

RECUMBENT CYCLIST

A Journal for Human Power Enthusiasts

FALL 1990--VOL. 1 NO. 3

Published, Edited and Produced by Robert J. Bryant
16621-123rd Ave. S.E., Renton WA 98058-USA

The Revolutionary DH Recumbent Bike



THE DH5000 RECUMBENT

You wouldn't think that Houston Texas was a hot-bed for recumbent bicycle activity but it is! Houston Texas is where David Heckart of University Cyclery builds and sell the DH Recumbents. I found out what David was up to in a Recumbent Buyers Guide written by Harold Wooster, who writes for the League of American Wheelman's Bicycle USA (a great mag.--ed.). Harold sent me an advance copy last Spring, and when I saw the DH

there on the page, I immediately gave University Cyclery a call.

University Cyclery is also a Schwinn Dealer, a very progressive Schwinn Dealer it would seem. David builds the DH right there in the bike shop. The inspiration for this recumbent came from Davids interest in a comfortable and maneuverable recumbent bicycle. After studying both the Tour Easy and Lightning P-38, He decided to design his own. The first design was similar to the P-38, with

a high bottom bracket, but the medium wheelbase did not meet with all of his riding needs. The high bottom bracket design tended to cause poor circulation in his legs. The next step was to attempt to shorten the LWB configuration. David wanted a bike that was shorter than the typical 70" long wheelbase but retaining the front wheel in front of the pedals design. The final result is very nice. The DH has a wheelbase of 60" (or 56" for riders under 5'5") This shorter wheelbase is achieved

Photo courtesy of David Heckart
University Cyclery-DH Recumbents
Houston Texas

The DH5000 cont'd

by moving the seat further back and up, along with a more upright seating position. This recumbent is a full 11" shorter than my LWB recumbent!

The seat is a beautiful fiberglass with foam padding and a non-vinyl covering. The seat is also 24" off of the ground. You may think this would cause problems for shorter riders, but the pedals being low to the ground helps out. The seat hugged my back perfectly and has a great lumbar support. The seat is similar to a Tour Easy, but in my opinion, superior.

The rod-linkage upright steering takes some getting used to, you look out towards the fork and seemingly nothing is turning them. The way it works is about mid-way down the top-tube between the seat and headtube is a custom stem extension. The rod mounts to the side of the stem extension and runs out to the front fork. On top of the extension are standard tourist type handlebars. This makes for a very nice and comfortable reach. I really enjoyed the DH's non-tiller like feel, and the controls are right in front of you. My test bike had a computer and a great rear-view mirror on the handlebars. The upright steering is also a perfect mounting point for my favorite option, a Zipper fairing., which is a \$250 option on the DH. I came away with a very good opinion of this new creative steering design. The one drawback to indirect steering is the special parts that are involved. The system is more complicated than a Tour Easy style of steering.

The frame craftsmanship is right up there with the Tour Easy and Lightning P-38, handmade custom quality. Built of 4130 Chromoly aircraft tubing with a beautiful custom fork to fit the 20 X 1-1/8" front wheel. My test bike is the owners personal bike and had some extra chrome on it. The paint was a very nice Metallic-Black and seemed to be holding up quite well. The seat mounts on the top-tube with a quick release on it, this was the only part of the

DH that I had trouble with. It does make for a very easily adjustable seat. The quality of all of the custom fittings on the DH was top-notch!

The components are also of excellent quality. The DH comes with Shimano Deore II hubs, freewheel, shifters and derailleurs that worked flawlessly and were extremely quiet. The DH is a 21 speed with a 13-28 freewheel and a 28-42-52 crankset. The spec sheet calls for a Deore II crank, but David Heckart has a limited number of rare and beautiful Avocet triple cranks that are made in Italy. I had never seen one before this. The gear range is near perfect, a low of 28 and a high of 108 gear inches. I prefer a little lower low gears for my Seattle test-loop, but the extra power that I generated from the seat and lumbar support hugging my back let me ride at least one gear higher than I usually do on my LWB recumbent. The brakes on the test bike were Mathauser Hydraulics, which are very expensive and are an option.

The stopping power was very good, but I did not care for the brake handles. For hydraulic brakes, the Magura from West Germany have a nicer feel, and are easier to work with. The standard DH brakes are Dia-Compe side-pulls with Shimano MTB brake levers. My large sized DH weighed in at 30 pounds and had a wheelbase of exactly 60".

Riding the DH5000. This is one of those recumbents that you just climb on and ride away. The more upright position and low bottom bracket height make it an easy bike to learn to ride. Once you pick up some speed and ride some corners, you realize that the indirect steering is a little bit sensitive and takes a little getting used to. Another aspect of the DH design that may add to this is the higher and further back center of gravity. This does not slow the DH down at all. I found this upright recumbent to be very fast. The seating position and wonderful seat with lumbar hugs your back and is great for generating power. This recumbent was faster than my two underseat steering recumbents, but not as fast as my old Tour Easy. The DH's

speed is hard to explain. For me it was the great seat. Another possible explanation may come from an old Dutch Roulandt Recumbent brochure. On Roulandt design the brochure states, "You can best move a heavy cupboard by putting your back to the wall and pushing with your feet. This is one of Roulandt's logic principles." The Roulandt sits higher than the DH, but the principle may work for the DH as well.

I really enjoyed my time on the DH5000. David Heckart has designed a great machine. It is hard to compare it with other recumbents because it is so different, but it is a very fine machine. It could possibly be the best commuting/urban recumbent around. The upright seating and handlebars along with the shorter long wheelbase make the DH5000 something special. The current price for a custom-built DH5000 is \$1295. There is also a less expensive version, the DH1000. It has a mild-steel frame and lower-line components. Framesets are also available. If you are interested in a DH Recumbent you can contact them at:

University Cyclery c/o David Heckart, 4007-G Bellaire Blvd. Houston Texas 77025 or (713) 666-4452.

Robert Bryant

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1991 IHPSC

Portland Oregon

August 1-4

The Sixteenth Annual International Human Powered Speed Championships hosted by OHPVA/ Jerry Jacobsen and Linda Waltmire was in my opinion a great success, through the hard work of all of the members of OHPVA, but mainly their leaders Jerry and Linda. The weather was Oregon's finest all week long. I must admit, this was my first IHPSC and I had an absolute blast.

Sam and Marjorie "Geriatric-Jalopy" Cox were participants in these events and they have written an excellent article inside this issue of RC. But here are a few IHPSC highlights.

For IHPSC race results please see the IHPVA's HPV News, the RC was mainly in Portland to check out the practical/recreational recumbent scene. One newsworthy racing note, there was a great upset in the twenty mile criterium. Gardner Martin's Gold Rush undefeated in this event in the last several years was beat in Portland by "The Cutting Edge" ridden by owner-builder Matt Weaver. Matt's sleek bike or "Cruise Missile" passed most of the competitors like they were standing still! Under the missile like skin of Cutting

Edge was a composite frame that wrapped around Matt's shoulder. I forgot to mention one interesting thing about the "Cutting Edge", it had a sponsor. On the tail section Easy Racers had its sponsorship logo..... Anyway, this event was the highlight of the racing events.

Steve DeLaire of Rotator Bicycles unveiled his new recumbent tandem, see this issue. Angle Lake Cyclery brought down the fleet consisting of a '90 Presto, a Opus tandem and several Moultons. I demo'd my Lightning Cycle Tailwind and my wife's Infinity II for any interested parties. There also was Clive Buckler with his popular "Soccer-Bike" and a mysterious Roulandt riding around.

Several recumbent manufacturers were present, although it would have been nice for all to make an appearance. The parking lot was hopping with spectators trying to get a glimpse of that recumbent that they have only seen in pictures before. Here are the manufacturers and dealers that I know of who were present at IHPSC: Easy Racers Gardner Martin was easy to spot, a fleet of polished aluminum "Gold-Rush Replica's" was present. You can own one of these gorgeous machines for

just over \$2100. The guys from Lightning Cycle Dynamics were present, although I looked for and could not find Tim Brummer. Lightning had a very nice new '90 model P-38--my size too. Eco Cycle's Ken Trueba was there with the new "Trice" recumbent trike. This was probably the most popular midnight-parking lot racer over at the Delta Inn. Ken sold several of these newly imported English trikes built by Peter Ross. Ken will also be selling the new Ross SWB recumbent built also by Peter Ross in England. A mysterious new trike from the mid-west the "Fly-By Tryke" made an appearance. If any readers know the folks building these, have them send me a brochure. Earl Aldrich had his unbelievable "Earth-Traveler" trikes. The finish work and all of the custom-machined parts for this trike are spectacular. This is some of the nicest quality work that I have seen on any recumbent vehicle.

The week was a fun-filled recumbent-overdose and I loved every minute. It was a pleasure to meet all of the people who have been names on a letter or voices on the phone. I also would like to thank Linda and Jerry of OHPVA for the fantastic job they did.--RJB



The Recumbent Cyclist Newsletter is dedicated to promoting recumbent bicycles and providing communications between enthusiasts, dealers and manufacturers of recumbent bicycles.

"The Recumbent Cyclist Newsletter" is produced in cooperation with the "Recumbent Bicycle Club of America".

To Subscribe to the Recumbent Cyclist Newsletter Please send \$15 (US Funds) For USA and Canadian members, \$20 (USA Funds) anywhere else in the world. Mail To:

Extra copies of this issue are available from the Publisher in any quantity at the above (Renton WA) address. Prices are as follows:

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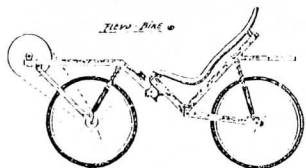
MISC. STUFF:

The neat SWB recumbent that was below the RC's return address on RC #2 was the "M5 Recumbent" built by Bram Moens in the Netherlands. We will see more of the M5 in upcoming issues. Breeze Eeze A company mentioned in the last RC builds fairings for underseat-steering recumbents. We made a mistake on the address, the correct address is: Breeze Eeze, PO Box 611, Big Rapids MI 49307**

FROM THE EDITORS DESK:

Welcome Recumbent Cyclists, We at the Recumbent Cyclist would like to welcome you to the World's only Newsletter specifically written for recumbent riders! You would not know it by reading your local or national bike magazines, but recumbents are gaining in popularity. Manufacturers are reporting good sales years, along with all of the action in Europe, we still cannot get the attention of the magazines. The American bicycle media just keeps on reporting about that same old 106-year old bike design, along with innovations like elevated chain-stays and the latest drop-bar technology. This is why we are here. I imagine someday we will see some mainstream magazine recumbent road tests, this is happening in Europe as you read this. Bicycle magazines in England recently did a great road-test on the Burrows Windcheetah Recumbent Trike. Because I read both major USA bicycle magazines, I truly hope that they come around. While talking to RBCA's Dick Ryan the other day, I found out that a good percentage of our readership are recumbent enthusiasts--but not owners, yet. Many would-be owners have

a hard time deciding what recumbent to buy. For many people, it is hard enough to find your favorite model in person we have an idea. In your search, it is best to narrow your choice down by affordability because recumbents range from \$318 for an LB jr. to \$3500+ for a Lightning F-40. Once you do this and have your choices narrowed down to a model or two, contact the manufacturer and find out if they have any owners in your area. This is how I found my first recumbent. Our idea is for a recumbent-owners-network. This would enable would-be purchasers to take a look at bikes in their locale. Hopefully this will change some of the would-be's into recumbent owners.



A RC reader was telling me a story about his usual beach ride along the bike path in the Los Angeles area. A racer was drafting him for several miles. Finally the racer said he had to stop, couldn't keep up with the recumbent-rider any longer. We can imagine the racers aching wrists, sore lower back, neck and possibly other numb areas. The recumbent rider was just out for an average ride! If they only knew of the comfort and speed.....

On the home front, The Recumbent Cyclist is growing very quickly. We are International, with members in New Zealand, The Netherlands, Sweden, Canada and Switzerland to name a few. The Recumbent Cyclist is also the official newsletter for the Recumbent Bicycle Club of America! If you would like to help us grow, extra copies of the RC are available to members, manufacturers and dealers for \$1 each, in any number. Some recumbent manufacturers give out a copy of RC with the purchase of a recumbent bike, now that is what I like to hear.

UPDATE-FLEVO-BIKE!--Yes, as you can imagine, the Flevo was a favorite topic among letters that I received. Craig (aka) "Dr. Recumbent" Cornelius, of

Redmond WA and Mike Eliasohn of St. Joseph MI let me know that my conclusion that the Flevo was rear steered was incorrect! So thanks to Craig, Mike and the others corrected my mistake. John Riley of Toronto Canada sent me a Road test on the Flevo in Dutch! Any translators out there? I'll work on it. Marti Daily said she saw it while in Europe this summer--so it does exist! She said that it was very difficult to ride. She also had a photo of a "FLEVO-TRIKE!" I have some more leads on this mysterious HPV---more in upcoming issues.

LATE FLASH!!!!

Just as we were going to press I received a letter from Bas ten Brinke on behalf of FLEVO BIKE-HOLLAND. He informed me that building plans are available! Although they are for the '88 model Flevo and they are in Dutch. They are currently working on plans for the bike pictured on the cover of last months RC. If you would like to order these plans, send a check or money order for \$15 USA funds to: NVHPV c/o Bas ten Brinke, Postbus 10075, 1301AB-ALMERE, The Netherlands.---RJB

E_{co}Cycle

Earth Friendly Transportation
Corvallis, Oregon 503 753-5178

The 1990 Trice Recumbent Tricycle

The 1990 Trice is designed for lightweight low rolling resistance. Trice is available in a lighter *Speed* version and a more rugged *Touring* model and is also available in both a narrow track and wide track. Trice incorporates standard high quality bicycle parts to allow customization, upgrade and easy maintenance at local bicycle shops.

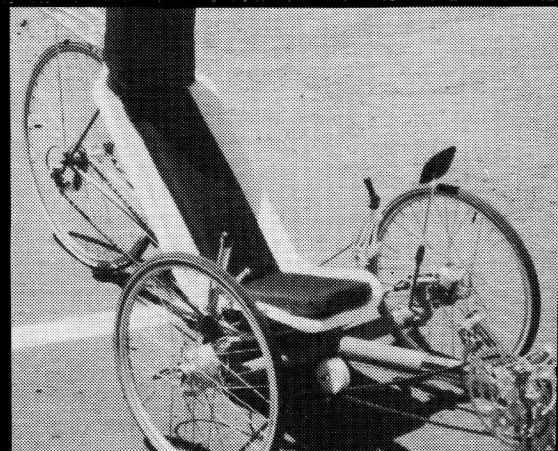
The front wheels are 20" and the rear a standard 700C. Both are high pressure narrow track tires on the *Speed* while the front are 1 3/8" low pressure tires on the *Touring*.

To further reduce weight the *Speed* has an aluminum pedal tube while the *Touring* has a chromium plated steel tube. Loosening one clamp allows the pedal tube length to be adjusted.

The rear of the frame uses Reynolds 531 stays allowing the use of quick release hubs.

Presents... **TRICE**

An exciting new riding experience:
"Its like driving a small sports car"
by CRYSTAL ENGINEERING
Now in production in Cornwall, UK.



The new Trice is the result of the experience of supplying customers and racing over the last seven years, it is at 35lb lighter, faster and better handling. Send \$1 for brochure or \$10 for video tape.

Price with optional equipment and shipping:
Touring \$1399 Speed \$1499

RECUMBENT BICYCLE BUILDING PLANS

This is a list of building plan sellers that I currently know of. I originally planned to do a two part Buyers Guide for plans, but due to the amount of material for this issue, I have decided to list them here, and then review one or two per issue in a new column called "Home-Built Recumbents". Please feel free to write with any helpful hints of ideas for "would-be builders". Here are the plan-sellers:

- **The Prelude Recumbent, from J. Benditt Co. A LWB underseat steerer. Plans are \$12.95 From: J. Benditt Co., PO Box 589L, Feasterville PA 19047.
- **LWB-Composite Recumbent Bicycle, by Dennis Kerns. A neat innovative design. Plans are \$12.95 from: Dennis Kerns, 2751-Union St. Lake Station Indiana 46485.
- **Econ-Bent from Gaylord Hill's "CycloPedia" A medium WB available in semi-kit form, be sure to request CycloPedia's Main & HPV catalogs. Econ-Bent Plans are \$30 from: Cyclo-Pedia, PO Box 884, Adrian MI 49221 or 1-800-678-1021.
- **The Easy Racer, from Gardner Martin, prob-

ably the most popular "plan-built-recumbent" ever! A great design and bike that is well proven. Plans are \$35 from: Easy-Racers, Box 255, Freedom CA 95019-0255.

- **The Harper FWD, A medium WB, front-wheel drive design available from: WA Harper, PO Box 491871, Redding CA 96049, plans are \$12
- **HuDyn Vehicles, Recumbent trike plans, kits and complete vehicles. HuDyn Trike plans are \$32. other books are available (see ad) Write to: Tom McGriff/ HuDyn Vehicles, PO Box 22444, Indianapolis IN 46222.
- **Traylor FWD, Mr. Traylor is a front-wheel drive expert having built and raced them for years. The bike is a medium-wheelbase. Plans are \$12 from: T.D. Traylor, 22407-Warmside Ave., Torrance CA 90605.
- **Evenglide, LWB plans from John Steggman. He also sells a recumbent sling-style seat kit Please send an International Reply coupon for information to: Steggman, 1-Heath St., Newlands 7700, Capetown Republic of South Africa.
- **Rebel-Cycle, A neat SWB design. Plans include a fairing design. For more information, send \$4. (US funds) for study-plans to: Rebel-Cycles, Tony Woodrooffe, Ardmore Airfield-Private Bag, Papakura, Auckland New Zealand.-----RJB

"THE HARPER FWD"

W.A. Harper of Redding California has been experimenting with recumbent bicycles for about 16-years. After 10-bikes he is a firm believer in the FWD recumbent due to its near perfect medium wheelbase and lack of a long chain. Mr. Harper has designed a bike that can be built very easily at home by a novice builder, using a couple of old bike frames and some steel tubes. The six pages of plans are very easy to follow. I do not feel that I would have any trouble at all building a bike from these plans. Especially nice are the frame-jig plans of which a full page is devoted. The same is true for the seat plan, a full page exploded view drawing for a plywood, padding and vinyl seat. The plans could have had more comentary and written instructions, at six pages, they are considerably shorter than other plans that I have seen. I still would recomend them to anyone who has ever considered FWD!

W.A. HARPER
P.O. Box 491871
Redding CA 96049

Building Plans \$12.
Info. \$2.

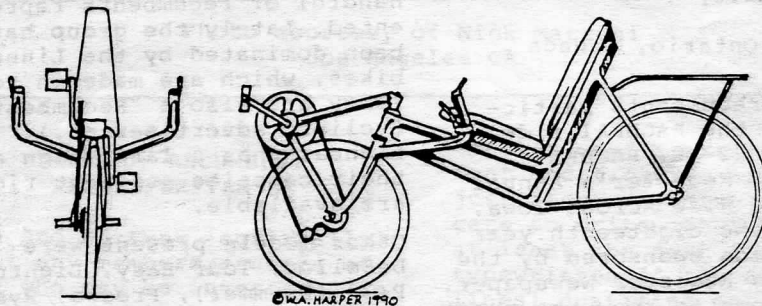
"The Traylor FWD"

Here is another innovative recumbent design. Mr. Traylor is a long-time FWD enthusiast. The bike is very similar to the "Harper FWD", with a few small differences. Traylor's plans were on the market first but I believe that they both started building FWD recumbents at around the same time. The main difference seems to be the handlebars, the Traylor bike has modified upright bars and the Harper uses underseat steering. (the bars actually connect to the forks) The plans include 30 pages of instruction, drawings, temp-lets and even recumbent riding tips! Mr. Traylor's plans are very complete, and his bikes are a familiar sight in Southern California. I have

seen pictures of several different Traylor FWD bikes, including a recumbent tandem. Mr. Traylor's current design is a monocoque framed versio of his original desing. The plans are to build the tube-framed version. If you would like to purchase these plans send \$12. to: T.D. Traylor, 22407-Warmside Ave., Torranc CA 90605.

(Editors note)

If you have ever pondered a FWD recumbent, I highly recomend that you get the Traylor and Harper plans. These FWD Pioneers have several years and lots of prototype FWD recumbents bui and you can definetly learn from their expertise.



©W.A. HARPER 1990

HARPER FRONT WHEEL DRIVE RECUMBENT

DOUBLE-RECUMBENT TANDEM UNVEILED AT IHPSA

That Custom-Hot-Rod Recumbent builder, Steve DeLaire, is up to it again. Steve is known for his Rotator Super-7 Streamliners and other one-off custom bikes. Steve unveiled his new tandem at the Portland International Human Powered Vehicle Speed Championships in early August.

Up till now if you wanted to ride in recumbent tandem formation, you had to borrow Gardiner Martin's "Double Gold Rush" or take a look at Tim Brummer's T-38 Back to Back tandem. Rotator's new Double-Recumbent tandem is the first semi-production face forward tandem to come along. The design is inspired from a commissioned design that Steve has made extensive upgrades and modifications to. The most apparent were the twin Lightning P-38 seats. These are among the most comfortable recumbent seats available. The prototype was barely finished, has 20" wheels front and rear. This makes the tandem easily transportable and keeps the seat heights fairly low to the ground. Gearing with 20" wheels can be a little tricky, but Rotator specializes in the use of 20" wheels front and rear. All Rotator Streamliners use them. To get a wide gear range, the tandem had a triple crank with a 71 tooth large chainring! The design also yields a fairly short wheelbase, approx. 48". The Captain sits in the forward position and steers via handlebars that are connected directly to the front forks.

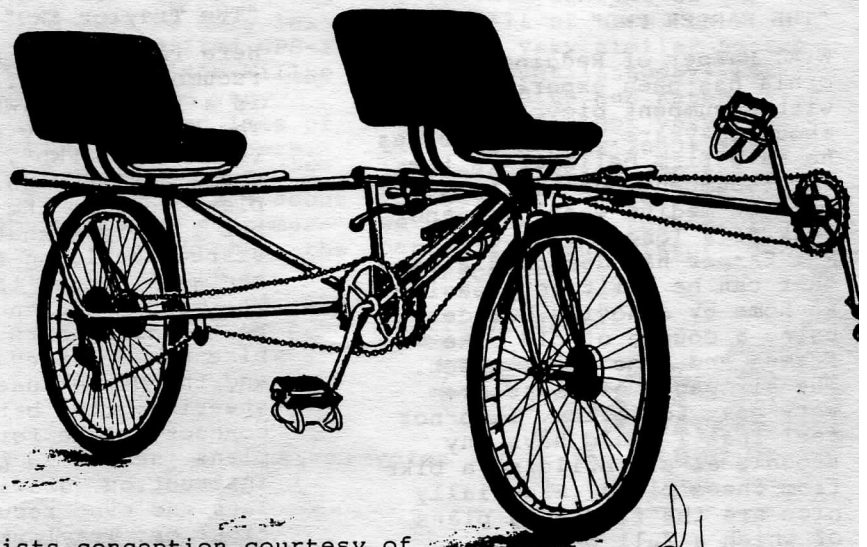
I had known of this tandems existence from a conversation with Steve a few months ago. Then at IHPSA, I heard rumors that test rides were being given at 11pm in front of the Delta Inn. The next morning I set out to find it. I had to beg a member of the Rotator pit crew to let me take her for a spin. I am not an experienced tandem rider. I have ridden a road tandem once and an Opus tandem once around the block. I climbed on board, and took off. Even though this prototype was barely finished, I really liked it. It is the perfect tandem formation. The pedaling position is very comfortable, a slight downhill angle, and of course the P-38 seats are very nice.

With the short-wheelbase, the tandem seemed agile and quick. I think the true test would be my Seattle test-loop with some serious hills, but my first impression was that this design is a winner. The best part of all, is that you can now order your own Custom Double-Recumbent tandem from Steve DeLaire and Rotator Bicycles. Prices start at \$3000. ready to ride, frame-sets are also available. Contact: Steve DeLaire, Rotator Bicycles, 915-Middle Rincon Rd., Santa Rosa CA 95405.---RJB



ROTATOR BICYCLES

915 Middle Rincon Rd.
Santa Rosa, CA 95405
707/539-4203



Artists conception courtesy of
Steve DeLaire-Rotator Bicycles

RAGBRAI REPORT

by John Riley

Toronto, Ontario, Canada

About 25 recumbents participated in the RAGBRAI ride held July 22-28. RAGBRAI stands for Register's Annual Great Bike Ride Across Iowa. This was the eighteenth year for the ride sponsored by the Des Moines Register Newspaper. No one seems to know the exact number of riders, but estimates for the number of riders can be as high as 10,000.

Since I started riding this event every year eleven years ago, there has always been a handful of recumbents represented. Lately the group has been dominated by the Linnear bikes, which are made in Iowa (They are also a "Recumbent-Cyclist" advertiser-ed.) "Team Linnear" has a large sign at their campsite and test rides are available.

Other models present were DeFelice, Tour Easy, Lightning P-38 (Brummer), Presto, Ryan and a bright yellow Corsa trike was spotted around camp but not on the road. There were also rider built machines including of course, Tour

Easy's. Two machines were more unique. One had front wheel drive and rear steering. The geometry appeared straight forward: the headset vertical and several inches of rearward fork trail. It looked twitchy on the road but I never got a chance to talk to the guy because he always sped by me! Don Valatka and his wife Diane of Denver, CO have ridden the ride for several years on bikes Dan designed and built. His latest design is a long wheelbase with rear suspension and two 27" wheels. The front half of the bike is a normal bicycle main triangle.

RAGBRAI Cont'd.

Steering is remote with a tube running from the headset to the handlebars, which are mounted in front of the rider. The rear suspension is a Moulton style swinging triangle with a steel coil spring.

The mileage on RAGBRAI is serious, but for the most part the ride itself is not. Many of the towns welcome the riders like a liberating army, with children lining up at the curb side to do hand slaps and the adults cheering us on from their lawn chairs. Church and school groups use the ride as a fund raiser and provide frequent food and drink stops all along the route.

Because of the serious mileage the ride is an excellent opportunity to take advantage of the comfort afforded by a recumbent. In fact it was my desire to do this ride, coupled with my inability to find comfort on a regular bike that lead me to purchase a recumbent in 1982. I have been riding one ever since.

There seems to be an inverse relationship between the presence of hills and peoples concern about them. Iowa is not flat, but few of the hills are of any consequence. Outside the northeast part of the state, few of the hills are more than a couple of hundred feet. Still the recumbent rider on RAGBRAI must deal

with incessant questions about hill performance. No matter that this misses the obvious point, which in most cases is comfort. I feel that I climb as well as I did on a regular bike, but even if I didn't, for this ride the comfort would be worth it.

Some of the questions are down-right rude. One asked how I could ride in such a distorted position. A tandem rolled up to me and the captain asked how many hills I had to walk. Fortunately, at this point we were getting into some hills and I took great satisfaction in simply riding away from him.

A Mountain-Bike Recumbent?

Only from California. I bet Milt Turner never envisioned the Laid-Back Jr. as a Mountain Recumbent! RC reader Nick Mattoni of Los Angeles is no-doubt a recumbent advocate! He owns a partially faired Tour Easy, two LB Jr.'s and his pride and joy, a Turner Laid-Back '90. The MTB Recumbent started out as a stock LB Jr. Nick repainted it and drilled holes in the square-tubed mild steel frame to lighten it up a little. The front tire is a fat 16" and he added a fat knobby to the rear. Nick also changed the gearing to accommodate his need for low gears. "It's a blast to ride through hilly vacant lots and the regular mountain bikers are just amazed", "It's also a rugged practical bike for trips to the store, through alleys with pot holes and broken glass". describes Nick. The LB Jr. is the most inexpensive recumbent in the USA. You can purchase one from Turner Enterprises for under \$350. Special thanks to Nick for the photo and information.

----RJB

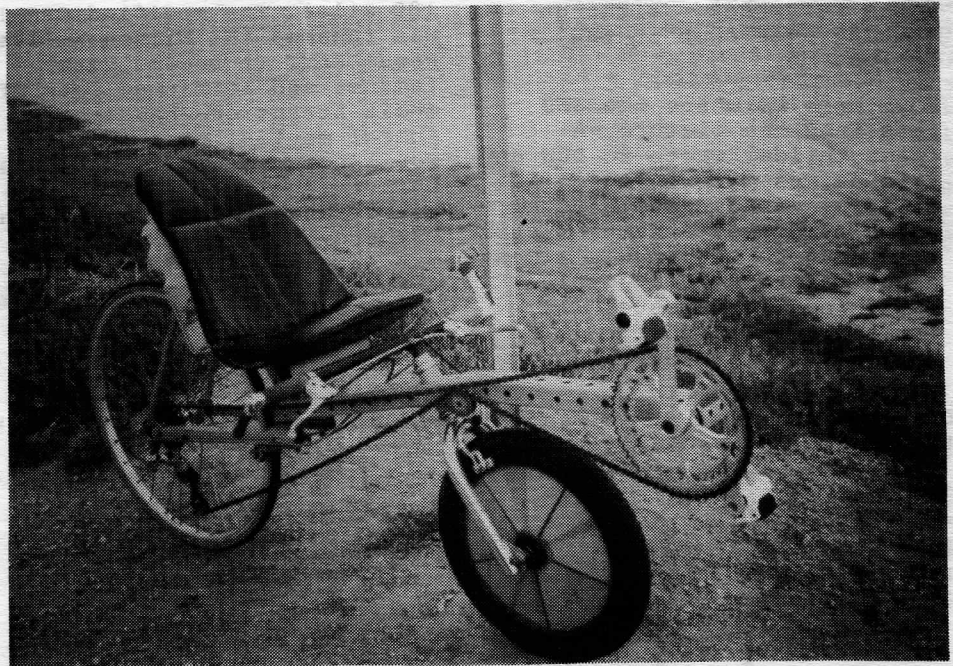


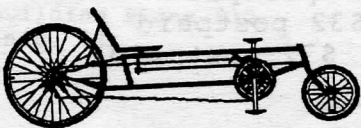
Photo courtesy of Nick Mattoni
Los Angeles CA

WANTED: RECUMBENT RIDER/WRITER'S

Fame and Fortune (not really) await any members/readers of "RC" who may be interested in doing some writing for this publication. I would be interested in articles on your recumbent experiences, long rides, product evaluations,

"better way" articles, recumbent modification articles or just about anything you would care to write about. For at least the next issue, typewritten 3" (30 character lines) justified on the left margin only!

Please write to the editor, Robert Bryant, 16621-123rd Ave. S.E., Renton WA 98058.



The History of the SWB Recumbent Part II

The modern history of the recumbent bicycle, including the SWB starts in the USA in the late 60's. There was not much going on between the late 30's and the late 60's, other than a few antique recumbent riders in Britain. But in 1968 a airplane pilot who loved to ride bicycles, Dan Henry, read all that he could on antique bicycles and he built a recumbent. A LWB with suspension! Some call Dan Henry the father of modern recumbent bicycles.

A little while later the recumbent movement had started on the East and West coasts seperately. David Gordon Wilson (DGW), who is the current Editor for IHPVA's "Human Power" started the east coast movement. DGW held a design contest in 1970 for alternative bicycle design. At this time DGW was riding a Moulton. The vehicle that won was a recumbent although nothing ever came of the design.

Now, here is where the SWB gets into the picture. A frame-builder wrote to DGW and said he was interested in building an advanced unusual bicycle. DGW sent him a sketch that unknown to him was almost identical to a Ravat Cyclo-ratio (see last issue). The framebuilder, Frederick Willke built the SWB from

DGW's sketch. The year was 1972 and the machine was the Willke "Green-Planet Special I". The bike bore a strong resemblance to the antique Cyclo-ratio, and in my opinion to the modern Lightning P38.

Wilson and Willke continued to correspond, a new sketch with modifications came about. A very laid-back seating position and the crank lowered as far as

possible, this created a much more comfortable ride (the Avatar seating position). The year was 1973, and the machine was the "Green-Planet Special II".

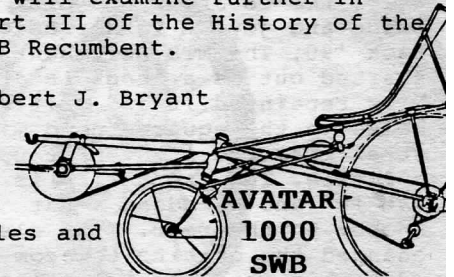
The GPS-II was purchased from Willke by DGW and many modifications were made, mainly to the seating position and moving the front wheel forward to help take the load off of the front wheel. Tires on the GPS-II were said to only last 100 miles. The modified GPS-II was renamed the Wilson-Willke Recumbent. It became very famous, and attracted lots of media attention--newspapers, school movies, photo's and a Mobil commercial. It was about this time also that a commercially produced recumbent, the "Hypercycle" came onto the market. The Wilson-Willke recumbent is very similar in appearance to the modern "Hypercycle".

Next comes the "Avatar", most people think of the near-classic, definetly collectible short lived LWB, but in 1978, the Avatar 1000 was born. This was a SWB improved version of the Wilson-Willkie recumbent. The 1000 was built when interest from a potential manufacturer arose. The design was further refined and experimentation with alternative drive systems was done. The front wheel-rear wheel load distributions were 62% front and 38% rear. The need to further reduce the load on the front wheel became apparent.

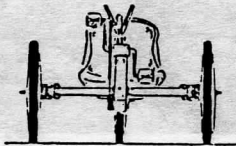
In 1979, all of the problems with the SWB Avatar were solved--by going to a LWB configuration, the Avatar 2000.

All of this set the pace for several commercially produced recumbents to come on the scene. All of them, in some way, are very similar to the Avatar's. Still today, the German Radius and Fateba from Switzerland, look very much like the Avatar 2000. The 1000's evolution set the pace for several SWB designs that we will examine further in part III of the History of the SWB Recumbent.

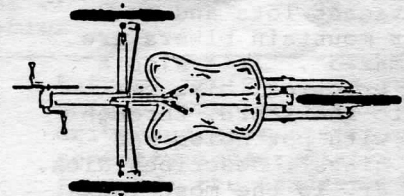
Robert J. Bryant



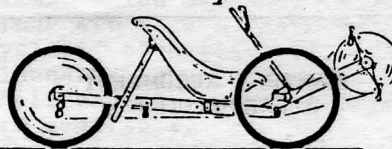
Drawing reproduced from the article "Evolution of Recumbent Bicycles and the Design of the Avatar Bluebell" by David Gordon Wilson.



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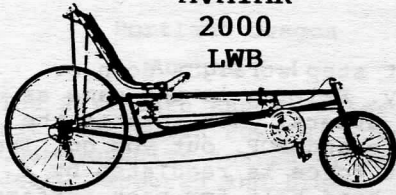
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"Highly recomended", says Robert Bryant of "Recumbent Cyclist".

AVATAR
2000
LWB



The History of the
SWB Recumbent

Comments from
David Gordon Wilson

I started my recumbent-designing career with a sketch of a SWB recumbent for Fred Willke; he built and improved it, eventually sold to me, I spent a long time changing it until it became what we called the Wilson-Willke. I was enthralled with it. But I am a year-around bicyclist, and the performance of this and the SWB-MWB Avatar 1000 was unacceptable in snow. I

also found the tendency for these bikes, particularly the SWB, to stand vertically on the front wheel in heavy braking, to be exciting but nothing that I would want to sell to a novice. The front tires wore out too fast and the front-wheel spokes needed continual tightening and trueing.

Accordingly, my search, conducted partly with Richard Forrestall of FOMAC (the company that eventually built the Avatar 2000), was to arrive at a true MWB, which I would define as one having the front wheel under the feet rather than behind them (SWB) or in front of them (LWB). We tried various linear and arcuate pedaling motions rather briefly. We had to give up on these because FOMAC needed to get something into production and chose the LWB configuration for the Avatar 2000.

This is what I ride every day, all year up to a snow depth of about 75mm, and I love it. However, I dream of something that would be a little shorter and a whole lot lighter. We were not able to spend the effort to further refine the Avatar 2000 (after it won the IHPSC and was, for a while, the world's fastest bicycle) before heavy competition from many machines, apparently, rather closely after put FOMAC out of business.

by David Gordon Wilson
(more from DGW in the next issue--Ed.)

A LITTLE KNOWN AVATAR FACT:
Dave Wilson originally designed cable-steering into the Avatar 2000, but Richard Forrestall preferred the rod-link type. His current designs use cable steering.

Peoples Choice

Seventy three competitors gathered at the 1990 International Human Powered Vehicle Association Speed Championships held August 1-4 in Portland OR, 70 of which were recumbents. Most were home made prototype vehicles, however there were a good many Lightnings (P-38) and Easy Racers. Since the main emphasis in such a meet is on speed, many of the entries were fully faired and required outside crew assistance both to stop and to start and thus they were not considered practical vehicles under the meet rules.

Twenty-nine recumbents entered the Practical Vehicle Competition which consisted of a number of tests to establish the vehicle's true practicality. Competitors had to prove that their vehicles were street legal and then demonstrate their ability to go over a gravel section of road, carry a load of groceries, change a tire, stop, start, turn sharply and park. This phase of competition was held during two sessions at the Portland International Raceway.

The final phase of the PVC was a seven mile commute to downtown Portland where the vehicles were displayed to the lunch hour crowd at the Old Court House Square, where the public was invited to vote on their choice of vehicle. In order not to make an undesirable impact on city traffic, we started at one minute intervals from PIR, speed was not a criteria and everyone made the trip easily within the 45 minute allotment. Our own trip was uneventful although we did not really enjoy the very heavy traffic of the central city.

This part of the practical vehicle event triggered our imagination, aware that we could never REALLY compete in the speed events, we thought to stand out from the crowd, we must be unique! Our recumbent tandem, "Geriatric Jalopy" we fitted out with a unique gold fringed surrey top and from thrift stores we put together gay nineties costumes from straw boaters to host-button shoes!! We DID stand out from the crowd and drew quite a bit of interest as did the "Batmobile" with it's costumed and masked Batman and Robin.

The large crowd circulated among the vehicles, took pictures, and asked questions and generally were amazed at this collection of very "funny bikes", so different from anything most had ever seen. Many of the people were intrigued by the idea that two people in their 70's could enjoy riding a bicycle "built for two", for 70,000 miles. This was very good public exposure as it demonstrated the practical vehicle aspect of bikers in general and recumbents in particular.

We won the "Peoples Choice" award and were pleased that "Geriatric Jalopy", the most comfortable bike we have ever ridden, also appealed to the public.

Sam and Marjorie Cox

Tubac AZ

Sam and Marjorie Cox and RBGA and IHPVA members and will be frequent RC contributors--ed.



Sticky Feet
OR
How I solved the
Toe-Clip Flip

Frederick F. Ungewitter III
Daytona Beach FL

My wife and I have been avid tandemists for over a decade. Since I knew only of single rider recumbents, I have put off buying one. Until the Lightning Cycle Dynamics (Tim Brummer) T-38 tandem arrived, that is! More on that in a future article.

We have been riding the Lightning for over 1200 miles and I have not been all that happy with the pedal situation. The bike comes equipped with some very well engineered heel rests (or slings --ed,) but they prevent my ankle from rotating as the cranks turn. I am one of the unfortunate ones with that type of bone structure requirements.

Of course, toe clips and straps allow for ankle rotation, but what happens to the pedals when they are attached? On a conventional bike they are only ninety degrees away from the operating position, but on a recumbent, especially a Lightning, they are one-hundred-eighty degrees out of line.

My wife is using the heel rests in combination with toe-clips (no straps) and the heel rests keep the clips in the proper position. My knees will not allow heel rests, so no tow-clips!

What about Look (clipless pedals-ed.) type systems, you might ask? No need to ask, I will tell you. The Look systems are wonderful on conventional bikes, but they hang bass-ackwards like toe-clips. Let's not forget what happens when your feet slip on cleats while seated on a recumbent. So what does a recumbent cyclist do to remain attached to one's pedals?

The answer comes from the world of the off-roader. When I bought my first set of non-cleated biking shoes ten years ago, they were called touring shoes. Now you ask for off-road or mountain bike shoes! Same stuff, different name. I expected only to buy ordinary touring shoes, having given up for the present on clipless pedals or making a toe-clip work for me.

The sales dude at the shop set me right, though, and I discovered Shimano's SH-M100 shoes and PD-M737 pedals. The shoes are top quality with stiff fiberglass soles and an aggressive tread. The uppers are leather and nylon with Velcro straps instead of laces. They are much better quality than my sneakers and at \$70, they should be. There is a yellow rectangular patch on the sole where a cleat should go.

When you buy the pedals (\$180) the yellow patch comes off with some effort (and a pair of pliers) and the cleat attaches with a backing plate and a pair of recessed screws. One excellent feature of this system is that the cleat sits INTO the sole and not above (below) it. One can walk without bearing on the cleat, which is made of high strength steel and could take it anyway. No slipping cleats on pavement.

The pedal is double sided, that is, you can clip into it from any point. No more problems with flipping it around, just step and fetch it! The cleat and shoe need only be aligned approximately with the pedal. Just line it up and push, and you are locked in.

Even the Look systems require that you place the front of the cleat into the pedal. Not so with the Shimano system,

just step straight down or away. Exiting is the same as all others, just rotate the ankle and POP, out you go. The exit force is regulated by a hex head bolt for each surface of each pedal, four in all.

As of this writing, I have only ridden about 50 miles with the new system, but the difference is astounding! I estimate that I was using up to one third of my effort just keeping my feet on the pedals! On the first ride, my wife noted how smoothly the power felt. We accelerated more quickly and climbed hills as much as two gears higher.

I recently discussed these pedals with Steven K. Roberts of Computing Across America fame and here is his response, direct from GENie.

"Thanks for the note--interesting comment on the Shimano pedals.

I'm using Cycle Binding, which are excellent--they allow a bit of rotation to prevent knee damage (more likely on a recumbent, because you don't have a skinny seat plugged into your you-know--what to keep you on center-line). They are also self-righting, and the shoes are female, meaning I can walk comfortably in them. Great product. In your letter to RBCA (Recumbent Cyclist) Newsletter, please mention that I have chosen them for those reasons, if you have room (and if you want to project as balanced a product view as you can)."

I would certainly like to see an article from a user for comparison purposes. My wife

is as enthusiastic about the Shimano pedals and shoes, and wants a set for her end of the bicycle. If there is an alternative (read cheaper) I am all for it!

MORE NEAT PUBLICATIONS:

**The Counterpointer, a newsletter for Counterpoint Opus and Presto owners, \$5. US/ \$7 foreign per year, Rick Pope, 6305-SW Roundtree Ct., Portland OR 97219.

**IHPVA's HPV News, A must for any serious HPV fan! \$20 per year gets 6-HPV News

issues and 4-Human Power, IHPVA, PO Box 51255, Indianapolis IN 46251-0255.

**KAAT News/ Official Journal of the Kinetic Art/All Terrain Racing Assoc. These are those neat very large multi-wheeled human powered vehicles. Your choice: Lean KAT \$3.50 (per year), Kool KAT \$5, Fat KAT \$10 or more per year, Kinetic

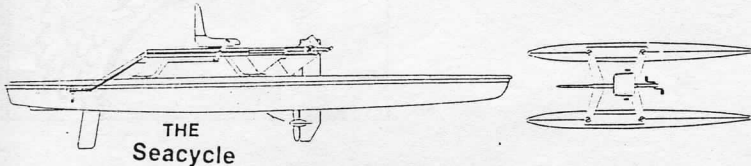
Press, POB 225, Arcata CA 95221

**The Journal of High-Tech Nomadness/ Steve Roberts. 6 issues \$15, Nomadic Research Labs, PO Box 2390, Santa Cruz CA 95063.

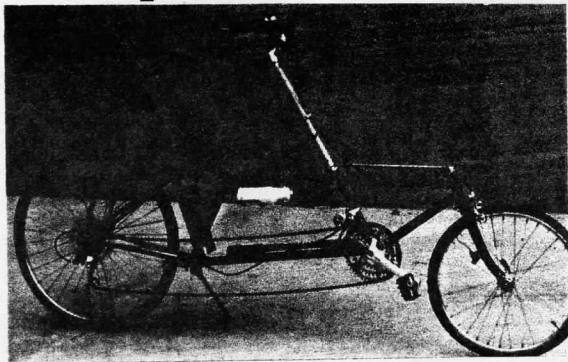
The Recumbent Cyclist receives all of these publications!-RJB

RECUMBENT NEWS

RADIUS-In my endless pursuit for the latest recumbent information, I have finally come up with a dealer in England who would ship bikes to the USA. The Radius is very similar to the Avatar with several upgrades, a Moulton style rear suspension and Magura Hydraulic brakes. The downside of this beautiful German Recumbent is that it weighs 37 lbs. The Radius is also very expensive, around 1250 Pounds, the price would probably be around \$2500 with shipping to the USA or Canada. Your nearest Radius dealer is: Neatworks, The Lees Stables, Coldstream, Berwickshire, Scotland TD12-4NN. If you write to them please enclose atleast one Int'l Reply Coupon. Tell them you read about the Radius in "RC" and they probably won't know what you're talking about. **KANN LINEAR**--The aluminum folding recumbent manufacturer have signed a new exclusive agent for all of Italy. Linear's are also sold in Germany. **INFINITY-Cyclo-Pedia**-Gaylord Hill mentioned the possibility of an Infinity Limited Edition for 1991. Including a special powder-coat paint job including custom fork and seat frame. Top Quality parts throughout! A custom seat pad, full Index shifting with Grip-Shifts and even a sealed roller-bearing



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bottom-bracket. Top of the line parts along with Infinity's lightweight frame could produce one heck of a machine. If you are interested in this, contact Gaylord Hill at: Cyclo-Pedia, PO Box 884, Adrian MI, 1-800-678-1021. **RYAN RECUMBENTS**-The smooth riding under-seat steering recumbent has announced a new lower price. You can now purchase a new Ryan for \$995 complete! Ryan Recumbents, 58-Lyle St., Malden Mass. 02148. **RECUMBENT BRAKES**-If you can't afford a pair of Magura hydraulics and you need to find a pair of LONG REACH side-pulls with the pull on the opposite side. Take a look at Performance Bike Catalog's Dia-Compe GX500 and GX730 long reach side pulls \$34.95 for a complete set, including drop-bar handles that you can't use. Performance 1-800-PBS-BIKE.**I have also heard good things about the ODYSSEY PITBULL BMX brake. I have used BMX brakes with AZTEC Pads and they stop great! **RECUMBENT SEAT KIT**--BAT Bicycles has a neat sling-style seat kit that should adapt to any type of recumbent. It is a no-weld design and has a lumbar support and a very nice pad. The kit is priced between \$75 and \$100 depending on shipping and insurance. BAT, 1-Heath St., Newlands 7700, Capetown Rep. of South Africa. Other neat seats. Tim Brummer sells his P-38 seat kit, around \$120 and Steve DeLaire of Rotator Bicycles in Santa Rosa CA does custom one-off seats. **KINGSBURY'S KINGCYCLE**-A new SWB commercially produced recumbent has twin horizontal tubes, a 24" rear wheel and a 17" front. The Kingcycle can be purchased as a complete bike or just a frameset and it weighs 26 lbs. USA prices should be around \$1300 shipped. You can get a brochure on the KC through Neatworks (see Radius) please enclose a Int'l Reply Coupon. **SEA-CYCLE RECUMBENT**-The neat Sea Cycle Recumbent Catamaran is built in Oregon, but a "Recumbent Cyclist" of Eugene Oregon has recently become a distributor. If you would like more information on the Sea-Cycle contact: Kurt Jensen, 1672-Happy Lane, Eugene. OR 97401.***If you write any of the companies in this newsletter, please send an SASE or if they are foreign, an Int'l Reply Coupon (from the Post Office). **T-N-T Enterprises**-is a new company in New Jersey that represents the LB Recumbent line. Contact David Thierer of T-N-T at (201)599-1118***RJB

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