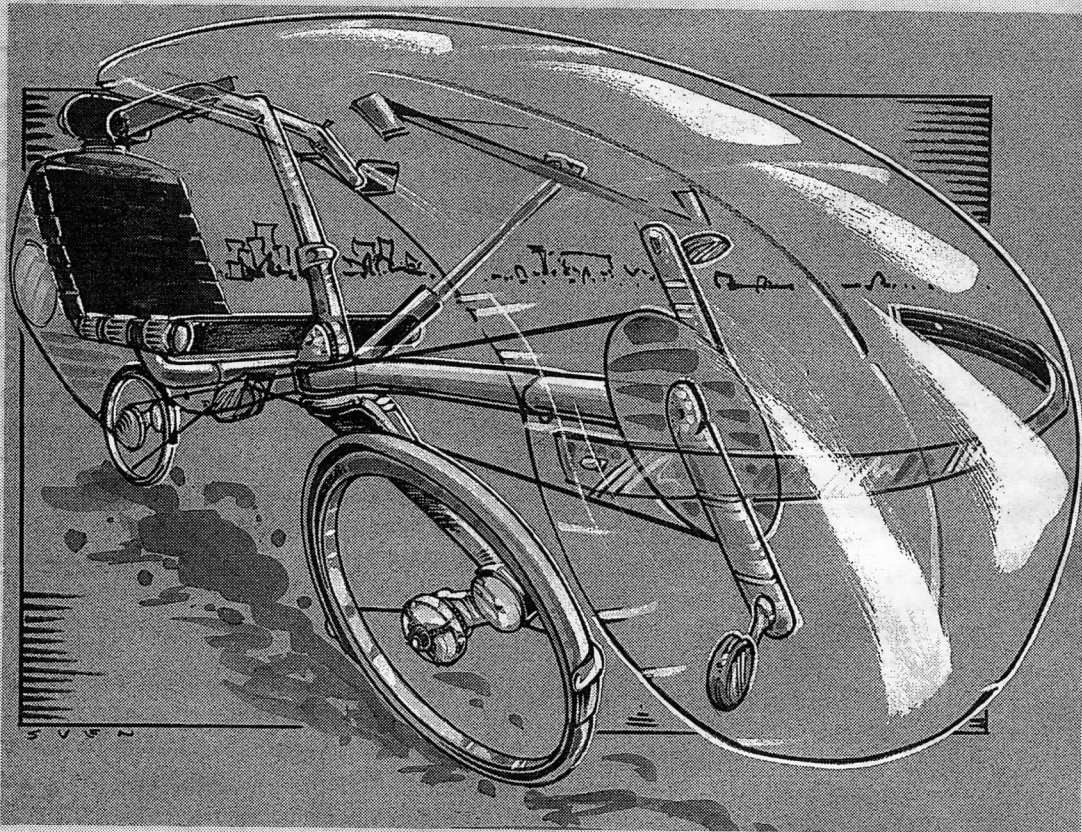


Recumbent Cyclist

NEWS

RCN #18 January/ February 1994



RCN'S Dream Bike For The Year 2000!

.....
Inside this issue: "In Search of the Instant Recumbent"
"Presto vs. Tour Easy shoot-out!"



EDITORIAL LICENSE:

by Robert J. Bryant, Publisher

.....

WELCOME RECUMBENT CYCLISTS!

To the first RCN issue that is 100% computer generated from the RCN offices. This is a huge step in our goal to streamline and bring in-house the RCN issue layout and preparation. Readers can expect larger issues starting with RCN#19. This issue is smaller because it is our first in-house, but RCN#19 will be over 32 pages-which will most likely be our new average size.

We are pleased to announce that the next issue, RCN#19, will be our **3rd Annual RCN Recumbent Buyers Guide**. Listing deadline is January 7, 1994 and advertising deadline is January 21, 1994. Call if have any questions. Ph:# 206-852-8149. The Buyers Guide should hit the streets around March 15th.

NEWSLETTER BUSINESS RCN has entered the ultra-intense phase of our reorganization. In the past two months, we have selected a new printer, researched how to improve our mailings and last but certainly not least, taken over 100% of the issue page-layout (we had an unscheduled parting of ways with our former printer who also did the RCN layout). We now use Aldus Pagemaker 5.0 and all of the layout is done in-house. Within the next few months we will be totally self-sufficient (aside from printing) with the purchase of a new Hewlett Packard Laser Printer and a scanner purchase following soon after.

RCN MAILING: The next task of our reorganization is to re-think subscription options. When we set this up back in late '91, we hadn't really a clue on how newsletters and magazines did this. After three years experience, we now know exactly how its done. The problem is that our subscription & mailing options were set up when everything was done by hand. Our two person office staff can no longer process everything by hand. This means setting up streamlined & automated systems. For RCN readers this means a much quicker RCN delivery (bulk/ 3rd class). For this reason, we have discontinued the "first class" subscription option. If all goes as planned, current RCN first class subscribers will be converted to "bulk/ 3rd class" and will have the appropriate number of issues added to their subscriptions (in first class-third class conversions, percentage points of issues (less than one issue), will be bumped to the next higher issue. We will also welcome "Supporter" upgrades.

We will caution RCN readers that bulk mail is not generally forwarded, the postal service tosses them in the waste bin. We cannot stress enough the importance of sending us your new address a month or so prior to moving.

ISSUE DATING: Since RCN#2, we have mailed the RCN issue in the middle of the official mailing period, or in other words, the March/ April issue was usually mailed April 1. Needless to say, this makes us terminally late. As of this RCN#18 (this issue), we are reformatting our mailing date schedule so that we run two-three month ahead-like other newsletters & magazines. **Do not be concerned**, we will be also reformatting RCN renewal dates to reflect the change in our schedule. Note: We are also changing from label renewal notices like this: "2/94 Renewal Date" to one similar to this: "Sub. Expires with RCN#19." Be sure to watch your label. Regardless of dates on issues, you will receive **SIX RCN** issues during 1994.

RCN DREAMBIKE: RCN Underground HPV Artist, "Sven," has come up with this artist conception of the SWB bike for the year 2000! This futuristic recumbent rendering offers a mono-suspended CNC machined fork, CNC machined mono-supported hubs, custom futuristic drivetrain and gearing with electronic shifting, Magic-style crank, Speedplay style pedals, custom adjustable headrest with miniature CD/AM/FM Stereo/CB/ Short-wave and a fairing. Not seen in the picture is the retractable Lycra/Gortex side-panels for performance and weather-protection.

COVER ART: We will be sponsoring a on-going contest for RCN cover-art. Art is to be submitted to RCN with the understanding that if it makes it onto the cover, the artist will have his standard RCN subscription upgraded for one year. RCN reserves the right to use runner-up art inside the pages of RCN with no prizes awarded. Art cannot be returned unless a post-paid envelope is enclosed.

Last but certainly not least, we are working on official "RCN T-Shirts." Watch for an announcement in RCN#19.

Viva Recumbency!

Robert Bryant, Publisher 🍷

RECUMBENT MAIL-BOX



TRIKE CONCERNS

Dear Robert,
I must respond to your review of the Trice and your interview with Peter Ross. Having commuted on a Trice for 2 1/2 years and the Thebis for the past three months, I believe that I have some worthwhile experience to share. I have great respect for Ken Trueba for all he has done to improve the Trice and for Thebis for making a beautiful machine. Incidentally, the price differential is no longer that great.

The Thebis is a truly beautiful machine whose design has been expertly and painstakingly executed. The brakes are far superior to those on the Trice, as is the overall quality. (I had an older Trice.) The Thebis is not as stable at high speeds, nor in corners, but the Thebis manual gives specific direction about these two issues, with instructions about leaning in corners and a maximum recommended speed of 30 mph. I find the pedaling position more comfortable and effective on the Thebis than was the case with the Trice.

Mr. Ross, in his interview, should have shown more respect for the well designed and executed Thebis, since he admitted to never having ridden one. The British-built Trice that I bought several years ago was truly a prototype with multiple shortcomings that Ken Trueba has done a lot to improve. The assembly of the Trice was difficult for a novice like me, but Ken did offer help over the phone. The SunTour Derailleurs never worked correctly, so I replaced them with Shimano Deore XT components, which were fine. I am glad to see that they are available as an option, one which I would strongly recommend. Ken

has added an aluminum pedal tube, a heavier rear wheel, a new seat (mine was made of poor quality fiberglass which ultimately cracked in several stress points and became unstable), an improved frame quality (my British-built frame was unimpressive in workmanship and ultimately cracked at the junction of the seat bracket, resulting in the demise of my vehicle). Ultimately, my major enduring criticism of the Trice is that the braking is inadequate. I live on a very steep hill, and I never felt that the brakes were strong enough.

I am excited to hear about the new Trice fairing. I was considering Blue Sky Design's product, but didn't want to proceed with a large investment on an old vehicle. I used a Zzipper experimenter fairing on my Trice which worked to keep my feet warmer in winter, but adversely affected handling. I got a lot of help and free advice from Zzip Designs. A well ventilated and workable fairing is an important area for improvement for an all-season commuter.

One of the shortcomings of both vehicles as commuters is lighting. If you commute in all weather and in the dark as I do, lighting must be excellent. As far as I'm concerned, no bicycle product makes it. I have evolved a highly visible system, that works day and night but is heavy due to the 20 pound Sears wheelchair motor battery that I must lug around. This weight sacrifice has allowed me to use standard automotive equipment which is relatively cheap and very available. I used an automobile driving light, a revolving yellow light and a trailer tail-light-all from an automotive supermarket store. The box is a

RCN PUBLICATION INFORMATION

Recumbent Cyclist International is a sole-proprietorship in the state of Washington. Recumbent Cyclist News is 100% dedicated to promoting recumbent bicycles and providing and encouraging communications between HPV enthusiasts, home-builders, dealers and commercial manufacturers of recumbent bicycles. We are the only recumbent-only news publication in the world today. We are cycling's future.

SUBSCRIPTION INFO: Recumbent Cyclist News is published 6 times per year. To subscribe, please send: USA Subscription-\$25, Canadian-\$45 (Canadian Funds-personal checks OK), and International/Worldwide Air-\$45 (US funds/ cash). We also offer Deluxe "Supporter" subscriptions ranging from \$40 (1 issue mailed first class) thru-the Supporter-X (10 copies mailed 2nd day priority-\$100). These deluxe subscriptions are mailed the day we get the issue back from the press. They are mailed in a large flat envelope. If you are interested in upgrade information for your subscription send your inquiry to us or leave us a voice mail message at Ph:# 206-852-8149.

RCN SUBMISSIONS:Please write or call for our reader/ writer submission information sheet. This information is important. Ph:#206-852-8149

RCN Main address:

Recumbent Cyclist International
PO BOX 58755
Renton, WA 98058-1755

For UPS, FEDEX & packages

Recumbent Cyclist
17650-B6-140th Ave. SE, Ste. 341
Renton, WA 98058

RCN#18 COVER: Cover logo graphics provided by Mark Colliton of Kensington Design in Kensington, MD. "RCN Dream Bike For the Year 2000 artists conception/ graphics courtesy of the brilliant & talented HPV artist, "Sven."

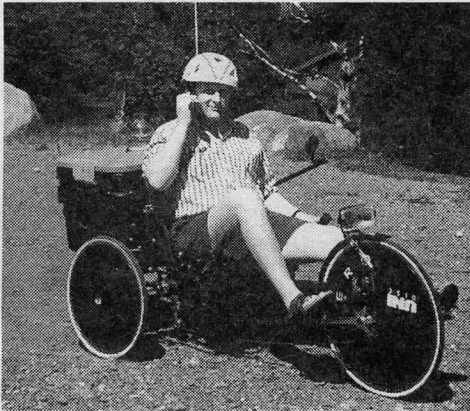
DEVOTED PRODUCTION STAFF: Publisher: Robert J. Bryant, Circulation/ Business Manager: Marilyn J. McKee-Bryant, Production Assistant: Jeanene Smith. Issue Layout proudly done at the offices of RCN in beautiful downtown Kent, Washington, USA. RCN is written and produced exclusively on an Apple Macintosh computer system.

COPYRIGHT 1994© All rights reserved. Material in this publication must not be reproduced in any form without written permission. All materials submitted for publication become the property of RCN unless previously negotiated.

Rubbermaid lockable case that houses my battery, wiring, horn and cellular phone (I am an Obstetrician/Gynecologist and can now take call from the trike). I mounted a slow moving vehicle farm triangle on the back of both vehicles. This really improves daytime visibility from the rear. I also think that wider wheels would be better for both vehicles. This is especially true for a tricycle, since one ends up riding on the edges of the road, especially when going slowly up hill. I tend to get out of people's way on our rural highways where pickup trucks go fast and furious. Narrow 1-1/8" wheels tend to sink into sandy, muddy or snowy edges of the road.

I have had good experience, good exercise and stress reduction from my commuting vehicles and feel grateful to those whose years of work have made them available to me. I think that the commuter market has a lot to offer the recumbent industry and hope that you will continue to write about issues concerning commuting.

Sincerely,
Marc Heller, M.D.



Dr. Mark Heller's Thebis--M. Heller

Dear RCN,
Great issue #17. The hybrid recumbent that Steve Smith wrote about....what a jewel! 20" low gear, swing arm suspension, drum brake, it folds, and looks like it could carry a ton!
Keep up the good work
M. Queen.

Dear RCN,
I just received my first issue and I am delighted with its contents. Of course I wish it contained more articles because I finished it so quickly and now must wait for the next one. The hybrid recumbent article by Steve Smith was very interesting. Is it possible for me to obtain plans from Mr. Smith? Could you forward this letter to him.

Sincerely,
Mel Pedinoff

Mel, RCN forwarded your letter to Mr. Smith and judging by the amount of mail we received about the SS15, it might be a good opportunity for Mr. Smith to market the bike or plans.

Dear Robert,
When is the next "RCN Recumbent Buyers Guide going to be published?"
Sincerely,
B.J. Strass

B.J., We are almost out of RCN#14 '93-'94 Buyers Guides, even after a 2nd printing last summer. RCN#14 reprints are available for \$10.95 first class postpaid. Our next issue, RCN#19, due out March 15th, will be the 3rd Annual 1994 RCN Recumbent Buyers Guide. It will be mailed as part of your regular subscription and be available as a back copy for \$7.95.

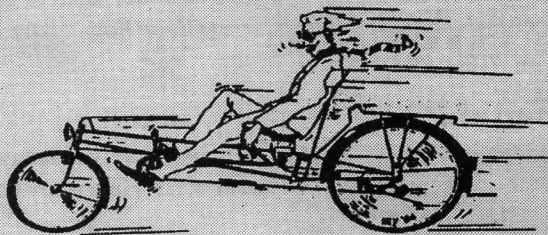
Dear RCN,
The homebuilders corner article in RCN#17 really sparked my imagination. I ride a Lightning P-38 and love it, but it is limited for the most part to paved surfaces. The SS15 Hybrid, with its fat tires, high center of gravity, low bottom bracket and suspension is just the kind of recumbent I would want for winter commuting, non-paved roads and some off-roading.

Mr. Smith has obviously put a lot of thought and hard work into the execution of this fine looking machine. I would like to correspond with him directly. If he can not be persuaded to build one for me, perhaps he could provide plans, measurements, technical assistance, etc.
Sincerely,
Dennis Kathrens

Dennis, the off-road recumbent scene seems to be gaining some steam. Two other builders who are working on off-road recumbents are Ed Roeters (Alternative Bikestyles-Ed wrote an upcoming article on this for RCN) and Milt Turner with his offroad Laid Back-E. Stay tuned to RCN for more offroad recumbent info. If you want to correspond with Steve Smith (SS-15) his address is: Steve Smith, 2 Acoma #5, Denver, CO 80223.



Rearview of the Thebis--M. Heller



DR. RECUMBENT

Dear Dr. Recumbent,

- 1) Can you tell me about the Swiss made "Twike?" It looks like a highly engineered bike, why don't we ever hear about it?
- 2) Can you tell me what ever happened to the 1970's PPV (People Powered Vehicle)?
- 3) What is the best way to open a alternative vehicle-recumbent shop? Which manufacturers sell only direct? Which are seeking dealers?

Texas Recumbent Fellow,
Eric Ebner, Austin, TX

Dear Eric, 1) the Swiss "Twike" is an elusive futuristic Euro HPV. This is also one of my dream bikes. There is a great "centerfold" of the "Twike" in Richard Ballentine's excellent must-have book, **Richard's Ultimate Bicycle Book**. According to Mr. Ballentine the Swiss three wheeler can achieve 19 mph

pedal assisted and 44 mph with the optional electric motor. A complete ready to ride hybrid Twike costs \$18,000 Swiss Franks or upwards of \$14,000 US Dollars. Could this be the HPV of the future? Maybe there is a market for something like this in the USA? Twike, Kirchenhein, 4460, Geherkinden, Switzerland.

2) The "PPV" was a heavy HPV that was not very practical and the company did not stay in business very long. The "PPV" was probably ahead of its time. PPV's can occasionally be found at garage sales, bike shops and shopper newspapers. Angle Lake Cycle in Seattle just sold a used PPV, and one of our readers in Washington also owns one.

3) This could be the subject of an intense manual for a new business for the year 2000. A few years ago, any enthusiast with capital to purchase a few test bikes could go into the recumbent business. Interest in recumbents amongst mainstream bike shops is increasing and many see recumbents as the next trend in cycling (we hope). With main stream shops interested, this makes it harder for the backyard dealers. My advice is to talk to the manufacturers who are aggressively seeking dealers (see our listing of manufacturers who had booths at Interbike) and get a storefront of commercial space as soon as you can. Beware, the competition is getting fierce. Most every recumbent manufacturer will sell direct if they have no dealer in the area. There are only a one or two manufacturers who sell direct-only and this tends to change, so you will need to contact manufacturers directly.

Dr. Recumbent □



RANS

RECUMBENTS

Performance Beyond Tradition

1104 E Highway 40 By-Pass
Hays, Kansas 67601
(913) 625-6346

Zzip Designs

Home of the Zipper Road Fairing

Windscreens on the Fastest Human Powered Vehicles in the World!

Call or write for our Free Brochure!



Danny Ray Burdick pictured at the helm of "Sasquatch," his Zipper Fairing equipped Ryan Vanguard Recumbent:



Zzip Designs

P.O. Box 14
Davenport, CA 95017-0014
Fax: (408) 425-1167
(408) 425-8650

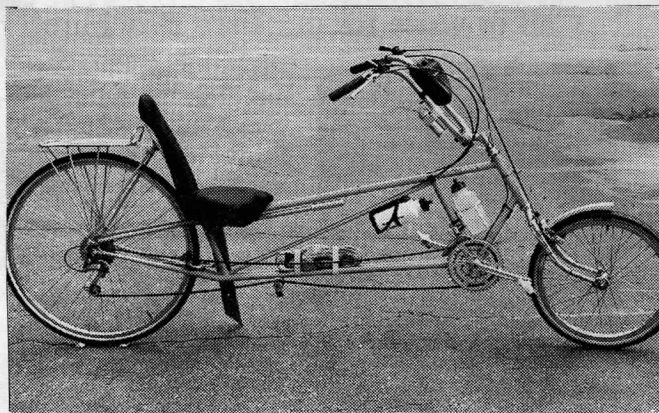
Counterpoint Presto Easy Racer Shootout

by Ollie Deex

Twelve years ago I bought an Easy Racer frameset, added the necessary components and started riding it part time. A year later, when my wife got one of the first Tour Easy bicycles made, then started riding recumbents exclusively. Last year, on the basis of the RCN review, I bought a slightly used Counterpoint Presto from the RCN classified ads. I got it in October and I have ridden it about 2100 miles; enough to know it, but nowhere near the 40,000 miles I have logged on the Easy Racer.

THE SET UP

The two bicycles weigh in the same at 31 lbs. This includes two bottle carriers and a Blackburn rack on each. The Easy Racer has a Haro 20 x 1.5 front tire and an Avocet Cross K 700 x 35 tire on the rear. The Presto is equipped with two 20 x 1.75 ACS Edge tires. Both bicycles have indexed shifting and thumbshifters, which I prefer since they allow me to brake and shift down at the same time in traffic. The bicycles are also geared similarly with 26/36/46 cranks driving a 13-15-17-20-24-28-32 freewheel on the Easy Racer and a 30/44/54 crankset with a 12-14-16-18-21-24-28 cassette on the Presto. Both bikes have Shimano SPD pedals. I use 180 mm cranks on the Easy Racer and 175 mm cranks on the Presto. (I have used 175's on the Easy Racer, but the super-light all-Kevlar seat I currently use can only be adjusted in 1/2" increments and the 180's fine tune the seat to pedal distance perfectly. My inseam is 36".) The measured diameter of the Easy Racer rear wheel is 26.5"; that of the Presto is 19.1". Both bicycles have side pull caliper brakes with Aztec pads which I find entirely adequate. (My



Ollie's 40,000 mile Easy Racer--O. Deex

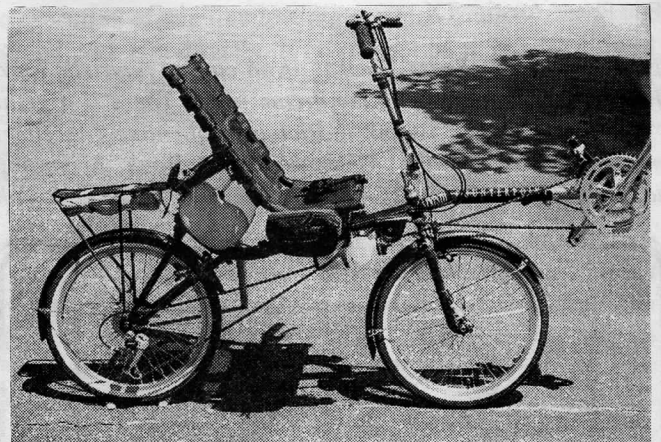
crashes have all been from skidding on water, sand or gravel or from getting caught in ruts.) (*Current Tour Easy's have a roller cam rear brake and side-pull front*)

STRONG POINTS

Both bicycles are superb machines. Each solves many of the problems of a recumbent in different ways. Here is my list of the strong points of each.

For the Easy Racer we have:

- ☛ Natural, "easy chair" seating position.
- ☛ A seat shape which makes it easy to shift your weight at low speeds.
- ☛ A low seat so it is easy to put your foot down when stopping.
- ☛ A very stable, forgiving steering and high speed behavior.
- ☛ Low wind resistance.
- ☛ A good ride bad roads.
- ☛ The ability to use a front rack and carry a large load.
- ☛ Handlebars that accommodate a handlebar bag and other items for ready accessibility.



Ollie's Counterpoint Presto--O. Deex

For the Presto the pluses include:

- ☛ An unbelievably comfortable sling seat with a cool mesh back.
- ☛ Maneuverability and quick responsive steering.
- ☛ Relatively low sensitivity to cross winds.
- ☛ A suspension which gives a good ride on rough (but not wavy) roads.
- ☛ Weight distribution which allows 40 lbs. baggage to be put on the rear
- ☛ Rack with no change in handling.
- ☛ A high bottom bracket and very effective fenders to keep the rider dry.
- ☛ A single frame size which fits all.
- ☛ Easy 1-20 mm. seat-to-pedal adjustments.

RYAN RECUMBENTS INC.

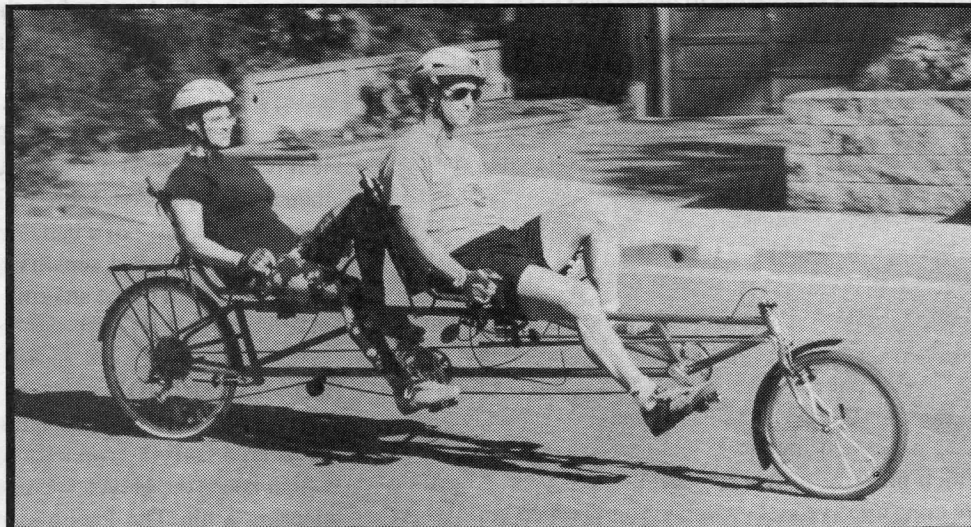
Bicycles, Tricycles & Tandems



**"THE BEST
RECUMBENT
VALUE."**

*THE RECUMBENT
CYCLIST MAGAZINE*

**NEW ADDRESS:
1-Chestnut St.
4th Floor
Nashua, NH 03060
Phone/ Fax
(603)-598-1711**



THE FLEETWOOD

Enjoy THE SCENERY, RIDE IN COMFORT.

TRY A NEW

Experience the comfort, fun and performance of seated cycling™!

"The most deluxe recreational/city bike-recumbent built"

Recumbent Cyclist News

"The bike I primarily use"

Dave Sader, Bike R_x

"Like riding a magic carpet with pedals!"

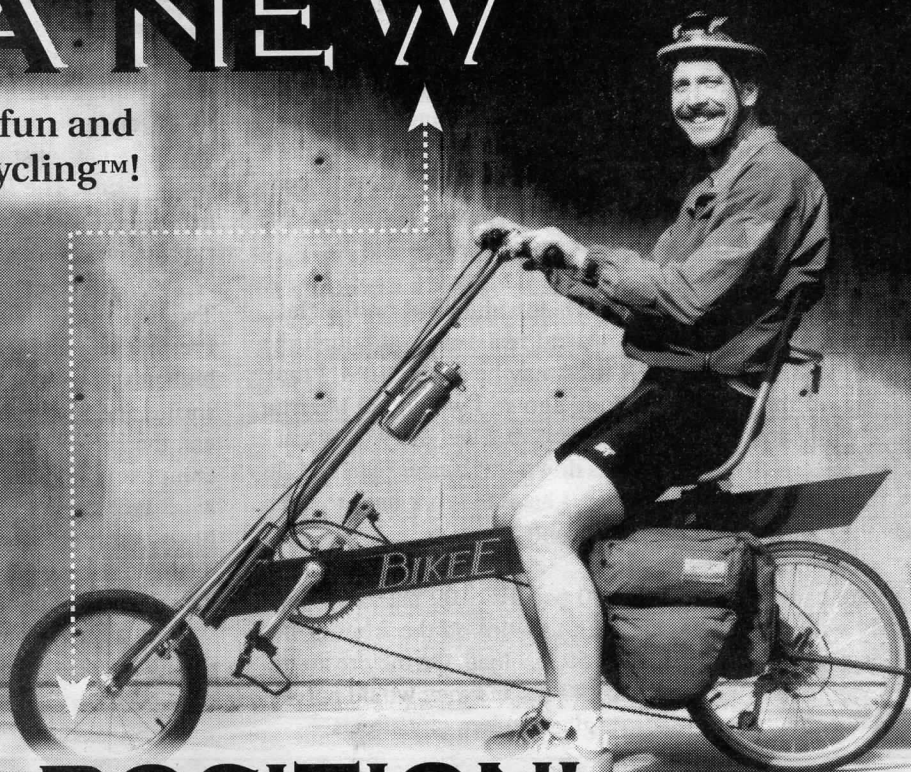
J. W., Dublin, CA



BIKEE CORP.

5460 SW Philomath Blvd
Corvallis, OR 97333

☎ (503) 753-9747



POSITION!

THE DETAILS

Now for a few details. The Easy Racer seat is the same height, angle and softness of your living room easy chair. You can see the road without bending your neck. When you stop, you just put one foot down without changing position. At very low speeds, say up a 10% grade, it is possible to move side to side enough to balance the bike so that the understeer of a long wheelbase recumbent is not a problem. The Presto seat is more laid back to accommodate the higher bottom bracket. The seat is unbelievably comfortable; however, and the mesh back and cloth seat eliminate the wet back problems of solid foam seats. The high seat makes stopping less comfortable and one tends to get off the bike for scenery and conversation.

HANDLING: LWB vs. SWB

Handling is the greatest difference between the two machines. The Easy Racer is very steady and responds more slowly to steering corrections. I once let the Easy Racer go to 54 mph on a long hill right after the road had been repaved. The bicycle was very steady; however, after I blew a new Michelin Tour-Light on a half-inch piece of gravel in Vermont last year, I have become more conservative and switched to the much sturdier Avocet Cross K tire. The Presto steering is very quick and lively. Riding it demands more attention and the higher seating position is required for stability. The Presto is very maneuverable and you have much more the feel of being a part of the bike. I have had it up to 45 mph on one of our few smooth hills; it is steady and tracks exceptionally well. The tendency of the Presto to pitch on small dips which are often not very visible, makes me very cautious on roads I do not know.

To put the steering differences another way, on the Easy Racer you turn a corner by steering the bicycle first and then leaning with it. With the Presto you lean first and then steer. The Easy Racer goes where you steer it and it is not necessary to consciously change position much at normal speeds. The Presto behaves best if you shift your weight and then steer.

The Easy Racer is definitely faster downhill and on the flats. This seems to be mostly due to wind resistance, although the rolling resistance of two BMX tires may be a factor too. I took the fairing off the Easy Racer long ago so I would not overrun my wife going downhill (she weighs 130, I weigh 195). When I ride the Presto, however, she goes down hills faster than I do. In short, if I ride the Presto with her, I have to work hard to keep up. On the Easy Racer I have no problem.

The Presto can be fitted with 100 psi IRC 100 psi 20 x 1 1/8 tires. My wife has no trouble with this tire on the front of her Tour Easy, where it only carries a 59 lbs. load. On the Presto my 195 lbs would load these tires to 147 lbs and they would not last long on our rough back roads or glass-strewn city streets.

The Easy Racer is also somewhat better up unpaved hills on loose sand and gravel. The extra weight on the rear wheel provides more traction and the lower seat makes it easier to stop and get off when riding becomes impossible. The other side of this coin, however, is that the low load on the Easy Racer front wheel makes it more likely to lose traction and dump you when coming down these same unpaved hills.

An unexpected feature of the Presto is its low sensitivity to cross winds. This is hard to quantify but the Presto is definitely better than the Easy Racer. There was an article in the IHPVA News last year about the use of a panel mounted forward of the front wheel to reduce crosswind sensitivity. The Presto's cranks and rider's legs are in front of the steering pivot which may provide this kind of effect.

LOAD CONTROL

The Easy Racer will accommodate a front rack and thus has a very large carrying capacity for touring. The front bags are low, which keeps the bicycle's center of gravity low, but they do affect steering a bit. The Presto starts with 54% of its weight on the front wheel so putting 40 lbs on the rear rack does not affect its handling at all. Custom bags that attach to the seat are available for it but these bags nullify the effect of the mesh seat. I once put a shoulder bag behind the seat and ended up with my back wetter than when I ride the Easy Racer.

The Easy Racer handlebars will accommodate a large handlebar bag (or a small one if the fairing is used) in addition to a cyclometer, water bottles and dog repellent. These can be easily reached while riding. Leg clearance requirements on the Presto limit me to a cyclometer on the bars. The Presto handlebar folds forward (to allow easy dismounting) which permits stretching your arms while riding. The reverse tiller effect this gives to the steering is hard to get used to but changing arm positions does make long rides more comfortable.

Twenty inch custom made fenders are available for the Presto. These are very effective, especially when coupled with the high position of the bottom bracket. As the snow melts here in the spring, the roads become shallow, muddy rivers. With the fenders, the Presto can be ridden through all this and the rider stays completely dry. Unfortunately, the fenders also reduce heel clearance with the front wheel and rough roads here in Massachusetts have caused the rear one to fatigue and crack.

The telescoping bottom bracket on the Presto also makes it possible to adjust a single frame size to fit almost every rider. Fine tuning the seat-to-pedal distance is also exceptionally easy. It is only necessary to release a quick-release on the boom, slide the

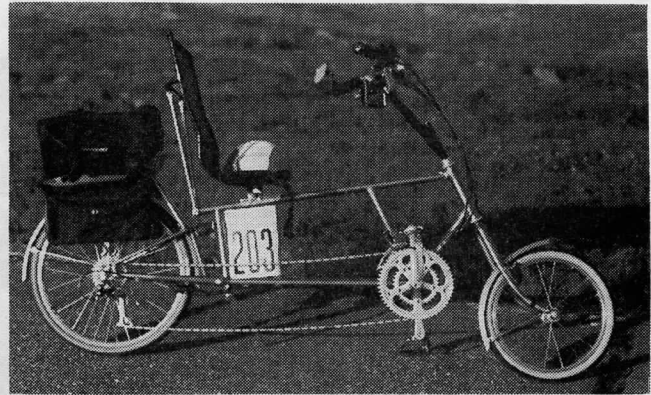
Deex Notes: the bag resting on the twin frame tubes of the Easy Racer (and strapped under the rack on the Presto) is an old "tire sock" in which I keep extra tubes, patch kit, tire-irons, hex-keys, screw driver, wrench, etc. The handlebar bag (side of seat on Presto) neatly holds sunglasses, garage door opener, wallet, etc.

1993 International Human Powered Speed Championship Report

by RCN Midwest Correspondent Michael Eliasohn

It was recumbent riders heaven at the 19th annual IHPSC, Aug. 17-22, north of Minneapolis, MN. There were the usual races and, as always, lots of neat stuff. But this year there was also the Earth Sports Expo, held in conjunction with the IHPSC. The championships were conducted by the Minnesota HPV Association and sanctioned by the International Human Powered Vehicle Association.

The 200 meter sprints and quarter-mile drag races were held at the Anoka County Airport. The rest of the events were a few miles away at the National Sports Center in Blaine, which includes a velodrome (with wood track surface), soccer fields stadium, multi-purpose building, large parking lots on which HPV races were held, and a pond adequate for the watercraft course.



Sharrie Brick's CLWB built by husband Ray--M. Eliasohn



Zach Kaplan on his custom Presto with prototype Zzipper--M. Eliasohn.

Scheduling of the IHPSC came first, MnHPVA President Dave Krafft said, but organizers of the first Earth Sports Expo proposed sharing time at the Sports Center. The MnHPVA gave names of alternative cycle manufacturers/ dealers to the Expo organizers. The result was a raft of non-conventional bikes to ride, plus two pedal-powered, propeller-driven, commercially available boats (rowed or paddled), in-line skates, dog sled racers, climbing and hiking gear, etc. —only sports that don't require motors. There were even two climbing walls.

With a large door leading outside from the multi-purpose building where the Expo was, it was possible to hop on an exhibitor's demonstration bike inside, ride it outside and around in the parking lot, where a maneuverability course was set up, then back inside! HPV exhibitors there were Angle Lake Cyclery with various Moultons, a Counterpoint Opus and a Presto (with the new front suspension).

PRESTO-EASY RACERS SHOOTOUT continued from pg 7.

bottom bracket in or out a few millimeters and then retighten the quick release. Larger adjustments require the addition or removal of a few chain links-not much of a job.

WHICH IS BEST?

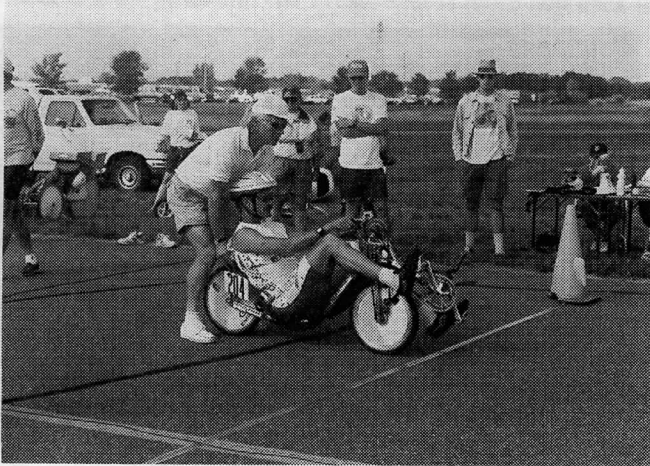
I really like both bikes. The Tour Easy is the more versatile of the two and certainly the choice for heavy duty touring, exploring unpaved roads (but it is no mountain bike), and riding in situations where you must stop a lot. But the Presto is fun to ride. It is responsive, maneuverable, and very comfortable in hot weather. It is also much easier to transport if you don't own

a van and to store if you have no garage. I rode it on our annual Bike Across Massachusetts ride and it was great for the day of rain we had. I was the only rider with clean socks at the end of the day. If there is a lot of wind on the day of our October club century ride, I'll take the Easy Racer and if we get to do our planned trip across the USA when my wife retires in four years, the Easy Racer will also be the choice.

In closing, I might add that both Gardner Martin at Easy Racers, Inc. and Kelvin Clark at Angle Lake Cyclery (who sells the Presto) are very helpful if you have problems or need parts. Choose the bike that suits your fancy on the basis of what it does. Both are high quality with good dealers to back them up

1993 IHPSC REPORT continued:

Rans with its new lower-cost Response (\$895), plus its Stratus and Nimbus; Transportation Alternatives from Cleveland with a Coos Bay Flyer trike and a Unicorn Mach II SWB (another Harse design); Infinity; and Green gear Cycling with its folding Bike Friday.



Wimpie van der Merwe's FWD (unfaired)--M. Eliasohn

feet. Width was slightly under 20 inches. An aluminum frame and kevlar and carbon fiber body kept the weight (with fairing) to 37.4 pounds. The bottom bracket was mounted to the frame, with the chain running from dual chainrings to a frame mounted free-wheel (intermediate drive). A "twisting-chain" ran to the front wheel, which had a single sprocket. The bike was built specifically for road racing and differed from his long distance record bike, which has rear wheel drive.

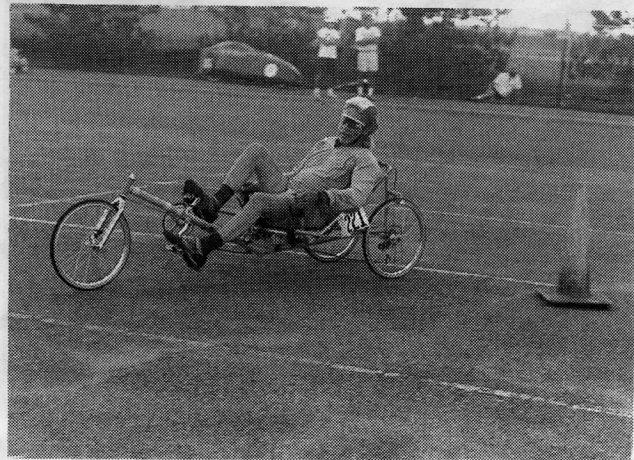
The body was quickly removable, which enabled Van der Merwe to compete in the open class with full fairing, the GT class with canopy removed, and the non-faired class with no body. His speeds in the 200 meter trials were interesting: 46.07 mph with fairing, 43.52 mph in GT, and 39.91 mph without fairing. That gave him first in three divisions.

Scoring in the practical vehicle competition was based on static judging and a slalom and braking test; simulated errand run; voting by the competitors; and possible points from the races. First was Steve Iles, Bolivar, Ohio, on his homebuilt designed-for-touring short wheelbase recumbent, which has a large streamlined trunk that fits over the back wheel and a partial front fairing. Second was Carl Bulbronson, on a homebuilt Tour Easy with wheel covers and a fairing. Third was Paul John, on his Lightning F-40.

Two dealers had Linears on display and another dealer had a ReBike. A new Minnesota company, Just Two Bikes, Inc., had its side-by-side recumbent four wheeler there (all 120 lbs. of it). There was also another side-by-side four wheeler there from Minnesota, the Diet Ride, with canvas body stretched over a tubing frame styled to look like a Corvette, but only plans are available. Not part of Expo, but available for rides, were two BikeE's. It's safe to say hundreds of people who had never ridden a recumbent bicycle before rode them at Expo, and likely most of them had never seen one before, except maybe in photos. "A lot of people didn't have any idea what they were," said Infinity's Don Barry.

As for racing, there were at least 58 land vehicles participating, plus six watercraft and two all-terrain vehicles. It's likely the Colorado Speed Challenge (Sept. 13-17)—straight line speed runs only—kept some of the "hot-dog" competitors away from the IHPSC, two events within the span of a month being one too many. That was unfortunate for South Africa's Wimpie van der Merwe, whose appearance at the IHPSC was definitely a highlight. Van der Merwe holds four IHPVA records for 4,000 and 10,000 meters, 12 hours (352.4 miles, 566.97 kilometers) and 24 hours (560.6 miles, 902.2 Km).

Van der Merwe's bike was very innovative. Use of front wheel drive, with the rider straddling the front wheel, and 17" wheels at both ends kept the length (with fairing) to slightly more than 6



Don Harse's Coos Bay Flyer Trike--M. Eliasohn

The 1994 International Human Powered Speed Championships, the 20th annual, will be held in Eureka, CA., tentatively July 18-24, 1994. Eureka is 281 miles north of San Francisco. The 1995 IHPSC will be held in the Netherlands, dates not yet announced. It will be the first time the event has been held outside of North America □

Cannondale Recumbent part II.

.....

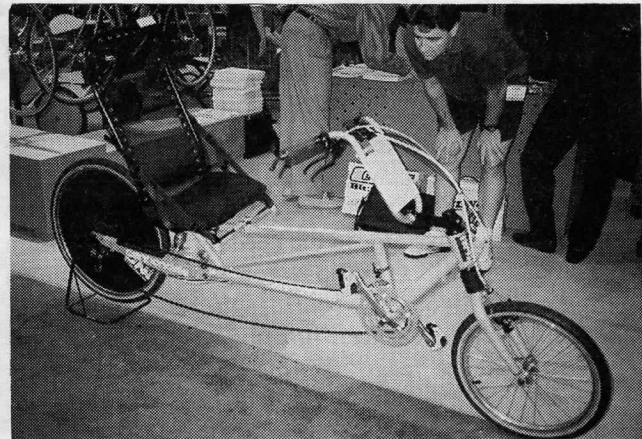
IMPRESSIONS OF THE CANNONDALE PROTOTYPE

by Zach Kaplan-RCN Las Vegas Crew Member

It is great that Cannondale is taking the plunge—a major bicycle company legitimizing recumbents. Perhaps the best thing about the Cannondale recumbent is that it's likely to open up the recumbent market and bring with it competition from other major bicycle companies. Imagine, a year from now, recumbents in every Cannondale dealership across the country.

I was disappointed that the prototype Cannondale recumbent was a LWB design. I don't think the mass market wants a bike that is as long as a tandem. The frame was quite similar to an Easy Racer Gold Rush Replica. I wish the head angle was more relaxed like that of the Easy Racer, as this would create less of a tiller feel at the handlebars. The prototype, in fact, used Easy Racer handlebars. They were mounted to a fairly long rear facing stem to compensate for the fairly steep head angle. My knees hit the handlebars during any kind of cornering. I found the amount of side to side movement at the handlebar while maneuvering at low speeds unacceptable, especially for a bike intended for people unfamiliar with recumbent balance-steering.

The choice of seat was excellent, direct from Lightning Cycle Dynamics. By far the best aspect of the Cannondale prototype was the fact that it had full suspension. The suspension parts appeared to consist of a modified ELS head tube shock with a 20" aluminum "Pepperoni" fork and modified rear suspension from the Super-V mountain bike. There was no suspension bobbing under hard pedaling and the ride over a 2 X 4 and metal beam obstacle course very plush. The LWB design probably helped in this area as well. I was also told by a Cannondale rep., Dave Campbell, that the recumbent's designer, Robert Humphries, has been riding the prototype off road. This might be the ultimate on/off road touring recumbent. Perhaps if the LWB is successful, Cannondale will come out with a SWB version. They seem open to new ideas. *Zach Kaplan writes "Zach Tech" for RCN. He is an avid SWB fan. He has owned a highly customized Counterpoint Presto and currently has a '93 Lightning F-40 on order.*



Cannondale prototype at Interbike--staff photo

moving balance at low speeds and in tight turns. Despite a lack of acceptance by the general riding population, I would prefer this bike with underseat steering and adjustable ratio linkage up to speed the wheel swing. *Rick currently rides a custom Counterpoint Presto with adjustable linkage underseat steering among many other bikes. Rick has been the publisher of the Counterpointer newsletter and is the editor of the OHPVA newsletter.*

.....

IMPRESSIONS OF THE CANNONDALE PROTOTYPE

by Ron Schmid-RCN Las Vegas Crew Member

I really don't like LWB recumbents except for the Ryan, but the Cannondale reminded me of a better version of the Easy Racer with a much more comfortable seat. I am excited about the Cannondale's ability to advance the recumbent movement into mainstream bike manufacturers. *Ron Schmid is a Counterpoint Presto (SWB) rider from Portland, Oregon. Ron is a board member with the Oregon Human Powered Veh. Assoc. (OHPVA).*

.....

IMPRESSIONS OF THE CANNONDALE PROTOTYPE

by Robert J. Bryant-RCN Las Vegas Crew Member

The Cannondale prototype is certainly a milestone in recumbency. This is the first company bold enough to be different. The first to show a recumbent. The prototype's designer, Robert Humphries, is a subscriber to RCN and has been a recumbent enthusiast for three of his past five years at Cannondale. He works in research and development. The idea to build a recumbent was conceived after Robert viewed several recumbents in a bike show booth three
Continued on page 12.

.....

IMPRESSIONS OF THE CANNONDALE PROTOTYPE

by Rick Pope-RCN Las Vegas Crew Member

The Cannondale LWB: very comfortable, although the front suspension is probably overkill for road use. Rear shock pressure, which is adjustable, was set a little too high for my body weight, but still felt good riding over obstacles. It felt fast in straight line riding, but I don't like LWB bikes with upright handlebar steering when it comes to sharp corners. There is too much arm

CANNONDALE part II continued:

years ago. The fully suspended prototype that we rode is #2, and the first with suspension. Prototype #2, only two months old, barely finished in time to make the show. Prototype #1 was a "hard-tail" (no suspension) which had been ridden for quite some time.

Unlike my Las Vegas crew members who are all die hard SWB riders, I have been a long time LWB upright steering recumbent fan (my design of choice); current bike: Easy Racer Gold Rush Replica, I could immediately relate to this concept. The sling/ mesh seat and suspension were icing on the cake. The Cannondale suspension technology is easily adaptable to recumbents. Some have argued the need for front suspension on a LWB recumbent. One trip over a 2 X 4 and aluminum pole on our makeshift obstacle course in the back corner of the Las Vegas Convention Center will convince you that it most definitely will take the "edge" off your daily commute. Robert Humphries added that when you watch the bike being ridden, you can see the front suspension work.

There are some immediately obvious changes that need to be made to the Cannondale before it hits the street. During my conversation with the designer, it became very apparent that he was aware of them.

1) The stem & bar combo (stock Easy Racer bars with a salvage 19" Cannondale stem) creates a tiller-effect and wide swing to the steering. The chosen rake of the Cannondale will always produce more tiller-feel than say a Tour Easy, but we guess the steering can be dialed in better with a correct stem designed for the bike. A custom recumbent stem is on the drawing board. Given the prototype Cannondale's head tube and fork rake, it will be hard to beat the legendary Easy Racer steering geometry with laid back head tube and longer "chopper" style fork.

2) The lack of seat supports was apparent. A production model should have rear seat stays, as did prototype #1.

3) Seat: The Lightning seat is one of the most comfortable and best designed seats in the industry. Seeing it on this design of recumbent was a real breakthrough. The seat design for a possible production model has not been finalized.

So far, the Cannondale recumbent prototype has been downplayed to the mainstream cycling media. They have missed

RUMOR OF THE MONTH:

December 1, 1993: In a related story breaking last week, we received word that an official "Trek Bicycle Company" dealer survey was nearly half filled with questions pertaining to recumbent bicycles.....

the hint and the scoop, as have other manufacturers who we know are looking at recumbents. The RCN Las Vegas Crew were witness to some interesting recumbent centered ramblings in the aisle-ways in Las Vegas. Many media personnel read RCN, so they will find out now. This bike is being developed by Cannondale R & D as if it's a go-ahead project. Full approval has not been given, but if and when this happens, we could see a Cannondale recumbent in showrooms nationwide as early as mid-1994. This date shocked me, as we have heard everything through 1996 as production dates.

As for price, if you want to see how much a Cannondale recumbent will cost, drop by your local dealer and take a look at the Super-V mountain bikes. In other words, it won't be cheap. My own educated guess is in the \$2000 range, give or take \$500 bucks, mainly depending on level of componentry.

I would like to thank the bold forward thinking representatives from Cannondale who have made bringing you this story possible. Cannondale's Dave Campbell was our Las Vegas connection. He is the one who answered our questions and let us test the bike at the show. Robert Humphries, Jr. is the designer of the bike and he works in Cannondale Research & Development. Dave and Robert are interested in what enthusiasts have to say about their prototype. They have given me the O.K. to give out their mailing address for commentary on the Cannondale recumbent prototype. Write to: Cannondale, Attn: Robert Humphries, Jr., Research & Development, 9 Brookside Pl., PO Box 122, Georgetown, CT, 06829-0122.

Editors Note: I would also like to thank RCN European reader, James Carlisle, for the original Cannondale recumbent phone tip. James heard of the existence of a Cannondale recumbent at a recent European bike show □

SAMPLE RCN MAILING LABEL:

(A) Bulk-17 (B) 2/94 Renewal date
(C) R. E. Cline
1-Laid Back Road
Recumbentown, NA (D) 00000-0000

A) Type of subscription and first issue number
B) 2/94 "2" is the month, February, and "94" is the year. This date indicates the last month that you will get RCN. NEW FOR '94: In 1994, we will be changing to an issue based renewal indicator, example: "Sub. Expires with RCN#18."
C) Name, address, city and state.
D) Zip + 4. NEW FOR '94: We will soon be converting to zip+six and barcodes to speed up bulk deliveries.

Interbike Las Vegas '93

by Rick Pope

We saw. We were overwhelmed.

The Interbike '93 trade show was held in the Las Vegas convention center over a four day period September 17-20 and Ron Schmid (of OHPVA) finally convinced me to attend. I've never even seen AUTO shows this big!

Robert Bryant, from Recumbent Cyclist News was there with us along with his East Coast Correspondent, Mark Colliton. We discovered early on that it is impossible to keep four people together in a crowded convention so we finally split into groups of two (that was bad enough at times) and regrouped several times during the day to compare notes. At that pace, it took me two full days to cover all the aisles in the show, and a complete third day to go back through catching the products that I missed the first time through. So, herein is the summary of recumbent news for the '94 season.

ReBike had the largest booth of all the recumbent manufacturers (in line with their record sales numbers I suppose). In addition to the original ReBike, they had the 818 on display with its 18 speed drivetrain, and the new ReTrike. Like all Re-offerings, the trike is fairly heavy but it beats the heck out of those old upright trikes for the senior citizen crowd. The biggest surprise to me was the extensive line of ReBike souvenirs that will soon be available, everything from jewelry to coffee mugs and tee shirts.

BikeE was well represented with two bikes in their booth and at least two more in the parking lot available for test rides. They seemed to be signing up dealers at a fast pace and had a lot of interest in their product. A fairly extensive line of accessories is coming out soon.

The folks at **Advanced Transportation Products** had both the long and short wheelbase versions of their (Vision) R-40 bike on display, as well as a brand new model, the R-45. This new hot rod is a lighter SWB design (the prototype weighs in at a very nice 22 lbs) and will be in production soon at the projected price of \$1600-\$1800. It features the adjustable seat back angle common to the R-40. New for the R-40 (\$995 in SWB configuration) is an upright steering arrangement that can be retrofitted to any model. Now you can buy one bike and have your choice of long or short wheelbase, underseat or upright steering. Other new accessories include a back bag, chainguard, and they are working on a Zipper fairing mount.

Rans Recumbents had a booth that was interesting since you don't see too many Rans out in the northwest. The two established models, Nimbus and Stratus, are still available starting at \$995. A new lower cost model, the Response, was also shown, starting at \$895 with a simpler frame.

Two new manufacturers showed up to give us a surprise. **Comffy Bikes**, out of Fort Collins, CO, had two models in their booth. These are long wheelbase, upright steered bikes with unusual seats (wide, sprung bike saddles with separate back rests). The entry level bike lists for \$475 with steel tubing and 6 speed gearing. For \$799 you can step up to the GT with chro-molly tubing, 14 speeds, and alloy rims. They claim to have a third model, the HD (Harley Davidson) for the person wanting the "chopper look" complete with leather and tassles. This would set you back \$2099!

S & B was the other new bike on the block. Working out of Compton, CA, this SWB is a copy of the original Hypercycle with a 36" wheelbase, 16"/26" wheels, and direct underseat steering. The seatback looks taller than a Hyper to me, but otherwise it's very close. It comes in a variety of component configurations from 6-24 speeds, and prices range from \$300 to \$575. Low cost is the primary feature of an S & B.

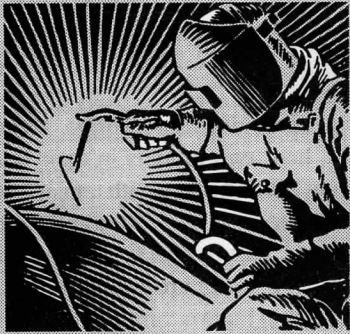
Linear, the original folding long wheelbase recumbent, had their latest bike along with several English Brompton folding bikes. The Linear/ Neatworks/ IHPVA booth had a **Kingcycle** and **Speedy** trike to show off. This machine is very light (claimed 21 lbs.) and likes to go fast, but low speed maneuvering is a little tricky with both heel and handlebar interference. The Speedy is of course the trickiest trike out there, but then at a price of over \$5700 it should be!

It's hard to summarize the rest of the show, but I'll try. All the mainstream bike producers were there, lots of titanium frames this year, a few Boralyne, more carbon fiber, but nothing too earthshaking. Except at the Cannondale booth where they showed off a futuristic mountain bike that they swear will be in production by March with suspended monostrut design, unique large bearings, CNC machined components, and a \$5-7,000 price tag.

Lots of component manufacturers were there, of course, tons of new companies offering machined cranks, and stems. More companies are getting into 20" suspension forks that may work on SWB recumbents (watch for Tange and Answer), evidence that 20" composite wheels may appear in the market....and of course, plenty of bimbos to attract your attention to the booth spaces (sorry, I'm just reporting it like it was).

It was a fairly expensive trip to make just to see a bike show, but hey, this is THE biggest bike show in the world and I had to see it at least once. So for next year, I propose that all OHPVA members send me contributions for my travel expenses so I can visit the show as it returns to Anaheim. I won't go anywhere near Disneyland, strictly business (yeah, right).

Article reprinted with permission from Oregon Human Powered Vehicles: PO Box 614, Beaverton, OR 97075. Yearly dues are \$10.



HOMEBUILDERS CORNER

IN SEARCH OF THE INSTANT RECUMBENT

by Kevin Haupt & Rick Fowler

There is a well known and respected naval architect named Phil Bolger. He has designed gold plated yachts for millionaires, fishing boats, research vessels, and various experimental craft which challenge much of what we have come to accept as good boat design. He is currently best known for his plans and building techniques for a series of home built craft known as "Instant Boats." I recommend his books on boat design to anyone who has ever thought of designing anything.

The idea for the "Pencil" was to design a long wheelbase recumbent that anyone with basic metal working skills and a few tools could build at home, "Instant Recumbent." I am not sure that we have achieved our goals with the Pencil. Our first attempts with this design had direct steering. It was easier to construct but the handling was awful and dangerous. The indirect steering system complicates the construction process and may prove too difficult for the first time builder. Read on and decide that for yourself.

SQUARE IS EASIER THAN ROUND

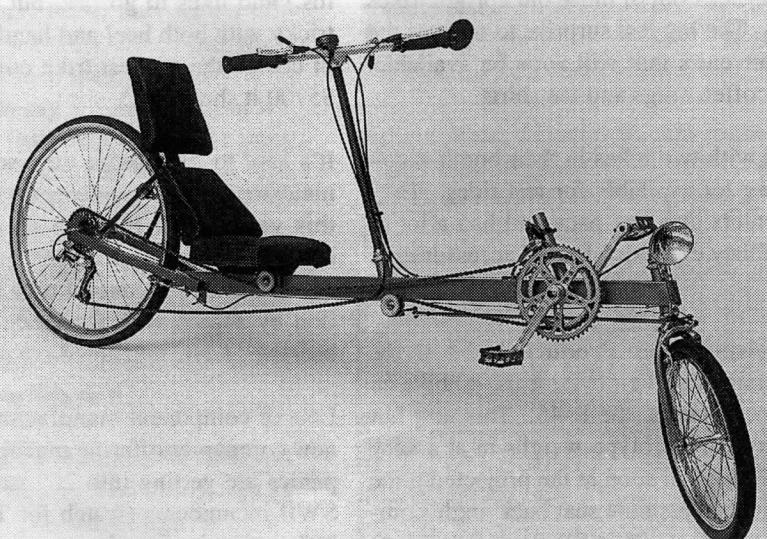
Over the past couple of years we have designed and built no less than a dozen recumbent bicycles. The majority of these have used round tubing. Round tubing is wonderful for its strength-to-weight ratio, is available in every conceivable diameter and wall thickness and is used in most state-of-the-art designs. It is also difficult to align without building elaborate jigs, frustrating to miter within close tolerances unless you have a milling machine and requires specialized equipment for bending.

Square tubing was the obvious choice for the Pencil. It greatly simplifies the fabrication and assembly of this design. Thin wall

(.035") two inch chrome molybdenum square tubing is not available. We chose .049" mild steel 2" square tubing for the main frame member. The .049" wall thickness was not strong enough in certain areas of the frame and required reinforcing. We would recommend .065" wall thickness for anyone attempting to duplicate this design. It will add a couple of pounds to the frame weight but eliminate much extra welding. The same .065" wall thickness can also be used in one inch square mild steel for the chain stays.

BUILDING THE PENCIL

We used .035" square chro-moly for our chain stays. So far, this has proved to be strong enough. Our dropouts are BMX type with rear facing slots. A derailleur hanger was welded onto one dropout. The dropouts were bolted together and then sandwiched between the cut to length chain stays. Next they were tack welded to the stays and then separated for final welding. The stays were marked and notched with a hacksaw (photo #1). Finally they were heated, carefully bent, and placed in the jig (photo #2). The jig is constructed of ply-

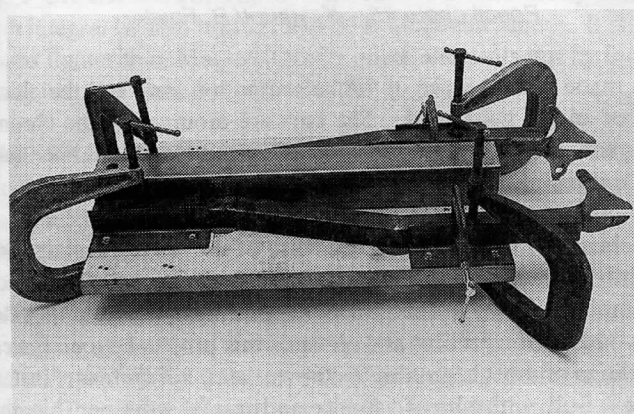


The "Pencil" -- K. Haupt/ R. Fowler

wood, 1" angle iron, and a short length of 2" square tubing and requires six "C" clamps. Large holes were drilled through the jig so that the stays could be welded on both sides before removing them from the jig.

The main frame tube was cut to length, measured and marked in preparation for drilling. Standard road bike headtubes have an outside diameter of 1-1/4." We formerly purchased head tubes

from a frame parts catalog but we found that generic 1-1/4" by .035" chro-moly tubing works just as well and is less than half the cost. Holesaws were used for drilling. Buy the best holesaws you can find. We have used Lennox, Blu-Mol and Milwaukee with good results. Remember to feed slowly and use lots of oil. The head tube holes are drilled separately on the top and bottom of the main frame tube. They are offset and then filed to obtain the proper head tube angle. We use a cheap pneumatic die grinder fitted with a stone for many of these cut and try operations. Always wear safety glasses while working in the shop! Holes are also drilled for the bottom bracket shell. Once again, unless you have access to a milling machine, drill separate holes from both sides.



*Pencil photo # 2, rear stays
-- K. Haupt/ R. Fowler*

Next we brazed in the bottom bracket shell and head tubes. The headtubes are aligned on a flat surface with spacers and shims (photo #3). We buy cheap sets of feeler gauges and take them apart for shims. Bottom bracket shells have a nasty habit of warping when heated. We usually drill a couple of one inch holes for stress relief in the shell prior to heating and always screw in a couple of old bottom bracket cups. Alignment of the bottom bracket is slightly more complicated. Shims and spacers can be used for the horizontal alignment. To make the shell perpendicular with the frame tube we use one crank arm attached to a bottom bracket mounted in the shell. With vernier calipers we check the distance of the crank arm from the side of the main frame tube and then rotate it 180 degrees and then check it again. The shell is shimmed until the distances are equal. The shell is tack brazed first, checked again for proper alignment, and then finish brazed (photo #4).

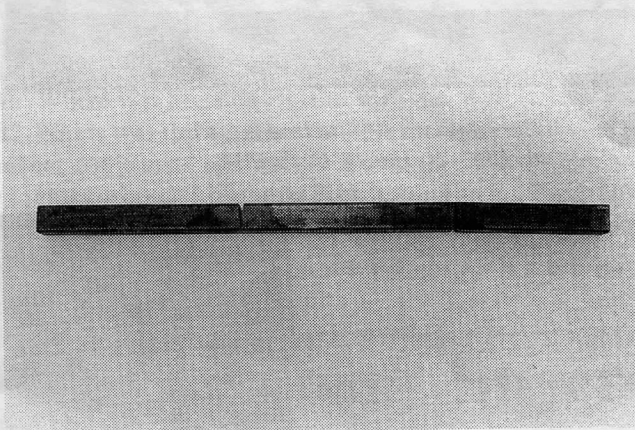
Attaching the chain stays to the main tube is the final assembly step in completing the basic frame. We bolted an axle to the dropouts and adjusted it until the spacing was correct. A .125" thick steel plate was cut to fit just inside the end of the main tube and welded in place. We were careful not to let any of the welding bead extend beyond the outside surface of the tube because this would interfere with the mounting of the stays. The thick

plate was chosen in order to reinforce the thin wall main tube. The stay assembly is clamped to the main tube and supported at the proper angle with a wooden block. A small hole was drilled on the center line of the main tube near the end. A piece of welding rod was inserted in the hole and used to measure the dropout distance from the main tube (photo #5). The stays were then welded in place. (Note: we are currently revising this assembly process. Some distortion can occur in the thin walls of the main tube and alter the dropout spacing. Using .065" tubing should minimize this problem.)

The last tube to be added to the frame is for the front derailleur. We used 1 1/8" .035 chro-moly. Once again a hole saw and brazing were used to mount the tube. A thin sheet metal plate was brazed over the angled opening at the front of the main tube. Now the tedious work begins.

Two standard road bike headsets are required. The inside of the head tubes are deburred and the cups are press fitted. A scrounged fork was cut up and a plate was welded onto the bottom of the steerer tube to serve as a Pitman arm. A half inch hole was drilled crosswise through the steerer tube. A length of 7/8" chro-moly tubing was inserted into the steerer tube and welded in place at the half inch holes. This 7/8" tube serves as a gooseneck.

A Pitman arm is welded to the front fork. Both of the Pitman arms are angled slightly to keep the steering linkage tube parallel to the frame tube. The linkage tube is 3/8" .035 chro-moly with 1/4" fine threaded bolts brazed into the ends (heads removed).

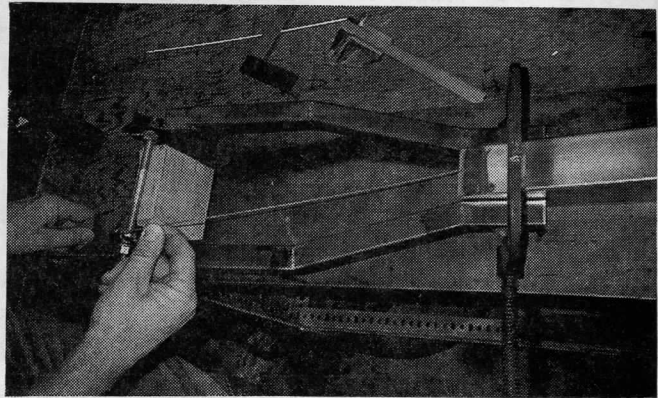


Pencil photo #1, 2" square main tube--K. Haupt/ R. Fowler

Aircraft rod ends (also referred to as Heim joints) were screwed onto the ends of the linkage rod and locked in place with jam nuts. A steering stop was welded to the underside of the main tube and in front of the idler arm (photos no. 6 and 7). Road tests made without this stop proved to be rather exciting. The setup and adjustment of the steering system required hours of trial and error. This is not the place for sloppy workmanship. All vital nuts and bolts in the steering system should be drilled for cotter pins and assembled with Loctite.

The last items to be added to the frame were the idler wheels. These are made out of roller skate wheels with precision bearings. The axle bolt for the wheels are brazed onto the main frame tube (Note: this is another area where the main frame tube proved to be too thin and needed reinforcing). The wheels are grooved for the chain by inserting a bolt through the wheel, tightening it up, and chucking the assembly into a drill press. A 1/4" wood chisel was used to cut the groove into the spinning wheel. Use a lathe if you have one.

Cable stops and a rear brake bridge were brazed on and a quick release for the rear center pull brake was welded in place (photo no. 8). We usually outfit our bicycles with recycled parts removed from garage sale ten speeds. The seat on the Pencil is one of our own designs, with a welded aluminum frame and plywood and foam pads. It is attached to the main frame tube via brazed on "L" brackets. Short tubular seat stays are bolted onto another set of "L" brackets brazed to the chain stays. A custom handle bar



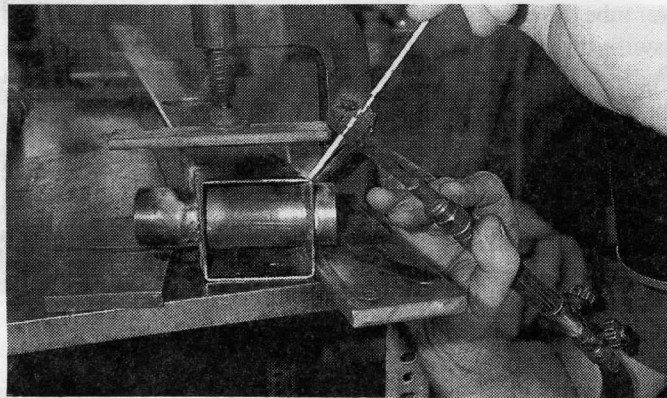
Pencil photo #5, --K. Haupt/ R. Fowler

was made from a piece of 7/8" aluminum tubing and the clamp end of an old gooseneck. The bars are mounted to the chrome molybdenum steering tube by slipping the clamp over the tube and tightening. A shim was required to match the diameters.

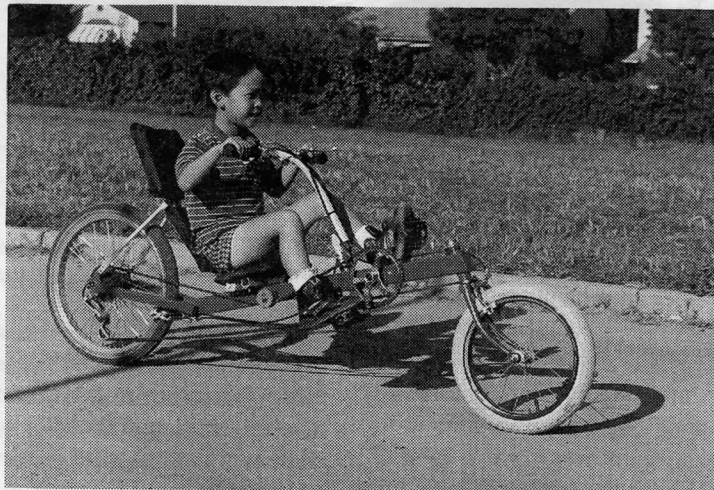
We chose the name "Pencil" because of the long thin shape and slightly pointed nose. The basic frame construction of the Pencil is simple and straight forward. The steering system complicates the construction process and elevates this project beyond the capabilities of most beginning metal workers, not quite an "Instant Bike." Still, with a bit of patience and careful workmanship, this bicycle is fairly easy to build. We have not produced any plans for Pencil but if enough interest is shown we may do so

Kevin C. Haupt
9027 Hubbard St.
Culver City, CA 90232
Ph:#310-836-6746

Rick Fowler
1812 Palm Ave.
Alhambra, CA 91803
Ph:#818-284 0114



Pencil photo #3, the headtube in the jig -- K. Haupt/ R. Fowler



The "Pencil Jr." --K. Haupt/ R. Fowler



Zach Tech: INTERBIKE SHOW STOPPERS by Zach Kaplan

POWER ASSISTS: I saw about four different power assists, two of them were electric. The most promising was the Chronos electric assist with battery which fits into the water bottle cage. it was very high quality and lightweight, though it had a short range, being designed solely for uphill assistance. Randy Olsen, the company president had a super high tech motor assist on his Lightning F-40.

HOT CRANKSETS: The new Sweet Parts chro-molly crank with integral bottom bracket will be available in March. It is 70 grams lighter than Magic/CODA's crank and pulls out by loosening just one 5mm bolt. Very trick!

DISC BRAKES GALORE: Dia Compe, Sachs, Hope, Phil and Mountain Cycle all had production disc brakes. Additionally, Cannondale had a prototype full hydraulic disc brake on the V-4000 Superbike.

INTERNAL GEARS: A big boom for small wheeled fans comes in the way of the Sachs 3 x 7 hub system (The new Presto SE-63 will utilize this drive-train for '94). This consists of a three speed internal (geared) hub with a splined body which takes seven hyperglide cogs. It has all the range of a triple chainwheel system but uses just one chainwheel. Shimano & Sachs both have 7 speed internal hubs. Shimano's comes only as a coaster brake while Sach's can be had with freewheel, coaster or drum brake configurations.

SHIMANO REPORT: They are offering 11 tooth cogs on most mountain bike groups for '94. The XTR group is unchanged, lacks this feature. The XT is totally redesigned. Also seen is a new lower priced SPD pedal that is one side SPD and the other

MTB platform. **RECUMBENT WHEEL NEWS:** Big news at the Sun booth which unveiled the new "Primo Champ III" 20 X 1 tire and corresponding M14A aero rim with 16 spokes. The tire had an ERTO designation on the side wall of 19-451 110 psi/ 7.5 BAR. They are also coming out with a 16" X 1" tire and corresponding M14A rim. It is a joint venture between Sun and Gallop in Taiwan. It was originally intended for racing wheelchair use to provide an alternative to fragile tubulars currently used. Sun is aware of HPV applications. The 16" size will be going to production late this fall; they will be the lightest small wheels available. **RECUMBENTS AT INTERBIKE:** Of all the commercial recumbent displays, ATP had the best. This is because they had the best bike, a prototype R-45 which weighed just 22.5 pounds. They also had a slick version of folding (upright) handlebars that will retrofit on Vision models. It uses internal cable routing inside the bars. I love the way the seat just quick releases off in a few seconds; no messing around with Velcro and screwing up your tension adjustments. The new ATP Zzip SWB fairing will be optional, and priced at \$350. A retrofitable front suspension is about a year away. **RECUMBENT ROLL CALL:** BikeE had a nice display, as did Linear, but it would have attracted more attention if they had the Kingcycle and Speedy in the booth—rather than at the IHPVA booth. ReBike had the largest booth, lots of good cheer and the comical antics of ReGis, the company mascot. The Rans display was nice-with a good choice of bike colors. The Response is very well put together and an excellent deal. Where was Stephen Delaire with the new Rotator Pursuit? Where was the Ryan booth? Smaller, less established recumbent companies had booths. Come on Dick. Where was the Lightning booth? Come on Tim, leaving an F-40 with business cards in front of the Convention Center was just a tease□

RCN#19 is the "1994 RCN Recumbent Buyers Guide" This has been the most critically acclaimed, information packed issue we have ever produced! It will be part of your regular RCN subscription or available as a back issue in mid-March.

Manufacturers/ Dealers: Do you want to have your product listed or advertise? Call us regarding product listings or advertising today! The issue deadline is coming soon! RCN#19 Ad Info: Ph#206-852-8149

RECUMBENT NEWS & RUMORS

REBIKE: Congratulations Kathie & ReBabes! Bicycling Magazine's December '93 issue gave ReBike a "Big-Ring" Award. **Get ready!** Thanks to the hard work of Joe at J & B Pacific in Kent, WA. (wholesale only) and the folks at A.T.P. who have gone to the Kenda tire company and commissioned a **New 16" X 1-3/8" 90/100 psi recumbent tire** (this tire will be found on 1994 Visions). This new tire utilizes the same mold as its lower psi counterpart but will have an increased side-wall thread count which will make it possible for the tire to hold up to 110 psi, however, the side-wall will still read the lower rating. This tire should be available for March delivery. Joe is working to create an entire line of "recumbent tires" with a recumbent tire name...like maybe "RCN Tires?" Also expected in March are a new 20" X 1-3/8" and 1.5" recumbent tires. J & B also stocks the IRC Road-Lite EX tire. Dealers and manufacturers, call Joe at J & B for more info. **A.T.P. Vision '94!** All kinds of interesting stuff going on at NW Vision headquarters. The 1994 line will include a bunch of new models (ten total!) and there are so many new options we have lost track. All bikes are available with upright or underseat steering and in SWB or LWB form, either or both. The new R-42 offers an enthusiast mix of componentry with Shimano Deore derailleurs, Grip Shifts, XC Pro brakes and a Sakae triple crank. Weight is 26 lbs. and prices for this model start at \$1495. The new hot-rod super-deluxe R-45 has a 26" X 1" rear tire matched with a Moulton 17" front, Ultegra/ Deore XT derailleurs, Grip Shifts, XC Pro brakes and a Ultegra or Deore XT crankset (double or triple). Got all that? **VISION FAIRINGS** Last, but certainly not least, the ATP Vision fairing is a new option for 1994. ATP uses bubbles from Zzip Designs with ATP designed & manufactured mounts. The fairing has a single mount (an MTB type stem) that inserts into the derailleur post of both SWB and LWB Vision models. The fairing will be priced at \$350. RCN was told that these mounts will work on other SWB recumbents as well. Watch for a Vision review in RCN#20. We currently have an R-40 with fairing in the RCN garage, this is one excellent affordable package. **COUNTERPOINT:** "SE-63" is the code-name for this 1994 model Presto that has many gears (for gear-heads like your editor). The Sachs 3 X 7 X 3 drivetrain (three speed internal hub, seven cogs and a triple crank) provide 63 gears! This SWB will have a gear inch range of 19.9 for a low

and 138.5 for a high (easily customized too). The middle internal gear provides a 1:1 lockup (with no additional friction loss). According to Angle Tech Chief Presto Tech, Matt, a straight chain drive is at best 96%-97% efficient. The SE-63 offers that in the middle internal gear, and in the low and high internal gears it will be 92% efficient (due to friction loss). The SE-63 weight gain due to the hub is only one pound. This hub does not (yet) come with a hub brake. The SE-63's 63 gears will be shifted by two Shimano bar-ends and one Grip Shift (type) shifter that works the internal three. Other Presto's from the entry level CL at \$1549 to the SE Tour at \$1749 all the way up to the 21 pound Ti XL Titanium Presto at \$5499 will be unveiled just after the first of the year. **PRESTO FAIRINGS:** Earlier this year, Counterpoint commissioned Karl Abbe at Zzip Designs to design a fairing system for the Presto/ Opus models. Zzip ran performance tests, experimented with different bubble shapes and thicknesses. Zzip then designed mounts that will fit both the bikes. They are built extra stable and tough just in case a soft body should become available..... The Presto/ Opus Zipper & mounts are now available. Price should be in the neighborhood of \$650. **EASY RACER:** A prototype sling/ mesh (lawnchair) seat! No? Yes! If you would like to see this seat developed-call Gardner at Easy Racers and tell him so. (He doesn't like lawn chairs as much as we do). A composite fender for the front wheel is currently available. It is a custom piece designed for the Easy Racer. Call now for rainy season delivery. **S & B Recumbents:** What looks like a Laid Back, but costs less: the new bargain S & B SWB. It reminds me of a cross between the last USA built Hypercycle with swept back handlebars and the Turner Laid-Back '90, if a low price leader SWB is what you're after, give S & B a call. **INFINITY:** Long awaited road test in early '94.....RCN#20. **THEBIS:** Peter Perkins called the other day to catch up. Look for early '94 delivery dates for the new lower priced RWS trike from Canada. Give them a call at Ph:#604-656-1237. **RYAN RECUMBENTS RELOCATING:** Dick Ryan & company are moving home and business back East to New Hampshire. The new address as of December 1, 1993 is: Ryan Recumbents, 1-Chestnut St., 4th Floor, Nashua, NH 03060. The new phone number as of mid-December is Ph#603-598-1711. **RUMOR-MILL:** Imagine a \$650 CLWB from an established & respected 'bent manufacturer. We can and it sounds great ☐

The 1994 RCN Recumbent Buyers Guide (RCN#19)

will be out on March 15, 1994! This will be our largest most information--packed issue ever! This special issue will be part of your regular subscription or available for \$7.95 1st Class postpaid.

MANUFACTURERS & DEALERS: If you would like to have your products listed in our issue, call ASAP! The deadline for listings is January 7th, 1994 and advertising January 21st, 1994. For more information write or call RCN today: PO Box 58755, Renton, WA. 98058. Ph:#206-852-8149.

ReDiscover Bicycling



"One of 1993's Hottest Bikes" Bicycling Magazine
 "A Hot Idea" U.S. News & World Report
 "Fantastic riding on a **truly comfortable bike!**"
 That's what one of our customers said about
 ReBike, a truly comfortable approach to cycling.

ReBike

Ph# 407-750-1304

103 NW 43rd St, Suite 1, Boca Raton, FL 33431

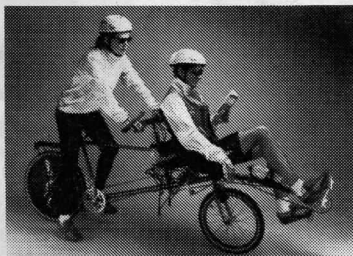


COUNTERPOINT

OPUS IV

TANDEM

The tandem which allows
 different pedaling cadences
 and better maneuverability



COUNTERPOINT

PRESTO

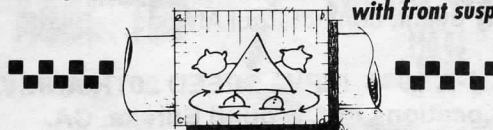
RECUMBENT

"The best recumbent of 1993"

Recumbent Cyclist

New! 3-person Opus, Titanium Presto, Presto Trike, & Presto

with front suspension fork!



Send \$2.00
 For Catalog

"ANGLETECH"

P.O. Box 1893 318 N. Highway 67
 Woodland Park, CO. 80866

719.687.7475 800.793.3038

"BIKE TECHNOLOGY FROM A DIFFERENT ANGLE."

The Thebis 201 Touring Trike

- *Air cushion seat
- *Magnesium frame
- *Limited-slip drive
- *33 pounds
- *Money-back guarantee
- *Manual & Warranty



"A work of art."

--Robert Setrakian, Chairman of the Board
 of Governors of the U.S. Postal Service
 and a customer.

".....a superb example of what Engineering
 Design at its best should be."

--Professor Gerard F. McClean, Ph.D., P. Eng.

"A machine for the HPV connoisseur"

"The BMW of recumbents"

--Robert J. Bryant, publisher,
 Recumbent Cyclist News.

"I love my Thebis 201 Touring Trike."

--Dr. Frederick Kurth, M.D., customer.

(604) 656-1237

Colour brochure and information pack:

\$5.00

Current availability: Spring 1994

Thebis International, Ltd.

#110-2031 Malaview Ave.

Sidney, B.C., Canada, V8L 3X9

RECUMBENT CYCLIST CALENDAR

FEBRUARY 25 & 26, 1994 SEATTLE BIKE EXPO

Northwest Rooms*Seattle Center*Seattle Washington

Come see what is new in recumbents from local favorites: Counterpoint, ATP and BikeE. The show opens at 2pm on Friday and 10am on Saturday. This is a busy show that is never a disappointment. Come see us 'hang'in in the bike parking lot. Watch for the long & low bikes. NW Classics Ph:#206-523-3470.

MARCH 12 & 13, PORTLAND BICYCLE SHOW

Portland Coliseum Exhibition Hall, Portland, OR.

This is the big NW recumbent show. Why? Promoter, Bill Bradley has a test ride area. Do you want to ride your favorite new recumbent—this is the show. Saturday 10am-7pm, Sunday 10am-6pm. For exhibitor information, call Bill Bradley at Ph:#206-248-8430.

JULY 22, 23 & 24 DA VINCI DAYS

Downtown Corvallis, Oregon

Oregon's annual HPV fest. This is the best event in the NW. For more information regarding the HPV segment of this community event, contact Paul Atwood at BikeE. DaVinci festival information Ph:#503-757-6363.

AUGUST 1-7, 1994 IHPVA SPEED 20TH ANNIV. CHAMPIONSHIPS

Various Locations in & around Eureka, CA.

These are the dates for next years event to be held in Eureka, California (not to be confused with Yreka, Ca.). The newly formed official IHPVA Chapter Redwood HPV Assoc. is the host chapter. If you would like to offer advice, sponsorship, or volunteer to help, contact: REHPV, Al Krause, 2338-18th St., Eureka, CA 95501*Ph:#707-443-8261.

S & B Recumbent

The Most Affordable On The Market Today!

Providing Bicyclists with attractiveness, comfort and speed.
Drivetrains of 6,12,18 & 24 spds. Sizes: Small (for ages 7-12 yrs.),
Jr. (5'2"-5'4" tall), and Adult (5'4" & taller).

DEALERS-We have frame-kits for you to customize yourself!

Tandems available Jan. '94

For details, call

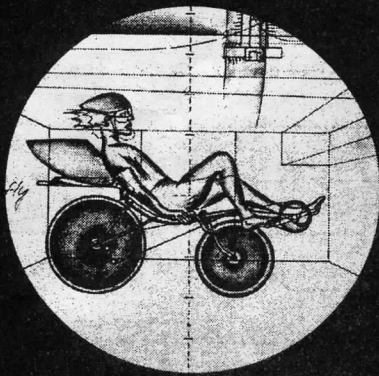
310-638-6008 or 310-762-2243 or write:

S & B Recumbent

PO Box 3061

Compton, CA. 90222

VORVA



FULL SCALE
PRECISION PRINTS
FOR THE
CONSTRUCTION OF
THE ULTIMATE
AERODYNAMIC
SUSPENSION BICYCLE

\$59⁹⁵ CHEQUE
OR MONEY
ORDER

TETRA DIMENSIONS
HORNBY - B.C.
CANADA - VOR 120

INFINITY®

The all New "1993 21st Century"

Infinity

All-Aluminum Recumbent

Lighter, Stronger, Faster & more Agile.

NOW AT NEW LOW PRICES . . . from \$349

Discover the aerodynamics and mechanical efficiency of the Infinity design, the stability of under-seat steering, and the strength of square sectioned aluminum tubing. Above all, discover the shock-free comfort of Infinity's fully supported seat, a comfort you must ride to believe!

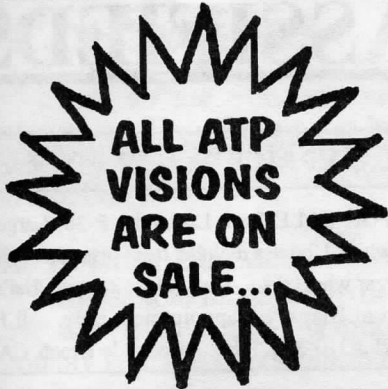
For catalog, send \$1.00 to:

Ace Tool & Engineering

P.O. Box 326

Mooreville, IN 46158

(317) 831-8798



1994 NEW YEARS SALE!

R-40 SWB Reg. \$995, now \$940.94
 R-40 LWB Reg. \$1125, now \$1040.94
 R-42 SWB Reg. \$1385, now \$1240.94

PEOPLE MOVERS

811 S. TUSTIN AVE., ORANGE CA

WE SELL MOST MAJOR
 BRAND RECUMBENTS.
 OPEN 7 DAYS A WEEK

714-633-3663

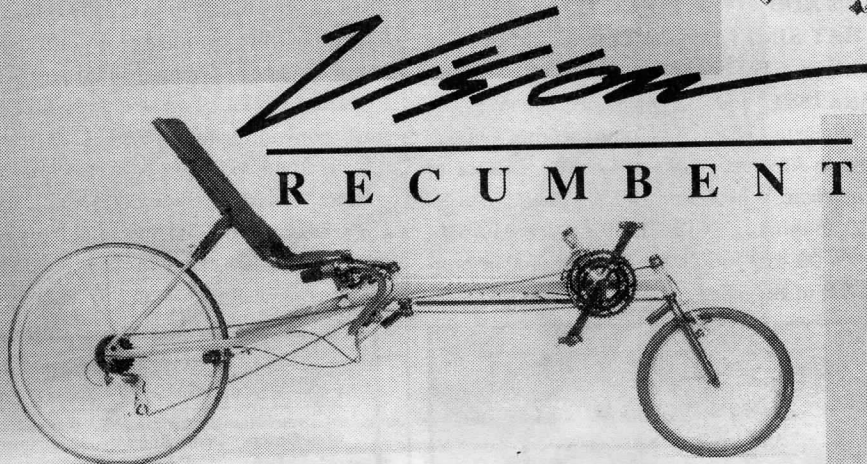
WE SHIP
 EVERYWHERE!
 VISA, DISCOVER
 MASTERCARD
 ACCEPTED



SALE ENDS MARCH 7, 1994

The future is fast and affordable.....

The VISION offers a high performance, high quality recumbent at a breakthrough price - \$995! (VR40au). Our unique convertible wheelbase and above or below steering options allow you to choose your style. Ten configurations available for 1994 - including a Deore LX equipped R42 and our 23lb R45! Call or write for details today.



VISION RECUMBENT

New for 1994

- Three different models - ten different configurations!
- Zip fairing - fits long and short wheelbase VISIONs and many other recumbents -- \$350.
- Seat back bag -- 550cu. in. -- \$65.
- Chainguard -- \$19
- Computer mount -- \$5

ADVANCED TRANSPORTATION PRODUCTS, INC. 6201 Ravenna Ave N.E. Seattle, WA 98115 (206)-789-7323

RCN RECYCLE CLASSIFIEDS

RECUMBENT DEALERS

BIKE Rx: FULL SERVICE RECUMBENT DEALER FOR SOUTHERN COLORADO.

We stock Rans, Linear, ReBike, Vision R-40, BikeE and Turner. Complete line of accessories 10am-5 pm M-S. Look for our new store in Green Valley, AZ! David Sader. 706 Red Feather Lane, Woodland Park, CO. Ph:#719-687-6217 .(CO)

The Whistle stop: New & Used Recumbents in stock. ATP Vision, Lightning P-38, Ryan Vanguard & Fleetwood, Rans Stratus/ Nimbus, ReBike, and Turner. We buy, sell, trade and, consign. Test rides and rentals available. Ph:#303-224-5499. Fort Collins, CO (18-25/ CO)

INTROSPECT CYCLE: Your Northern California recumbent dealer. We offer ReBike, Infinity, Linear, Ryan, A.T.P. Vision, Trice and others. Recumbent accessories and custom modifications. Call for our current listing of used recumbents. Showroom hours by appointment only. 1029 Amberwood Road, Sacramento, CA. 95864. Call B.J. at Ph#916-481-2906. (CA)

HAL'S CUSTOM BIKES: California South Coast's recumbent headquarters. We specialize in the finest European HPV's. See the 1994 Windcheetah trike and our faired Kingcycle. Personalized service our specialty. By appointment only. Ph:#310-376-5882. (Redondo Beach, CA/18)

PEOPLE MOVERS: We specialize in Ryan, Linear, Rans, Infinity, A.T.P. Vision, Haluzak, BikeE, Rotator, Land Rower & ReBike recumbent bicycles. Drop-ship anywhere in the USA. People Movers, 811- So. Tustin Ave. (At 22 Fwy. in Orange) Phone# 714-633-3663. Your full service recumbent shop.. Open 7 days. (CA/18)

Classified Ads Rates: "Parts Wanted," "Parts For Sale" & "Personal ads" all free to subscribers. "Bikes For Sale"—Each 25 words \$7. Non-Subscriber rates are: 0-50 words \$20. Commercial classifieds are \$1. ea. word (35 word minimum). Name, address & phone counts as 10 words. Please phone 206-852-8149 for a display ad rate card. *Be sure to ask about special first timer special rates and discounts. RCN Classified Ads work!*

THE WHISTLE STOP: Northern Colorado recumbent specialists. We stock Rans, Infinity, Ryan, Linear, Turner, and ReBike recumbents and framesets. Rentals, sales, plus new and used parts for buildups. Phone#303-224-5499. (CO /16)

MARYLAND - D.C. - M.T. AIRY RECUMBENTS. Many in stock, ready to ride- New, Used, Tandem, Trade & Rentals. Obscure parts- Instant Worldwide Delivery. Frame Repairs, Brazing & Custom wheels in one day. Traffic-free test area. Long rural rides. Airport pickup for out-of-towners. Call #301-831-5151. (MD/thru #18-25)

RECUMBENT/ HPV PARTS:

FOR SALE-16" and 20" Recumbent Performance Road Wheels, Deore XT Hubs, 36 hole, Sun Mistral or Arai rims with quick release axles. \$69.95 TO \$79.95 each plus shipping. Call People Movers Ph#714-633-3663 (CA/17)

FOR SALE-Recumbent Custom Fender-Mixed Sets: 700c/27"/26"/20"/17"/16" sizes In stock and available ready to bolt on or kit form. Inquire for specifics. Call Angle Lake Cycle at Ph:#206-878-7457 (WA/18)

FOR SALE- New Composite AeroSpoke 700C, black, Sachs Freewheel. New "0" miles. This is below wholesale. \$250 + shipping.. Ph:#206-852-8179 (WA/18)

BOOKS & PUBLICATIONS

You can try to be heard alone.....OR YOU CAN ADD YOUR VOICE TO OURS. IT'S THAT SIMPLE. The League of American Wheelman has been protecting bicyclist's rights since 1880. Your \$25 membership can help to continue this effort. Join us to preserve your access to America's trails and roads. **League of American Wheelman**, 190 W. Ostend St., Ste. 120, Baltimore, MD, 21230. voice 410-539-3399/ fax 410-539-3496. **The National organization of Bicyclists.**

BIG ONE INCH
Display ads work!
Call RCN Today
Ph:#206-852-8149

USED RECUMBENTS

FOR SALE-Rare Lightning P-38. Large size, white. Updates include: front suspension fork and rear wheel disc. Call before its gone. Hal's Custom Bikes, by appointment only, call Hal at Ph:#310-376-5882. (Redondo Beach, CA/18)

FOR SALE-LIGHTNING P-38: 1993 model, large size, blue, very low miles. Standard component group. \$1400. Ken (w) Ph:#404-235-6550 X-3493, (h) 404-939-5912. (GA/18)

FOR SALE-1993 Linear Recumbent: Like new, 21 speed, Blackburn rack. \$600. Call Dave Ph:#804-296-1826 (VA/18)

FOR SALE-RANS NIMBUS: Exc. Cond. not, one year old, CLWB, Dia Compe, Deore XT, thumbshifters, aluminum bars Rans Special fairing and carrier. Very comfortable shock absorbing seat. Priced to sell. Call Ph:#708-490-0567 (Chicago area). Will deliver within reason. \$850. (IL/18)

FOR SALE: RANS STRATUS-1986: Copper colored, large size, brazed frame with triple crank and luggage rack.. Lo Mi. \$600 eves. Ph:#206-255-7560 (WA/18)

FOR SALE: 1993 Linear Recumbent, 18-speed bicycle with Sack Rack, Like new, Ridden 50 miles. Must sell due to health problems. Eastern Iowa. Ph:#319-852-3962. (IA/18)

FOR SALE: 1993 Counterpoint Opus IV. Show quality bike. Custom paint (Giro) Ocean Spray Deltron Turquoise to Purple fade with painted custom fenders, crank-arms & rear Blackburn rack.). Two seat posts & two seats: easily convertible for 5'4"/6'1" Captains. Deore XT drivetrain, Magura's, Avocet Altimeter computer & Transverse trunk. This bike is less than a year old and is in MINT condition. Could be sold as new. Also available- Opus Kidfront. \$ave \$\$\$ over new. Ph:#206-852-8179 (WA/18)



Recumbent Specialist
"The South's Largest Dealer"

Many Brand Names in Stock • MC/VISA accepted
Mail Orders • Demo Rides by Appointment

Morgan's Cycle & Fitness

2513 Sunset Ave. • Rocky Mount, NC 27804
919-443-4480

We're Serious

...and so are you...serious about comfort, serious about quality and performance. Easy Racers has been producing the best-performing, most user-friendly recumbents since 1979. Ask an owner about the legendary performance and reliability.

The Bottom Line....

...the serious money skips the learning curve and rides a real recumbent. The chromoly Tour Easy or our aluminum Gold Rush Replica.

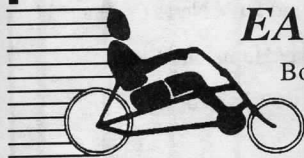
Dynamite Video...

...\$5 gets you a rich info pack...four-color brochure, glossy spec sheets, order form and a twelve-minute professionally-made color video. Serious stuff.

Or call for free info brochure.
(408) 722-9797



1994 GOLD RUSH REPLICA

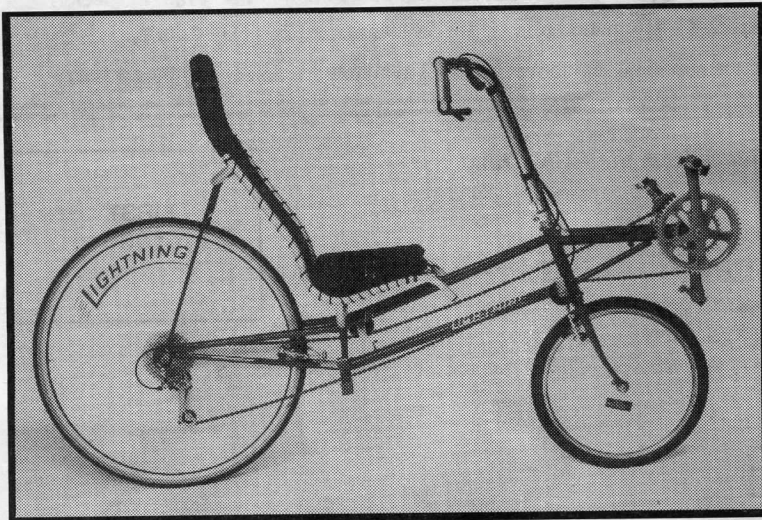


EASY RACERS

Box 255-X
Freedom, CA 95019

F-40 "Worlds fastest road bike"

Los Angeles to New York: 5 days, 1 hour, 8 minutes
San Francisco to Los Angeles 18 hours, 4 minutes



All New Lightning Action Video \$10!

The P-38 utilizes a stiff, yet light-weight "space" frame; this results in excellent hill-climbing and acceleration, plus contributes to a total bike weight of about 25 pounds.

With a 44 inch wheelbase and 45 front/55 rear weight distribution, the P-38 also has superb handling and stopping characteristics.

Best of all is the patented aluminum frame, nylon mesh seat – the most comfortable ever put on any bike!

Send \$2.00 for color brochure.

LIGHTNING

Lightning Cycle Dynamics

312 Ninth St.
Lompoc, CA 93436
(805) 736-0700

RECUMBENT CYCLIST NEWS

subscription information

Read all about it! New product information, the latest on all commercially built recumbent bicycles, readers shared experiences and the latest new bicycle technologies. We are positive that you will find our issues and information the most concise every written on the subject of recumbent bicycles. This is the #1 source for recumbent bicycle information in the world today! Become part of bicycling's future today!

1994 SUBSCRIPTION RATES

- | | |
|---|---|
| <input type="checkbox"/> \$25 USA Subscription (3rd Class/ bulk). | <input type="checkbox"/> \$45 USA Subscription 2-yr. bulk |
| <input type="checkbox"/> \$40 Supporter-I (1 copy mailed 1st class in flat envelope). | <input type="checkbox"/> \$45 Canadian Sub. / Canadian funds-check O.K. |
| <input type="checkbox"/> \$50 Supporter-III (3 copies mailed 1st class in a flat envelope). | <input type="checkbox"/> \$35 Canadian Sub. / US funds -cash or bank draft. |
| <input type="checkbox"/> \$100 Supporter -X: (10 copies / mailed 2nd Day Priority-US/ Can. | <input type="checkbox"/> \$45 Worldwide Air Mail -US Funds-cash/ draft |
| <input type="checkbox"/> This is a subscription renewal. | |

BACK ISSUE ordering information

The Recumbent Cyclist back issues can be a valuable resource to new recumbent enthusiasts. They make an excellent recumbent resource library, like a college course on recumbent bicycles & HPV's. Some back issues are high-quality reprints, others are first printings.

- | | |
|--|--|
| <input type="checkbox"/> \$5.00 RCN#4-Ryan Vanguard Review. | <input type="checkbox"/> \$5.00 RCM#12-Rans Road Test/ Underground HPV News (Yreka '93) |
| <input type="checkbox"/> \$5.00 RCM#5-Linear LWB Review. | <input type="checkbox"/> \$5.00 RCM#13-R & D Tech E-Z Rider Trike/ Homebuilt SWB |
| <input type="checkbox"/> \$5.00 RCM#6-Tour Easy/ Gold Rush Reviews. | <input type="checkbox"/> \$5.00 RCM#15 -The ReBike & Tim Brummer's P-38 design. |
| <input type="checkbox"/> \$5.00 RCM#7-Lightning P-38 Review. | <input type="checkbox"/> \$5.00 RCN#16-The Trice Trike |
| <input type="checkbox"/> \$5.00 RCM#8-'92 Buyers Guide/ Homebuilder | <input type="checkbox"/> \$5.00 RCN#17-The BikeE/ Draising/ RCN Policy |
| <input type="checkbox"/> \$5.00 RCM#9-A.T.P. R-20 SWB/ BMX homebuilt | <input type="checkbox"/> \$5.00 RCN#18- Presto vs. Tour Easy Shootout/ LWB homebuilder |
| <input type="checkbox"/> \$5.00 RCM#10-Laid Back / Thebis reviews. | <input type="checkbox"/> \$7.95 RCN#19-1994 Recumbent Buyers Guide! (avail. Mar. 15 '94) |
| <input type="checkbox"/> \$5.00 RCM#11-Presto Test/ SWB Homebuilder. | <input type="checkbox"/> \$5.00 RCN#20 -ATP Vision & Infinity tests.(avail. May 15, '94) |

- US RUSH / CANADIAN SERVICE—ADD \$.50 PER ISSUE
- WORLDWIDE-AIR MAIL ADD \$2.ea. ISSUE (Specials below not valid)
- SPECIAL-A: Any six back-issues mailed 2nd Day priority for \$27.00 (#2, #3, #14 & #19 not avail. in special)
- SPECIAL-B: A complete set of back issues #1-#18 mailed priority for \$89.95 mailed 2nd Day Priority.
- RCN #2, #3, #14 Are only available in the complete set above. (#2 & #3 available for \$5 ea. thru Feb. 1, '94)

**Recumbent
Cyclist
NEWS**

P.O. Box 58755
Renton, WA 98058-1755 USA

Happy Holidays from the RCN Crew!



**Forwarding & Address
Correction Requested**

If your renewal date (top line of label) says 10/93, 11/93 or 12/93, this is your last issue.