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 SBW 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 together 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...
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 minuscule niche within 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 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 700/20 at $1,324 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 BikeIt. While there are some good bikes out there (entry level from Sun and Cycle Genius; high end from Cannondale, HP Velo and Maxxary), 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 700/20 if they can get it. This is quite the opposite of the current trike trend for micro-size (305mm, 349mm and 355mm) wheels.
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 are 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 is 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 Worksman 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 a 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 its 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, Zzipper 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 Highracer. 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.

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4 Recumbent Cyclist News
HOW DO YOU IMPROVE THE ULTIMATE TOURING TRIKE?

SEAT RESEARCH AND DEVELOPMENT
First, we talked to our chiropractor about what riders need from a seat, and then with her help, and using measurements from over 500 riders, we made a number of prototypes. We tested them with many, many different riders. Eventually, using special bonding equipment, we managed to 'mould' the seat tubes to fit the curvature of the human spine. Thus we combine the nice curved appearance of a hard shell moulded seat with the better suspension, shape conforming and ventilation qualities of spring mesh seats. Just one seat is enough to tell you that a new standard of comfort has been reached.

STEERING UPGRADES
Research indicated that even with our centrepiece 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 re-moved to the top of the main tube, giving better ground clearance, and shorter bars. Plus they have been given more curve, so that they fit the hands better, yet are still in line with the pivot, eliminating any tilter effect.

NEW LUGGAGE RACK
Our new rack is made from high tensile aluminium tubing, by Massload. It weighs only 370g, yet has been tested successfully to 40kg. Thus we rate it at 30kg. It has a universal mounting plate for lights or reflectors, and a mudguard attachment point.

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Recumbent News

ActionBent
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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 business 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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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 discrete 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 Screamervivo.

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 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 of 35” to 45”.

According to 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

RCN Survey
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A completed Reader Survey is worth $2 off an RCN subscription or renewal. Must be postmarked by April 1, 2004

March/April 2004 7
Concept 21.5 Pound Tricycle

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 specced with a view toward full Audax use following the success of ICE trikes in this years' Paris-Brest-Paris 1200 Kms 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, bumper adjustment, 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

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 during the development of the Rad-loc seat clamp, when it became apparent what a great advantage it was to be able to lock 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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"I did a 45 mile morning ride and was able to get up to 43.7 mph on a downhill where before my best was 37-38 mph. I did the ride in 2 hours 25 minutes and averaged 18.2 mph which is another personal best...up from around 15-16 mph. Those fairings are awesome!!"
— Nanda Holz
Recumbent Glossary

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

Bar-ends: MTB handlebar extensions most often used on US 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-fitting, usually made of Lytex or other stretchable fabric.

Bottom bracket: (BB) pedal axle & bearings

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

Cantilevered stays: untriangularized monostays.

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

CG: Center of Gravity - usually at one's belly button.

Chain killer: 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 politics which signs 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 3 x 7/8/9.

Fairing: An aerodynamic windscreen designed specifically for recumbent bicycles.

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

FWD: Front Wheel Drive

Gear-inch range: Front chaining 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.

Hilites: High tension 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.

Log 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 a CLWB between the bottom bracket high and the seat tube.

Mid-drive: A mid-wheel-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: Height of the pedals at the bottom bracket spindle (ACL).

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 3-speed freewheel (21 speed total). Gear #3 is reduction underdrive, #2 is 1:1, and #1 is overdrive.

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

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

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

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

Tandem: 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 sail 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

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.pachell.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 primary concern with the HyperCycle design.

Turner’s SWB USS
aluminum.” The standard seat frame is stainless steel. An aluminum seat is optional and saves weight.

Zach Kaplan
Zach Kaplan Cycles

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

Randy S. Mitchell

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 disc Brakes 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.

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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 eager 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 tested 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 teller 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 a 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 back 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 derailer 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 changes the “Q” factor. The cost of adding the quad to my triple is not all that bad, and the range of gear 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
cromer@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@recentbicyclenews.com or RCN, PO Box 2048, Port Townsend, WA 98368

March/April 2004 11
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 recumbent. 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, Worksman 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 “contraaption"
- 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.

Worksman Cycles is a company from New York, USA, that has been building industrial bikes, cruisers and vamping carts for years. Their Y3K Easy Glider has been built for some time. It has 7-speeds and is under $500 retail (www.worksmans.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, 35, 7, 8, 21, 24 speed models and a Big Daddy Ed Roth “Rat Fink” Special Edition) — all at under $720 retail (www.electrabi.com).

A Kustom Kulture Big Daddy 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 high racer, 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 Schitter), 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.”

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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/Champagne.
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 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

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Specifications
Model: Giant Revive DX
Type: EZB (semi-recumbent)
Size: One size (5'-6.6”)
Wheelbase: 48.25-inches
Seat height: 23-36.5-inches
Pedal height: 11-inches
Weight: 53 pounds
Frame: Aluminum
Fork: Steel uncrong
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 champagn/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. Schlumf 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" x 406 mm wheels with Chen Shim 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 flic 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 similiar Evox I tried a year ago. The seat was comfortable, and I never got a sore hinie 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 Leah’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 Slime tubes (www.slime.com; They even have Slime 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. ♦

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RCN reader Derek Leah has a cool website: www.revivedx.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 ($1499), 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 Kooah ($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 the 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 Kooah 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. Kooah 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 considers 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 seat back.

The ALX -20 Squared (3950) has 20" wheels, an aluminum version of the Cycle Genius X-Frame, disc 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 Scream, 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)

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

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

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 they really wanted 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 Thracic wheel set and an M5 carbon seat.

An aluminum rear rack is now available from Bacchetta, and the seat is now 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 adapter. 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 velcro 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 seat 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 brake options 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 "camo 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 seat. A carbon headrest 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 Ramble ($2,400).

Hase

The Hase Pino, a front recumbent/seat up 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 Trits ($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 upgrades. The seat 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-
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 Thraciamic wheelset is joined by a Thraciamic 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, 451/711, and 406/621.

The Thraciamic set comes with the Aerohedrim, 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

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 ERTOS sizes were listed in their information, and they didn’t respond to email, but following normal nomenclature, the sizes would be as listed.

Vredenstein
Vredenstein tires are distributed in the US by Veltec Sports. They are no longer offering 20" Slick 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. Cutey 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. Handlebars 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-lok.

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 bike: 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 price holds 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 Ahmadz sent an email from the Hong Kong airport about planned changes for the Ray-I 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.

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 ti 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 components 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 starts 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 Screamaker tandem and a custom-spec Lightfoot Ranger ATS1D (dual 26 LWB OSS with SRAM DualDrive).

Angletech also does a custom a Huluzak 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 Batchetta 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 bike 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 (Triumph & 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 slightly 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 bet-
ter 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 atten-
dance figures for Interbike 2003 indicate that
over 21,000 industry personnel attended the
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 exhibit-
ing 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 test-
ing event, which attracted over 6,000 attend-
ees. 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 specifica-
tions may very well be changed but the time
you read this.

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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
- 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 lower performance will 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 gyroscope 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 (MTR 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 performance-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. 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.
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 uncorssed 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.

Transporting Recumbents
Do not underestimate 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 also offer exceptional performance, as Lexan fairings are more effective and easier to mount.

There is a newer type of LWB that has a monolute 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-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: Baccetta, 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
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 lightweight road bike parts. Bacchetta's John Schlitter and Mark Cottin 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 for closed-course racing. More street-rideable models are now appearing. While there 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, Catrìke, 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 bit 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 269-945-5581
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 quickly 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

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, cassette ($25-$75), chain ($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**

Stock and Custom Spec’d Recumbent Bikes, Trikes and Tandems!

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WOODLAND PARK, CO. 80863

Bacchetta, Easy Racers, RANS, HP Velo, Vision, Haluzak, Quadraped, mC2, Altitude
CALL 800-793-3038  www.angletechcycles.com

March/April 2004 25
Recumbent MiniReviews

Compact Long Wheelbase (CLWB)

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.

Medium Wheelbase (MWB)

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 Recumbon — 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/TT-R — 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 TT-R 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 anything you want it to.

RANS Stratus — The beautiful Stratus is the classic flagship of the RANS line. Celebrating its 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 its 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 makes many upgrades making it the hotrod LWB flagship of the line.

Rotator Pursuit — This bike was passio-

Long Wheelbase (LWB)

Cycle Genius — These are two new and affordable LWB models, built in Taiwan 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.

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Rotator Pursuit — This bike was passio-

between an EZ Sport and EZI, 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 style, 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 import 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 MS 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 that 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
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, US = under-seat steering.
- **Frame**: Al = aluminum; Cr = CroMo; Ti/T = 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; GF = Fiber Glass; M = full mesh, M/F = mesh back and foam base, S/F = shell/foam, Plast/F = plastic/foam.
- **Brakes**: V = V-style brakes; SP = side pull; DP = Dual Pivot.
- **Weight**: WOP = With Out Pedals; Weights will vary, some are RCN weights, others are mfr. weights and most vary with size and scale was used. Some mfrs. weigh bikes without pedals, etc. We apologize for this inconsistency. If weight is of concern to you, tell the dealer/mfr. this and/or BYOS (Bring Your Own Scale).

<table>
<thead>
<tr>
<th>Price</th>
<th>Model</th>
<th>Style</th>
<th>Components</th>
<th>Brakes</th>
<th>Wheels</th>
<th>Frame</th>
<th>Fork</th>
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<td>Electra Townie</td>
<td>FF Cruiser FS</td>
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<td>Semi-bent RS</td>
<td>7-speed derailleurs</td>
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**Compact LWB/MWB (medium wheelbase)**

<table>
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<tr>
<th>Price</th>
<th>Model</th>
<th>Components</th>
<th>Brakes</th>
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<td>HIT</td>
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**LWB (long wheelbase)**

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<th>Price</th>
<th>Model</th>
<th>Components</th>
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**SWB (short wheelbase)**

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<th>Price</th>
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<th>Components</th>
<th>Brakes</th>
<th>Wheels</th>
<th>Frame</th>
<th>Fork</th>
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March/April 2004 27
### SWB Note:
Lightning's websites did not list 2004 specs or prices and neither responded to our request. Please contact mfrs. for info.

### Highracer SWB (dual big wheel)

<table>
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<tr>
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<th>Frame</th>
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<th>Battery</th>
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<tbody>
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<td>5 spd</td>
<td>Mix, 46-sp</td>
<td>Mix</td>
<td>DP, SP</td>
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<td>$1650</td>
<td>Bacchetta Strada</td>
<td>2000-2003</td>
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<td>Mix, 46-sp</td>
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<td>DP, SP</td>
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<td>RANS Force 5 XP</td>
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<td>5 spd</td>
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<td>Mix</td>
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<td>Bacchetta Corsa</td>
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<td>SP</td>
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### Trikes — Delta (two wheels in back)

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### Trikes — Tadpole (2 wheels in front)

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<td>Disc</td>
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<td>3 spd</td>
<td>Mix</td>
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<td>3 spd</td>
<td>Mix</td>
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### Trike note:
We've only listed recumbents up to $5,000. ICE, Windseacht 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**

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<th>Type</th>
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<th>Front D.</th>
<th>Size</th>
<th>Gender</th>
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<td>$1995</td>
<td>Sun EZ Tandem CX</td>
<td>LWB OSS</td>
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<td>Disc</td>
<td>26/20</td>
<td>Cro</td>
<td>NA</td>
<td>M/F</td>
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<tr>
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<td>Sun EZ Tandem AX</td>
<td>LWB OSS</td>
<td>NA</td>
<td>Disc</td>
<td>26/20</td>
<td>Al</td>
<td>Cro</td>
<td>M/F</td>
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<td>RANS Screamer SP</td>
<td>SWB OSS</td>
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<td>SRAM 7.0 V-s</td>
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<td>M/F</td>
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<td>SWB OSS</td>
<td>Shimano LX/XT</td>
<td>V</td>
<td>2x20</td>
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<td>SRAM/Shimano mix</td>
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**TANDEM 3+ Wheelers**

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<th>Type</th>
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<th>Front D.</th>
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<th>Gender</th>
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<tr>
<td>$4149</td>
<td>WizWheelz Tadpole</td>
<td>USS</td>
<td>FSA/Shimano mix</td>
<td>Shimano Deore disc</td>
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</table>

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: SaturnDay 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.
<table>
<thead>
<tr>
<th>Recumbents</th>
<th>Worldwide Manufacturers</th>
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</thead>
<tbody>
<tr>
<td><strong>Bacchetta Bikes</strong>&lt;br&gt; Tel. 727-341-1811&lt;br&gt; Web: <a href="http://www.bacchettabikes.com">www.bacchettabikes.com</a>&lt;br&gt; Products: SWB OSS recumbents</td>
<td><strong>Challenge</strong> (Holland)&lt;br&gt; Web: <a href="http://www.challenge-lijfietsen.nl/">www.challenge-lijfietsen.nl/</a>&lt;br&gt; Product: Lowracers &amp; Euro SWB</td>
</tr>
<tr>
<td><strong>Big Cat HPV</strong>&lt;br&gt; Tel. 407-293-1626&lt;br&gt; Web: <a href="http://www.catrite.com">www.catrite.com</a>&lt;br&gt; Products: Tadpole USS</td>
<td><strong>Cambie Cycles</strong> (Canada)&lt;br&gt; Tel. 604-874-3616&lt;br&gt; Web: <a href="http://www.cambiecycles.com">www.cambiecycles.com</a>&lt;br&gt; Products: LWB OSS</td>
</tr>
<tr>
<td><strong>Burley Design Coop</strong>&lt;br&gt; Tel. 866-859-5496&lt;br&gt; Web: <a href="http://www.burley.com">www.burley.com</a>&lt;br&gt; Products: SWB and LWB OSS</td>
<td><strong>Greenspeed</strong>&lt;br&gt; Web: <a href="http://www.greenspeed.com.au">www.greenspeed.com.au</a>&lt;br&gt; Products: Line of tadpole USS trikes</td>
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<td><strong>Cannondale</strong>&lt;br&gt; Tel: 1-800-BIKEUSA&lt;br&gt; Web: <a href="http://www.cannondale.com">www.cannondale.com</a>&lt;br&gt; Products: Full suspension CLWB</td>
<td><strong>HP Velotechnik</strong>&lt;br&gt; Web: <a href="http://www.hpvelotechnik.com">www.hpvelotechnik.com</a>&lt;br&gt; Products: Euro SWB, MWB &amp; lowracers</td>
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<td><strong>Cycle Genius</strong>&lt;br&gt; Tel: 866-901-BIKE (2453)&lt;br&gt; Web: <a href="http://www.cyclegenius.com">www.cyclegenius.com</a>&lt;br&gt; Products: Compact LWB/MWB OSS</td>
<td><strong>ICE (Inspired Cycle Engineering Ltd.)</strong> (UK)&lt;br&gt; Web: <a href="http://www.ice-hpv.co.uk">www.ice-hpv.co.uk</a>&lt;br&gt; Products: Tadpole trikes &amp; tandem trike</td>
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<td><strong>Easy Racers, Inc.</strong>&lt;br&gt; Tel. 831-722-9797&lt;br&gt; Web: <a href="http://www.easyracers.com">www.easyracers.com</a>&lt;br&gt; Products: LWB OSS</td>
<td><strong>Leitra DK ApS</strong> (Holland)&lt;br&gt; Web: <a href="http://www.leitra.dk">www.leitra.dk</a>&lt;br&gt; Products: Enclosed velomobile</td>
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<td><strong>Hediger Cycles</strong>&lt;br&gt; Tel: 518-654-4323&lt;br&gt; Web: <a href="http://www.trimuter.com">www.trimuter.com</a>&lt;br&gt; Products: SWB and tadpole trikes.</td>
<td><strong>Hase Spezialradler</strong> (Germany)&lt;br&gt; Web: <a href="http://www.hase-spezialradler.de">www.hase-spezialradler.de</a>&lt;br&gt; Products: Delta &amp; folding trike</td>
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<td><strong>Lightfoot Cycles</strong>&lt;br&gt; Tel: 406-821-4750&lt;br&gt; Web: <a href="http://www.lightfootcycles.com">www.lightfootcycles.com</a>&lt;br&gt; Products: LWB OSS, trikes and a quad</td>
<td><strong>Maxaraya Design</strong> (Canada)&lt;br&gt; Web: <a href="http://www.maxaraya.com">www.maxaraya.com</a>&lt;br&gt; Products: Compact LWB, full suspension</td>
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<td><strong>RANS Recumbents</strong>&lt;br&gt; Tel. 785-825-6346&lt;br&gt; Web: <a href="http://www.rans.com">www.rans.com</a>&lt;br&gt; Products: SWB, Compact, LWB, &amp; ldmb.</td>
<td><strong>MS Ligfietsen</strong> (Holland)&lt;br&gt; Web: MS-ligfietsen.com&lt;br&gt; Products: Lowracers</td>
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<td><strong>Rotator</strong>&lt;br&gt; Tel: 707-539-4203&lt;br&gt; Web: <a href="http://www.rotatorrecumbent.com">www.rotatorrecumbent.com</a>&lt;br&gt; Products: LWB and SWB &amp; trike OSS</td>
<td><strong>Optima</strong> (Holland)&lt;br&gt; Web: <a href="http://www.optimabikes.com">www.optimabikes.com</a>&lt;br&gt; Products: Lowracer &amp; trike</td>
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<td><strong>Sun Bicycles</strong>&lt;br&gt; Web: <a href="http://www.sunbicycles.com">www.sunbicycles.com</a>&lt;br&gt; Tel. See your local dealer&lt;br&gt; Products: CLWB, LWB, tandem, &amp; trikes</td>
<td><strong>Velo Nouveau/Burrows Eng.</strong> (UK)&lt;br&gt; Tel/Fax: 44 (0) 1603 721700&lt;br&gt; Product: SWB ASS</td>
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<td><strong>Recumbents</strong>&lt;br&gt; <strong>Sold Factory/Distributor Direct</strong>&lt;br&gt; <strong>American TriCruiser</strong>&lt;br&gt; Tel. 619-281-6720&lt;br&gt; Web: <a href="http://www.americancruiser.com">www.americancruiser.com</a>&lt;br&gt; Products: Affordable tadpole trike</td>
<td><strong>Windsheet/AVD</strong> (UK)&lt;br&gt; Web: <a href="http://www.windsheet.co.uk">www.windsheet.co.uk</a>&lt;br&gt; Products: Tadpole trike.</td>
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<td><strong>Angletech</strong>&lt;br&gt; Tel: 800-793-3038&lt;br&gt; Web: <a href="http://www.angletechcycles.com">www.angletechcycles.com</a>&lt;br&gt; Products: Tadpole trike OSS</td>
<td><strong>Zox</strong> (Germany)&lt;br&gt; Web: <a href="http://www.zoxrad.com">www.zoxrad.com</a>&lt;br&gt; Products: Euro FWD SWB/lowracer</td>
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<td><strong>Bartcroft HPV</strong>&lt;br&gt; Tel: 703-750-1945&lt;br&gt; Web: <a href="http://www.bartcroftcycles.com">www.bartcroftcycles.com</a>&lt;br&gt; Products: SWB OSS, tandem, &amp; lowracer</td>
<td><strong>Zeus &amp; Noted</strong> No 2004 Info (website is up)</td>
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| **Bent Up Cycles**<br> Tel: 310-779-0853<br> Web: www.bentupcycles.com<br> Products: USA sales of Velokraft Lowracer |
| **Crank-It**<br> Tel. 888-747-2038<br> Web: www.crank-it.com<br> Products: Offroad quad |
| **Doyle Custom Bikes**<br> Tel: 618-962-3479<br> Web: www.doylecustombikes.com<br> Products: Tadpole trike with Honda 310cc motor |
| **HPM (Human Powered Machines)**<br> Tel: 541-543-5568<br> Web: www.efn.org/~cat<br> Products: SWB, LWB, & folder |
| **Just Two Bikes**<br> Tel: 800-499-1548<br> Web: www.justtwobikes.com<br> Products: FWD delta trike (folding) |
| **Reynolds Weld Lab**<br> Tel: 603-432-3327<br> Web: www.reynoldsweldlabs.com<br> Products: Dual 700cc highracer |
| **Rhoads Car International**<br> Tel: 800-974-6233<br> Web: www.rhoadscar.com<br> Products: Four wheeled pedal cars |
| **Terracycle**<br> Tel: 800-371-5871<br> Web: www.terracycle.com<br> Products: SWB ASS and custom parts |
| **Turner Enterprises**<br> Tel: 520-290-5546<br> Web: www.turnerrecumbents.com<br> Products: SWB, LWB & ldmb. USS |
| **Volae Recumbents**<br> Tel: 715-340-1133<br> Web: www.volaerecumbents.com<br> Products: SWB OSS, big wheel. |
| **WizWheelz**<br> Tel: 269-945-5581<br> Web: www.wizwheelz.com<br> Products: Tadpole USS trike |

| **EZB (Easy Bikes)**<br> Flat Foot Cruiser/Semi 'Bent** |
| **CCM Ecox**<br> Web: www.ecoxcycle.com<br> Products: EZB for adults and kids |
| **Electra Bicycles**<br> Web: www.electrabikes.com<br> Products: Flat Foot “Townie” EZB. |
| **Giant Bicycle**<br> Web: www.giant-bicycle.com<br> Products: Revive EZB |
| **RANS Recumbents**<br> Web: www.rans.com<br> Product: EZB |
| **Worksmn Cycles**<br> Web: www.worksmn.com<br> Products: Y3k EZB |

**Bike Friday**<br> Web: www.bikefriday.com<br> Product: N/A |

**Lightning Cycle Dynamics**<br> Web: www.lightningcycles.com<br> Products: SWB OSS and lowracer |

**Linear Recumbent**<br> Web: www.linearrecumbent.com<br> Products: LWB & CLWB folding |

**NF Cycles**<br> Web: www.nfcycles.com<br> Products: Tadpole trikes from $1300. |

**Organic Engines**<br> Web: www.organicengines.com<br> Product: Trikes, & trucks |

30 Recumbent Cyclist News
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 Force 5 — This is RANS’ newest offering. The F5 is an affordable HiTrike 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 HiTrike sales for 2004.

Volae — These are HiTrikes 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 foot cranks. TriSpreader 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 treatment hasn’t been a problem, but we’d sure like to see them do it anyway.

**Crank It Quad** — This is bulletproof, 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 lay 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.

**LaBent by LaDue**

Web: www.radiks.net/~laDue/
Products: LWB OSS plans and kits

**R.Q. Riley**

Web: www.rqliley.com/bike.html
Products: Recumbent plans
Recumbent Rider Groups

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

Tucson (Ajo Bikes)
http://www.ajo.bikes.com/riders.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/~2parks/errc.html

Redwood Empire HPV
www.humboldtl1.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/NothFloridaRecumbentRiders/

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.4crynoutloud.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'n Joes (Valley Bikes)
http://www.valleybikes.com/main.html

Kentucky
Louisville Relaxed Recumbent Riders
http://pages.prodigy.net/bikelounger/sitpages/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/armangd/
Cruiserrule.html

New York
Metro Area Recumbent Society
http://www.recumbent.com/mars/

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

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

Ohio
Bent Trail Riders
http://www.sis.com.net/~grindly/btr/

Oregon
Oregon HPV http://ohpv.org/

Portland United Recumbent Riders
http://home.pacifier.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/

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Washington's Happily Independent R'Bent
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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; baldwin@pattmedia.net, 603-918-4544 (NJ082)

LWB For Sale

FOR SALE: EASY RACERS GOLD RUSH. White, like new; medium frame; purchase June 2002; 186 miles. Extras - 9 spd; extra Super Zip Folding fenders; Welgo Mag platform and SPD clipless pedals; mirrors; computer; bottle cages; complete kickstand; pump. Original Cost $3,600; Price $2,000 Email jhammack@kixp.com Cell 425-503-2809 (WA082)

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. miscipapa@mallstation.com or 505-982-3568 (NM082)

FOR SALE: 2000 EASY RACERS TOUR EASY. Small Medium frame, black paint, <200 ml, stored inside, no rust or scratches. Looks like new. Can email pictures. $1500 + shipping. Contact dachtr4r@netscape.net or Call: Dave 805-526-0337 (082)

FOR SALE: 2000 RANS STRATUS. med-lg frame, emerald, 1,000 miles, new back rest, seat cushion & cover, rack, computer, extra tires & tubes. Exp. Cond., shows no wear, $1,100 plus shipping from So Cal. mdaspp@cox.net or Mike 619-222-9374 (CA082)

FOR SALE: OLD INFINITY LWB US$ Greet first bent. $300 OBO + ship. jruiter@shorelinecontainer.com Tel. 616-396-0392 (MI082)

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- 0818 or www.flyboy@windsigns.com (CA082)


Recumbent Wanted

WANTED: RANS VELOCITY 2. Prefer XL. Any condition considered. Email miscipapa@mallstation.com or tel. 505-982-3568 (NM082)

Parts Wanted

WANTED: 20-inch 451 Aerospoke wheel in good shape. Contact wally williams @ 317-852-8893 or e-mail awilliams@indy.com (081)

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FOR SALE: Brompton 6-speed. Like New, 6-spdr, front rackbag, lights, fenders, rack. Dk. Green. Exp. Cond. $1244 new, sell $879. bob@recumbentcyclistnews.com or 305-379-5607 (WA082)

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