs. It's a bit heavy, and may be too laid back for some riders.

RANS V-Rex — This 26/20 American style SWB OSS recumbent is the best all-rounder, touring, commuting, recreational SWB made. It's a true classic SWB recumbent. While other models get more buzz, the V-Rex is still a good seller and wonderful riding 'bent.

RANS Rocket — Imagine a more

Continued on page 31

Recumbent Model/Price Directory 2004

We've done our best to compile a list of recumbents that are actively marketed and sold in the USA. For 2004, we have listings to production recumbents priced under \$5,000, as anything above that mark is truly a custom bicycle. We have also limited our listings to recumbents with prices quoted in USA dollars and bikes that are available from USA dealers or manufacturers selling direct. We have tried to offer the most correct data that we can. On foreign and manufacturer-direct sold bikes, we've attempted to factor in shipping and duty. Please verify prices with your dealer or at manufacturers website as they are subject to change with no notice.

KEY

Price: This is manufacturers suggested retail price that the bike should sell for at the USA dealers. Dealers selling direct may charge shipping, and level of set up required and who pays for it will vary. We do not list foreign mfr. prices unless they include shipping and customs duty.

Style: CLWB = compact long wheelbase, MWB = medium wheelbase, LWB = long wheelbase, SWB = short wheelbase, Highracer = SWB with 2 full size wheels, FS = full suspension; OSS = over-seat steering, USS = under-seat steering.

Frame: Al = aluminum; Cro = CroMo; TIT = Hiten steel; Ti = Titanium; FS = front suspension; RS = rear suspension; FS = full suspension.

Seat: Cruiser + BR = Cruiser bike-style saddle with separate back rest; NBR = No Back Rest; CF = Carbon Fiber; FG = Fiber Glass; M = full mesh, M/F = mesh back and foam base, S/F = shell/foam, Plas/F = plastic/foam

Comps: DD = Dual Drive (SRAM 3x8/3x9 3-speed internally geared hub); DA = Dura Ace

Brakes: V = V-style brakes; SP = side pull; DP = Dual Pivot; Disc = disc brakes.

Weight: WOP = With Out Pedals; Weights will vary, some are RCN weights, others are mfr. weights and most vary with size and whose scale was used. Some mfrs. weigh bikes without pedals, etc. We apologize for this inconsistency. If weight is of a concern to you, tell the dealer/mfr. this and/or BYOS (Bring Your Own Scale).

Price	Model	Style	Components	Brakes	Wheels	Frame	Fork	Weight	Seat Type
EZB									
\$370-720	Electra Townie	FF Cruiser FS	Nexus 3, 8/21 or 24-spd.	V	26/26	Al	Susp	NA	Cruiser +BR
\$532	eFun	Semi-bent RS	7-spd. derailleur	NA	20/16	HiT	HiT	33	Cruiser + BR
\$550	Workman Y3K	Semi-bent RS	7-spd. derailleur	V	20/20	NA	NA	NA	Cruiser +BR
\$599	Giant Revive	Semi-bent	8-spd. derailleur	NA	20/20	Al	HiT	NA	Cruiser +BR
\$659	KHS 1620	Semi-Bent	7-spd. derailleur	NA	20/16	Cro	Cro	37	Cruiser +BR
\$829	RANS Fusion	FF Cruiser	SRAM 5.0 24-spd.	SRAM V	20/20	Cro	Cro	28.5	RANS NBR
\$799	Giant Revive DX	Semi-bent RS	Nexus 7	Band	20/20	Al	HiT	53	Cruiser +BR

Compact LWB/MWB (medium wheelbase)

\$450	CycleGenius CGX	CLWB OSS	Mix, 24-spd.	V	20/16	HiT	NA	40	M/F
\$525	Sun EZ1 SX	CLWB OSS	Mix, 21-spd.	V	20/16	HiT (sq)	NA	39	M/F
\$625	CycleGenius CG24	CLWB OSS	Mix	V	20/16	Cro/HiT	NA	40	M/F
\$699	Sun EZ Rider SX	CLWB OSS	Mix	V	20/20	HiT	HiT	NA	M/F
\$825	Sun EZ1 AX	CLWB OSS	Mix, 24-spd.	Tektro V	20/16	Al (sq)	NA	34	M/F
\$825	Sun EZ1 DSX	CLWB OSS	SRAM DD 24-spd.	Tektro V	20/16	HiT (sq)	NA	34	M/F
\$950	CycleGenius ALX ²⁰	CLWB OSS	SRAM 3.0/5.0 mix	Avid disc	20/20	Al (sq)	Cro	37	M/F
\$999	Sun EZ Rider CX	CLWB OSS	Mix	V	20/20	Cro	Cro	NA	M/F
\$1049	RANS Tailwind	CLWB OSS	Shimano/SRAM mix	SRAM 5.0 V	20/20	Cro	Cro	31	M/F
\$1195	Maxaraya Ray-1	CLWB OSS FS	SRAM ESP 7.0 mix	SRAM V	20/16	Al	Cro	29	M/F
\$1499	Sun EZ Rider AX	CLWB OSS	Mix	V	20/20	Al	Cro	NA	M/F
\$1599	Cannondale Bent-II	CLWB OSS	Mix	Disc-V	20/16	Al	Al	NA	M/F
\$1865	Maxaraya Ray-1X	CLWB OSS FS	SRAM DD mix	Disc	20/16	Al	Cro	31	M/F
\$1695	HPVelo Spirit	CLWB OSS FS	SRAM DD 24-spd.	Disc	20/16	Al	Cro	39	M/F
\$1999	Cannondale Bent-I	CLWB OSS FS	Mix	Disc-V	20/16	Al	Susp	40.25	M/F
\$3000	Bigha	MWB/OSS RS	SRAM DD	Avid disc	26/20+	Al	Susp	44-50	Plas/F

LWB (long wheelbase)

\$925	Sun EZ Sport CX	LWB OSS	Mix, 24-spd.	V	26/20	HiT	Cro/HiT	40	M/F
\$899	Burley Koosah	LWB OSS	Mix, 24-spd.	Tektro V	26/20	Cro	Cro	NA	M/F
\$1000	Cycle Genius LTX	LWB OSS	Mix, 24-spd.	Tektro disc	26/20	Al	Cro	NA	M/F
\$1149	Burley Jett Creek	LWB OSS	Mix	Shimano V	26/20	Cro	Cro	NA	M/F
\$1250	Sun Easy Sport AX Ltd.	LWB OSS	SRAM/Shimano mix	V	26/20	Al	Cro	34	M/F
\$1299	Burley Canto	LWB or SWB OSS	Mix	V	26/20	Cro	Cro	34.5	M/F
\$1299	RANS V2	LWB OSS	Truvativ/SRAM 7.0	SRAM 7.0 V	26/20	Cro	Cro	33	M/F
\$1350	Cycle Genius RDX	LWB OSS	Shimano/SRAM mix	Tektro MT-50 V	700/20	Al	Al	32	M/F
\$1399	Burley Limbo	LWB or SWB OSS	Mix	V	26/20	Cro	Cro	38	M/F
\$1649	RANS Stratus	LWB OSS	SRAM 9.0/105 mix	Avid Arch Rival V	26/20	Cro	Cro	31	M/F
\$1735	Rotator Pursuit I	LWB OSS	Mix, 48-spd.	Tektro V	20/20	Cro	Cro	31-32	M
\$1799	Burley Taiko	LWB or SWB OSS	Shimano XT/105	Shimano disc	26/20	Cro	Cro	32	M/F
\$1900	Cambie Recumboni	LWB OSS	Deore/Tiagra/STX	Disc/V	26/20	Cro	Cro	36	S/F
\$1995	EZRacer Tour Easy	LWB OSS	SRAM/Shim./Sugino	V or SP	700/20+	Cro	Cro	30	M/F
\$2000	Cambie Recumboni	LWB OSS	Shimano Tiagra/Deore	Deore disc	26/20	Cro	Cro	33	FG S/F
\$2370	Turner T-Long	LWB OSS	Shimano 105/Ultegra	NA	26/20	Cro	Cro	NA	S/F
\$2550	Lightfoot Ranger	LWB OSS	SRAM/Shim. Deore	Shimano V	26	Cro	Cro	40	M/F
\$2550	Lightfoot Rambler	LWB OSS	SRAM/Shim. Deore	Shimano V	20/20	Cro	Cro	40	M/F
\$2600	Rotator Pursuit II	LWB OSS	Mix, 54-spd.	V	20/20	Cro	Cro	26	M
\$2995	EZ Racer GoldRush	LWB OSS	SRAM/XT/Ultegra	V	700/20+	Al	Cro	27	M/F
\$3049	RANS V2 Formula	LWB OSS	SRAM XO/Uit./HED	V	26/20	Al	Cro	NA	M/F
\$3500	EZ Racer Fold Gold	LWB OSS FLD RS	XT/XTR/Ultegra	V or SP	700/20 +	Al	Cro	29	M/F or S/F
\$4700	Rotator Pursuit III	LWB OSS	Mix, 54-spd.	V	20/20	Ti	Cro	21	M
\$5000+	Calfee Stilletto	LWB OSS	NA	DP	700/20	CF	CF	23	NA
\$5000+	Easy Racers TiRush	LWB OSS	SRAM/Ultegra/XTR	V or DP	700/20	Ti	Cro	NA	S/F or M/F

SWB (short wheelbase)

\$699	HP Velo Wavey	SWB OSS	Mix, 3x7 21-spd.	Canti	20/20	Cro	Ballistic	36	S/F
\$699	Sun EZ-Spdstr AX	SWB OSS	Mix	V	26/20	HiT	HiT	NA	M/F
\$745	Actionbent Jetstream	SWB OSS	Mix 24-spd.	V	26/20	Cro/HiT	Cro/HiT	30	S/F
\$880	Lightning T-Bolt	SWB OSS	Mix	NA	NA	NA	NA	NA	M
\$999	Sun EZ-Spdstr CX	SWB OSS	Mix	V	26/20	Cro	Cro	NA	M/F

\$1045	Actionent Tidawave	SWB OSS	LX/105 mix	V	700/20	Cro	Cro	27	S/F
\$1149	RANS Rocket	SWB OSS	Shimano/SRAM mix	SRAM 7.0 V	20/20	Cro	Cro	29	M/F
\$1395	Volae Tour	SWB OSS	Mix	Avid V	26/20	Cro	Cro	30	FG S/F (M5)
\$1399	Burley Django	SWB OSS	Mix	Deore V	26/20	Cro	Cro	30	M/F
\$1400	Turner T-Lite	SWB USS	Shimano Sora/Tiagra	NA	26/20-16	Cro	Cro	28	S/F
\$1499	Sun EZ-Spdstr AX	SWB OSS	Mix	V	26/20	AI	Cro	NA	M/F
\$1550	Lightning Phantom	SWB OSS	Mix	NA	NA	NA	NA	NA	M
\$1550	Bacchetta Giro	SWB OSS	Truativ/Deore	Deore V	26/20	Cro	Cro	30	M/F
\$1649	RANS V-Rex	SWB OSS	SRAM 9.0/Shim. 105	Avid Arch Rival V	26/20	Cro	Cro	29	M/F
\$1735	Rotator Tiger I	SWB OSS	Mix, 48-spd.	Tektro V	20/20	Cro	Cro	31-32	M
\$1395	Volae Century	SWB OSS	Mix	Avid V	26/20	Cro	Cro	27.5	FG S/F (M5)
\$1870	HPVelo StreetMach.	SWB USS FS	SRAM 9.0/Shimano	V opt. disc	26/20	Cro	Susp	NA	Shell
\$1995	Barcroft Dakota	SWB OSS	Shimano XT/105 mix	V	26/20	Cro	Cro	28.5	M or M/F (RANS)
\$1999	Burley Hepcat	SWB OSS	Shimano mix	Shimano disc	26/20	Cro	AI	29	M/F
\$1990	HP Velo St.Mach GT	SWB OSS	Mix	Tektro V	26/20	Cro	CF Meks	35	M/F
\$1990	HP Velo Grasshopper	SWB OSS FS	Mix	NA	20/20	AI	CF Meks	30	S/F
\$2000	Hediger Wickster	SWB USS	105	Avid V	26/20	Cro	Cro	30	CF S/F
\$2000	Cambie Recumbini	SWB OSS	Shimano Acera/Alivio	NA	26/20	Cro	Cro	33	FG S/F
\$2050	Barcroft Dakota	SWB OSS	Shimano 105/XT mix	LX V	26/20	Cro	Cro	28.5	M/F (RANS)
\$2350	Barcroft Virginia GT	SWB OSS	Shimano 105/XT mix	Tektro Mini-V	26/20	Cro	Cro	28.5	M/F (RANS)
\$2490	HPVelo Speedmach.	SWB OSS LR FS	Mix	Disc	26/20	AI	AI	36	S/F
\$2550	Turner T-Lite Deluxe	SWB USS	Shimano Ultegra	NA	26/20-16	Cro	Cro	NA	S/F
\$2600	Rotator Tiger II	SWB OSS	Mix, 54-spd.	V	20/20	Cro	Cro	26	M
\$2600	Hediger JT Cruiser	SWB USS	Ultegra	Avid V	26/20	Cro	Cro	29	CF S/F
\$2700	Lightning P-38	SWB OSS	Mix, varies	V or SP	700/20	Cro	Cro	NA	M
\$2800	TerraCycle TerraZa	SWB OSS	105/XT	V	20/20	Cro	Cro	32	M/F (RANS)
\$3500	Hediger HED Turner	SWB USS	Shimano Dura Ace	Avid V	26/20	Cro	Cro	28	CF S/F
\$3650	Angletech MC2 ST27	SWB OSS	XT/Dura Ace mix	Avid Arch Rival V	26/20	Cro	Cro	26	M
\$3850	Bacchetta Aero-Basso	SWB OSS	FSA/Am.Classic/Ult.	Bacchetta SP DP	26/20	Ti	CF	23 (WOP)	S/F (M5 Carbon)
\$4050	Angletech Altitude GL81	SWB OSS	DualDrive mix	Magura hydraulic	20/20	Cro	Cro	31	M/F
\$4050	Angletech MC2 GL81	SWB OSS	XT/DualDrive mix	Magura Hydraulic	26/20	Cro	Cro	27.5	M
\$4350	Angletech MC2 SHO	SWB OSS	Dura Ace/XT mix	Avid Arch Rival V	26/20	Cro	Cro	25	M
\$4700	Rotator Tiger III	SWB OSS	Mix, 54-spd.	V	20/20	Ti	Cro	21	M
\$4750	Anglet. Altitude RBT14	SWB OSS	Rohloff 14-spd.	Magura hydraulic	20/20	Cro	Cro	30	M/F

SWB Note: Lightning's websites did not list 2004 specs or prices and neither responded to our info request. Please contact mfrs. for info.

Highracer SWB (dual big wheel)

\$1600	RANS Force 5 LE	SWB OSS HR	Mix	DP SP	650c	Cro	Cro	28.5	M/F
\$1850	Bacchetta Strada	SWB OSS HR	FSA/105/Ultegra	Avid SingleD V/SP	26/26	Cro	AI	29	M/F
\$1995-2395	Volae Club/LX	SWB OSS HR	SRAM/Shimano mix	Avid V	650c	Cro	CF	27.5/26	FG/CF S/F (M5)
\$2100	RANS Force 5 XP	SWB OSS HR	Mix	DP SP	650c	Cro	Cro	28.5	M/F
\$2395	Volae Club	SWB OSS HR	SRAM/Shimano mix	105 DP SP	650c	Cro	CF	NA	S/F
\$2600	Bacchetta Corsa	SWB OSS HR	FSA/Shimano Ultegra	Bacchetta SP DP	2x650c	Cro	CF	26.5 (M)	S/F
\$2995	Volae Team	SWB OSS HR	SRAM/Shimano mix	Dura Ace DP SP	650c	Cro	CF	24	S/F
\$3900	Bacchetta Aero	SWB OSS HR	FSA/Am.Classic/Ult.	Bacchetta DP SP	650c	Ti	CF	22 (WOP)	S/F (M5 carbon)

Trikes — Delta (two wheels in back)

\$725	Sun EZ3 SX	Delta OSS	Mix, 21-spd.	Disc/V	20/16/16	HiT (sq)	HiT/Cro	NA	M/F
\$825	Sun EZ3 USX	Delta USS	Mix, 24-spd.	NA	20/20/20	HiT	HiT/Cro	NA	M/F
\$1295	Sun EZ3 AX	Delta OSS	Mix	Promax disc (x3)	20/20/20	AI (sq)	HiT/Cro	50	M/F
\$2850	Hase Kett Wiesel	Delta USS	Shimano 9-spd.	Disc	20/20/20	HiT/Cro	Cro	34	M/F
\$3400	Lightfoot Trike	Delta LWB OSS	SRAM/Shimano mix	Shimano V	26/20/20	Cro	Cro	NA	M/F
\$4050	Has Lepus	Delta USS folding	Shimano	Hydraulic disc	20/20/20	HiT/Cro	Cro	44	M/F

Trikes — Tadpole (2 wheels in front)

\$1995	Catrike Trail	Tadpole USS	Mix	Avid disc	20/20/20	AI		30	M
\$2258	WizWheelz TT 3.5	Tadpole USS	Shimano Tiagra mix	Shimano disc	20/20/20	Cro		36	M
\$2350	Catrike Speed	Tadpole USS	Mix	Avid disc	16/16/16	AI		30	M
\$2650	Rotator Comfort 3	Delta USS	Mix	Magura Hydraulic	20/20/20	Cro		38	M
\$2875	Hediger Big Wheel	Tadpole USS	SRAM DD mix	Drum	26/20/20	Cro		39	M
\$2850	Greenspeed GT3	Tadpole USS	Shimano Tiagra	SA Drum	16/16/16	Cro Folding		40	M
\$2885	Hediger Trimuter	Tadpole USS	SRAM DD mix	Drum	20/20/20	Cro		42	M
\$3349	WizWheelz TTR 1.2	Tadpole USS	FSA/Shimano mix	Shimano Deore disc	20/20/20	HT AI		28.4	M
\$3420	Windcheetah CS	Tadpole Joystick	Shimano XL/105/DA	Drum	26/20/20	Bonded AI		33	FG S/F
\$3700	Angletech TriSpeeder	Tadpole OSS	Mix	Drum	20/20/20	Cro		39	M
\$4100+	Angletech Quadraped	Tadpole arm/leg	Mix	Drum	20/20/20	Cro		44+	M
\$4140	Windcheetah SS	Tadpole Joystick	Shimano XT/Ultegra	Drum	26/20/20	Bonded AI		32	CF S/F
\$4250	ICE Trice Classic	Tadpole USS	Tiagra, Deore, DA	Disc	26/20/20	Cro		37.2	M
\$4330	ICE Trice Explorer	Tadpole USS	Tiagra, Deore, DA	Disc	20/20/20	Cro		37.3	M
\$4420	ICE Trice XL	Tadpole USS	Tiagra, Deore, DA	Disc	20/20/20	Cro		37.2	M
\$4700	Greenspeed GTR	Tadpole USS	Shimano Deore/105	SA Drum	20/20/20	Cro		NA	M
\$4850	Greenspeed GTO	Tadpole USS	Shimano Deore/105	SA Drum	20/20/20	Cro		NA	M
\$4820	ICE Trice XXL	Tadpole USS	Tiagra, Deore, DA	Disc	20/20/20	Cro		35	S/F
\$4850	Greenspeed GTC	Tadpole USS	SRAM DD, Shim. mix	SA Drum	16/16/16	Cro		NA	M
\$5000+	ICE Trice Mini	Tadpole USS	Tiagra, Capreo, DA	Disc	18/18/18	Cro		33.4	S/F
\$5000+	ICE Trice Micro	Tadpole USS	Tiagra, Capreo, DA	Disc	18/18/18	Cro		32.5	S/F
\$5000+	ICE Trice Monster	Tadpole USS	Shimano mix; varies	Disc	26/18/18	Cro		34.4	S/F
\$5000+	Wincheetah HS	Tadpole Joystick	Shimano DA	Drum	26/20/20	Bonded AI		28	CF S/F

Trike note: We've only listed recumbents up to \$5,000. ICE, Windcheetah and Greenspeed prices were accurate as of January 20, 2004 and include estimated shipping and duty to USA addresses. These prices may vary by exchange rate. ICE mainly ships framesets to USA dealers. Angletech, ICE, and Greenspeed offer models that cost more than \$5,000. We've shown models that "list" for under \$5,000, but prices exceeded the amount with shipping and duty. Prices on some trikes have gone up significantly due to the falling dollar, and rising Euro, Pound, and Australian dollar

TANDEM 2 Wheelers

\$1995	Sun EZ Tandem CX	LWB OSS	Deore/Am. Classic	Disc	26/20	Cro	NA	59	M/F
\$2695	Sun EZ Tandem AX	LWB OSS	NA	Disc	26/20	AI	Cro	NA	M/F
\$3399	RANS ScreamerSP	SWB OSS	Mix	SRAM 7.0 V-s	26/20	Cro		48	M/F
\$3975	Barcroft Columbia	SWB OSS	Shimano LX/XT/105	V	2x20	Cro	Cro	46	M/F (RANS)
\$4400	Lightfoot tandem	LWB OSS	SRAM/Shimano mix	V	20/20	Cro	Cro	NA	M/F
\$4899	RANS ScreamerTR	SWB OSS	Mix	NA	26/20	Cro	NA	NA	M/F
\$5000+	Longbikes Eliminator II	SWB OSS	Shimano LX/XT mix	Avid disc	26/20	Cro	Cro	NA	M

TANDEM 3+ Wheelers

\$4149	WizWheelzTadpole	USS	FSA/Shimano mix	Shimano Deore disc	20/20/20	Cro		60	M
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ICE, Greenspeed, Hase (2 linked trikes), and WizWheelz build tandem tadpole trikes that sell for more than \$4,000. On direct sales, and factory orders Greenspeed and ICE prices can fluctuate with US/Aus. dollar exchange rate until transaction has completed. Web prices don't include shipping or duty. USA dealers ICE receive framesets only so prices vary. See website for pricing/spec information

MANUFACTURER Notes

Greengear/Bike Friday note: SatRDay and DoubleDay models are being replaced with simplified models. For up to date info, see their website. Vision note: Vision bikes were not in production at the time this list was made.

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Recumbents Sold Through Dealers

Bacchetta Bikes

Tel. 727-341-1881
Web: www.bacchettabikes.com
Products: SWB OSS recumbents

Big Cat HPV

Tel. 407-293-1626
Web: www.catrike.com
Products: Tadpole USS

Burley Design Coop

Tel. 866-850-5486
Web: www.burley.com
Products: SWB and LWB OSS

Cannondale

Tel: 1-800-BIKEUSA
Web: www.cannondale.com
Products: Full suspension CLWB

Cycle Genius

Tel: 866-901-BIKE (2453)
Web: www.cyclegenius.com
Products: Compact LWB/MWB OSS

Easy Racers, Inc.

Tel. 831-722-9797
Web: www.easyracers.com
Products: LWB OSS

Hediger Cycles

Tel. 618-654-4323
Web: www.trimuter.com
Products: SWB and tadpole trikes.

Lightfoot Cycles

Tel. 406-821-4750
Web: www.lightfootcycles.com
Products: LWB OSS, trikes and a quad

RANS Recumbents

Tel. 785-625-6346
Web: www.rans.com
Products: SWB, Compact, LWB, & tdm.

Rotator

Tel. 707-539-4203
Web: www.rotatorrecumbent.com
Products: LWB and SWB & trike OSS

Sun Bicycles

Web: www.sunbicycles.com
Tel. See your local dealer
Products: CLWB, LWB, tandem, & trikes

Recumbents Sold Factory/Distributor Direct

American TriCruiser

Tel. 619-281-6720
Web: www.americruiser.com
Products: Affordable tadpole trike

Angletech

Tel: 800-793-3038
Web: www.angletechcycles.com
Products: Tadpole trike OSS

Barcroft HPV

Tel. 703-750-1945
Web: www.barcroftcycles.com
Products: SWB OSS, tandem, & lowracer

Bent Up Cycles

Tel. 310-779-6853
Web: www.bentupcycles.com
Products: USA sales of Velokraft Lowracer

Crank-It

Tel. 888-747-2038
Web: www.crank-it.com
Products: Offroad quad

Doyle Custom Bikes

Tel. 618-962-3479
Web: www.doylecustombikes.com
Products: Tadpole trike with Honda 31cc motor

HPM (Human Powered Machines)

Tel. 541-343-5568
Web: www.efn.org/~cat
Products: SWB, LWB, & folder

Just Two Bikes

Tel. 800-499-1548
Web: www.justtwobikes.com
Products: FWD delta trike (folding)

Reynolds Weld Lab

Tel. 603-432-7327
Web: www.reynoldsweldlabs.com
Products: Dual 700c highracer

Rhoades Car International

Tel. 800-974-6233
Web: www.rhoadescar.com
Products: Four wheeled pedal cars

TerraCycle

Tel. 800-371-5871
Web: www.terracycle.com
Products: SWB ASS and custom parts

Turner Enterprises

Tel. 520-290-5646
Web: www.turnerrecumbents.com
Products: SWB, LWB & tdm. USS

Volae Recumbents

Tel. 715-340-1133
Web: www.volaerecumbents.com
Products: SWB OSS, big wheel.

WizWheelz

Tel. 269-945-5581
Web: www.wizwheelz.com
Products: Tadpole USS trike

EZB (Easy Bikes) Flat Foot Cruiser/Semi 'Bent

CCM Evox

Web: www.evoxcycle.com
Products: EZB for adults and kids

Electra Bicycles

Web: www.electrabikes.com
Products: Flat Foot "Townie" EZB.

Giant Bicycle

Web: www.giant-bicycle.com
Products: Revive EZB

RANS Recumbents

Web: www.rans.com
Product: EZB

Workman Cycles

Web: www.workman.com
Products: Y3k EZB

Worldwide Manufacturers

Challenge (Holland)

Web: www.challenge-ligfietsen.nl/
Product: Lowracers & Euro SWB

Cambie Cycles (Canada)

Tel. 604-874-3616
Web: www.cambiacycles.com
Products: LWB OSS

Greenspeed

Web: www.greenspeed.com.au
Products: Line of tadpole USS trikes

HP Velotechnik

Web: www.hpvelotechnik.com
Products: Euro SWB, MWB & lowracers

ICE (Inspired Cycle Engineering Ltd.) (UK)

Web: www.ice.hpv.co.uk
Products: Tadpole trikes & tandem trike

Leitra DK ApS (Holland)

Web: www.leitra.dk
Products: Enclosed velomobile

Hase Spezialrader (Germany)

Web: www.hase-spezialraeder.de
Products: Delta & folding trike

Maxaraya Design (Canada)

Web: www.maxaraya.com
Products: Compact LWB, full suspension

M5 Ligfietsen (Holland)

Web: www.m5-ligfietsen.com
Products: Lowracers

Optima (Holland)

Web: www.optimabikes.com
Products: Lowracer & trike

Velo Nouveau/Burrows Eng. (UK)

Tel/Fax: 44 (0) 1603 721700
Product: SWB ASS

Windcheetah/AVD (UK)

Web: www.windcheetah.co.uk
Products: Tadpole trike.

Zox (Germany)

Web: www.liegerad.com
Products: Euro FWD SWB/lowracer

Seen & Noted No 2004 Info (website is up)

Bike Friday

Web: www.bikefriday.com
Product: N/A

Lightning Cycle Dynamics

Web: www.lightningbikes.com
Products: SWB OSS and lowracer

Linear Recumbent

Web: www.linearrecumbent.com
Products: LWB & CLWB folding

NF Cycles

Web: www.nfcycles.com
Products: Tadpole trikes from \$1300.

Organic Engines

Web: www.organicengines.com
Product: Trikes, & trucks

Penninger Recumbents
Web: www.penninger.com
Product: Delta trikes, trike tandem

S&B Recumbent
Web: www.home.pacbell.net/recumbent/
Products: SWB Delta trike & tandem

Sidewinder
Web: www.sidewindercycle.com
Products: rear wheel steer tadpole trike

Recumbent Parts & Accessories

Angletech
Tel. 800-793-3038
Web: www.angletechcycles.com

C&C Industries
Tel. 952-929-0313
E-mail: cg@visi.com
Products: Sun Quad kit; ZEM distributor

Crateworks
Tel. 800-934-5214
Web: www.crateworks.com
Products: Travel boxes

Easy Street Recumbents
Tel. 512-453-0438
Web: www.easystreetrecumbents.com
Products: BikeE parts

Gaerlan Custom Cycles
Web: www.gaerlan.com/

Mueller Windwrap
Tel. 877-267-1645
Web: www.windwrap.com
Products: fairings

Power On Cycling
Web: www.poweroncycling.com

TerraCycle
Tel. 800-371-5871
Web: www.terracycle.com
Products: OSS stem/risers, custom handlebars, pannier racks, tail fairings.

Zzip Designs
Tel. 838-946-7276
Web: www.zipper.com
Products: fairings and mounts

Recumbent Racks (for cars)

Alpaca
Tel. 877-350-3361
Web: www.alpacacarriers.com
Products: recumbent car racks

ATOC
Tel. 800-ATOC-021
Web: www.ATOC.com
Products: recumbent rack trays, etc.

Draftmaster
Tel. 800-659-5569
Web: www.draftmaster.com
Products: Receiver hitch bike rack

Recumbent Rack
Tel. 800-332-DOCK
Web: www.topperfloats.com
Products: LWB rack tray

Sportworks
Tel. 888-661-0555
Web: www.sportworks.com
Products: Recumbent racks for cars

Yakima
Tel. 888-925-0703
Web: www.yakima.com
Products: Recumbent racks and trays

Bentech
Web: www.bentechbikes.com
Products: Recumbent plans, kits and parts

Recumbent Building Plans

LaBent by LaDue
Web: www.radiks.net/~ladue/
Products: LWB OSS plans and kits

R.Q. Riley
Web: www.rqriley.com/bike.html
Products: Recumbent plans

MiniReviews . . . Cont'd from page 26

compact V-Rex with a 20/20 wheel set. The Rocket feels more nimble, handles a bit better (arguably), but the ride can be a bit more firm. RANS offers lots of cool upgrade hotrod parts for their recumbents. This is the best high performance recumbent deal going.

RANS Force5 — This is RANS' newest offering. The F5 is an affordable Highracer with a trussed (triangulated) frame, and RANS' new Zephyr (XP) lightweight seat. This model will be built in the USA and should help to double Highracer sales for 2004.

Volae — These are Highracers designed by Rolf Garthus of the Hostel Shoppe. They were originally built by Vision. Production has now moved to the prestigious Waterford factory. We expect the Volae's to be impressive bikes.

Trike

Angletech Quadraped — The Quad is the most invigorating workout you'll ever have on an HPV. This trike is hand-built in Colorado to a refined and proven design that includes hand and foot cranks. TriSpeeder is foot crank only. Watch for a Ti trike coming soon.

Catrike Speed/Trail — The Catrikes are simple, affordable, very light, and built in the USA. If there is a downside, the aluminum frames are not heat treated and the 16-in. wheels are a bit rough riding. So far lack of heat treating hasn't been a problem, but we'd sure like to see them do it anyway.

Crank It Quad — This is a bulletproof, and pricey, hand-built (by Rotator), off-road recumbent quad. It's unbelievably tough and one of the most fun HPV's I've ridden.

Greenspeed GTO/GTR — Among the finest handling recumbent trikes made. Greenspeed wrote the book on modern trike handling. Sadly, with exchange rate woes, prices have taken a serious hike this year. Some frames are made in Taiwan, but painted and built up in Australia, before being shipped to the USA. The only downside is the fixed seat recline angle. You have to know your laid back preference in advance. On the upside, this makes for a torsionally stiff frame.

Hase Kettwiesel — This is a sporty and finely crafted delta trike. It's low, light and a blast to ride. The downside for some might be the light front end, lack of a front brake and cost of this German import.

ICE Trice Explorer — This tadpole trike was the finest I've ever ridden. The craftsmanship was better than any recumbent to come through RCN's test garage before or since. They offer a many models and variations. Your eyes will be blurry from reading the little details in their thick catalog. While it's good to have a USA dealer, some communication with the factory in trike selection is necessary. Email makes them very accessible. The downside is, of course, the price, declining dollar and exchange rate.

Lightfoot Delta — These are near bullet-proof, owner-serviceable, serious delta trikes, pedal trucks, pedicabs and does-anything machines. They are built in Montana, USA. A lengthy list of custom options are available including: power assist, two-wheel drive and fairings.

Sun Delta — This simple HiTen delta trike has been the best selling recumbent in North America in 2002. It's a reasonably tough, and very affordable delta trike. You just can't do better than this for fun and value. These Taiwan built trikes are heavy. The aluminum 3x20 version has a high front end, and a chopper like feel. It also didn't fit me due to a sizing glitch (that should be corrected by now). These deltas are a real deal.

Sun Tadpole — Entry level tricyclist wannabes won't have to wait much longer for an affordable Sun 3x20 tadpole. It's a more recreational design with a lower BB than most.

WizWheelz 3.5 — This little company from Michigan is the largest selling enthusiast tadpole trike mfr. in North America. They offer the best performance, value and reputation for the bucks. They've been at it for years, and each trike is better than the last. The service is friendly and they're local boys done good. The only downside is the continuous upgrades make your trike seem dated. The only difference is at least WizWheelz is telling you what and when they're updated. Wiz sells direct and offers a 30-day money-back guarantee.

Windcheetah — This is the British classic tadpole, complete with joystick steering — a work of kinetic art. We like their simple USA ordering system (shipping included). We've never reviewed a Wincheetah, but hope to do so in 2004. ♦

Recumbent Rider Groups

Arizona

Phoenix Recumbent Bike Club
<http://groups.yahoo.com/group/brag-az/>

Tucson (Ajo Bikes)
<http://www.ajobikes.com/rider.htm>

California

Recumbents Bay Area
<http://groups.yahoo.com/group/Recumbents-BayArea/>

Recumbents East Bay
http://groups.yahoo.com/group/Recumbents_of_the_East_Bay/

Monterey California Recumbent Club
<http://groups.yahoo.com/group/bents/>

Sacramento, Recumbent Riders of
http://groups.yahoo.com/group/recumbent_riders_of_sacramento/

San Diego Area Recumbent Riders
<http://home.earthlink.net/~r2parks/errc.html>

Redwood Empire HPV
www.humboldt1.com/~mhp/rehpv.htm

Orange (People Movers)
<http://www.recumbent.com/>

Colorado

Laid Back Bikes — Front Range Colorado
<http://groups.yahoo.com/group/laidbackbikes/>

Florida

North Florida Recumbent Riders
<http://groups.yahoo.com/group/NorthFloridaRecumbentRiders/>

Central Florida Recumbent Riders
<http://groups.yahoo.com/group/CentralFloridaRecumbentRiders/>

South Florida Recumbent Riders
<http://groups.yahoo.com/group/SouthFloridaRecumbentRiders/>

Florida Feet First
<http://www.4cryinoutloud.net/feetfirst/>

Georgia

Atlanta Recumbent Riders
<http://www.coolbike.com/arc.htm>

Idaho

Bent In Boise
<http://groups.yahoo.com/group/BentInBoise/>

Indiana

Bloomington Area Recumbent Riders
<http://www.bloomington.in.us/~bents/>

Indianapolis — Fly'in Joes (Valley Bikes)
<http://www.valleybikes.com/main.html>

Kentucky

Louisville Relaxed Recumbent Riders
<http://pages.prodigy.net/bikeolounger/sitepages/news.htm>

Michigan

Michigan Recumbent Cyclists (Wolver Bents)
<http://www.lmb.org/wolverbents/>

Michigan HPV <http://www.lmb.org/mhpva/>

Minnesota

Minnesota HPV <http://mnhpva.org/>
<http://groups.yahoo.com/group/recumbentsmn/>

Nebraska

County Cruisers
<http://members.cox.net/armandg/Cruisersrule.html>

Start a Group!

Start a local rider Yahoo group (www.yahoo.com/groups) and announce it to your local bike club, recumbent newsgroups and in RCN. ♦

New York

Metro Area Recumbent Society
<http://www.recumbents.com/mars/>

Rochester Area
<http://home.rochester.rr.com/rare/>

Western New York Recumbent Riders
http://www.bluemoon.net/~padelbra/the_recumbenteers.htm

Ohio

Bent Trail Riders
<http://www.siscom.net/~grindix/btr/>

Oregon

Oregon HPV <http://ohpv.org/>

Portland United Recumbent Riders
<http://home.pacificer.com/~jwills/rides/rides.htm>

Pennsylvania

Philadelphia Area Recumbent Cyclists
<http://www.geocities.com/goohall2000/>

Texas

Recumbent Enthusiasts of North Texas
<http://www.rbent.org/>

Utah

Utah Recumbent Riders
<http://groups.yahoo.com/group/utahrecumbents/>

Washington DC

Washington's Happily Independent R'bent
<http://www.recumbents.com/whirl/>

Washington

Spokane area — NOW FORMING
capttourez@hotmail.com or call Gale at tel. 509-892-6908.

Olympic Peninsula (Port Townsend area)
bob@recumbencyclistnews.com

Canada

Ontario Recumbent Cyclists
<http://www.hpv.on.ca/>

Victoria BC — NOW FORMING
<http://www.smartgroups.com/groups/CCRrecumbenteers/> & <http://rideitbent.net>

Updates

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bob@recumbencyclistnews.com



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- \$45 1 year First Class USA**
- \$60 2 years, 12 issues
- \$80 3 years, 18 issues*
- \$45 Canadian Airmail (US Funds)
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** Recommended for those who've had trouble with their mail, move often, or have two seasonal addresses.

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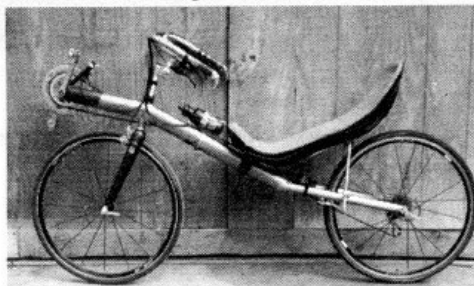
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Classified Ads RCN

Trikes For Sale

FOR SALE: 2001 GREENSPEED GTE, 72 speed, fully equipped, <500 miles, near perfect cond. Cost \$3500. Asking \$2800 OBO. Will deliver to within 200 miles of Plymouth, NH free. Tel. 603-726-0097 or email: dleeguitars@coopresources.net (081)

FOR SALE: 2000 TRIMUTER (similar to GS GTS); 6,320 miles; black; 2 mirrors, computer, rear fender, flag, panniers, NiteRider headlight; \$2,200 with new tires, cables and complete LBS overhaul, or \$1,900 as is; + shipping; baldwinc@patmedia.net, 609-818-4544 (NJ/082)

LWB For Sale

FOR SALE: EASY RACERS GOLD RUSH, White, like new; medium frame; purch June 2002; 186 miles. Extras - 9 spd; extra Super Zip Fairing; fenders; Welgo Mag platform and SPD clipless pedals; mirrors; computer; bottle cages; double kickstand; pump. Original Cost \$3,600; Price \$2,000 Email jhammack@klh-cpa.com Cell 425-503-2809 (WA/082)

FOR SALE: HPM ROADSTER. LWB, dual 26", XL frame. Former RCN test bike. Safe, user-friendly, low BB design with Tour Easy seat. Well used but in good shape. A sturdy, comfortable bike. \$550 + shipping. miscpippa@mailstation.com or 505-982-3568 (NM/082)

FOR SALE: 2000 EASY RACERS TOUR EASY, Small/Medium frame, black paint, <200 mi., stored inside, no rust or scratches. Looks like new. Can email pictures. \$1595 + shipping. Contact: drach4r@netscape.net or Call: Dave 805-528-0337 (082)

FOR SALE: 2000 RANS STRATUS, med./lg. frame, emerald, 1,000 miles, new back rest, seat cushion & cover, rack, computer, extra tires & tubes, Exc. Cond., shows no wear, \$1,100 plus shipping from So Cal. mdsspg@cox.net or Mike 619-223-9374 (CA/082).

FOR SALE OLD INFINITY LWB USS, Greate first 'bent. \$300 OBO + ship. jruiiter@shorelinecontainer.com Tel. 616-395-0392 (MI/082)

FOR SALE: 2003 EASY RACERS TOUR EASY, med. frame, white, absolute MINT condition, 15 miles, Purchased new April '03 Incl. computer and double kickstand. \$1650 + packing and shipping. Bob 858-454-6818 or www.flyboy88@mindspring.com (CA/082)

FOR SALE: EASY RACERS TOUR EASY, med./lg, good condition, 4 yrs. old, low miles, worn but effective Zipper, performance seat. \$1450 firm. Bob. 206-938-2171. (082)

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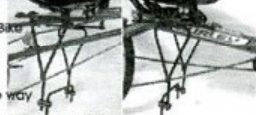
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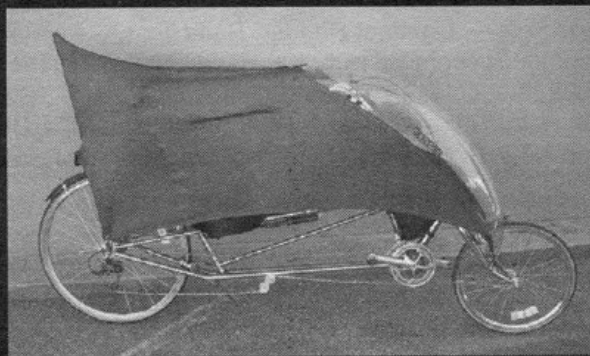
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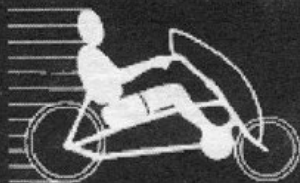


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