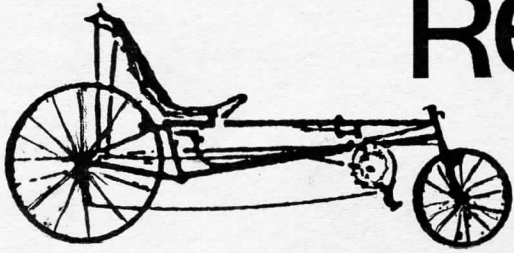


THE RECUMBENT CYCLIST



March-April 1991

The Official Newsletter of the
Recumbent Bicycle Club of America

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Cover Story: The Linear Recumbent

The Linear Recumbent

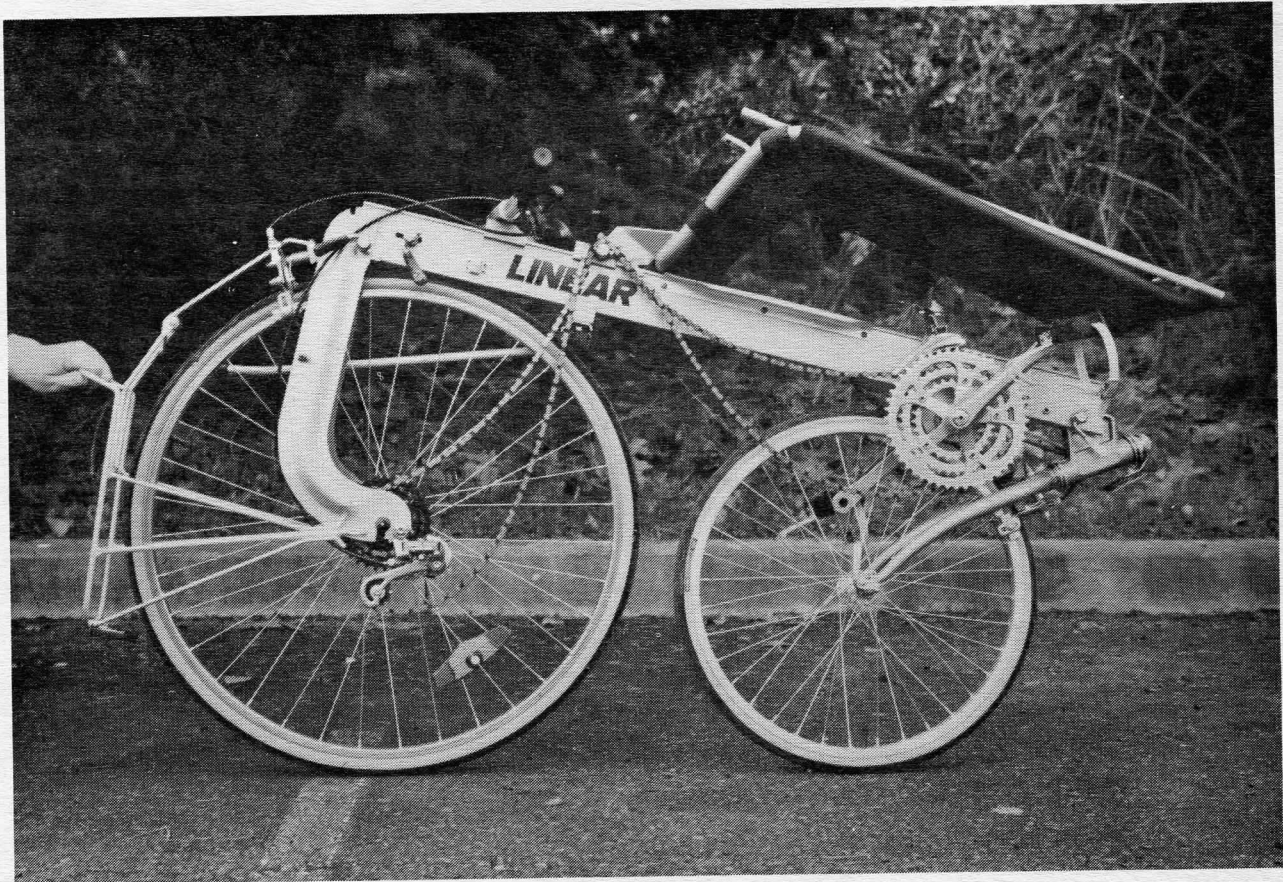
I suppose that I should start off by saying that everyone's idea of the perfect bicycle is different. When you take into consideration recumbent enthusiasts, boy what a variety of "perfect bicycles" we can come up with. Recumbent bicycles in general can really cover the broad spectrum of bicycle design, with many different beliefs as to which is the "perfect one". The Linear is a recumbent with a strong following of loyal riders. On the other hand some recumbent enthusiasts do not take it very seriously. For anyone not paying attention to Kann Manufacturing/ Linear Bicycle's role in the evolving recumbent market, it is time to wake up. According to recumbent sales figures, the Linear Recumbent could be the best selling recumbent bicycle in the USA.

In the past seven months, I have had the opportunity to live with two different Linear demo's. In that time, my attitude regarding this different approach to a recumbent bicycle has really changed. At first, the different frame design was hard to get used to. But after carrying the bikes in the back of my Toyota; with Linear's unique folding feature they only take up half of the space of my other LWB's. The bikes were also used for many casual rides in all types of weather including a ride in three inches of snow. The usefulness of the Linear has won

me over. As most of you can tell, I never profess that one type of recumbent design is better than another. It is my belief that there is a place in the recumbent market for all designs and configurations of recumbent bikes.

The Unique Frame

The extruded single I-beam aluminum frame is the design work of Dirk Kann, owner of Kann Manufacturing Company in Guttenberg Iowa. Kann is an Industrial Manufacturer. The venture into the bicycle business has worked out very well for them. The frame is made of aluminum extrusions that are manufactured in the same way that Kann's other products are made. The I-beam is the central unit on the frame and the fittings slide into and allen bolt/clamp to the frame. The main fittings that are not designed to move have some of the strongest lock-tight type sealant on the threads that I have ever encountered and should never come loose. The hinging head tube and one-piece formed chain stays slide into the mainframe and are hinged with an allen bolt and locked with a locking quick release. The Linear forks are specially made of chro-molly steel which is something that you do not always find on a recumbent in this price range. Linears come in your choice of two anodized colors: Gold and Silver. Both are



very nice. I have had no problems at all with the pair of Linears. The construction method and folding mechanism are superbly engineered and the bike overall is of excellent quality. Linear backs up their product with a lifetime warranty on the frame, seat and handlebars.

Folding Feature

One of the big selling points is the folding feature. The bike was introduced in 1983 in a nonfolding version and currently all Linears are sold with the ingenious folding feature. If you are a frequent traveller or you have limited storage space this could be the ideal bike for you. The front headtube and the rear one-piece formed chain stays have quick release locks for fast, easy folding. This allows the bike to fit on normal bumper or roof channel racks. The complete fold is even more amazing. With both wheels off, the frame folded and seat removed or folded forward, the LWB Linear can fit into a very small package. Even completely folded, the bike goes back together very easily and quickly.

Component Selection

The Linear's component selection is very good. It comes as an 18 speed (triple crank), although a 21 speed could be in the near future. The wheels are a 27" rear wheel and a 20" front with an optional 24" rear and 16" front for shorter riders or people wanting a more compact bicycle for transporting. Both test bikes had SunTour XC 7000 derailleurs and indexed thumbshifters. The shifting performance and indexing was more than adequate, although I do not care for this derailleur model. The slightly upgraded current model SunTour XCM, XCE or XC-LTD would add greatly to the bike's shifting performance. Brakes are Dia Compe side pulls with very good stopping power, one added bonus is that these brakes come with quick releases. (NOTE: aftermarket brake pads such as Aztec or Kool Stop can greatly improve braking performance on any recumbent.) The gearing selection is well thought out for the bikes intended use-recreation; the low gear is 24 and the high 100 gear inches. If you find that you need a higher gear, one can easily be added just by switching large chainrings on the crankset. I was very pleased with the Linear's out-of-the-box performance.

A very nice feature that currently is not offered on any other production recumbent is the riders choice of underseat steering or pull-back style handlebars. So you want to know which is the most popular? I am told that the underseat steered version significantly outsells the pull-back bar version. As you can see, the bike has a very upright seating position. The seat back is made from a breathable mesh material and the lower section

has a foam pad for added comfort. I found the seat comfortable. A Linear long distance rider told me that the more upright position can cause your rear to get sore during very long rides. Linears also come in five frame sizes 36", 39", 42", 45" and 48" and will fit most size riders. The bikes weigh anywhere from 32 to 33-1/2 pounds. This is slightly above normal for a LWB recumbent, but the folding feature and quick releases add a little weight.

Accessories

The Linear also has a nice rack rear mount. It seems considerably more durable and stronger than other similar type mounts, and any type of rear rack will work on the Linear. The bike also has fender eyelets and will take a front rack and panniers. It was difficult finding a place to put my water bottles until I found a handy pocket sewn into the rear of the seat. It will hold at least two bottles, although a frame mounted waterbottle cage would be very useful. The one-piece chain stay assembly made it impossible to pull my bike trailer. Linear's very helpful Marketing Manager, Steve Hansel, said that this has been done before with some slight modification. Zipper fairings will also fit the Linear. The Tour Easy Zipper works on the upright handlebar version and a Linear Zipper for the underseat steered bike is currently in the works.

Marketing Pro's

Something else you may have noticed about Kann Manufacturing and the Linear is their very professional marketing. They advertise in many bicycling publications, including the trade magazines. This helps the recumbent movement by working to gain acceptance in the mainstream bicycle market. The Linear Company is also at most bicycle trade shows promoting recumbents and working to develop a professional bicycle dealer network and again, paving the way for the general acceptance of the recumbent bicycle to the American public. This is to the benefit of all recumbent enthusiasts and manufacturers alike. Some other advantages of the Linear are the supply of new bikes ready for immediate shipment no six or eight week waiting period, and Linears are shipped in one carton, whereas most recumbents are shipped in two. One final plus for dealers is the ease of set up. Most consumers will never have to assemble one as the bikes are only sold through dealers, but the assembly is extremely quick and easy. Finally, Linear has just finished an owners manual that is the most complete that I have ever seen for any bike. It is full of helpful information and illustrations.

The Ride

One thing is for certain, this bike is not a racer and no speed or performance claims are made. The intended

use of this recumbent is recreation, a very comfortable bike for everyone. When you look at the bike in a recreational perspective you see it in a completely different light. Even for you performance riders, how about this folding recumbent as a second bike? Possibly for that bike trip to Hawaii or maybe Europe. For these applications the Linear is perfect. I found the ride to be very nice. My trips were comfortable and I could see and be seen by motorists easily. I demonstrated the bike to many recumbent novices who also found that the bike was easy to ride. The Linear has a higher center of gravity than most recumbents. For some new riders this makes the initial feeling a little unstable until you are used to it. For anyone with recumbent experience, you will ride right away. Both of my demos were underseat steering models. The bike steers easily and tracks straight with a minimum of effort and the steering is not overly quick. The aluminum frame absorbs much of the road shock and I did not notice any inordinate amount of frame flex. In the past, other riders have made comments about the road feeling of aluminium LWB recumbents. I enjoy the added shock absorbtion and have always liked the ride of aluminum LWB

recumbents.

The Linear is definetly different-on that we can agree. It would be a suitable recumbent bicycle for the mass market and a good candidate for the new rider or the seasoned veteran recumbent rider who needs a more portable recumbent. The Linear is an excellent quality refined machine. It is not as sexy as a \$2000 fillet brazed custom performance recumbent, but an excellent value in the recreational recumbent bicycle market. Linear Recumbents sell for \$875-ready to ride. The optional pull-back upright handlebar steering is \$96. For a test ride, see your local professional bicycle shop or call Linear for a dealer near you.

By Robert J. Bryant

FOR MORE INFORMATION
Kann Manufacturing Corp.
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Future-Tech

Terry Paradigm CV Posi-drive Bicycle Drive Train System: We first saw the Terry bicycle transmission at the INTERBIKE show in Anaheim California last fall. The idea here is to rid the bicycle of the derailleurs. The bicycle's derailleurs, multiple sprockets, complex free-wheels and button shift controls are handled inside the oversize rear hub. Everything is internal.

Inventor Bill Terry of Redmond (WA) invented this inovative transmission. When I spoke to him after the show, he was getting ready to deliver several Paradigm equipped bikes to some major bicycle manufacturers for testing. The system offers infinite gear selection. This means no more searching for the perfect cog. By twisting the grip (similar to a motorcycle accelerator) while pedaling, standing still or even rolling backwards the speed level output / cadence can be changed. Your bike will lose two derailleurs, shifters, multiple chainrings and freewheel. This drivetrain is basically just a single front chainring and an oversized rear hub with all the gears internal.

"The Paradigm gives the rider a faster start and smoother, quicker acceleration through a more efficient application of power. Conventional derailleurs cause the rider to lose speed during each shift ", says inventor Bill Terry.

The unique Paradigm speed changer utilizes a " direct drive" system with a continuously variable speed gear. The sprocket drives to the sun gear: drives planet gears (with integral locking clutches). Which in turn drives a hub output gear. Ratio multiplication (gear change) is accomplished by the cam followers riding on an eccentric cam, progressively advancing the planet gears about the sun gear thereby multiplying the basic output / speed ratio by manually selected amount of eccentricity on cam. As you can see this is a difficult operation to explain.

To figure your gear ratios, simply chose the sprocket sizes for your lowest gear and the Paradigm transmission will give you a 4:1 top gear. The front and rear drivetrain sprocket sizes can be increased or decreased to provide you with the proper gearing.

From a nontechnical (your editor's) view, this system looks very intriguing. I tried to get the Paradigm to work at INTERBIKE and something seemed to be wrong; I could not get the grip to twist. Before making any judgements about the Paradigm, we are planning to get a test ride and see it in action. Another local RBCA'er from Everett (WA), Don McLees has been in contact with the Paradigm organization and plans a more technical report at a later date.

From all current industry signs, it does not look like the derailleur, freewheel and crankset will leave us anytime

soon. Although not the most hi-tech system, it is certainly proven, dependable, inexpensive and easy to work on.

The high price of the Paradigm system will leave most of us out of the running for it. It is my guess that the system will be expensive, in the \$300+ range-if you can even get one. The primary market seems to be targeted for upper line mountain bikes at first. One last thought, It would seem that the Paradigm system is being taken seriously by he bicycle industry; several major manufacturers are being shipped test bikes.

For more information on this product, write to: CV POSI DRIVE, 3832-148th Ave NE, Redmond WA 98052

Fifteen Speed Hubs? After last issue's FUTURE-TECH column, I spoke with Gaylord Hill at CycloPedia. Gaylord said that he stocks Sturmey-Archer three and five speed internal geared hubs with drum brakes and an optional three speed freewheel cog that threads onto it. Using a rear derailleur with either hub creates nine or fifteen gears at the back wheel. Okay gearheads, used with a triple crank this gives you 45 total gears. If we throw on a Mountain Tamer Quad inner fourth chainring you can expect a mere 60 different gears.

CycloPedia (517)263-5803

Robert J. Bryant

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FROM THE EDITORS DESK:

Welcome Recumbent Cyclists,

Things are moving fast here at the RC offices. Getting up and running with the new Mac has been both fun and frustrating. The final outcome will be a remarkable difference in the quality of this publication. It may take a few issues get going. Special thanks to all of our computer literate members who have offered advice. Especially the ones that told me to buy a Mac.

Membership is approaching 500, this is fantastic. We apologize for the dues increase (dues/ renewals are now \$20 US and \$25 (US funds) foreign). Even though we have great recumbent manufacturer support, the RC loses money with every issue. To make the newsletter pay for itself we need to attract some more advertisers but mainly more members. The fastest way for us to grow is for you to send a copy of RC to someone you know.

RBCA Celebrities: We are in the news gang. Vic Sussman wrote an article that appeared in the Washington (DC) Post that told about his happy experiences in his new Ryan Vanguard. (1-18-91 Washington Post "On the Move.") The article gave the clubs address for more info on recumbents, we have had over 150 inquiries since the article ran. "LAID-BACK CYCLIST LAYS ON THE SPEED" is what the headline read when Mike Ziegenbein was pictured in the Atlanta Journal on 11-1-90. Mike rides a partially faired Lightning P-38. We took some pictures at the Seattle Bike Show last November of my wife Marilyn standing behind an Ice White loaded Turner LB'90. We then sent a copy to Milt Turner who sent the picture on to BBJ (Bicycle Business Journal), a bicycle trade magazine. They published it. We are still getting responses from bike shops. We will

send them all a sample RC to show these bicycle shops the 90's and beyond bicycle market.

Here is a current list of **RBCA Contact People:** Maybe we can get some rider groups or loose-knit Chapters going: **Los Angeles** area: South Bay Recumbent Riders Gerry Pease (213)336-7731. **Texas:** Gary Klein, 5801 Hollister #1704, Houston Texas 77040. **Eastern WA:** Lawrence Walters, PO Box 265, Vera Dale WA 99037. **Western WA:** (volunteer wanted) call Robert (206)255-9479. **Florida:** David Hoekzema, 29 Hildreth Drive, St. Augustine FL 32095. **Toronto:** John Riley, 150 Gough Ave, Toronto Ontario, Canada M4K 3P1. **British Columbia:** David Conn, 248 Waterford Dr., Vancouver BC, Canada V5X 4T4. If you would like to be added to this list or taken off, please write me at the RC office in Renton WA. Please let me know if you want your home phone listed.

The RBCA/ Recumbent Cyclist made a last minute appearance at the **Seattle Bike Expo** with our fleet of recumbent bikes. We had been on a list for space and got a call two days before the show. This show is sponsored by the Northwest's Cascade Bicycle Club and the reaction to our weird and wonderful machines was excellent. As you read this we will have just finished up the **Portland Oregon Bicycle Show** in late March. We are being sponsored in Portland by: Ryan, Linear, EasyRacers, Infinity, DH Recumbents, Millennium Recumbent Bicycles, Eco Cycles importers of the Trice Trike, Joel Smith with his new Advanced Transportation Products R-20 SWB Recumbent and Lonnie Fishter with his new trike. Thanks guys.

Robert J. Bryant,
Editor and Publisher

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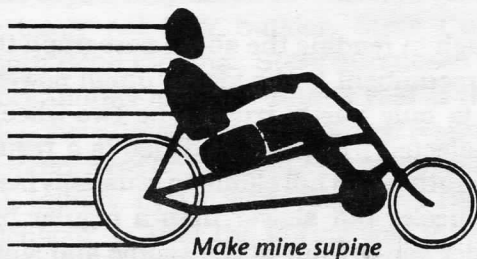
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Recumbent Design Considerations

You've finally decided to take the plunge and build the recumbent bike that you've always wanted. But before you cut apart that old bicycle frame, start to miter any tubes or put that torch to the metal, some decisions have to be made.

The first one (of many) is: will it have two wheels or three? Let us look at the pros and cons of each design before a decision is made.

Three Wheels: Three-wheeled recumbents usually follow one of two popular designs: 1.) the Vector/ Speedy/ Trice design with two steering wheels in front with one driving wheel in the rear; or 2.) the Earth Traveler design with one steering wheel in front and one driving wheel in the rear and one non-driving wheel in the rear. Although these designs are vastly different they share many of the same advantages and disadvantages.

The three wheeled vehicles look sexy and most people who are thinking of building an HPV think of building a three wheeler first. Three wheeled designs offer great stability (the strongest advantage) at low speeds and in

windy conditions. They tend to be more complicated and costly to build, have complicated drive systems, have higher rolling resistance (more weight and three wheels), higher wind resistance (larger frontal area), cannot lean into the corners (its high speed cornering ability is usually lower than a two wheel design), and forced to keep a balance between height and width (as rider positions get higher the vehicle width must get wider to maintain vehicle stability as the vehicle gets narrower it usually gets lower.) Low vehicles (both two and three-wheeled designs) are seen as unsafe because the riders have a hard time seeing and motorists and other riders have a hard time seeing them. High three wheeled designs tend to be more tippy when cornering. This has not prevented a number of people from building successful three wheeled vehicles. These builders feel the inherent stability and sexy looks of the three-wheeled design outweigh its disadvantages.

Two Wheels: If a prospective builder were to attend one of many HPV racing or practical vehicle events that are held around the country he/ she would be led to believe that every HPV has two wheels as they are the most common. Currently two wheeled vehicles seem to come

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in two variations: long wheelbase with the crank behind the front wheel, the TourEasy and Infinity are examples of this variation, and short wheel base with the crank in front of the front wheel. Lightning P-38 and Laid-Back Bicycle are examples of this variation. Although at first glance they appear different they share many of the same advantages and disadvantages.

Where the three wheelers have stability as a strong point the two wheelers have no dominate advantage. Most builders find the two wheeled HPV the easiest and cheapest to build because of the simple design. Many parts can be taken from a standard bicycle and used without modification. Rolling resistance is less than that of three-wheeled recumbents. (compared to a regular bike, as is driveline resistance). Two wheel HPV's generally have 10-20% less frontal area than a three wheeler (20-30% less than a regular bike) so air resistance is much less. Beginning recumbent riders usually find the steering and balance very much like their regular bikes and have little if any difficulty in handling and cornering. The two-wheeled recumbent is usually no wider than a regular bike and can share the highways with motor vehicles without incidents. Currently recumbents are still a novelty and are usually very visible in traffic. At the same time most two-wheeled recumbents place the rider at a height and in

a position where they can see and hear traffic better than their counterparts in motor vehicles.

It looks as though in reading the above paragraph that the two wheel recumbent is the ideal human powered vehicle. This is only partly true. The two-wheeled recumbent is affected by cross winds (so is a regular bike) and acceleration and hill climbing is usually faster than a three wheeler but slower than a regular bike because the rider can get out of the saddle and stomp the pedals to put maximum power into these situations. The trade-off is recumbent seats Both two and three wheelers are generally larger and more comfortable than regular bike seats and because the hand and arms are not supporting part of the rider weight sore wrists, arms and shoulders are a thing of the past. Because the head/neck is in a more natural position the early season stiff neck is not a problem with recumbent riders.

Which is better? There is no one right answer. Each recumbent builder must look at his/her own riding conditions and determine which vehicle best suits his/her needs. Also before building (or buying) a recumbent of any kind, test ride as many different designs as possible. Just as a picture is worth a thousand words, so is a test ride.

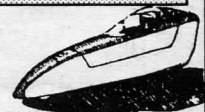
By Gaylord Hill
Adrian Michigan

Gaylord Hill is a recumbent bicycle enthusiast/ designer and also the owner of CycloPedia HPV Parts Mail Order.

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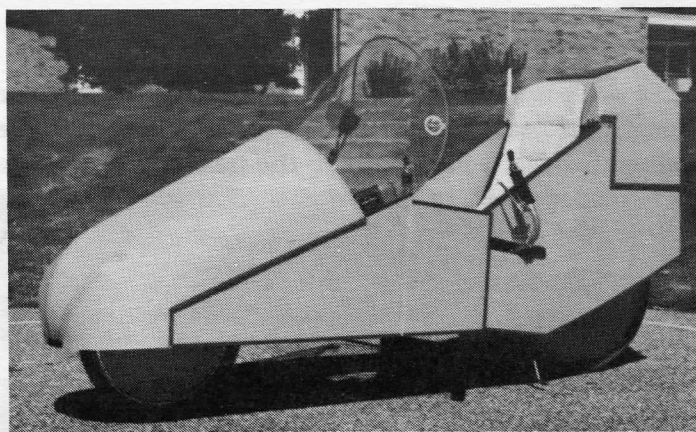
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The Evolution of the Omega HPV

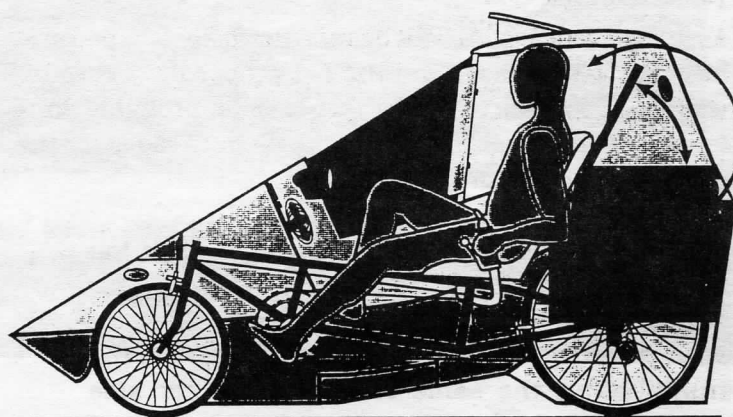
Who says a fully faired HPV should cost \$4000; Certainly not HPV builder, Steve Curneal of South Bend Indiana. Steve purchased his box-stock Infinity in 1987. After a year of riding the bike, Steve decided to add a fairing. He purchased a Breeze Eeze design that is built specifically for the Infinity by Gordon Mallett in Big Rapids Michigan. After the fairing was installed, he then built a dashboard and added a CB radio, cycle computer, thermometer, motion-sensor alarm, clock, inclination guage and a custom battery case with a rechargeable 12 V. Gel Cel battery. Other economical custom features include "joystick" steering extensions made from old lawn chair frames and a custom K-Mart imitation sheep skin seat cover pad to add comfort to the already "sofa-like" Infinity stock seat.

With all of these custom features, the ultimate improvement would be a full body. This seems to be the dream of many HPV/ recumbent bicycle enthusiasts. Steve designed a fairly simple body using the Breeze Eeze frame as a start and adding to the aluminum framework. (Unlike the Zzipper fairing, the Breeze Eeze uses an aluminum frame with a soft nylon material cover.) The body material was found through the IHPVA's Source Guide, Cor-X, corrugated plastic board made from copolymer polypropylene. This is like plastic card-board and it's readily available, in 4 X 8 sheets. Tracing onto the Cor-X from cardboard templets and cutting along the marks with an X-Acto knife made for much simpler construction compared with what it takes to build a fiberglass body (see also RC#2 CSPC "The Poor Man's Composite"). Steve's fairing is made from 6-sheets of the Cor-X, each piece held together with screws, lock nuts, double back tape and Velcro. To protect the rough edges of the Cor-X, rubber edging was applied. No glue, resin or epoxy was used in the bodies construction. With this new body, she was christened "OMEGA".

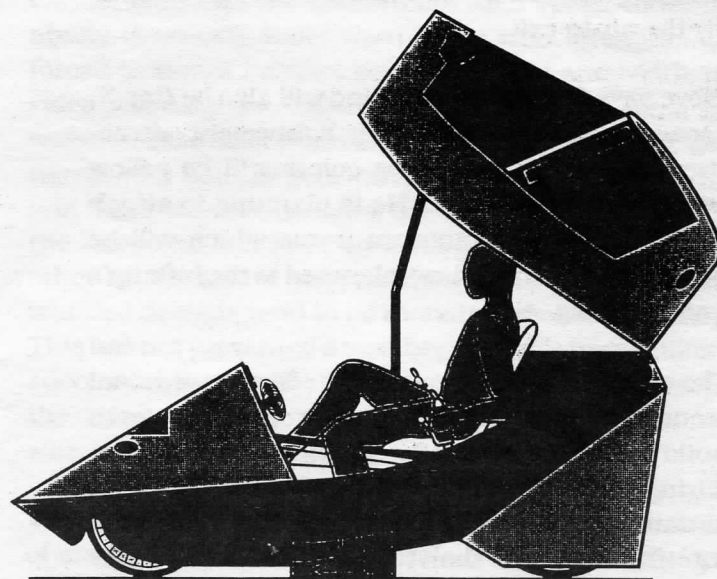
"It is hard to describe the attention I get whenever I take OMEGA out for a ride. With its yellow fairing and solar panel shining in the sun, it draws more stares than any other vehicle on the road—including a \$130,000 red Ferrari Testarossa I met one day while biking. A crowd gathers every time I park it. At every stop light I am asked questions and some drivers get out of



Current Omega Recumbent.



Omega II with infinity bike frame showing through.



Omega II design with canopy door and foot-flap open.

their cars for a closer look while the light is red," says owner/ builder, Steve Curneal.

OMEGA II Progress

Steve wrote me a few months ago to let me know how the Omega II project was coming. He has since rejected the original Omega II plans due to the box like shape. He also decided that the new doors were too heavy and complex. As you can see from the artwork, the new Omega II fairing design is far superior to the original design.

The Omega designing was done by Steve Curneal on a cad-computer, an IBM compatible with Corel Draw graphic design software. "Drawing with the computer sure is light years ahead from the ink pens, T-square and zip-a-tone of yesterday," says Steve.

As for the new design, it will be more wedge shaped and have fewer windows than the old proposal. Omega II will have as much of a floor as possible, probably flaps for your feet and cut out sections on both sides for the turning arc of the front wheel.

Instead of sliding doors it will have a hinge top section to allow entry and exit (see fig. 2). For ventilation it will have removable lexan side windows held in place by Velcro that will store in the trunk, about the same as the sports car side curtains. (see fig. 3). The top will have a sun roof type vent, but hinge it backwards (open towards the front) to blow air into the cockpit. For more ventilation it will have adjustable side window vents and an electric fan mounted on the dashboard. The back above the trunk lid will be open for the air to exit.

Steve says that the new fairing will also be Cor-X, because it is easy to work with, lightweight, attractive and inexpensive. The colors will be yellow with a red mid section. He is planning to attach the Cor-X to an aluminum frame which will be basically self-supporting, clamped to the Infinity's frame (see fig. 4).

The overall result is a very cost effective personal recumbent vehicle-possibly even easy or easier to build? After attending a fiberglass/ composite fairing workshop at an HPV meet, the Cor-X on aluminum frame method seems within reach, and significantly easier than the time consuming labor intensive job of plugs, molds, fiberglass, kevlar, epoxy and releasing agents. Hopefully, this article will stimulate a few designer/builders to go to

work. The Omega II Infinity body is not a commercially available product, but Cor-X and Breeze Eeze fairings are. For more information contact:

Breeze Eeze, Inc.
PO Box 611
Big Rapids, MI 49307
Infinity fairings

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Infinity Bicycles
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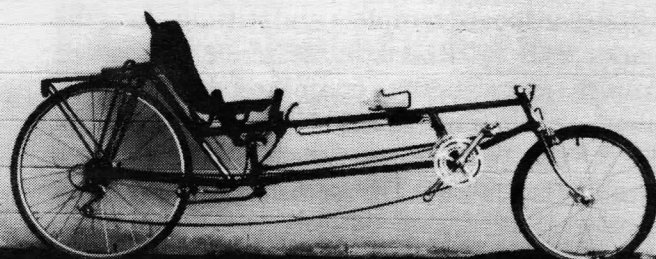
Infinity Note: Besides being the most affordable recumbent available in the USA today, the Infinity makes a great starting point for a faired HPV. The square aluminum stock that the frame is made from makes it easy to mount fairing/body fixtures. The Infinity is also the lightest LWB recumbent in its class at 27 pounds box-stock. Infinity prices start at \$499 for a painted 12 speed.

Robert J. Bryant

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

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USA

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**Price List of out-of-print recumbent brochures, articles and road tests-please send S.A.S.E. (or free with a back copy order).

NEWSLETTER SUBMISSIONS: We are interested in your articles, photo's, letters to the editor, stories and HPV/ recumbent information. Please print your name on the back of anything sent to the RC office so we can credit the source. If you can send your submission on computer disc, we use a Mac that will read IBM 3.5" discs in ASCII format only. Please send submissions directly to the Recumbent Cyclist office at:

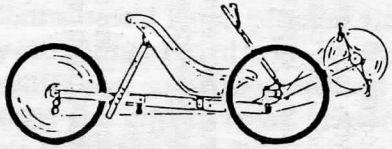
The Recumbent Cyclist Newsletter
Robert J. Bryant, Editor and Publisher
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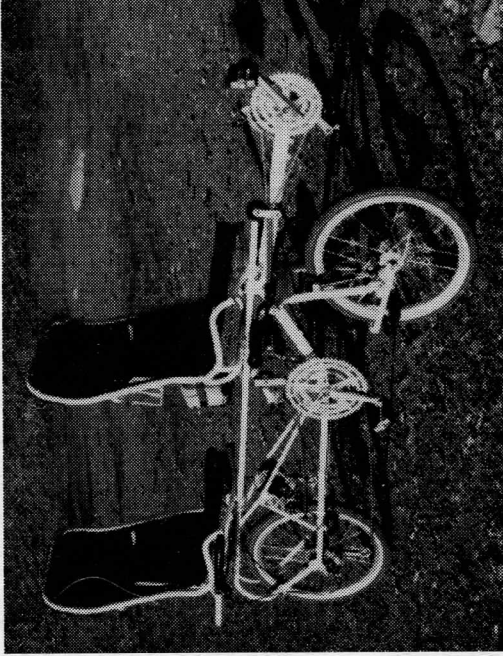
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The Companion

by Rotator Tandem



Some time ago, an article appeared in Bike Tech that discussed the concept of having **individual cadence** capabilities on tandem bicycles...

Recently I finished a recumbent tandem that is designed so each rider can select his or her own pedaling rate. Of course the extra complexity creates more weight... however, it also adds some distinct benefits:

- start-up is smoother
- less power-induced steering oscillations
- the stronger rider cannot overpower the weaker rider and cause early burn out
- the weaker rider cannot hold back the stronger rider
- shifting can be done at any time. While one person carries the load, the other can select the proper gear. This is a tremendous asset for hill climbing.

Is it faster? So far, we haven't done conclusive testing to say yes or no. My intuition tells me it will be.

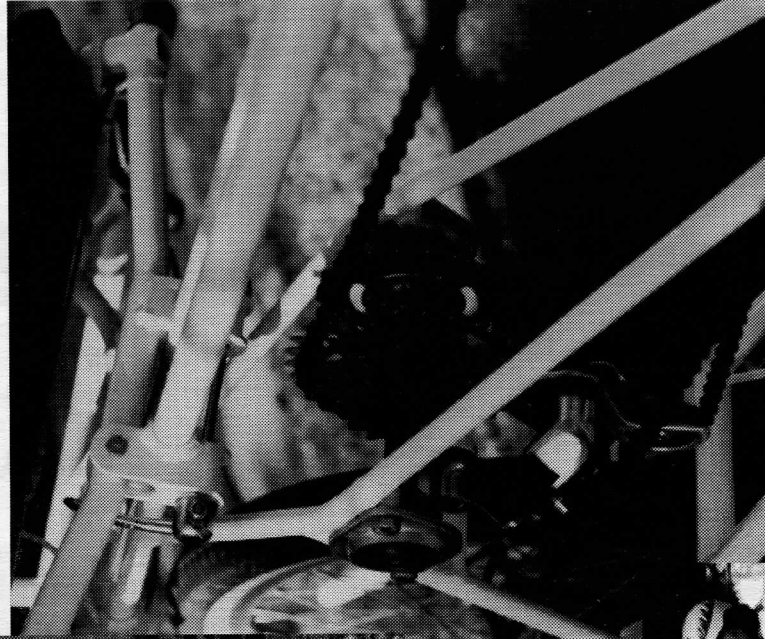
Modern automobiles continue to become more complex with four valves per cylinder, twin overhead cams, and turbo charged engines. This makes sense because it improves performance.

Dual cadence tandems make sense because they improve rider harmony which will help increase performance.

Every **ROTATOR** product is hand built to the customer's requirements. Quality craftsmanship is our foremost pursuit.

...Stephen Delaire

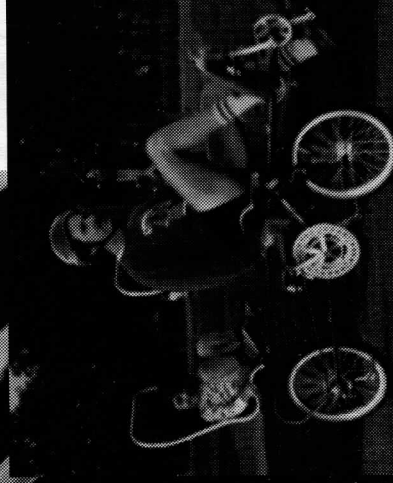
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RBCA CALENDAR

MAY 11-12 10 am to 5 pm **The 6th Annual Pedal-Powered Potlach** For Pedal powered watercraft, to be held at the Center for Wooden Boats, 1010 Valley St., Seattle WA 98105
For more information contact: Phil Thiel (206)633-2017

APRIL 22-JUNE 28 The Canejo Valley Art Museum **Exhibition of Alternative Vehicles**. The museum is at Hillcrest Dr., Moorepark and Wilbur Streets at the Janss Mall Exhibition Hall in Thousand Oaks (CA).

APRIL 27 Gerry Pease and the **South Bay Recumbent Riders** will host a **meeting** at the Canejo Museum. They will meet at the museum around noon and have lunch in the mall. The group will be riding their vehicles to the meeting. The ride is 70+ miles, for more information call Gerry Pease (213)336-7731 (Wk.) and (213) 379-6663 (Hm.).

MAY 11 **Concourse d'Elegance** at Stan Sayres Pits, Lake Washington Blvd. just south of the old sunken and New Floating Bridges in Seattle WA. We would like to see some recumbent cyclists compete in the HPV class. For more info call Robert Bryant at (206) 255-9479 or R&E Cycles for show specifics at (206) 527-4822.

JUNE 8 **Alternative Energy Symposium & Fair**. This fair will be held at Bellevue Community College (Bellevue, WA). We are in the planning stages of a recumbent display for the show. For more info call Olof Sundin, Fair Coordinator (206)641-2012 or Robert Bryant regarding the recumbent display (206)255-9479.

JULY 3-7 **L.A.W. NATIONAL RALLY** (League of American Wheelman) to be held at Evergreen State College Campus in Olympia WA. Also see Lawrence Walters article in this issue.

AUGUST 14-18 1991 **The IHPVA 17th Annual Human Powered Speed Championships** (IHPSC). This year in Millwaukee Wisconsin. For more information contact the IHPSC, PO Box 51255, Indianapolis IN 46251.

SEPTEMBER 20-22 **INTERBIKE 1991** to be held in Anaheim CA. This is a bike industry trade show. For anyone interested in going, drop me a note at the Recumbent Cyclist office. We may be involved in some way this year or need a reporter for the Anaheim or Atlantic City Shows.

OTHER STUFF:

FIRST ANNUAL PACIFIC NW STREAMLINER RACING SERIES This new race series will consist of races in the Puget Sound area, Portland (OR) and elsewhere. For more info contact: Stewart DeLaire, 1365 Fox Run Blvd. NW, Bremerton WA 98310. Phone (206) 692-9738

MIDWEST HPV RACE SERIES Another new race series to be held throughout the MidWest. For more information contact Don Berry at Infinity Recumbents (317) 831-8798

The role of the RBCA/ Recumbent Cyclist is to promote recreational and practical uses of recumbent bicycles / HPV's. We have listed the race information above as a service to our members who are the race promoters. Generally these races turn into recumbent bicycle get togethers. Especially the IHPSC in Millwaukee which will have a Practical Veh. Competition.

NEWS FLASH!!!

"But the key to long-distance cycling's current popularity may be technological advances that allow cyclists to stay in the saddle" (NEWSWEEK, JULY 23, 1990)

Now isn't that interesting? Suppose someone could create such a "technological advance?" What would they call it... How about a "recumbent?" Hello, World, welcome to Recumbency!

I'm fairly new to Recumbency, having been introduced to it via Steven K. Robert's Computing Across America in 1989. I began researching recumbents, and after visiting Gardner Martin's Easy Racer location earlier this year, and trying a friend's Tour Easy on a couple of 50 miler's, I was sold!

My primary objective in writing this is to bring to everyone's attention that the League of American Wheelman's 1991 National Rally is being held in the beautiful Pacific Northwest on the Evergreen State College campus July 3-7. I would like to invite all recumbent owners and enthusiasts to attend. I propose some recumbent activities, such as a seminar on Recumbency, a sit-down dinner, (with Steven Roberts as the quest speaker?), a "mini-rally" of recumbent owners, etc. I would like to get ideas from others on my proposal, and would be happy to coordinate the input via the RECUMBENT CYCLIST. You can write to me at:

Lawrence Walters
P.O. Box 265
Vera Dale, WA 99037-0265

or via the RECUMBENT CYCLIST. I am a member of the Spokane Bicycle Club, Spokane, Washington, there are two other recumbent owners in the club.

Yours in Recumbency,

Lawrence Walters

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RECUMBENT NEWS 1991

EASY RACERS: The new "Cobra" seat is almost done and should be ready for delivery by May 1. The Cobra will come on the standard Tour Easy in a fiberglass version and on the Gold Rush Replica in a super-light Kevlar version. The seat will also be available separately to retrofit your trusty old TourEasy. We have tested the prototype and it was much more comfortable than the current seat. **HOT FLASH! Tour d'France** promoters are interested in a TourEasy for '91 race promotions, by the time you read this they may own one. In mid-March Gardner Martin went to France to check out a course for the Gold Rush. **1991 RYAN VANGUARD** pricing was recently announced. The Vanguard is priced at \$795. An upgrade menu will be available as the component selection was slightly downgraded to reduce the price from \$995. Options such as Blackburn Racks, Sun-Mistral Rims and SRAM Grip-Shifts will be available. The possibility of a top-of-the-line model for late '91 or early '92 exists. Ryan Recumbents is moving to Eugene Oregon as of April 7, 1991. The new address is: 3910-Stewart Rd. Unit F, Eugene OR 97402. The new phone number is (503) 485-6674. **INFINITY RECUMBENTS:** For 1991 Infinity prices have dropped. The powdercoat paint option is now standard, this was a \$75 options last year. The new "Bulldog" 54" wheelbase recumbent is

almost ready according to Don Berry, deliveries will start sometime in May. **ROTATOR:** Steve DeLaire's Companion Tandem, possibly the recumbent tandem that we all have been waiting for, Steve has come out with a separate cadence version with front suspension! (Take a close look at the bike in the ad). **PRESTO NOTES:** A '91 Presto model was seen at the Seattle Bike Expo. Changes include a rubber doughnut type suspension on the Performance version, a Composite nose cone, wheel skirt and Aero Lycra rain and trunk covers. The beautiful composite work is done by RBCA member/Presto advocate Paul Atwood. **ZIPPER ROAD FAIRINGS:** This is our favorite recumbent option here at RC. Zipper received some press lately when Bernard Magnouloux and his companion Françoise rode their studded tire equipped German Radius Recumbents fitted with (Ryan model) Zipper fairings pedalled as far North as they could go to the Finnish Ice Cap. The story was featured in the "New Cyclist: Winter '90/'91 issue. **THE NEW CYCLIST:** a great quarterly publication from England. This is the best bicycling magazine that we have ever read. The New Cyclist offers recumbents and HPV's equal coverage. Air Mail subscriptions run £51.80 (Pounds). New Cyclist, Unit 1 Hainault Rd., Romford, Essex RM6 5NP England.

CLASSIFIED ADS

Lightning F-14 Recumbent Close-out. Same layout and geometry as the P-38. SunTour 3000 components, 12 speed. \$650. Used bike, Lightning F-40 Prototype also for sale. 48 lbs., not for hilly areas, \$1800 OBO. Lightning Cycle Dynamics, 1500 E. Chestnut Ct., Lompoc CA 93436. (805) 736-0700

Recumbent Bicycle for Sale: Custom-built, almost new, 15 speed, cantilever brakes, sealed bearing hubs, mesh seat, underseat steering, 63" wheelbase, can stand vertically (less storage space required) and fits riders 5'7" and shorter. \$550 OBO + shipping. Contact: Mike Eliasohn, 2708 Lake Shore Dr. #307, St. Joseph Michigan 49085. (616)982-4058.

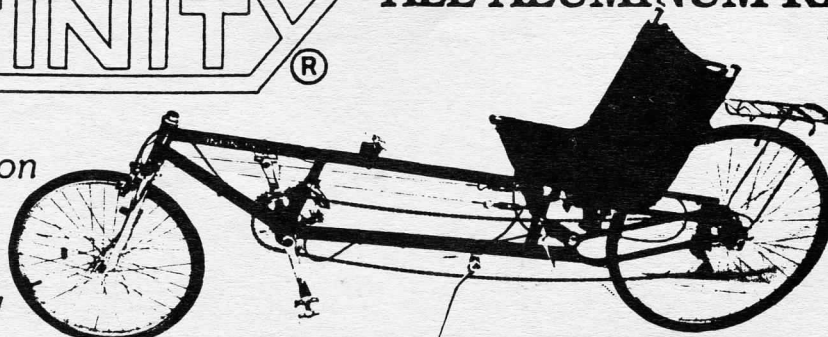
1990 Infinity Show Bike: Top of the line components. 18 speed, index shifting drivetrain. \$899 + shipping. Also come see our 1991 Lightning P-38 and 1991 EasyRacers Gold Rush Replica on display. Millennium Recumbent Bicycles (206) 255-9479 (WA)

For Sale: Kahn Linear: Like New-only used 200 miles-I paid \$850, will sell for \$500. Call Larry at (805) 497-0322. (CA)

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