

# RCN

RECUMBENT CYCLIST NEWS

Issue # 59  
Sept/Oct  
2000

## ***Chopper Recumbents in New Mexico***



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Contact us at:  
PO Box 2048  
Port Townsend, WA 98368  
Tel. 360-344-4079  
Fax: 360-344-4080  
Email: bob@recumbencyclistnews.com  
www.recumbencyclistnews.com

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Bob & Marilyn Bryant in  
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Associate Copy Editor—Paul Arends  
Int'l Distribution—Ron Schmid  
Art Director—Mark Colliton

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www.greenspeed.com.au.

#### ■ In Our Next Issue...

We road test the Burley Limbo LWB; We look into the 'Big Wheel Cult' of recumbent riders modifying their bikes to accept two full size recumbent wheels; Touring Europe by recumbent;

#### ■ On the Cover...

Chopper recumbents in New Mexico. Absolutely Recumbents' head mechanic, John Roberts, reincarnates a LWB DeFelice into a real bad boy.

#### ■ In Our Last Issue...

RCN#58 was mailed in late June and included road tests of the J & B Supercruiser EZ1; Radius C4; V-Rex; Turner T-Lite; a look at the Rohloff hub; a look at the Mountain Cycle Quad design; and we offer ideas on what to do with you Vision on a rainy day.

# Editorial License

## The PT Kruise

by Bob Bryant

Sometimes it seems as though I'm the luckiest guy around. My daily bike ride allows me to pedal around paradise. The smells, scenery and experience can be surreal.

The ride takes me throughout the Quimper Peninsula at the 'end of the road' in and around the small Victorian Seaport of Port Townsend, Washington that we now call home.

The ride basically starts wherever I happen to be. Being that this is a peninsula—you can head out in at least three directions. I often head south out of town on the Larry Scott Trail towards Old Fort Townsend State Park. The trail runs along the edge of the bluff overlooking Port Townsend Bay, Marrowstone and Indian Islands.

Most recumbents can navigate this course easily, though extreme positions, high BB's and skinny tire folks should proceed with caution. Watch out for dogs, walkers...and base jumping parachutists! There is some kind of wind condition off the bluff that allows these adventurers to jump from the bluff and sit aloft and play with the wind and their parachutes. The other day I came head on with three landing on the trail.

If you find your way to Otto Street there is a funky bike junk yard/furniture store. You can literally ride for miles without ever seeing a car. I find the unpaved and offroad miles comfy and enjoyable on the right recumbent. Only when the trails get very wet, or with more extreme pedaling configurations does it become a problem.

There are some great unpaved roads, trails and singletrack that go for miles. It is MTB heaven. The state park has lots of good trails. Needless to say, riders are very surprised to see a recumbent on the trails.

Once you find your way back to town, the trailhead is at the end of Port Townsend's Boat Haven marina. Every day there is some new boat in, out or near the water to gaze at. If boats are your thing, this is Mecca. If bikes and boats do it for you, don't ever visit PT or you'll never leave. A must stop is the marina bulletin boards, where sailors, charters, boats, bikes, cars, RV's and even rooms and houses for rent are all advertised. You then pass the historic Adventuress sailing ship, the Coast Guard Station and the fishing fleet. This is also motel row and traffic starts to pick up here.

By the time you get to the main street through town, ferry traffic can also be a concern. Downtown PT hosts the Keystone (Whidbey Island)—Port Townsend Washington State Ferry, which takes cars, RV's, bikes and people from the Olympic Peninsula to Whidbey Island. North of Whidbey is Deception Pass and Anacortes, which is the gateway (ferry) to the San Juan Islands. PT also has a passenger (and bike) ferry direct to Friday

Harbor on San Juan Island.

Being that PT is a small town, you must ride slowly to take it all in. Cruising through town is lots of fun. Refreshments can be had at the world's best hot dog stand, Dogs-A-foot (try the foot-long with everything), Elevated Ice Cream (try the Espresso Sundae: coffee ice cream, 2 shots poured over the top with whipped cream and chocolate sprinkles) or down the street to the Point Hudson Marina seafood dive for fish & chips & chowder in a yurt with a view.

There is a nice beach here to ponder life, and a great lookout to the point. In this location, you have a birds-eye view of the shipping lanes into and out of Puget Sound. Riding on through the marina you will see Pygmy Kayak (sells wood kayak kits). You will inevitably see some paddling around the marina on demo rides. I once saw Jim Weaver (Counterpoint Recumbents) heading out for a test paddle. I also have run into several other recumbent cyclists in this area.

After gazing at all of the marina activity, and lingering around town, head out and over to Fort Worden State Park (a bloody steep and difficult recumbent hill climb). This is where Debra Winger and Richard Gere filmed "An Officer And A Gentleman." Exploring the park is a day trip in itself providing spectacular views from the old military bunkers North to Vancouver Island and the San Juans with the shipping lanes in between. On a few occasions I've seen Trident nuclear subs stealthing past and recently, cruise-ships on their way to Alaska. This state park is perhaps the nicest and most underrated park in the state of Washington. I have never been to a nicer beach in this state (rivals those of Oregon).

The ride continues out to North Beach and beyond. Along these country roads lie additional loops diverting to such equally beautiful spots as Discovery Bay and Marrowstone Island.

It isn't quite nirvana, but it's damn close. We have our share of traffic from the big city. And being at the end of the road, there are lots of trucks and folks in a hurry on the highway.

The pleasures of life are magnified on a bicycle—especially of the recumbent variety. It really doesn't matter what I am riding as long as it is comfortable, capable and dependable. My speeds have actually decreased because there is so much to see. As many locals do, I spend a lot of time staring at the water and sitting on logs at the various beaches around town.

If you have followed my riding history through RCN you might detect a change over the years. My bicycling these days is more fulfilling than it has ever been (with the possible exception of the Slumgullian tour in '97). I seldom wear cycling outfits (Lycra) anymore,



*The Larry Scott Trail looking back on Kala Point less than 1 mile outside of Port Townsend. The bike is our wonderful '00 Easy Racer Tour Easy EX.*

I don't travel by car to go on a bike ride, and I like my 10-20 mile rides in street clothes just fine. I consider myself a lifetime cyclist, but often I do not look the part of the svelte athletic road rider decked out in a riding suit, fancy clipless pedals and all of the latest equipment. I have chosen to make my own path as a bicycle enthusiast without concern for what other riders may think of it. I choose my speeds and route and try to enjoy every moment of low stress cycling. The only thing I miss about cycling in the big city is my Low Down and Laid Back Recumbent Rider pals and Bobka runs.

Recently we made some sacrifices to live right uptown PT (original PT neighborhood). Our rental house is very small— which makes bike storage a bit of a problem. My bikes are outside under a tarp. I may splurge on a cheap yurt for the winter months, but the fact remains that I need only bikes that I can use, ride and depend on. No collector, trophy or show-off bikes.

What seems to work best for me hasn't changed much over the past 14 years. You all read about my Kneesaver pedal adapters (RCN#57). They are connected to platform BMX pedals that came off of a Rotator Pursuit (Delaire rides on them, too). All of my bikes have fat tires. Skinny tires are not welcome here. Just when I make an exception, I get a flat tire (happened in June).

I prefer low pedal/BB bikes. I feel more confident, more stable and enjoy the ability to jump on and ride at any time, without 'suing up.' For those of you who've been around for a while may recall that I climbed Slumgullian in '97 (see our website). My big toe went numb, and stayed that way for six months. I spent lots of time and money trying to solve the problem. The easiest solution has just been to ride a bike with a lower pedal/ BB height. For this reason, I have enjoyed the LWB and compact test bikes the most. The V-Rex and most recently Bike Friday Sat R Day have been enjoyable but I felt like I should be using my clipless pedals.

Every since Mark Ariens article, I've been daydreaming about a dual 20-inch wheeled custom LWB. I keep hoping that somebody will build that sub-\$1000 26/20 LWB OSS. Heck, maybe I'll start my own bike company. Anybody care to join in.

#### **PT Disclaimer/More Info**

Don't come to PT, you'll absolutely hate it. If you still want to come, check out: <http://www.ptguide.com/> and <http://www.ptchamber.org>.

#### **PT Kruse Test Bike Notes**

The Easy Racer Tour Easy is one of our all-time favorite bikes. The 2000 EX fat tire Kool Back equipped Kruse is the finest one we've ever ridden. The new rear fender/rack combo is a great addition for any commuter/wet weather rider. We even off-roaded this jack-of-all-bents with good success. Its offroad capabilities surpass even some of the SWB suspension models (due to low c.g and no heel interference). Our bike had the V-Brake, Rapid Fire shifter and low gearing options. A new Easy Racer signature crankset is another cool addition. Rumor has it that there is a new smaller Zzipper fairing for the Tour Easy. □



*The Angletech Altitude at Point Hudson Marina in Port Townsend, Washington. This is where the Wooden Boat Festival takes place.*



# Happenings on the Recumbent Planet

## Stuff

### Ballistic Fork Recall

International Co. Ltd. of Taiwan recalled 13,500 Ballistic front suspension forks installed on certain Brunswick mountain bicycles because they can break apart. The recalled forks are installed on Mongoose S-20, MGX S-20 bicycles and Roadmaster Ridge Rider bicycles. The forks are black with decals reading "Ballistic" and "105," and carry the serial Nos.: BA10044001 through BA10049000, BA10050001 through BA10051000, BAX001251 through BAX0006750, BAX0006781 through BAX0007080, and 98022087 through 98027843. The bicycles were sold at toy and department stores nationwide from September 1998 through May 2000 for \$125 to \$150. Consumers are urged to call Brunswick at 877-211-3525 for a replacement fork.

### Laid Back New Orleans Tours

Bike & Blues 1 Day Tour: Laid Back Tours announces its new guided bicycle tour package which allows New Orleans visitors to get out of the French Quarter and see more of this beautiful and historic city. Riders choose from several types of recumbent 2 and 3-wheeled bicycles. All Bike & Blues tours are done by Veda Manuel, a premier licensed tour guide and a native New Orleanian, 5 generations. The tour includes bike rental with radio communication, lunch, dinner, music club cover charges, and all taxes.

This daylong excursion is unique in that it enables participants to have an up close and personal laid back New Orleans experience.

Contact: Musa Eubanks Phone: (800) 786-1274 or (504) 488-8991  
E-mail: info@laidbacktours.com  
Web site: www.laidbacktours.com

### Cool New Test Bikes

Watch for our upcoming Rans V2, Burley Limbo, Sat R Day and HPM Roadster tests upcoming in the next RCN issues. If you are a manufacturer looking to have a bike tested, please call to arrange a 2001 road test.

**WANTED:** Lowracer & Euro bikes reviews for RCN.

## Chopper Recumbents...or a DeFelice Reincarnated

(see cover photo)

By John Roberts

The first time I saw the bike it was in use as a sign. Never did pay it much attention. Then Hester decided to move the shop. Zoning regulations would not allow the bike to be mounted as it had been before on the roof of the previous shop. It sat around the new shop still attached to part of the sign frame. I kept implying it was now "yard art." I was told it was a DeFelice.

Months before the shop move, I had purchased a Wheelman high wheeler. In the same catalog that I had purchased the high wheeler from was a Springer style replacement fork. The fork was for a Monster Cruiser using a 36-inch wheel. The possibilities and uses for such a fork! I just had to have one. The potential it offered justified its price tag. One night shortly after the shop move and a couple of Coronas, I was noticing the DeFelice's skyward bound poise. Just for grins I decided to mount the Springer on the DeFelice. Ah, yes. The fork's potential shined. Considering the weathered look of the bike, it looked great. Its yard art status was soon to perish.

Needing a thorough going through, I dismantled the DeFelice completely. Upon reassembly, I changed the 170 mm crank arms to 180 mm sporting a 62-tooth gear. My first true recumbent was starting to come to life. More extreme it was; Springer fork, longer cranks, taller gears. I was struck with the Tim Allen syndrome of wanting More Power. Just when I thought it was extreme enough, I got a wild hair (some people say I have a head full of them) and went even more extreme. How about a recumbent with under-seat and above-seat steering? Even better. Handlebars that you can pull on all you want. Stephen Byarlay, a former co-worker during my Schwinn days, hooked me up with a set of ape hangers by Paughco. Their 1" diameter makes them very stout and rigid. You can pull on them all you want and they won't flex. Instead of the usual leg-press effect you achieve on most recumbents, I achieved more of a rowboat effect.

What started off as a joke soon turned into a very efficient classy looking ride. It became a Choppered-looking lowrider that cruises effortlessly. Besides good looks, the extended Springer fork elevated the DeFelice's fairly low bottom bracket, making it a stronger performer. To bring life back to something old and proven, and then make it better than it originally was, has its rewards. The comments it receives confirm its appeal. A wing-

nuted front axle, slingshot gooseneck, giant sprockets, a thumb shifter mounted onto the side of the seat frame and no brakes, all help to achieve the bike's appearance. Nothing says "retro" like a Springer fork does; especially if it squeaks a little.

The bike is far from being done. A front SRAM drum brake is in future plans. A dual disc would be nice, but the price, reliability and ease of installation make the drum brake a shoo-in—if I have any left. The SRAM drum looks pretty good, though the disc would be cooler. My first safety flag reads "Hell of a Bent." The seat states "Bent to Hell." Is this a big kid's bike or what? I hope the rest of you are having as much fun as I am.

The HPM Roadster (see upcoming review) is a natural candidate just begging for a Springer. A Longbikes Slipstream with ASS should work. Rans Wave or Tailwind have increased contact to gear and brake cable housing and heavy foot or pedal contact with the fork when turned very sharply to the sides.

Handling is sacrificed when increased rake or extended fork leg lengths are used. Front brake changes will be required in most fork swaps. Changes like these are definitely not for everyone. □

### Last Chance To fill out your RCN Back Issue collection.

Most issues will be *SOLD OUT* forever within the next few months. See page 40 this issue and email us to see if we have your issue in stock:

bob@recumbentcyclistnews.com

### Do You Have Stuff For Recumbent Planet?

*A Product Review? Product News?*

*An Event? Club News?*

*Have you bought a really cool & rare new bike?*

*Have you built a really cool new bike?*

*Do you have news from your recumbent shop?*

*Do you have news from your recumbent factory?*

*If so, please send info to:*

*RCN, POB 2048*

*Port Townsend, WA 98368*

*Text only can be emailed to:*

*bob@recumbentcyclistnews.com*



X-EYED underseat rack available from Bike Depot

## X•EYED DESIGN



### MID-SHIP RACK

**\$100 | USA**

The best racks are made of tubular steel. Ours are made of 4130 aircraft grade tubular CroMoly. They're stronger than aluminum, finished in a tough satin black powdercoat and should last you a lifetime. The *Mid-Ship* is also very modular, so if you do happen to mangle it, you can replace just the broken piece and not have to buy a whole new rack. The *Mid-Ship* allows you to move your panniers forward and down for better weight distribution, ideal for commuting and hard core touring. They fit any RANS bike with a 1.5" or 2" top tube. If you ride something else and really want this rack, please let us know. We started with the RANS bikes because that's what we ride and are most familiar with. And because we wanted a rack for ourselves. X-EYED gear will be sold (for now) exclusively through the **BIKE DEPOT**, John's new bike shop in Hays, Kansas. 785-625-5685 or [Bikedepo@ruraltel.net](mailto:Bikedepo@ruraltel.net)

John Schlitter

Mark Colliton



## Recumbent Mystery Solved!

For those of you who have been wondering as to whatever happened to John Schlitter, well here it is! He and his wife Janice have just opened a new full service bicycle shop in Hays, Kansas. The **BIKE DEPOT** is the shop's name and it is located at 900 Main Street, in the heart of downtown Hays, right next to the railroad tracks. And I mean **RIGHT** next to the railroad tracks! So if you call and it sounds like a freight train is running through the shop, it probably is.

Recumbent bicycles will be the main focus of the shop. John's experience in co-developing the RANS Recumbents over the last twenty five years easily makes him one of the most knowledgeable persons in the world on RANS products. So don't hesitate to give him a call if you're in need of some help or you're just a RANS bike freak and need to talk. (But please keep it short, they need him to get some work done around the shop)

John and Janice are also avid **SCREAMER** tandem riders and sponsor the local Hays Area

Recumbent Drivers, H.A.R.D. with 6:00 a.m. rides scheduled everyday of the week with tandems or singles.

The Bike Depot will also be the exclusive outlet for the up coming X-EYED Design products by John and his partner in crime, Mark Colliton. John and Mark started X-EYED Design to give themselves an outlet for all the ideas they've had over the years but haven't had a chance to build yet.

The Mid-Ship Rack is their first project and will help fund the other things they want to build, like bikes! Yes, there are bikes in the works, but they take time and money. Soooo, if you want to help move things along, order a rack and keep an eye out for more X-EYED stuff in the near future.

You can contact John and Janice at 785-625-5685, or e-mail [bikedepo@ruraltel.net](mailto:bikedepo@ruraltel.net) for your recumbent needs or ride information in and around the Hays, Kansas area.

Source: X-EYED/Bike Depot

### Recumbent Rumors

**BikeE**—Tandems are being shipped. We have heard a rumor of a 2001 RX road bike with a bead blasted natural anodized frame and rear or full suspension priced from \$1395. We have also heard rumblings of a more affordable BikeE.

**Burley**—Rumor has it that they are working on a new SWB ASS performance recumbent.

**Big Cat HPV**—This new trike is designed and built by Steve Delaire at Rotator and sold by Big Cat HPV. It sells for \$2300 + shipping. See them at [www.catrike.com](http://www.catrike.com)

**Easy Racers**—The folding rear-suspension model is being finalized for production. There is a rumor of a Tour Easy and TiRush versions as well as the Gold Rush version shown in RCN#56.

**Fools Crow**—Ed Deaton is importing Challenge, Flevo, M5, Zox (FWD) and other slick European recumbents. See information at [www.foolscrow.com](http://www.foolscrow.com)

**Lightning**—The new Raptor B2 is a 105 equipped redesigned Stealth. It comes with "V" or drop bars, has a 44-inch wheelbase and 26-

inch rear wheel. An S & S coupled P-38 suitcase model is also available.

**Longbikes**—Our Longbikes test bikes were abruptly canceled this spring. Delays, production problems and R & D woes (SWB seat and LWB ASS) are some of the problems. Rumor has it that production will soon cease until Taiwan production can be ramped up.

**ReBike**—Due to overwhelming demand, this recumbent is no longer available (what?).

**Yellowbike**—This new company has imported a container load full of European Optima recumbents (lowracers, Euro low SWB and a trike model) into the USA. These are said to be premium quality recumbents and they are all painted yellow (we like that!). See them at [www.yellowbike.com](http://www.yellowbike.com)

**Vision**—Dealers are being pitched on the new tall boy Saber SWB. We've only heard from one RCN reader who has purchased one and one dealer we know has one on closeout already.

**WizWheelz**—An updated model is now available. Wiz reported their BEST sales month ever after the RCN article in RCN#57.

## WizWheelz Announces the TerraTrike Version 3.0.

In response to the review in RCN issue #57, we have developed and are now offering the TerraTrike version 3.0, which includes the following improvements over the version 2.3.

1) Detachable boom system: This allows a much wider rider height range. This system allows for 3 different length boom-tubes to fit his/her x-seam measurement. Matching the rider to the correct length boom allows us to move the pedals closer or further from the rider as necessary. This means we can maintain a centered seat position where the rider's weight is equally distributed across all three wheels. The correct distribution guarantees that the riding characteristics remain true. The attachment joint is virtually undetectable and it actually strengthens the boom section. We have kept the adjustable seat positions so the rider can "dial-in" the perfect position. This new system also makes it possible to package a more fully assembled trike into a UPS'able box size.

2) New more durable idler wheels with a larger outside diameter. A recent (unscientific) test showed that this new idler wheel lasted approximately ten times longer than our original idler wheel. Don't ask us what they are made of. The raw material is even a mystery to us; our supplier keeps this information confidential. Also, the larger outside diameter means it has become very difficult to flip the chain out of the idler grooves when traveling over even the roughest terrain.

3) Lowered the main-tube one inch, which lowers the center of gravity allowing the rider to experience more aggressive cornering while also reducing the overall frontal area and cutting down the wind resistance.

4) Added water bottle braze-on mounts.



5) Created more aggressive steering angles, which have made the trike more stable at high speeds.

6) Added a "TerraTank" frame option for heavier riders. This thick-wall tube-set was created not because we were afraid of breakage (the standard model will not break under your weight), it was created for better ride characteristics. If you weigh between 250 and 300 lbs, you may wish to consider this option.

For more details and photos, visit our web site at [www.wizwheelz.com](http://www.wizwheelz.com).



## Bubble Trike To Compete In Cycling's Toughest Test: The Race Across America

RAAM 2000 is an epic coast-to-coast bicycle race that begins in Portland, Oregon on June 18th, and pits the world's top ultra-marathon cyclists in a test of will and skill all the way to the finish line in Gulf Breeze (Pensacola), Florida.

It's a meld of high-tech design and do-or-die athleticism that will drive the bizarre looking Greenspeed Recumbent Racing Trike through the all-out, non-stop Race Across America 2000.

It looks like a bubble with its clear windshield and fully enclosed fairing. While some 50 other riders will be mounting their road bikes and tandems, the 4-man team of "Tim Skipper and friends" will be climbing under the cover of the Greenspeed trike fairing for the ride of their lives.

This is the first time that a fully faired recumbent trike will be competing in the Race Across America. Team captain Tim Skipper says he got the idea after seeing a neighbor ride a similar bike around his office complex. "It's just a blast...like those old crate go-karts we built and raced as kids," Skipper says.

But the Race Across America is no joy ride. Outside Magazine rates RAAM as "The World's Toughest Race," deeming it more difficult than the "U.S. Army's Best Ranger Competition," and 10 times tougher than the

Hawaii Ironman Triathlon.

For one thing, the clock never stops in RAAM, and cyclists sleep an average of only one to four hours a day in pursuit of the finish line. Cyclists endure desert heat, driving rains, high winds, and bone-chilling cold. They struggle up steep mountain climbs, and experience vivid hallucination caused by sleep deprivation. About half drop out before the race is over.

Considering these conditions, Tim Skipper decided he still wants to do the World's Toughest Race on the Greenspeed Trike. Skipper has competed in and completed RAAM three times before. Each time he was on a team, and twice on a tandem team. The 42-year old software consultant from Northern California decided that if he were to do the race again, he'd like to try something different. And the trike is very different.

Greenspeed President Ian Sims says the fully faired recumbent trike has advantages and disadvantages in a race like RAAM. ON the plus side, the trike is designed for aerodynamics. It's low to the ground and has a streamlined fairing which makes it easier to push through the wind. The recumbent riding position is also an advantage. With the laid back riding position, the rider is reclining at 20 degree angle from the ground, like a banana lounge with the pedals out in front. In this position there is no pressure on the hands and arms. The seat distributes the rider's weight more evenly than the small, hard seat on an ordinary bike, making it more comfortable and easier on the rider over long distances.

And since the trike has three wheels there is no need to continually balance the machine. Any energy savings that the trike has to offer is a boon on the grueling RAAM, plus, Sims adds, "if you do fall asleep, you're not going to fall over."

Sims says the recumbent racing trike should be faster on the level and downhill, but it's expected that it will be slower up hills and more work for the riders. Another challenge, according to Sims, will be to get enough air into the machine to cool the riders when the bike is going slowly during RAAM's long, steep mountain climbs.

Both Sims and Tim Skipper are confident that the trike will perform well in RAAM. Similar Greenspeed trikes have won the World Solar Cycle Challenge in their home country of Australia for the last two years.

The two wheeled team record on an HPV is 5 days, one hour and eight minutes set on a fully faired recumbent bicycle back in 1989 by Tim Brummer's "Team Lightning." RAAM has never been done on a recumbent trike.

To learn more about the Race Across America 2000, visit the RAAM website at [www.raceacrossamerica.org](http://www.raceacrossamerica.org).

# Happenings 2000

**September 9th Saturday  
Michigan Recumbent Rally — West**  
Grand Rapids area, 9am-3pm. [www.lmb.org/wolbents](http://www.lmb.org/wolbents), [BobMich@compuserve.com](mailto:BobMich@compuserve.com) or 734/487-9058.

**September 16th Saturday  
Fall Recumbent Rendezvous**  
Stony Creek Metropark Eastwood Beach shelter (north Detroit suburbs). 9am-3pm.  
[www.lmb.org/wolbents](http://www.lmb.org/wolbents),  
[BobMich@compuserve.com](mailto:BobMich@compuserve.com) or 734/487-9058.

**September 23 (rain date 9/24)  
Connecticut River Recumbent Ramble**  
Sponsored by Saybrook Cycle Works to benefit the Connecticut Children's Medical Center. Fully supported with 24-50 mile routes. Contact: Peter Scholes 860-526-4339 [pscholes@sikorsky.com](mailto:pscholes@sikorsky.com)  
<http://biomeddevices.com/recumbent>

**September 17th, 2000  
Mt Airy Bent Event**  
Contact: [www.bike123.com](http://www.bike123.com) or 301-831-5151

**September 23-27  
Interbike Las Vegas**  
Industry tradeshow  
<http://www.interbike.com>

**October 6, 7 & 8, 2000  
World Recumbent Bike Expo**  
Ervin J. Nutter Center Dayton, OH  
Event Director Mike Sutton email:  
[mmsutton@sprynet.com](mailto:mmsutton@sprynet.com) Tel. 937-427-8747

**SEND CALENDAR LISTINGS TO**  
RCN, PO Box 2048, Port Townsend, WA 98368  
or [info@recumbencyclistnews.com](mailto:info@recumbencyclistnews.com)



## RCN Corrections

**Kneesavers**—We reprinted the phone number from an brochure that, as it turns out, was outdated. That number had been disconnected. For more info on the SCOR Kneesavers see [www.bikescor.com](http://www.bikescor.com) or call (800) 548-4447 (Randy Ice, P.T., C.C.S. eves & message) 562-690-9693 (days & orders).

**Barcroft**—We inadvertently deleted Barcroft from our recumbent manufacturer list on page 39. Barcroft Cycles, Falls Church, VA <http://www.barcroftcycles.co>, Tel. 703-750-1945.

**BikeE**—The correct address is 5125 SW Hout St., Corvallis, OR 97333, Tel. 800-231-3136. Tel. 703-750-1945 [barcroft.cycles@att.net](mailto:barcroft.cycles@att.net)

**RANS**—The phone number is wrong in on page 39 of RCN#56 under the 2000 Recumbent Manufacturer Listings. The correct phone number is 785-625-6346.

## Recumbent Bicycle Tours of the Rio Grande Bosque and Historic Rio Grande River

While in Albuquerque, New Mexico, enjoy a few hours riding recumbent bicycles in the magnificent cottonwood forest along the Rio Grande River. Delight in a scrumptious picnic lunch of freshly made sandwiches and pastries. Listen to the river flow and watch turtles as they bask in the brilliant New Mexico sunlight. Our knowledgeable tour guide will take you away from it all and bring you a place of serenity, wonder and simple pleasures: The Rio Grande Bosque.

### On Every Tour:

1. You will be given a recumbent bicycle riding lesson and be outfitted with a recumbent bicycle sized right for you.
2. You will be given a well fitting helmet with a Sheik Flap and a water bottle filled with cool spring water.
3. You may choose either a 9-mile (approx. 2 hours) or a 20-mile (approx. 3 hours) ride on a fully paved path.
4. You will have a nature loving tour guide who is also a skilled mechanic. He will be equipped with spare tubes, a pump, tools and a first aid kit.
5. You will see the wonders of the Rio Grande Bosque which may include: The Rio Grande River ducks, geese, roadrunners, hawks, hummingbirds, turtles, lizards a beaver's lunch, gopher mounds and native plants

6. You will visit the Rio Grande Nature Center which offers nature exhibits and a pond observation room.

7. You will be served a delicious picnic lunch prepared by Rolling in Dough Bakery.

8. You will have a Glorious Time!

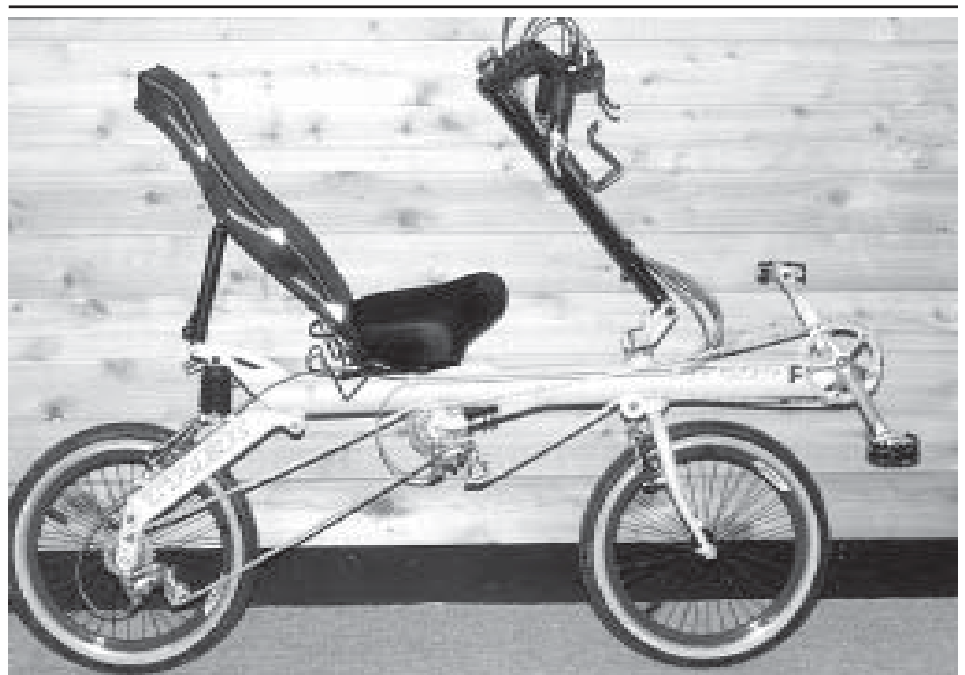
## Absolutely Sun Gear

Absolutely Recumbent specializes in sun gear. That is, for recumbent riders who ride where the sun shines and there is the chance of sun burn. Riders in the SW take this very seriously. Here are a few of the products that Absolutely offers: **Sun Lids**—Our latest invention for the person who gets a sunburned part or sunburned head underneath their helmet. Absolutely Recumbent has the Sun Protective solution! It is a rectangular piece of Sun Protective fabric that fits inside your helmet and will protect your head. \$9.49

**Longer Sheik Flaps**—We now have longer Sheik Flaps that give you extra sun protection on your neck. \$11.99

**Sun Screen and Lip Balm**—are now available at Absolutely Recumbent. I got the kind that smells good. Don't worry.

For details, prices or reservations, call Absolutely Recumbent at 505-243-5105 or stop by their website at: <http://www.absolutelyrecumbent.com>



## The Wheel & Sprocket Trek 200 R

Wheel & Sprocket offers custom-spec Trek R200 recumbents. They have upspecced components including:

- ✓ Shimano Ultegra 9-Speed Group
- ✓ Shimano Chain
- ✓ Avid brake levers
- ✓ Nexus V-brakes

- ✓ Optional custom wheels
- ✓ Choice of many different handlebars (drops, BikeE NX and or Euro-U bars)

These custom Treks start at \$1999 and go up. Call Wheel & Sprocket at 1-800-362-4537.



# Recumbent Mail

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

## Criticizing Gardner Martin

I just received issue #57 and I wanted to respond to your editorial. I don't know what I would have done without your publication. There is NO-WHERE to go, to get honest info and feedback about 'bents. Sure, there are a zillion web sites, but every manufacturer says his design is the best, the fastest, the most comfortable, yada, yada, yada . . . I like the diversity of designs and ideas as much as the next guy but the information can be, at best, biased, at the least, confusing, and, for a newbie, overwhelming. I learned a lot from reading your work. And I LIKE the fact that I don't always agree with your choices or opinions. It shows you are honest and forthright in giving your opinion of the recumbent industry and its products. I own a Tour Easy and recently joined the Easy Racers Recumbent Club and, while I really enjoy their magazine, you do something in RCN that they never do . . . you have the gall to occasionally criticize Gardner Martin. Now, I think the world of Gardner and his designs, (and I know you do too) but I also reserve the right to disagree with him AND you. I wear out my RCN issues, referring to them and rereading them constantly. It is a shame that some manufacturers are messing with you. So let me say this. I don't care if you publish a 3 page, hand typed magazine for the next two years and double the price. It's the content and the integrity behind it that I value, not the paper it's printed on or the number of pages. Please stay in business. Please keep publishing RCN. I will support your publication as long as you decide to keep doing this, regardless of the subscription cost. You, sir, are the only show in town. Don't let the bastards get you down!

Yours truly  
Joe Zigurski

## Gone in a New York Minute

The subscription rates may be high, but I get value for the dollars spent. If the rate was higher I'd still pay. If some big glossy bike mag comes along and offers the same content at half the price, I'd be gone in a New York minute. Your bike reviews are too long. My eyes glaze sets in about half way through some of the longer paragraphs. While others may pine for a review of every 'bent under the sun, I'm only interested in the more common variety. No matter how good a small production run 'bent is, unless I can see it in a nearby bike shop (I drove 200 miles for the two 'bents I have so "nearby" is not real close), I will not be a buyer or test rider. I am interested in some new technology that a manufacturer has to offer, not a five page review of a rare bike. Bob you're doing a great job, keep it up, and keep the editing pencil sharp!

Norm Diebold  
Farmington Hills, MI

*Editor Comments: I guess you are an example of the 'new' recumbent consumer. At least we know where we stand with you. We probably have a few more years until you jump ship.*

## Candid & Unbiased Evaluations

The price for RCN magazine may seem a bit high, but I'll gladly pay it if I know I'm getting candid and unbiased evaluations of the various bikes and components. I have two Easy Racer bikes, purchased on your evaluations, and haven't been disappointed in their performance. I plan on buying a SWB sometime in the next year. Whatever I buy will be based on RCN's evaluations and my personal requirements. If a bike company hasn't provided RCN with a test bike, then I figure they aren't very confident in their product. I'll take my chances with the ones who have the guts to provide a test bike and then live with your evaluation, warts and all. Besides, there's no such thing as a perfect bike.

Billy F. Webster

## Gardner Martin Comments

I have read every issue of RCN from the beginning (ten years ago) and May-June 2000 is certainly one of the best.

A few comments. The late Dan Duchaine and his practical low-racer articles touched me. Dan certainly built one of the best-looking and most fun recumbents ever. I did ride one and I did want to buy one. I was even a little jealous of the beauty of Dan's bike. I will try to apply what Dan taught me about aesthetics to our line of Easy Racers products in the future.

Dick Ryan and his Avatar-Ryan recumbent interview showed the honesty and integrity of a very insightful man who was a pioneer in recumbency. Thanks too to Kelvin Clark for his thoughtful questions. Bob Bryant's editorial made me realize how much Bob has done for recumbency and his willingness to listen to his subscribers about the content and direction of RCN in the future.

Now to the subjects we don't like to talk about: crashes, injuries, broken bones. Well it's true, just like the three letters in your May-June Issue said, people get hurt and unfortunately it will happen again. Although these three letters referred to serious damage incurred to ankles from crashing on a BikeE, it could happen and does happen on all kinds of recumbents. Being in business manufacturing and selling 'bents for over twenty years, I have heard of perhaps a half dozen broken ankles. The rider usually hits a slippery spot on the road. Sometimes the rear wheel slides out, sometimes the front wheel slides out. Bent riders must be careful because any two-wheeler can put you down. Luck has a lot to do with whether or not you break something. My personal belief is that it is better if you keep your feet in or on the pedals. This may be hard to do in a crash. Statistics show that most serious bicycle-related (read wedge) crashes result in head, neck or shoulder injury. Certainly this is not the case with 'bents. So if your feet, ankles and legs are more important to you than head, neck and shoulders, you shouldn't ride a 'bent as upper body injury on 'bents is rare.

Ride to have fun, but think and be cautious on any two-wheeler.

Gardner Martin  
Easy Racers, Inc.  
info@EasyRacersUSA.com

## Outstanding 57

I've been digging through #57...outstanding...outstanding....outstanding!! I enjoyed the heck out of your editorial "rant" too...dead-on right. Keep doin' what you're doin'....

Leo

## Cost of RCN

While the cost of RCN may be dismaying to you and others, the content, topics and the exclusive source of the information make it worth the cost of three subscriptions to any other bike enthusiast periodical I have seen to date. On that scale, I support your efforts and appreciate the time and devotion you have made to this project.

Si Little

## Expensive & Biased

I received the latest one today, thanks. I only had time to quickly scan a few pages, but I noticed more than a few complaints about, "bias" and "cost." I wanted to chime in. I have neither complaint! I want to tell you that you and your company are doing a top notch job, I can't fault anything you've got going now. I enjoy reading articles from various view points, or opinions. And as far as cost goes. Sheez. What else are we going to purchase with our six bucks? McDonalds? Keep up the outstanding work!

Dan Hughes  
dhughes@toysrbob.com



## Telling the Truth

We are recent subscribers and have enjoyed each issue. I think your policy of telling the truth on bike reviews is one of the things that initially attracted my interest. Keep up the honest work in spite of manufacturers' pressure to sugarcoat problems. We are very happy owners of 2 Bike E 3.0's that have turned out to be lifestyle changes rather than recumbent bicycles. We are also celebrities in our small world and are doing our part in spreading the word about 'bents.

A couple of comments on reader mail. #1: The KMC chains on our bikes have 1400 miles on them and are in wonderful shape (no water, don't like rain). #2. Numb feet, ever try taking your foot off the pedal and wriggling your toes: Works well. Keep up the good work.

Don Faulkenberry:ughdum@aol.com

## BigGlossyBikeMags

I used to subscribe to the BigGlossyBikeMags, but wearied of their approach. What you are doing is great stuff . . . and substantive. I, for one, am OK with eliminating the plastic bag the magazine comes in if that'll save costs. I'd also pay more to subscribe if it comes to that . . . but I'd like everyone to do so as well. Cheers and keep up the good work . . . Gardner said it best: ". . .make mine supine."

Skip in San Diego >>>O~o

## Who Wants to Be a Recumbent Millionaire

Great latest issue. I wish I had a million dollars to give you to help with the magazine. Great writing. I really like the photographs of actual riders on the bikes. Helps to determine if this body would fit on that design.

Mr. Bill, wagamawe@apci.com

*Editor Comments: We will try harder to run photos of riders when we can.*

## Disagrees with RCN...Oh No!

A great editorial in issue #57. The only time I've disagreed with part of your bent assessments was on the Trek R200. I had one and it was a pretty decent bike. It needed a chain guard and a side stand and fewer than 40 gears, but it was comfortable, stable, lightweight and great, even for us fat people. Keep up the good work.

Erv Lichterman

*Editor Comments: Erv, You "had one" Why did you sell it?*

## Are Those Manufacturers Hiding Something?

I wanted to comment on your editorial concerning manufacturers pulling their adds when you honestly critique their bicycles. Would they want you to lie about their bicycles? Why? Are they hiding something? Manufacturers should look at it as helping them to work out the bugs so as to make a better bicycle. I would want someone to tell me in my job if I can improve on the way I do something. It's common sense.

I am happy to see Rans' ads. Hopefully they take critique better than others because they have fantastic recumbents. I have a Rocket. WOW! I love it! I drive a sports car (not as much as I used to since I got my Rocket) so why not have the same in a recumbent?

Keep up the excellent work. I don't require a "BigGlossyBikeMag." I'm more concerned about content than looks. RCN looks great! More importantly—its content is excellent. Thanks.

Tony Wasion, noisaw@hotmail.com

## Peccadillos—Elitism

I thought the annual bike guide was excellent and even though missing some companies the most comprehensive in the industry. I admire the magazine's commitment to honest reporting. I find I can hardly even glance at Bicycling mag anymore. It seems quite fatuous and the message mired by all that big bucks patronization, little room for critical thought. I had a somewhat similar experience with audio magazines years back but they have their own peccadillos—elitism is rampant in that industry. In my part of the world (North Texas DFW) recumbency is on the rise (although we don't have a good shop. I went to Houston to get my Lightning Thunderbolt and I tell everyone to subscribe (to RCN).

Abe Factor, abe@txis.net

## Bravo, right on and AMEN!!!

Read your editorial in #57 this morning. Bravo, right on and AMEN!!! I for one would rather see you continue to tell it like it is when you review any kind of new bent. Any company that plays the "withhold the ads if

you don't make nicey-nicey when reviewing their product" is not worth messing with. It is worth the extra price to me to get the lowdown on a product, warts and all rather than to get a politically correct snow job. Keep up the good work!!! If the cost per issue goes up, well, I will just have to pay a little more to get the straight scoop. BRAVO!!!!!!!!!!

Paul Krieg, Heartfrdm@aol.com

## I'm really appalled that you...

I just finished reading the story about Kimberly Childs' "bike tour" in RCN #57. As I understand the article, she signed up for a bike tour, never rode with the other riders, never stayed with the other riders, doesn't know how to ride or change a tire, tried to sell her bike to another rider, thinks an RV is roughing it, and she and her husband like to drink and drive! (pg. 29, paragraph 5 "I get into the van where Carl pours some white wine and turns on National Public Radio. We ride past cyclists...") It is Ms. Childs' prerogative to travel by RV, and as far as I am concerned she is welcome to do so as long as she leaves the alcohol at home. But I'm really appalled that you 1) condone her behavior and 2) think it has anything to do with bicycle touring.

Marc Thompson

*Editor Comments: RCN is a forum for its readers. You have an open invitation to write for RCN just like any other reader. To think that RCN articles are contrived to align with our views gives us WAY too much credit.*

## Quetzal Comments

Your comments in regards to Denis Brown, Sport Soleil et Neige, and Procycle, on page 17 of the March/April 2000 (RCN#56), will do nothing to promote recumbent bicycles or enhance the image of your magazine.

Denis Brown and the organization(s) behind the Quetzal have put considerable energy into building Quetzal recumbents that are affordable in \$CAN, and into promoting recumbent riding in Quebec. Your description of the organization behind the Quetzal as "fringe ... from Canada" building a "dog recumbent," is rude and unprofessional and should never have appeared in print.

I hope you had fun being "the voice of yourself." I find it hard to believe that your sponsors and readers will line up behind this kind of vindictive treatment of a recumbent enthusiast. Perhaps your inability to express yourself in a professional manner is the reason that companies such as Lightning Cycle Dynamics, ATP, and Linear "Do not subscribe to or advertise in RCN." Have you insulted them along the way as well?

To be clear, it is fair and appropriate for you to present an extremely negative review of a bike, BUT, if you wish to have any respect as a journalist, you should stick to the facts, and not go out of your way to be rude. You might also give some thought to the fact that expressions and content that are acceptable on the West Coast of the US are insulting to Canadians and Europeans.

Greg Shaw, Lachine, Quebec

*Editor Comments: Peugeot/Quetzal ceased communication with us in the Summer of '98. They also abandoned the test bike at RCN. We tried multiple times to get in contact with them to no avail. The actual RCN review appeared in RCN back in 1998 and was written by Tony Licuanan. We spent several days with that test bike, and stored it for 6 months, and eventually found a way to return it back to Canada.*

*RCN readers prefer critique and editorial opinion, as facts can be somewhat boring. If you have a different O P I N I O N of these bikes, feel free to write an article for RCN.*

## Correct & Worthwhile

An interesting situation you find yourself in, isn't it? I want to assure you that I—and many others—believe what you are doing is correct and worthwhile! It's quite refreshing to find sanity and simplicity in the clutter of modern hype and hyperbole. Utah is a vast recumbent wasteland, and I may be forced to purchase something without riding it. As such, your observations and insights become that much more significant. And, if I might state the obvious, cycles not reviewed or advertised are not being considered.

Martin Neunzert

## Magical Long Wheelbase Recumbents

I have a 1999 Vision R40 LWB ASS, which I love. In my opinion, the R40 is the best bike in their entire line. Before I converted it to a LWB, I had a flat on the front Conti Top Touring tire on an empty bike path travelling at 10 mph. I lost control and nearly kissed the pavement. I had decided to

convert it before this incident. I can only imagine what would have happened if I had been going 20 mph or in traffic. I once had a flat on the front of my BikeE at 25 mph and it just slowed down and stopped. After talking to other riders and reading RCN#57, I suspect this is common to all, or at least most SWB's. I would like to hear about similar experiences. I now ride ONLY compacts and LWB recumbents. LWB are magical bikes. Thank you for RCN. You do a great job. Even with your limited resources you're far better than the "BigGlossyBikeMags." I don't always agree with everything (in RCN), but I don't have to. You provide a lot of information which no one else is providing.

Harvey Stackpole

### Broken Leg

The brake was set too high on the wheel of our Rans Screamer tandem, and on a hard stop, I saw smoke on the front tire. This was immediately followed by a loud 'pop,' and I knew we were going down so I unclipped and prepared for the fall. Up in front, my husband was not so quick to give in to the inevitable, and he fought to stay upright. He doesn't know to this day if he unclipped his foot from the pedal or not. Or if he should have. But as I hopped off the bike completely unscathed, he suffered major road rash and a seriously fractured leg, immediately above the ankle. In my position, the two seat backs acted as more or less of a roll cage. My husband's ankle caught the full force of stopping both of us.

At the hospital, the emergency room attendant noted that most bike injuries are broken arms (or worse); but broken legs are associated with recumbents. So our question is this: When you know you are going to fall over, what's the best way to roll?

Mary Poppendieck, mary@poppendieck.com

### Vision Butt

I would like your opinion regarding which you consider to be the most comfortable seat on a SWB recumbent. I currently ride a Vision 40, and after a couple of hours of continuous riding I develop a sore tailbone area. I prefer under-seat steering. In your experience which SWB offers the most comfortable seat, lack of tailbone pressure, for extended riding? I would appreciate your wisdom! Is there a SWB which is noted for not causing any tailbone problems? I know it depends on the rider, but there must be one which is best for the greatest number of riders.

John G. Cole

*Editor Comments: This the same seat that 3000 recumbent riders are said to prefer according to one recumbent catalog. Check out the Vision thermarest seat cushion to replace the stock foam. You may be able to release the strap tension to slacken the seat a bit in the tailbone area. The Haluzak seat is comfy, though takes a long time to break in. It is a full sling/mesh seat. The design of the seat makes it difficult for shorter or even medium height riders to use, so ride before you buy.*

### Rocket Redux

Last October my Rans Rocket was stolen. I spent several months going through back issues of RCN trying to find the best replacement. I finally decided on a new Rocket. While in Florida, I purchased the new Rocket from BJ Strass at Atlantic Bicycles. I couldn't be happier. I drive a truck over the road and get a chance to ride in many places. Are there any other truckers that ride recumbents? I try to ride every day. I have a Freightliner Century Condo. The Rocket fits in perfect where the passenger seat goes.

B. Craig Duysen

### Opinionated, Inconsistent and Fat-Headed

I felt that you buyers' guide issue (#56) was perhaps the most useful of this difficult genre that I've ever encountered. You discussed the theoretical and philosophical issues behind the choices provided in the recumbent world and left the concrete decisions to the persons involved. Many people would rather be told what to buy, but you can't please 'em all. Kudos to you and your fine work. At times you're opinionated and fat-headed, but since you freely admit to all these, its hard to call them sins. They're necessary qualities in your line of work.

Jim Furze

### RCN is a GREAT magazine!

I always look forward to reading through each new issue from cover to cover. I especially enjoy the reviews and opinions expressed by yourself and the other contributors. Yes, I know they are biased, just like my very positive bias for the Rans V-Rex. I may not agree with the review, but I enjoy hearing another opinion. Please continue doing an excellent job.

Continued on page 34

RECUMBENT CYCLIST NEWS

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# The 2000 Angletech Altitude

## a.k.a. the Boulder Galaxy

by Bob Bryant

Imagine a highly refined, full suspension recumbent with its primary design mission only to be the BEST full suspension SWB available anywhere. How's that for a mission? There are no cost cutting measures, pencil pushing cheapskate specs or finding cheaper ways to accomplish a given task.

The team of Angletech and Boulder Bikes builds and sells the Angletech Altitude/Boulder Galaxy full suspension SWB. This team is tough to beat. Kelvin Clark and Angletech are two of the most respected names in recumbency. Kelvin has been in the recumbent business for years—predating even RCN. Kelvin's specialty is custom fit (AngleFit), high end and custom-spec recumbents.

Rich Williams' Boulder Bikes is a mountain bike and bicycle suspension pioneer. The Boulder full suspension upright models are handcrafted for suspension connoisseurs. This team together is unbeatable. The R & D, design, attention to detail and ability to dial in a bike specifically for the rider is not available from any other manufacturer.

The Altitude and Galaxy offer an identical frame. The variables are the paint, component specs and prices. The Galaxy is less expensive, though Angletech has a similar spec at the same price. Our test bike was an Altitude, though we enjoyed lengthy Q & A from both Kelvin Clark (Angletech) and Rich Williams (Boulder). In fact, they both went beyond the call of duty and offered perhaps the most proactive RCN review in years.

### I. SYSTEMS

**FRAME**—The frame is laboriously hand-built by Boulder's Rich Williams. The frame is made of TIG welded aluminum. It is a complex process with lots of special parts and handwork including custom dropouts, shock, shock mount and tube-set. The weld beads are excellent as is every aspect of the Altitude build.

**PAINT**—The custom 'deep powder' powdercoat paint on the Altitude is exceptional. It is about as good as you'll find on any recumbent. The bike comes in the customer's color choice, with clear powder over top. According to Kelvin Clark, the Rainbow (painter) paint offers an Imron shine with powdercoat durability. The Boulder Galaxy version does not have the same painter.

Both Angletech and Boulder have their own custom pewter headbadges that are classy and unique. Unfortunately, the paint finish is marred by a seeming battle of the merchandisers' decals. Our test bike had an Angletech headbadge, a Boulder decal, an Angletech decal and a large Altitude decal—the combination of all of them that is a bit annoying.

**SUSPENSION**—The rear suspension is Boulder designed. The coil (spring)/oil shock fits neatly inside the frame tube (very cool). To adjust the preload, you remove the chain-link like connector doo-hickey (from the shock plunger), then turn the shaft counterclockwise to make the shock firmer. The problem with this is that you might have to do this a few times to get it right (took me 3 times). When you remove the chain-link connector-plate doo-hickey (connects shock to swing arm), you must undo two allen bolts, and out drop two washers and two little rubber O-rings. You must take this assembly apart every time you fold the swing arm (this is annoying).

The Boulder-built swing arm pivots on bearings. Like many other parts from this bike, it is custom made in Boulder's Lyons, Colorado shop. The suspension is the best and most active recumbent rear suspension that we have tried, if you love an active suspended ride.

**HANDLEBARS**—The handlebars and stem are from Rans (Longbikes on the SHO). They are very comfortable and ergonomic—very much like a Rocket or V-Rex—only better (AngleFit).

**DRIVETRAIN/SHIFTING**—The drivetrain is a SRAM/Sachs 3x7 with ESP shifters and rear derailleur, along with a Shimano front derailleur. The ESP shifters shift fast and efficiently. Angletech uses higher quality SRAM ESP 8-speed shifters set up to span the 7-gears of the cassette. The idea is to get away from the lackluster '3x7' level components and upgrade

to superior SRAM "SL" level components.

The 3x7 has its usual slightly sluggish feel. The problem is the new SRAM 3x7 shifter. Gone is the old spring-loaded 3x7 trigger (3rd shifter/shifts the 3x7 on 63-speed bikes) of years past. This new plastic shifter required lots of effort to use and was not intuitive or ergonomic. This mediocre mechanism is a far cry from the trigger. SRAM reports that the Trigger is coming back for 2001. Kelvin says that if a customer buys an Altitude and doesn't like the 3x7 shifter, he'll replace it with a Trigger when they come out late this summer. SRAM also has a new Escargo cable roller that replaces the rear axle nut. This helps to make the shifting less sluggish feeling. These can be purchased for \$15 for any 3x7 equipped recumbent from Angletech.

Most agree that the 3x7 63-speed (3 internal gears x 7 cassette gears x 3 crankset chainrings) drivetrain is necessary to achieve adequate gearing with a 20" drive-wheel recumbent. The Altitude has an incredibly wide range of 18.3-144.9 gear inches. In our experience, 20" drive-wheels also are necessary for properly designed SWB recumbent rear suspension (or in other words, we have yet to try a 26" drive-wheeled SWB suspension recumbent that worked properly). The 20" drive wheel improves weight distribution, and allows only one tire size/choice (same contact patch) and allows for the added space necessary for swing arm, shock and mounts (without pushing the rider too far forward). However, there are trade-offs: larger chainrings (less effective front shifting) and/or the complexities of a 3x7 hub. What we have found over the years is that after riding or owning one for a time, riders split camps to either loving or hating them.

**CHAIN MANAGEMENT**—The chain management is not too bad. The upper chain idler on the previous Altitude has been replaced by a short chain tube that is bolted to the Rans seat QR mechanism. It appears that the slight redesign of the bike has given it an improved chain-line. The chain idlers are smooth and quiet. The only problem is that the seat is connected to the chain until you separate the Rans seat QR/chain tube/nut plate.

**WHEELS**—The wheel quality was exceptional. The wheel parts are selected by Kelvin Clark, and all wheels are built in Kelvin's shop by his chief mechanic, Jim Farrell. Jim is a former USCF Team Mechanic and has worked for John Tomac. Angletech's wheels are among the best in the business.

**BRAKING**—The Magura hydraulic rim brakes are the strongest rim brakes you'll find anywhere. The stiff hydraulic brake lines do hamper folding and taking the bike apart, though V-brakes can be had on the bike (and are stock on the Boulder version).

**TIRES**—Our test bike came outfitted with Tioga Comp ST 20 x 1.75 90 psi tires. "This is basically the Pool with inverted tread. It's a good all around tire for pavement efficiency, with the inverted tread for imperfect situations," says Clark. These are the perfect tire for riders who ride a diverse terrain (like we do). The tires didn't seem exceptionally fast and didn't make any humming noise, though they were dependable.

There are a vast array of tire choices. The maximum available tire width is 1.95 inches. However, this looks like it might be a very tight fit if you want to have fenders as well. Williams and Clark both said it will work. There are two other 20 x 1.95 tires available. The IRC Flatlander, which is 100 psi with external road tread. Conti Grand Prix's are stock on the SHO.

### II. COMFORT

**RIDING POSITION**—The riding position is more extreme than a V-Rex and close to a Rocket. The seat/bottom bracket differential is +3.5-4.5 inches (BB is higher). This is a rather extreme riding position, though with the reclinable Rans seat, it was not as noticeable as one might think. The primary reason, according to Rich Williams, is the eternal quest for a lower seat height.

**FIT**—There are several sizes to fit most rider heights. It will take a minimum height rider for the rather high seat height and pedals/BB. This is common for many 20" front wheel SWB recumbents. A full suit of

customer measurements are taken and the bike is set-up specifically for the customer. We have dubbed this AngleFit. The basis of this is the magic 90-degree arm/forearm bend to reach the handlebars.

**SEAT**—The seat is a Rans tall-back and was extremely comfortable. Angletech has a standard custom fitting that allows the seat base and back to fold. This is a boon for anyone travelling (as this seat is obnoxiously large) with their bike. However, the mini-clips that hold the seat upright (when not folded) get lost easily. Our bike arrived with one missing. Boulder supplied us with a different type of pin that worked better. However, we found too many small parts on this 'travel' bike that could create a problem if misplaced.

### III. RIDE/HANDLING

**STABILITY/MANEUVERABILITY**—The Altitude is very maneuverable and handling is very good. The head-tube angle is a correct 71.5 degrees—which makes it feel like a Rocket or V-Rex. This offers the most refined and optimum suspension-SWB handling.

Stability-wise, the Altitude is on par with the Rans V-Rex and Rocket—one of a handful of SWB bikes that I'd pedal down Slumgullian Pass at 50mph. These bikes are more stable than other SWB recumbents, especially those with USS and/or a more forward center of gravity. Keep in mind that your skill, familiarity with the bike as well as tire choice will affect how the handling feels to you.

**SPEED/EFFICIENCY**—The Altitude is the most deluxe recreational/touring recumbent you could hope for. Don't expect optimum SWB performance, as the bike is heavier and the suspension can still pogo (pedal induced suspension movement) a bit on hills and starts if you like an active and plush ride. The Altitude is no slouch, but you are essentially choosing comfort over all else.

**THE RIDE**—The combination of the high quality build, custom fit and active suspension makes the bike a dual 20-inch wheeled coil/oil suspension SWB rider's dream. The coil (spring)/oil reacts much easier than the Cane Creek air shock and offers a superior, smooth and town-car like ride. The Ballistic front shock is not the best we could have hoped for, but does the job nicely. We'd love to see a better quality and more active front shock. We keep hearing rumors of such.

### IV. OWNING/PURCHASING

**VERSATILITY**—The Altitude will be at home riding anywhere. We rode it on trails, gravel, poorly paved roads and very smooth pavement. The only detractor in uncertain conditions was the high pedals/bottom bracket. Aside from this, the bike is capable of doing most anything that you'd care to do with a \$4000 bicycle.

**SHIPPING/ASSEMBLY**—Every Angletech recumbent bicycle is carefully built up, bench tested, road tested and carefully packed for direct shipment to the customer.

**TRANSPORTABILITY/STORAGE**—The Altitude is NOT a quick fold or folding bicycle per se. The front wheel comes off, the steering column disconnects, the seat comes off (there is an optional folding seat) and the rear swing arm



disconnects and swings back under the bike. This fold is 10-20 minutes depending on how much practice you have. Angletech offers a very nice soft travel bag custom designed for the Altitude and built for Angletech by Sew What.

The 3x7 63-speed version has a bolt-on 3x7 hub. This requires carrying a socket and wrench to remove the rear wheel (I don't usually carry these on my bike, nor do I want to). We would like to see a tool kit included (or at least this one tool). The Altitude has custom Boulder dropouts (Breezer-like). Rich Williams tells me that these were originally designed by the Wright Brothers and now used by many designers.

It was apparent after talking to designer Williams that I did not have the mechanical patience that may be necessary to travel with such a bike. The travel compatibility of this bike comes at a price. Like several other packable bikes, the price was too high for me—I never once put my Bike Friday back in the suitcase. Recently, I wanted to buy a folding kayak. I showed Marilyn the 20-minute sequence of events in a series of time-lapse photos. Marilyn laughed at me out loud and said, "You are going to build that, from those pieces in those bags!" So, folding to me means easy and less than a minute (like a Brompton or Dahon). So, in your search for a compatible bike, be sure to ask just how 'folding' is defined. If you can relate to my comments on this, tell these guys that you are an impatient recumbent weenie like Bob Bryant.

**QUALITY/DURABILITY**—This is truly a hand-built bike where no shortcuts have been taken. Rich Williams of Boulder Bicycles hand crafts each frame. This is a slow process as the bike has a complex frame. The Angletech purchase process is very comprehensive (without

being overbearing) whether you are live in person, Internet or on the phone. From a one on one test ride session, through accepting the order—every Angletech customer will feel special. There are other high-end bikes, though few manufacturers and dealers go to this extent in delivering a recumbent bicycle.

**OPTIONS & ACCESSORIES**—Angletech offers a host of custom Altitude options and accessories. Angletech has their own made-in-the-USA seat bag (Sew What) that caps over the seat back. It is such a good idea that Rans' seat bag now mounts similarly. The cost of the seat bag is \$80. A fender set is also available as is about every option you can imagine. Custom specs and paint jobs are available to create your dream bike. A custom rear pannier rack that mounts on the stinger tube accepts even the huge Ortliebs, and costs \$200. Fenders are available from Angletech for the Altitude. They are \$80 for the German SKS and there are German Woodguards (9 ply of Beech Wood + 3 finishes) at \$170. An Angletech Zzipper fairing is also available for this bike. It is much like the P-38/V-Rex Zzipper though uses a special sliding tri-adjust mount.

The Altitude can arrive in its own custom designed and made travel-bag (optional and costs \$350). The folded size is 31" x 46" x 10". The bag has the all of the benefits of a hard-shell case but without the hard shell. The bag is sewn of foam-lined nylon. It comes with interior holders and pack bags for bike parts and conveniently rolls into its own duffel for storage when not in use. The bag was originally developed by Dale Clark (Angle Lake Cycle) and Sew What! back in 1985/6 for use with Moulton AM upright bikes. The theory is that airline employees will be more careful with a



Angletech's head badge



Aluminum swing-arm + coil/oil shock



Angletech's Altitude SHO

soft bag and place it on top of the baggage rather than at the bottom as they might with a corrugated box. The bag is of the highest quality. Angletech offers custom ordered similar bags for Rans V-Rex, Stratus and Screamer S & S models. The cost is about \$400.

#### V. RCN ANALYSIS

**VALUE/DEPRECIATION**—The Altitude is an expensive bike. Expect to take a good hit once you ride it away from Angletech. We've seen used Altitudes in the high \$2000 range and up to \$3000. This is on par and about average (a 25%-30% first year depreciation is about normal, though it seems worse on more expensive bikes; expensive options take an even bigger hit).

It is extremely difficult to quantify whether these dream bikes are worth the high cost. This must be a personal decision. Most are incredibly wonderful bikes—and the Altitude is no exception—it makes the 'A' list of great recumbents to dream about or buy.

**MARKET COMPETITION**—There is little market competition. This bike is a few notches

up from the Rans Vivo (which is its closest competitor). The Vision suspension bikes are not in the same league refinement-wise (newly redesigned for 2000 and not yet tested by any source that we know of).

What is new for 2000 is that Angletech and Boulder are now competing to sell versions of this bike. Customers who want high attention to service and detail, or fancy custom spec or other custom options can deal with Angletech. A more

straightforward and stock set-up can be had through dealing with Rich Williams at Boulder. Both are excellent to deal with, though they have different approaches to the same bike.

**RANTS**—This is an exceptional recumbent bicycle. We'd like to see one that costs less money, and we'd like to see a longer travel suspension fork that is at the same quality level of this bike. At \$4000+, this bike should be perfect in every way—and I don't think the Altitude has reached perfection yet (though very close). There are a few details outlined in this review that could use a tweak or two.

Lastly, expect to WAIT for an Altitude. These bikes do not get built fast. A limited number are built each year. You should plan your purchase, remain calm and be patient.

**VERDICT**—Many of you might have seen or ridden the Altitude in its past incarnation. This current model is better. We still think they have a ways to go to reach perfection, but this bike is well on the way. This is not a speed bike, but the ultimate recreational, touring, commuting and travelling SWB ASS machine available. The Altitude is a wonderfully cushy ride built by passionate recumbent perfectionists from the mountains of Colorado. I believe it to be the best suspension recumbent made.

**BOB RATING:** Excellent

#### ABOUT THE BIKE

Model—Angletech Altitude GL63 Type—SWB; Steer—VASS (vertical above-seat steering w/ custom fold forward); WB=42"; Seat Height=23.5"; Bottom Bracket Height=27-28"; Head tube angle=72 degrees; Weight=#32 (no pedals or accessories); Frame—Easton 7005 butted 6061 T6 TIG welded aluminum with 6061 T6 aluminum swing-arm; Fork—Angletech tuned Ballistic suspension; Suspension—Angletech/Boulder Coil/Oil shock

#### COMPONENTS

CRANK—Ritchey Logic (crank arms to suit rider); Bottom Bracket—Phil Wood; Headset—Chris King; Derailleurs—SRAM ESP 9.0 SL 3x7=63-spd; Chain—Sachs PC89R; Gear Inch Range—18.3-144.9; Pedals—none; Wheels—406mm 20" X 1.4"; Rims—Bontrager Maverick black w/machined sides; Tires—Tioga ST Comp 90 psi; HUBS—SRAM/Sachs; Wheel Build—Angletech; Brakes—Magura & levers; Warranty—Lifetime on frame; Paint/colors—Custom deep powder

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**CONS**

- ▼ SWB handling still a bit twitchy
- ▼ Seat fold pins get lost easily
- ▼ Magura brake lines don't fold very well
- ▼ Ballistic fork is okay, but not at the same level of this bike
- ▼ Not exactly a 'quick fold'
- ▼ Take down procedure too complex (more difficult than any other travel recumbent)
- ▼ VERY expensive

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# THE WORLD OF HPB'S

## Human Powered Recumbent Boats

By Bob Bryant

Imagine a place where there were no bike helmets; no SUV's bearing down on you; no traffic signals; no constant 3rd eye viewing of the road behind you. Now imagine the peace, quiet, and serenity of a calm lake, river or ocean coastline. When you consider the world's waterways it vastly increases the amount of places where you can pedal in a recumbent position, which cannot be a bad thing.

There is also a stronger pitch from some in the Human Powered Boat (HPB) world. The stories all have a similar beginning. We are running out of places to ride our bicycles safely. Biking legend and champion cyclist, John Howard, is outspoken about the safety aspect of bicycling. This led him to form a partnership with his marine engineer brother to build the Wave Walker HPB and get water cycling off the beach. John had this to say about modern day cycling "The Product Safety Commission says riding a bike is statistically the most dangerous thing you can do. The thing is, 90 million Americans do it. More and more, we're fighting for a piece of the roadway, and that's a dangerous proposition when you're competing against a 3000 pound truck, car or whatever."—John Howard, Interviewed by Diane Majeske of the Springfield, Missouri News Leader.

You'll be surprised to discover a whole other realm of recumbent enthusiasts enjoying their pedaling on our lakes and waterways. The market for their style of recumbents is certainly not as large as for our land-based 'bents, but it is big enough that several manufacturers have already started producing several types of recumbent boats for the marketplace. Selection of the ideal boat for any given rider is a more complex process than ever, since "stability" now includes the ability to tip over or not tip over in the water. Manufacturers have also needed to combine recumbent bicycle expertise with skills in hull and propeller design, as well as resolving unique issues surrounding drivetrains and gearing choices for moving through the water.

### About the boats

There are several types of HPB's. Their prices range from an \$895 kit to transform your kayak or canoe, to \$4000 for a deluxe, multi passenger or high performance HPB.

The HPB design types can be broken down into three subgroups primarily based upon their hull designs.

**1. Catamarans**—The Sea Cycle and MicroMarine HPB's have been around for years. You sit up off the water above and in between the twin sleek hulls. There is no body work around the rider and you are exposed to the weather. Another type of HPB catamaran is the Wave Walker. It is a sit-in catamaran that seems more game for open water.

**2. Kayaks/Canoes**—These designs are based on narrow and lightweight kayaks, especially

"A lot of things I used to love about cycling, such as fresh air and safe, fun places to ride, have disappeared. Water cycling provides all the benefits of bicycling without the inherent risks of pedaling down the road. Water cycling gets people away from traffic and crowded streets and onto the wide open waterways of America. I believe water cycling is the next big revolution in recreational sport." —John Howard

optimized for pedal power. These HPB's are smaller, narrow and very light. They can be lifted onto a roof rack by their riders. Owners will undoubtedly use their HPB's more often if they are easier to transport to the beach.

Modern kayaks require all kinds of specialized and expensive gear and instructors want you to learn to do many safety maneuvers such as the Eskimo Roll. Some feel that the quest for performance (tippy boats) keeps many from getting into kayaking. Stability in a non-rolling kayak comes in the more pedestrian, wider and more stable 'recreational' kayaks such as the Old Town Loon or Perception Jocassee. Folding kayaks such as the Folbot and Klepper wrote the book on this topic. These are what you should look for in a real paddling kayak if you don't want to learn the 'roll.'

Canoes are equally tippy feeling, though they require less specialized and expensive gear. A good canoe can have initial stability, once you get past the tippy feeling (which means into the canoe and out onto a lake). We owned a really sweet traditional lake canoe that was nearly 18 feet long and held my wife, kids and old dog with ease. However, nobody ever felt really comfortable and stable for a long period of time on the water.

**3. Displacement hulls**—The Nauticraft Escapade may be the original HPB. I can remember seeing them in the IHPVA's publications years ago. The deep ballasted 'sit in' microship is sure to be an eye catcher and will probably be best at handling rough water, though with the added weight, performance suffers.

### HPB Performance

A few manufacturers claim a speed potential of 10 mph. One claimed 6 mph, and also said, "don't believe anyone else." So the spirit of competition is alive and well. The kayak-based designs should be the best performing of the group. In both canoes and kayaks, long hull lengths (>16 feet) and narrow beams (<28 inches) equal high performance. Short and/or wide boats are more stable and can be easier to haul around, though they are also slower.

As for drivetrains, some use twisted chain or belts to convert horizontal power to vertical power. The Ozone and Velosea use a much more expensive gearbox that is easier to pedal and

more efficient.

Finding the optimum mix of all design traits is the trick—and this can vary with water condition, rider size, budget and how you plan to haul your new HPB to the beach.

With that said, let's take a look at the different types of HPB's.

### Catamarans Sea Cycle

The Sea Cycle is a large pedal powered catamaran that comes in several different configurations, allowing up to two pedalers and a total of four people. There are several models and all disassemble quickly. A very similar HPB is the Micromarine catamaran. Dick Ryan owns one of these.

### Bob White's Suncatcher

Suncatcher may be a homebuilder's dream manufacturer. They offer several models based upon the Suncatcher universal platform. This platform consists of twin fiberglass hulls (similar to the Sea Cycle & Micromarine boats) with a versatile aluminum framework that acts as a connection and support system to the power device—you and your bike. How you power a Suncatcher can vary wildly. The Suncatcher brochure shows two recumbent models (with multiple gears!); a mountain bike version (bolt your MTB to the frame); next is a HydroSkier which is propelled by your NordicTrack (I'm serious?); and finally, the "Amphibian" which has the bike tow the boat (with forks & wheels it acts as its own trailer). When you get to the beach, you bolt the bike onto the Suncatcher platform and off you go—a self contained, amphibious bike/boat.

Bob White is the inventor/manufacturer responsible for this unique product. He was motivated after his daughter moved from California to Kentucky. As an avid cyclist, she found the roads in Western Kentucky to be a dangerous place to ride. However, the region has plenty of water. "We were sitting around one day," recalls White, "thinking there must be a way to get the bikes on the water." Thus was born the idea for the Suncatcher. Since he already had a fiberglass business that produced greenhouses, White started fiddling with designs for his new product. In about six months, he had a design.

### John Howard's Wave Walker

The Wave Walker is somewhere between a kayak and catamaran. It is fairly narrow and sleek, though actually has a tunnel hull. It is the fastest human powered watercraft in production, according to its builder John Howard, who states "Conditioned athletes can exceed 10 mph! It is versatile enough to negotiate surf or rough water conditions."

This HPB was designed by marine engineer

Harry Howard (John's brother and partner). The kayak catamaran is more enclosed (on three sides). You sit down low inside the hull so the rider doesn't get wet. The tunnel hull makes the vessel more stable and it also creates a high-pressure, undisturbed flow of water for the propeller. There is an optional arm-crank version available for upper-body workout and/or people with disabilities.

The drivetrain parts are stainless steel and the hull is rugged fiberglass which makes the WaveWalker suitable for salt or fresh water!

The Hydrocycle is 14.5 feet long, 3 feet wide and weighs 120 pounds. The adjustable boom bracket allows riders of 4' 6" to 7'.

The ergonomics of the Hydrocycle are fairly extreme by RCN definition, with the laid back seat and high bottom bracket. The Hydrocycle should be seaworthy and perform well.

## Kayaks Soleau Velosea

The Canadian Velosea Soleau (pronounced 'solo') is a high-tech CAD designed human powered kayak/boat. The inherent tippiness of the kayak design is overcome by adjustable telescoping outriggers on the Soleau—though we're not sure why they didn't just opt for a bit more length and beam. The rider sits low, which gives excellent stability. According to Velosea, this is a strong competitive advantage over more traditional canoes and kayaks which can be very unstable. Seating is adjustable forward and back and riders stay dry.

The Soleau was designed by a team of engineers and designers led by company president Steve Copeland. As a weekend triathlete, he cycles hard and fast. He wanted the same benefits on the water. Performance is said to be quite good, "Hit speeds of up to 10 mph and leave the kayaks in your wake!" according to the brochure.

The drivetrain is a custom-built aluminum cast gearbox, which has been used in HPB's for some time. The shaft is stainless steel and the prop is a unique large diameter 4-blade model designed for the relatively low power output of humans (.25 HP). In a late update, we have heard that a 3-speed transmission and a mesh seat are now available.

The Soleau is 12 feet long, 24 inches wide and weighs 75 pounds (Kevlar - 70 pounds). The outriggers are adjustable from 32 to 52 inches. The hull's capacity is 300 pounds. The Soleau costs \$2995 (Can.) for a fiberglass version and \$3295 (Can.) for Kevlar.

## Ozone Kayak

The Ozone Hyper 1 is a long and sleek and efficient pedal powered kayak. The hull design was optimized specifically for pedaling in the recumbent position.

This kayak is 17' long and weighs just 61 pounds complete (56 lbs. in Kevlar). The pedals couple to a driveshaft out to a propeller (three props with varied pitches are available). Ozone is one of two manufacturers using a spiral bevel gear direct drive custom gearbox that deletes the twisting chain (or belt) drive as we have seen on some front-wheel drive recumbent bicycles. This is said to offer superior power transfer. The Ozone also has a retractable prop, which makes beaching easier (a common complaint). The



*The \$2395 Ozone Hyper 1*



*John Howard's Wave Walker. This is certainly the most high performance looking HPB. It is a catamaran design (with a tunnel hull), though it is actually more narrow than it looks in this picture. Note the rather aggressive high pedal/BB position. We were not able to see or ride this HPB, though would love too.*

Ozone 1 is steered by a small lever on the side of the hull which activates a rudder. With its 17' length, sleek hull design and light weight, the Ozone 1 is said to be the fastest of the group. The company states that 6-7 mph is possible and says that their boat is the fastest of the production vessels. This HPB is 17' 1" long, 27.5" wide and sells factory direct for \$2395 (Kevlar version is \$2895)—which includes shipping. Ozone is also known for their 'easy to install' recumbent pedal boat kits. They include frame-work, seat, pedals, chain, crank, transmission, driveshaft, bearing, water-seal, propeller, remote rudder, recumbent seat (looks about like an S & B bucket), a template for lower (prop) unit and hardware. The kit retails for \$895 and comes with your choice of standard, large blade or

performance props. The website shows conversions of commercial kayaks using their kit.

## Life's a beach—Hobie Mirage

The Hobie Mirage is a one or two person plastic kayak made by the same company that brought you sailing catamarans. This roto-molded plastic kayak weighs 55 pound, is 12.5' long and can be easily pedal driven with their patented Hydro-Sail Drive or paddled like a regular kayak or both.

The Hydro-Sail Drive is driven by a back and forth 'linear' pedal action (rather than a round pedal stroke). The pedals flip to dagger-board looking fins that are mounted under the drive and below the kayak's waterline in a sculling motion or even fish-like 'fin' motion.



The Hobie is steered via a cable-actuated rudder with hull mounted small side-sticks. Hobie states that the Mirage can easily skim along at speeds equal to or better than a paddled kayak and with a regular kayak paddle can be a full body workout.

The Hobie Mirage is the closest thing to a mass marketed HPB. Hobie is a big corporation (as we found out) selling through an established dealer network. The Mirage has to be the simplest of the HPB's.

The Hydro-Sail drive has me scratching my head. It is sooo simple, but can it really work. The Mirage is available as a single (\$1195) or tandem (\$1795). [www.hobiecat.com](http://www.hobiecat.com)

### **Displacement Hulls Nauticraft Escapade**

The Escapade is probably the best recumbent boat for serious water conditions. The design provides a deep sailboat like keel that offers protection for the propeller and rudder. Since the keel is filled with ballast, the craft should be very seaworthy and ultimately self-righting. The sailboat-type hull positions the operator down inside the cockpit giving a reassuring feeling of safety, security and privacy.

The Escapade's cockpit has space for the operator as well as one or two passengers and/or traveling gear and supplies.

The Escapade has been around for years and is fairly well known in HPV circles.

The drivetrain includes a specially designed drive unit that mates bicycle pedals and crank arms with an industrial toothed belt and sprockets. The belt makes a 90° twist between large and small sprockets—which gives an incredibly simple, yet effective, power transition to the propeller drive shaft. Sprockets are installed with corrosion-proof bearings. A large diameter, relatively slow moving propeller drives the Escapade through the water efficiently and quietly, though it is said to be a bit on the slow side. The Escapade even a reverse gear (also used as a brake).

The large spade-type rudder gives highly effective turning capability. It is controlled by hand levers mounted on each side of the cockpit. The push-pull action of either lever provides quick and easy steering.

The hull is made from rotomolded polyethylene (plastic). This construction is used in entry level and rental kayaks. The Escapade is 12'2" long, 4' wide and weighs 325 lbs. It has a speed Potential of 5.3 m.p.h. and a capacity of 525 lbs. Prices are around \$3000.

### **RCN Analysis**

We won't be making any quality or even rideability comparisons here as we have not ridden any of them yet. However, here is some good information to help you select which HPB might work best for you:

Well, if I lived in sunny California or Florida, the sleek Sea Cycle catamaran would really be fun. I've heard from several enthusiastic owners over the years. Homebuilders should go absolutely bonkers over Suncatcher catamarans which offer an amphibious set-up. The Ozone 1 and Soleau kayaks seem well engineered and very light. I'd probably use these more than the others. Water cycling in Port Townsend Bay would be an absolute delight. Initially, the



*The 75-pound Velosea Soleau*



*The Hobie Mirage with simple linear sail drive*

performance rider in me lusted after the sleek John Howard Wave Walker Hydrocycle catamaran. The potential speed and 'sit-in' hull design seem to be the trick. However, it would practically take a trailer and it's too large and heavy for me to carry (easily) by myself.

So where can you test pedal them? Your best bet is to find one of the get-togethers where many manufacturers are present, or ask the builder for a local reference. Ownership of some of these HPB's will take a serious commitment—trailers and boat launches are no fun.

We're not saying give up on road bikes—ABSOLUTELY NOT, though cross training and cross-pollination of the sport we all know and love, with the open air, non-helmeted natural exhilaration of wind, weather and water makes a lot of sense.

### **HPB Notes**

Some of you may remember Bob Stuart who developed the Original Car-Cycle Technology, a coroplast and composite velomobile (fully faired commuter trike) that was seen at many HPV events in the early 1990's. Bob's primary business these days is working with human powered boat drive systems (Spin Fin). He has done custom fabrication and consulting for Steve 'Computing Across America' Roberts' new waterborne craft.

Bob is still doing business as Original Car-Cycle Technology (OCCT), 208 A Walker's Hook Rd., Salt Spring Is., B.C. Canada, V8K 1P5, Email: [bobstuart@saltspring.com](mailto:bobstuart@saltspring.com) or [www.microship.com](http://www.microship.com) □

### **Access**

**Bob White Fiberglass Systems** (Suncatcher)  
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**Hobie Cat Co.** (Mirage)  
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**HydroCycles, Inc** (WaveWalker)  
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**Meyers Boat Co.** (Sea Cycle)  
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[www.seacycle.com](http://www.seacycle.com)

**MicroMarine, Ltd.**  
800-451-8746, 508-634-0205 or  
[www.micromarine.com](http://www.micromarine.com)

**Nauticraft, Corp.** (Escapade)  
616-798-8440 or [www.nauticraft.com](http://www.nauticraft.com)

**NW Nauticraft Dealer: Pedalcraft, Inc.**  
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**Open Water Cycling** (Cadence)  
425-222-7082 or 425-222-5471

**Ozone Watercraft, Inc.** (Hyper 1)  
603-358-6365 or [www.ozone-watercraft.com](http://www.ozone-watercraft.com)

**Velosea, Inc.** (Soleau)  
705-725-1905 or [www.velosea.com](http://www.velosea.com)

### **Organization web sites**

[www.humanpoweredboats.com](http://www.humanpoweredboats.com)  
[www.ihpva.org/mailling\\_lists/](http://www.ihpva.org/mailling_lists/) (mailling list)  
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# The Nauticraft Escapade:

## A Sea-Going HPB

by Michael Lampi  
lampi@mdlcorp.com



**UPDATE:** Since that article was written I've taken the Escapade out on Puget Sound, Lake Chelan, Lake Union and Lake Sammamish. The boat has performed quite well in all cases, and we have not had any troubles with propeller fouling.

On Puget Sound the wind blew up to 35 knots, with waves of 3 to 4 feet. There was a noticeable difference traveling with the wind or perpendicular to it, both in speed through the water and in the amount of spray the blew over the windshield. The oversized rudder helped immensely in maneuvering through the waves, and my boat was one of the few to complete the course. I was certainly much drier than the other rowers and kayakers in the race that day!

The only drawbacks encountered so far have to

It took a little longer than I had been expecting, but yesterday I received my Escapade from Nauticraft. I Borrowed the forklift from a neighboring company to lift the trailer and boat from the flatbed delivery truck, ogled it a while with my co-workers, hitched it up to my Neon and drove it home. Yup—short day at the office!

I changed into shorts, got the life jackets, some snacks and my 5-year old daughter and headed for a boatlaunch on Lake Washington. Once there I had my first experiences actually launching, as opposed to watching someone do it. Happily, I did not back the car too far in, and shortly afterwards we were cruising towards Enatai Beach.

I managed to tangle the bow line in the propeller, not once but TWICE! Freeing the prop meant either jumping overboard or removing the windshield. I opted for the windshield as it is made of thin, flexible plastic and held in by about a dozen T-headed plastic screws which, if you turn them 90 degrees, enables the windshield to come off.

The Escapade seems to cruise somewhat faster than my paddle wheel canoe, especially into a headwind and choppy water, as was the case yesterday. To be honest, except for the difference in "air conditioning" which depended on my heading, I did not notice any wind effects on navigation. Also, the relative seaworthiness of this craft meant that neither of us got wet unless we chose to, such as by trailing our hands over

the sides.

My daughter especially enjoyed traveling over the wake of passing motorboats, and suggested we try to find more big waves.

Pedaling the boat was fairly easy at about 60 to 70 rpm. I found myself getting quite warm, even with the bimini top providing shade on this cool (upper 60's to low 70's) day. Removing the windshield for greater cooling is something that had been recommended by the manufacturer, but I wasn't sure that with the waves sometimes splashing onto the windshield that I wanted to get wet, too. In less wavy conditions that is definitely the way to go.

We managed to snag some weeds while in the middle of the channel, but after a little forward and backward pedaling the prop was freed. We had no troubles with the prop again. Just as we were nearing the north end of Mercer Island, Aria and I decided that it was time to turn around and go home for dinner. This was fine with me as now we could see how well the wind would push us. As it turns out, it didn't make a whole lot of difference, except for the ride being smoother. Mt. Rainier was visible in the distance, looming over the hills of Mercer Island.

Loading the boat back onto the trailer was pretty easy. Aria even helped out by towing the craft towards the trailer as I backed into the water. All in all, we had a great time, and look forward to more outings.

do with items not actually manufactured by Nauticraft. For example, the boat cover webbing straps were not able to withstand the stresses of keeping the cover on the boat while being trailered down the freeway at 70 mph. I ended up sewing new ones on with sturdier thread.

The boat trailer electrical system permitted salt water to enter the taillights. Just one launch in salt water was enough to cause the lighting system to corrode and short out—even after I carefully washed down the entire frame after each salt water exposure with fresh water.

Most boat launches I've encountered seem to have a more gentle slope to the ramp than is desirable for the way that the boat is carried by the trailer. This means that either the car is backed further into the water so that the boat can float onto and off the trailer during launch and retrieval, or the boat is forcibly shoved off and on the trailer and the car is protected from getting wet. Luckily the boat is pretty light, so the shoving off/on method works pretty well. Strategically placed rollers would make this a bit easier on the hull, too.

All in all I would recommend this boat to anyone who is interested in cruising around at 3 to 4 mph, who enjoys being in a boat that can safely be out in fairly rough waters, and who might want to take along one or two friends as well. □

# The Sea Cycle: An Open Catamaran HPB

by Bob Malcomb

As I drove back and forth to work at a stress analyst job at Pratt & Whitney I couldn't help but notice the endless miles of Florida waterways. I love being on the water and biking, so I thought this would be the perfect combination. After calling Sea Cycle and viewing the free video of their 'bike boat' or HPB (Human Powered Boat), I decided to order one.

They have two choices: the first is a one-man 'Water-Bike.' It comes with two eight-foot plastic pontoons and a single seat. By leaning (like a bike) left or right, you turn the rudder. The other choice is the 'Sea Cycle.' It is a two-person version or a four-man 'limo' model.

I ordered the two-person version. I expected it to be like a paddle boat at a park; I was wrong; it was a rocket. I found it to be surprisingly FAST (5-10 knots). Instead of the typical paddle wheels, the Sea Cycle uses propellers. They are significantly more powerful. And the aerodynamic looking pontoons give very little hydrodynamic drag. Pedaling feels effortless. A typical biker could ride it for two hours non-stop without cramping. Six to eight knots is a typical speed.

## Propulsion

The power system is incredibly simple. An enclosed plastic housing shaped like an airplane wing or fin. It contains a stainless steel bike crankset at one end and an eight-inch propeller at the other. It's about 25% full of oil to lubricate the bike chain and bevel gear. The fin locks in place, and is fully adjustable for tall folks as well as the altitude challenged. And if it falls in the water, it can float. I was very impressed with the "fin." If I were going to build my own boat from scratch, I think I'd still buy the propeller drive system from them.

Arm and foot pedals are available for a full body workout. I wanted my arms free for fishing, so I did not order the arm option, although the arm levers can be quickly removed.

## Ordering Recommendations

1. The hull is soft plastic. For a couple hundred extra bucks you can get the rental-business version with a hard hull. If I had known that, I definitely would have ordered the scratch-resistant version. The sun tends to bleach out the color a little over time, so its good to cover it with a tarp.
2. If you have kids, I'd recommend the two man model with the extra seats on the back. I made my own back seats, using swivel chairs, in an hour but they aren't yellow like the rest of the bike/boat. It doesn't look as snazzy as the factory seats.
3. Don't throw away the pictures. Although it comes with a manual, it's pretty useless. It has a huge wrench that I still don't know how to use (or where to use it). An assembly and maintenance video would be nice.



4. The boat breaks down so you don't need a trailer, in theory. In reality, I could never get the whole thing into the back of my truck and had to make two trips every time I went to the beach. Assembly is very easy (once you see it) but it does take time away from boating. I bought an inexpensive trailer at a hardware store (boat weighs maybe 150 pounds).

## Recommendations to the Manufacturer

Sea Cycle was sent the following list of ideas/recommendations. I got no response. I am including it here because so many of you inventor types make modifications to everything you buy:

1. The seat: It should be tilted back slightly. This utilizes gravity to keep the rider positioned positively and sure is a lot more comfortable. Recumbent bicycle owners will think the seat is lousy.
2. The cost: The whole attachment system was WAY over-engineered. I added two back seats using a U-bolt, replacing about 10 machined parts. If someone went in the business, they could easily take \$1000 out of the cost. And a \$1200 or \$1500 boat sells a lot faster than a \$2500 boat.
3. Keep interest high and let people share ideas by starting a user group. I already have a spinnaker and sail design I'd be happy to share.

The boat design is beautifully simple. It can be broken down and car-stowed. Being an engineer, I couldn't help notice how expensive many of the components are. I'd guess someone could easily make a cost-reduced version for about half. But I'd recommend buying the drive

system from Sea Cycle. It is quite good. I always modify my bikes to see if I can make them better and this is no exception. But even in its original form, it is quite fun.

I'm always getting compliments, and as with other recumbents, people stop, stare, then smile and want to know how and where to get one. According to the manufacturer, a team has already ridden one from Seattle to Alaska and it easily takes three foot ocean waves.

The Sea Cycle Twin model sells for \$2379. It includes two main frames, two adult seats and two separate drive units. Twin models can be converted into a solo model. Optional child seat or basket may be added.

The Limo model sells for \$2679 It is designed with longer twin main frames to hold up to four passengers. Two boat passengers and to rear passengers. Two carryall baskets are also included. The Sea Cycle drive Unit is \$695 each. □

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# The High Plains Shifter

## or Recumbent Cycling Adventures in Eastern Oregon

by Monte Crippen

Battle Mountain seems like an appropriate name for the first major climb of the trip. Something that starts at Pilot Rock at 1,530 ft. and crests at 4,270 ft. some 24 miles later. It had my full, and undivided, attention for about 3 hour and 35 minutes. And the gross climb is 2,860 ft. which is more than the net—that's what I like about this area, it always gives you more than it advertises.

While climbing the Long Creek Grade my mind wanders back to a year ago when I did some of the same route. On that Memorial Day I had gone from Pilot Rock to Long Creek in one day of 75 miles. Doesn't sound too bad until you add the 5,890 ft. of gain. That extra mile of UP makes for a long and slow trip. While I was tired, I thought the 36 miles the next day would be easy and make up for it. Except it started raining in the middle of the night. Hard.

So in the morning I dressed in all my gear for wet and cold weather, had a solid breakfast and kicked off at 3,550 ft. in a downpour and headed up into that cold, gray, cloud cover. By the time I hit 4,300 ft. I couldn't alibi it anymore. It was snow. By the time I crested at 5,100 ft. there was 1/2" of frozen slush on the front side of Mr. Zipper. When I got down to John Day at 2,500 ft. it had warmed to toasty 45 degrees! There must have been some other time in my life that was more miserable but I couldn't seem to remember it.

But that was yesteryear and today is sunny, it's 70 degrees and the climb is fun. And a hoot going down the other side in the warm, summer air. A most enjoyable day!

So why did I do this trip? It does get away from the cellular phone (since they do not work in most of this area) and other distractions. But, probably to satisfy the organization challenge. Since the distances are large, the hills are killers, and the accommodations meager, one has to be creative in finding a workable route and then disciplined enough to follow through with both the long-hard, and short-easy days. And I find it positive to deal with and listen to the locals in these quiet places away from the Internet, Wall Street Journal, Cable TV, and other hype. By and large they are well intentioned, good at what they do, and willing to do a little extra. Many times they are better than that and on the rare occasion when I do run into a real louse, well, that is no worse than I do at my normal 8-5 job.

As an example, at more than one place I have arrived to find that the principle eatery-drinkery has been shut down and is for sale. So dinner may be a deli sandwich before their 6 PM closing. Then one needs to get enough cheese, bread, juice or whatever to approximate breakfast for the next morning. I rationalize by thinking that a splendidly prepared salmon dinner with good wine and linen table cloth every night would probably spoil me. So I average out with Bud in a bottle, fish sticks and greasy fries in a basket, on some warped kitchen table.

So why is this land what it is? This area was converted, by force of arms, from stone age nomadic gathering to post industrial farming in the late 1800's. A rather painful transition, as some history buffs will tell you—we are still suffering from that today vis-à-vis Indian Treaty Rights. In any case, those events established a network of towns 20-30 miles apart. That meant that a farmer could "go into town for supplies" with his wagon and get back the same day. Tough, but doable. The limits of transportation also meant that any little valley that might support fruit trees crops most years (if it didn't freeze-out, drought-out or bug-out) was a treasure and was worked as such.

But the motor car, telephone, Sears catalogs, and Universal Product Code scanners made all that obsolete. Grazing cows in Long Creek, Fox, or Wagon Tire simply cannot compete with an Iowa feed lot. Period. And the same with fruit orchards, chicken factories, etc. Now, if that rancher in Ukiah were to raise some fancy cow/horse variety for breeding purposes he might well have a real money maker. But niche markets are tough, hard to find, and harder to stay in. It also demands cleverness and capital instead of bullheaded work and perseverance which is more predominant in this culture.

So what remains today are those souls that were lucky/smart enough to have the choice land and they do fine. The rest are barely hanging on by changing bed sheets and heating up burritos and jo-jos. That is why I don't mind paying more than average for the motel non-amenities and leaving a good tip where I eat and drink. It's the only thing between them and welfare. Seriously.

Met a horse and rider coming at me on my side of the road and the horse was very upset about me. I tried to pass quietly, and as far to the left, as I could but an approaching car spoiled that. Since the rider did not want to be thrown, and I didn't want to be kicked, we both did the sensible thing and dismounted. We quieted our respective steeds, at which he had the tougher job, and finally got by. He was happy to know that there were not any bikers behind me so he wouldn't have to go through the experience again. I suspect the horse has seen bikes before but the Zipper fairing has a lot of flash, shimmy, and glint that was strange and frightening.

Somewhere after the lunch stop at Silvie's I heard a disconcerting "ping." Sure enough, a broken spoke on the free wheel side (is there any other kind?). I had previously thought out a solution for this problem. This is Farm Country where there aren't many people but all of them are friendly and all pickups have at least 50 pounds of tools bouncing around in the back end. So, it only takes 10 minutes for the first one to come by, I hail him, he stops, I explain, and he replies:

"Sorry, my wife and I are going into town for dinner tonight and all my tools are in the working pickup back at the ranch. But you go back half a mile and go to that ranch house you can see from here. Yes, right there in that grove of trees. That's my older brother's place, Merin Purdy, his name is on the mail box, and I know he is home and would help you with the tools."

Okay, wheel back on, wobble 1/2 mile on paving, then 1/2 mile on a good dirt track, knock on the door, ask Merin, he's off to the barn, and back in a flash with a 24" Stillson pipe wrench. Makes free wheel removal sooooo much easier! Merin likes to talk so, being the sterling conversationalist that I am, I keep my end going with "Uh-hu," "Really!," and "Tell me more."

"Yeah, homesteaded this place when I was young and had just moved out of the folks' house near Seneca. Got married, then the Depression came but didn't make much difference here. Tough raising cows anyhow. Can't say it got much better in the Forties and after the War but I just kept at it. Wife passed on a few years ago, so I kind of cut back now, just tend the garden. Don't bother chasing the cows around anymore, I lease out and let the kids do that. I still bail some pretty good hay out of the valley. Yup, my kid brother takes me into town now and then for shopping, have some company, and to see the bright lights."

About now am finishing up the field truing of the wheel and my subconscious mind has been doing the arithmetic—this guy can't be a day under 85 and is probably closer to 90 years old! He moves and talks a lot better than many 65 year olds I have seen. Wow! Tough country makes for tough people.

This is an area relatively untouched by what passes for civilization. In many places, if you can just ignore the road and the associated fence/telephone poles, you can see no sign of man, save the occasional remnants of some pioneer structure. Just endless stretches of sagebrush and bunch grass egged on by 6" of moisture a year mostly as winter snow. And lots of volcanic remnants to flavor the distant horizon. Why, sometimes you can almost see Flint Ironwood on his horse, in the dust, in the distance. And you can really see the stars at night—Big, Bright, Clear, and positively enchanting.

A few years ago one of the major computer chip manufacturers was considering expanding their Portland based plant to other locales. One of the towns on their short list was Crane. So the urban, three-piece-suit people came out to talk to and interview the rural, T-shirt-and-jeans people. The following excerpt catches the spirit of the area:

Suit: (seriously) "What is your community's most serious drug

problem?”

T-shirt: (sheepishly) “Some of our high school seniors have been caught with chewing tobacco on the school grounds”

Suit: (after closing gaping mouth) “Count your blessings.”

The main industry in Christmas Valley is Oil-Dri. They have many acres of diatomaceous earth with a little borax in it that they mine and package. It makes for great kitty litter that is advertised as naturally deodorizing. And there is enough to keep every cat in North America scratching for the next 300 years. It ain't glorious, but it is 17 full-time, year around jobs that pay well.

Let me pass on what I had heard from others about washing clothes. I have given it a full field trial and it works. When the time comes, you find the local laundromat and take everything in. We presume that you were clever enough to have only wash-wear, perm-a-press, and colorfast ensembles. Go into their rest room and change to your swim trunks. Now you can put all the clothes, soap, and quarters (Oops, did I forget to say about getting a handful of change first?) into one washer. Same with the dryer. Reverse the changing process and you are now spotless, fluffy, and clean, with a minimum of time, money and effort.

To the East of Christmas Valley one sees a series of huge, disconnected steel fences rising hundreds of feet into the air. Looks a little like backstops for the Jolly Green Giants softball team. Turns out to be a phased array, back scatter radar antenna. The Air Force built it in the late 80's to give early warning and tracking of cruise missiles that might be launched from vessels in the Pacific Ocean. Like many government things, what you don't see is as significant as what you do. The transmitter units are located 200 miles westward on the coast and there is a satellite system that is needed to pass timing information between the two locations. There is also a duplicate unit in Maine that was to cover the Atlantic Ocean.

The Cold War wound down about the time construction was completed. So the Air Force paid off the constructors and played with the hardware enough to see that the equipment worked but never went operational. They then took their classified computers and went away. It is nice to see your taxpayer dollars not at work. But remember, war is an inherently wasteful endeavor.

And now a commercial break from your Friendly Science Professor—“Hello Students. It is a fact that atmospheric pressure decreases as altitude increases, specifically, at one mile up the pressure is about 81% of sea level and the temperature is 11 degrees lower. This means that the partial pressure of oxygen, the factor that drives our metabolic system is 81% of sea level which is where the vast majority of us reside and bike. Therefore, when you are going over this 5,280 ft. pass you will have to breath 23% more air just to maintain your normal horsepower and rate of climb. Lots of Panting. You will also lose 23% more water through exhalation.

Thirsty. The body can partially compensate for this by growing more red blood cells as part of the acclimatization process. But that process takes more than a few days. So you go slower on the hills, pant and drink. So much for the bad news.

“Now the good news. There is also 23% less aerodynamic drag force. Since the majority of energy expended while riding on a level surface is from drag friction that means you will go noticeably faster. Actually about 11% faster for 23% less drag. Because energy loss from drag increases with the square of speed, but that is another lesson. So, pant, drink, go faster on the flats, and really feel good.

“Students, review your notes carefully, because there will be a test on this material next time you bike in the mountains. Class dismissed.” And back to the original story.

Who says government agencies can't cooperate? In a place that is about 120 miles from any town with the usual services is the “North Lake County Courthouse Annex.” About the size of a four car garage. On Monday mornings the Probation & Parole person is there. On Tuesday mornings it's the office of the Building Inspector. All day Wednesdays and Thursdays the Public Health Nurse is there. The Social Security people finish the week on Friday afternoons. In addition, several other agencies have a file drawer in the common cabinet that they use on an appointment basis. Now, if we could just get the Big Boys in Washington, DC to play together that well.

As a result of this trip I can now say that I have bicycled to “nowhere.” There is a brass Bench Mark, “USGS Certified Center of Nowhere—EL 4355 feet.” You can put your hand on it and, with a little stretch, put your other hand on the door knob of the Christmas Valley Post Office, 97641.

Occasionally you may hear or see the B-52's or F-16's making their practice runs at the Oil-Dri Corp, which is the only industrial looking set of



*Battle Mountain Summit, the first of many*

buildings within two days of bike riding. I am fully confident that any air crew that can find their way from their Nevada base to a kitty litter plant in Central Oregon can surely find any missile silo in Siberia.

As I was sitting at the bar over looking the golf course, which was covered with Canadian geese, I saw this 7-pound cat sitting on the center line of the entry road. Very calmly. This juvenile English Sheep Hound (only 50 pounds) trots up to him and stops. He looks at the cat and says, “Come on let's chase, chase, chase, huh, huh, pant, pant.” The cat doesn't puff up or anything, but just sits there and calmly stares at this oversized dog. The dog tries again, “Come on let's chase, chase, chase, huh, huh, pant, pant.” Finally the cat whispers, “Go ahead, Pup, make my day!” The dog blinks, and trots off. After an appropriate time the cat stands up and ambles back to his house. I do believe I saw the Dirty Harry of Catdom in action. Again, tough country breeds tough critters.

Fort Rock was born about 6 million years ago when Mother Nature belched some lava up through what was then a shallow lake. The wind and water erosion since then has been minor. It looks like an excellent military defensive position but apparently there were never any Indian/Calvary battles in recorded history.

In 1937 some archaeologist found 75 sandals woven out of the local sagebrush but without manufacturing labels. The site was covered with Mt. Mazama ash. Radio carbon dating confirms that they are 9,000 years old. The eruption was about 6,000 years ago and blew off the top 4,100 ft. of the mountain. There was about half a cubic mile of rock in the air at one time!!! Since most of us in North Americans date history from Columbus of 1492 (or Lewis and Clark of 1805 if you are a Westerner), it is awesome to contemplate the implications of dating our area from 7,000 BC.

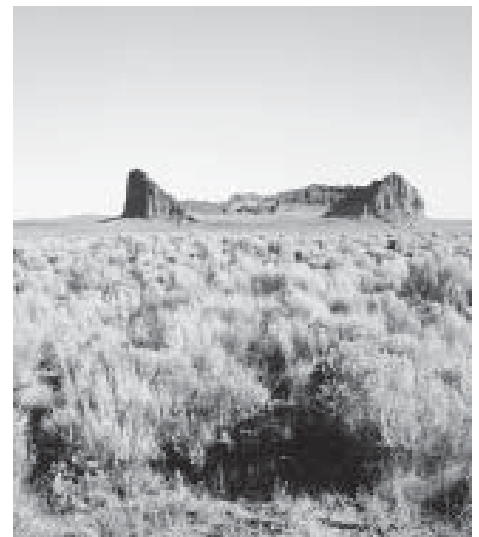
Others think I stretch facts a little. But my theory is that Fort Rock was the original Nike factory until the fatal eruption forming Crater



*The central downtown of Wagontire, Oregon*



*Long Creek Summit*



*Fort Rock*

Lake. Upper management then chose Beaverton, Oregon for their new manufacturing facility, added the "Swoosh," and have done well ever since.

After going downgrade from La Pine to Bend to Redmond to Madras, to Maupin there is one more climb. The peak identifier at Criterion Summit has seen some ill use with its missing labels but it puts names to the many volcanic remnants (some more active than others) that I had seen for the last three days. Indeed, unless you are in the middle of a storm there is hardly a time when you won't see at least some of the peaks. But pictures do not do this arrangement justice—most of the peaks range from 30 to 150 miles distance, all clearly visible, and that is not

apparent in your average snapshot. In one grand sweep one can see Mt. Adams, Mt. Hood, Mt. Jefferson, Mt. Washington, Three Fingered Jack, The Three Sisters, Broken Top plus lots of little crags in between. What a view! And a fitting way to exit the High Plains. □

#### ■ Statistics of Interest

##### Wildlife:

- ✓ 1 Two-point white tail buck in velvet
- ✓ 1 Eagle with a salmon in its talons
- ✓ 1 Coyote (visually) and two packs in the distance heard at 0200 and 0900
- ✓ 1 Cottontail rabbit
- ✓ 1 Cormorant
- ✓ 2 Lizards
- ✓ 2 Heron

- ✓ 11 Assorted deer
- ✓ 12 Big jackrabbits
- ✓ Many assorted small bird varieties
- ✓ A hundred Canadian geese
- ✓ Lots of chipmunks
- ✓ A zillion hawks

##### Biking:

- ✓ 725 miles in 13 riding days plus a rest day
- ✓ 38.3 Minimum miles in a day
- ✓ 74.3 Maximum miles in a day
- ✓ 26,330 ft. (5 miles) of total elevation gain
- ✓ 700 feet of min. elevation gain in a day
- ✓ 3,580 feet of max. elevation gain in a day
- ✓ 340 feet Minimum elevation during trip
- ✓ 5,340 feet Maximum elevation during trip
- ✓ 15 Annotated summits climbed
- ✓ Zero other touring cyclists

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# The Recumbent Bicycle

by Dan Henry

The desire for more and more speed has perhaps fathered more vehicular designs than any other single consideration. And so it has been with this recumbent bicycle. I was seeking greater speed and I found it. But even more exciting, I found undreamed of ease and comfort.

The recumbent bicycle, as such, is not a new idea. Over several generations a number of them have been shown and tried on bike tracks around the world and outstanding performances have been recorded.

Previous versions were either ridden on one's belly in a swimming position, with the pedals at the rear, or on one's back in a reclining position quite like that assumed on a deck chair. On this second type, feet were extended horizontally forward with pedals convenient to this position. Less successful designs utilized some combination of crank and rod instead of a conventional chain drive. In all cases, the prime object was to reduce aerodynamic drag by reducing the square unit of body area passing through the air. Aerodynamic drag is by far the most formidable barrier to attaining greater speeds.

All recumbent designs insofar as I can determine, failed to prevail and never achieved mass production or distribution. Usually just a single unit was hand built.

Much of the failure appears to have derived from the inability of the cyclist to sustain himself for extended periods on the bike because of physical distress. One or a number of physiological factors placed them in disfavor. Additionally, it is my belief that they also failed for a variety of mechanical and economic factors.

The recumbent shown here was conceived after a careful study of photographs and drawings of a goodly number of previous designs. My goal was to build a speedy bicycle that would be comfortable and a pleasure to ride.

This bicycle is *fast* and has the *drive* and float of a tandem. A real speedster and fun machine. Fun for the person on the bike and a fascinating and amusing occasion for most spectators. Unlike any other bike that I have ridden, I find an *aura*, an invisible envelope of contagious excitement seems to follow it down every road upon which I ride. Faces light up with childish delight as I pass and this adds immeasurably to the pleasure of the day's outing. The phenomena is quite unlike simple ridicule to which cyclists have become accustomed.

## Technical Details

Except for the frame, which is silver brazed of ultra light CroMo aircraft tubing, it is built from conventional bicycle parts, or other equipment likely

to be found around the house or in a neighborhood hardware store. Many parts have, however, been modified by heating, bending, cutting, etc. Not a single part was machined especially for this bicycle.

The most novel feature of all is the remote steering arrangement. A false steering head supports the handlebar and steering is accomplished by a chain drive from this false head to the true steering head at the front.

## Seat of Furniture Webbing

The seat is constructed of old handlebars and furniture webbing very much like the webbing of a folding chair. Sitting comfort is comparable to that of a webbed chair. The seat in its present version, shown here, is the fourth type that was tried. The three that were discarded were equal to or better than the ordinary standards of bicycle comfort but fell short of the degree of comfort that I had hoped to attain.

## Spring Suspension

Both wheels are spring suspended for the elimination of road shock. This suspension is similar to the one employed on a more conventional bicycle previously described in *American Bicycling* 1967.

The wheelbase is longer than a tandem and about twice that of a conventional bicycle. This extreme of wheelbase gives exceptional comfort. The rider being suspended well within this long wheelbase, results in his receiving but a fraction of the amplitude of shock received by the wheel.

Hub brakes are employed because of the spring wheels. The conventional rim brakes are not feasible with this arrangement.

Normal riding position is relaxed and natural imposing no discomfort. In several of the photographs it is apparent that the riding position assumed greatly reduced the aerodynamic drag factor. On the recumbent, substantially the biggest reduction in drag is derived by both the arms and the legs entering the air stream endwise rather than full or partially broadside, as is the case on a conventional bicycle. The torso is about equally situated in either case.

## Increase In Pedal Thrust

One's thrust upon the pedal is considerably greater than can be achieved on a regular bicycle. It is quite like sitting upon the floor with your back against the wall—in this braced position a force much greater than one's weight can be imposed upon the pedals. On the conventional bike, your weight approximates the maximum thrust.

**Very High Gears**

Because the recumbent rolls at a higher speed with comparable effort, exceptionally high gear ratios are employed. It has a five speed set of conventional derailleur gears utilizing a chain wheel with 60 teeth. Several gear ratio choices with over 100 are available. The gear shifting lever is at the center of the handlebar. Eight ounce rims, silk tires aluminum parts wherever possible, and egg shell thin tubing are many of the refinements that make the bike a very lively and responsive machine. The gross weight is within a few pounds of the conventional racing bike.

“So long for now I’ll wait for you at the coffee shop.”

This article was originally published in American Cycling Magazine 1968 Article by Dan Henry. Photos by Victor Hirschfield. Scanned by Mark Colliton from photocopies of the original magazine article



Dan Henry and wedgie rider chat. Note dual suspension and remote above-seat steering—photo circa 1968



Dan’s recumbent seat consisted of an inverted drop bar, homebuilt seat back with mesh from a lawn chair

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# Recumbent Anthology

## Gardner Martin of Easy Racers, Inc.

by Kelvin Clark

*This interview takes place late evening, poolside, at the Flamingo Hilton Hotel, Las Vegas, Nevada in September 1999. Bob Bryant & Ron Schmid are lurking in the shadows and I'm visiting with Gardner Martin. — Kelvin*

**Kelvin:** Gardner, tells us about the bike that you have here tonight.

**Gardner:** Well, I needed a run around bike when I got to Las Vegas. I looked at what was available and said, "Hell, I'll take the old Dead Man's bike." Dead Man's bike was the first Gold Rush. I'll tell you the story about Dead Man's bike. In about 1983, a dentist in Ohio called me up and wanted to buy a Tour Easy like he'd seen on TV. So I sold him the Tour Easy and probably three years later he called up. At that time I had very close contact with most of my customers because I wasn't making a lot of bikes per year. He said, "Gardner, my wife just died and I am just really distraught and I don't know what to do with myself." He had been a lifelong bicyclist, belonged to one of the biggest clubs in Ohio and bicycling was the only thing he had left. "Gardner, is there something special you could do for me, you know, a really special recumbent?" "Well, Doc, you know we built this here aluminum bike to race with the Streamline bodywork and I could probably make you one like it—but it's going to cost you!" "Well, I don't care what it cost." So I built him the first "for sale" aluminum bike, which at that time we didn't even call the Gold Rush because we hadn't named our speed bike the Gold Rush yet. The actual speed bike that won the DuPont prize had an identical chassis to this bike. Maybe three years later I got a call, hadn't heard from him in a good while, except that he one time called me and told me he was going to some big bike races, but boy, things weren't going well for him. He'd wrecked his truck—fallen asleep once and I think he just couldn't get his head back together after his wife died. He still had the club, so one day he was out riding with the club members, and they were probably twenty, thirty miles into the ride and he had a minor heart attack. They called 911 and got an ambulance out there and took him back. Two weeks later he went out by himself and they found him dead along the side of the road with his feet still in the toe clips. What I think happened was that he just decided he wanted to go join his wife and he went out and pedaled hard 'til his old heart blew up. It's happened in lots of cases where the one mate dies and the other one is just, you know, it just kills their spirit, they just don't want to live anymore. So that's why we called it the Dead Man's bike. So I bought it back and I offered it to my wife. Said, "This'll be your bike." She said, "Yeah, yeah I can kind of dig that." But there was something kind of hesitant about it, you know, later on she just told me that she didn't want to ride a dead man's bike. It was her bike for quite a few years but she never rode it. I tried to use it around the shop but it wasn't quite late model enough to use as a demonstrator. All of the equipment is fairly "old tack."

**Kelvin:** Gardner then phases into a BioPace moment...

**Gardner:** It's got Frank Berto's half step plus granny gearing and BioPace chainrings on it. Some people think the BioPace doesn't work. I think the BioPace can be a help on hills on recumbents. Maybe it doesn't work so well on an upright bike, it will induce a pogo effect because you are pedaling in the same plane as the up and down suspension of the bike whether it's natural suspension or fully articulated. On a recumbent bike, you're pedaling horizontally and you're opposed to any up and down motion, you don't get what's been termed "biopacing." Our office manager (Luke) actually still has one old Tour Easy that he rides regularly that has the BioPace. We gave him a brand new Tour Easy a couple of years ago and he rides them both probably almost equally. He thinks the BioPace is a little easier to climb the steep hills when he is down in the extreme chain rings, so it just goes to show that sometimes a fad can



*Kelvin and his super deluxe MC<sup>2</sup> SWB*

be successful and it can also be killed by opinion that may or may not be right for everything.

**Kelvin:** The Gold Rush went into production in '86 then?

**Gardner:** We won the DuPont prize in '86 and we decided in '87 to make it a real production item although we had built a few for customers that wanted something lighter than the Tour Easy or our original Easy Racer. We incorporated in 1979 to build recumbent bicycles. The original Easy Racer was all hand brazed and mitered. It looks like a Tour Easy but more complicated joints. We had nicely tapered chain stays, used Campagnolo drop outs, silver soldering and hand brazing. We built somewhere in the neighborhood of 100 to 120 of the original hand built Easy Racer models before we brought out the Tour Easy. The Tour Easy was launched in 1982. We had been racing for four years at the International Human Powered Vehicle Championships.

I'm kind of taking you back further and further with what I would call the modern revolution in recumbency. It really all started in 1974 when I walked into a liquor store looking for my favorite copy of Big Bike Motorcycle Magazine. At that time I was building custom parts for motorcycles, making gas tanks and fairings. I was interested in both the chopper scene and the road racing scene. I probably owned what were absolutely the best and fastest motorcycles that were ever built up through the early 70's. I owned a Harley Davidson and a super custom, super fast Norton at that time. I previously owned several brand new racing Triumphs and I owned the absolute ultimate motorcycle of all time—the Vincent Black Shadow. I was really into the motorcycles, but there in the liquor store magazine rack beside my favorite copy of Big Bike was a bicycling magazine with a streamline bicycle on the cover and the title of the article was, "Are Streamline Bicycles in Your Future?", by Dr. Chester Kyle. I never bought a bicycling magazine before, I was into hot rods, dragsters and fast "motorcycles." So I picked it up. The gist of the article was, Chester Kyle, a professor at Long Beach State, with the help of his students in an engineering class, built a streamline fairing for a conventional upright racing bicycle. It was a Teledyne type titanium bicycle and he got a current Olympic champion, Ron Scarren, to ride this thing. They went out and broke a bunch of speed records. Broke all the 200 meter, 500 meter, 1000 meter, 1 mile speed records that had been set on conventional bikes, which by this time had surpassed the earlier recumbent streamliner records. So they went 44 mph, which was maybe two to three miles and hour faster than the current sprint record at the time. It sounded exciting. He proposed the idea, "Let's have anything goes speed contest race in the spring of 1975." I thought, "Wow, man—this sounds neat." I started drawing some pictures. I took some pictures of a regular road racing bicycle in the magazine and rotated it 90 degrees until I had him lying on his belly and I said, "you know, I can get him about half as tall or half the frontal area if I put him flat on his belly. I knew what streamlining did at high speeds. The air resistance is 95 percent of your energy to overcome it—its speed, or more. So I said, "If I can build something half as high with half the frontal area, I ought to be able to go twice as fast." Okay, maybe not twice as fast, but certainly exceed the speed record. So in the spring of '75 thirteen crazy guys in their thirteen weird machines showed up at a drag strip down in Irwindale, California—Irwindale Raceway. The old professor won because nobody else quite had their vehicles working right, so Ron Scarren upped his record to maybe 45 mph and one other prone machine, Dr. Alan Abbott, got second place. He was really fast. And he just had partial streamlining but flat on his belly.

My bike had the distinction of having the first high speed crash. We had three different riders, one of them a real bicyclist but not a racer, and the



*EZ Man Gardner Martin and his TiRush*

other two just buddies of mine. They all wanted to ride it and we only got to make three runs. Each guy was trying to give it his all. This one guy who was a bicycle rider got it up to 34 mph and crashed in the speed traps. Although he was so low to the ground he didn't come close to breaking anything or even straining anything. Man, it took more skin off of him skidding down the road in his scanty shorts and T-shirt, I mean he looked like hamburger. We took him to the airport and flew him out of there, never heard from him again. We call that original belly bike "Jaws" because it ate a lot of riders including me before we found Fast Freddie. The thing was evil handling. You get it up to about 30 mph and you're really pushing hard to get more speed and it would start shaking in the front end so I started talking to the people that should maybe know. Dr. Alan Abbott, at that time held the speed record behind the car at like around 150 mph, it could have been 142 or 152, I can't even remember exactly, but really fast and Dr. Abbott had a pretty good grasp on steering geometry. I met a man Glen Brown, an aerodynamicist and also into motorcycles, he gave me some real good pointers. He'd been doing some experiments in steering geometry with way laid back head tubes and laying flat on your back. Talk about low rider, this thing was as low as any of the low riders you've seen. His streamlining was kind of hacked together and it ended up he didn't even race it. But he went pretty fast very stably. My belly bike had the rear wheel between your legs and the pedals behind the rear wheel, so when you pedaled hard it caused an oscillation of pivoting the bike on the rear wheel so that

you get a shake in the front wheel—left or right, with every pedal stroke when you're pushing really hard, and you couldn't keep it straight. It took me nearly three years before we figured out what was wrong and we had to move the wheel an additional thirty inches rear. We got it behind the bottom bracket to get the rider totally between the wheels.

**Kelvin:** The leverage behind the back axle was causing the...

**Gardner:** Yeah, you don't want that. Same thing happens a little bit with recumbents that have the pedaling in front of the front wheel. Early on, I was getting into stability and finding out by trial and error and talking to other guys who were really on the way to finding out what made a good stable vehicle. The next year I still wanted to race it, but I was trying to say—it wasn't comfortable. I made a couple of quick rough attempts at building laid back recumbent bicycles that weren't very good. One day my buddy and I were riding down the street on a tandem bicycle, a cheap ladies model frame in the rear with the sloping top tube from front to rear. We're going down the street and all of a sudden it was like a light bulb went off in my head. I said, "Rick, pick your feet up." He was captaining up front. He picked his feet up and I slid down on the lower angle top tube just right at the rear seat tube, sat on the top tube and put my feet on his pedals and we never stopped rolling. It didn't take but three seconds to do this, I started pedaling and he was steering. I said, "Wow man, we got an instant recumbent here." I says, "Rick turn this thing back around

and get back to the house. We're going to build ourselves a neat recumbent." So we took it back to the house, sawed off the front seat tube, so now we had a straight line from the head tube aiming low down angling back to the rear drop outs. I took some rubber inner tubes and wrapped them around the rear of the frame, the top tube, and the rear seat tube for a quicky seat back. I put a set of Stingray high rise handle bars on it and we had us an instant supine recumbent bicycle that just naturally handled good. It was easy to ride. Wow! Then we started modifying over the next few months, cutting up old bicycle frames and stuff like that until we improved it to the point where, "Boy, it's really handling good, is very comfortable and pretty fast too." Although we didn't think it would have the speed potential of the belly bike, she still sat up fairly high.

The next year, probably the third year of the speed racing, we started streamlining that bike also. The fourth year of the speed bike races, 1978, I decided I should have won it already. I needed to get a powerful rider because all the other guys were powerful riders. The next year I met a guy named Paul Van Valkenburg, a famous auto journalist and race car builder/ designer—has written books on race car engineering and many other auto subjects—airplanes too. He built a four wheeled flat on your belly hand and foot crank streamliner, maybe you don't even call it a bicycle, but it knocked the record up some more. Abbott had gone 47 mph and this guy goes 48.9 mph. So he sets a new record. That year, we got Fast Freddie and another really strong sprinter to ride our two bikes, the belly bike and the basic Easy Racer that we now produce. We put a streamline body on it. Fast Freddie only wanted to ride the belly bike because he wanted to go for the pure speed. Fast Freddie got second place that year behind the four wheel vehicle. He had a really bad cold that day. The guy on our street type bike, the Easy Racer, won the first ever road race, so it showed some real practicality, got second place in the hour behind the way laid back recumbent and Fast Freddie got second place. Now we're really cookin'. The next year Fast Freddie won the top speed. He was the first to crack 50 mph for a single bicycle rider unaided. That made us feel really good, but that same year a two person tricycle went 55 mph and won the avid prize, which was \$2500, a fair amount of money back then. That would have been 1979, I guess. Tim Brummer came out of the same mold as I did, from the speed championships, although he didn't start quite as early. He started his first races in '78. It was a college outfit and Tim was one of the main engineers on it. The next year we went back and we were still looking to go pretty good, thought maybe we'd win again and the Vector Tricycles came along. Aerospace Engineering team built these awesome tricycles that are the absolute forerunner of all the modern tadpole tricycles. They had extremely well engineered body work, nobody's done any better since on a tricycle. Nobody's gone any faster. They pulled a couple of these things out of their trailer and they're black and bad looking, they're just mean—space age looking, and they put the word out, even told us, "Fred Markham—we're out here to kick your butt, you don't stand a chance." We didn't. They had the six fastest

guys on the national sprint team and a couple of national pursuit riders. Not only did they win the single rider competition, they had a back-to-back double tricycle that was just awesomely fast. The single vehicle went 56 mph, the two-man tandem went 62 mph. They were just screaming. Lightning just barely cracked 60 mph. They just dominated with the tricycle. So now everyone wants to go to tricycles, here's the new wave. Everyone can see it, if I build a tricycle, I'll make it faster. There have been a lot of copies done, lots and lots. None of them has ever done what the original Vector team did. That was a combination of superb engineering and catching the right racing riders, three wheels, anyone could ride them, and the right race track. It was the Ontario Motor Speedway, a perfect speedway for us to race on. You could get up on the banking coming out of the last turn, a two and a half mile long track and get a little downhill run up at the traps by coming off the bank. They tore that track down the next year and put up a housing development, that was the end of Ontario.

**Kelvin:** For a time you sold Easy Racer bicycles and you sold plans simultaneously. What was the inspiration for that?

**Gardner:** The inspiration for selling the plans was simply a way of generating a little bit of revenue, we had gotten a lot of attention of two or three different TV shows, several magazine articles, and a recumbent being so high priced took us 80 hours to make one Easy Racer by hand. We didn't really have enough orders to continually finance the company on just the bicycles. So we said, "Hey, we designed this thing by cutting up old bicycles in the first place. They look almost like production models." We found a simple way that if you cut up a bicycle and put some of the parts together backwards, get some extension tubes—Viola! You got a really nice recumbent. The plans ended up being tremendously successful and we sold thousands of sets of plans. The first five years we would sell ten to fifty sets of plans a week. Initially at \$20, eventually we took the price up to \$40 and we sold parts, you know, bottom extension tubes. We got hundreds and hundreds of photographs back from all over the country and all over the world of people who had built their own version of our bike that looked just like our bike, sometimes not exactly like our bike. A few people would even modify it to the extent of putting, God forbid, underseat handlebars on an Easy Racer. But it was fun for them and they were so proud of it. We had the pictures up on what we called our Wall of Fame. All these people—Australia, Batswana, a picture of a black guy in the middle of Africa riding a one-speed Easy Racer—you know, that's a turn-on to me. It's like being able to give something to the world and give people pleasure doing it, pleasure riding it, and pleasure in transportation. If I couldn't make the bigger dollars selling the bike at least I could make a few dollars off of each person to help me finance the company, and they were glad to pay me. Everyone that finished the bike thought the plans were a bargain. We finally decided that the hours spent in the selling of the plans and servicing of the plans builder with parts and advice was less profitable than making bikes. So we decided for the good of the company, we had to quit selling the plans. There is a time for everything. The time for the plans went far enough, we helped a lot of people out.

**Kelvin:** You're a one-design recumbent company. What is your thinking about that, a strong opinion? Tell us a little bit about it.

**Gardner:** There is room in this world for many, many, many different kinds of bicycles. At this time, I'm not big enough to build all the different kinds. It's not necessarily that I don't like other designs. I've got a whole lot of designs in my head, even a few that I think could be some competition for our current line of bikes, but at this time I don't need competition for our current line of bikes. Our line of bikes are classics. It's like a Shelby Cobra—an eternal car. There's at least a dozen active manufacturers of Shelby Cobras now. It's the most sought after car in the world. It's a great design. The Tour Easy/Gold Rush design is just a great recumbent design. It doesn't mean there aren't a lot of other great designs. Not to say that someday I won't build a short wheelbase bike.

**Kelvin:** Well, it's stood the test of time well. The titanium version of the design—how did that come forth?

**Gardner:** Like so many people deep into the bicycle mystique, just the sound of titanium rolls off the tongue so nice. The mystique of the magic material, I wanted to use it. I knew it had a lot of good qualities, so I asked our custom frame builder, Steve Delaire. He's tried a lot of different things. Up to that time he had built all our aluminum Gold Rush Replicas. I hired Steve on all of the early production aluminum bikes, well most of them. The very early production ones we did in-house and then we hired

him to wrap it up into a real production thing. So Steve, being an ace builder, I said, "Steve, let's do some titanium bikes. It will be good for both of us." Steve liked the idea so he spent a tremendous amount of time. It took a whole lot longer to get into the project just for the learning process of how to safely work titanium. It's a tricky material to work right. The welding has to be done extremely carefully. It takes three times as long to properly weld a titanium frame. He built us the first run of the titanium bikes. Word got out, we had brief mention in the RCN that Easy Racer is doing a titanium bike and people wanted them. They wanted that "ti" bike. The titanium bike is truly faster than an aluminum or steel bike. We did some very closely controlled tests with a guy that rides 12,000 miles a year, does lots of double centuries, has a very steady heart beat, runs with a heart rate monitor. On a typical country loop where the road is a little rough and a little hilly, every single time with an exact same bike, same wheels, same tires, same seat he would be five percent faster average on the titanium bike. Both bikes weighed exactly the same within a few ounces. It proved in my mind that the titanium is definitely faster. We think titanium, especially when you're working it, bumps and turns, going hard up hill, it gives you back more energy. It's one of the best springs in the world. So you're saving energy and using energy more efficiently with the titanium. Is it worth it? Well, it's worth it to those who want just that little extra. It's not worth it to the average cruiser rider, a Tour Easy is just fine. An extra two and a half or three pounds doesn't matter, that's a big difference for a performance cyclist. It's way more than just a few pounds. The aluminum is a big step up and it's more of a step up than it should be if you just looked at the numbers, and the titanium is a bigger step up than it should be if you just looked at the numbers. You know, why does the aluminum Gold Rush perform a lot better than a steel Tour Easy? To some people it's not much difference but to others ...

**Kelvin:** What's the ratio between the steel and the aluminum one?

**Gardner:** Yeah, yeah, that's about a five percent difference.

**Kelvin:** Talk about Freedom California. What's the significance of Freedom California and Freedom Boulevard and all that kind of stuff.

**Gardner:** Well, serendipity, maybe. Sometimes people get set into situations not by their choice but by chance or luck or maybe "The Force!" My wife and I left Florida in late 1969. She just graduated from college in Florida and I had been going to school there studying art and decided we needed to get away from Florida for a lot of reasons. We wanted to move to California for the innovative climate. We ran out of money when we got to the Santa Cruz area. I had to sell my Vincent Black Shadow to buy something to eat—it broke my heart. But we settled in. I got another motorcycle and some things and we started making something of ourselves. We moved to the little town of Watsonville, put an ad in the paper, "Wanted: an old barn to rent for a workshop." An old gentleman rancher had some apple ranches there. On his ranch he had these long chicken coops made out of old barn wood. He put them up in the 1920's and he rented us a pretty big old barn with low ceiling chicken coop for \$50 a month, I believe it was for half of the building. That was probably in '77 or '78. It had no electricity, no toilet, half the floors had turned back into dirt. My wife and I hauled out probably forty wheelbarrow loads of manure, but the rent was cheap. We got electricity put in a little bit at a time and kept the initial working area, probably four to five hundred square feet and we kept expanding pouring new concrete floors, rebuilding the building. Making it nicer, put sheet rock on all of the inside, totally wired the building, everything at our own expense. The old farmer said, "I'll give you good rent, but you have to pay for any improvements you want." So, it was good for us, and good for him, too, I suppose. Eventually we rented the whole of the building and then more chicken coop outbuildings for storage. We had a fair amount of room but a lot of different little buildings. It was very inconvenient. After nineteen years in the chicken coop, business starting getting good. We started having to hire quite a few people. With up to about a dozen or more people in the chicken coop and it was just too many people bumping elbows. Last year we rented a nice 10,000 square foot building in the little town of Freedom. The chicken coop was on Freedom Blvd. The new place is actually in the town of Freedom on Airport Blvd. If you wanted to manufacture a motorcycle or maybe a bicycle, there could not be a better name for the town than Freedom, California, USA. Handbuilt in America. So we like the place. Our new plant is right on the airport and I'm an aviation enthusiast. I am a pilot and I build experimental type aircraft designs. Hope to someday get into building some home-built kit airplanes in Freedom, California.

**Kelvin:** Tell us about the off time Gardner stuff. What do you do to rejuvenate yourself?

**Gardner:** Other than the day to day grind I probably test ride a bicycle every single day. I don't do many long rides anymore. The longest ride I've done lately is here in Las Vegas running all over this town. To get away from my regular business I've been interested in aviation ever since Burt Rutan designed that first wild airplane with the wing on the rear and the tail on the front. Looks kind of like a starship. First saw a magazine, a Popular Mechanics type magazine in Spanish in the local library. Showed pictures of it, and that was twenty-five years ago. I said, "That's the coolest looking airplane I ever saw—I want to build airplanes, too." So I started tinkering with very small models just to see how the concept would look and glide. I had to put it off for many years doing any further development, but probably six or eight years ago I got serious about doing some of these designs and although they are not totally radical from anything that has ever been built before, there's no airplanes currently flying that are quite like what I'm trying to do. Some of the parts look like they're backwards on my airplanes. They're quarter-scale prototypes, and I don't even like to call them models because they are actually prototype flying machines. The next one I'm going to build is going to be probably the final prototype before we build a full scale airplane. The airplane will be the size of a small aerobatic biplane. It'll be pretty fast for a sport airplane, but nothing in speed like a jet airplane. Cruising speed could be 175 mph which is plenty fast if you want to go somewhere. It'll be designed to be a fun airplane that you could do full aerobatics in if you wanted or if you wanted to fly from San Francisco to Los Angeles in less than two hours you could do that too. There are quite a few airplanes on the market that are capable of doing that kind of thing, but none of them would quite combine all the different things I have in mind in the same package. My seating is going to be different. I'm going to have a staggered side by side with one guy sitting about eighteen inches behind the other guy so one guy's legs would be up beside the chest of the other guy. They can both have elbow room, but we can keep a relatively narrow profile for better aerodynamics. That's just a dream in my life. Somebody asked me the other day, "Gardner, what's your dream?" I said, "Man, I'm living it." But I do have more dreams to go. I've got one of my machines in the Smithsonian in a very prominent display in the Museum of American History in the Smithsonian in Washington, D.C. I have had literally hundreds of people tell me proudly they've seen that Gold Rush in the Smithsonian museum. A man who I admire as much as any man living in this world is Dr. Paul MacCreedy, he's got about four different machines in the Smithsonian. The engineer of the century to me. If I could just get one of my machines in the Air and Space Museum I would really die happy! So that's almost my final goal.

**Kelvin:** Tell us about the 1957 Studebaker Golden Hawk.

**Gardner:** Well, I've got kind of a rare old classic muscle car. A really jazzed up version of what was considered back in the mid 50's a very sexy designed car. The mid 50's car started getting tailfins, so they took this really sleek car and put some gaudy tailfins on it, lots of chrome, kind of made it look like the Batmobile. I'd always admired this particular type of Studebaker. It had a really hot supercharged V-8 motor in it, a 160 mph speedometer, and that was fast back in the 50's. I found one in the neighboring town that had been sitting in an old guy's backyard for twenty-five years. Just kind of rusting away and sinking down in the dirt. The old guy bought it brand new, drove it only 58,000 miles, had a little problem with the supercharger and took it apart. The mechanic skipped town with the supercharger and the car sat. So I picked the car up for \$2500. A lot for a junkie old rusty car with everything needing to be fixed on it. The motor was frozen up, the transmission was frozen, the windows were all frozen, the radiator was rotted out, I had to go through the whole car. It ate up a lot of time and sometimes I kick myself for all the time I put into it. When I was a kid, I wanted that model year. It was painted white, people saw it and said, "Gee, man, that thing looks like the Batmobile. That's a wild looking car." So I said, "I'm going to paint it black and really do it up Batmobile style." Extra chrome, extra trim. I even put the Batman logo on the hubcaps. My wife got me a Batman outfit for our thirtieth anniversary and we go out to dinner. You couldn't drive a new Ferrari or a Viper and get as much attention as that Batmobile gets.

I love the old car and the history of old cars. Some cars are a very important piece of Americana. The year 1957 ("the year the stars came from heaven" is what my mom said to me) is my favorite year. I just got the 50th anniversary issue of Motor Trend magazine. They did a study on

what are the most favorite cars of the readers and what are the most favorite years. 1957 is the number one year. Someday, I'd like to open up a car museum called '57 Heaven. Most of the cars I've ever owned in my life were never newer than twenty years old. I got a brand new Ford van for the company. So '57 is my favorite year. As a kid growing up, all the cars I ever had were all '57 for some strange reason.

When I was 17 years old I had the world's fastest Jeep. It had a big block Corvette motor with racing Hilveron fuel injection, a very lightweight two-wheel drive Jeep. It looked like an army jeep but no front wheel drive. It did 0 - 130 mph in ten seconds. When I would take off the left front wheel would never touch the ground till I was over 100 mph. I was running on three wheels. I was actually doing what they call appearance drag racing. Not making a lot of money but back east, getting match races against other neat looking cars. I'd get matched up against a little Volkswagen bug that had a hot V-8 Corvette in the back seat. We had our Jeep painted up and had a machine gun on the roll bar, we called it the Rat Patrol. So cars have been a big part of my life.

**Kelvin:** Let's go back to bikes for just a second. Tell us about seat design. You've had one corporate design for many, many years and then you've moved into the Kool Back choice.

**Gardner:** Well the Kool Back seat kind of goes to the American's desire for luxury and even ultimate luxury. You would think that in a bicycle, ultimate luxury and performance would be contradictory, but they're not, really. We are sitting in a chaise lounge right now by a beautiful pool and the seat in this chaise lounge isn't as good as most recumbent mesh sling type seats. I don't like the looks of a lawn chair on a bicycle, I couldn't imagine that any Harley Davidson rider in this whole country would put a lawn chair on his Harley. He'd be laughed out of the club. But, the people that are buying recumbents are buying them for comfort. Even though my aesthetic eye said, "That thing be big time ugly," I had to accept the fact that for ultimate comfort I had to put a mesh back seat after many years of making a padded hard back seat onto the bike, as an option. And it's quite popular. The mesh back seat is desired three to one over the padded seat. But performance-type riders, an awful lot of them, still prefer the rigid padded back. They feel they can really push into it harder and can get more aggressive on the bike. So, I'll get one guy that comes into the shop, "Well, I really like the way this cool mesh seat really surrounds my back and holds me in place." And you get a racy kind of guy, "Man, I like this Cobra seat, I can move around on it." Different strokes for different folks.

**Kelvin:** Any comments about the posture on your bikes and "recumbent butt?"

**Gardner:** The most important thing in recumbent acceptance is going to be user friendliness. The sit in the automobile position, how people drive cars. They've been doing it for 100 years now and all cars have seats that sit in a very similar position. You fly an airplane and you sit in that very same position. You ride a Harley Davidson cruiser, you sit in that same position. That is the most natural sitting position for control, visibility and also makes it very easy to pedal. For user friendliness and ease of mechanical integration through the pedaling system, higher pedaling is just not as easy to get used to and is harder on the anatomy. It's harder on the feet, on the ankles, and harder on the thighs. The only disadvantage of the what we might call the sit up bicycle, rather than way laid back or lay down type is that it does put a lot of weight right on the butt muscles. So the disadvantage of the car type seating position is it hurts some people's butts a whole lot more than others. I've found that a lot of people need some individual help with the shape of the butt. There is room in this world for bikes that lean back and get weight off your butt. Also, most Americans are a little overweight. The more belly you've got and the higher you've got to lift your legs, the harder it is to pedal. A circus clown can ride a bicycle standing on his head pedaling with his hands, but if you want to sell recumbent bicycles and make them very accessible and natural feeling, the style of the BikeE, the Easy Racer, the RANS Stratus, for a lot of reasons just make a lot of people feel more at home.

Now you can learn to ride a more radical bicycle. I've got one that you crank with your hands and your feet and I can go like hell on it. And it's definitely a superior bicycle than just pedaling with your feet. How many people want to learn how to pedal with all four? Not many, but it's a better bicycle. We've got one old man, I use old man of someone that is sixty-three years old. But a sixty-three year old man that's got an Easy Racer with hand and foot cranks, you may have seen it at some of the HPV things

out here. Well he got into this thing so big, two years ago when I saw him he told me had put 22,000 miles in one year on that bike. Toured all over Europe pulling a trailer. Most twenty year old guys can't keep up with him when he's pulling a trailer on his hand and foot crank Easy Racer. You develop your upper body to the point where you're just adding more and more. It's like cross-country skiers are the most aerobically fit of all athletes because they use their whole body. On hills you can generate thirty percent more power. You don't even have to shift down to a granny gear. The world is not ready for a hand cranked bike yet. There are a lot of recumbents yet to come.

**Kelvin:** Wrapping up.....

**Gardner:** You know, it may be that a design's time just hasn't come sometimes. The Velocar from France, their timing was bad, not their fault necessarily. World War II, things like that, and the International Cyclist Union banning their vehicle for speed. Who knows for sure, but the

modern impetus was when Chester Kyle started the first speed races, that's where all of the modern recumbents came from. The tadpole tricycle, the short wheel base recumbent with the pedals in front of the front wheel. Tim Brummer was one of the first to do that, not the absolute first. Nobody was willing to buy them until the speed race thing happened. So it's kind of a funny thing. It all came out of the original speed championships which have been largely forgotten by a lot of the people that are now into the recumbent thing. To me racing is also very historical. I watch all forms of automobile racing, Grand Prix racing, Indy car racing, NASCAR racing. I love the Tour de France, I love racing on bicycles. I've sat at the velodrome maybe one hundred or more times watching Fast Freddie race on his bicycle. In a bicycle, you've got to be damn practical, too. There is not a bicycle in the world more practical than a Tour Easy or a Gold Rush.

**Kelvin:** Thank you for your time. □

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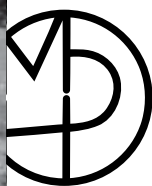
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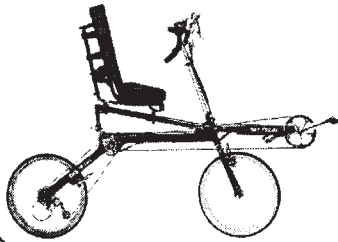
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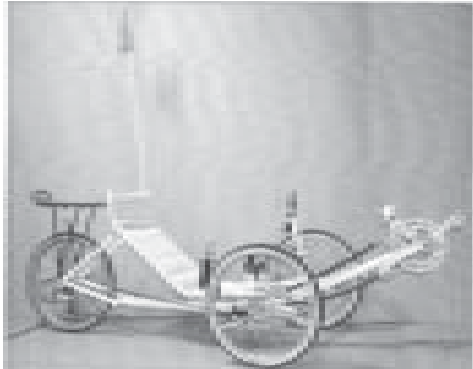
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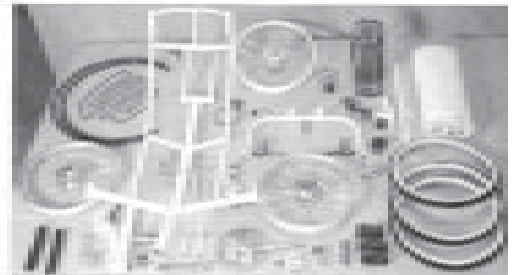
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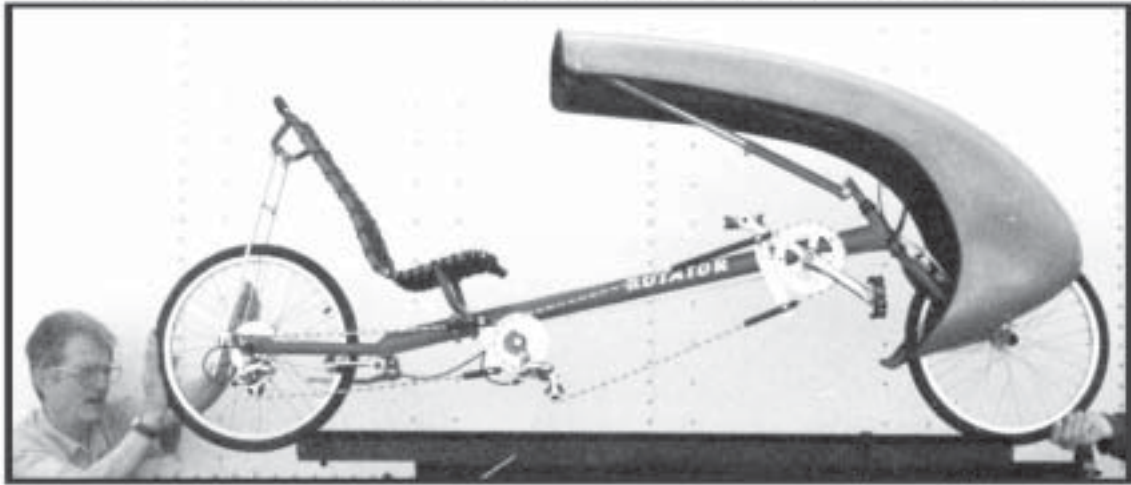
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# Origins of mystery craft finally revealed!



*Photo courtesy of JPK Wisconsin*

In response to what some are calling the "Hales Corners incident" unnamed government sources have finally revealed that the mysterious sightings of strange and unusual craft observed in various locations around the Hales Corners region are not a hoax. Amid speculation of a possible high-level government cover-up and rumors that officials have been turning a blind eye on these sightings for years, the facts have now been laid bare! In a recent press conference called by noted SETI researcher and astro-physicist Dr. Harold Wozniak, he dispelled any notions that these bizarre vehicles were extra-terrestrial in origin and produced dramatic evidence (see photo) to support his position. "Although these things may be extra-terrestrial in terms of comfort," says Wozniak, "you can find them at down-to-earth prices at Wheel & Sprocket, at least that's where I got this one."

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