

#32/33

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RCN

RECUMBENT CYCLIST NEWS

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PEOPLE MOVERS
RECUMBENT BICYCLES

and

Bicycles by Haluzak

1996 RECUMBENT BUYERS GUIDE



Haluzak Hybrid-Race



Haluzak Leprechaun

DOUBLE VISION

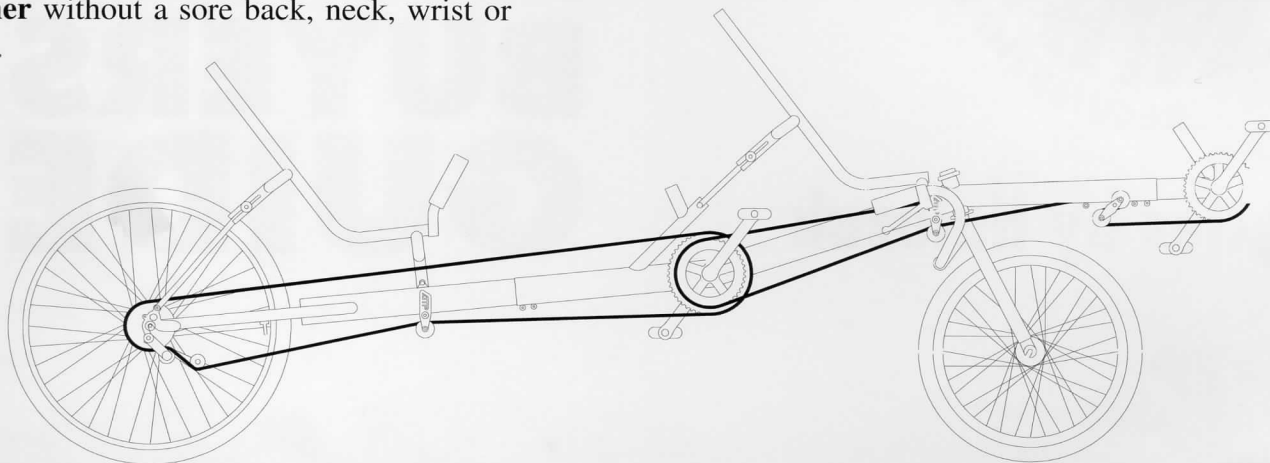
Now Try The Tandem Recumbent Performance and Price Leader!

Vision recumbents have become the country's recumbent performance and price leader. Now you can get the same great quality and customer service in a Tandem!

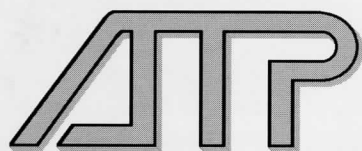
The Double Vision offers **advanced performance, features and comfort** over it's competitors, and features not found on conventional tandems. Now you can ride **together** without a sore back, neck, wrist or wallet.



"Editors Choice" Best Tandem 1996 - RCN

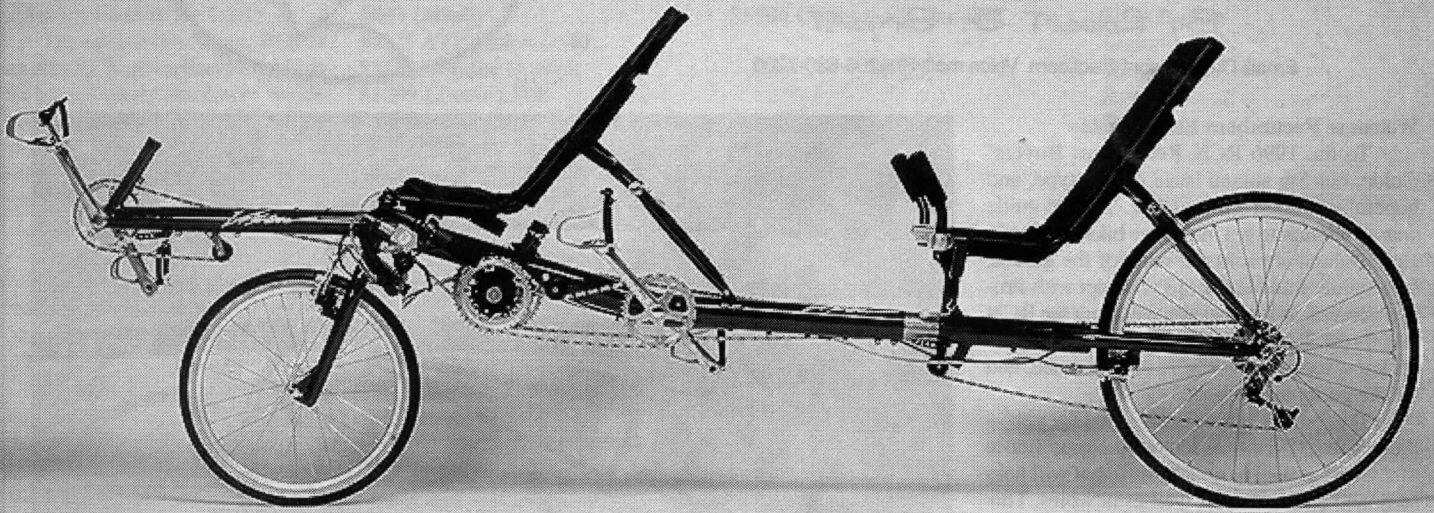


- * Comfortable, fun, fast, and easy to ride.
 - * Independent Pedaling System (I.P.S.) adds only 1.5lbs to the bike, but enables either the captain or stoker to freewheel at any time (patent pending).
 - * Cadence between captain and stoker can be varied.
 - * 20" front wheel, 26" rear wheel, under seat steering
 - * Frame telescopes to accommodate stoker's size. this feature also allows for a UPS shippable bike.
 - * Adjustable and removable mesh seats, with integrated seat pad.
 - * 74" wheelbase, fits on standard tandem car racks.
- Built in Seattle, U.S.A **Prices start at \$3400**



Advanced Transportation Products, Inc.
952 Republican Street, Seattle WA. 98109
V: (206) 467-0231 Email: ATPVision@AOL.com

RECUMBENT CYCLIST NEWS



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What's Coming Up!

RCN road tests for 1996 will include a feature on Steve Delaire's Rotator Interceptor, the Lightning Stealth, Rans V-Rex 24, Turner-2000 and Milt Turner promises to send a '96 T-Lite (new round tube model). Look for an article on designer/artist Jaroslav Belik also a Rans Stratus vs. Easy Racer Tour Easy shoot-out this summer. Throughout the year look for more touring articles and continuous updates from the world of recumbency!

RCN is printed on a bimonthly schedule—6 issues per year. The subscription cost is \$30/\$40 first class (see pg.74) to: RCN, PO Box 58755, Renton, WA 98058. RCN is meant for informational and entertainment purposes only. The opinions stated are those of the authors and not necessarily RCN.

Above Photo: The ATP Double Vision Tandem is the co-winner of the RCN "Editor's Choice for Best Recumbent 1996" along with the Rans Screamer tandem.

RCN PUBLICATION INFORMATION

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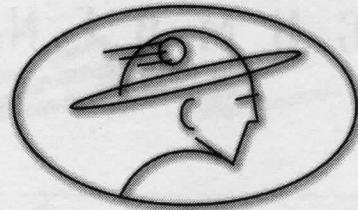
RCN Buyers' Guide Listings: We supply a free minimum listing to any manufacturer who completes the requested pre BG paperwork. RCN reserves the right to cut listing sizes down based on space availability as this issue is printed in 8 page increments. Fortunately for us—MOST of the manufacturers support this publication through advertising.

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Editorial License

By Robert J. Bryant

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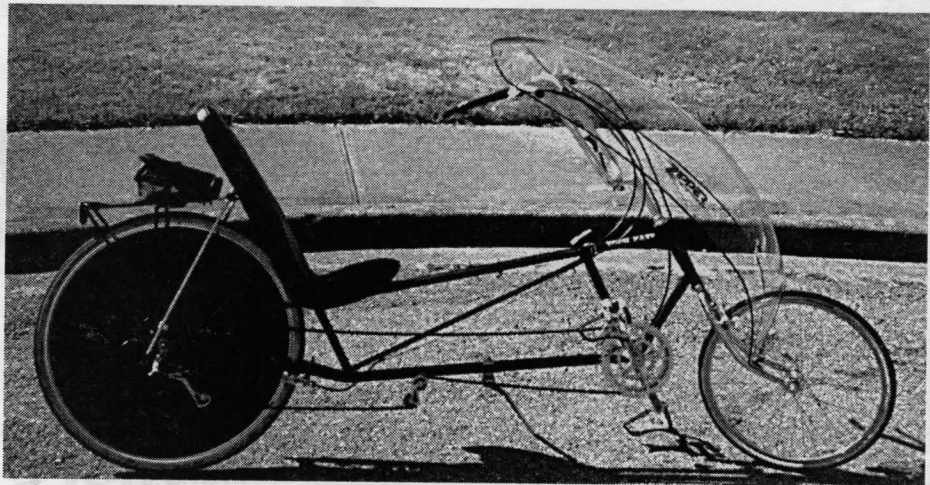


Welcome Recumbent Enthusiasts—

To the 1996 RCN Recumbent Buyers' Guide, our 5th annual issue of this type, and hopefully our best effort to date. The '95 guide was an attempt to get into more bike shops etc. Even though we sold out most of the guides, our venture into bike shops was met with limited success, as it seems some dealers see RCN as a threat. It must be the fact that RCN readers know too much—you're too informed, and we are guilty as charged!

This buyers' guide is designed for you—the readers. There are lots of pictures (more than ever) as well as a lot of info that will help seasoned enthusiasts as well as newbies. This is YOUR guide! We try to give unbiased opinions based on our experiences with the bikes. It's OK if you don't agree with RCN's editorial—read through it—digest it—filter it—think about it—talk to your 'bent friends about it—and form your own conclusions. If you disagree with what we've said—take the time to write an article—it could mean a free subscription (when printed). RCN is a reader forum. As the years go by, we want reader/riders/writers to become even more involved.

There are some great new products for you this year. We have recumbent composite wheels (just a dream a few years ago) and fairings: Zzip Design has fairings for most every type of bike, if not Karl will help you make it work. There is Steve Delaires updated Interceptor fairings (that fit some MWB bikes too) and many hot new models: the Rans Screamer and ATP Double Vision tandems, which by the way, both are co-winners of RCN Editor's Choice for Best Recumbent 1996; the value added bargains: Infinity at \$849, Rans Tailwind at \$985 and the bargain Vision R-40 at \$995. ATP has what could be the hottest bike of the year, the R-44 (R-45 frame/R-42 components), for \$1800, Dick Ryan has his Spin wheel-equipped Vanguard and then there is Kelvin Clark up in Woodland Park, Colorado who has his custom spec'ed and very dialed Rans bikes. Our favorite is the V-Rex 24 GL63 with fat tires (not available from Rans) and with optional front suspension! Kelvin Clark has just announced custom spec'ed Easy Racer Gold Rush Replica's with optional Magura brakes! For trike enthusiasts we have the return of Earth Traveler, Hudyn (trike design/construction manuals) and Rick Horwitz' newly updated and dreamy Zephyr and Thunderbolt trikes. The best trike news is that Peter Ross has redesigned the venerable Trice and it's available mail-order from the U.K. for \$2200. For even more daydreaming, we've included as many Euro-photos as we could squeeze in! There are some fun new ways for the recumbent enthusiast to



Your publisher's first 'bent—a 1987 Tour Easy purchased sight unseen from Easy Racers. This is the bike that is responsible for RCN.

spend money this year! Please be sure to tell the manufacturers you read about it in RCN.

Buyers' guide questionnaire/info/photo requests went out to every manufacturer we know of that does business in the USA (and some who do not). We guarantee a FREE listing to all who respond. Unfortunately, there are some manufacturers who take us up on the FREE part and do not support RCN. This issue would not have been possible without the support of ALL RCN advertisers to whom we offer this special thank you!

The buyers guide cover is offered up for manufacturer sponsorship. This allows us to produce a bigger publication and use glossy paper on the cover. This years sponsorship came from Jim Wronski/People Movers and Bill Haluzak/Bicycles by Haluzak. We salute and sincerely thank these two companies for their involvement in this project. ATP and Rans also stepped up for the glossy ad pages. A special thank you to them as well.

1996 marks the sixth year of our company and possibly a turning point. We have tried to be "Bicycling" to the recumbent world with limited success. What you may not know about this issue is that one guy (me) spent over 1,000 hours working on it. I did have a bit of help in the graphic, cover and scanning departments, along with a few articles by other writers and dedicated friends, however, RCN is still pretty much a two person show. I write the magazine and Marilyn is the circulation department, so if it's not perfect, please accept our apologies and note that this is a big a project for two people to handle and retain their sanity. If you think RCN should be all glossy color, let me tell you that two issues of this and we'd be history. If you think advertisers will pay for it, think again, RCN ads cover only 25% of what it takes to produce this publication. RCN ads cost just a

fraction of what ads cost in big magazines. The economies of scale are in action again, this is the same reason your new recumbent will cost twice that of a new wedge!

For 1996, we plan to have more reader written articles as well as those from free-lance professionals. If this is you—drop us a line as we would like to keep a database of recumbent educated writers. There is pay involved, albeit you won't get rich working for us. One thing to consider is that you never know where your RCN work might lead to should recumbents catch on. If you can offer other services that you feel we need, please drop us a line and send a sample of your work.

Some readers have criticized RCN about our less than perfect editing and other errors. Please keep in mind that this is a reader supported publication run on a skeleton crew. Many of the writers are amateurs, but they are the ones out there doing the riding, building and testing. Until this industry gets a lot bigger, we hope you'll cut us some slack. We are growing RCN as fast as we can afford to. This will assure you that we won't just disappear someday like 99% of magazines do. Our goal is to make each RCN better than the last—and most readers tell us we're doing just that.

The subscribers of RCN are what has made it happen over these past years. We could not have done it without you. Please take a bow and pat yourself on the back. You are RCN and we sincerely thank you for reading our publication. Enjoy your 1996 recumbent season and we'll see you on the trail!

Viva Reambency
Robert and Marilyn Bryant

Recumbent Bicycles 1996

THE PLAYERS

The following are those who have track records and have built and sold many bikes in the USA.

Throughout this listing, **BOLD** denotes RCN advertisers for which this buyers guide absolutely would not be possible without their advertising support. If you do business with these companies, please tell them you saw it in RCN.

THE PLAYERS

Ace Tool/Infinity
 AngleTech
 ATP Vision
 BikeE
 Easy Racers
 Greenspeed
 Lightning
 Linear
 Haluzak
 Rans
 Rotator
 ReBike
 Ryan
 S & B
 Turner

SWB MODELS

\$610 S & B
 \$868 Belik Gust/Gale (new)
 \$950 Turner T-Lite
 \$995 ATP R-40 Vision
 \$1200 Linear Sonic
 \$1495 ATP Vision R-42
 \$1400 Backsafer (new)
 \$1679 Werner (new)
 \$1800 ATP R-44
 \$1800 Turner T-Lite Dlx.
 \$2320 ATP R-45
 \$2500 Turner 2000

MWB MODELS

\$995 Haluzak Leprachaun
 \$1095 Rans Rocket
 \$1195 Lightning Stealth
 \$1295 PM/Haluzak Horizon Ace
 \$1395 Haluzak Horizon
 \$1395 Crystal/Ross
 \$1475 Rans Rocket
 \$1550 Stealth LX (P-38 comp.)
 \$1795 Haluzak Hybrid Race
 \$1995 Haluzak Traverse
 \$1995 Lightning P-38
 \$2299 AngleTech V-Rex GL24
 \$2595 Lightning P-38X
 \$2520 AngleTech/Rans V-Rex GL63
 \$3000 Kingcycle
 \$3200 PM/Haluzak Hybrid Race Dlx.
 \$4500 Lightning F-40
 \$5800 Lightning R-84

LWB MODELS

\$425 Rotator Coaster
 \$849 Infinity
 \$1125 ATP Vision R-40
 \$1150 Rotator Pursuit
 \$1200 Linear LWB
 \$1290 Belik Jet Stream (new)
 \$1595 Easy Racers Tour Easy
 \$1595 ATP Vision R-42
 \$1595 Rans Stratus
 \$1595 Rans Nimbus
 \$1650 Ryan Vanguard
 \$2100 Grand Touring Infinity 15th Anniv.
 \$2500 Easy Racer Gold Rush Rep.
 \$2520 Rans Stratus/Nimbus GL63
 \$2600 Rotator Inceptor
 \$2999 AngleTech/Gold Rush GL63
 \$4999 AngleTech/Gold Rush SS

CLWB MODELS

\$500 ReBike 707
 \$550 ReBike 818
 \$630 ReBike 2600 LE
 \$795 BikeE 7 spd.
 \$795 Easy Racers EZ-1
 \$868 Belik Breeze/Wind (new)
 \$895 BikeE 21 spd.
 \$985 Rans Tailwind

TANDEM MODELS

\$2595 S & B
 \$2800 Linear
 \$3400 ATP R-82 Double Vision
 \$3800 ATP R-82 Double Vision I.P.S.
 \$3875 Rans Screamer
 \$4149 AngleTech/Rans Screamer GL24
 \$4150 ATP R-85 Double Vision
 \$4299 AngleTech/Rans Screamer GL63
 \$4550 ATP R-85 Double Vision I.P.S.
 \$4999 AngleTech/Rans Screamer GL63 I.C.S.
 \$3900 Ryan DuPlex
 \$4550 ATP R-85 Double Vision ATP's I.P.S.—Independent Pedaling System was designed and is built by ATP. AngleTech I.C.S.—Independent Coasting System is built by Vertical Descent.

TRIKE

\$700 ReTrike/VP
 \$1498 Pacific Spec.Tricumbent
 \$2200 Crystal/EuroTrice
 \$2600 Tricumbent Raven
 \$3000 Greenspeed GTR20/20
 \$3300 Greenspeed Tourer 26/20 (Greenspeed prices est. US)
 \$4000 Rubicon (new)

\$4000 Demon (est US price)
 \$4395 Zephyr GT
 \$4695 Zephyr GTX
 \$5500 Greenspeed Tandem

KIDS

S & B
 Belik (new)
 Flying Dutchman (new)

USS

ATP Vision
 Linear
 Ryan
 Infinity
 Haluzak
 S & B
 Turner
 Belik (new)

ASS

ReBike
 Rans
 BikeE
 Easy Racers
 Lightning
 ATP Vision
 Rotator
 Crystal/Ross
 Maxam
 Backsafer (new)

IN BUSINESS THE LONGEST

- 1) Rans—Randy Schlitter 1974
- 2) Easy Racers—Gardner Martin 1976 (tie) Lightning—Tim Brummer
- 3) Infinity—Ace Tool R & D 1980
- 4) Turner
- 5) Linear

NOTE: Dick Ryan was an employee of Avatar in the early 1980's. S & B and Turner are variations of Hypercycle that dates back to 1980. Julian Smith "Smitty" of S & B has ties to all three designs, the Hypercycle, Turner (tri-tube 2000) and S & B models. Turner formed Turner Enterprises in the early 1980s and S & B was formed by Jack Baker and Julian Smith in 1991.

LARGEST SALES NUMBERS

- 1) ATP (tie) Linear
- 2) Rans
- 3) BikeE
- 4) Easy Racers
- 5) Ryan (tie) Lightning

Sales numbers are approximations

SPEED RECORD/RACE HISTORIES (USA)

Easy Racers
 Lightning
 Kingcycle
 Ross
 Rotator
 Infinity

WHERE DID THEY GO?

• Counterpoint—After seven years, Jim Weaver halted production in the fourth quarter of 1995. Angle-Tech may have framesets and complete bikes available.

• Darby/Neobike—Remember the Neobike CLWB from 1994? It had a potential for 60 gears and a really unique frame design. The Neobike company no longer exists, but the contract builder, Bill Darby is still kick'in in the NE. We have tried to get info for three years to no avail.

• Doppler—Did not respond.
 • Eco Cycle—Ken Trueba showed a new US built Trice like trike this summer at daVinci days and then moved to Spain. Eco's phone number is disconnected and the info-pack he promised RCN back in July never showed up. Eco is no longer a licensed builder for the Crystal Trice, however the much improved '96 Euro Trice is available direct from Crystal in the U.K.

• Lemle Lightning—Gene chose not to take a listing, although, he still builds a limited number of LWB bikes by custom order only.

• Maxam—Our test bike took eight months to arrive after many delays. John and Chris Day say things are running again although we did not get info or pictures.

• Nordictack—Ceased production of all bicycles, including the Fore-runner in the Spring of 1995.

• SOHO—Shane Harris does custom bikes and design work, but no longer has production models. He did not want a BG listing.

• Varna—George Georgiev does limited business mainly by word of mouth from his Gabriola BC, Canada studio.

• Windcheetah—The legendary Speedy builder lost their USA distributor. You can purchase this \$6000 trike direct from the U.K. (see European listings in this guide.)

NOTE: This list is of bikes that are readily available in the USA. European manufacturers are listed elsewhere in this issue. □

RCN Reader Bests

These are the winners of the Readers Choice Awards from the mini-survey in RCN#31. It's interesting to note that only a handful of people responded to our voice mail reply, many by phone, but the most responses came from Email.

READER'S CHOICE: BEST SWB/MWB?

29%—Lightning READERS CHOICE

- 21%—Rans V-Rex/Rocket
- 16%—Haluzak
- 11%—ATP Vision
- 1%—Each for: Sprite(?), Street Machine, Kingcycle, Stik Boy, Velocita
- 18%—Did not respond.

READER'S CHOICE: BEST CLWB?

22%—Easy Racer EZ-1 READERS CHOICE

- 17%—BikeE
- 4%—Rans Tailwind
- 1%—Belik CLWB
- 1%—Bevo FWD
- 55%—Did not respond

READER'S CHOICE: BEST LWB?

52%—Easy Racer READERS CHOICE

- 15%—Ryan
- 7%—Rans Stratus/Nimbus
- 5%—ATP Vision
- 2%—Rotator Interceptor
- 2%—Infinity
- 1%—Belik Jet Stream
- 16%—Did not respond

RECUMBENT TO WATCH IN 1996?

16%—ATP (Double Vision, R-44 and susp. Vision) READERS CHOICE

- 9%—Haluzak (Traverse & Horizon)
- 8%—Rans Screamer and V-Rex
- 7%—BikeE
- 7%—Ryan
- 5%—Haluzak
- 6%—Easy Racer
- 6%—Belik
- 3%—Lightning
- 1%—Rotator
- 1%—Tricumbent Raven (not to be confused with the Pacific Specialties Tricumbent)
- 1%—Greenspeed
- 1%—Turner Titanium (Milt said he had a secret that he wouldn't tell us about, maybe.....)
- 29%—Did not respond

BEST RECUMBENT MANUFACTURER

19%—Easy Racers READERS CHOICE

- 18%—Rans
- 14%—ATP
- 7%—Ryan
- 5%—Haluzak
- 4%—Lightning
- 2%—Greenspeed
- 2%—BikeE
- 1%—Rotator
- 1%—Belik
- 1%—Kingcycle
- 1%—Radius (Germany)
- 25%—Did not respond

BEST RECUMBENT CRAFTSMANSHIP?

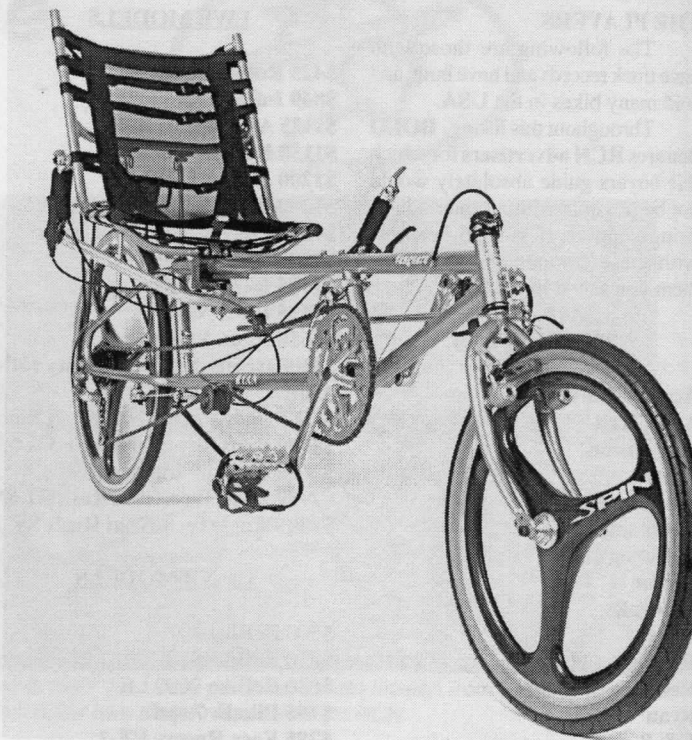
21%—Easy Racers READERS CHOICE

- 17%—Ryan
- 15%—Rans
- 5%—AngleTech
- 4%—Lightning
- 2%—Lightning (Lemle)
- 1%—ATP
- 1%—Belik
- 1%—Velocita
- 1%—Greenspeed
- 1%—Rotator
- 1%—Haluzak
- 1%—BikeE
- 1%—S & B
- 1%—Stik Boy
- 1%—Practical Innovations
- 26%—Did not respond

READER'S CHOICE: BEST DESIGN?

18%—Easy Racers READERS CHOICE

- 15%—Lightning
- 15%—Ryan
- 14%—ATP
- 5%—Haluzak
- 4%—Counterpoint Presto
- 1%—Belik
- 1%—Greenspeed
- 1%—Infinity
- 1%—Rotator
- 1%—Kingcycle
- 24%—Did not respond



Ryan Vanguard Photo—R.B. Croteau

RCN FREQUENCY: How often would you like RCN to come out?

- 42%—6 issues with a separate buyers' guide.
- 29%—5/6 issues per year with a buyers guide included.
- 29%—10 smaller monthly issues with a separate buyers' guide.

RCN PAPER CHOICE: Would you rather have:

- 41%—40 page/ electrobright (RCN#25).
- 10%—36 page/electrobright inside pages and a glossy white cover.
- 43%—32 pages/ white paper (RCN#30).
- 6%—No answer.

RCN REPORT CARD: How good a value your RCN subscription dollar?

- 54%—Very good
- 41.5%—Good
- 4%—Fair
- .5%—Poor

We would like to take this time an to offer a special thank you to all of the RCN readers who participated in our mini-survey.



Graphics courtesy of Pichlerrad, Germany

1996 RCN Editor's Choice Awards

RCN BEST RECUMBENTS BIKES

Spread the wealth is my motto for 1996. Each recumbent has its strong and weak points, and we have honored several for specific points. We have primarily awarded bikes that are easily available in North America and that we have seen or ridden.

RECUMBENT OF THE YEAR—1996: *Rans Screamer (tie) ATP Double Vision.* These two new tandems are both remarkable in their own right. Both are rock-solid stable—more so than the quicker handling singles that inspired them. It was difficult to choose which was best between them—so we didn't—both are great. USS fans will love the Double Vision and ASS fans the Rans Screamer. The Rans has a stiffer triangulated frame, the ATP has a modern look. Both offer independent pedaling/coasting systems. ATP designed their own. AngleTech offers the Vertical Descent I.C.S. Contratulations to ATP and Rans for these superior products.

The BEST SWB USS Recumbent of 1996: *ATP Vision R-44/45.*

The BEST MWB USS Recumbent of 1996: *Haluzak Horizon with optional bar-end extensions.*

The BEST MWB ASS Recumbent of 1996: *Rans V-Rex with optional tilt-steering. (24/20-performance/26/20 touring).*

The BEST CLWB Recumbent of 1996: *Easy Racer EZ-1. Runner-up: BikeE, the '96 redesign looks very nice.*

The BEST LWB ASS Recumbent of 1996: *Easy Racer Gold Rush Replica. Runner-up: The Rans Stratus with "B" bars is one hot bike.*

The BEST LWB USS Recumbent of 1996: *Ryan Vanguard. Runner-up: The ATP Vision LWB is a very nice LWB USS.*

The BEST Trike of 1996: *Greenspeed GTR20/20. We are looking forward to the new Euro Trice which retails for \$2200 shipped to the USA.*

The BEST Tandem Recumbent of 1996: *Rans Screamer and Double ATP Vision.*

The BEST Recumbent Manufacturer of 1996: *Rans.* There are many great manufacturers, Easy Racer, Ryan and ATP are a few, but no other has the capabilities that Rans does.

The BEST New Products of 1996: *ATP Vision R-44, Rans Tailwind redesign and the new tandems.*

The Most Intriguing New Product of 1996: *Anything from Belik.*

OTHER BESTS

The BEST SWB Frame: *ATP Vision R-44/45.*

The BEST SWB/MWB ASS: *Rans with the new "flip it" steering.*

The BEST SWB/MWB USS: *Haluzak with bar-end extensions.*

The BEST SWB/MWB Handling: *High-end—Lightning P-38; Low-end—Rans Rocket.*

The BEST MWB Frame: *Rans V-Rex.*

The BEST LWB ASS Design: *Easy Racers (all models).*

The BEST LWB USS Design: *High-end—Ryan; Low-end—Infinity/ATP.*

The BEST LWB ASS Handling: *Easy Racer.*

The BEST LWB Frame: *Easy Racer Gold Rush Replica.*

The BEST CLWB Handling: *Easy Racers EZ-1.*

The BEST Performance SWB: *ATP R-44/45.*

The BEST Performance MWB: *Lightning P-38/R-84. Runner-up: The Rans V-Rex is one notch down the performance scale, but up two notches for user-friendliness and affordability.*

The BEST Performance LWB: *Easy Racer Gold Rush Replica. Runner-up: Rans Stratus with "B" bars and a Super Zipper.*

The BEST Performance Deal: *Rotator Pursuit with Interceptor parts.*

The BEST Folding Recumbent: *Linear LWB.*

The BEST Touring SWB: *ATP Vision R-42.*

The BEST Touring MWB: *Haluzak Horizon.*

The BEST Touring LWB: *Ryan Vanguard (tie) ATP LWB.*

The BEST Recumbent Seats: *'96 ATP (tie) Rans (tie) Lightning. The best foam/shell is the Easy Racers Cobra.*

The BEST 'bent Deal SWB: *S & B SWB at \$610.*

The BEST 'bent Deal MWB: *Rans V-Rex at \$1475.*

The BEST 'bent Deal CLWB: *Easy Racer EZ-1 18 speed at \$795.*

The BEST 'bent Deal LWB: *Infinity at \$849.*

The BEST 'bent Deal Frameset: *The new Turner T-Lite at \$575.*

The BEST 'bent Enthusiast Deal: *ATP Vision R-40 USS (\$995) and Rans Tailwind (\$985)—both are superior value-added products that cannot be beat. The R-40 is a better buy than the R-42, however, the R-44 is the best choice if you can afford it, and the best enthusiast deal. The Tailwind is a better buy than the more costly Response model.*

The Best Craftsmanship on a Recumbent: *Easy Racers.*

The Best Recumbent Building Plans 1996: *Ok trike fans, the Hudyn manuals are back, read them before you build. CycloPedia's EconBent are also good, but we sorely miss the Easy Racer plans....*

The Best Recumbent Parts Source: *Your nearest RCN advertiser.*

THE BEST COMPONENTS

The Best Recumbent Component Group: *Low-end—BikeE 21 spd.; Medium—Rans Tailwind/Vision R-40; Medium-high—Haluzak Horizon; High-end—Haluzak Hybrid Race; Ultra Deluxe—Vision R-45 and AngleTech GL63.*

The Best Recumbent Paint Job: *ATP R-45. Each bike is custom painted any color you want. AngleTech and Lightning have custom options.*

The Best 'bent Clipless Pedals—all around: *Shimano SPuDs are tried and true, Look Moabs for people with large feet (wider, more support) and Speedplay for the high performance techno-weenie. Non clipless CLWB riders—get a high quality BMX platform by Odyssey or similar.*

The Best Recumbent Crank: *Low-end: Suntour XC Pro/Comp (grimace—there is too much Suntour spec for 1996/avoid Suntour XCT/X-1); Medium—Ritchey cold forged; High-end—Campy/Cook Bros. E Style.*

The Best Recumbent Brakes: *Low-end—Dia Compe Big Dogs that come on the Linear and Haluzak (optional). These are better than Bull Dogs that come on some models. Also worthy of note are the Vision R-40's XC Pro canti's (even though I hate....cantilevers); Medium—Haluzak Hybrid Race Deore XT/105SC; High-end—Shimano 105SC Dual Pivot or if you like cooking oil running in the viens—Magura's. Alloy Mouse says the Sachs disc work great. Shimano V- cantilvers are hot!*

The Best Recumbent Chain(s): *Any Sachs—it makes a difference.*

The Best Recumbent Chain Idler: *Haluzak Horizon and Easy Racers.*

The Best Recumbent Shifters: *SRAM Grip Shift SRT600/800, retrogrouches, grab Shimano Ultegra bar-ends while you can!*

The Best Recumbent Faring: *Zip Design.*

The Best Recumbent Faring Deal: *Rans with optional windscreen.*

The Best Recumbent Deraileur: *Low-end—Rans Tailwind Shimano STX with Bullet Bros Chain Tensioner; High-end—AngleTech Shimano XTR with beefier spring (current model Shimano's need a spring boost).*

The Best Recumbent Trailer: *BOB for cargo/touring/Burley for kids.*

The Best Recumbent Wheels: *The most trouble free wheelset I own are Tour Easy wheels built by Fast Freddie Markham. For composites, see Aerospoke, HED and Spin, all are fine.*

The Best Option on a Recumbent Bike: *BikeE's chainguard, Haluzak's computer/light mount and Haluzak's-ATP-AngleTech's custom seat bags.*

The Best Recumbent Warranty: *Any lifetime warranty.*

THE BEST RECUMBENT FOLKS

The Best Recumbent Dealers: *Any dealer who advertises in and sells RCN in their stores. Why? These dealers are seeking a regional market and are willing to deal with educated consumers!*

The Best Recumbent Dealer: *People Movers remains the largest recumbent specific shop in North America and probably the world.*

The Long Distance Dealer: *Angle Tech for custom spec and preshipping bench/road tests. This is an important consideration.*

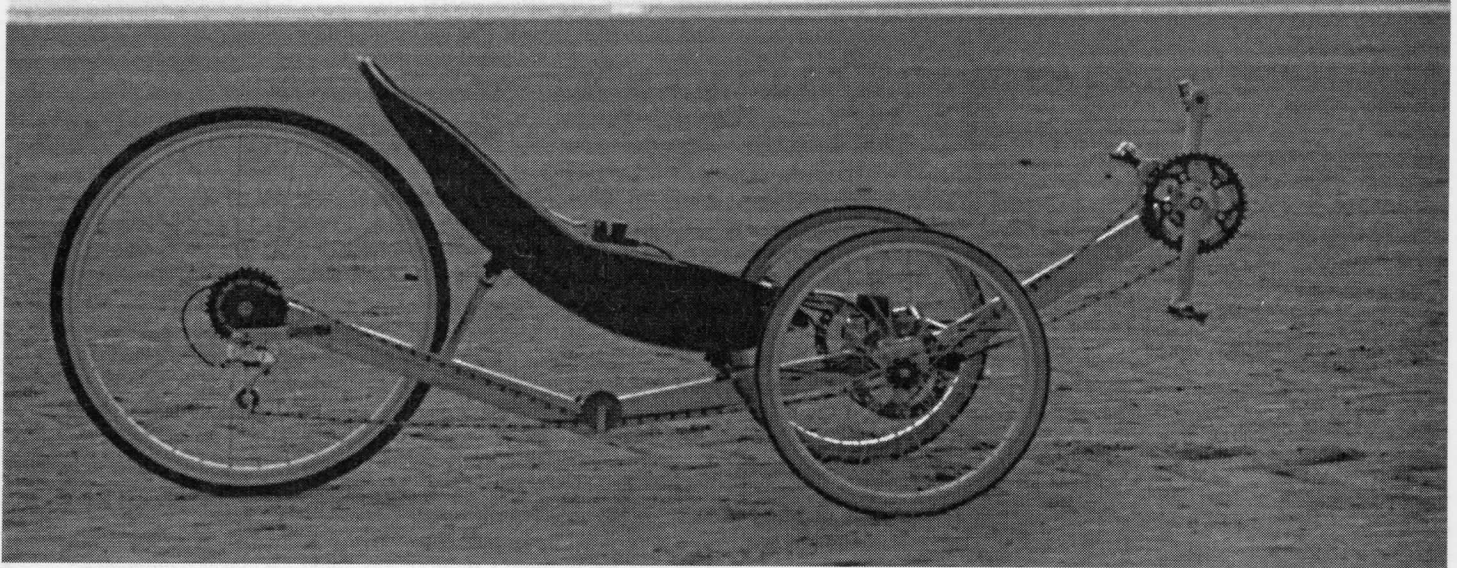
The Best Custom Spec'ed Recumbents: *Kelvin Clark, AngleTech*

RCN DUBIOUS ACHIEVEMENT AWARD:

This award goes to the few recumbent manufacturers who do not subscribe, advertise or support this publication in any way, shape or form. We will continue our efforts to promote recumbent bicycles with or without you—though we'll be here if you need us.

Viva Reambenaf
Robert J. Bryant

Buyers' Guide Primer



The Rubicon Trike imported to the USA through People Movers —Rubicon

BUYING A RECUMBENT BICYCLE

You know that you've hit upon something great when you can ride 25 or 125 miles and be comfortable the entire ride—seated on your high-tech recumbent bicycle. Road and mountain bike designers continue trying to reinvent the upright bicycle with limited success. *Recumbent* designers may have different ideas on geometry, style, look and performance—but most know what the bottom-line is—COMFORT!

Stop and think for a moment about how unique recumbent bicycles really are. Our design boundaries have no limits set-forth on us by the stagnant bicycle industry. How about the diversity of the recumbent riding crowd! Homebuilders and F-40 racers hangin' together. Easy Racers riding along side Visions, V-Rex along side Ryans and doctors riding with bus drivers. The riders cross the spectrum of ages, sex, race, ethnicity and socio-economic status. Doesn't that make you feel proud to be part of recumbency! This is a positive image that I am proud to be a part of—the riders known as *Recumbent Enthusiasts*.

For years the stagnant bicycle industry has tried to persuade you that the mountain bike, and then the hybrid-bike (is this a dumb name or what—maybe even as bad as recumbent), or the next new seat gel saddle technology, composite beam or space age elastomer as the answer to being comfortable on a bicycle. Unfortunately, they are wrong, and they are betting you won't run into us.—*The Recumbent Ones!*

Comfort is the main reason to consider a recumbent. When you ride a recumbent bicycle you will no longer have an aching back, stiff neck, numb wrists or a sore bottom. You will be able to ride longer with less fatigue and arrive at your destination feeling refreshed. The reason is the relaxed, recliner, easy-chair position that the recumbent bicycle offers. This laid-back position offers a better view of the road in front of you as well as the world around you. Another benefit of this is an open chest for easier breathing.

Recumbents are versatile machines and can be used for a wide range of applications including fitness, recreational, sport riding, daily commuting, as well as racing, speed record setting or that fast century. They are optimum for long distance touring. Outstanding performance is another good reason to consider a recumbent as they hold all of the human-powered speed records. They are aerodynamically superior to conventional bicycles; less frontal area means less wind resistance. The Lightning F-40 currently holds the Race Across America speed record of five days and one hour. Gardner Martin's Easy Racer Gold Rush, ridden by Fast Freddie Markham, was the winner of the Dupont Prize for breaking 65 mph (production versions are available). Fairings for street use are common and optional equipment on many models. They protect you from rain, cold and wind with up to a 30% reduction in drag. In ideal conditions, recumbents can be 10+% faster than conventional bikes. With a fairing speeds can range from 15%-

25% faster. With a full body you can go even faster. Lightning advertises the F-40 as potentially 40% faster. Finally, recumbents are not always faster than conventional bicycles, as it will depend on the rider, bike and even where you ride. Do your homework. If your goal is performance and speed, be sure that you look for a recumbent designed for this purpose. Pay close attention to speed records, racing involvement and victories.

SIMPLE RULES

On the surface, choosing a recumbent may seem difficult. It really isn't, as we will point out with a few basic guidelines:

I. SET YOUR BUDGET

You can expect to pay twice (or more) for a recumbent over what you would pay for a conventional bicycle. The reasons are: low production numbers, hand-made in the USA, costly seats and the limited component buying power of small manufacturers. Recumbents are more complicated than conventional bikes. Recumbent seats are a perfect example, they must be light-weight and comfortable. They can cost 25 times that of your off-the-shelf upright gel saddle.

The best values in the recumbent world are with bikes in the \$600-\$1200 range, however, the best bikes come in the over \$1200 range. Beware of that common disease called "one-step-itis" that has you willing to spend \$800, but considering \$1500 bikes. Lastly, do your homework.

II. CHOOSE A STYLE

SWB—Short Wheelbase (33"-39") This type of recumbent has the crankset in front of the headtube and the front wheel tucked underneath the legs of the rider. They are quick handling, accelerate well and are extremely maneuverable. SWB recumbents are the most compact design

SWB USE: These are great all around recreational machines. They fit in bike racks, elevators, apartments and small cars. SWB recumbents can be used for fitness, light touring, commuting and recreational riding. They often take more attention to the road and offer a comparatively harsh ride. SWB models do not handle as well fully-loaded, at high speed, or on uneven terrain. If you want more stable high-speed performance, move up to a MWB or performance LWB. The concern is the reaction time for bikes with a 36" wheelbase should road hazards arise. The SWB benefits include virtually no heel interference and a low seat height with a 16" wheel. Example: ATP Vision, S & B and Turner. ATP owns this market with the value added Vision line; S & B and Turner offer entry level bikes and frame-kits at really affordable prices.



Very compact

Little heel overlap with front wheel

Good performance/acceleration

Very maneuverable/responsive

Light-weight

Fit in tight spaces/standard car racks

Great Recreational choice



Ultra quick handling

Less than perfect weight distribution

Less predictable handling

16" wheels/poor tire choices

Relatively rough riding

High center of gravity on 20" models

MWB—Medium Wheelbase (40"-46") is a longer variation of the SWB. These designs are more stable at speed, have better weight distribution, and are proven performance and speed record holding bikes. User-friendliness slips a notch due to heel interference as the front wheel is pushed out farther.



Compact

Light-weight

Quick responsive handling

Excellent performance/acceleration

Very maneuverable/responsive

Excellent weight distribution (most models)

Excellent hill climbing ability

Fit in tight spaces/standard car racks

Great performance choice



Major heel overlap with front wheel

16" wheels/poor tire choices

Comparatively rough riding

High center of gravity on 20" models

Some riders can't sit flat footed at a stop

MWB USE: The MWB was primarily



A Rans 24/20 V-Rex on the LA bike path—Gunnar Fehlau

designed for performance. Tim Brummer is rumored to have tested his bikes stability at upwards of 60mph. MWB recumbents that are great for sport-touring, commuting, a fast century and even HPV racing. Examples are the Rans V-Rex, Rocket, Lightning and Haluzak.

WARNING: If you are in the market for a SWB/MWB please consider the seat height issue. Being able to sit flat footed at stops is important—especially for performance oriented riders. It's not as big a deal once you've learned to ride or for the casual tourist.

LWB—Long Wheelbase (60"-72+") These models have the front wheel ahead of the crankset. They are extremely stable and inspire confidence in new riders. The ultimate in user-friendly road-limo comfort. They are the ultimate long-distance touring machines and a joy to ride. This design has been the mainstay of the commercial recumbent world for many years.



Easy to ride/learn

Feet flat on the ground at stops (most riders)

Smooth comfortable ride

Low center of gravity (most models)

Smooth predictable handling

Perfected design

Best Wheel/tire choices

Good weight distribution (most models)



Nearly as cumbersome as a tandem

Generally heavier than SWB/MWB models

Hill climbing suffers (weight and arguably riding position)

Will not fit in tight spaces/standard car racks

LWB USE: LWB is the most versatile recumbent design. You can have a LWB that will

be equally at home on a fast century as it would be crossing the great plains on a tour. Examples are the Easy Racer Tour Easy, Gold Rush Replica, Ryan, Linear, Infinity, Rotator and ATP.

CLWB—Compact Long Wheelbase (50"-59") This is a variation of the LWB design. The CLWB is designed with a higher seat and a smaller diameter wheelset (20/20 or 20/16) that makes the bike smaller, shorter and more manageable. These bikes are perfect for cruising the beach, the bike trail or a city commute. They can be the ultimate urban assault vehicle. They are not the best performers and have heavily loaded rear wheels, though they are the simplest, easiest to ride and are the most affordable recumbents. Look for great models from BikeE, a super deluxe cruiser; the Easy Racer EZ1, an excellent city bike with a performance heritage and legendary Easy Racer attributes; and the Rans Tailwind—the dual 20" wheels model priced under \$1000 and comes with great new Rans seat.



Easiest to ride/learn

Easy to own/use

Comfortable ride

Predictable handling

Simple design

Low cost

Best city or fitness recumbent



Can be heavy

Hill climbing suffers (weight, weight distribution and arguably riding position)

Performance suffers

High seating position/center of gravity

Seat comfort suffers (most models)

16" wheels/tires (less important with this use)

Poor wt. distribution (avg. 75% rr./25% ft.)

CLWB USE: This is the best entry level style of recumbent. This is probably not the best design for a cross country tour, but it has been done. We've had reports of EZ-1's in the Caribbean, BikeE's touring the coasts and RCN reader Jean Seay just completed a European tour on a BikeE (her primary bike). For traveling, this design is very compact. Some low-end models are just too heavy to be used seriously, but the design is still lots of fun. Examples are the Easy Racer EZ-1, BikeE, Rans Tailwind and ReBike.

TRIKES—Trikes come in three basic varieties. The first and most popular is the two wheel in front high performance models. These are serious enthusiast HPV's starting at about \$2500 to upwards of \$10,000. Next is the heavy two-wheel in back cruiser trikes that sell for around \$750. The third is the inexpensive one speed lean/steer beach/rental trike. For 1996, there is an enthusiast version in the Tricumbent Raven. Examples: Trice, Greenspeed, Tricumbent and Zephyr.

☺☺☺

Extremely responsive
Slot-car like handling
No balance required
Very good performance
Very low to the ground
Best Fun on a recumbent

☹☹☹

Most trikes are heavy
Trikes take a beating
Ridiculous to transport
Very expensive
Very low to the ground
Riders need to learn lean-steer/body english

TRIKE USE: Many recumbent fans have fantasies about fully enclosed, weatherproof, futuristic, streetable HPV's. This is just a fantasy for most of us as the commercially available models of this type will set you back over \$8,000 before you get them stateside. Enthusiast trikes are costly to build and very expensive, however, they are the most fun you can have on three wheels. We cannot recommend low-cost units for anything but beach cruisers. They are heavy, have poor components and inadequate braking systems. True world-class high performance road worthy trikes come with a hefty price tag. Look for excellent hand built examples from Greenspeed, Practical Innovations and the legendary Windcheetah immortalized by Richard Ballentine in his many bicycle books.

The ultimate commuter? I'll leave that for you to decide. Consider what it would be like riding with your butt 10" off the ground and your head 39" above the road. Imagine riding on a two lane road where autos pass you at 50mph while cursing that you belong on the sidewalk.

TANDEMS: This is the big year for tandems. Recumbent manufacturers are hoping that you'll shell out \$2500-\$5000 and beyond for a the latest two-place recumbent designs. Their uses are pretty straight forward by design. The Double Vision will be a great tourer, the Screamer is the performance oriented sport machine and the LWB Ryan DuPlex is the ultimate tourist. Linear has a new tandem that we haven't seen yet. S & B has an



RCN Reader Li Hock Hung's son Kai on dad's M5 Low Racer.

entry level tandem. Examples: The Rans Screamer, Double Vision and Rans Duplex.

III. RECUMBENT ERGONOMICS

Recumbent bicycle ergonomics are relatively straight forward. The most important aspect is the relationship of your body/seat back angle to your foot/bottom bracket position. All designs are NOT created equal. In layman terms, here is what we've found. The downward pedal angle such as the CLWB EZ-1 and BikeE offer the easiest riding position, however, it's not the most efficient. The CLWB bikes are popular with non-cyclists and those interested in a comfortable easy to use machine.

Arguably the best all-around design offering is the Tour Easy/Rans Stratus type. The riding position differs as they have downward pedal angles like the CLWB bikes, but also have low seats and long/low frames make for an added bonus in performance. The LWB ASS cannot be beat for it's user friendliness and real world functionality. Throw on a Super Zipper fairing and you'll have a tough time finding a bike as fast (short of an F-40). Oh yeah, there is virtually no learning curve on this style of recumbent.

Models with a bottom bracket height at hip level or below, (Vision, Turner, S & B, Haluzak, Rocket and V-Rex) are the easiest of the SWB models to ride—providing you are tall enough to hold the bike up. This position is comfortable and offers hill climbing benefits. The Rans Tailwind, ATP LWB and the Linear LWB share this position as well.

The more upright seat with a higher bottom bracket (higher than your hip joint) such as the Lightning P-38 which offers superior acceleration, hill climbing and overall excellent performance. This more extreme design is not as user-friendly. This is primarily due to the closed pedal angle (the relationship between the seat back angle and bot-

tom bracket). Some long-time Lightning riders have equated this to a sprinter position, good for criterium type conditions and fast centuries, but less optimum for long distance touring. In saying this, there are MANY Lightning riders who tour on their bikes, including crossing the USA and Europe. A similar, but less extreme model is the Rans V-Rex 24/20, which offers an adjustable recline angle for the seat (Lightning seats have some adjustment for 1996).

The most natural ergonomic position is similar to that of driving a car. All CLWB and most LWB bikes have it. SWB with 16" front wheels such as the ATP, Turner and S & B have the lowest (SWB) BB's and the riding position replicates that of a sports car.

The ultra extreme Euro-SWB position has yet to catch on in the USA. These models have very reclined (35°) seat angles. The idea is to cut a narrow profile into the wind. Many Euro designers think us Americans are off-our rockers with our more ergonomic (and conservative) design theories. The Euro-SWB and Low Racer riding positions are absolutely the most difficult to get accustomed too. This extreme riding position replicates that of the space shuttle, well, maybe that's an over dramatization....

Every recumbent rider develops their own theories on the subject of rider ergonomics. Just be sure to make your decision based on what you really want from a bicycle, whether it be total comfort or optimum performance. If it's a bike you love, you will become at-one with it and any slight performance differences can be overcome by your own efficiency and experience.

Another aspect of recumbent ergonomics is plain and simple economics. Do you get "suited up" for your rides with all the garb: Lycra, cleats, clipless pedals and aero helmet or do you wear sweats or shorts and running shoes? These are the extremes that may define what type of bike

you should buy. Extremists who have the garb, may want high end SWB/MWB, performance LWB or trike. If you are a fitness rider who cruises the bike trail every afternoon—maybe you should opt for the CLWB or user friendly LWB (there are crossover SWB models as well). As you can see, it's not just the cost of the bike, but it can be the cost of your riding style. Choose the ultimate enthusiast technoweenie machine, and you need the stuff to go with it. Choose the low key bike trail cruiser and just be sure to get a helmet.

CLIPLESS PEDAL NOTE: All SWB, MWB, trikes and performance LWB models will benefit from clipless pedals. On a recumbent, you use leg muscles to hold your feet in an outward position (versus letting gravity take it's course as on an upright). Clipless pedals offer performance benefit as well. I've been riding on them for five years and feel unsafe in toe-clips or any other contraption. CLWB models such as the BikeE or EZ1 don't really need them unless you're going to hit the road for a day ride or tour.

IV. COMFORT 101

- If you want the most comfortable recumbent, look for the optimum mix of seat comfort and ergonomic rider position for YOUR body.
- If you want the ultimate in comfort, go with larger diameter, fatter tires. A 26" or fat 700c rear and a 20"x1.5/1.75" front.
- The longer the wheelbase, the more comfortable the ride is. There are even differences between a 36" and a 40" WB and 16"/20" front wheels.

V. PERFORMANCE 101

- Recumbent models can vary by up to 5+ mph for the same rider on a different models. Many say "I don't care about speed." With an efficient performance bike, you can ride longer and farther with the same amount of energy.
- If you want the fastest recumbent you can get, look at bikes that hold speed records or have racing histories.
- Composite-shell/foam seats are the primary choice for performance bikes worldwide. Two exceptions are the Rans and Lightning seats which are comfortable and the bikes perform well.
- Aerodynamics are very important when it comes to performance. Options like a Super-Zzipper fairing or F-40 body make a lot of difference.

VI. NEW RIDER TIPS

The most difficult part of all—finding recumbent models to see and ride. If you can, find a recumbent specialist (that carries many models) or HPV club and try as many bikes as you can. You have already started your quest by picking up this magazine. Your second step will be calling the listed manufacturers and ask them for the name of your closest dealer. Your final stop should be the local yellow pages, just to see if you've missed anything.

Become educated, do not expect to get this solely from a dealer or manufacturer. Ride bikes, talk to owners and read RCN and back issues about models that you are interested in.

Watch out for dealers trying to cash-in on the recumbent wave. Some tell-tale signs are that there is no knowledgeable recumbent salesperson, bikes are poorly set-up and sometimes they



P-38 rider cruising on the People Movers ride last September—Gunnar Fehlau

will only sell one or two lines. We've had reports from Recumbent Specialists who regularly provide a "clean-up" service to adjust the bikes correctly and show the buyers how to use them. Beware of these "limited participation" shops, the odds of satisfactorily completing your recumbent education may be hampered and you certainly will not experience the diverse world of recumbent bikes to it's full extent. Do yourself a favor and look for a recumbent specialist.

If you have no local dealer, or the bike that you want to see is not represented locally, consider going to the manufacturer or a regional specialist. You will most likely have an idea of what you want within an hour of test riding.

Mail order customers should consider the issue of bike preassembly. Manufacturers have differing and sometimes multiple levels of preassembly, so be sure to ask. You don't want a box with a frame and another box with parts, when you may be able to pay a few bucks more and be out riding in 15 minutes. If you need to find somebody to help set-up your bike, ask the manufacturer for a referral. If you must buy mail-order, the best pre-assemblers are AngleTech, BikeE, and Easy Racers.

Some dealers have old stock demos. Be sure you are riding what you will be buying. Two models where this is very important is the Rans V-Rex and BikeE. In both cases, the '96 bikes are improved and in the case of the V-Rex offers slightly different wheel combinations.

Keep in mind that recumbents are expensive—and you get what you pay for. While comparing models, keep in mind that even the cheapest ones are made in the USA by American Craftsmen in American shops. When you get over the \$1300 range, many of the bikes are literally hand-built. The Australians and Europeans are doing some great recumbent design work. Order one of these beauties and you may have a one of a kind recumbent in the USA—but be prepared for sticker shock.

TEST RIDE TIPS

- **AVOID ATTENTION:** The last thing you want is onlookers to see you try a recumbent for the first time. Get some help. This is a good reason to go to a specialist. I am surprised that more dealers don't offer instruction as is done in the U.K. An alternative for new riders is to go find an empty parking lot early some weekend morning.
- **EMPTY YOUR POCKETS:** The reclined position makes it very easy to lose things, like keys, money or your wallet...
- **PEDALS:** As soon as you've mastered the bike, switch over to clipless pedals. The improvement is even more worthwhile than with conventional bikes (CLWB may not need clipless).
- **APPLY BRAKES WHILE STOPPED:** It's too easy to start rolling backwards, and much harder to control yourself with your feet.
- **GET A FOOT READY WHEN STOPPING:** A recumbent gives you less balancing time when you come to a complete stop. Have one foot already released from the pedal.

Tips from Cycling Plus Magazine, U.K.

CONNECT WITH A RIDER GROUP

There are a few strong rider groups in the USA. The biggest are WHIRL in the Washington DC area, LA Recumbent Riders in the Los Angeles area and WISIL in the Chicago area. Others include Indiana HPV, MN HPV, Oregon HPV also some manufacturers and dealers sponsor riders.

A quote from a great recumbent Visionary—We are recumbent enthusiasts and we are on the cutting edge of bicycling. In time, people will flock to us to learn the secrets of being recumbent, what it is like to be recumbent and how they can become recumbent too. The image is no longer that of a geeky pocket protector type, but as real people out to have fun on way-cool and comfortable bikes. Recumbent riders are individualists who take great personal freedom in their choice of bicycles. We are recumbent enthusiasts and proud of it. □

Free Advice On Recumbent Selection

Free Advice

©Alloy Mouse

A column for recreational recumbent riders and friends.

Are you considering a recumbent? Maybe I can help. Cycle buying sometimes results in a poor and unhappy match between owner and bike. About the time you figure out what you really should be riding, you are all out of money.

Ride the bike first. Find a shop or an individual that has the type of recumbent you are considering. Ask for an extended test ride. If they will loan you the bike for a day, all the better. This is the only way to be sure of what you are buying. This advice applies to everyone, beginner or long-time pro-rider.

To illustrate this I offer these two examples:

- My friend Bill Fletcher wants a trike. As a child, Bill had the misfortune of being one of the last persons to contract Polio. As a result, Bill, I was sure, would not be able to get into the low seat of a Greenspeed trike. Bill came by to see my new Greenspeed and immediately sat down in the seat without any problems. There is no way we could have determined this without testing. It took less than a minute.

- This week, Gerry Tatari rode his 'upright' bike out from Dallas to see and to test the Greenspeed. Gerry is from Sidney, Australia, and had raced a Greenspeed for Ian Sims in 1992. The 1992 trike had a high seat angle and he now needed to test the new low 35° seat. He rode for a while and liked the low seat, stating that it would reduce fatigue in a long race. Gerry is one of the world's greatest ultra-distance pro riders. He won the 'upright' Race Across America in 1993, while still recovering from a serious accident.

Look in the mirror and meet the engine. Everyone wants the fast, light, super sexy, latest, and most exotic bike. WHY? I just don't know. The most enjoyable bike you could ever own will be the one that matches you, and not the person in an ad.

Really! Look in that mirror. If you don't look like a professional bike rider, you probably are not fast. Riding an exotic bike could make you even slower. A super light model might flex and squirm under you. If it does, you will be afraid to go fast (I hope you will be.) Skinny bikes and skinny tires are for skinny riders. Ride something that matches you. I ride a trike because of 'blown' knees. I am very uncomfortable trying to put a foot down on a two-wheeler. In spite of this, I still try to ride two-wheeled recumbents and uprights once in a while just for the image. The trouble is that the image is not me. I am no longer happy, even on the most perfect and exotic two-wheelers. On a trike built just for my large size, I felt like I am riding in playground heaven.

You can go through a lot bikes and money finding the one that matches your engine.

Ignore budgets, model fixation, and components. It does no good to buy the wrong recumbent just because it is within your budget. This may be the most common error I see in recumbent buying. If the bike is not the right one, you may end up spending more, and buying several models, until you get the one you should have bought in the first place.

My first recumbent was a long wheelbase model. I bought it thinking I had to have a LWB bike. It turns out the LWB's are not practical for a person with my extreme leg length. The bike ends up just too long. In my case, the crank could not be moved far enough away to ease the stress on my bad knees. Likewise, a person 5' 2" tall, with a fixation on short wheelbase (SWB) models, had better like 16" wheels because he or she will not reach the ground on taller 20" wheel models. (Back to looking in the mirror).

Cranks, brakes, shifters and gadgets do not equal happiness. Most recumbents come with medium-to-low quality components. This helps keep the cost low. Find the bike you can ride, first and foremost. Then ride it for a while, maybe a year. Is it the bike you want to ride into the sunset? If so, upgrade things as they show signs of wear or poor performance. Maybe, after that first year, get a set of custom-made wheels and your dream tires (my favorite of all upgrades). Buy a fancy shifting setup or whatever else you think the bike needs. You can get these things from your local shops or from one of the RCN advertisers. And last, avoid impulse buying.

That's it folks. If you have questions about this column or need some help, send Email to my Online address, alloymouse@aol.com on the Internet. If you are not wired, reach me through RCN. If I cannot answer your question, I can find someone who can. Remember RCN is the best source for information on recumbent buying and riding.

ADVICE FOR BENT NEWBIES...from Vision Recumbents

If you're a first time recumbent buyer, perhaps a few simple questions will help you end up with a bike you love.

1) Do I want to buy from a shop, or direct from a manufacturer?

This is a tough question for recumbent buyers. On one hand, very few shops stock recumbents, and you can probably find a manufacturer that will sell to you direct. On the other hand, the time spent finding a shop that stocks recumbents will allow you try before you buy, to say nothing of the mechanical set-up and support after the sale. Even a shop that doesn't stock bikes, but will order one for you, is a good idea as they will be a close contact for accessories, and can help you to resolve mechanical problems or needs. Vision Recumbents are sold only through dealers, as we feel the support of a shop is crucial to the long term satisfaction of most buyers.

2) What style of recumbent is best?

This is a common question, yet impossible to answer. There are several styles of recumbents available, as you are probably aware (or soon will be) as a reader of RCN. Every designer has excellent reasons for building the bike they build. What configuration is best for you is something only you can determine. Talk to people who ride, ride as many styles as you can find, and try to get the bike that feels good to you. Don't over-analyze things—if the bike feels right, then it is the right bike for you. Comfort makes for a far better ride than a lot of data. Vision 40 & 42 models are designed to be convertible from SWB to LWB, and all our bikes can be fit with either above or under seat steering, or with 16" or 20" front wheels. We designed our bikes with this modular approach simply because what's right for one rider often isn't right for another. Our design philosophy is based on our belief that things are rarely black and white, right or wrong. Everyone is different, and what is right for one person can often be totally wrong for another.

3) How much should I spend?

This is an easy question, spend what you have to in order to get the bike you like. Unlike the general bicycle market, there is no room in the recumbent field for cheaply made, inadequate machines. The few companies that tried to make "cheap" recumbents went out of business their first year. There is a wide range of prices on recumbents, from the multi-thousand dollar limited edition machines, through some very affordable CLWB styles. All of these bikes are built well. Decide what you like based on what feels good to you, not on how much it costs, then look at your pocketbook for the final answer. Again, the key is to ride as many as you can find.

4) What if I just don't like riding my recumbent?

Well, that is unlikely, especially if you do your homework. We've know a lot of traditional bike riders that have added recumbents to their stable of bikes, and most of these would never go back to an upright bike for road riding. If you are really uncomfortable on your recumbent, then try a different configuration machine before giving up on the genre altogether. If it simply doesn't work for you, then keep in mind that the salability on used recumbents in good condition seems to be fine, just check out the ReCycled Classifieds here in RCN!

5) OK, I want to try some recumbents, but I can't find any in my area to try.

If you're being frustrated in your attempts to find some bikes to ride, call the people who manufacture the bikes you're interested in. They can usually provide a list of shops in your area that are recumbent friendly. Here at Vision we even have a nationwide network of consumers who ride our bikes and are willing to talk to new buyers about them. □

Buyer's Guide Listing Key

The following categories and background information, abbreviations, etc. will help you decipher the '96 RCN BG manufacturers listings.

DESIGNER: Designer and date designed.

DESIGN: Design designation, wheelbase and steering type. All will be one of the following: **SWB**—Short Wheelbase, **MWB**—Medium Wheelbase, **LWB**—Long Wheelbase, **CLWB**—Compact Long Wheelbase and **TRIKES**

STEERING TYPE: **ASS**—Above seat steering—this is the standard method of bicycle steering as found on conventional bicycles. There are several types, the first is the Tour Easy/Rans style of what look to be high-tech ape-hangers inspired by the Stingray of the 60s. SWB/MWB ASS are on a riser that comes out of the head tube. Some tilt forward and others do not (more important on SWB). ASS is generally found on performance oriented designs. Some exceptions do exist.

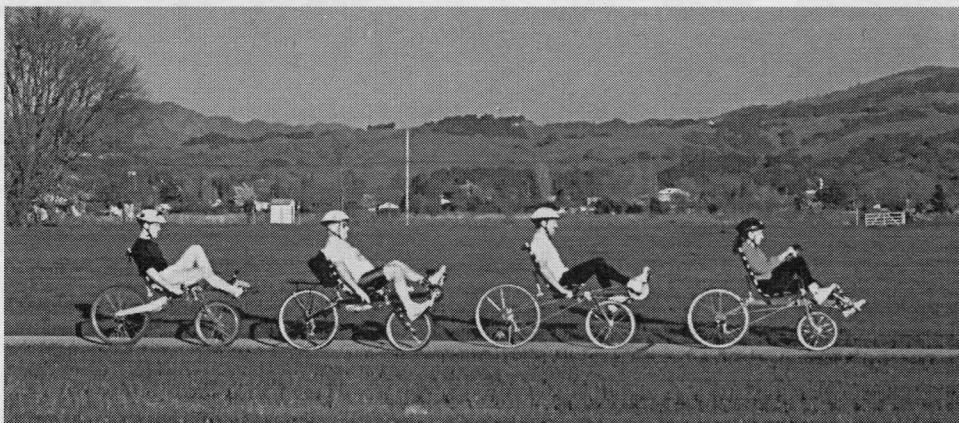
USS—Underseat steering. This is hands-down-at-your-side steering. It is more difficult to get accustomed to and offers an arguably more comfortable position. USS bikes are designed more for touring with a relaxed riding style. USS can be either indirect via a rod/cable linkage, or direct such as on the Vision (LWB uses an indirect rod type). Some USS models have bar-end extensions that bring the controls closer to your body—which is preferred (Ryan/Haluzak).

WHEELBASE: The simple rule is the longer the wheelbase, the more comfortable and stable the ride. Tire selection and frame stiffness also play a part. SWB's can be a handful down steep hills, MWB bikes are better, there are differences between 36", 40" and 45" wheelbases. Climb on a Screamer, Stratus or Gold Rush Replica and you will find out what stability is about.

SEAT HEIGHT/RECLINE ANGLE: Seat heights can vary dramatically by design. A seat height on a LWB or trike can be as low as 10". A low seat on a SWB will be nearly 20". In the best case scenario, riders need to sit flat-footed to hold the bike up. With 20" front-wheeled SWB/MWB models this does not always happen. Remember, the higher the seat, the higher the center of gravity. This is not as important on a LWB as it is on a trike or SWB. An adjustable seat recline angle is a preferred feature as they vary wildly from the Euro-SWB ultra laid back (35° or so) to a more natural ergonomic American angle of 55°-65°. Whatever you choose, be sure it is ergonomically comfortable for your body, or you will be sorry.

WEIGHT: As reported by the manufacturers' in our buyers' guide questionnaire. If weight is important to you, quiz the manufacturer and/or ask the dealer to weigh the bike. We've had to rely on manufacturers weight listings. Last year there were some complaints that a few models were over the stated weight—so check.

FRAME: AL/Alum.—Aluminum; SS—Stainless steel; CroMo—chrome-moly steel; Hi-Tension—mild steel. CroMo is arguably the best. Heat-treated AL is lighter than CroMo, however, not as durable—and comes on high-end bikes. Hi-Ten isn't as good as CroMo, this is arguable for use in large diameter recumbent mainframes. Square tub-



The Haluzak Crew—photo courtesy of Bill Haluzak

ing works great and is found mainly on entry level machines. There are three basic types of frame construction: brazing, TIG and MIG welding. Fillet brazing (Lightning P-38), Brazing with lugs (old /high end road bikes, the only recumbent with any cast lugs is the Lightning P-38) and TIG welding is what comes on top of the line bikes throughout the bicycle world. TIG is the most predominant and accepted. It is widely used in the mountain bike world (TIG'ed bikes: Haluzak, Easy Racer and ATP). MIG welds are functional and industrial, but not always beautiful. These come mostly on lower line models. Some builders believe in heat treating aluminum (Easy Racers/Practical Innov.) and others do not (Infinity).

FORK: The best forks are those built in the USA by the manufacturer of the bike—and these are becoming more rare. The few that come to mind are the Lightning P-38, ATP Double Vision and AngleTech/Rans Screamer. Second best are custom designed forks to the designer specification. These are found on Easy Racer bicycles. Next, come custom raked forks, such as those on Rans LWB and others. Then comes the off-the-shelf CroMo variety that is so widely used today. Did you know that ATP, Rans (CroMo), Ryan and Haluzak are using basically the same fork? What has become known as the J & B CroMo recumbent fork (imported by J & B Pacific, wholesale only) and comes in 16" or 20" sizes. The kind of fork you don't want is a HiTen steel juvenile fork. In many cases you can upgrade to a CroMo or suspension fork.

SEAT: This is the single most important aspect of a recumbent bike as you cannot deweight your seat or stand on your pedals. All other recumbent facts and figures aside, if you can't be completely comfortable on your recumbent seat, keep trying bikes until you can. Seat comfort is a personal thing—so try many. Here is our overview of recumbent seat types:

SHELL/FOAM: This is what works perfect on Easy Racer bikes. If you have a builder who is committed, they can be very comfortable—though we still give the sling/mesh the comfort edge. For performance, the Europeans seem to have proven that a hard shell seat enables the rider to develop more power. We've had similar results, but try and tell that to any Lightning or V-Rex rider.

HYBRID: A high quality mesh back, CroMo

frame and a composite base with foam and cover. This incredible new Rans seat is a marked improvement over the old Rans bucket. It retrofits easily to homebuilts and other models. Just before press time, we were able to try a Rans Stratus with the new seat. It works great, but be sure to ask for the seat tip foam wedge.

SLING/MESH/PAD: This is what's offered from ATP Vision and Lightning Cycle Dynamics. For '96, ATP has updated their seat to work better with the higher tandem captain's seat and 20" wheeled models. The seat sides are now cut away and there is an integral foam pad base and the seat is the best ever. The Lightning seat has an aluminum frame with laced mesh and a foam pad.

SLING/MESH: This is a CroMo or aluminum frame that has a nylon mesh attached to the frame. The best one we've found is on the Haluzak. The seat is similar to the old Presto, but the back is higher. The mesh is made by Sew What (former Presto seat maker). Rotator has updated their seat for '96 and we liked the bungy stretch cord suspension. It is similar to the Lightning seat by design, but lower and made of CroMo (read about bungy cord seat-lace in RCN#30).

DERAILLEURS: Most derailleurs shift wonderfully when they are new. It is the higher-end stuff that hangs in there for many thousands of miles. The minimum you need is a Shimano Alivio, or better yet—STX and realistically Deore LX or XT. We are partial to Shimano shifting, however, newly redesigned '96 Sachs looks great. There are some Suntour front derailleurs spec'ed for '96. Suntour is out of business in the USA, however many Suntour parts are still spec'ed on recumbents. You will be at the mercy of your manufacturer for warranty support.

Recumbents use a mix of road, mountain and BMX/freestyle parts. These are the lines as recumbents are concerned: (Mtn./Rd.)

- The Shimano line is as follows: Alivio—STX/RSX—Deore LX/105SC—Deore XT/Ultegra—XTR/Dura Ace.

- The Sachs line as per recumbents is as follows: 5000/6000—Centera—Neos/New Success—Quartz (3x7 hubs are used with all).

- The Suntour line as per recumbents is as follows: XCT (crank/steel rings)—X-1 (crank/steel rings)—XCD—XC LTD/XC Expert—XC Comp and XC Pro.

SHIFTERS: Recumbent riders shift more than upright riders—especially if you live in a hilly area. For this reason, you should get shifters that you feel comfortable with. SRAM Grip Shift and Sachs Twist seem to be the most popular shifters this year. Grip Shift SRT400/600 work well and seem to be trouble free. Sachs has revamped their shifter line (a good thing). We haven't tried any of these yet. Shimano Rapidfire works well, however, they are not serviceable, are complicated and slow shifting in comparison to twist grips and bar-ends. I am the last hold-out for the Shimano Ultegra bar-con (or any bar-end—for that matter). Shimano thumbshifters can still be found as well, we saw an AngleTech/Rans Screamer with them.

CRANKSET: In the '96 specs you will notice that many Shimano equipped bikes are outfitted with Suntour cranks. It may seem that these are bargain-basement specials—and they are, however, most are pretty fair cranks. Shimano cranks generally shift better—especially when matched with other Shimano components. Beware of the Suntour X-1 and XCT cranks they are heavy aluminum and have a plastic coating with steel chainrings.

Our favorite cranks are those by Ritchey, Specialized and Campagnolo (all cold forged). If you must have CNC Aluminum, the RCN CNC guy, Ron Schmid, says the Cook Brothers E Style is his favorite. He reminds us that we should buy the matching mini crank-arm quick release skewers available in many anodized colors.

For more info on component groups see the April '96 Bicycling Magazine Buyers' Guide.

FREEWHEEL/CASSETTE: Most manufacturers who use Shimano drivetrains have gone to the freehub/cassette system. Both are good systems provided the components are acceptable.

GEAR INCH RANGE: Divide the number of teeth in the rear cog into the front chainring and multiply it by the wheel diameter. A high performance recumbent will need high gears in the 120-160 (Rotator) range. An acceptable low gear for hill climbers is 22 gear inches. If you tour, tow kids, or ride tandems up mountain passes, a low of 16-20 gear inches may be necessary. 7 or 14 speed recumbents are only good for flat land riding.

BRAKES: There is a diverse menu of brakes available. Cantilevers are tried and true, but set-up is no fun. The new Shimano V cantilever brake is the industry rave, however, they may not work on all recumbents (not all levers will work with the V). Magura Hydraulics are the best and becoming more widely available. If you dislike cantilevers as much as I do, look for a model that come with Shimano 105SC dual pivot side-pulls or Dia Compe BMX Big Dogs. There are some models that come with old reliable Dia Compe side-pulls, some of which don't have a quick release feature—which stinks. Keep in mind that you can do a lot with some better cables, brake levers and upgraded pads (Aztec, Kool Stop or Scott Super). As for discs, Alloy Mouse has Sachs discs on his new Greenspeed trike and likes them. Sachs and Sturmey Archer drums work especially well on recumbent 16" or 20" front wheels.

WHEELS: Hubs are pretty much the same group sets previously mentioned. Sachs 3x7 units are used on some models. These are very high quality hubs with 7 external and and three inter-



Rubicon in the lead at Lancaster, U.K '95—Peter Cox

nal gears. The more money you spend on a bike, the better the wheels are. If you are riding across the country—GET SOME GOOD WHEELS. SS-stainless steel spokes are the best. UCP spokes come on entry level bikes. Generally, the amount of spokes in the wheel is determined by the usage the bike is intended for. Variations would be for a cross country tour, or a very strong/heavy rider. Keep in mind that weight distribution is different on a recumbent, so wheel quality is even more important. If you buy a bike with cheap wheels, plan on broken spokes and a short wheel life, especially if you ride the wheels off your recumbent (as most owners do).

WHEEL SIZES: On a LWB recumbent, the best set up for performance is the 700c rear and a 20" x 1-1/8" 451mm front. If you want to commute or tour, opt for a 26" or 700c fat rear and a 20" x 1.5/1.75" 406mm BMX size front. With SWB/MWB, the situation gets more complicated. The best for performance is a 700c rear and a 17" Moulton front. This keeps the seat height low. Historically, the 16" x 1-3/8" 349mm tire is inferior to the wide variety of 20" models. A new 85 psi 16" x 1-3/8" tire is expected from ATP very soon. If you go for a 20" on the front of your SWB, tire life and quality increase dramatically, as does seat and bottom bracket height. With CLWB models, the 20/16 combination is proven. The extremely light load on the front wheel (25%) brings the 16" wheel/tire into the realm of acceptability. Some CLWB models use a 16" x 1.75 305mm juvenile tire (BikeE and ReBike) with no

upgrade path (16" x 1-3/8" won't fit). The Rans Tailwind is the only CLWB to use dual 20" wheels.

FRAME-SETS: For the first time EVER, we are recommending that some purchasers consider a frameset, as the component specs for most bikes are just not as good as they should be until you get into the \$2000 range. This is not all the manufacturers' fault, as Shimano distribution for small builders leaves a lot to be desired. Many owners will go the "gram-counter" method, which we really don't recommend. If you are going to spend the bucks for good componentry, get proven and durable stuff.

BOTTOM BRACKET/HEADSET: These vary dramatically by bike cost. Both need to be repacked with grease once per season with your annual tune-up (unless you have a cartridge sealed BB). Both can come loose during break-in and both need to be monitored for safety. Recumbents need good headsets, both LWB and especially SWB models put more stress on these parts than do their upright brethren. Beware of the difference between "sealed bearing" and "cartridge sealed bearing", the latter is used on high-end Phil Wood and others. Throughout RCN, we commonly refer to the bottom bracket as BB.

PAINT: A durable powdercoat is a good finish for a heavily used recumbent. For a high-end bike, you may want to try a custom job. ATP (R-45 only), AngleTech, Lightning (optional) and others have custom paint options.

RIDER HEIGHT AND ADJUSTMENT: Recumbent models vary by how they fit different

height riders. Some SWB bikes have sliding booms, others have sliding seats. Booms are a hassle as critical chain adjustment is necessary. Sliding seats are not as easy to adjust as they look, but in most cases are the better of the evils. Ask your dealer for a seat-adjustment demo.

Be certain to get a properly sized bike. There are no bargains if your bike does not fit. Keep in mind inseam (measured—not pants), X-seam and any other measurements called for. X-seam is measured by sitting flat on the floor with your back against the wall and measure from the bottoms of your feet to the wall (toes in the air). This is the most accurate form of fitting.

Shorter riders may want to consider models with a low seat or 16" front wheel (to keep it low). Large, strong or tall riders should consider models with triangulated steel frames and 20" front wheels with wider front and rear tires.

An old recumbentur once told me that the perfect height recumbent rider was in the mid-height range, they can ride anything but the highest SWB models. Shorter riders—ride LWB and taller riders—ride a MWB. If you consider this from an anatomical perspective, it does make sense. Riders shorter than 5'2" or taller than 6'2" need to be especially cautious in bike selection.

SUGGESTED RETAIL PRICES: These are the prices quoted to us on or before March 20, 1996. Prices do not always include shipping and dealer prep. If at all possible, we highly recommend that a recumbent professional set-up your new bike if possible. If you buy mail-order, expect to pay a shop \$35-\$150 for set-up.



Team ATP cruising in the Seattle sunshine—ATP

OPTIONS: We have included a partial list. Be sure to ask the manufacturer about options, custom accessories and braze-ons.

WARRANTY: These are for the main frame and manufactured parts of the bike (unless otherwise noted). Components have their own warranties based from 60 days to one year. With overseas manufacturers, there will be questions as to return shipping or if there is a warranty at all.

The ultimate commitment from manufacturer to customer is a lifetime warranty on the frame. Rans, Easy Racers, Ryan, ATP, BikeE and Linear offer them. Others offer as little as 1-5 year war-

ranties for comparable bikes. We suggest purchasing a model with a lifetime frame warranty or quiz the manufacturer about post warranty coverage. We have heard of some manufactures covering failures after the warranty is over. Warranties generally do not cover parts that naturally wear-out from use, are raced or abused.

SOLD THROUGH: Most recumbents are available through dealers, some are manufacturer-direct only and others are offered both ways.

CHANGES: The information in this guide is up-to-date as of March 20, 1996 and are subject to change. □

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B-O-B

TRAILERS

patents pending

B-O-B Universal HDQ - 3641 Sacramento Dr. # 3, SLO CA 93401 • TEL: 805 541 2554 • FAX: 805 543 8464 • E mail: bobinc@callamer.com • web site: http://www.callamer.com/bobinc

SWEDEN - Monark Crescent AB + 46 340 800 00 • U.K. - Neatwork + 44 1 89 88 3456 • USA - GT / RiteWay Products 800 869 9666

CH - MTB Cycletech + 41 31 972 5572 • D - Sport Import + 49 44 059 2800 • FIN - MTR Keskus + 35 80 682 2397 • NZ - Cycle Works + 64 3 338 68 03 • NORWAY - DBS Racing + 47 51 60 45 72

AUSTRALIA - + 61 3 534 3074 • DENMARK - Winther + 45 86 84 7288 • CANADA - Cycletech 800 661 1662

Ace Tool & Engineering

INFINITY®



Model

Designer
Design/ Steering Type
Wheelbase/BB height
Seat height/recline angle
Weight (mfr. supplied)
Weight distribution (bk./ft.)
Headtube Angle
Frame/ Fork/ construction
Seat frame/material
Derailleurs (ft./rr.)
Shifters
Crankset
Freewheel/ cassette
Gear Inch Range
Brakes (fr./rr.)
Rear Wheel/ hub/rim/ spokes
Front Wheel/hub/rim/ spokes
Bottom Bracket/Headset
Paint/ colors
Rider Height and Adjustment
Model designed for
Suggested Retail Price

Infinity 21st Century

Ace Tool R & D—1981
LWB USS
63"/67"
20"/N.A.
#27
63/37 (5'9" rider)
73°
6000 aluminum/HiTen/TIG
Aluminum/open-weave poly
Shimano
Shimano 21 spd.
Shimano 24/32/42
Shimano 11-28 7 spd.
23-103
Weinmann 605 sidepull w/QR
700c Sovos/Wein./DT SS/ 36°
20"/Sovos/Wein./DT SS/36°
Shimano sealed/YKS steel
Powdercoat Red, White or Blue
4'11"-6'6" sliding seat
Touring/commuting/enthusiast
\$849

Infinity Grand Touring 15th Anniversary

Ace Tool R & D—1981/1996
LWB USS
63"/67"
20"/N.A.
#27
63/37
73°
6000 aluminum/HiTen/TIG
Aluminum/open-weave poly
Sachs
Sachs 24 spd.
Sachs 23/34/44
Shimano 11-28 8 spd.
22-108
Wein. 605 sidepull, QR, guides, Kool Stop
700c Aerospoke/IRC Roadlite
20" Aerospoke/IRC 20" x 1-1/8" Roadlite
Curve sealed/Ritchey Alloy
Powdercoat Silver-Vein
4'11"-6'6" sliding seat
Touring/commuting/enthusiast
\$2100

Variations: Ace Tool has been building recumbent bicycles for 15 years. The Infinity utilizes a unique and simple tension cable steering system that is proven, durable and reliable. There is a second frame length for shorter riders. Riders can easily sit flat footed while at a stop. Framesets are available for \$449 F.O.B. Mooresville, IN.

Options: Computer mount, Aerospoke wheels and Infinity Zipper from Zzip Designs.

New For 1996: The all new 15th Anniversary Grand Touring model is based on the 21st Century model with upgraded components and Aerospoke wheels

Sold through: select dealers and direct

Is bike pre-assembled: Yes

Bench/ road tested prior to shipping: Yes (15th Anniv. only)

Warranty: 3 years

RCN Articles: RCN#22

For more information, contact:

Ace Tool & Engineering

292 W. Harrison St./ PO Box 326

Mooresville, IN 46158

Ph#317-831-8798

Advanced Transportation Products

Model	VR40A & VR40E	VR40B/VR40F	VR42A/VR42E
Designer	Bower/Smith—1992/1995	Bower/Smith—1992/1995	Bower/Smith—1992/1995(20")
Design/ Steering Type	SWB/ASS or USS	LWB ASS or USS	SWB ASS or USS
Wheelbase	36"(16")/37.75(20")	60"(16")/62"(20")	36"(16")/37.75(20")
Seat height/recline angle	23"/24" adjustable	23"/24" adjustable	23"/24" adjustable
Weight (mfr. supplied)	#29.5	#31	#27
Weight distribution (bk./ft.)	46/54 or 50/50 (20")(5'9" rider)	68/32 or 70/30 (20") (5'9" rider)	46/54 or 50/50 (20")(5'9" rider)
Headtube Angle	70.5°/67°	70.5°/67°	70.5°/67°
Frame/ Fork/ construction	1020 & 4130 steel/CroMo/TIG	1020 & 4130 steel/CroMo/TIG	1020 & 4130 steel/CroMo/TIG
Seat frame/material	6061 T6 Alum./polyester mesh	6061 T6 Alum./polyester mesh	6061 T6 Alum./polyester mesh
Derailleurs (ft./rr.)	S. T. XC Comp/ Shimano Alivio	S. T. XC Comp/ Shimano Alivio	S. T. XC Pro/ Deore LX
Shifters	Grip Shift SRT400 21 spd.	Grip Shift SRT400 21 spd.	Grip Shift SRT600 21 spd.
Crankset	S.T. XC LTD 24/36/46	S.T. XC LTD 24/36/46	S.T. XC LTD 28/38/50
Freewheel/ cassette	12-28 7 spd.	12-28 7 spd.	12-28 7 spd.
Gear Inch Range	22.3-99.7	22.3-99.7	26-108.3
Brake (fr.& rr.)	S.T. XC Pro Cantilever	S.T. XC Pro Cantilever	S.T. XC Pro Cantilever
Rear Wheel/ hub/rim/ spokes	26" Alivio/ Sun/ SS/ 32°	26" Alivio/ Rigida/ SS/ 36°	26" Deore LX/Sun/SS/32°
Front Wheel/hub/rim/ spokes	16" or 20"/XC LTD/Rigida/SS/36°	16" or 20"/XC LTD/Sun/SS/36°	16" or 20" LX/Sun/SS/32°
Bottom Bracket/Headset	YST cartridge/YST	YST cartridge/YST	YST cartridge/YST
Paint/ colors	Powdercoat Aqua or Burgundy	Powdercoat Aqua or Burgundy	Powdercoat Aqua or Burgundy
Rider Height and Adjustment	5'3"-6'7" sliding boom	5'3"-6'7" sliding frame	5'3"-6'7" sliding boom
Model designed for	Touring/commuting/recreational	Touring/commuting/recreational	Sport touring/high-performance
Suggested Retail Price	\$995/\$1020	\$1125/\$1150	\$1495/\$1520
Model	VR42B/VR42F	VR45A & E/VR44A&E ¹	VR85U Double Vision ²
Designer	Bower/Smith—1992/1995	Bower/Smith—1993/1995	Bower/Smith—1996
Design/ Steering Type	LWB ASS or USS	SWB ASS or USS	SWB USS
Wheelbase	60"(16")/62"(20")	36"(16")/37.75"(20")	77"
Seat height/recline angle	23"/24" adjustable	23"/24" adjustable	24" front/21" rear adjustable
Weight (mfr. supplied)	#28.5	#23.5/25	#46
Weight distribution (bk./ft.)	68/32 or 70/30 (20") (5'9" rider)	46/54 or 50/50 (20")(5'9" rider)	48/52
Headtube Angle	70.5°/67°	70.5°/67°	72°
Frame/ Fork/ construction	1020 & 4130 steel/CroMo/TIG	4130 CroMo & Al./CroMo/TIG	CroMo, 1020 & 304/CroMo/TIG
Seat frame/ material	6061 T6 Alum./polyester mesh	6061 T6 Alum./polyester mesh	6061 T6 Alum./polyester mesh
Derailleurs (ft./rr.)	S. T. XC Pro/Deore LX	Shimano Deore XT	S.T. XC Pro/Shimano Deore XT
Shifters	Grip Shift SRT600 21 spd.	Grip Shift SRT600 24 spd.	Grip Shift SRT600 21 spd.
Crankset	S.T. XC Pro 28/38/50	Cook Brothers 28/38/50	Custom ATP I.P.S. 28/44/53
Freewheel/ cassette	12-28 7 spd.	HG90 12-25 8 spd.	Sachs 12-28 7 spd.
Gear Inch Range	26-108.3	23.2-108.3	26-117
Braked (fr.& rr.)	S.T. XC Pro Cantilever	S.T. XC Pro Cantilever	Magura Hydraulic
Rear Wheel/ hub/rim/ spokes	26" Deore LX/Sun/SS/32°	26" Ultegra/ Sun M14A/SS/ 32°	26" Phil Wood/Rino/SS/40°
Front Wheel/hub/rim/ spokes	16" or 20" LX/Sun/SS/32°	16" or 20" Ult./Sun/SS/32°	20" Phil Wood/Rino/SS/36°
Bottom Bracket/Headset	YST cartridge/YST	Shimano UN71/YST Alloy	Curve/YST Alloy
Paint/ colors	Powdercoat Aqua or Burgandy	Custom	Custom/ Red or Black
Rider Height and Adjustment	5'3"-6'7" sliding frame	5'3"-6'7" sliding boom	5'7'-6'5" ft./3'-6" rr. sliding frame
Model designed for	Sport touring/high-performance	Sport touring/high-performance	Touring/enthusiast recreational
Suggested Retail Price	\$1595/\$1620	\$2320/\$1800	\$4550/\$3400

Advanced Transportation Products line of Vision Recumbents have quickly become the country's recumbent performance and price leaders. The Vision offers advanced comfort and performance at half the price of most recumbents. The Vision is the easiest to buy recumbent on the market today. Whether you need a LWB, SWB or tandem, ATP has the right bike for you.

¹Listed are VR45 specs. The R44A/ R44E. This bike incorporates the ultra-lightweight frame from the R45 and the component specs from the popular ATP R-42 line.

²Listed are VR85U specs. The VR82U Double Vision offers Deore LX/ Phil Wood components and cantilever brakes. ATP IPS (Independent Pedaling System) is optional on all Double Vision models (\$400). A Zipper fairing is available for the Double Vision as well (\$400).

Variations: ATP offers SWB, LWB, ASS (T), USS(U), 16"(A) and 20"(E) front wheels on their VR40 and VR42 model designations. R-44/45 models are sold as SWB only in A,E,U and T variations.

Options: ATP offers many options including an ATP Zipper fairing and

mount, lexan chainguard and seat bag.

New for 1996: ATP has a redesigned seat with integrated seat pad that allows riders to reach the ground easier, a new 85 psi 16" x 1-3/8" tire, the Double Vision tandem, and R-44 (R-42 components/R-45 frame).

Sold through: dealer only
Is bike pre-assembled: Yes
Bench/ road tested prior to shipping: No
Warranty: Lifetime to original owner

RCN Road Tests: RCN#9, RCN#21 and RCN#25.
For more information contact:

Advanced Transportation Products
952 Republican
Seattle, WA USA 98109-4325
Ph#206-467-0231
Email: ATPVision@aol.com

Vision



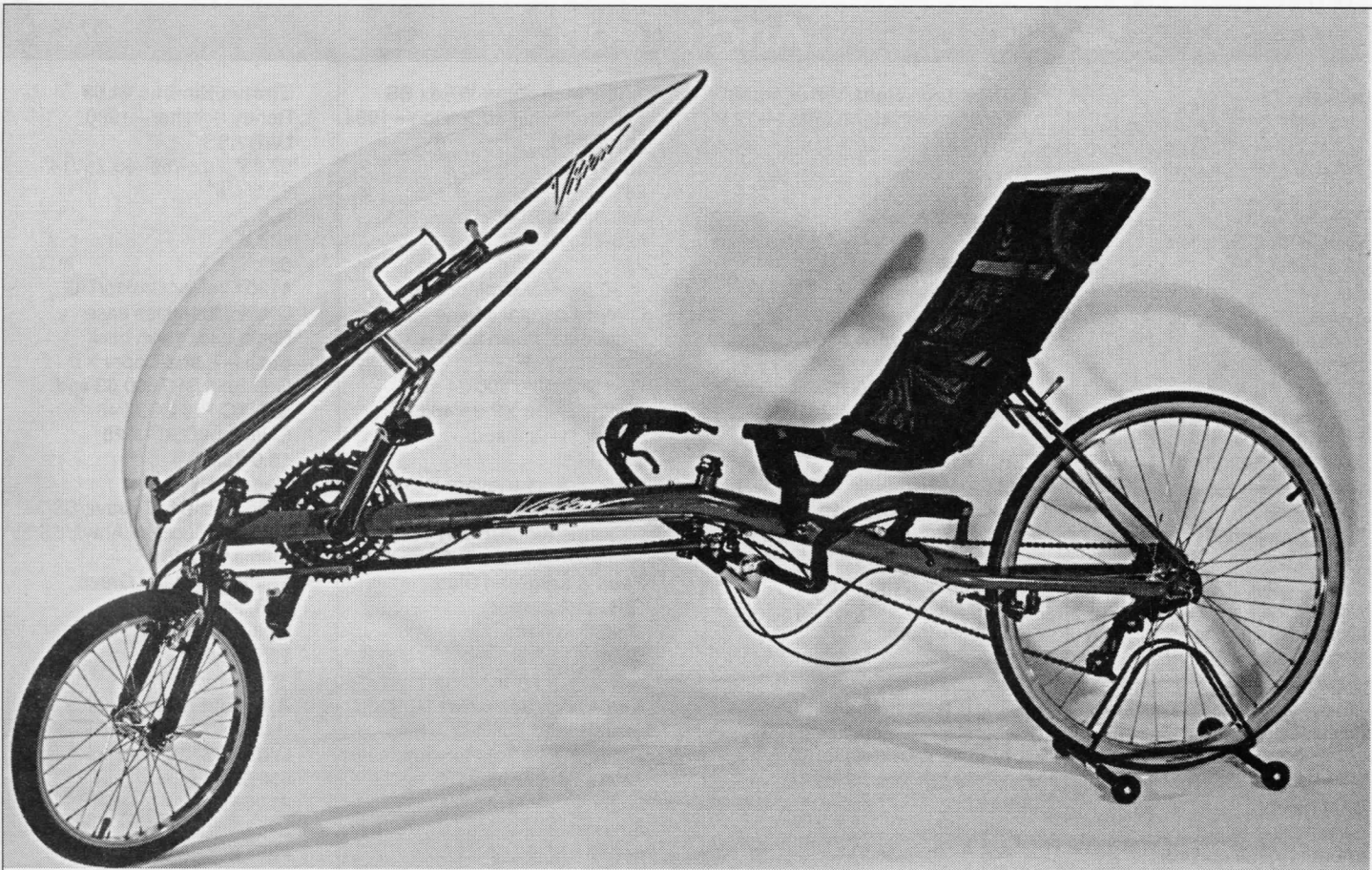
Upper: ATP R-40 USS 20". The Vision R-40 is sold in SWB, LWB, ASS, USS as well as 16" and 20" models. Conversions are fairly simple. The Vision is the ultimate recumbent experimenters kit. Prices start at \$995.



Center: ATP R-45 USS 16" This refined machine is the hottest SWB going today. ATP will paint it any color you like and the specs are among the best in the industry. R-45's are available in SWB only with ASS, USS, 16" and 20" models.

Lower: ATP Double Vision in action. This is the co-winner of the RCN Editor's Choice for Best Recumbent 1996 (along with the Rans Screamer). Double Vision's start at \$3400 and have a unique ATP designed, engineered and built I.P.S. system (Independent Pedaling System). We've ridden the Double Vision—it's smooth, stable and a joy to ride.





Upper: ATP's LWB R-40 Vision with USS and an optional ATP Zipper fairing. LWB Vision models start at \$1125 .

Lower: This photo is from the R & E Cycle Vision ride. Earlier on this morning it was snowing and the riders are bundled up. ATP has a very loyal following in the northwest and all over the USA.



AngleTech

<p>Model Designer Design/Steering Type Wheelbase/BB height Seat height Seat recline angle Weight (mfr. supplied) Headtube Angle Frame/ Fork/ construction Seat frame Seat material Derailleurs (ft./rr.) Shifters Crankset Freewheel/ cassette Gear Inch Range Brake (fr./rr.) Rear Wheel/ hub/rim/ spokes ront Wheel/hub/rim/ spokes Bottom Bracket/Headset Paint/ colors Rider Height and Adjustment Model designed for Suggested Retail Price</p>	<p>AngleTech Rans V-Rex GL63 Schlitter/Schlitter/Colliton—1994 MWB ASS 40"/26" 24" Adjustable #28 72° 4130 CroMo/ CroMo/TIG CroMo/fiberglass base Foam pad/ mesh back Sachs New Success/Deore XT Grip Shift SRT600 63 spd. Sachs Quartz 34/42/52 Sachs 11-28 7 spd. 19-141 Magura Hydraulic (HS11) 24" Sachs 3x7/Araya/SS/32° 20"/Sachs/ Araya/ DT SS/36° Shimano UN51/YST Pearl Black/Pearl Blue Q.R. sliding seat Multi-Purpose \$2399.99</p>	<p>AngleTech Rans V-Rex SS Schlitter/Schlitter/Colliton—1994 MWB ASS 40"/26" 24" Adjustable #25-26 72° 4130 CroMo/ CroMo/TIG CroMo/fiberglass base Foam pad/ mesh back Shimano XTR Grip Shift SRT800 24 spd. Sugino Team XP 34/46/56 Sachs 11-28 8 spd. 126.7-112 Magura/Kooka levers (HS22) 24" Chris King/HED/Ti/18° 20" Chris King/HED/Ti/18° Sampson Stratics Ti/Chris King Pearl Black/Pearl Blue Q.R. sliding seat Multi-Purpose \$N.A.</p>	<p>Stratus/Nimbus GL63 Randy Schlitter—1980 LWB ASS 67.75"-70.5"/59"-66.75"/14" 22.5"-24" N.A. #29.5 62° 4130 CroMo/ CroMo/TIG CroMo/fiberglass base Foam pad/ mesh back Sachs Quartz/Deore XT Grip Shift SRT600 63 spd. S.T. XC-Pro 24/36/46 Shimano IG50 11-28 16.9-153.5 Magura Hydraulic 700c Sachs 3x7/Araya/SS/36° 20" New Success/Araya/SS/36° Shimano UN51 Shark Skin/Jade Green Q.R. sliding seat Multi-Purpose \$2519.99</p>
<p>Model Designer Design/ Steering Type Wheelbase/BB height Seat height Seat recline angle Weight (mfr. supplied) Headtube Angle Frame/ Fork/ construction Seat frame Seat material Derailleurs (ft./rr.) Shifters Crankset Freewheel/ cassette Gear Inch Range Brake (fr./rr.) Rear Wheel/ hub/rim/ spokes Front Wheel/hub/rim/ spokes Bottom Bracket/Headset Paint/ colors Rider Height and Adjustment Model designed for Suggested Retail Price</p>	<p>AngleTech Screamer GL63 John/Randy Schlitter—1995 Tandem ASS (fold forward) 72"/13.25" and 26.25" 24.5" Adjustable #45 74° CroMo/CroMo-Nobilette/TIG CroMo/fiberglass base Foam pad/mesh back Sachs Quartz/Deore XT/3x7 Grip Shift SRT600 63 spd. Sugino Fuse 500 12-28 7 spd. 21-153 (or custom) Magura/Sachs disc drag brake 26" Sachs 3x7/Mavic/DT SS/ 36° 20"/Quartz/ Araya/DT SS/36° Shimano UN51/Specialized Midnight Blue/Ferrari Red Q.R. sliding seat Multi-Purpose \$4149.99</p>	<p>AngleTech Screamer GL321.C. John/Randy Schlitter—1995 Tandem ASS (fold forward) 72"/13.25 and 26.25" 24.5" Adjustable #48 74° CroMo/CroMo-Nobilette/TIG CroMo/fiberglass base Foam/mesh back Sachs Quartz/Deore XT SGS Grip Shift SRT600 24 spd. Sugino FUSE 500/Ind. Coast. Shimano 12-32 8 spd. 19-125 (or custom) Magura HS11 26" Chris King/ Mavic/DTSS/ 32° 20" Sachs Quartz/ RB17/SS/32° Phil Wood/Chris King Dry Ice Green/Red Q.R. sliding seat Multi-Purpose \$4999.99</p>	<p>A.T. Gold Rush Replica SS Gardner Martin—1984 LWB ASS 63"-69"/N.A. 21"/68° 59° #26 65/35 Alum./CroMo/TIG Carbon-fiber/Kevlar Foam/Lycra Shimano XTR/XT Grip Shift SRT800 24 spd. Campagnolo Racing 28/44/52 Shimano 11-28 8 spd. 27-127.6 Shimano Dura Ace Dual Pivot 700c Chris King/Araya/SS/32° 20" Sachs Quartz/HED/18° Sampson Stratics Ti/Alloy Polished natural aluminum Q.R. sliding seats Multi-Purpose \$4899.99</p>

Variations: AngleTech offers 63 speed versions of the Rans Stratus, Nimbus, V-Rex, Screamer and there are two new AngleTech Easy Racer Gold Rush Replica models. AngleTech offers factory spec'ed Rans bikes and 24 speed SS models with upgraded components. Also available is a custom-spec line of AngleTech/Rans Screamers from \$4149. Independent Coasting is an AngleTech exclusive on Screamers.

Options: Angletech offers a full line of HPV and recumbent bicycle parts and services.

New for 1996: AngleTech offers front suspension on Rans models, a complete line of Rans Screamers, SS 24 speed and GL63 (3x7) models from Rans and Easy Racers. Look for Gold Rush Replica GL63 with optional Magura brakes and the high end "SS" model. AngleTech also offers a complete listing of recumbent parts, accessories, Zzipper fairings, 20" suspended forks, custom fold-forward ASS steering and custom spec dream bikes. AngleTech models are built from the frame up using first grade cables, housing, full and complete

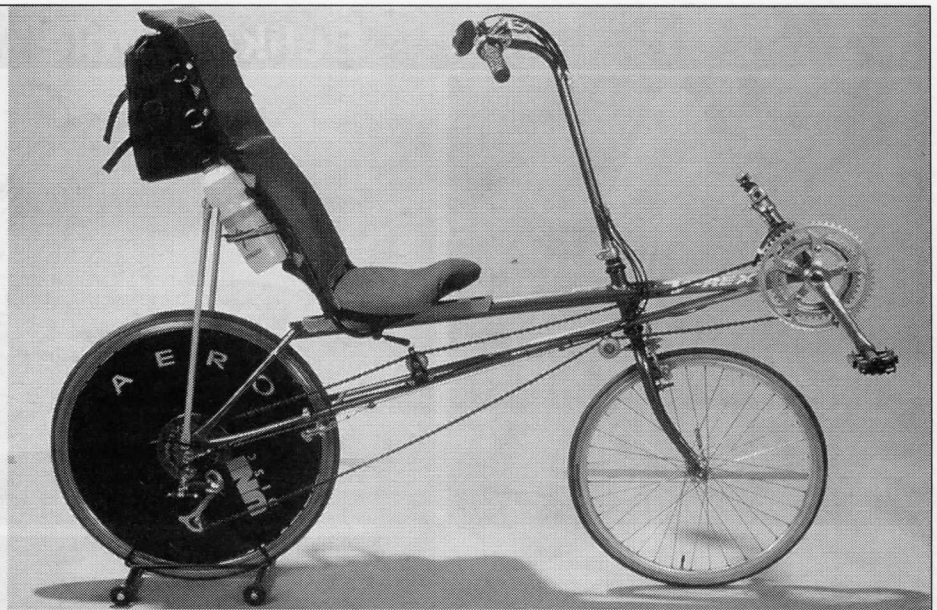
pre-assembly, bench test, road test and shipping to points around the globe.

Warranty: Manufacturers

Fore more information contact:
AngleTech
318 N. Highway 67
PO Box 1893
Woodland Park, CO 80866-1893

Ph#719-687-7475
1-800-793-3038 (order line)
Email: Anglezoom@aol.com

Catalog \$2.



Upper: AngleTech V-Rex 24 SS. This is the most high-tech V-Rex available.



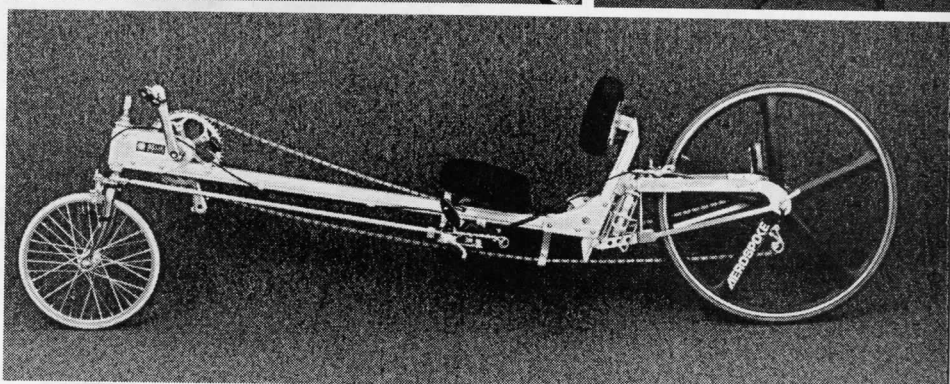
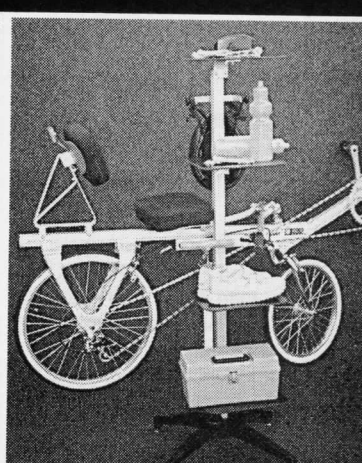
Center: AngleTech/Rans Screamer offering an AngleTech exclusive, Vertical Descent Independent Coasting System. AngleTech offers stock spec Screammers well as. Custom spec models range in price from \$4149.99-\$4999.99

Lower left: The AngleTech V-Rex 24 with a "fat 24" rear tire and a "fat 20" up front with the suspension fork option and GL63 options.

Lower right: Angletech/ Rans Screamer "Flip it" steering column. This is optional on all Rans and AngleTech MWB recumbents or available outright for use on other bikes.



Belik Bicycle



Model

Designer
Design/ Steering Type
Wheelbase
Seat height/recling angle
Weight (mfr. supplied)
Weight distribution (bk./ft.)
Headtube Angle
Frame/ Fork/ construction
Seat frame/material
Derailleurs (ft./rr.)
Shifters
Crankset
Freewheel/ cassette
Gear Inch Range
Brakes (ft./rr.)
Rear Wheel/ hub/rim/ spokes
Front Wheel/hub/rim/ spokes
Bottom Bracket/Headset
Paint/ colors
Rider Height and Adjustment
Model designed for
Suggested Retail Price

Jet Stream

Jaroslav Belik—1995
LWB USS
65"-69.5"/N.A.
14"-17"
#31
57/43 (5'9" rider)
75°
Alum./HiTen-CroMo/Bolt-clamp
Alum./foam/nylon mesh
Sachs 3 x 7
21 speed
Dotek alum. 52-T.
12-28 7 spd.
N.A.
Dia Compe
700c or 20" x 1-3/8" alum./SS
20" x 1-1/8" or 1-3/8"/alum./SS
Shimano/Odyssey
Silver anodized
5'-6'10" sliding seat
High-performance/fast touring
\$1290-\$1790

Breeze/Wind

Jaroslav Belik—1995
CLWB ASS or USS
52"
25.5"
N.A.
77/23
65°
Alum./HiTen-CroMo/Bolt-clamp
Alum./foam/nylon mesh
Sunrace or Sachs
7 or 21 speed
Dotek alum. 52-T.
Sunrace or Sachs 13-28/12-28
37-80/87 or 37-64/69
Dia Compe
20"x 1-3/8" or 16"/alum./SS
16" x 1-3/8"/SS
Shimano/Odyssey or VP Tech
Silver anodized
5'-6'10" sliding seat
General Recreational use
\$868-1184

Gust/Gale

Jaroslav Belik—1995
SWB ASS or USS
33"
25.5"
#28
33/66
75°
Alum./HiTen-CroMo/Bolt-clamp
Alum./foam/nylon mesh
Sunrace or Sachs
7 or 21 speed
Dotek alum. 52-T.
Sunrace or Sachs 13-28/12-28
37-80/87 or 37-64/69
Dia Compe
20"x 1-3/8"/SS
16" x 1-3/8"/SS
Shimano/Odyssey or VP Tech
Silver anodized
5'-6'10" sliding seat
General Recreational use
\$868-\$998

Similar Models: The Belik Jet Stream is offered in several configurations including rear suspension, and rear wheel choices of 20" or 700c.

Variations: All Belik bicycles use the same 6061-T6 aluminum extrusion and they are available in custom lengths. Bikes are bolted/clamped together. The seat is a sliding aluminum seat with separate backrest. Most models are available with USS or ASS and variable wheel sizes. There is also an upcoming tandem model. Mini Gale/Gust models are available with a 16"/12" wheel combination.

Options: Belik offers custom seats, bike storage units (vertical) and a unique fairing for just \$120.

New for 1996: Belik Bicycles are available in kit form, or you can buy a beam, rear stays and a head-tube assembly and build your own. All

bikes use the same component packages: 1, 3, 7, 14 and 21 spds. (3x7) are all available. Several wheel sizes are also available.

Sold through: direct and through dealers

Is bike pre-assembled: Yes

Bench tested prior to shipping: Yes

Warranty: 3 years.

For more information contact:

Belik Bicycle
1610 Mulcahy
Rosenberg, TX 77471
Ph#713-341-7197
Fax#713-232-9007

BikeE



Model

Designer
Design/ Steering Type
Wheelbase/BB height
Seat height/recline angle
Weight (mfr. supplied)
Weight distribution (bk./ft.)
Headtube Angle
Frame/ Fork/ construction
Seat frame/material
Derailleurs (ft./rr.)
Shifters
Crankset
Freewheel/ cassette
Gear Inch Range
Brake (fr./rr.)
Rear Wheel/ hub/rim/ spokes
Front Wheel/hub/rim/ spokes
Bottom Bracket/Headset
Paint/ colors
Rider Height and Adjustment
Model designed for
Suggested Retail Price

BikeE 7 Speed

Atwood/Ullman/Rau—1992
CLWB ASS
52"/17.25"
25"/70° Adjustable
#27
75/25 (5'9" rider)
58°
6005-T5 alloy/CroMo/TIG
Stainless steel/foam-nylon
Sachs Centera
Sachs Twist 21 spd.
Dotek cold-forged 52-T.
Shimano 11-28 7 spd.
37-95
Chang-Star cantilever
20" Sachs/ Wein./ UCP/ 36°
16"/Sachs/ Wein./UCP/18°
YST cart.sealed/Aheadset™
Red, Blue, Black, Violet
To 6'4" sliding seat
Fitness/recreation
\$750

BikeE 21 Speed

Atwood/Ullman/Rau—1992
CLWB ASS
52"/17.25"
25"/70° Adjustable
#28
75/25 (5'9" rider)
58°
6005-T5 alloy/Cro/Mo/TIG
Stainless steel/foam-nylon
Sachs Centera/3x7
Sachs Twist 21 spd.
Dotek cold-forged 46-T.
Shimano 11-28 7 spd.
23-108
Chang-Star cantilever
20" Sachs/ Wein./ UCP/ 36°
16"/Sachs/ Wein./UCP/18°
YST cart. sealed/Aheadset™
Red, Blue, Black, Violet
To 6'4" sliding seat
Fitness/recreation/light touring
\$895

Variations: BikeE, presenting the next step in the evolutionary cycle.

Options: A BikeE Super-Zzipper and mounts is \$389. Chain Guard, foul-weather kit (fenders, chainguard), pannier rack, kickstand and trailer hitch.

New for 1996: A lighter weight, streamlined aluminum extrusion and frame, tilt-adjust seat and hi-tech seat pad.

Sold through: select dealers and direct

Is bike pre-assembled: Yes

Bench/ road tested prior to shipping: Yes

Warranty: Limited lifetime

RCN Articles: RCN#17, 28, 30 and 31

For more information contact:

BikeE

5460 SW Philomath Blvd.

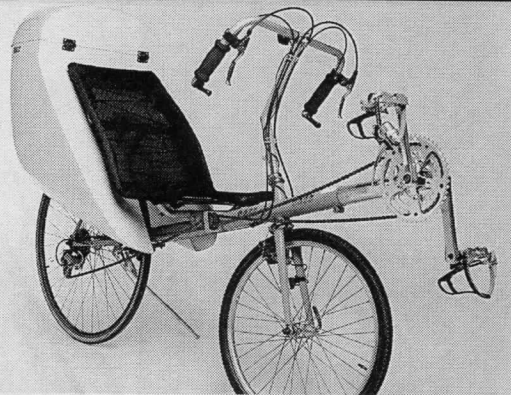
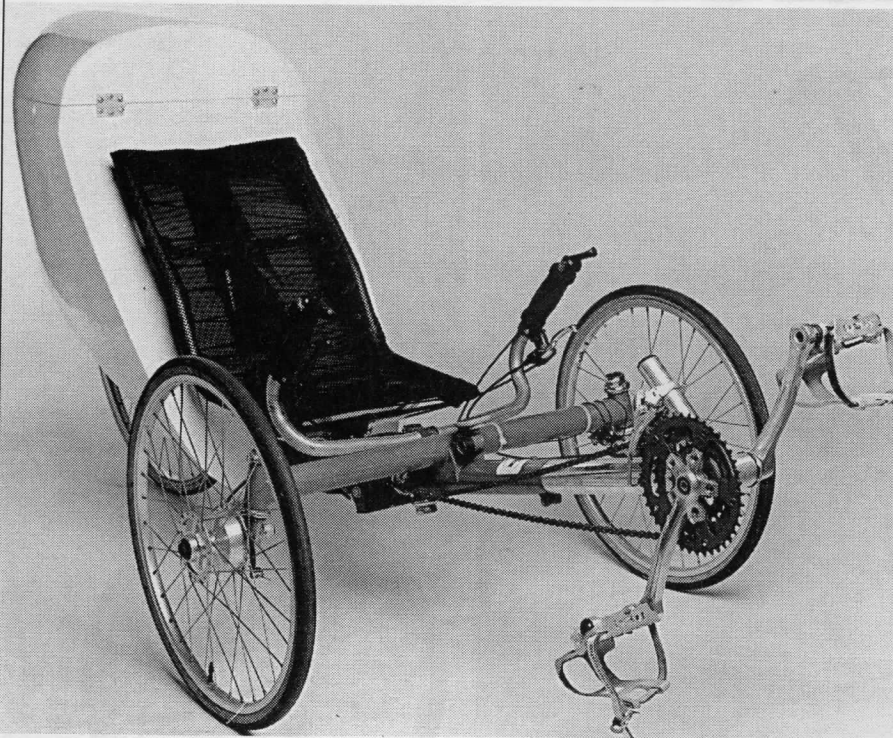
Corvallis, OR 97333-1039

Ph#503-753-9747 or Ph#1-800-231-3136

Fax#503-753-8004

Email: BikeEvol@aol.com

Crystal Engineering



Model	EuroTrice '96/10th Aniv. Trice	Speed Ross	Festina
Designer	Peter Ross—1995	Peter Ross—1996	Peter Ross—1995
Design/ Steering Type	Trike USS	SWB ASS	SWB ASS (Low Racer)
Wheelbase	39"/Track 32"	40"	41"
Seat height/recline angle	10"/45°	24"/45°	7.5"/40°
Weight (mfr. supplied)	N.A.	#24	#25
Weight distribution (bk./ft.)	28/72 (5'9" rider)	50/50(5'9" rider)	45/55 (5'9" rider).
Headtube Angle	N.A.	70°	70°
Frame/ Fork/ construction	Steel-Reynolds 531/Brazed-TIG	Steel-Reynolds 531/Brazed-TIG	Steel-Reynolds 531/Brazed-TIG
Seat frame/ material	Aluminum/Terylene mesh	Aluminum/ Terylene mesh	Aluminum/ Terylene mesh
Deraillleurs (ft./rr.)	Shimano	Shimano Ultegra	---
Shifters	Shimano bar-end 21 spd.	Shimano bar-end 21 spd.	---
Crankset	Stronglight 28/38/48	Stronglight 28/38/48	---
Freewheel/ cassette	Shimano 11-28 7 spd	Shimano 11-28 7 spd	---
Gear Inch Range	27-117.8	27-117.8	---
Braked (fr.& rr.)	Dia Compe/Sturmey Archer drum	Shimano Deore LX cantilever	---
Rear Wheel/ hub/rim/ spokes	700c Shimano/Campy/SS/36°	700c Shimano/Campy/SS/36°	20" x 1-1/8"
Front Wheel/hub/rim/ spokes	20" Sturmey/Sun/SS/36°	20" Sturmey/Sun/SS/36°	16" x 1"
Bottom Bracket/Headset	Stronglight	Stronglight	---
Paint/ colors	Powdercoat red (other optional)	Purple metallic	Unpainted
Rider Height and Adjustment	5'6"-6'2" sliding boom	5'6"-6'3"/ sliding boom	5'9"-6'2"sliding boom
Model designed for	Touring/commuting	Touring/commuting	High-Performance/racing
Suggested Retail Price	\$2200	\$1400	\$1200 (frameset)

Variations: The Trice is ten years old. We have listened to the comments from our customers and for its birthday, we went back to the drawing board. On the '96 Trice, you will find: 1) better weight distribution; 2) frame mods to make the rear end stiffer; 3) more dialed, less twitchy steering geometry; 4) new chain-guide system; 5) new rear fairs; 6) easier front end adjustments; 7) Shimano components; 8) high-pressure 20" x 1.75" tires; 9) headset for the handlebar and front wheel pivots 10) new front and rear fiberglass fairings. You can have more fun getting there in a Trice!

New for 1996: The 1996 Speed Ross has upgrades carried across from the Trice Trike, as well as a lower bottom bracket for improved aerodynamics, new front and rear fairings, new chainguides, 20" x 1.75" tires and Shimano components. The Ross remains the best value for the money and the lightest SWB recumbent in the European market—equally at home on the race track or for long distance touring.

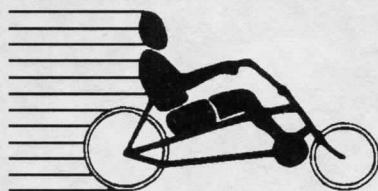
Race Ahead with the 1996 Festina. The latest Festina has a 16" front wheel with reversed forks to give even lighter weight and greater stability. It may be raced unfaired or streamlined (body not ready yet) and is available as a set of plans for the homebuilder.

Sold through: North American customers can order Crystal products direct from the U.K. There is no US distributor at this time.

Is bike pre-assembled: Yes
Bench/ road tested prior to shipping: Yes
Warranty: Lifetime original owner

For more information contact:
Crystal Engineering
Unit 1a Jubilee Wharf, Commercial Road, PENRYN
Cornwall, England TR10 8AQ
Ph/Fax#+44 01326 378848

Easy Racers Inc.



Gold Rush Replica



Model	EZ-1	Tour Easy	Gold Rush Replica
Designer	Gardner Martin—1994	Gardner Martin—1978	Gardner Martin—1984
Design/ Steering Type	CLWB ASS	LWB ASS	LWB ASS
Wheelbase	53" and 56"	63"-69"	63"-69"
Seat height/ recline angle	25"/70°	21"/68°	21"/68°
Weight (mfr. supplied)	#29	#28	#26
Weight distribution (bk./ft.)	70/30 (5'10" rider)	65/35	65/35
Headtube Angle	63°	60°	59°
Frame/ Fork/ construction	HiTen/CroMo/TIG	CroMo/CroMo/TIG	Aluminum/CroMo/TIG
Seat frame	Alum	Carbon fiber/ Kevlar	Carbon fiber/ Kevlar
Seat material	Foam/ Lycra	Foam/ Lycra	Foam/ Lycra
Derailleurs (ft./rr.)	Shimano Altus C50/ C10	S.T. XC Pro/Deore XT	S.T. XC Pro/Deore XT
Shifters	Shimano Thumbshifter 18 spd.	Grip Shift SRT400 21 spd.	Grip Shift SRT600 24 spd.
Crankset	SR SX 32/46/53	S.T. XC Pro 24/36/48	S.T. XC Pro 24/42/54
Freewheel/ cassette	13-28 6 spd.	Shimano 11-28 7 spd.	Shimano 11-28 8 spd.
Gear Inch Range	23-84	23-118	23-132 (or custom spec)
Brake (ft./rr.)	Suntour XC Pro Cantilever	D.C. FSE/ S.T. Roller cam	Shimano 105SC
Rear Wheel/ hub/rim/ spokes	20" Shim.Par./ Wein./ UCP/ 36°	700c Shim/Sun CR18/SS/ 32°	700c Shim. Ult./Sun/SS/32°
Front Wheel/hub/rim/ spokes	16" Sovos/ Wein./UCP/36°	20" Shim.Par./Sun M17/SS/32°	20" Shim. Ult./Sun/SS/32°
Bottom Bracket/Headset	Shimano cart. sealed/YST	S.T. XC Pro Grease Guard	Shimano UN71/Ritchey Comp
Paint/ colors	Powdercoat red/black	Powdercoat red/black	Polished natural aluminum
Rider Height and Adjustment	5'-6'4" sliding seat	5'2"-6'4" sliding seat	5'2"-6'4" sliding seat
Model designed for	Fitness/recreational/light touring	Multi-purpose	High performance/sport touring
Suggested Retail Price	\$795 (\$99 upgrade 21 spd.)	\$1595	\$2495

Variations: Framesets are available for Tour Easy and Gold Rush Replica models. The EZ-1 Speed Wheel option includes Grip Shifts, 21 speeds and a gear inch range 23-99.

Options: Easy Racer recumbents were designed to utilize the Zipper and Super Zipper fairings. They provide excellent looks as well as performance benefits. The small Zipper is \$129 and the Super Zipper is \$249. Other options include: waterbottles & cages, Kickstands, pumps, composite front fenders and Aerospoke wheels.

New for 1996: Super Zipper fairing for the EZ-1, and new lower prices on the Tour Easy and Gold Rush Replica. The seat foam has been upgraded on all models. See our new web page.

Sold through: select dealers and direct

Is bike pre-assembled: Yes

Bench/ road tested prior to shipping: Yes

Warranty: Lifetime to orig. owner on frame, 5 yrs. fork, 1 yr. seat

RCN Articles: RCN#6, 18, 21 and 28.

For more information contact:

Easy Racers, Inc.

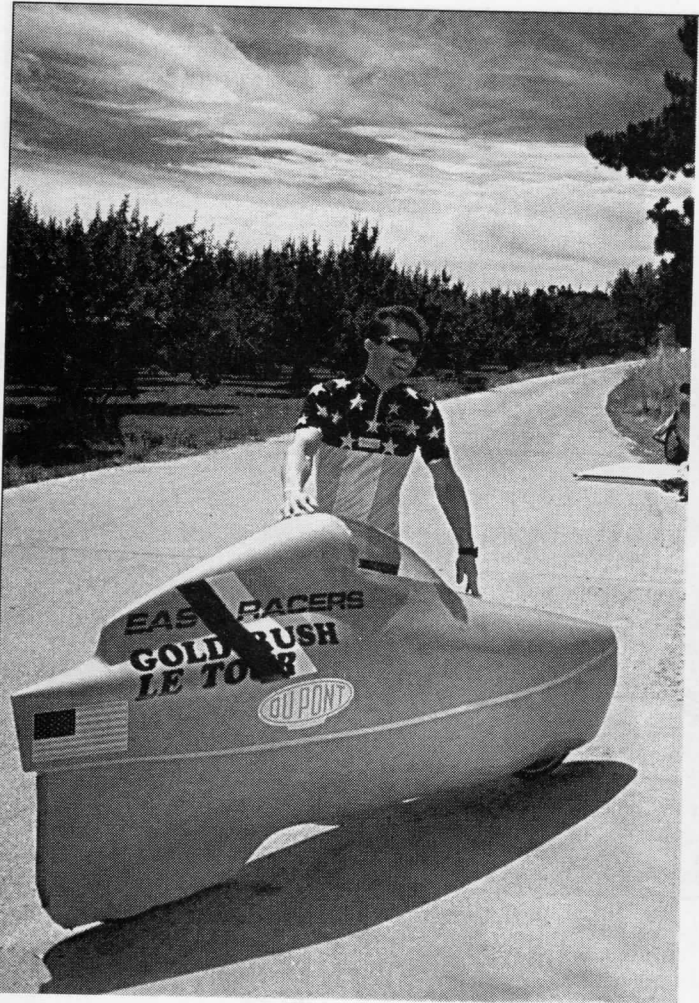
2891 Freedom Blvd.

Watsonville, CA 95019

Ph#408-722-9797

Email: Tooeasy1@aol.com

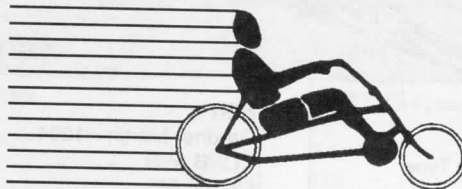
Web Home Page: <http://www.easyracers.com>



Upper: Tour Easy set up for a world tour
—photo courtesy of BJ Strass.

Left: Fast Freddie and the Gold Rush LeTour
(lower profile model) built for the Tour de
France Invitational Exhibition—photo courtesy
of Easy Racers, Inc.

Lower—Easy Rac'in in Hawaii or How I spent
my winter vacation by Gardner Martin



Greenspeed



Model	GTR20/20 Tourer	GBR 20/26 SWB Tourer	Tandem Touring Trike
Designed	Ian Sims—1995	Ian Sims—1995	Ian Sims—1993
Design/ Steering Type	Trike USS	SWB USS	Tandem Trike USS
Wheelbase	39"/Track 31.5"	40"/Track 31.5	98"/Track 35.5"
Seat height/ recline angle	12"/ 35°	23"/ 35°	12"/ 35°
Weight (mfr. supplied)	#39.6	#28.6	#63.8
Weight distribution (bk./ft.)	60/40	45/55	34/66
Headtube Angle	N.A.	71°	N.A.
Frame/ Fork/ construction	Reynolds 531 CroMo/MIG	Reynolds 531/CroMo/MIG	Reynolds 531 CroMo/MIG
Seat frame/ material	Reynolds 531/ Nylex	Reynolds 531/ Nylex	Reynolds 531/ Nylex
Deraillleurs (ft./rr.)	Sachs	Sachs or Shimano	Sachs
Shifters	Sachs 63 spd.	Sachs or Shimano 21 spd.	Sachs 63 spd.
Crankset	Sachs 52/42/32	28/38/48 or 32/42/52	Sachs 32/42/52
Freewheel/ cassette	Shimano or Sachs 11/28 63 spd.	Sachs 12-32 7 spd.	Sachs 11/28 7spd.
Gear Inch Range	16.7-128.6	22.75-104 or 26-112.6	26-104/27-108(700c)
Brake (ft./rr.)	Dia Compe FSE/ Big Dog	Sachs or Sturmey Archer drum	Sachs Power Disc hydraulic
Rear Wheel/ hub/rim/ spokes	20" x 1.75" 3x7/Araya/SS/36°	26"/Sachs or SA/Araya/SS/36°	20" x 1.75" 3x7/Araya/SS/36°
Front Wheel/hub/rim/ spokes	20" x 1.75" Sachs drum/SS/36°	20"/Sachs or SA/Araya/SS/36°	20"/Power Disc/Araya/SS/36°
Bottom Bracket/Headset	N.A.	Sachs/Primax roller	N.A.
Paint/ colors	Powdercoat	Powdercoat red/black	Powdercoat
Rider Height and Adjustment	4'10"-6'6" sliding boom	5'6"-6'3" sliding boom	4'10"-6'6" sliding boom
Model designed for	Touring/commuting	High performance/ sport touring	Touring/commuting
Suggested Retail Price	\$3500 Aus.	\$2990 Aus.	\$6000 Aus.

Variations: Greenspeed trikes are built custom for the customer and a wide variety of options are available. Greenspeed trikes have circum-navigated Australia and can be found all over the world.

Options: Sachs Power Disc hydraulic brakes, Schlumph Mountain-Drive (extra wide gear range), heavy-duty custom Reynolds 531 Rack, Lightweight 20 x 1 1/8" wheels, (save 1kg), Special Bunyip recumbent panniers, lighting set, Ride-On-Cables.

New for 1996: See our new full body kit.

Sold through: dealers or direct
Is bike pre-assembled: Some

Bench/ road tested prior to shipping: Yes

Warranty: N.A.

RCN Articles: RCN#30

For more information contact:

Greenspeed Recumbents

69 Mountain Gate Dr.

Ferntree Gully

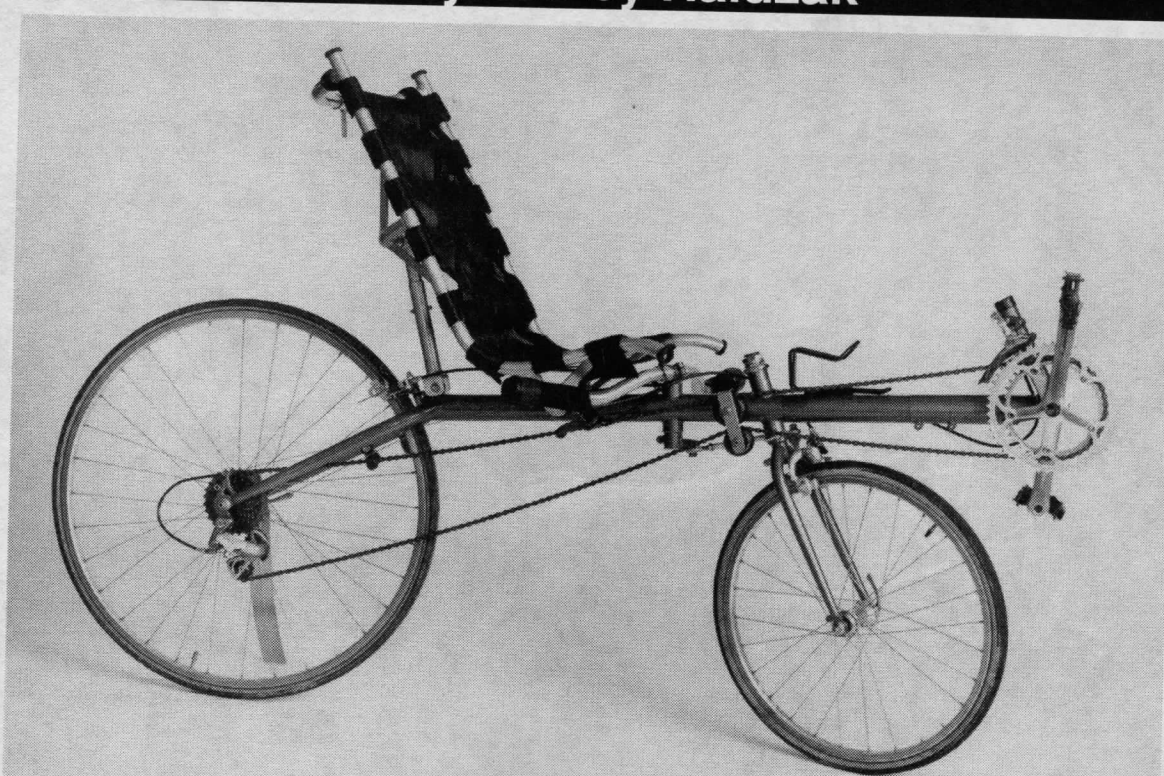
Victoria, Australia 3156

Ph#61 3 9758 5541

Fax#61 3 9752 4115

Email:greenshp@ozemail.com.au

Bicycles by Haluzak



The Hybrid Race

Model	Horizon	Traverse	Hybrid-Race
Designer	Bill Haluzak—1992	Bill Haluzak—1995	Bill Haluzak—1992
Design/ Steering Type	SWB USS	SWB USS	SWB USS
Wheelbase/BB height	40.5"/24"	40.5"/24"	40.5"/24"
Seat height/recline angle	23"/ 68° Adjustable	21"/68° Adjustable	23.5"/68° Adjustable
Weight (mfr. supplied)	#29	#27.5	#25.5
Weight distribution (bk./ft.)	46/54 (5'9" rider)	46/54 (5'9" rider)	46/54 (5'9" rider).
Headtube Angle	69°	70°	69°
Frame/ Fork/ construction	1.75 4130 CroMo/CroMo/TIG	CroMo-Alum./CroMo/TIG	1.75 4130 CroMo/CroMo/TIG
Seat frame/ material	Aluminum/Nylon mesh	Aluminum/Nylon mesh	Aluminum/Nylon mesh
Derailleurs (ft./rr.)	Shimano Deore LX	Shimano Deore LX	Shimano Deore XT
Shifters	Grip Shift 24 spd.	Grip Shift 24 spd.	Grip Shift 24 spd.
Crankset	XC Comp 24/36/46 or 28/40/50	XC Comp 24/36/46	XC Comp 28/40/50 175mm
Freewheel/ cassette	Shimano 11-28 8 spd.	Shimano 11-28 8 spd.	Sachs 11-28 8 spd.
Gear Inch Range	22.3-108.7 or 26-118.2	23.2-108.3	27-122.7
Braked (fr.& rr.)	Dia Compe Bulldog	Deore XT/Dia Compe Big Dog	XT Canti. or Ultegra dual pivot
Rear Wheel/ hub/rim/ spokes	26" /Wein.-Bon./SS/36°	26"/Wein.-Bon./SS/36°	700c/SunM14A/SS/32°
Front Wheel/hub/rim/ spokes	20"x1.5" Wein.-Bon./SS/36°	20"x1.5" Wein.-Bon./SS/36°	20" x 1-1/8"/SunM14A/SS/28°
Bottom Bracket/Headset	Shimano UN 51/Tange CD Levin	Shimano UN 51/Tange Levin	Shimano UN 51/Tange Levin
Paint/ colors	Red, Blue, Green Polyurethane	Red, Blue, Green	Red, Blue, Green
Rider Height and Adjustment	5'8"-6'1" sliding boom	5'8"-6'1" sliding boom	5'8"-6'1" sliding boom
Model designed for	Multi-use design	Built for off-road use	High-Performance/sport touring
Suggested Retail Price	\$1395	\$1995	\$1795

Variations: This bike has it all. The handling is superb, the finish is attractive, and you won't find features like this on bikes costing twice as much. The Haluzak Leprechaun is a scaled down version of the Horizon with a 26"/16" wheel combination, 21" seat height/24" bottom bracket height and lower-line components such as Sovos hubs, Sunrace drivetrain and Vanguard brakes. Many other aspects of the bike are identical to the Horizon. Haluzak can build using thicker diameter tubes and custom options to suit nearly every type rider.

Options: Day bag, Brake upgrade (cantilever fr./ Big Dog rr.), SRT600 shifter option, Headlight cyclometer bracket, rack and adapter, custom colors, LED tail light, and even FEDEX air delivery at rates less than others charge for UPS.
Sold through: dealers and direct

New for 1996: Bill Haluzak is offering the Haluzak Ace at \$1295 (slight component variations and ASS) and the Hybrid Race Deluxe with Aerospoke wheels and a Zzipper fairing available through People Movers.

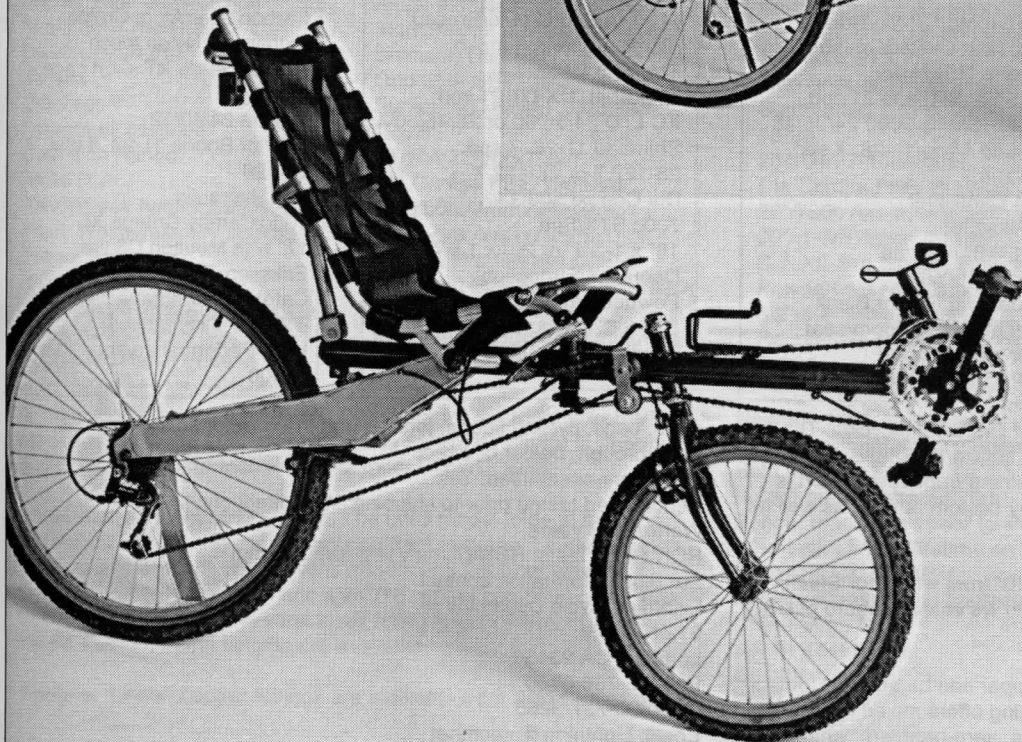
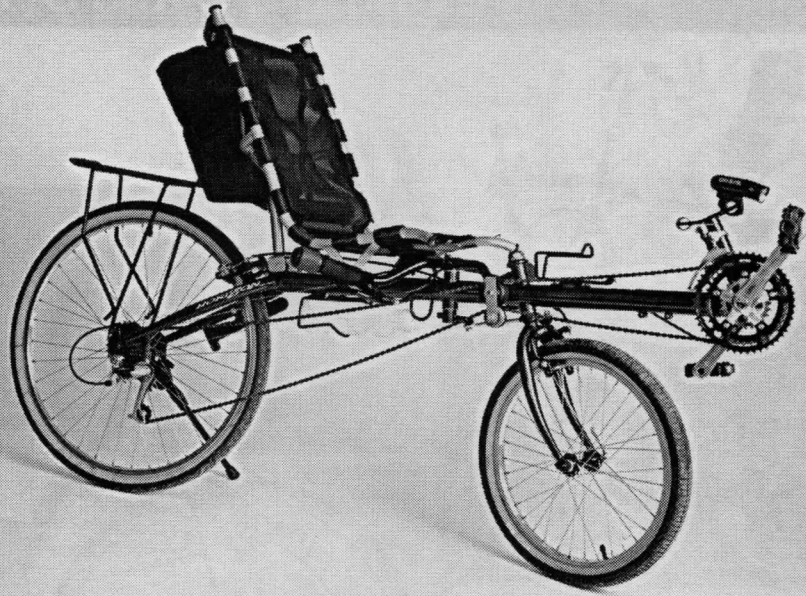
Is bike pre-assembled: Yes
Bench/ road tested prior to shipping: Yes
Warranty: Lifetime to original owner
RCN Road Tests: RCN#22 and 31
For more information contact:

Bicycles by Haluzak
2166 Burbank Ave.
Santa Rosa, CA 95407
Ph#707-544-6243
Email: Recumbent2@aol.com

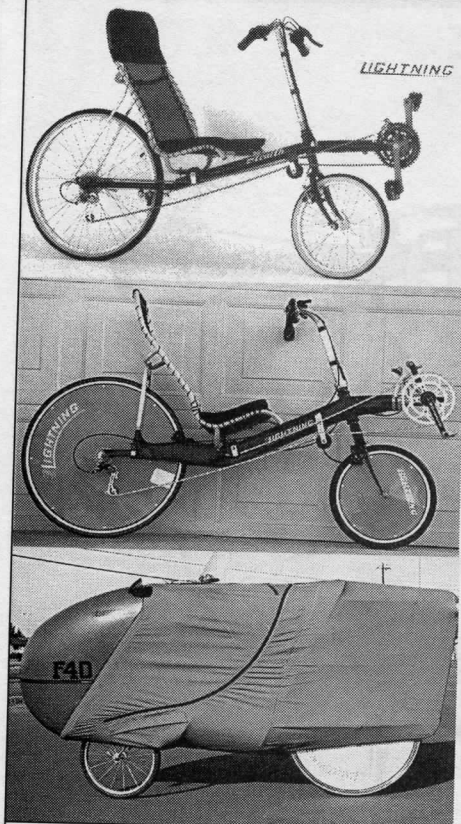
Upper: The Haluzak Horizon. This is our Editor's Choice for Best MWB USS. The Horizon is an exceptional deal at \$1395, priced hundreds below the competition.

Center: The Haluzak Leprechaun is designed for shorter riders. The Leprechaun lists for \$995.

Lower: The Haluzak Traverse Mountain Recumbent or Ultimate Urban Assault Vehicle has a unique monoshock suspension. With this bike you will search out the biggest bumps, ruts and hills that you can find. Prices start at \$1995.



Lightning Cycle Dynamics



Model

Designer
Design/ Steering Type
Wheelbase
Seat height/recline angle
Weight (mfr. supplied)
Weight distribution (bk./ft.)
Headtube Angle
Frame/ Fork/ construction
Seat frame/ material
Derailleurs (ft./rr.)
Shifters
Crankset
Freewheel/ cassette
Gear Inch Range
Braked (fr. & rr.)
Rear Wheel/ hub/rim/ spokes
Front Wheel/hub/rim/ spokes
Bottom Bracket/Headset
Paint/ colors
Rider Height and Adjustment
Model designed for
Suggested Retail Price

Stealth

Brummer—1994
SWB ASS
45"
20"/30-40° Adjustable
#29
55/45 (5'9" rider)
N.A.
4130 CroMo/CroMo/Brazed
Alum. heat treated/ mesh/foam
Shimano RSX/Alivio
Grip Shift SRT400 21 spd.
S.T. X-1/Sachs 3000 24/36/46
Shimano Alivio 11-28 7 spd.
22.3-108.7
Alivio Cantilever
26" Alloy/36°
16"x1-3/8" Alloy/36°
Suntour SL/YST
Powdercoat Red or Black
5'2"-6'8" sliding boom/seat
Touring/commuting
\$1195 (\$1550 with P-38 spec)

P-38

Brummer—1984
SWB ASS
44"
21"/30-40° Adjustable
#25
55/45 (5'9" rider)
N.A.
4130 CroMo/CroMo/Brazed
Aluminum/ Nylon mesh
Shimano Deore LX
Grip Shift CX DT 21 spd.
XC LTD 24/36/50 or 26/46/50
Shimano 11-28 7 spd.
23-122.7 or 25-122.7
Dia Compe 500GX
700c STX/Sun
16" x 1-3/8" or 20" x 1.5"/STX
Deore LX/Stronglight
Powdercoat Blue, Red
5'2"-6'6" sliding boom
Touring/ commuting
\$1995

R-84

Brummer—1990
SWB ASS
45"
20"/40°
#19
55/45 (5'9" rider)
N.A.
Carbon fiber/Alum CroMo
Aluminum/ Nylon mesh
RX100/Deore XT short cage
Grip Shift
Topline 24/40/52
SRP or Boone 11-23 8 spd.
28-128
IBC Hydraulic
700c/Campy Omega XL
17" with Moulton C3 tire
Eriksson Ti/YST
Catalysed Urethane/clear coat
5'2"-6'6" sliding boom
High-Performance/sport touring
\$5800

Variations: There are several variations of Lightning bicycles. The P-38X is a Deore XT version of the above selling for \$2595. The R-84 model has front and rear suspension. Lightning front suspension is optional on the P-38. Lightning offers many custom options as well as tandems.

New for 1996: Lightning has an optional 20" front wheel for Stealth and P-38 models, a special needs trike and we've even heard of USS conversions.

Options: F-40 full fairing kit or a P-38 Zipper can be added. Contact Lightning for a complete option list. Lightning offers mixed fender sets (17"/700c), Moulton, HED wheels and tires, aero-panniers, wheels

discs, bags, cycling shorts, jerseys and many other custom options.

Sold through: dealer or direct

Is bike pre-assembled: Yes

Bench/ road tested prior to shipping: Yes (direct only)

Warranty: 3 years

RCN Road Tests: RCN#7 (new test forthcoming)

For more information contact:

Lightning Cycle Dynamics

312 Ninth St.

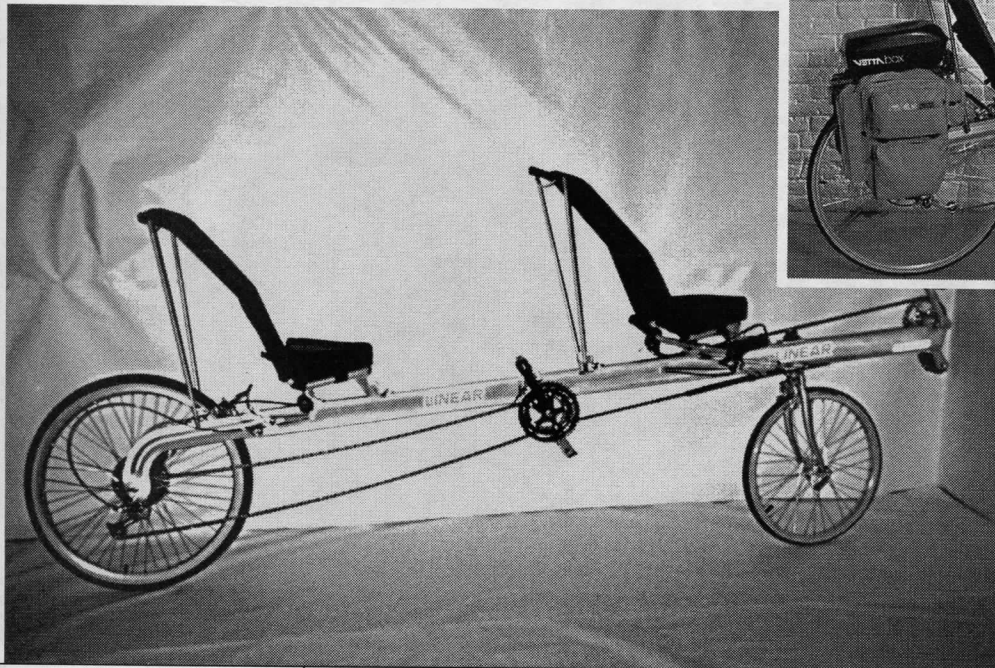
Lompoc, CA 93436

Ph#805-736-0700

Fax#805-737-3265

Email: Lightning@utech.net

Linear Mfg., Inc.



Model	Linear LWB	Sonic SWB	Linear Tandem
Designer	Kann—1982	Kann/Hansel—1995	Hansel—1995
Design/ Steering Type	LWB USS Folding	SWB USS Folding	Tandem USS Folding
Wheelbase	62" std.(five sizes & custom)	38"	N.A.
Seat height/ recline angle	25"/70°	25"/70°	N.A./ 70°
Weight (mfr. supplied)	#32	#29	#N.A.
Weight distribution (bk./ft.)	60/40 (varies by size)	50/50	N.A.
Headtube Angle	75°	N.A.	N.A.
Frame/ Fork/ construction	Alum. extrusion/CroMo/TIG	Alum. extrusion/CroMo/TIG	Alum. extrusion/CroMo/TIG
Seat frame/ material	Alum./mesh/ cushion w/ lumbar	Alum./mesh/ cushion w/ lumbar	Alum./mesh/ cushion w/ lumbar
Derailleurs (ft./rr.)	Shimano Deore STX	Shimano STX	Shimano STX
Shifters	Grip Shift SRT400 21 spd.	Grip Shift SRT400 21 spd.	Grip Shift SRT400 21 spd.
Crankset	Suntour XC Comp 28/38/48	Suntour XC Comp 28/38/48	Suntour XC Comp 28/38/48
Freewheel/ cassette	12-28	12-28	12-28
Gear Inch Range	26-104/27-108(700c)	26-104/27-108(700c)	26-104
Brake (ft./rr.)	Dia Compe FSE/ Big Dog	Dia Compe FSE/ Big Dog	Big Dog/S.A.drum/Arai drag
Rear Wheel/ hub/rim/ spokes	26"/700c /Wein./SS/ 36°	26"/700c /Wein./SS/ 36°	26" /Wein./SS/40°
Front Wheel/hub/rim/ spokes	20"x1-3/8"/Wein./SS/36°	20"x1-3/8"/Wein./SS/36°	20"x1.5"/Wein./SS/36°
Bottom Bracket	S.T. XC Pro Grease Guard	S.T. XC Pro Grease Guard	S.T. XC Pro Grease Guard
Paint/ colors	Anodized Blue,Silver,Gold, Black	Powdercoat red/black	Polished natural aluminum
Rider Height and Adjustment	5'3"-6'3" sliding seat	5'2"-6'4" sliding seat	5'2"-6'4" sliding seat
Model designed for	Recreation, touring, commuting	Recreation, touring, commuting	Recreation, touring, commuting
Suggested Retail Price	\$1200	\$1200	\$2800

Similar models: Linear is the US distributor for the Kingcycle SWB recumbent from the U.K. The 1996 price for the Kingcycle is approx. \$3000. For more information on this model, see RCN#31.

Variations: All Linear frames fold. The LWB model folds at the headtube and rear stays for a very compact package. Linear bicycles are available with 26" or 700c rear wheels and 20" front wheels. A small 36" frame is available with a 24"/16" wheel combination as well. Linear bicycles come in several sizes fitting riders of almost every height. Custom frame lengths are available.

Options: Linear Zipper fairings are available from Zzip Design for

New for 1996: Linear has a new more laid back lumbar bend seat, 26" wheels optional on all models and the redesigned Linear tandem.

Sold through: dealers

Is bike pre-assembled: Yes

Bench/ road tested prior to shipping: Yes

Warranty: Limited lifetime on Linear Mfg. parts

RCN Articles: RCN#24

For more information contact:

Linear Mfg., Inc.

32744 Kestrel Ave.

Guttenberg, IA 52052

Ph#319-252-1637

Fax#319-252-3305

People Movers



Model

Designer
Design/ Steering Type
Wheelbase/BB height
Seat height/recline angle
Weight (mfr. supplied)
Weight distribution (bk./ft.)
Headtube Angle
Frame/ Fork/ construction
Seat frame/ material
Derailleurs (ft./rr.)
Shifters
Crankset
Freewheel/ cassette
Gear Inch Range
Braked (fr. & rr.)
Rear Wheel/ hub/rim/ spokes
Front Wheel/hub/rim/ spokes
Bottom Bracket/Headset
Paint/ colors
Rider Height and Adjustment
Model designed for
Suggested Retail Price

Horizon Ace

Bill Haluzak—1996
SWB ASS
40.5"/24"
23°/ 68° Adjustable
#29
46/54 (5'9" rider)
69°
1.75 4130 CroMo/CroMo/TIG
Aluminum/Nylon mesh
Shimano Deore LX
Rapidfire 21 spd.
Shimano Exage LX 26/36/46
Shimano 11-28 7 spd.
24-109
Big Dog/Bulldog
26" /Wein.-Bon./SS/36°
20"x1.5" Wein.-Bon./SS/36°
Shimano UN 51/Tange CD Levin
Red, Blue, Green Polyurethane
5'8"-6'1" sliding boom
Multi-use design
\$1295

Haluzak Hybrid Race Dix.

Bill Haluzak—1995
SWB ASS/USS opt.
40.5"/24"
21°/68° Adjustable
#27.5
46/54 (5'9" rider)
70°
CroMo-Alum./CroMo/TIG
Aluminum/Nylon mesh
Shimano Deore XT
Grip Shift 24 spd.
Shimano Deore XT 28/40/50
Shimano 11-28 8 spd.
26-118
Deore XT/Ultegra dual pivot
700c Aerospoke
20"x 1-1/8" /Aerospoke
Shimano UN 72/Odyssey Pro
Red, Blue, Green
5'8"-6'1" sliding boom
High-Performance/sport touring
\$3250-\$3300 (Incl. Zip fairing)

Rubicon Trike

Rubicon—1995
Trike (joystick)
39.37"/27.95" track
N.A.
#38 est.
N.A.
N.A.
Welded 304 sq. stainless steel
Fiberglass/cover
Sachs New Success/Shimano
Sachs New Success/Shimano
Sachs New Success/Shimano
Sachs/Shimano
N.A.
Hope Disc
26" Rubicon/Alum./SS
18" Hope/Alum./SS
N.A.
N.A.
Sliding seat
High-Performance/sport touring
\$4000 est.

Variations: People Movers represents ATP, BikeE, Easy Racers, Haluzak, Lightning, Linear, Rans and many others. People Movers is a key USA source for Greenspeed and Rubicon. PM is the US distributor for Rubicon. The upgraded People Movers Hybrid Race Dix. includes a Zipper fairing.

New for 1996: People Movers is new to the custom spec arena offering a new low-end Haluzak Horizon that sells for \$100 less than a stock model. The "Ace" has standard ASS. People Movers is a full service recumbent shop, the largest one of it's kind in the USA today and quite possibly the world. If you can get to a specialty shop such as this it will make your selection process much easier.

Sold through: direct only
Is bike pre-assembled: Yes

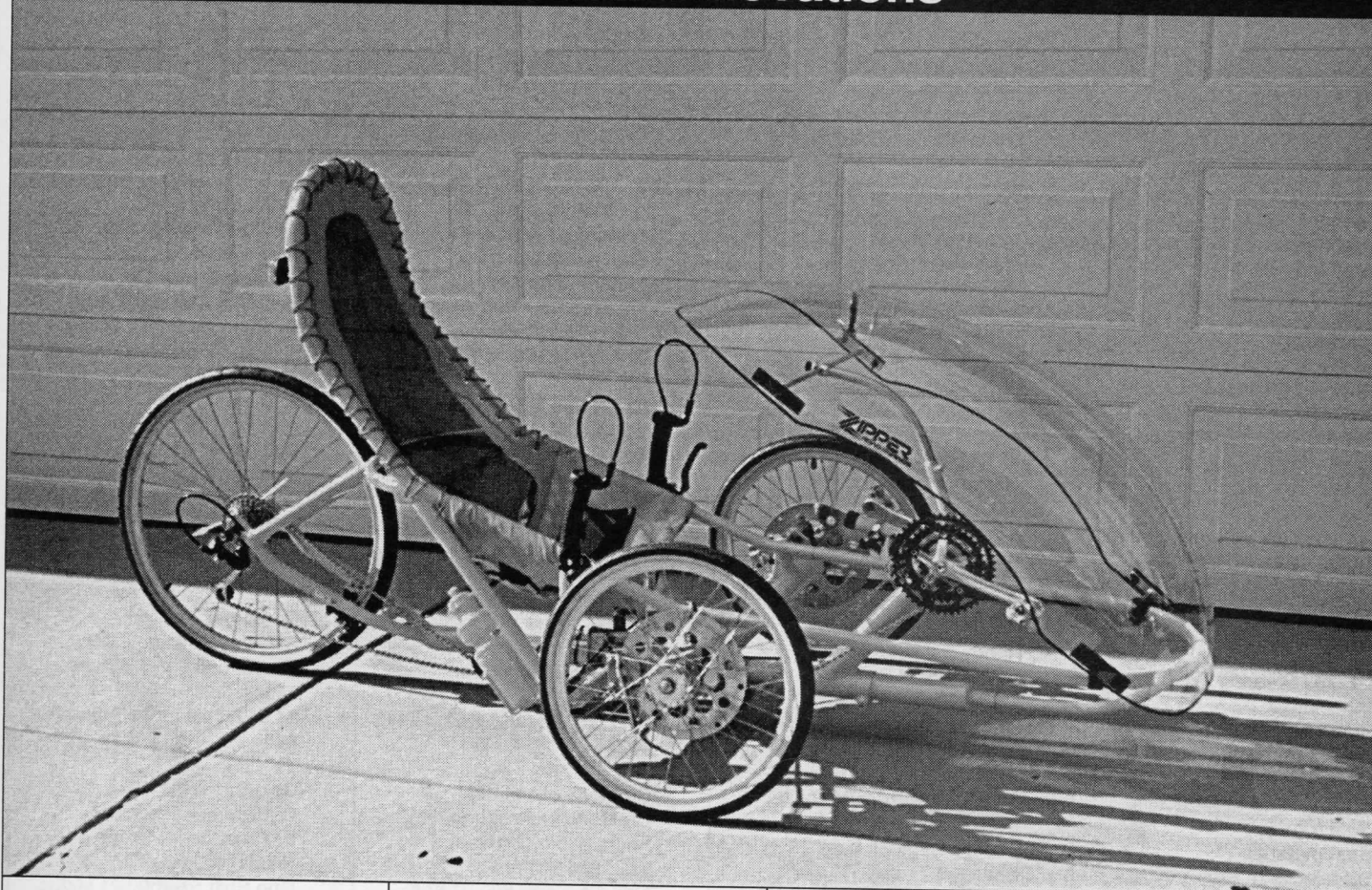
Bench/ road tested prior to shipping: Yes
Warranty: Manufacturer warranty

For more information contact:

People Movers
980 N. Main St.
Orange, CA 92667
Ph#714-633-3663
Email: Peplemovrs@aol.com

Photo: The Haluzak Leprechaun Ace

Practical Innovations



Model	Thunderbolt	Zephyr Mk III
Designer	Rick Horwitz—1995	Rick Horwitz—1995
Design/ Steering Type	Trike USS	Trike USS (dual vert. tiller)
Wheelbase	42"/ Track 32.5"	43.5"/ Track 32.5"
Seat height/recline angle	12"	12"/53°
Weight (mfr. supplied)	#35	#38 (w/o front bumper/ fairing)
Weight distribution (bk./ft.)	30/70	32/68
Frame/ Fork/ construction	6061-T6 Al. heat treated/TIG	6061-T6 Al. heat treated/TIG
Seat frame/material	Alum./Nylon Lanoloc Mesh	Alum./Nylon & Cordura Mesh
Derailleurs (ft./rr.)	Shimano STX	Shimano Deore XT
Shifters	Grip Shift SRT400	Grip Shift SRT600 24 speed
Crankset	Shimano STX 24/34/48	Ritchey Pro Logic 24/34/46
Freewheel/ cassette	Shimano HG70 11-28	Shimano HG90 11-28 8 spd.
Gear Inch Range	22.3-113.4	22.3-108.7
Front Brake	Sachs dual drum brakes	Dual Mech. Disc (PIC)/D.C.730
Rear Wheel/ hub/rim/ spokes	26" STX/ Rigida/ SS/ 36°	26"/Deore XT/ Mavic 435/SS/32°
Front Wheel/hub/rim/ spokes	20"/Sachs Drum/ Rigida/SS/36°	20"/PIC disc brake/ Rigida/SS/36°
Bottom Bracket/Headset	Suntour Micro-Lite	Shimano UN71/Suntour Micro
Paint/ colors	Powdercoat/chrome	Powdercoat Red or Teal
Rider Height and Adjustment	5'-6'6" sliding boom	5'2"-6'6" sliding boom
Model designed for	High-performance/ sport touring	High-performance/ sport touring
Suggested Retail Price	\$2495	\$4,345 GT/\$4,695 GTX

Options: Thunderbolt Zipper \$270. For increased performance, our GTX model comes standard with a Zipper fairing. This fairing is fastened using our own built-in-the-frame mounting system. Both bumper and fairing can be quickly removed for easy storage/transport. The Mk III is loaded with many extras such as a rear-view mirror, rear light, safety flag, water bottle/cage, stainless steel hardware and more. Also available are a Sachs 3x7 rear wheel, custom size height Bottom Bracket towers and Precision Billet Derailleurs (GTX only).

New for 1996: Introducing the all new \$2500 Thunderbolt trike. For MkIII and MkIII GTX (see Recumbent News).

Sold through: select dealers (T'Bolt only) and direct
Is bike pre-assembled/road tested: Yes
Warranty: T'Bolt: 2 years/ MkIII: 10 years (2 years seat fabric)

For more information contact:
Practical Innovations
PO Box 2536
Morgan Hill, CA 95038
Ph#408-226-3991
Email: rhorwitz@hooked.net

RANS Recumbents

<p>Model Designer Design/ Steering Type Wheelbase Seat height/recline angle Weight (mfr. supplied) Headtube Angle Frame/ Fork/ construction Seat frame Seat material Derailleurs (ft./rr.) Shifters Crankset Freewheel/ cassette Gear Inch Range Brake (fr./rr.) Rear Wheel/ hub/rim/ spokes Front Wheel/hub/rim/ spokes Bottom Bracket/Headset Paint/ colors Rider Height and Adjustment Model designed for Suggested Retail Price</p>	<p>Tailwind Randy Schlitter—1995 CLWB ASS (D Bar) 57.9"/N.A. 23°/25° tilt range/Adjustable #30 62° Sq.CroMo/CroMo/TIG CroMo/fiberglass base Foam pad/mesh back Shimano TY25/STX GripShift SRT 400 21 spd. Suntour XC Comp 36/46/58 Shimano HG50 11-28 7 spd. 25.7-105.5 Deore LX canti./D.C. Bulldog 20"x1.5"Alivio/SS/ 36°/Nimbus 20"x1.5"Alivio/SS/ 36°/Nimbus Shimano/YST Hot Red Q.R. sliding seat 5'3"-6'5" Multi-purpose \$985</p>	<p>Response Randy Schlitter—1993 LWB ASS (D Bar) 65" 25°/25° tilt range/Adjustable #31 62° Sq.CroMo/CroMo/TIG CroMo/fiberglass base Foam pad/mesh back Shimano TY25/STX Grip Shift SRT 400 14 spd. Tracer Alloy 42/52 Shimano HG50 12-28 7 spd. 40.5-117 Dia Compe 500 side-pull 700cx26 Shimano Alivio/SS/36° 20"x 1-1/8" Alivio/SS/36° Shimano/YST Hot Red Q.R. sliding seat 5'5"-6'8" Multi-purpose \$1295</p>	<p>Stratus/Nimbus Randy Schlitter—1980 LWB ASS (B or C bars) 67.75"/63-3/8" 22.5"/24" 25° tilt range/ Adj. #30 62° CroMo/CroMo/TIG CroMo/fiberglass base Foam pad/mesh back Shimano Deore LX Grip Shift SRT600 21 spd. Shimano Deore LX 24/36/46 Shimano HG50 11-28 7 spd. 22.3--108.7 Shimano Deore LX cantilever 700cx26 Shimano Alivio/SS/36° 20"x 1-1/8" Alivio/SS/36° Shimano UN51/YST Sharkskin, Green/Galaxy, Red Q.R. sliding seat 5'5"-6'8" Multi-purpose \$1595</p>
<p>Model Designer Design/ Steering Type Wheelbase Seat height/recline angle Weight (mfr. supplied) Headtube Angle Frame/ Fork/ construction Seat frame Seat material Derailleurs (ft./rr.) Shifters Crankset Freewheel/ cassette Gear Inch Range Brake (fr./rr.) Rear Wheel/ hub/rim/ spokes Front Wheel/hub/rim/ spokes Bottom Bracket/Headset Paint/ colors Rider Height and Adjustment Model designed for Suggested Retail Price</p>	<p>Rocket Randy Schlitter—1995 MWB ASS V-Bar/Riser 40" 22.5°/25° tilt range/Adjustable #30 74° Sq.CroMo/CroMo/MIG-TIG CroMo/fiberglass base Foam pad/mesh back Shimano TY25/STX Grip Shift SRT400 21 spd. Suntour XC Comp 36/46/58 11-28 7 spd. 25.7-105.5 D.C. Bulldog/Deore LX canti. 20"x1.5"Alivio/SS/36°/Nimbus 20"x1.5"Alivio/SS/36°/Nimbus Shimano/YST Yak and Hot Red Q.R. sliding seat Multi-Purpose \$1095</p>	<p>V-Rex Schlitter/Schlitter/Colliton—'94 MWB ASS V-Bar/Riser 40" 24.5°/25° tilt range/Adjustable #30 74° CroMo/CroMo/TIG CroMo/fiberglass base Foam pad/mesh back Shimano Deore LX Grip Shift SRT600 21 spd. Shimano Deore LX 24/36/46 Shimano HG50 11-28 7 spd. 22.3-108.7 DiaCompe 730/Deore LX canti. 26" Alivio/SS/32°/Fat Boy 1.25 20"Alivio/SS/32°/IRC Roadlite Shimano UN51/YST Red and Green Q.R. sliding seat 5'2"-6'4" Multi-purpose design \$1475</p>	<p>Screamer Tandem Schlitter/Schlitter—1995 Tandem ASS V-Bar/tilt riser 74.5" 24.5°/25° tilt range/Adjustable #45 74° CroMo/CroMo/TIG CroMo/fiberglass base Foam pad/mesh back Shimano Deore XT Grip Shift SRT600 21 spd. Specialized Tandem 32/44/54 Sachs 12-30 7 spd. 27.7-117 Ritchey Logic Cantilever/Arai 26" Phil Wood/Sun/SS/40° 20" Phil Wood/Sun/SS/36° Shimano UN51/Tange Levin Hot Lips and Midnight Blue Q.R. sliding seats Multi-Purpose design \$3875</p>

Variations: Rans has been in the business of selling recumbent bicycles for 23 years. They are the largest manufacturer involved in recumbent bicycles as they also build airplanes. Framekits are available for all Rans models. The differences between the Rans Stratus and Nimbus is the frame design and seat height. The Nimbus is 3-4" shorter and has a higher seat. There are two versions of the V-Rex. The first is the standard (above spec) 26/20 V-Rex, the second is the V-Rex 24, which replaces the above wheel set with a 24" x 1-1/8" rear wheel and a 20" x 1-1/8" front. Tires are IRC Roadlite EX. The cost for both models is the same. The difference is that the 24/20 offers better performance and a lower seat height. SWB models come with Rans V-bar/V-Riser ASS. The Screamer is outfitted with Rans fold-forward adjustable steering column. Rans LWB bikes come outfitted with Rans B (open Stratus bars), C (closed loop) or D (long open bars). Handlebar fairings are available.

Variations II: For 1996, Rans has come out with a totally new concept in bicycles with the Rans Zero-G. This is a TIG welded CroMo laid-back cruiser with 26" wheels, MTB-style rear suspension and STX/Deore LX/Grip Shift components. The key is the new seat, which is a

variation of the Rans recumbent seat base. The ultimate cruiser Zero-G retails for \$995.

Options: For the Response model, a Suntour 24/36/46 triple crank is optional at \$50. Rans offers custom fade paint jobs on all models, upcharges are \$50(1 color)-\$100(3 color), modified Greenfield kickstands are available for all models. 3x7 and hydraulic brake braze-ons are available. Rans fairings are standard on the Stratus/ Nimbus. Sold through: dealers and direct
 Is bike pre-assembled: Yes
 Bench/ road tested prior to shipping: Yes
 Warranty: Frame-lifetime, fork and seat-1 year.
 Designer: Randy Schlitter/V-Rex: Randy Schlitter-John Schlitter and Mark Colliton/Screamer: Randy Schlitter-John Schlitter

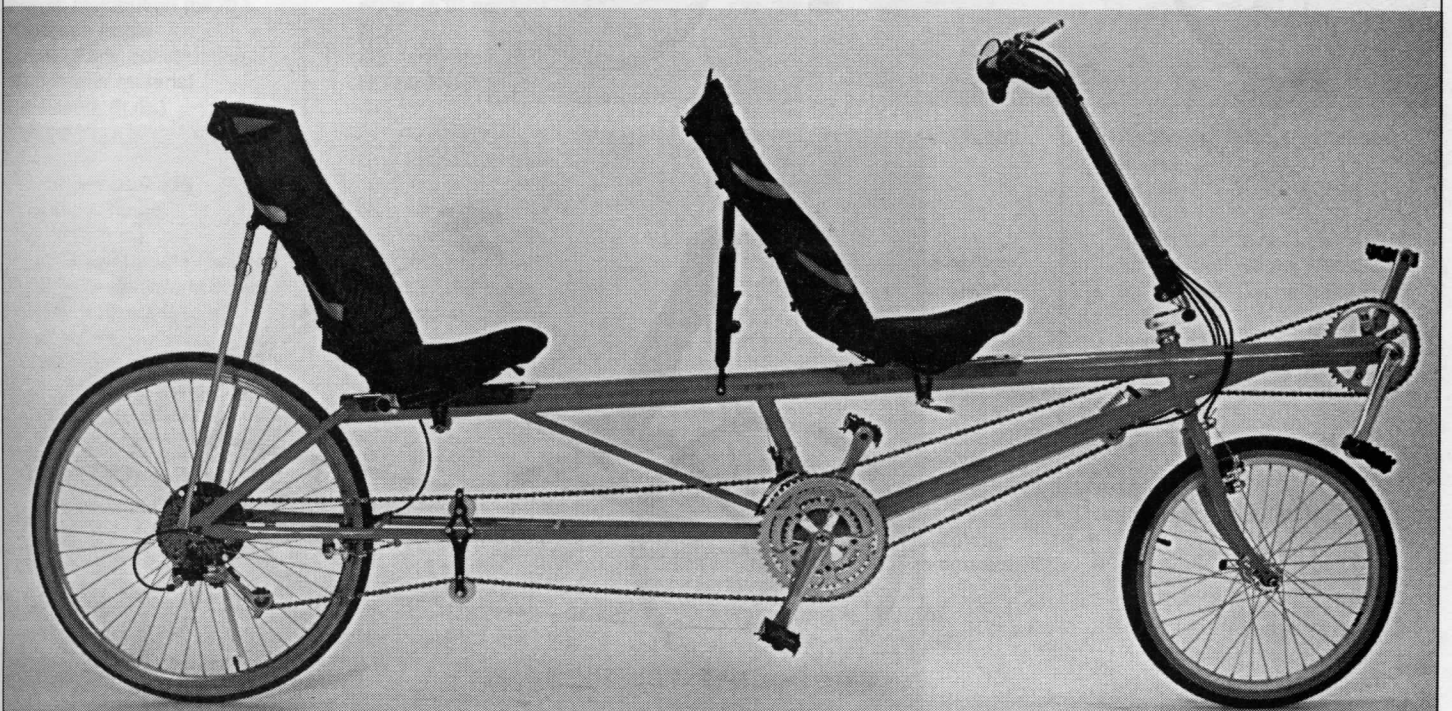
For more information contact:
 Rans Inc.
 4600 Highway 183 Bypass
 Hays, KS 67601
 Ph#913-625-6346

Upper right: 1996 V-Rex 24 (24/20) with standard ASS steering. The V-Rex is the best high performance MWB recumbent in it's price range. Prices start at \$1475.

Center left: The 1996 Rans Tailwind CLWB offers an aggressive SWB-like riding position and LWB stability combined with a silky smooth drivetrain and that great Rans seat. Prices start at \$985

Center right: The 1996 Rans Rocket has dual 20" tough BMX wheels, a simple, straight forward design and V-Rex bars, stem and seat, all for just \$1095.

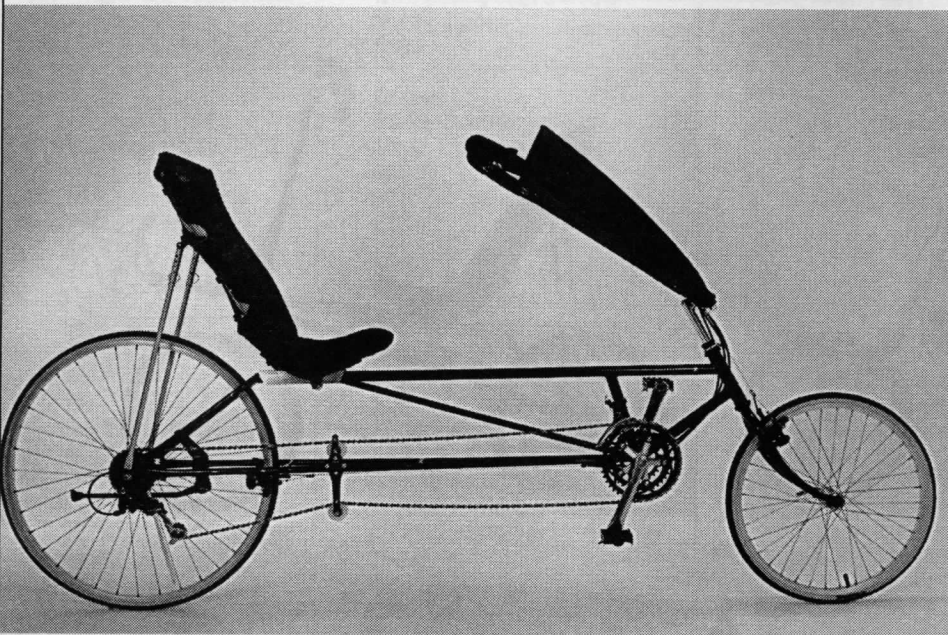
Lower: 1996 Rans Screamer Tandem with standard "flip-it" ASS. This model has a beefy 2" main tube with full triangulation. If your style is performance oriented, the aggressive Screamer is the tandem for you. The Screamer is the co-winner of "RCN Editors Choice for Best Recumbent 1996" Prices start at \$3875.





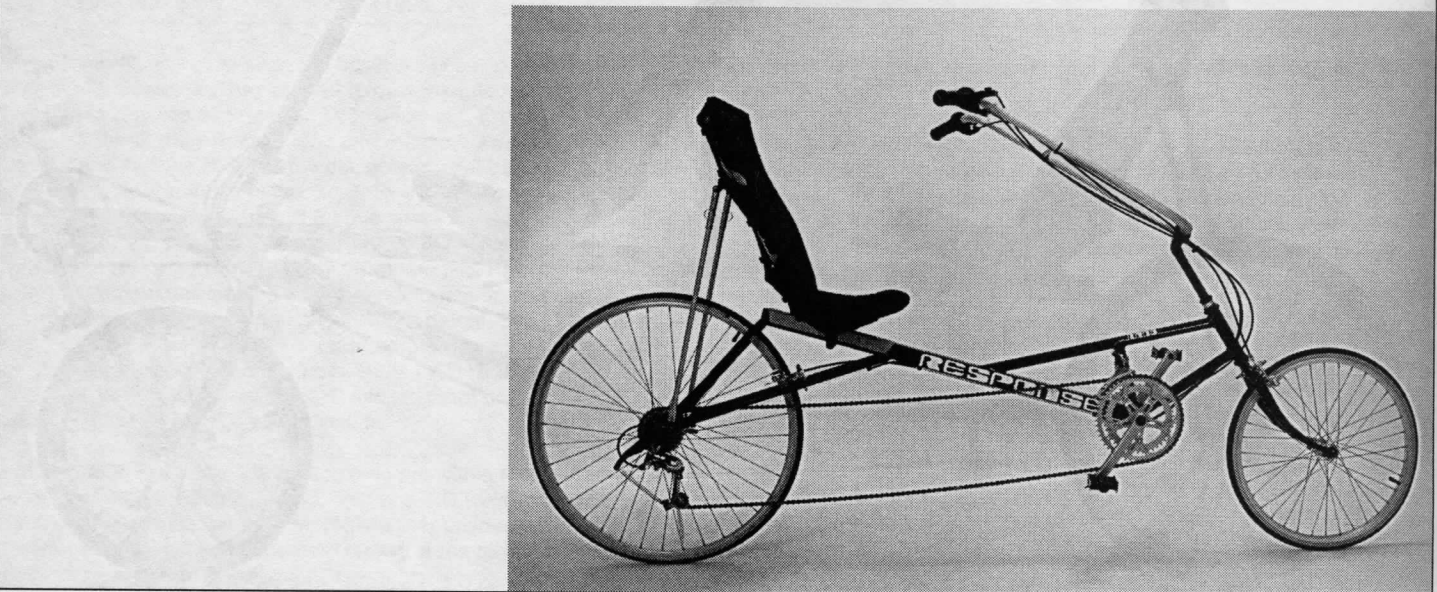
John and Randy Schlitter's sideline business is building airplanes.... Rans is one of the largest kit-plane manufacturers in the world. The Rans production plant produces some of the finest recumbent bicycles built today. They started back in the '70s with a pedaling recumbent sail trike, and then onto the Stratus and Nimbus designs and the rest is history.

Upper: The Stratus is the Rans flagship. The Stratus is a high-performance, high-tech LWB machine for the '90s. The new seat transformed this bike into something new. With your choice of bars and a Zipper fairing, this is a moving machine. The Stratus is priced at \$1595 and comes with a fairing as standard equipment.

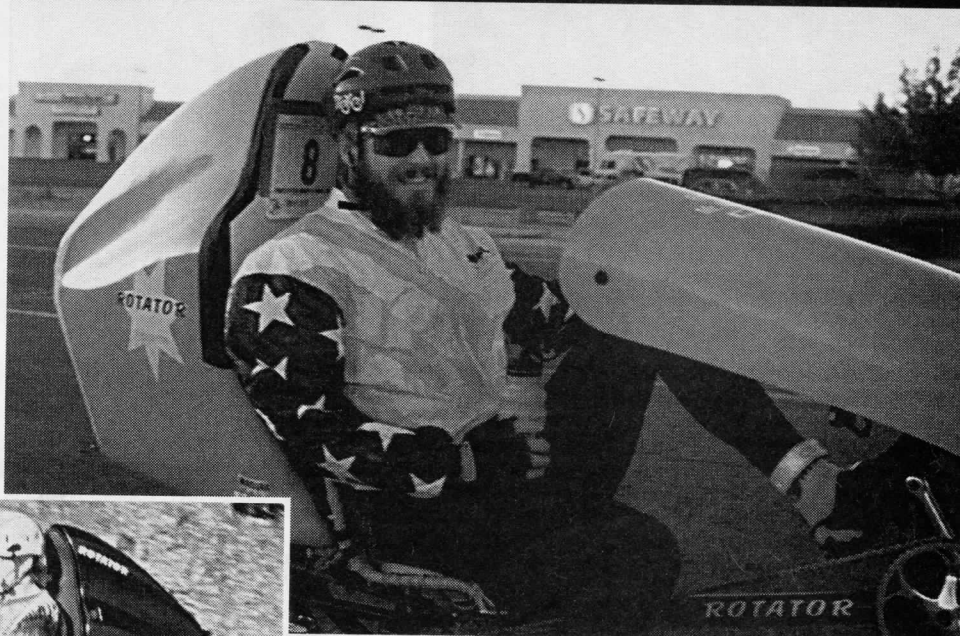
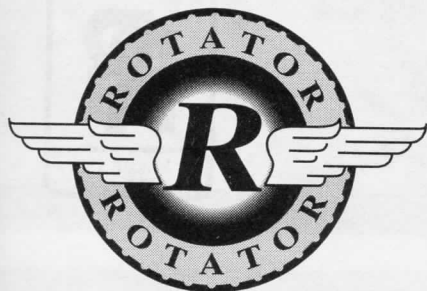


Center: The Nimbus is an excellent bike for those who seek a less aggressive machine, but want a high-quality refined bicycle. It has a higher seat, shorter wheelbase and smaller diameter main tube for a comfortable ride. Rans produces several handle bar options for the LWB models. The Nimbus is priced at \$1595 and comes with a fairing as standard equipment.

Lower: The Response is based on the Stratus and is priced lower and has elevated chainstays for simplicity. The Response is a 14 speed bike, but a triple crank is optional. This model is priced at \$1295.



Rotator



Upper right: Myhee on his Rotator Interceptor.
Lower left: Bob Gepford on his Interceptor.

Model	Coaster	Pursuit	Interceptor
Designer	Stephen Delaire—1995	Stephen Delaire—1993	Stephen Delaire—1994
Design/ Steering Type	LWB ASS	LWB ASS	LWB ASS
Wheelbase	63" (med. size)	63" (med. size)	63" (med. size)
Seat height/recline angle	18" Seat Height	15"/ Adjustable	15"/ Adjustable
Weight (mfr. supplied)	#40	#30	#35
Weight distribution (bk./ft.)	60/40 (5'9" rider)	60/40 (5'9" rider)	60/40 (5'9" rider).
Headtube Angle	N.A.	N.A.	N.A.
Frame/ Fork/ construction	Sq. 1010 steel/HiTen/MIG	CroMo/HiTen/Hi Ten brass braze	CroMo/ Hi-Ten brass braze
Seat frame/ material	HiTen/ Nylon mesh	CroMo/shock-cord laced mesh	CroMo/shock-cord laced mesh
Derailleurs (ft./rr.)	---	Sachs 5000 (2 rear)	Sachs New Success (2 rear)
Shifters	---	Sachs ProTwist Shift 35 spd.	Sachs ProTwist Shift 35 spd.
Crankset	One piece BMXsteel 52-T.	Sachs	Sachs
Freewheel/ cassette	16-T.	Sachs	Sachs
Gear Inch Range	65 gear inches	25-160	25-160
Braked (fr. & rr.)	Coaster (rear only)	Sachs Cantilever	Sachs Cantilever
Rear Wheel/ hub/rim/ spokes	20"x1.5" BMX steel	20" Sovos/Alloy bolt-on/36°	20" x 1-3/8" Sachs NS/SS/36°
Front Wheel/hub/rim/ spokes	20"x1.5" BMX steel	20" Sovos/Alloy bolt-on/36°	20" x 1-3/8" Sachs NS/SS/36°
Bottom Bracket/Headset	BMX steel	N.A.	N.A.
Paint/ colors	Powdercoat	Powdercoat	Powdercoat
Rider Height and Adjustment	One size/sliding seat	Any height/ sliding seat	Any height sliding boom
Model designed for	Fitness	High-Performance/ sport touring	High-Performance/ sport touring
Suggested Retail Price	\$425	\$1150	\$2600

Variations: The Pursuit and Interceptor are based upon the same frame. The Interceptor comes complete with front and rear fairings, upgrade components and a CroMo fork.

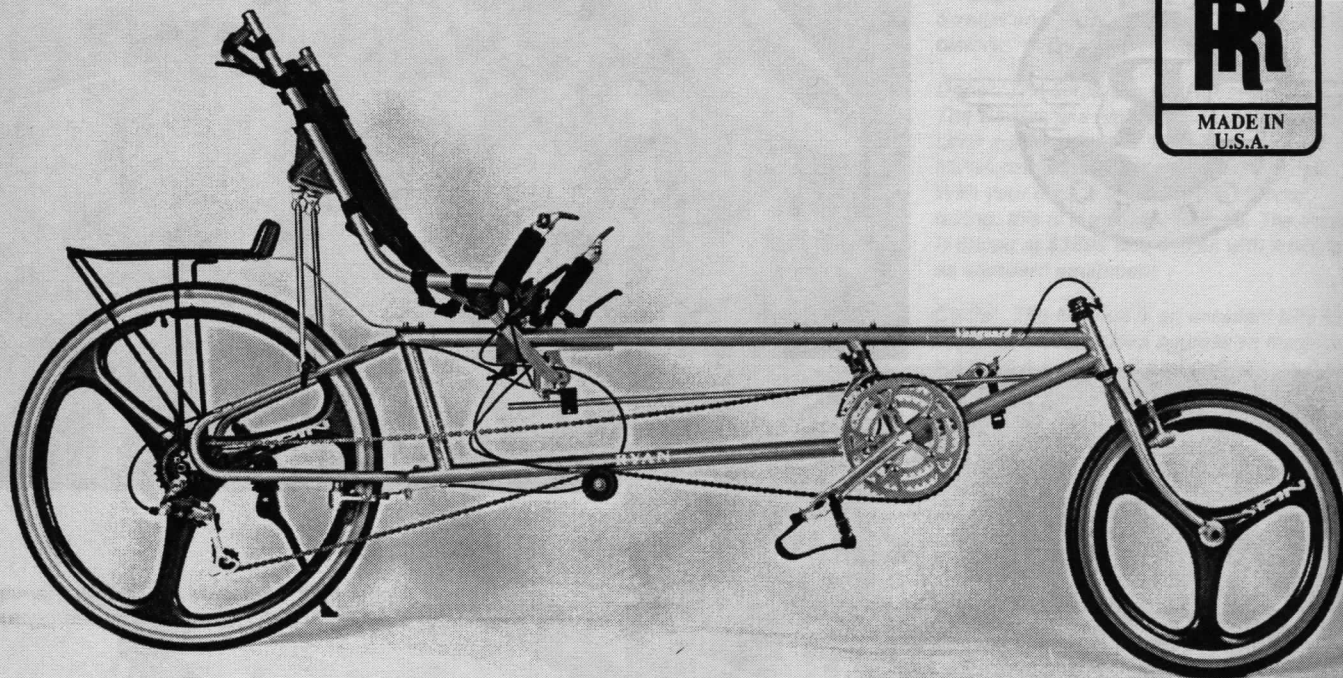
Options: Rotator builds custom race bikes and does custom fabrication. Optional equipment includes: Aerospoke wheels, panniers, front fairing, rear fairing, Super Zipper fairing, fender and light kits.

New for 1996: Rotator offers the one speed Coaster, The Pursuit/ Interceptor has a 35 speeds intermediate freewheel/two rear derailleur drive standard. Interceptor fairings have been refined to ship UPS.

Sold through: dealer or direct

Is bike pre-assembled: Yes
Bench/ road tested prior to shipping: Yes
Warranty: Rotator Mfr. parts frame & seat 5 years seat fabric 1 year.
RCN Road Tests: upcoming
For more information contact:
Rotator Bicycles
915 Middle Rincon Rd.
Santa Rosa, CA 94509
Ph#707-539-4203
Fax#707-539-5354

Ryan Recumbents



Ryan Vanguard Photo—R.B. Croteau

Model	Vanguard	Duplex Tandems
Designer	Dick Ryan—1989	Dick Ryan—1993
Design/ Steering Type	LWB ASS	LWB USS Tandem
Wheelbase	52"	103"
Seat height/recline angle	25"/N.A.	25"/ N.A.
Weight (mfr. supplied)	#30	#53
Weight distribution (bk./ft.)	70/30 (5'9" rider)	50/50 est.
Headtube Angle	69°	69°
Frame/ Fork/ construction	CroMo/CroMo/TIG	CroMo/Cro/Mo/TIG
Seat frame/material	Al./Nylon mesh	Al./Nylon mesh
Derailleurs (ft./rr.)	Shimano Deore LX	Sachs
Shifters	Grip Shift 24 spd.	Shimano 24 spd.
Crankset	S.T. XC Comp LX 30/42/52	Specialized 32/44/54
Freewheel/ cassette	Shimano 13-30 7 spd.	Shimano 13-30 8 spd.
Gear Inch Range	26-104	28-108
Brake (ft./rr.)	Deore LX/Pedersen canti.	Deore LX or Pedersen/Arai drag
Rear Wheel/ hub/rim/ spokes	26" Wein.-Bon/SS/ 36°	26" Phil Wood/ Wein./SS/ 36°
Front Wheel/hub/rim/ spokes	20" Wein.-Bon/SS/36°	20" Sachs/ Wein.-Bon/SS/36°
Bottom Bracket/Headset	Shimano UN71/Tioga	Shimano UN71-Burley/Tioga
Paint/ colors	Red, Black (custom add \$100)	Red, Black (custom add \$100)
Rider Height and Adjustment	To 36" inseam sliding seat	To 34" inseam sliding seat
Model designed for	Touring/ Commuting	Touring/ Long distance adventure
Suggested Retail Price	\$1650.	\$3400

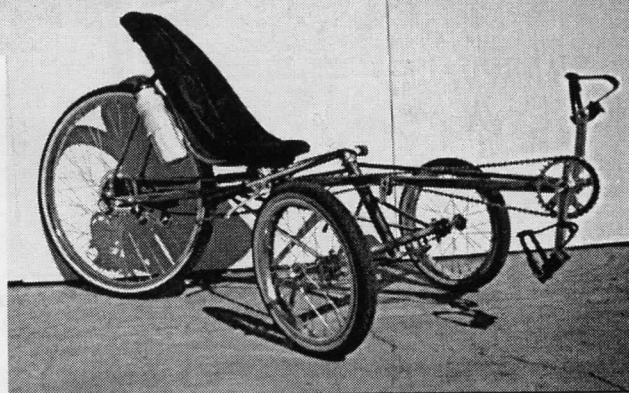
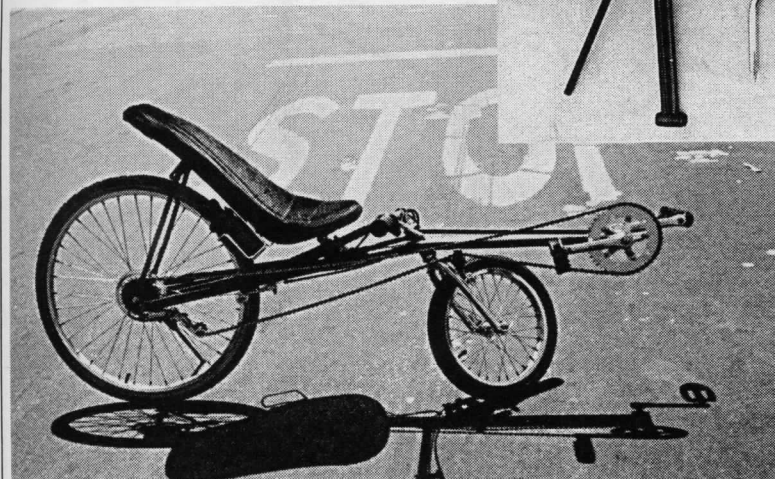
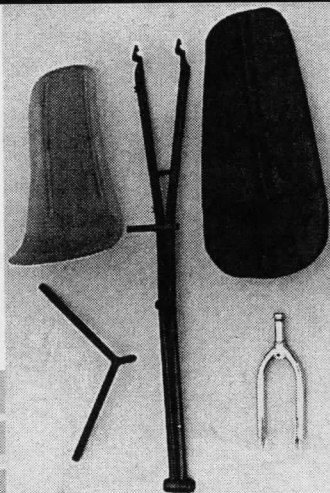
Options: S & S couplers on tandem and Spin composite wheels on the Vanguard. Ryan Zipper fairings are available from Zzip Design or your local recumbent dealer.

New for 1996: Refined steering linkage/bars, S & S couplers optional on the tandem and optional Spin composite wheels on the Vanguard. Ryan price note: expect upgraded specs and a price increase late this season.
Sold through: direct only
Is bike pre-assembled/bench tested: No

Warranty: Lifetime on frame
RCN Articles: RCN#29

For more information contact:
Ryan Recumbents
PO Box 588
Hampstead, NH 03841-0588
Ph/Fax#603-329-8336
Ph # 800-632-2869
E-mail: ryanbike@ryancycles.com

S & B Recumbent



Model	S & B Single	S & B Trike	S & B Tandem
Designer	Smith/Baker—1991	Smith/Baker—1995	Smith/Baker—1984
Design/ Steering Type	SWB USS	Trike USS	LWB ASS
Wheelbase/BB height	39"	39"	63"-69"
Seat height/ recline angle	18"/ N.A.	18"/ Adjustable	18"/ Adjustable
Weight (mfr. supplied)	#21 (al.)/26 (CroMo)/29 (steel)	#32	#42
Weight distribution (bk./ft.)	65/35 (5'10" rider)	60/40	N.A.
Headtube Angle	N.A.	N.A.	N.A.
Frame/ Fork/ construction	Alum.-CroMo-steel/CroMo/TIG	HiTen/ TIG (CroMo/alum opt.)	CroMo/CroMo/TIG
Seat frame/material	Fiberglass, vinyl, cushion	Fiberglass, vinyl, cushion	Fiberglass, vinyl, cushion
Derailleurs (ft./rr.)	Sachs 5000 or Shimano	Sachs 5000 or Shimano	Sachs 5000
Shifters	Sachs or Shimano 7 spd.	Sachs or Shimano 7 spd.	Sachs Aris Power Grip 14 spd.
Crankset	Sugino (optional double or triple)	Sugino 44 or 46-T.	Sugino with Pro Neck rings
Freewheel/ cassette	Sachs or Shimano 12-28	Sachs or Shimano 12-28	Sachs or Shimano 12-28
Gear Inch Range	N.A.	N.A.	N.A.
Brake (ft./rr.)	Odyssey	Single rear wheel drum	Sachs drum
Rear Wheel/ hub/rim/ spokes	26" Alloy/SS/ 36°	26" x 1.75" steel	26" Alloy/SS/36°
Front Wheel/hub/rim/ spokes	16"Alloy/SS/36°	16" x 1.75" steel	16" Alloy/SS/36°
Bottom Bracket/Headset	Tioga/YST	Tioga/YST	Tioga/YST
Paint/ colors	Optional powdercoat	Optional powdercoat	Optional powdercoat
Rider Height and Adjustment	5'-7" sliding seat	5'-7" sliding seat	5'-7" sliding seat
Model designed for	Fitness/recreational/sport touring	Fitness/recreational	Fitness/touring/recreational
Suggested Retail Price	\$615-\$735-\$1295	\$865	\$2595

Variations: S & B Recumbents has been manufacturing quality recumbents for over 20 years. The three above products are the latest creations in a long line of quality recumbent bicycles. Framesets are available for all models (\$399 HiTen/\$495/ Alum\$895). Frame-kits include frame, handlebars, seat bottom bracket and headset. S & B singles are available in aluminum, CroMo or 1020 mild steel. A new teflon idler with bronze bushing is standard. All S & B models come with CroMo forks.

Options: A new tall seat is optional on all models. Front drum brakes, 7, 14 or 21 speeds, and ASS are optional on the trike for 1996. S & B does custom design & fabrication. See RCN#25.

New for 1996: A new taller fiberglass seat, an extended wheelbase for

all single models (39"), new idler and other refinements. S & B offers the most affordable SWB recumbents in the industry.

Sold through: dealers and direct
Is bike pre-assembled/road tested prior to shipping: Yes

Warranty: 2 years

RCN Articles: RCN#25

For more information contact:

S & B Recumbents

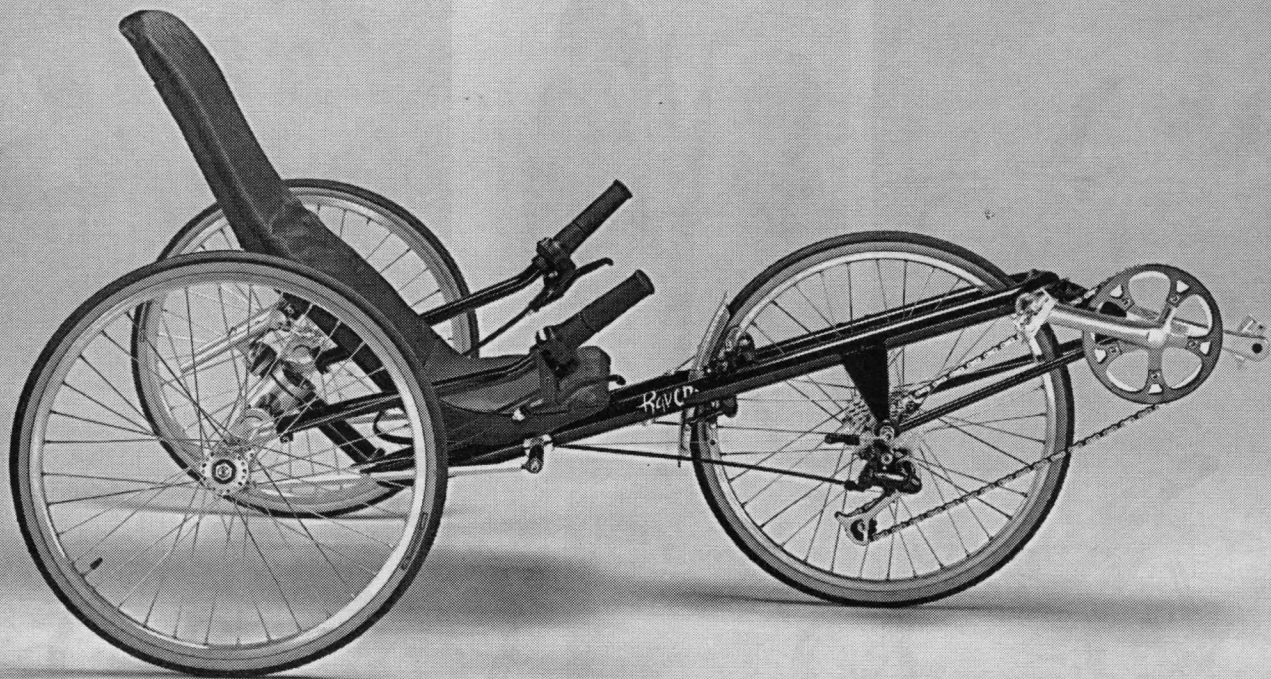
PO Box 3061

Compton, CA 90222

Ph#310-608-0008

Ph/Fax#310-762-2243

Tricumbent Productions LLC



Model

Designer
Design/ Steering Type
Wheelbase
Seat height/recline angle
Weight (mfr. supplied)
Weight distribution (bk./ft.)
Headtube Angle
Frame/ Fork/ construction
Seat frame/material
Derailleurs (ft./rr.)
Shifters
Crankset
Freewheel/ cassette
Gear Inch Range
Brakes (fr./rr.)
Rear Wheel/ hub/rim/ spokes
Front Wheel/hub/rim/ spokes
Bottom Bracket/Headset
Paint/ colors
Rider Height and Adjustment
Model designed for
Suggested Retail Price

Tricumbent Raven

Bill Mason—1995
Trike FWD
32"/Track width 32.5"
9"/45° Adjustable
#34 (#30 special)
56/44 (5'11" rider)
N.A.
CroMo/DOM/TIG
Fiberglass shell with pad and cover
Sachs Centura/ Sachs 3x7
Sachs Twist shift 21 spd.
Suntour XC 44-T.
Shimano 12-28 7 spd.
23-100
Shimano Deore LX Cantilevers
20"x1-1/8" Phil Wood/Sun
(2)20"x1-1/8" Sachs 3x7/ Sun
Shimano/Stronglight
Powdercoat Black
5'-6"4" sliding seat
N.A.
\$2600

Variations: The Raven is offered in "builder's kit" form for \$1800.

Options: carbon fiber seat shell (seats are built by Turner), colors and gearing.

New for 1996: New manufacturer, new model. Please do not confuse this trike with the Pacific Specialties "Tricumbent" model listed in our Seen & Noted section.

Sold through: select dealers and direct
Is bike pre-assembled: Yes
Bench/ road tested prior to shipping: Yes
Warranty: Frame and fork one year

For more information contact:

Tricumbent Productions LLC
111 S. Main St.
Deerfield, WI 53531
Ph#608-764-5302

The World's Most Advanced Bicycle

- Our bike is recommended by leading Sports Medicine doctor.
- The only recumbent with an adjustable lumbar cushion.
- Complete bikes from \$950! Framekits from \$575!
- Wholesale prices to the public.
- Call Today for our 1996 Catalog. Video \$20!

Turner Enterprises
1350 E. Flamingo Rd. #73
Las Vegas, Nevada 89119
Call (520) 290-5646



Turner Enterprises



Upper right: Turner 2000
Lower: Turner T-Lite



Model	T-Lite	T-Lite Deluxe	2000
Designer	Milton Turner—1994	Milton Turner—1995	Turner/Smith—1992
Design/ Steering Type	SWB USS	SWB USS	SWB USS
Wheelbase	38"	38"	38" (varies with size)
Seat height/Recline angle	22"/ N.A.	21"/68° Adjustable	22"/N.A.
Weight (mfr. supplied)	#29	#27	#28
Weight distribution (bk./ft.)	45/55 (5'10" rider)	46/54 (5'10" rider)	48/52 (5'10" rider).
Headtube Angle	N.A.	70°	N.A.
Frame/ Fork/ construction	CroMo/CroMo/TIG	CroMo-Alum./CroMo/TIG	CroMo/CroMo/TIG
Seat frame/ material	Fiberglass/ foam, pad, lumbar	Graphite/ mesh, foam, lumbar	Graphite/ mesh, foam, lumbar
Derailleurs (ft./rr.)	Sachs 5000	Sachs	N.A.
Shifters	Sachs 21 spd.	Sachs	N.A.
Crankset	Sachs or similar	Sachs	Bullseye 36/48/56
Freewheel/ cassette	Sachs	N.A.	Sachs
Gear Inch Range	N.A.	N.A.	N.A.
Braked (fr. & rr.)	Odyssey	Boa	ACS (Boa type)
Rear Wheel/ hub/rim/ spokes	24 or 26"/Weinmann/SS/36°	24 or 26"/Weinmann/SS/36°	26" Sachs New Succ./ Wein./SS
Front Wheel/hub/rim/ spokes	16" Weinmann/SS/36°	16" Weinmann/SS/36°	16" Sachs New Succ./ Wein./SS
Bottom Bracket/Headset	Open freeball/steel 10 speed 1"	Open free ball/aluminum	Bullseye/Ritchey
Paint/ colors	Powdercoat	Powdercoat	Powdercoat
Rider Height and Adjustment	5'1"-6'6" sliding seat	5'1"-6'6" sliding seat	5'9"-6'6" sliding seat
Model designed for	High-performance/sport touring	High-performance/sport touring	High-Performance/sport touring
Suggested Retail Price	\$950	\$1800	\$2500 Custom order only

Variations: The World's only Ergonomic Bicycle! The first in 1982 and the best today in comfortable performance bicycles.

Options: Graphite seat shell, Moulton front wheel and Vista light pack.

New for 1996: For 1996, Turner Recumbents are all CroMo round-tube models. Framekits and parts are available.

Sold through: dealer & direct

Is bike pre-assembled/Bench tested prior to shipping: Yes

Warranty: One year

RCN Road Tests: Turner 2000 upcoming. T-Lite due for testing soon.

For more information, contact:

Turner Enterprises

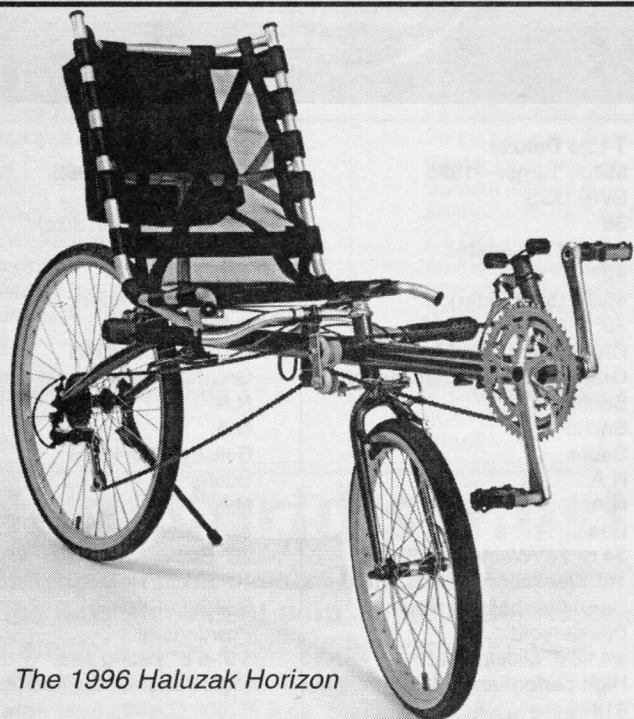
1350 E. Flamingo Rd.#73

Las Vegas, NV 89119

Ph#520-290-5646



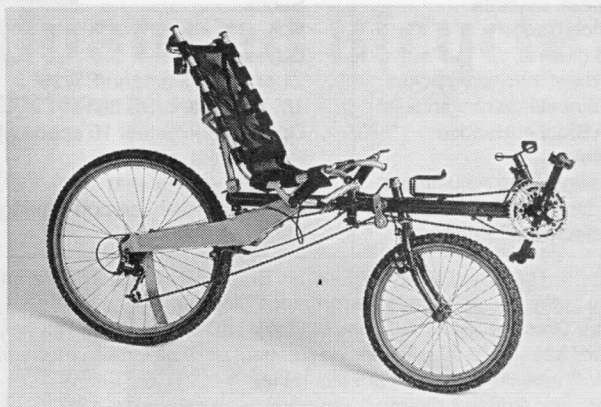
Danny Ray Burdick on his custom Zzipper equipped XL Ryan Vanguard, "Sasquatch"—photo courtesy of D. Burdick.



The 1996 Haluzak Horizon

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Seen & Noted

SMALL MANUFACTURERS OF '96

The recumbents in this category vary in type, style and availability. Some are new manufacturers just getting started, others are small manufacturers that have built prototypes or are in a limited production.

KEY Note: Construction: CroMo (frame)/CroMo (fork)/TIG (construction type).

Advanced American Bicycle Concepts

1408 Shamrock

Veradale, WA 99037

Ph#509-924-9480

Model: Advanta SRI

Designer: Ernie Buckler—1995

Type: MWB/CLWB USS

Wheelbase: 40"

Weight: #32

Construction: HiTen-CroMo/CroMo/TIG

Seat: Moulded base/tilt-back, 3-layer foam

Drivetrain: Sachs 3x7—21 spd.

Brakes: Sachs drum

Wheels: 26"/16" x 1.75"

Designed for: Touring/commuting

Warranty: Two years

Suggested Retail Price: \$1495

New for '96: production to start in 1996.

RCN Tests: This design has been around for years in limited production/framesets/kits. For 1996, it appears as though a production run will happen. We look forward to testing this model.

Alien Bike

(formerly Introspect Cycle)

1029 Amberwood Rd.

Sacramento, CA 95864

Ph#916-973-1945

Model: Meridian

Designer: BJ Strass—1995

Type: MWB ASS/USS

Wheelbase: 38"/40"/42"

Weight: est. #28

Construction: HiTen-CroMo//Braze-MIG

Seat: Sling/mesh, adjustable

Drivetrain: Sachs—21 spd. (3x7 optional)

Brakes: Dual pivot caliper (canti/drum option)

Wheels: 26"/16"

Designed for: Touring/commuting/recreational

Warranty: Five years

Suggested Retail Price: \$1100

New for '96: This bike is custom designed to and for the rider, custom touches and accessories. This is BJ Strass' company (formerly Introspect Cycle). The only other bike that BJ sells are new and custom BikeE's, used recumbents and special needs.

Backsafer

11400 North Kendall Drive, Ste. 100

Miami, FL 33176

Ph#305-668-3373/1-800-815-BACK

Model: Backcycle™

Designer: J. Kirk Crawford—1995

Type: SWB ASS (fold forward)

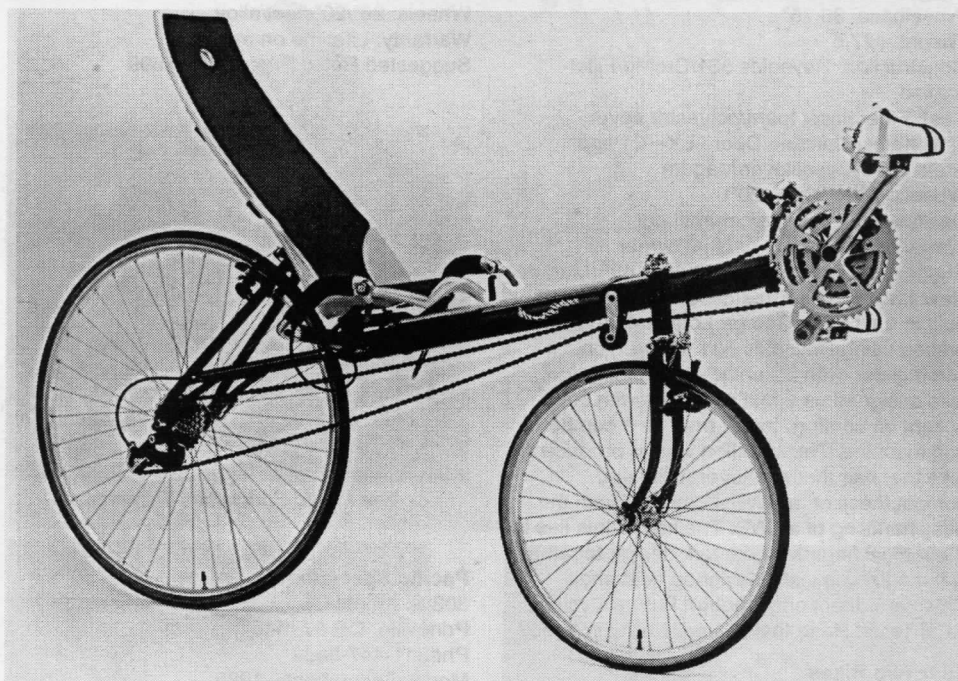
Wheelbase: 38"

Weight: #27

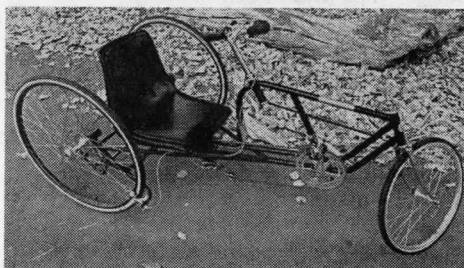
Construction: 1-3/8" .049 CroMo/CroMo/TIG

Seat: Fiberglass/canvas/foam insert

Drivetrain: Shimano Acera-X—14 spd.



The Streetglider—photo courtesy of FutureCycles



The Earth Traveler—E. Aldrich

Brakes: Pyramid side-pull
Wheels: 20" X 1-3/8"16" x 1-3/8"
Designed for: General/recreational

Paint: Powdercoat white

Warranty: Limited one year

Suggested Retail Price: \$1399

New for '96: Bicycles supplied with indoor stationary trainer.

RCN Tests: This new bike is already undergoing a redesign with a 1.75" .049 frame, thicker seat, upgraded seat adjuster and better components. Current models are available.

Earth Traveler

Paradise Creek Bicycles

511 S. Main St.

Moscow, ID 83843

Ph#208-882-0703

Model: Earth Traveler

Designer: Earl Aldrich—1974

Design: Trike (two wheels in back)

Wheelbase: 56"/Track: N.A.)

Weight: #45

Construction: CroMo/TIG

Seat: Turner fiberglass shell with pad

Drivetrain: Shimano Alivio/STX—21 spd.

Brakes: Arai drums (rear only)

Wheels: Rear: 27"/20" x 1-1/8

Suggested Retail Price: \$2995

RCN Tests: No test has been scheduled.



The Flying Dutchman—R. Van Dyke

Flying Dutchman Cycles

PO Box 458

Sharpes, FL 32959

Ph#407-632-6185

Model: Jr. Flyer

Designer: Rusin Van Dyke-1995

Design: SWB ASS Kids

Wheelbase: 33-34"

Weight: #30

Construction: HiTen-CroMo/HiTen/MIG/braze

Seat: Fiberglass/foam

Drivetrain: Wald/Pyramid one spd.

Brakes: Coaster

Wheels: 20" x 1.75"/16" x 1.75" Steel

Designed for: Kids

Warranty: One year

Suggested Retail Price: \$325 (\$199 frameset)

New for '96: new manufacturer/limited production for 1996

RCN Tests: No test scheduled.

Future Cycles

Friends Yard, London Road, Forrest Row

East Sussex RH18 5EE, England

Ph/Fax# +44 01342 822847

Model: Streetglider

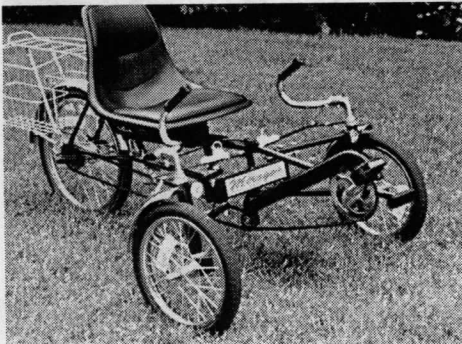
Design: SWB USS

Designer: Crowder/Frewing Associates—1994
 Seat Height: 26"
 Weight Distribution: 40/60 front
 Wheelbase: 36.75"
 Weight: #27.5
 Construction: Reynolds 531/CroMo/Fillet-brazed

Seat: Fiberglass/foam/polyester cover
 Drivetrain: Shimano Deore LX—21 spd.
 Brakes: STX cantilever/Magura
 Wheels: 700c/500A (20")
 Designed for: Touring/commuting
 Warranty: Lifetime to original owner
 Suggested Retail Price: £1399-£1495 (Magura)
New for '96: The Streetglider frame is hand built in the UK by George Longstaff and is brazed using Reynolds 531 tubing. The Streetglider, with its unique rear facing fork, was designed as a fast road bike with an accent on comfort, rather than as a competition machine. The intention was to produce a bike that had the maneuverability and compactness of a SWB, combined with the easy handling of a LWB. The key to this lies in the radical negative rake fork design together with an anatomically designed seat shell. Sales are direct only through Future Cycles. RCN Tests: Road test is a possibility in 1996?

Just Two Bikes

4821 Washington Ave.
 White Bear Lake, MN 55110
 Ph#612-426-1548
 Models: Side-by-side detachable tandem. See RCN#26.



The Leisure Time Trike

Leisure Time Products

PO Box 185
 Oak Creek, WI 53154
 Ph#1-800-725-7005
 Model: Leisure collapsible recumbent tricycle.

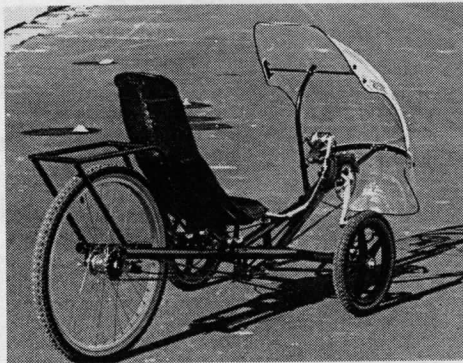
Lightning Cycle Inc.

Gene Lemle
 3819 Rt. 295
 Swanton, OH 43558
 Ph#419-826-4056
 Models: Custom built LWB; see RCN#26.

Maxam, Inc.

11236 Sebring Dr.
 Cincinnati, OH 45240
 Ph#513-648-0022
 Model: Reveille DL
 Designer: John & Chris Day—1994
 Design: LWB ASS
 Wheelbase: 64"
 Weight: #42/#35
 Construction: HiTen/MIG

Seat: Steel/Mesh
 Drivetrain: Falcon/Shimano Alivio—21 spd.
 Brakes: Falcon Cantilever
 Wheels: 26"/20" steel/alloy
 Warranty: Lifetime on frame
 Suggested Retail Price: \$499/\$699



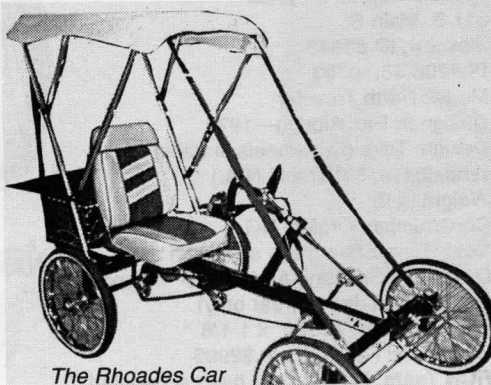
The Pacific Specialties Tricumbent

Pacific Specialties

303 S. Knight Ct.
 Prineville, OR 97754
 Ph#541-447-3452
 Model: Tricumbent—1995
 Design: Trike (two wheels in front)
 Wheelbase: 41"/Track width 30.5
 Weight: #53
 Construction: CroMo/TIG
 Seat: Turner fiberglass shell with pad
 Drivetrain: Sachs—7 spd. (284% range)
 Brakes: Coaster
 Wheels: Rear 26"/16" composite mag
 Warranty: N.A.
 Suggested Retail Price: \$1498
New for '96: The Tricumbent is an ideal machine for commuting, touring, senior citizens, disabled persons, industrial or as a golf caddy. The frame is built of heavy duty CroMo and has an integral rack. Options include: Zipper fairing, computer, 8 gallon storage container, headlight/taillight and golf bag holder.
 RCN Tests: We have requested a test trike but no test has been scheduled.

Quadracycle

6715 E. 500 South
 Hamilton, IN 46742
 Ph#219-488-2983
 Models: Four-wheel pedal-cars: 1,2,4 passenger and kids models.



The Rhoades Car



*Upper ReTrike—Harrison Evans.
 Lower: ReBike 707—ReBeike*

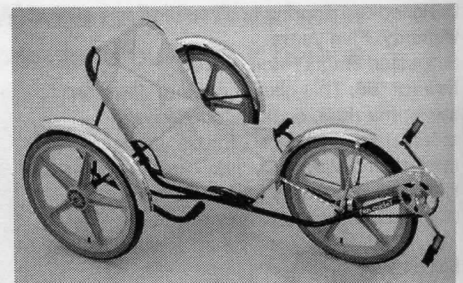


ReBike

103 NW 43rd St.
 Boca Raton, FL 33431
 Ph#407-750-1304
 Models: Cruiser recumbents from \$549. The 2600 is \$629 and ReTrikes start at \$700.
RCN Tests: ReBike did not respond to any of our info inquiries. We have a few copies of RCN#15 with ReBike test still available.

Rhoades National Corporation

100 Rhoades Lane
 Hendersonville, TN 37075
 Ph#615-822-2737
 Models: Rhoades Car four-wheel pedal cars (1, 2 and 4 passenger).



Trailmate

2359 Trailmate Dr.
 Sarasota, FL 34243
 Ph#1-800-777-1034
 Models: Joyrider, Funcycle, Banana Peel beach trikes

Varna Cycles

Site 54-13-RR2
 Gabriola Island, BC VOR 1X0

Ph#604-247-8379

Models: Recumbent trikes, CLWB cruiser,
hand-power, HPV racers.

Werner Advanced Bicycle Designs Inc.

PO Box 2006

Bridgeview, IL 60455

Ph#708-598-3978

Model: Calypso

Designer: Frank Werner—1995

Design: SWB ASS

Seat Height: 25"

Weight Distribution: 47/53 (front)

Wheelbase: 38"

Weight: #29

Construction: 4130 CroMo/CroMoTIG

Seat: Aluminum/Cordura mesh

Drivetrain: Sachs 6000/3x7—21 spd.

Brakes: Sachs drum/Odyssey Pitbull

Wheels: 700c/20"x 1.5"

Designed for: Touring/commuting

Warranty: Frame and fork one year

Suggested Retail Price \$1679

New for '96: New bike/ new manufacturer. □



Upper right: Werner Calypso

Center left: Varna CLWB, \$1500

Center right: Varna Senior trike, \$1500



The True Wheel Cycling & Fitness Shop

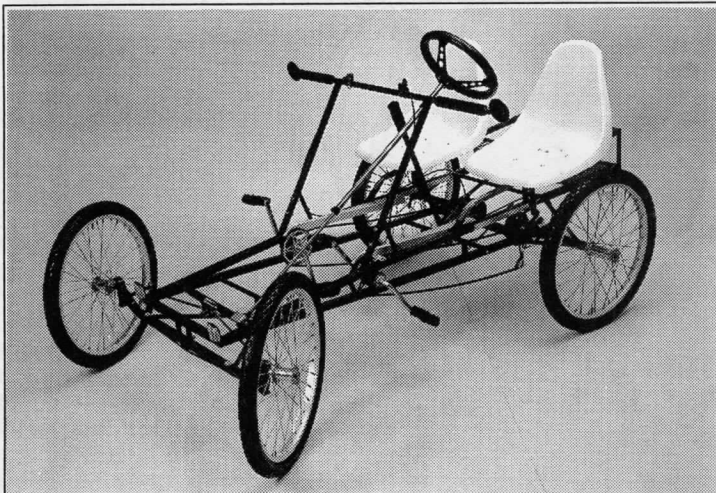


- **ATP Vision** • **Haluzak** • **Easy Racers** • **Rans** • **BikeE** •
- **Schwinn** • **Trek** • **Cruisers** • **Recumbent rentals** •

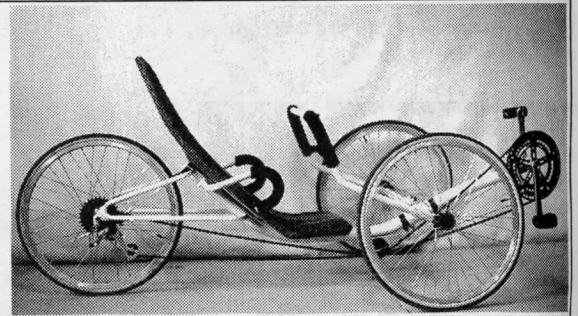
Come ride a recumbent while vacationing in Sun Valley, Idaho's beautiful Sawtooth Mountain area. We have a great bike trail for test rides and rentals.

Tel. 208-788-5433 • 800-607-7915

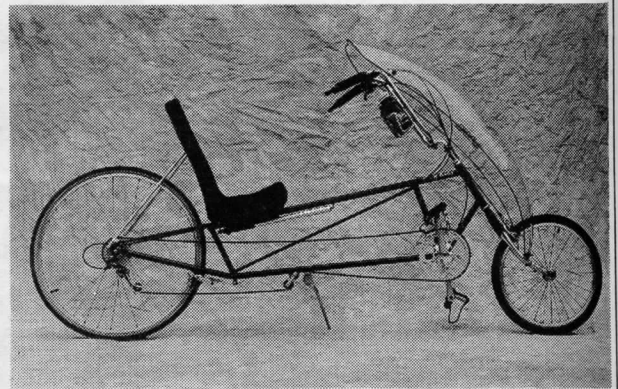
PO Box 1658 • 400 N. Main St. • Hailey, ID 83333



The Quadracycle pedal car



The Varna Sprite



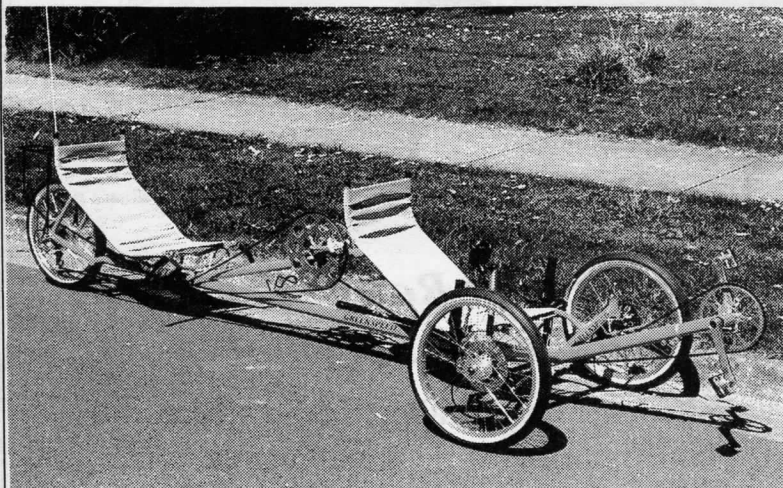
The Easy Racer Tour Easy



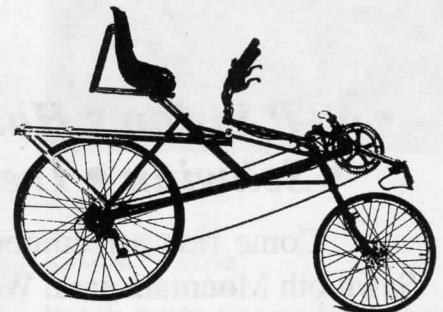
The BEVO FWD CLWB



The Maxam DL



The Greenspeed Tandem Trike



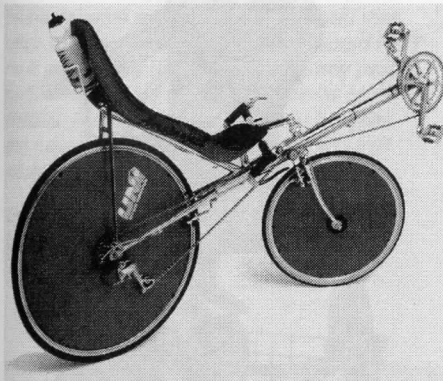
The AABC Advanta

European Recumbent Listings

We have included many foreign manufacturer listings this year. Some overseas builders are not interested in doing business in the USA and won't ship bikes stateside. The concern is product liability in the US market. For those of you interested in the world recumbent market, the bikes are expensive compared to similar US models. If you really must have one, consider a trip to the country where the bike is built.

AEROBIKES LTD.

Unit 13 Duddingstone Yards
Lasswade Road
Edinburgh, England EH15 3NT
Ph# +44 0131-657-5655
Products: Aerobike LWB/CLWB



HP VELOTECHNIK

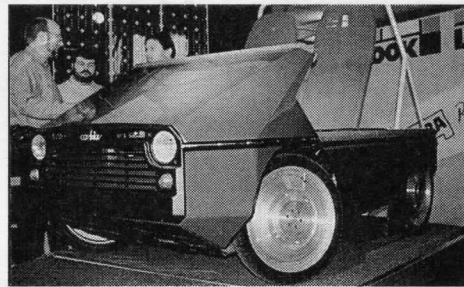
Rosserstr. 80
Kritel, Germany 65830
Ph/Fax# 0 61 92 02 18
Products: Streetmachine suspended SWB

BEVO BIKE

Voss Spezial-Rad GmbH
Tulpenweg 2
D-25524
Itzehoe-Edendorf, Germany
Ph# +49 4821 41409
Products: Bevo MWB/CLWB FWD

BJALBY RECUMBENTS

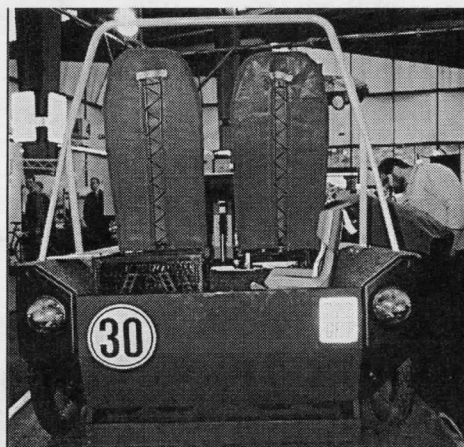
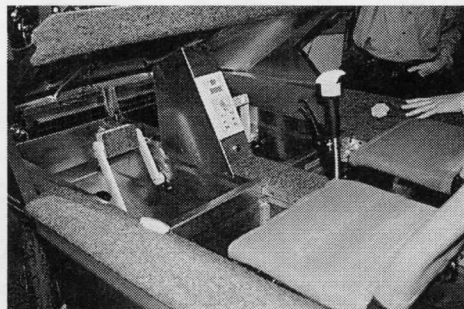
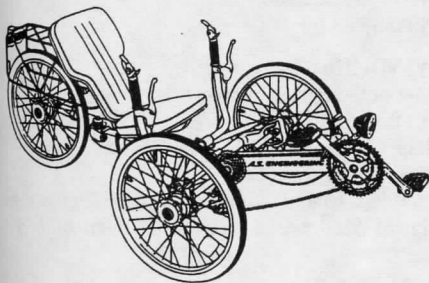
Stationsvej 10A
DK-3520
Farnum, Denmark
Ph# +45 42956005
Products: Easy & Tough suspended SWB



Car Bike #1-#3—Oliver Zechlin, Germany

AEROPROJECT

Hartig-Rahmenbau für Liegeräder
Richard Zanders-Str.48
D-51469 Bergisch Gladbach, Germany
Ph# 0 22 02
Products: Hand-built SWB recumbents, standard, citybike, sport and Low Racer models.



CARBIKE LEICHTFAHRZEUGE

Röntgenstraße 25
D-88131 Lindau, Germany
Ph# 08382
Products: High-tech pedal-car

A.S. ENGINEERING

AKAD Anokhin Str.12-363
Moscow 117602, Russia
Fax# 7 095 430 3897
Products: The S-325, a suspended FWD trike designed by aircraft engineers. Made of titanium and aluminum. This trike comes equipped with hydraulic brakes, adjustable seat, rear suspension. Frame-sets and complete trikes available.

CRYSTAL ENGINEERING

See photo listing.
Products: Trice trike, Ross SWB and Festina.

CHALLENGE LIGFIETSEN

Anklaarseweg 35-37
7316 MB Apeldoorn
Netherlands
Ph# 055 212405
Products: SWB Recumbents, company motto, "It's a Challenge."

EXTREME ENGINEERING

22 Oak St.
Southport
Merseyside PR8 6DD, England
Ph# +44 1704 543916
(People Movers in the USA 714-633-3663)
Products: Rubicon stainless steel recumbent trike (People Movers/USA)

FATEBA FAHRRADTECHNIK

ROSENSTR.11
8400 Winterthur, Switzerland
Ph# +41 52 212 6911
Products: Fateba LWB USS

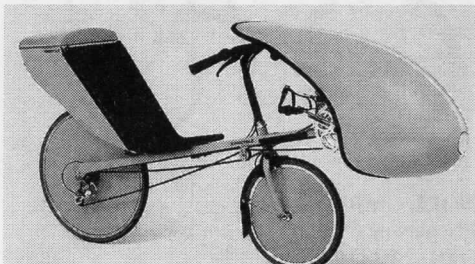
FLEVOBIKE

De Morinel 55
8251 HT Dronten
Netherlands
Ph# 03210 12027
Products: Flevo FWD single and trike.



FLUX FAHRRADER GMBH

Kreuzbreit strasse 8
82194 Grobenzell, Germany
Ph# 08142 -53180
Products: A full line of MWB, sport and low-racer recumbents.



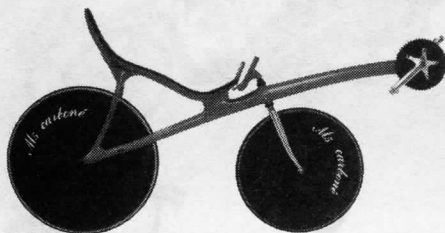
KINGCYCLE

EDS Portaprompt
Lane End Road, Sands

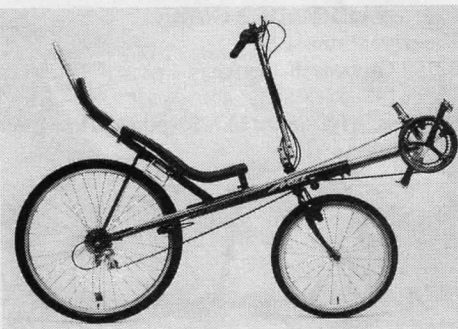
High Wycombe, Bucks
 HP12 4JQ England
 Ph#+44 0494 524004
 Products: Kingcycle SWB, K3 trike and Wasp
 FWD Low Racer. US distributor is Linear Mfg.



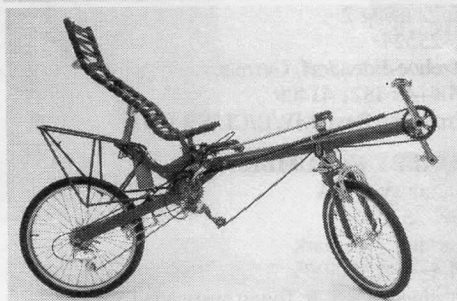
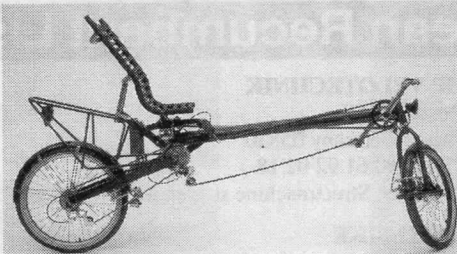
LEITRA
 Box 64, DK-2750
 Ballerup, Denmark
 Ph#+45 42183377
 Products: Leitra fully enclosed tricycle.



M5 RECUMBENTS
 Lightning Cycle Dynamics
 Products: M5 low-racer with ultra-laid back seat,
 monoblade fork and suitable for USCF time trials
 for riders shorter than 5'8". Framesets \$1500, com-
 plete bike \$2500.



NOLL GmbH
 Fischerweg 6
 36041 FULDA Germany
 Ph#0661 54836
 Products: SL3 & SL4 SWB and LL4 LWB



OSTRADER FAHRRADER GmbH
 Winsstrabe 48
 10405 Berlin, Germany
 Ph#+44 141 3391179
 Products: Full suspension SWB/LWB bikes.

PICHLERAD
 Herstellung and Vertrieb
 SteinstraBe 23
 76133 Karlsruhe, Germany
 Ph#07 21/37 61 66
 Products: LWB USS

RADIUS
 Fertigung-Vertrieb
 Borkstr.20
 48163 Munster
 Ph#02 51
 Products: Several SWB models.

RETEC
 Handels GmbH
 Eichenrain 28
 98574 Schmalkalden
 Products: FWD Trike.

ROADRUNNER LIEGERADER
 Busdorfer Strabe 20
 50259 Pulheim, Germany
 Ph#+49 022 38
 Products: CC Modulflex SWB USS/CC Gimmick
 SWB USS



SLIPSTREAM CYCLES LTD.
 PO Box 204
 Rackheath, Norwich NR13 6ES
 Ph#+44 1603 721967
 Fax#+44 1603 721112
 PRODUCTS: Demon trike.

SWINGCYCLE DELFT
 Hoornsestraat 29
 2613 PC Delft Holland
 Ph#015 123 681
 PRODUCTS: Chinkara FWD articulated bike



SHORTBIKE GmbH
 Eichenrain 28
 98574 Schmalkalden
 Ph#0 36 83 69 04-0

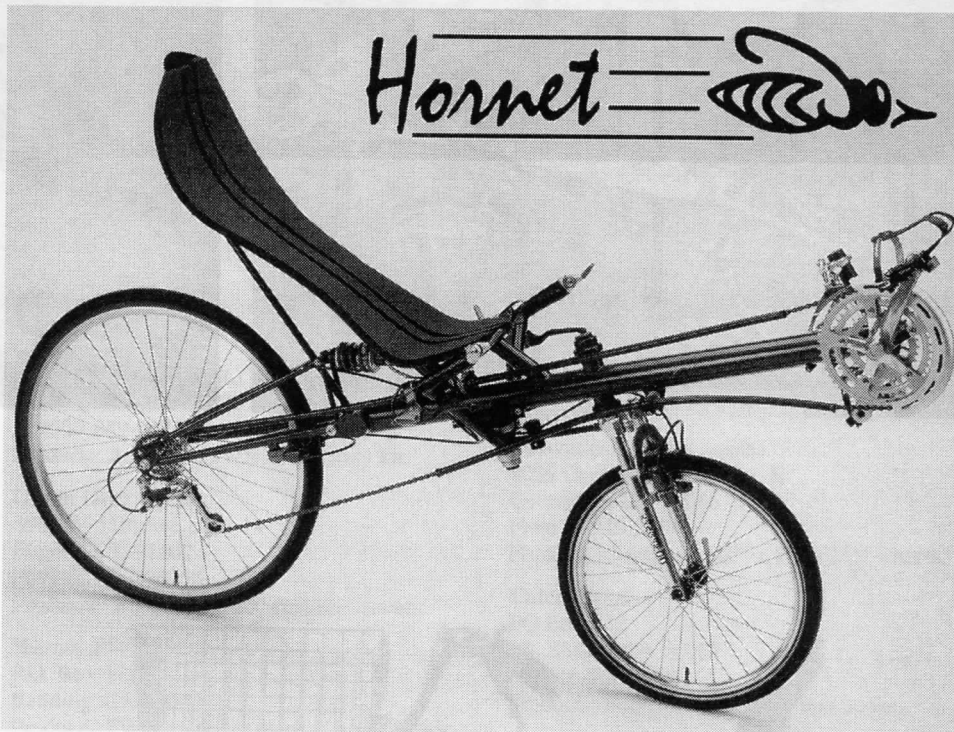
WINDCHEETAH
 Seat of the Pants Company
 PO Box 5
 Sale, Cheshire, MK 33 4AP, England
 Ph#+44 161 976 5662
 Products: Manufacturer of the Mike Burrows de-
 signed Windcheetah trike/no US distributor. □

EURO-NOTEBOOK: Last September two bicycle shows took place in Germany. Eurobike in Friedrichshafen, and InterCycle in Cologne.

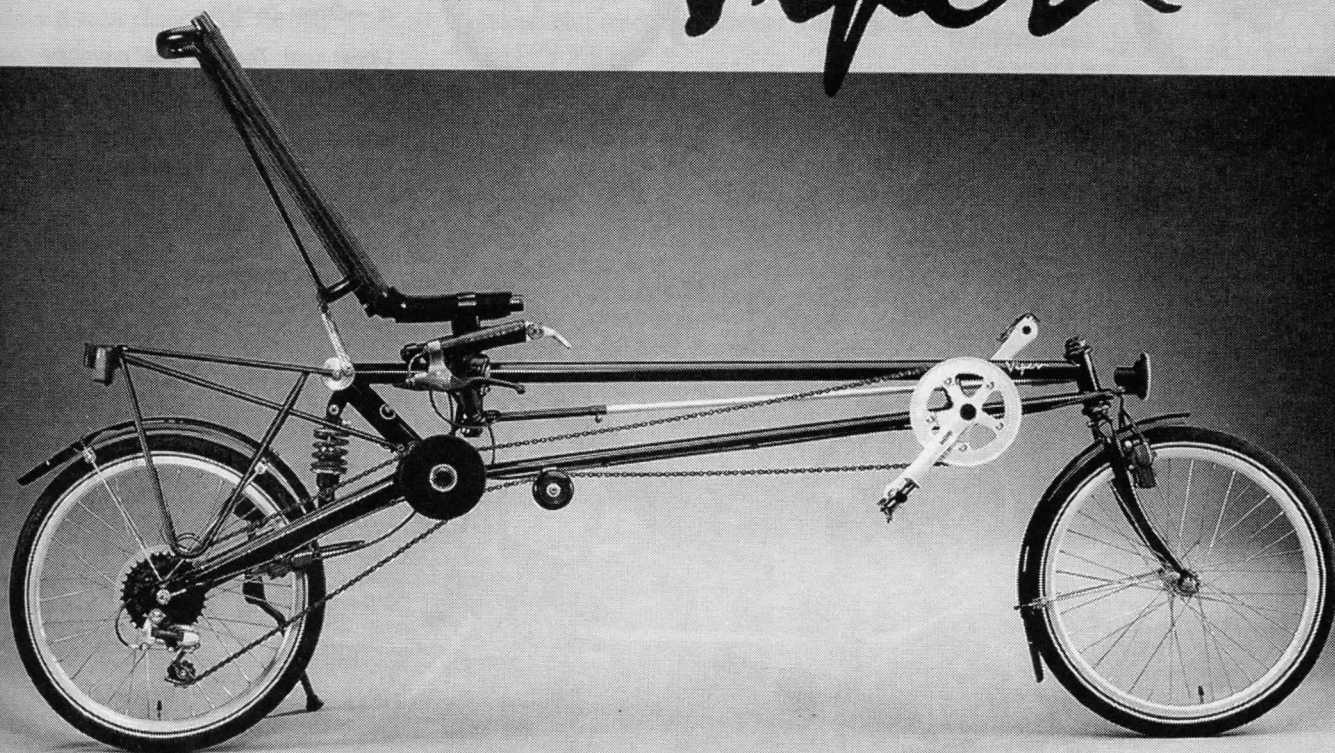
We were able to test-ride the new Shimano Nexus (7 internal gears/roller brake) equipped bikes. Shimano had many models mounted to rollers to try. I inquired about a recumbent and was told that they indeed had a recumbent, but unfortunately it was the most popular of the bunch and broke down. It was an Italian make by the way. A big hoot for InterCycle fair-goers was the HPV-test-track where everybody could try out lots of different recumbents and trikes.

RADIUS: the PEER GYNT is no longer produced, instead they have the VIPER, a short LWB with 20"/20" wheels. One of the founders gave a little speech. He said that after 13 years in the business he would NOT do it again, they still do not make any profits, he has its income from work outside of Radius. Furthermore he said that he sees the future (of Radius) in the medium LWB sector—Oliver Zechlin.

Upper right: Radius Hornet
Lower: Radius Viper



Viper



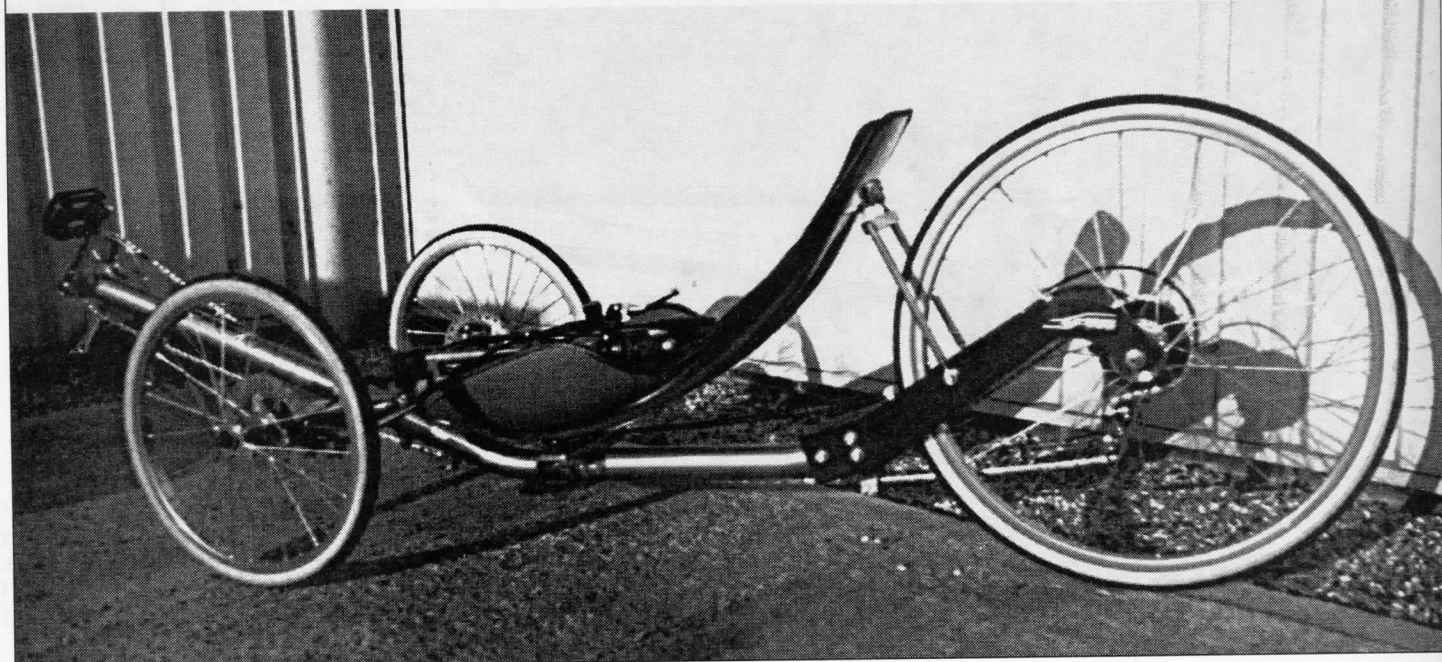
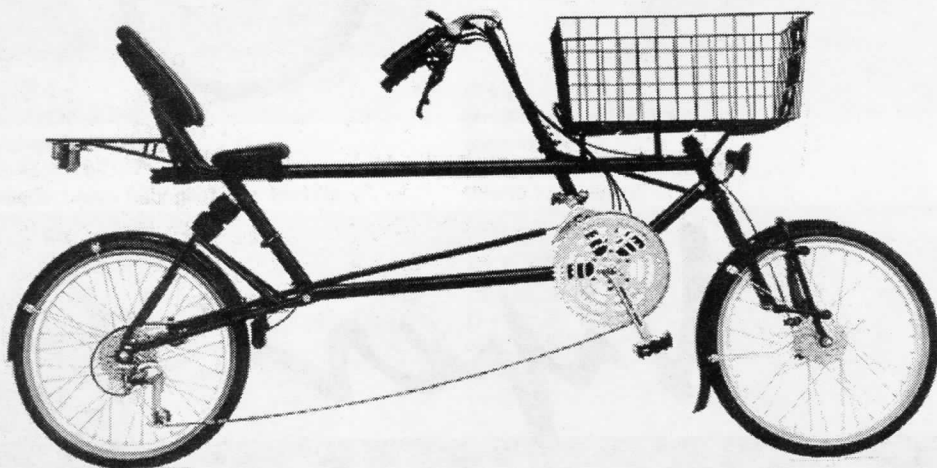


EURO NOTEBOOK: The idea behind the Street Machine was to combine the comfort of a LWB with the speed of a SWB. Born was the Street Machine, a fully suspended SWB with a relatively upright seat angle. For extended touring the Street Machine can be outfitted with under-seat mounted low-rider racks.

New for 96 is the ASS option. You can purchase the Street Machine either as frame-kit, or have the choice between two complete models. HP Velotechnik said that they would ship to the US, but three bikes are minimum.

The GO-ONE was displayed at Intercycle The maker of this fully enclosed trike is not an engineer but a designer. As of show time, he had not found a manufacturer for it. —Oliver Zechlin

Upper right: The "Go One" prototype.
Upper left: The Street Machine.
Lower: The Slipstream "Demon."
Center left: The deluxe Radnabel CLWB.



Recumbent Parts and Supplies

The companies listed below are parts, plans and kit suppliers. Most manufacturers will sell parts for bikes they build. For recumbent dealer info, contact manufacturers directly.

Aircraft Spruce & Specialty

201 W. Truslow Ave.
Fullerton, CA 92632
Ph#714-870-7551
Products: Homebuilder aircraft parts. Catalog \$5.

Aerospoke

1200 Holden St.
Milford, MI 48381
Ph#810-685-9009
Products: Aerospoke composite wheels for recumbents in 700c, 26" and 20" x 1-1/8".

Alien Bike (formerly Introspect Cycle)

1029 Amberwood Rd.
Sacramento, CA 95864
Ph#916-973-1945
Products: BikeE dealer, Meridian Mfr., used recumbents and special needs.

AngleTech

See manufacturer listing
Ph#719-687-7475 or 1-800-793-3038
Products: Recumbent dealer, custom-spec bikes, fairings, special needs, parts & specialty.

Belik Bicycle

See Manufacturer listing
Products: Parts kits and bikes

Bike Car Corporation

PO Box 72
Ocala, FL 32678-0072
Products: Bikecar plans. SASE for info.

B.O.B. Trailers

3641 Sacramento Dr. #3
San Luis Obispo, CA 93401
Ph#805-541-2554
Products: BOB one-wheeled cargo trailer.

Cambie Cycles

3317 Cambie St.
Vancouver, BC, Canada
Ph#604-874-3616
Products: Dealer builds custom LWB recumbents.

Cyclopeda

PO Box 884
Adrian, MI 49221
Products: HPV/ recumbent parts specialty.
EconBent MWB building plans.

Eugene Bicycle Works

455 W. 1st. Ave.
Eugene, OR 97401
Ph#503-683-3397
Product: Rentals, fabrication and classes.

Flying Canvas Products/Allen Johnson

15221 Transistor Lane
Huntington Beach, CA 92649
Ph#714-891-6842
Products: The Bike Flyer custom makes cordura nylon bicycle travel bags.

Fools Crow Cycle

1046 Commercial Dr.
Tallahassee, FL 32310
Ph#904-224-4767/904-877-6628
Products: Recumbent dealer, parts and service.

Gaerlan, Inc.

838 Grant Ave., Ste. 410
San Francisco, CA 94108
Ph#415-362-3866
Products: Homebuilder parts

Glas Tec

3417 East Michigan St.
Tucson, AZ 85714-2025
Ph#520-889-0181
Products: Aerolopet SWB body/ body kit.

Green Gear Cycle

4065 W. 11th Ave., Ste. 14
Eugene, OR 97402
Ph#1-800-777-0258
Products: Bike Friday/20" custom fenders.

Harper FWD Plans

P.O. Box 491871
Redding, CA 96049
Products: FWD building plans. SASE for info.

Loose Screws

12225 Hwy 66
Ashland, OR 97520
Products: Bicycle small parts.

Mt. Airy Bicycle

4540 Old National Pike
Mt. Airy, MD 21771
Ph#301-831-5151
Products: Full service recumbent and bicycle dealer, parts and service.

North East Recumbent

621 Bloomfield Ave., Ste. 33
Verona, NJ 07044
Ph#201-239-8968
Products: Recumbent dealer, parts and service.

Open Road USA

PO Box 291010
Los Angeles, CA 90029
Ph#213-468-1080
Products: BCQ and EnCycleopedia US dist.

People Movers Recumbent Bicycles

980 N. Main St.
Orange, CA. 92667
Ph#714-633-3663
Products: Recumbent dealer, parts and svc.

Prairie Design—HPV Supply

Rt 2, Pretty Prairie, KS 67570
Ph#316-459-6237
Products: Recumbent parts supply.

Rans Recumbents

See manufacturer listing
Products: BOB trailer distributor.

RCI Consultants/Robert J. Bryant

PO Box 58755
Renton, WA 98058-1755

Phone#206-630-7200 Fax#206-631-5728
Services: Recumbent industry consulting, specialized reports & phone consultation.

Rebel Cycle Plans/Tony Woodroffe

Aardmore Airfield
Papakura, New Zealand
Product: SWB plans. Info \$2.

Recumbent Sea

1225 Rosewood St. PO Box 285
Moline, MI 49335
Ph#616-877-2050/ 1-800-354-6916 (order)
PRODUCT: Recumbent dealer, parts and service.

Spin Wheels

Innovations in Composites
4059 Oceanside Blvd. Ste. E
Oceanside, CA 92056
Ph#619-945-2086
Products: Composite 20" x 1.5 BMX wheels.

Third Hand

PO Box 212
Mt. Shasta, CA 96067
Ph#916-926-2600
Products: Bicycle repair, tools and books.

T.D. Traylor

22407 Warmside Ave.
Torrance, CA 90605
Products: FWD building plans. SASE for info.

The Bike Doctor

525 E. Spruce Street
Missoula, MT 59802
Ph#406-721-5357
Products: High-quality touring wheelsets.

Treklite/Joseph Huberman

904 Dorothea Ave.
Raleigh, NC 27603
Ph#919-828-6068
Products: Treklite bags, fairings and accessories

The True Wheel

PO Box 1658
Hailey, ID 83333
PH#208-788-5433/1-800-607-7915 (order)
Products: Recumbent dealer, parts and service.

Wicks Aircraft Supply

PO Box 129
Highland, IL 62249
Products: Steel, aluminum and homebuilder aircraft parts. Catalog \$5 postpaid USA.

Zach Kaplan Cycles

235 Pacific Way, Box 214
Muir Beach, CA 94965
Ph#415-381-5723
Products: Recumbent dealer, parts, service, custom fabrication, and HPV race-specialty.

Zzip Design

P.O. Box 14
Davenport, CA 95017
Ph#408-425-8650 Fax#408-425-1167
Products: Fairings & mounting kits most all recumbents & experimenters. Send \$2/brochure.

Recumbent Accessory Guide

AERO WHEELS—Aerospokes are the unofficial-recumbent-rider's composite wheel. They are now offered as factory options by Easy Racers, Infinity and others. Aerospokes have been certified by the Department of Transportation (D.O.T.). The only reason not to use Aerospokes is if you need a size they don't make. Check HED for 17" or 24" (available from AngleTech) and SPIN for 700c, 650, 25" and 20" x 1.5/1.75" (available from Ryan/People Movers).

AERO WHEEL DISCS—UNI discs are still available for those who like to be punished (removal for inflation is a real pain). The Lightning wheel covers have a great look and little doors that allow you to fill the tires up without removal. Lighting Wheel Discs will look great on your V-Rex or Easy Racer.

BELLS—RCN Crew members BJ Strass and Ron Schmid like to see who has the loudest air-horn. These are obnoxiously loud and probably quite effective for use in heavy traffic in metro areas. If you need a basic bell for bike trail use, we like the Specialized Dirt Ringer.

BRAKES—You won't believe what a good set of brakes or a brake handle/pad upgrade will do for you. AngleTech and CycloPedia list brake upgrades. Hydraulics are a popular upgrade, we like the Magura exclusively. Disc brakes are too high tech for us. For calipers, check out the Dia Compe Big Dog which is the best BMX side-pull (Bull Dog's and Pit-Bull's are also acceptable), Dia Compe GX series of sidepull (Rans & Lightning) both have the pull on the correct side of the SWB boom. If you can make them work, Shimano 105SC and Ultegra dual pivot side-pulls are tops on our list, although they require skinny tires and the pull is on the wrong side for a SWB boom (some riders have put them on the back side of the fork). Don't ask us about cantilevers, cause we don't like 'em, although the new "V" brake is making a splash in the media. Upgraded brake pads on caliper brakes are important. Look for Aztec, Kool Stop or Scott Super brake pads. Good brake handles and cables can improve your braking as well.

BAR-ENDS—Do you want your USS recumbent to feel like a jet-fighter plane cockpit? Add a set of side-stick bar ends with controls to your bike, you won't believe the difference. Besides offering a more confident "in-control" feel, these bring the controls much closer to your body. Some riders have to reach too far for comfort for stock USS. Bar-ends for this purpose can be purchased from Haluzak, Ryan and CycloPedia.

CABLE HOUSING—High quality cable housing is a must for often long or creatively routed recumbent cables. We tested the Ride-On housing on the Greenspeed trike and it works great. Whatever you do, use high quality proper housing for your brakes and shifters. Cheapie Tip: spray Tri-Flo into your lined housing frequently. This makes for very smooth operating brakes and shifters, but requires a very clean system.

COMPUTER MOUNTS—The best computer/light mount we've seen is by Bill Haluzak. It fits on top of the front derailleur tube of SWB/MWB recumbents. Infinity also makes a com-

puter mount that zip-ties onto the frame. Fairing frames on USS recumbents are handy to mount a computer and accessories as well.

CHAINS—If you don't have a Sachs chain on your bike, get one the next time you replace it. Sachs chain is the best chain we've ever used, whether it be the basic-brown, ATB, silver or otherwise. Most riders should notice a difference.

CHAIN GUARDS—The best one we've seen is the BikeE. It sells for \$10.99 and is approx. 22" long. It is made of black plastic tubing that your chain runs through and velcro's to the frame. See the build it yourself chainguard in this issue.

CLOTHES—Need some 'bent clothes. Check out Alloy Mouse' article in RCN#28. The Mouse has checked every source for custom bike shorts. We found a few others. Lightning offers jerseys and shorts, but we haven't seen them. Believe it or not, RCN reader Clyde James found some cool loose baggies perfect for the casual benthist at his local southern Cal Target store. Also, non-lined bike shorts can be found at these store.

CRANKSET UPGRADES—There's lots of whiz-bang here. I still have an old cold forged Suntour XC Pro on my bike and a Ritchey and Campy triple sitting around just waiting for a new bike. That sums up my favorite crank list. Ultra-technoids will like the CNC whiz-bang, however, the question remains, is CNC (cost no concern) machined aluminum billet better than cold-forged tried and true....I don't think so.

DERAILLEURS—For the front: If you can dig up an old Suntour Mtn. Tech or similar derailleur that pulls from the outside-in these are best. Otherwise, most front derailleurs work well. Be careful of using derailleurs designed for microdrive systems with full size chainrings (not recommended). There are full size road triple derailleurs made by Shimano that would be the best choice (RSX & 105). For the rear, we prefer the LX or XT/XTR prices are ridiculous, but they work well. Shimano will interchange into a Sachs drivetrain with no problems. We had a Sachs 5000 wrap up around the freewheel on our Greenspeed trike. It was replaced with a Deore LX that worked much better. We are excited to try the new Sachs Quartz MTB and Twist shifters. CNC American-made derailleurs are cool, if you want to frame them and put them in your shop or office.

FAIRINGS—There is only one name when it comes to fairings and that is Zzip Design. They manufacture lexan fairings of different sizes, thicknesses and mounting procedures as well as experimenter kits. Your best bet is to discuss fairing availability with the manufacturer or dealer of the bike you intend to buy. Zzip has models for almost every recumbent including new models for trikes and the Haluzak Horizon.

Lower cost cloth handlebar fairings are available from Rans and are standard on the Nimbus and Stratus models. A special order model has a lexan windscreen. The ATP Zzipper is available for Vision recumbents and mounts to the front derailleur tube with a custom stem mount. We have seen a new wind-screen fairing from Belik. Steve Delaire builds a rear cargo/trunk aero tail fairing that works on Rotator models as well as some

MWB bikes. There is a matching fiberglass front fairing as well. AngleTech builds Root's-In-The-Sky nose cones designed for the Counterpoint Presto as well as the Darlex body stockings. Lightning builds fiberglass nose cones for the F-40, as well as offering P-38 Zzipper. Zzip sells a super Zzipper for the P-38. Karl Abbe (Zzip) reports that Tim Brummer will sell the small Lightning Zzipper for use on the the Rans Rocket, V-Rex and Haluzak (ASS). Treklite offers (see RCN#31) fairings and bags for SWB recumbents. Glas-Tec is a company in Tucson, AZ, that produces a SWB full body for the Turner SWB up to 38"+/-WB (see RCN#31). Late note: We were told that the Glas-Tec body will fit most SWB/MWB recumbents and they have some simple measurements to see if the body will fit your bike.

HANDLEBARS—Stock bars are usually the best. For USS bikes, adding bar-ends is usually a good idea. For ASS LWB bikes, bars sometimes intermix. We've heard of Easy Racer and Rans bars intermixing. We would guess that Rans "D" bars or Easy Racer EZ-1 bars could be used for ASS on Infinity's and Linears. Tour Easy bars are the narrow and stiff. EZ-1 bars are wide and ergonomic with a more relaxed wrist position, Rans "C" are the closed loop (tiller) bars, "B" are the open bars that are the widest and good for broad shouldered riders, the "D" bars are open, longer and a bit narrower than the "B" bars.

HEADSETS—Don't skimp here, if you want a really good headset, remember the name Chris King. You should be able to feel the difference. Keep a watchful eye on your headset.

HUBS—Shimano road and MTB are the best of the mid-range hubs. I don't like to see Taiwanese "Sovos" hubs or mixed combos of outdated stuff on expensive recumbents. In the high end Phil Wood, Campagnolo and the new Chris King are preferred. If you are looking at XT/XTR, upgrade to Phil or Chris King instead. By the way, our friends at Aerospoke supply the parts for the Phil Wood cassette hubs. I don't like the whiz-bang stuff until it has a reputation for durability.

LIGHTS—If you use lights, better discuss this with your dealer or manufacturer prior to ordering your bike. The best mount we've seen is the one made by Haluzak for SWB models and some monotube LWB recumbents. With other LWB bikes, your lights will mount to your ASS, however, you must be a bit creative when you direct your lights through a fairing. For specific light brands, we suggest you see your recumbent dealer/specialist.

LOCKS—If you ride an expensive bike, get a Kryptonite lock, simply the best. And I want to see all you riders with 20 pound bikes carrying one of these heavy locks around with you.

MIRRORS—We've seen optional mirrors from Lightning, AngleTech and others. If you ride a 'bent, you need a mirror, plain and simple.

PANNIERS—The coolest on the road are the Lightning aero-panniers. I've heard they even give you a performance boost!? AngleTech, Rotator and Greenspeed also have panniers available.

PEDALS—Most recumbents these days come with crappy pedals, this is because most

Fenders and Chainguards

FITTING FENDERS TO YOUR 'BENT

by Robert J. Bryant

A commonly asked question amongst recumbent riders who want to ride in the rain is "where do you get recumbent mixed fender sets?" Well, your first move should be to call the dealer where you bought your bike. If that fails, try the manufacturer directly. If you have no luck, try one of our ideas below.

IDEA#1: Call AngleTech and order a custom made set of Esge fenders that come in mixed sets. These 55mm fenders are manufactured to fit the Counterpoint Opus Tandem and Presto recumbent. The kit requires you to drill holes, place & rivet fittings. These come in silver/ black.

IDEA#2: Call Easy Racers and order one of their beautiful 20" x 1.5 (406mm) or 1-1/8" (451mm) fenders. These are hand-fabricated of carbon-fiber and are the finest fenders we've seen.

IDEA#3: Lightning Cycle Dynamics sells mixed set of fenders in the 700c/16" or 17" size.

IDEA#4: Green Gear Cycle, makers of Bike Friday, sell custom 20" fenders.

IDEA#5: Steel Fenders: The easiest most affordable way to go with inexpensive chrome-steel fenders made for cruisers and tourist bikes. These come in 16"/20"/24"/26" sizes.

IDEA#6: Another off the shelf solution is to buy a standard set of road or MTB fenders in the size of your rear wheel. For the rear, use a stock fender. For the front wheel, use a Weinmann (alloy) or Wald (steel) one-size-fits-all front "shorty" fender. You can then fabricate and rivet a splash guard from an old tire tube. These fenders also can be found in many bike shops or from CycloPedia and will work for 20" front wheels.

IDEA#7: How to Bake Fenders. Go down to your local bike shop and purchase some Esge or similar square section or clip-on MTB fenders in the 26" or 700c size. Use the rear fender stock. On the front we do a "heat & bend" trick. To start, take your front wheel with tire in place and your new fender into the kitchen. Turn the stove element to medium/high heat. Be sure that you hold

the fender 6-12" above the heat. To make the ever so slight bends, hold the fender in the bent position and let the heat slowly mold the bend. Try to bend it every 3" or so. **CAUTION:** never let the plastic fenders get melt-hot or they will stretch and ripple. You do this until the fender is bent to fit your 20" front wheel. You may need to put more of a bend in the midpoint. Be very careful, relax, take your time.

Depending on the brand of recumbent you own, you may need to shorten the front fender by cutting 2-4" off the bottom. A good set of garden pruning shears works beautifully. The Esge square fenders are easier to cut than the round ones. You also need to shorten the fender struts. This takes some muscle and a sharp set of wire cutters or a similar tool. If you are willing to take the risk, this can be the most affordable way to get a set of fenders.

Before you turn the heat on, realize this is not a fool-proof method. In my dozen or so fender surgeries, I've managed to ruin two or three front fenders. Once I had a customer complain that his fender cracked in half, but he was a really high mileage rider who frequented dirt roads. □

TUBULAR CHAIN GUARD

by BJ Strass

By the end of the riding season my calves tend to be quite large and occasionally touch the chain, especially when on the big chainring. After tiring of the greasy black goo on my leg, I finally made a simple, light, and inexpensive chain guard. The chain guard is small, simple and adds almost no weight.

At a hardware or lawn and garden store acquire a 2-3 foot piece of 1/2" dia. underground lawn sprinkler hose (the stiff, black kind) and a 3' piece of 1/2" wooden dowel. The hose comes in a large roll and thus will have a slight curve. Calculate the length needed by measuring the distance from the bottom of the front derailleur cage to the chain idler pulley. Take this measurement, reduce by 2", and cut the tube to this size. Now take the

dowel and cut to the right length so as to hang on the oven rack holders on the inside of your oven. Preheat the oven to 200-250 degrees. Take the tube and force over the dowel, a fairly tight fit. Hang this in the oven for 5-15 minutes. Individual oven temperatures vary so time and heat may have to be increased or decreased. Experiment a bit but don't melt the hose in the oven. The hose will become soft and straighten itself to the dowel. When it becomes straight, run cool water over it to "set" the shape. Next remove the dowel and heat the tube ends in a pan of boiling water. While hot, slightly flair each end with a rounded object—I use a boxed-end wrench.

Now "break" or separate the upper run of the chain using a chain tool, slip the tube over, and rejoin the chain. The tube is now installed but we need to make it stay within a certain limited range of motion and ride freely on the chain, yet allow for shifting movement. Hold the tube 1" from the bottom of the derailleur and make a mark on the tube aligned with the bottom of the head tube. Around the bottom of the head tube place a zip tie just above the headset cup. It needs just enough slack to slip the end of a zip tie through it. Slip a second zip tie into the first and close it without tightening, tighten the first zip tie snug against the head tube. Place a third zip tie around the chain tube at the alignment mark and through the second zip tie thus making a chain of sorts. Tighten this tie until snug on the chain tube. This tie should be tight enough to just be slipped forcefully by hand. Now check to see how far forward the tube will move by the chains movement. Tighten the second zip tie until the tube will not touch the derailleur but not so tight as it will hamper shifting of the chain. The chain guard is now complete. I have used one of these for many miles with no problems as long as it is adjusted correctly. The tube is unobtrusive, as it usually comes in black, and makes only a small amount of noise when climbing or accelerating hard. I have yet to clog one with crud or wear one out. Ride and Relax.....BJ □

ACCESSORY CONTINUED

enthusiasts go to clipless pedals, which is a great idea for any low-LWB or SWB rider (it takes effort to hold your feet outward). Low BB CLWB models are good candidates for some simple platform MTB or BMX pedals. Toss the plastic pedals in the junk bin.

PEDALS II—Lightning offers heel slings. We thought they were cool until my co-tester fell over when the heel of her shoe got caught in the wire sling. AngleTech sells the PowerGrip diagonal foot retention system. Many riders like these, however, I'm not a fan. Clipless pedals should be looked at as a safety device for low LWB, SWB or MWB models.

PEDALS III—The RCN favorite is still SPuD's, although two RCN crewbies have gone to the wider LOOK Moab for a wider platform and there is one holdout who uses Speedplays which seems to be the high-performance choice.

RACKS—Blackburn MTN racks are the best for most uses. If you need a custom rack, contact Bruce Gordon (custom upright builder).

SEAT/HANDLEBAR BAGS—Custom made seat bags by Haluzak, AngleTech/Rans and ATP. Lightning and BikeE offer handlebar bags.

SHIFTERS—Order some Shimano Ultegra Bar-ends or Deore thumbshifters before they are extinct. Ultegra's are the best shifters made and are optional from Haluzak and Greenspeed. If you like to do the "twist", you can't go wrong with Grip Shift. For most applications, SRT 400 are good (don't go any lower though), SRT600 is better. SRT800 X-Ray are the best.

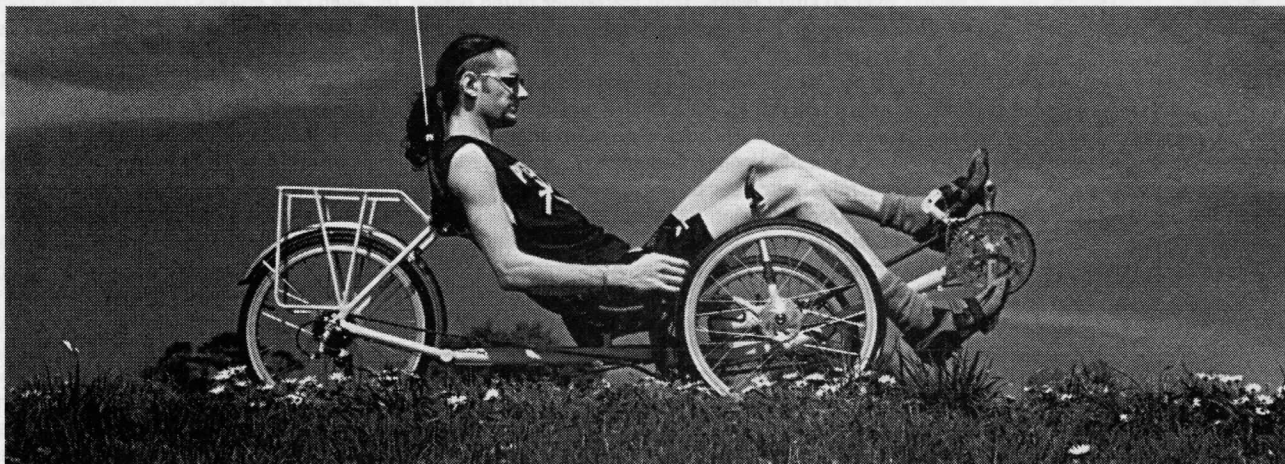
STANDS—Belik Bicycle offers Vertical and Horizontal bike stands based on the same aluminum extrusion used for the complete line of Belik Bicycles. The Horizontal stand holds up to four bicycles, two high, two on each side. The Vertical stand stores a single LWB recumbent vertically

(max. length 76" from fork stem to rear wheel).

STATIONARY TRAINER—We like the Quick Stand C-Force Trainer from AngleTech. This is a high quality unit that will accept variable rear wheel sizes. This unique stand also doubles as the best work stand for your recumbent. You take your recumbent, set it in the trainer up on top of a work bench or table and you have the ultimate test-bed for your bike.

TRAILERS—The unofficial recumbent-rider's trailer is the BOB, Philip Novotney's "Beast of Burden" one-wheeled cargo trailer. This incredible product will work on just about any recumbent. Custom spec'ed and painted BOB's are available through AngleTech. This is the official Mail-Trailer for RCN. If you need to tow kids, we suggest you get a Burley DeLite. It has the best hitch, adapts to recumbent-use well and is very durable. We've had one under clearly abusive conditions for years. □

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COMFORT ☺

Reynolds 531 seat frame; laid back with open weave mesh, and shock cord lacing.

"The most comfortable "chair" in my house." - Orlando Weibe, Winnipeg, Canada.

"Finished the "Great Eastern 1,000k" event with no sore rear end or pain anywhere.

"The Greenspeed is definitely the machine to ride on long distance events." - Pete Gifford, North Clifton, England.

"It is fun to ride , incredibly comfortable and motorists give me more room than I used to get on my old bicycle." - Michael Payze, West Footscray, Australia.

SAFETY ☺

"For me the greatest benefit was the stability and the ease of handling." - Diane Eager, Canberra, Australia.

"The brakes are hooked up independently, but you can brake 100% on one side with no problem. It is certainly the most well-balanced trike I have tried. It seems to be impossible to lift up the rear wheel, and the turning radius is super tiny." Robert Bryant, USA

"The Greenspeed is great. You ride like on rails even when it's very icy." - Andreas Falschluger, Schwoich, Austria.

PERFORMANCE ☺

Low center of gravity, low frontal area, centre point steering.

"The sudden acceleration, light and positive steering, fast cornering and powerful braking are an experience not to be missed." - Jim McGurn, "Encyclopedica" 1993/4, U.K.

"The trike is beautiful. The design of your trike is the best I've seen. Boy is this thing low! And a blast to ride! I have never

experienced a trike with this good handling and super positive and light steering. The steering/front end geometry is fantastic, the best I've tried." - Robert Bryant, USA

"Universally there was great acclamation both for the performance and the construction." - Joe Blake, Perth, Australia.

ENGINEERING ☺

Cro Mo 4130 main frame, 90 ton steel axles, and sealed wheel bearings.

"As for the craftsmanship, the frame tubes are excellent, some are hand ovalized on only one end. The boom is exquisite. The frame with integral triangulated seat (as part of the frame) is a great design. It's stiff, but very light at the same time. The stiffness and strength of the seat, handle bars and all systems together seem to offer the durability (and gorgeous simplicity) that is missing from the other trikes." - Robert Bryant, USA

"What a marvellous life it was! Fourteen months, 206 riding days, 15,035kms. That was our ride around Australia. The Greenspeeds did not let us down once." - Val Wright & Eric Butcher, Ocean Grove, Australia.

FUN ☺

"The Greenspeed is an electrifying ride, making my sluggish body feel like a powerful engine." - Jim McGurn, "Encyclopedica" 1993/4, U.K.

"I will check the alignment but I think it (tyre wear) has been due to my inability to control myself on those corners! It is the best toy I have acquired." - Dr. Lincoln Brett, Perth, Western Australia.

"The feeling of freedom and enjoyment I get when I am riding is amazing." - Philomena Macdonald, Box Hill, Australia.

GREENSPEED RECUMBENTS

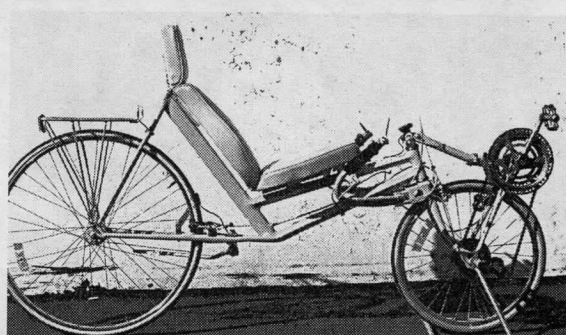
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Recumbent Homebuilder Ideas



Gaylord Hill's CycloPedia EconBent



The Harper FWD from plans—W.D. Harper

We are firm believers in utilizing existing technology & design where applicable. This can reach every aspect of recumbent bicycle design from steering to seats to building plans. Below is a list of our ideas. To find the company contact information, please check manufacturer and parts/services listings in this guide.

PLANS

• **LWB PLANS:** The first and foremost recumbent building plan-seller, Easy Racers Inc., has stopped producing recumbent building plans. There are plenty of sets out there. Plan sale or want-ads for are free to RCN subscribers.

• **MWB PLANS:** The CycloPedia EconBent is an excellent design MWB. The EconBent is similar to the Lightning P-38, but has a monotube frame, lower seat and a different geometry. The basic idea is to cut-up an upright bike for the rear triangle, take the blue-prints to your local Midas Muffler shop and have them bend the main tube of muffler-moly. Forks, head tubes, handlebars and various parts are available from CycloPedia to make your build easier. For the purist, space-frame and FWD plan varieties are available.

• **SWB PLANS:** The only plans currently available are the Rebel from New Zealand. This bike is based on the "A" frame design similar to the Kingcycle, however, the wheelbase is very short.

• **FWD PLANS:** Tom Traylor is a FWD pioneer and offers excellent building plans. The background, design theory and jig building information is worth the plan cost. The Harper FWD plans are less comprehensive, but the seat plan and drawings are worthwhile and recommended.

• **BMX CONVERSION:** The easiest way to get on the road as a homebuilder is to convert a BMX bike. Weld on a boom and add a seat and you're in business (see RCN#11).

• **TRIKE PLANS:** Greenspeed and Crystal Engineering (Trice) offer blueprints for the homebuilder. We would guess that these are rather extensive projects compared to the above ideas. Late addition: See the ad for the Hudyn manuals elsewhere in this issue. These are the best resource for would be trike builders.

• **LOW-RACER:** Peter Ross of Crystal in the U.K. offers Festina framesets and builder plans.

PARTS

The best deal on a recumbent seat is from S & B Recumbents. For around \$100, you can get a fiberglass seat shell and cover. Other medium-priced seats are from Infinity and Glas Tec, both seat mount easily. The Rans seat is a great set-up for the homebuilder. It comes in varying seat channels widths that rivet or screw into your top tube. The seat quick releases to the channel. The ATP seat mounts via two quick releases and is another easy retrofit. For the finest recumbent seats from Haluzak, ATP, Linear, Rans and Easy Racers you will be spending between of \$200-\$300. The lowest cost alternative is cut two pieces of plywood, connected via a door/piano type hinge and cover with foam and vinyl or similar material. This is the true \$20 seat.

STEERING: USS: The best homebuilder USS systems are available from two sources. The first is from Infinity with aluminum handlebars, cable adjusters and cables that extend to the fork.

It's a simple and clever set-up. ATP's direct USS (SWB) and indirect rod USS (LWB) is also recommended. CycloPedia offers a side-stick (MTB bar-end type) steering conversion kits for SWB USS (designed for Turner's) as does Ryan.

ASS: Clearly the best is the Rans fold-forward "flip it" set-up. ATP and CycloPedia also offer ASS kits.

FORKS: J & B Importers offers a line of CroMo recumbent forks. This fork is available from many recumbent manufacturers and parts suppliers in both 16" and 20" size. Ballistic suspension forks are available in the 20" size from AngleTech. AMP custom builds expensive suspension forks to order. 16", 20" and 26" chrome springer forks are available for low-riders and cruisers. These have limited appeal to homebuilders who may be building beach cruisers or more interested in show than go.

FRAMEBUILDING STEEL: You may be able to talk your local recumbent builder into selling you the tube you need, if it is a tube they use. Prairie HPV and CycloPedia sell some frame tubes and homebuilder aircraft sources are another good bet. Check your local scrap yard, second hand bike store, swap meet or if you live in the northwest go to Boeing Surplus.

WHEELS: There are incredible differences in the quality of wheels available. Generic recumbent wheels can be purchased in 16" and 20" sizes from Prairie and CycloPedia for under \$40 to more than \$100 per wheel. A great set of wheels can be purchased from AngleTech, Easy Racers or CycloPedia (Phil hubs!). AngleTech, People Movers and Lightning are the sources for Moulton 17"

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The Haluzak Zzipper
—photo by Lynn Miller



European Low-Racer—Gunnar Fehlau

parts. ATP and Rans offer great wheelsets on these bikes and replacements are available. Aerospoke is committed to the recumbent market and offers 20" x 1-1/8", 26" and 700c sizes. Several manufacturers and dealers sell them. SPIN offers 700c, 650 and 20" x 1.5/1.75" BMX wheels, these are available from Ryan, People Movers and others. HED offers carbon fiber minimal spoked wheels. The 17" Moulton, 20" and 24" HED JET are available through AngleTech.

Keep in mind sizing variations. 20" x 1.5" (406 ertto) and 20" x 1-1/8" (451 ertto) wheels are different diameter, there are varying 24" and 16" sizes. The BikeE 16" (305 ertto) which is not the same as ATP's 16" (349 ertto). Hub spacing is variable from 126mm(5/6 spd.)-140mm (8 spd.). Some 16" and 20" steel forks are meant for juvenile and BMX bike that have 90mm spacing, which can be too narrow for some recumbent front wheels. Most will work, just be sure you are aware of what you have.

HPV BUILDING PARTS: The best sources for recumbent/ hpv parts are Prairie and CycloPedia, both companies specialize in the home-builder and offer great budget solutions. Your local recumbent dealer is also a good bet. AngleTech has a recumbent parts list, and other dealers have large stocks of new, used and sometimes old-stock recumbent parts. We have heard of Rans "bucket" seats and ATP 16" forks around due to riders upgrading. Ads to sell either of these parts would be free to RCN subscribers.

BUILDING A RECUMBENT: You can buy an S & B SWB for around \$600, an Easy Racer EZ-1 or BikeE for under \$800 and the ATP Vision, Rans Rocket and Tailwind for around \$1000. You can also find dealer close-outs, sales, trade-ins, trade-ups etc. If you price out a homebuilt to the last detail, you'll find it quite easy to spend \$1000. Especially if you utilize factory parts, seats or any professional services for your build. Heck, you may hit \$500 just buying some steel, a seat and getting your bike painted. The other aspect of bicycle R & D is that bike #1 may

not work and you may need #2 or #3 to get it right. You can have an equally good time modifying an existing design or a bargain-basement used bike. So do a price study to find out if this is truly a cost-effective way for you to go.

RCN AND TECHNOLOGY

In closing, a few "HPV'ers" say RCN is too focused on commercial activity, and give this as a reason not to subscribe. We say bunk! RCN is on the leading edge of recumbent/HPV technology. Why not learn from the masters, the manufacturers who have spent thousands of hours designing and prototyping recumbents. Unless, of course, you want to do it the hard way?

RCN ISSUES FOR HOMEBUILDERS

- **RCN#2: CSPC "Poor Man's Composite"** by Steven K. Roberts (Computing Across America). This article describes how to use cardboard to build composite HPV bodies and structures. Steven Roberts built his bike trailer with this process using a refrigerator box, fiberglass and body filler.
- **RCN#9: "The Piranha Mk II"** by Kevin Haupt & Rick Fowler. The first in a series of articles written by these southern California homebuilders. The Piranha is a SWB recumbent. RCN#9 is also the ATP R-20 review and "Flatblack BMX Con-

version" by Mark Colliton. This article discusses the building and experimentation of three BMX bikes that Mark converted to SWB recumbents. This is the only article on this subject. The BMX conversion is the easiest way to build & ride a recumbent bike. A few original copies are still available.

- **RCN#11: "Coroplast Body Construction"** by Bob Stuart. This article was written by the builder of the famous, "Car Cycle X-4." Bob has built several bodies using layers of Corex and Chorplast (plastic cardboard sheets). A few original copies are still available.

- **RCN#13: "The Piranha MkIV"** by Kevin Haupt and Rick Fowler. The second in a series of article written by these southern California homebuilders. The Piranha is a SWB recumbent. A few original copies are still available.

- **RCN #15: "The Design History of the Lightning (P-38/ F-40)"** by Tim Brummer, designer/builder of Lightning recumbent bicycles. We gave Tim free reign to write a virtually unedited article telling the story of the Lightning. A few original copies are still available.

- **RCN#17: "The Hybrid Recumbent Bike"** by Steve Smith. This article was very popular with readers. Steve's hybrid is a suspended CLWB designed for fire-road riding and commuting. Original copies are still available.

- **RCN#18: "In Search of the Instant Recumbent"** by Kevin Haupt & Rick Fowler. The third in a series of article written by these southern California homebuilders. The "Instant Recumbent" is a low slung CLWB built with easy to work with square tubing. Original copies are available.

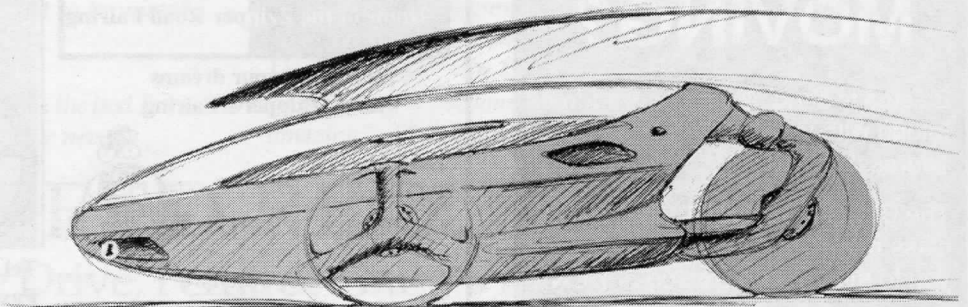
- **RCN#19/20 1994 Buyers' Guide:** This issue has a homebuilder article on the CycloPedia Econ Bent. Original copies are still available.

- **RCN#28 "Suspended SWB"** This is a must read for the builder/ designer. Original copies are still available.

Most RCN issues have information for the recumbent builder/designer who wants to keep up on the latest recumbent technologies. Keep in mind that just one idea could save you many hours of work. Be an educated builder/designer.

RCN issues listed above are \$6 postpaid USA/\$8 postpaid CAN/Airmail US funds. Please allow 4-6 weeks in case we are out of stock. □

Trike graphic is from the Go-One brochure—
Oliver Zechin, Germany



Recumbent Cyclist News

Medical Benefits of Recumbent Bicycles

by Paul K. Nolan, M.D.

Have you ever been on a long bike ride or a bicycle tour and noticed another cyclist riding a recumbent bicycle? If you were very far into the ride you might have noticed something different about the recumbent rider, primarily a contented smile while riders on conventional bicycles (maybe even yourself) were grimacing.

On two different week long 500 + mile summer tours this had occurred to me. At the end of a long day in the saddle I noticed riders like myself on conventional bikes shunning their mounts and walking with a slight bend to their backs and a bowed leg gate reminiscent of a Rexall Cowboy after a too long trail ride. The riders on the recumbents, however, still grinning, would be tooling around on their bikes, and when not on them, walked with no hint of the afflictions of their conventional mounted counterparts. I surmised that these guys either had a secret stash of some forbidden opiate or they were literally onto something with their recumbents. Discreetly I conducted some clinical research on these laid back riders and their conventional counterparts making mental notations of their activities, positioning, and pedaling.

The semi-reclined position of the recumbent rider provided a much broader distribution of the body weight across the more anatomically correct padded areas of the buttocks and across the back. The hands, arms and shoulders were in a relaxed position not bearing the weight of the torso. With the back in a reclined position, the abdomen was flat and straight which allowed full and easy expansion of the lungs. The feet rested on the pedals allowing easy flexion and extension of the legs and afforded a relaxed resting position much like on a recliner foot rest. The head was held in a neutral position, looking forward, the neck relaxed. Eye contact with motor vehicle drivers was second nature to the recumbent riding position.

The conventionally mounted cyclist was a dichotomy of the recumbent cyclist. The weight of the rider was concentrated on the narrow unpadded symphysis pubis (pubic bone) and on the hands. The Homosapien was not anatomically designed to bear weight on the arms like a quadruped nor was it designed to sit straddling a fence rail (politicians excluded). The head is forced in a perpetual downward stare, making eye contact with drivers a forced event, the rider having to hyper-extend the neck to get a glance down the road. This can lead to neck muscle spasms and cervical spine strains.

Not noting any other signs of opiate intoxication save the perpetual grin of the recumbent riders, my assessment was they truly were onto something with their strange looking machines. Casting my analytical doubts aside I asked several of the recumbent riders if I could try taking their wheels for a spin. They all eagerly acquiesced (try finding some fossil fueled wheeler doing that). Before I mounted up though, one of them told me quite soberly, "You can only do it on one condition. You must accept this truth: once you have ridden a recumbent there is no turning



Photo courtesy of Oliver Zechlin, Germany

back to a conventional bike." What else can I say? "I came; I saw; I rode; I converted!"

So what are the medical benefits of recumbent bicycles? Saddle sores become a distant unpleasant memory. The broad weight distribution across the back and buttocks allows good circulation to areas where the blood vessels are compressed closed for prolonged periods of time when on a conventional saddle. Chronic compression of the perineal nerve which runs under the symphysis pubis leading to the DDD (the Dreaded Dead Dingus) is completely eliminated. Males with chronic prostate problems that are aggravated by sitting on a conventional bicycle seat can find exquisite relief on a recumbent seat. Additionally, recumbent seats that are made of nylon webbing allow ample air circulation about the buttocks and back keeping these areas substantially cooler and drier. In fact, recumbent seats are ridden on more comfortably in non-padded shorts which allows for even more efficient evaporation of perspiration.

The upper extremities are not forced to do something they were not anatomically designed for. The pains in the neck, shoulders and arms of day long rides disappear. Numb hands and fingers from median nerve compression (Carpal Tunnel Syndrome) that can be severely aggravated by the hyper-extension and weight bearing of the wrists that occurs while riding a conventional bike are relieved especially on recumbents with underseat steering where the arms and hands are relaxed at the side of the body in a neutral position.

The lower back is not forced into a hunched over position but is allowed to assume a relaxed natural reclining position. My wife made an observation three months after I began riding my Ryan Vanguard recumbent, I no longer complained

of my back aching. Even though I had been a life long bicycle commuter, and had for the last five years been riding a conventional touring bike that had been properly fitted to me, over the last year my back was growing increasingly sore from my commutes.

Safety is another big medical bonus. With the continual head up riding position the rider is far more aware of the riding environs, eye contact with motor vehicle drivers is quite easy. The rider is closer to the road, is riding in a feet forward position and less likely to take a header in the event of a crash. During one ride before I became a convert, I was screaming 50 mph down a long 10 % grade along side a rider on an Easy Racer Gold Rush Replica long wheel based recumbent. His composite rear wheel disintegrated from brake overheating. Instead of flipping end over end as would have happened had he been riding a conventional road bike like mine, he was able to skid the recumbent to a stop on the rear chain stays and dragging his feet Fred Flintstone style. The only leather that was lost was on his shoes, he walked away unscathed. I have crashed on my recumbent only suffering a small abrasion to my thigh. I simply skidded to a stop on my side not endo-ing or jamming my wrist and incurring a probable fracture or concussion had I gone down in a similar manner on my conventional road bike.

There is one clear disadvantage of recumbents for those afflicted with agoraphobia (fear of contact with people) and introverts. Recumbents draw crowds and conversations just about anywhere you stop. People notice recumbents and they want to know more about them. If you suffer any of the conventional bike medical maladies I have described, look seriously at recumbent bicycles; they can truly renew your love affair with bicycling. □

☺ Recumbent Critique ☹

Ace Tool/Infinity

☺☺☺
 Great entry level LWB
 Aluminum frame for comfort
 Excellent stability/yet quick feeling
 Excellent steering geometry
 Simple seat slider
 Simple cable steering
 Performance bike/company with race history
 Low seat height
 New seat for '96?
 Experienced manufacturer
 Optional Aerospoke wheels
 Experienced manufacturer/proven design
 Excellent deal

☹☹☹
 New untested seat for 1996
 LWB is long/hard to store/haul
 Aluminum frame may effect performance
 Low speed stability/climbing
 Slower climber
 Early frames/seats had some failures
 New seat for '96 (untested)
 3 year warranty

ATP Vision R-40 SWB

☺☺☺
 Quick handling/Ultra SWB
 Minimal heel interference
 16" front wheel=neutral handling
 Modular versatile design (SWB, LWB, ASS, USS)
 Good climber
 Redesigned seat/cut away sides/flat foot stops
 Excellent quick release seat/recline adjustment
 Ergonomic USS
 Stiff, solid frame
 Great enthusiast value at \$995
 Excellent accessories
 Lifetime frame warranty
 LWB is optional
 Optional Zzipper fairing is less expensive than other SWB models
 Great dealer base/bikes are easy to find

☹☹☹
 Quick handling SWB
 Heavily loaded front wheel (SWB trait)
 USS is wide
 Not the best choice for high speed stability
 Seat horn that bothers some riders
 20" wheel=wheel flop/better for taller riders
 ATP USS better than ASS
 Not for racers

BikeE

☺☺☺
 Great all around CLWB
 Quick/pivotal steering
 Quality build
 Custom fork/steering geometry
 User friendly entry level city bike
 Excellent bargain/most fun for \$\$\$
 A very stylish design
 Excellent accessories
 Seat has space-age seat gel
 Optional Zzipper fairing works best on this design
 Lifetime frame warranty
 Great dealer base/bikes are easy to find

☹☹☹
 Bolt-on mono-stays/lacks triangulation
 3rd generation (previous model outdated)
 Narrow handlebars/quick steering
 Small seat base and low back
 Heavily loaded rear wheel (CLWB trait)
 16" x 1.75" front wheel (no upgrade path)
 Not for racers

Easy Racer Tour Easy

☺☺☺
 Great touring/performance LWB
 Excellent high speed stability/road manners
 Quality build/Fast Freddie welds 'em
 Custom fork/steering geometry
 Excellent quality triangulated/stiff frame
 Experienced manufacturer/proven design
 Performance bike/co. with race history/records
 User friendly bike
 Excellent ergonomics (handlebars are narrow)
 Best shell/foam seat
 Optional Rans seat/new for '96
 Optional Aerospoke wheels
 Optional Super Zzipper works best on this design
 Lifetime frame warranty

☹☹☹
 LWB is long/hard to store/haul
 Low speed stability/climbing
 Narrow bars/wrist position
 Slower climber

Easy Racer Gold Rush Replica

☺☺☺
 Best performance LWB money can buy
 Best high speed stability/road manners
 Quality build/Steve Delaire welds 'em
 Custom fork/steering geometry
 Experienced manufacturer/proven design
 Performance bike/co. with race history/records
 User friendly performance bike
 Excellent quality stiff frame/yet soft ride
 Best LWB climber
 Best shell/foam seat/adds to performance
 Optional Rans seat/new for '96
 Optional Aerospoke wheels
 Optional Super Zzipper works best on this design
 Lifetime frame warranty

☹☹☹
 LWB is long/hard to store/haul
 Low speed stability/climbing
 Narrow bars/wrist position
 Price

Easy Racer EZ-1

☺☺☺
 Great performing CLWB
 Very good stability/Easy Racers road manners
 Quality build/Fast Freddie welds 'em
 Performance bike/co. with race history/records
 Experienced manufacturer
 Custom fork/steering geometry
 User friendly entry level bike
 Excellent bargain/most fun for \$\$\$
 Best CLWB ASS handlebars
 Best handling CLWB
 Optional Super Zzipper works best on this design
 Lifetime frame warranty

☹☹☹
 Square tubes
 Seat is not world class
 Heavily loaded rear wheel (CLWB trait)
 Thumbshifters (get the Speed Wheel upgrade)
 Not for racers

Haluzak Horizon

☺☺☺
 Stable handling MWB tourer
 Slight oversteer steering/improved steering
 Monostays/monobeam frame for comfort
 Indirect rod linkage Ergonomic bar-end extensions
 Great sling/mesh seat (Presto type mesh)
 Best idler/chain line/quieter than most
 Sleek futuristic frame design
 Great enthusiast value at \$1395
 Monostays/monobeam frame
 Excellent accessories
 ASS now available
 Fat tires for comfort
 Lifetime frame warranty

☹☹☹
 High seat/riding position
 6' rider on tiptoes to hold up at a stop
 Indirect rod linkage USS/more complicated
 Monostays/monobeam frame (lacks triangulation)
 Bike has slight pedal steer
 High center of gravity
 Heel interference
 Not for racers

Haluzak Hybrid-Race

☺☺☺
 Stable handling MWB
 Slight oversteer steering/improved steering
 Monostays/monobeam frame for comfort
 Versatile multi-use bike
 Indirect rod linkage Ergonomic bar-end extensions
 Great sling/mesh seat (Presto type mesh)
 Excellent components/drivetrain
 Best idler/chain line/quieter than most
 Excellent comp./drivetrain/better than competition
 Excellent brakes (XT or 105SC)
 Sleek futuristic frame design
 Excellent accessories
 ASS now available
 Lifetime frame warranty
 Near custom build

☹☹☹
 High seat/riding position
 6' rider on tiptoes to hold up at a stop
 Monostays/monobeam frame (lacks triangulation)
 Indirect rod linkage USS/more complicated
 High center of gravity
 Heel interference

Linear LWB

☺☺☺
 Folding LWB
 Aluminum "beam" frame for comfort
 Excellent USS steering geometry
 High tech beam look & fittings
 Simple design
 Newly redesigned seat with lumbar bend
 Excellent Big Dog brakes
 Experienced manufacturer/proven design

26" rear wheel option available (recommended!)
Lifetime frame warranty

⊗⊗⊗

Aluminum "beam" frame may affect performance
Foam seat base can bottom out
LWB is long
Low speed stability
Heavy/slower climber
High/rearward c.g.
Folding joints squeak/added maintenance
ASS not recommended
Not for racers

Lightning P-38

☺☺☺

Very good high speed stability/road manners
Fillet brazed space frame/lugs
Custom fork/steering geometry
Very comfortable sling/mesh/foam seat
Performance bike/co. with race history/records
Light-weight bike
Extreme riding position (upright seat/high BB)
Flat feet at stops
Cockpit-like fighter plane feel
Excellent accessories
Very good acceleration and hill climber
Optional Lightning wheel discs
Optional 17" Moulton/20" front wheel
F-40 upgrade available
Proven design

⊗⊗⊗

Upper chain idler causes some noise/vibration
Light-weight bike
Extreme riding position (upright seat/high BB)
3 year warranty not as good as competition
16" standard front wheel/optional 17" Moulton

Lightning Stealth

☺☺☺

Very Good entry level performance MWB
Good stability/road manners
Optional 20" front wheel for tall riders
P-38 sling/mesh/foam seat
Performance bike/co. with race history/records
Extreme riding position (upright seat/high BB)
Flat feet at stops
Cockpit-like fighter plane feel
Good acceleration and hill climber
Brazed frame: monostays/monobeam frame
Excellent ASS/handlebars (wide & stiff)

⊗⊗⊗

Upper chain idler causes some noise/vibration
Drivetrain not as good as competition
Wheels not as good as competition
Price \$100-\$200 more than competition
Hose-clamp seat fastener
Handling not as dialed as the P-38
Extreme riding position (upright seat/high BB)
Brazed/monostays/monobeam frame
3 year warranty

Rans V-Rex

☺☺☺

Very good stability/handling
Very good handling/road feel (especially 24/20)
Excellent aircraft quality build
Largest manufacturer
High performance bike
Versatile multi-use performance bike

Excellent hill climber
Great seat/adjustable recline
Optional tilt-forward ASS
Excellent ergonomic hybrid mesh/foam base seat
Excellent quality stiff frame
Excellent value
Lifetime frame warranty

⊗⊗⊗

Upper chain idler causes some noise/vibration
Side-pull brake doesn't have quick release
24" wheel/tires more difficult to find
26" wheel makes bike higher
Needs front brake update (Q.R. and pads)
Not enough options/accessories

Rans Tailwind

☺☺☺

Excellent aircraft quality build
Largest manufacturer
Short LWB (CLWB)
Very good entry level bike
Great components for price
Best CLWB ergonomic mesh/foam base seat
Square CroMo main tube/fork
Simple design
Excellent comfort/ergonomics
20" drive wheel tough/compact
Excellent value
Lifetime frame warranty

⊗⊗⊗

Heavily loaded rear wheel (CLWB trait)
Consider upgrade to Big Dog rear brake
Taller riders may need longer frame (optional)
20" drive wheel slows bike
Square CroMo main tube
Not enough options/accessories
Not for racers

Rans Rocket

☺☺☺

Very good MWB stability
Excellent aircraft quality build
Largest manufacturer
Cockpit-like feel
Excellent entry level bike
Excellent components
Square CroMo main tube
Very good climber
20" drive wheel tough/compact
Optional tilt-forward ASS
Excellent ergonomic hybrid mesh/foam base seat
Excellent value
Lifetime frame warranty

⊗⊗⊗

Upper chain idler causes some noise/vibration
Not good for shorter riders/one-size
20" drive wheel slows bike
Square CroMo main tube
Not enough options/accessories

Rans Stratus

☺☺☺

Excellent performance LWB
Very good high speed stability/road manners
Excellent aircraft quality build
Largest manufacturer
Experienced manufacturer/proven design
User friendly performance bike
Excellent quality stiff frame/smooth ride

Excellent ergonomic hybrid mesh/foam base seat
Very good LWB climber
Optional "B" Open bars are wide and feel great (make the bike's handling better than "C")
Standard Rans fairing/Super Zzipper will fit.
Lifetime frame warranty

⊗⊗⊗

LWB is long/hard to store/haul
Low speed stability/climbing
"C" Narrow closed loop bars give tiller effect
Not enough options/accessories

Ryan Vanguard

☺☺☺

Great long-distance touring LWB
Excellent stability/road manners
Quality build
Excellent steering geometry
User friendly bike
Excellent quality triangulated stiff frame
Excellent bar-end controls
Sling/mesh seat
Experienced manufacturer/proven design
Lifetime frame warranty

⊗⊗⊗

Complex steering set-up
Seat horn that bothers some riders
LWB is long/Hard to store/haul
Low speed stability
Heavy/slower climber
Front brake ineffective ('95 test model)
High/rearward c.g.
Buy now as a price hike coming for mid '96
Not for racers

Rotator Pursuit

☺☺☺

Entry level performance LWB
Good high speed stability
Quality build/Steve Delaire builds 'em
Exc. Monostay/monobeam/brazed CroMo frame
Performance bike/co. with race history/records
BMX technology (dual 20" wheels)
Intermediate drive—35 speeds
Good LWB climber
Monotube frame/bungy seat lace for comfort
Performance benefits of SWB pedal position
Very low seat height
Excellent CroMo sling/bungeed mesh seat
Narrow aerodynamic profile
Optional Aerospoke wheels
Optional Interceptor fairing package

⊗⊗⊗

LWB is long/hard to store/haul
Low speed stability
Narrow profile—bars too narrow for some
Hose-clamp seat fastener
Very dramatic tiller steer/wheel flop
Intermediate drive—prototype was noisy
Monostay/monobeam/brazed CroMo frame
Five year frame warranty

The above critiques are derived from our experience with these bikes. Keep in mind that all models have strong and weak points. We hope this information helps you to form your own opinions, as no amount of information can do what a test ride can—so go out and ride some bikes! ☐

Recumbent Connections and Rumors

Infinity Indy Challenge*

April 27, 1996
Whitesand, IN
Contact: Don Barry @ 317-831-8798

Mooreville Race in the Park*

April 28, 1996
Mooreville, IN
Contact: David Pearson @ 317-831-8798

Michigan HPV Rally*

June 1, 1996
Waterford, MI
Contact: Linda Jayne @ 810-689-7898

Delta College Challenge*

June 2, 1996
Bay City, MI
Contact: Mark Bannan @ 517-781-3252

Freedom Easy Tour '96

June 15 (ride) & 16 (play day), 1996
Watsonville, CA
Contact: Easy Racers, Inc. @408-722-9797 or email: Tooeasy1@aol.com. This event is pre-register only.

Midwest Recumbent Rally

June 8 & 9, 1996
Jackson Elementary School, Stevens Point, WI
Sponsored by ATP, Linear and Rans.
Contact: Hostel Shoppe @ 715-341-BIKE

Recumbent Race*

June 16, 1996
Eldersburg, MD

Showers, food, demos, fun, prizes.
Contact: Larry Black @ 301-854-6876 or email abikie@aol.com.

Haluzak Dry Creek Valley Ride & BBQ

June 29, 1996
Santa Rosa (Hillsburg), CA
Contact @ 707-544-6243 to preregister.

Midwest HPV Rally*

July 6, 1996
Burlington, WI
Contact: Dennis Northey @ 414-671-4560

WISIL "Cheddar Cheese" Challenge*

July 7, 1996
Kenosha, WI
Contact: Dan Glatch @ 414-377-0864

Twin City's HPV Rally*

July 27, 1996
Elko, MN
Contact: Dave Krafft @ 612-929-2978

Minnesota HPV Rally*

July 28, 1996
St. Paul, MN
Contact: Dave Krafft @ 612-929-2978

Exhibition of HPV's

Late July, 1996
Pasadena, CA
Contact: Stephen Nowlin @ Ph# 818-396-2397 or Email: nowlin@artcenter.edu

European HPV Championships (BHPC)

July 26-28, 1996
Leicester, England.
Contact: Nick Green, secretary @ +44 1785 664879(UK) or 100771.3023@compuserve.com

Cyclefest U.K.

July 31-August 5th, 1996
Lancaster, England
Contact: John Bradshaw @ +44 01524-63446 X474

IHPVA World HPV Championships*

August 16-20, 1996
Las Vegas, Nevada
Las Vegas Motor Speedway Park
Contact: IHPVA, PO Box 727, Elgin, IL 60121-0727 Ph/Fax#708-742-4933

Northbrook 100*

September 7, 1996
Northbrook, IL
Contact: Sean Costin @ 708-468-1312

Proving Grounds Challenge at Joliet*

September 8, 1996
Joliet, IL
Contact: Sean Costin @ 708-468-1312

Interbike Anaheim International Bike Expo

September 19-22, 1996
Anaheim, CA
Contact: Interbike @ 714-376-6161

*Denotes 1996 National HPV Racing Series (formerly Great Lakes)

•**RECUMBENT RUMORS-RECUMBENT RUMORS-ALIEN BIKE**—Rumors persist of alien activity in and around Sacramento (area 52). Yes, it's true, our own BJ Strass changed the name of his company and now markets BikeE's, used recumbents, special needs along with his own Meridian MWB. **ANGLETECH**—Rumors abound... the top secret suspended MWB project is on hold for the time being. **ATP VISION**—The '96 seat is not a rumor, it's here. The tandem is no longer a rumor, it's here.....now what about that full suspension prototype I rode a while ago..... **BELIK**—Kits, parts and components are the words for the day. Also, we've seen a sketch for a 16/12 kids CLWB for road tester in training Amy Bryant (age 7). Designer Jaroslav Belik is an accomplished artist and talented designer, watch for an upcoming article this summer. **BIKEE**—Reports that they are not interested in Trek's repeated buy out overtures, however, they did in fact receive a utility patent on the BikeE design. **BACKSAFER**—Rumor has it that this brand new recumbent is being redesigned already. The mainframe and stays are very petite and flex a lot. The bike is said to be getting much needed beefy upgrades to the frame, seat and seat track. Current models are still being offered for sale. **COUNTERPOINT**—Presto's are almost gone.....it's too bad somebody doesn't step forward and buy this company..... **EASY RACERS**—Rumors of racing in Las Vegas, a back to back Double Gold Rush record attempt? All this from a "retired from

racing" Gardner Martin. Also, rumors around Watsonville place a Gold Rush Replica with a new Rans seat with double foam insert...late word places a Rans seat on the Easy Racer option list. Does that qualify as a lawn chair?.... **FLYING DUTCHMAN CYCLES**—This brand new company is testing a midsize 26/16 SWB USS/ASS with offroad tires. Also a full size 27/20 SWB USS/ ASS rear suspended with full CroMo frame and all the goodies. **GREENSPEED**—New for '96 Greenspeed has under development full and 3/4 fairings for trike models. **HALUZAK**—As the bikes continued to be refined, we hear rumors of dealers who'd like to see Haluzak come out with a LWB version of the Horizon..... How about a Traverse for the street..... Lynn Miller's (RCN#31) Hybrid Race has become a limited production model as the People Movers Hybrid Race Deluxe with a Zipper and Aerospokes included. **INFINITY**—We've heard that the sling/mesh seat will soon be replaced with an ABS moulded seat.... Rumors surfaced of a bike dealer trying to buy the bike division last year, but nothing ever materialized. There are secret FWD and CLWB prototypes floating around Mooreville. **LIGHTNING**—Reports that they now offer an adjustable seat recline angle..... Also new for 1996, a 20" x 1.5" front wheel for the Stealth & P-38. Lightning has reportedly built a USS version of their bike. We also hear rumblings of a suspended seat option? **LINEAR**—Gone are the Euro bikes that once made Linear the king of importers. The only bike that will

still come in is the Kingcycle, in limited quantities, as the price is a nearly out of this world \$3,000. We keep hearing scuttlebutt of Linear building BEVO FWD CLWB's (see RCN#26) in the USA. It's rumored that BEVO will build it's own US facility if..... **PROCYCLE?**—A new Canadian LWB USS 20/16 105 speed recumbent was spotted at the Toronto, Ontario bike show... **RANS**—The new Rans suspended cruiser, the Zero-G was the test bed for a landing gear suspension for Rans airplanes. Could this suspension may end up on a recumbent.... **RUMOR**—The CEO of a major overseas bike manufacturer met in the parking lot of a bike shop in the southwest specifically to ride a recumbent. Word has it there will be a new recumbent at Interbike..... **ROTATOR**—Imagine Rotator Interceptor aero pannier/tail sections that fit other bikes..... **SHIMANO**—Rumors out of Germany that Shimano had a Nexus equipped recumbent for demo rides? Belik had a Nexus equipped "Breeze" at Interbike and was not acknowledged.... **TAIWANESE RECUMBENT**—We've heard a rumor of a LWB USS full suspension recumbent being designed by an industry trade group in Taiwan..... **TURNER** Rumor has it that Milt is working on a new off-road model for mid '96. A reader sent me an Email the other day mentioning a Turner Titanium SWB. Milt would not substantiate the claim.....Keep your ears to the wall and give us a call—*RCN Ace Detectives*.
•**RECUMBENT RUMORS-RECUMBENT RUMORS-**

Recumbent Rider Groups



Milt Turner (back right) and the laid back gang—photo courtesy Turner Enterprises

RECUMBENT RIDER GROUPS

(please send an S.A.S.E. with any correspondence).

• **CHICAGO AREA RECUMBENT RIDERS:** Meet 9:00am Sunday mornings (weather permitting) at the parking lot towards the South end of the Caldwell Woods bike path (where Devon, Nagle & Milwaukee intersect). Moderate pace, everyone welcome, wedgie riders too. For more information call Joe Dickman at , Ph#312-725-0331.

• **EASY RACERS:** Quarterly rides, ph#408-722-9797.

• **INDIANA HPV:** David Pearson, PO Box 331, Mooresville, IN 46158.

• **LASERR:** Loose Assemblage of SouthEast Recumbent Riders: (Florida, Georgia and Alabama) Contact: Fred Ungewitter, 1964 Forest Ave., Daytona Beach, FL., 32119.

• **LOS ANGELES RECUMBENT RIDERS:** Meet monthly, third Sunday, 10 am at Burton W. Chace Park, Mindanao Way, Marina Del Rey, CA. Contact: Chris Broom Email: pwtccb@is.arcom.com

• **MICHIGAN HPV ASSOC.** Contact: Linda Jayne, 45223 Cass Ave. Utica, MI 48317.

• **MINNESOTA HPV ASSOC.** Contact: MnHPVA, 4139 Brookside, St. Louis Park, MN. 55416.

• **OREGON HUMAN POWERED VEHICLES:** Meetings rides and a bimonthly newsletter. OHPV, PO Box 614, Beaverton, OR 97075

• **NW HOMEBUILDER GROUP:** Group meets the 3rd Saturday of every month to discuss HPV homebuilding. Contact: Nick Hein at Ph#206-255-7560 (Rides anyone? See Recumbent Cyclists NW).

• **PEOPLE MOVERS/ ORANGE CO:** Monthly rides, Contact: Jim, Ph#714-633-3663.

• **SAN DIEGO RECUMBENT RIDERS:** William Volk, 2348 Lagoon View Drive, Cardiff CA 92007. PH#619-930-2323, Email: bill_volk@lightspan.com, Ride on last Sat. of the month, Mission Bay Visitors Center off of I-5.

• **RECUMBENT CYCLISTS NW: (RCNW)** Rider group forming. Send SASE for info: Recumbent, PO Box 58755, Renton, WA 98058.

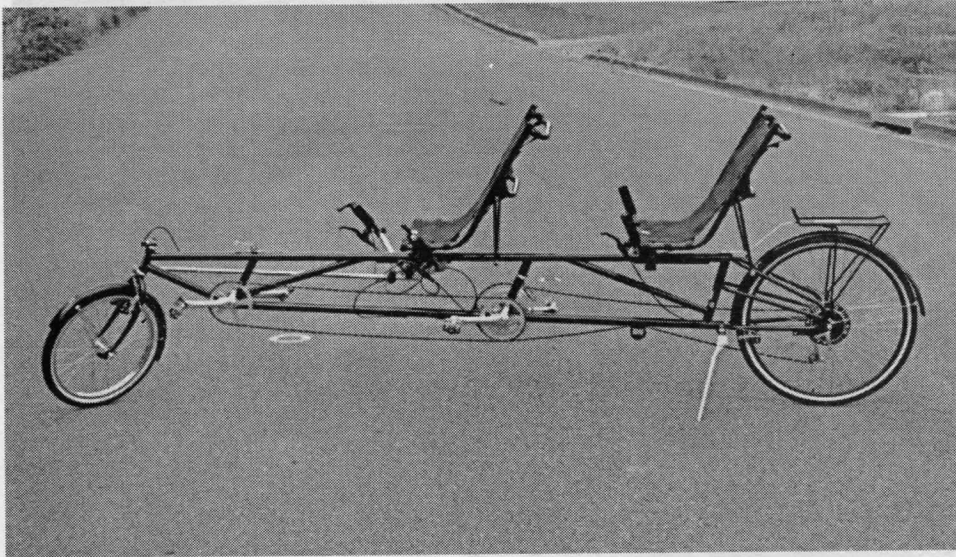
• **WASHINGTON DC AREA: W.H.I.R.L.** (Washington's Happily Independent Recumbent Lovers) The folks meet at the Viers Mill Recreation Center. MD, north end of Beach Drive, Saturday morning, weather permitting, at 8am (9am after the clocks go back in the fall.) No rules, No by-laws and No meetings, "Just a bunch of men and women who ride cool bikes together," says non-club non-organizer Vic Sussman. For more info contact: Vic Sussman at 301-897-5959 or vic@clark.net. WHIRL also has its own Internet mailing list. To subscribe send email to majordomo@cycling.org. In the body of your message type SUBSCRIBE WHIRL

• **WESTERN WHEELERS:** Monthly Recumbent & HPV rides, every 3rd Sat. AM (April-Nov.) at Gunn HS in Palo Alto CA. Call Alvin Chin ph#415-571-5147 or Email to AlvinTChin@aol.com for details.

• **WISIL HPVers (WI/IL):** Meets the last Sat. of each month. Contact: Len Brunkala, 260 S. Channing, Apt.#1, Elgin, IL, 60120-6619.

RIDER GROUP INFO: How do you get your rider groups name on this roster? A) Add RCN to your mailing list for newsletters, calendars, events etc. B) Encourage your riders to become RCN subscribers. If you would like information on your club, event or rider group posted here, please send it to RCN before May 15, 1996 for posting in the next regular RCN issue.

Reader Review: Ryan Duplex



“How a recumbent Tandem saved my marriage: One couple’s quest for cycling harmony”
by David Silberkleit

I have always loved cycling. I particularly like touring; my bicycles have facilitated great adventures and I have made fantastic friends while traveling by bike. For five years I have been trying to find a way to share this hobby with my wife. The Ryan Duplex has finally enabled us to ride in harmony. Since many couples may be struggling with this dilemma, I hope that sharing our story will help others avoid the unpleasant moments we experienced in our quest for cycling bliss.

When I met my wife to be, Alexa, she had not been on a bike in ten years. I figured I could get her all the right equipment and she would learn, that her fitness and determination would readily produce an avid cyclist like myself. Instead, I single-handedly created a huge rift in our marriage. Cycling became a dirty word. She was uncomfortable riding in the company of automobiles and her bike produced pain in about a dozen different parts of her body. We would ride together and I would wait for her while she worked herself to death trying to catch-up. Neither one of us enjoyed the experience. I would go mountain biking with my friends after our road rides to get some “real exercise”; she would go home and pass out from exhaustion.

“More equipment,” I exclaimed on our way to the bike shop to purchase the latest and greatest garb. But it was to no avail. “Change the scenery” was my next tactic and off we went to Venezuela to mountain bike in the Andes. I was in heaven as our bikes bashed down donkey trails. She was in agony. We tried New Zealand next, I hoped that dirt roads there would be smoother and that she would be swept away by the spectacular scenery. Instead, she was nearly swept away by her own tears and by the rivers we frequently crossed on our tour. I remember her heaving her bicycle after putting her foot in frigid glacial runoff while trying to ride across one of the streams on our route. “I hate this #*%’ing sport,” she yelled, as her vacant bike rolled and wobbled thirty feet before

falling dead in the water. We had reached a new low. Fortunately, this wonderful woman agreed to marry me on the same New Zealand trip. With this new commitment, my resolve stiffened. I would find a way for us to go on 2—wheeled adventures!

We next entered the motorcycle era. Comfort was missing, I reasoned, so comfort we would have. I was willing to sacrifice pedaling for a twist of the throttle; I figured two wheeled adventures were still possible with gas power. I set out to find the motorcycle with the most comfortable back seat on the planet and rode home on a Honda Goldwing, 835 pounds of touring bike with more 6-cylinder power than most cars. This huge motorcycle has a stereo, cruise control, heat and even a reverse gear. Alexa could now ride in plush comfort—wrong again. Off we went for our first trip to Nova Scotia. It was beautiful. It rained a lot. My wife was ready to fly home from our half way point in Halifax. She has not been on the back of the motorcycle since that trip.

Enter the Boston to New York AIDS ride, a 270 mile, three day cycling event to raise money for major AIDS related caregivers in New York City and Boston. I was moved to do something about the AIDS virus after spending a night on as an observer with a local ambulance crew. When I mentioned the AIDS ride after that night, I was surprised that she too had considered the ride out of her similar commitment to make a difference regarding this epidemic. She was also intrigued by the sheer enormity of the challenge—she would either breakthrough her previous bad feelings about cycling or be consumed by them, never to ride again. I treaded lightly, finally realizing the potential for divorce if I suggested yet another cycling adventure. And then she threw out the bait. “Perhaps if we had a recumbent tandem...” Two weeks later, training began on our new Ryan “Duplex” Recumbent tandem. For those unfamiliar with this machine, it is the limousine of bicycles, ten and a half feet of comfort. The reclined mesh seats are the only type that have ever felt comfortable to my wife and so many cyclists. Neck, back, shoulder and rear end pain are elimi-

nated in the recumbent position riders enjoy on this bike.

Our first tandem ride was a fifteen mile loop we often covered on single seat bikes. At the average speed Alexa enjoyed on her own bicycle, that would require a full afternoon and sufficient food for two lengthy rest stops. Instead, we blasted through the route in under an hour. We had a great conversation while we rode too; we were more familiar with short conversations since our speeds rarely matched while on single seaters. Suddenly my wife could see that bicycle travel could work. Our lives had changed forever.

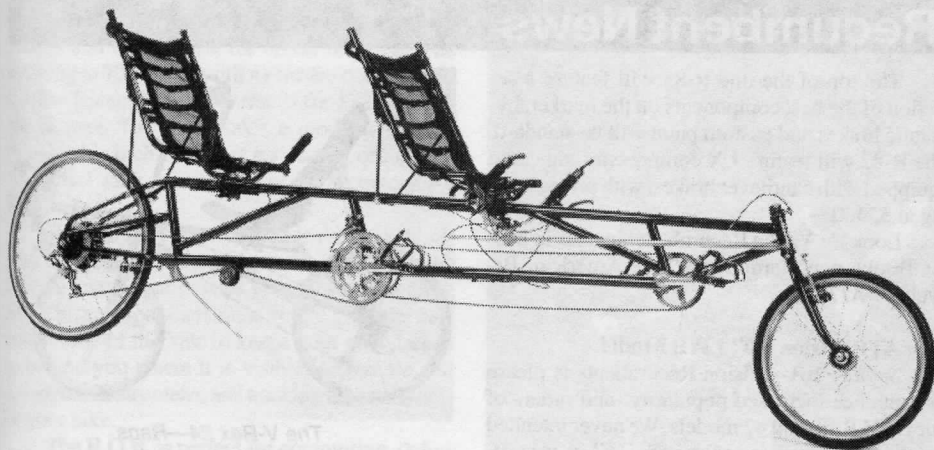
Training for the AIDS ride, we had fun wherever we rode. Small children chased us for blocks just to get a glimpse of our unique machine. Even adults honked, waved and cheered us as we passed. And all the while my wife and I pedaled, finally in unison, finally together in our outdoor adventures. We had finally found a way to share the hobby I so enjoyed. She no longer had to worry about maneuvering in traffic or selecting the proper gear; I now handled all of that for her. She was comfortable and I was finally able to enjoy cycling with my wife at a respectable pace.

We were now both making great friends on our rides. As stoker, one of Alexa’s responsibilities became public relations, particularly while I was concentrating on steering among 3,200 other AIDS riders. I thoroughly enjoyed listening to her speak to the many curious riders as we traveled from Boston to New York. Our efforts to handle repeat questions with the following sign made conversations even more fun:

NO, WE DON'T HAVE ANY GREY POUAPON
YES, SHE IS PEDALING TOO
AVERAGE UPHILL SPEED 4.5 MPH
TOP DOWNHILL SPEED 51 MPH!!!
THANK YOU BOSTON-NEW YORK AIDS
RIDERS AND CREW, WE LOVE YOU.

Imagine my delight when we finished the AIDS ride in NYC and she was still smiling, still alive for that matter. We rode every inch of the ride, never walking up a single hill, never riding in a single support vehicle. When it was pouring on our third day out and we were soaked to the bone, she broke the sound of the rain on our matching helmets and said, “You know Dave, I’m drenched back here and I’m kind of tired from the last two days...and I am still smiling and having a pretty damn good time.” At that point, I knew my prayers had been answered.

We rolled into New York City after three of the greatest days in all our adventure travels. We rode 100 miles each of the first two days, 65 miles the third. We spent 25 total hours on our bike. As a group, all 3,200 riders raised a total of 6.5 million dollars. This ride was only made possible because of the Duplex. We were tired but not sore. Alexa was not only still speaking to me, she was smiling. And that was after riding down Eleventh Avenue in Manhattan, with its pot holes and honking taxi cabs. This magical bike allowed for the impossible and for that we are forever grateful.



Here is more information about what it is like to own this product:

Driving a Duplex

Getting on a Duplex is a blast. I recommend learning to ride it with the rear seat empty. It is very easy to ride in this manner, simply like a really long LWB bike. The captain's seat is centered between the wheels making for a very balanced feel. The length makes the bike extremely stable and this is immediately evident. Perhaps because of the length, one immediately notices that more hand input is needed to turn the machine. Leaning seems counterproductive, one simply pulls back the hand on the side to which one wants to turn.

After mastering solo riding, you are ready to ride with a stoker. The balance changes dramatically with the rear seat occupied, particularly since the stoker's weight is so close to the rear wheel. It takes a little time getting used to this new feel. Speed helps a lot. It is easier to master the balance with two riders once the bike is moving more than about 8 mph. Make sure you tell your stoker to follow your movements and stay parallel with you. A large stoker that is leaning independent of your movements will make steering difficult. With a little practice, it is easy to master driving the loaded bike. I was quite comfortable riding a wide variety of passengers ranging from a 60 pound 7 year old to a 325 pound 6'4" friend of mine (I am 5'8" and 150 lbs).

Starting out with two riders is challenging at first. I suggest having the stoker pedal while the captain keeps his/her feet close to the ground in case of loss of balance. Once the bike is rolling, the captain can easily begin pedaling. After riding together a few times, it gets easy for both riders to start pedaling from a standstill, as long as the bike is in an easy gear and the pedals are positioned at 12:00.

When you are comfortable with the basics, you and your partner are off to a whole new world of recumbency. Riding a Duplex is like riding a six person toboggan. When this bike gets going, you just hang on and smile away. Like a child on a toboggan, you never get tired of the rush you get as you accelerate down a hill. It tracks perfectly straight and soaks up the bumps in a plush manner. The ride is solidly firm yet quite comfortable.

Conversations with your partner are delight-

ful. My wife and I have found that this bike is the perfect place to unwind after a day at work. We often go for evening rides, pedaling around the neighborhood discussing each other's workday. We have found that this bike facilitates fantastic conversations.

Racking

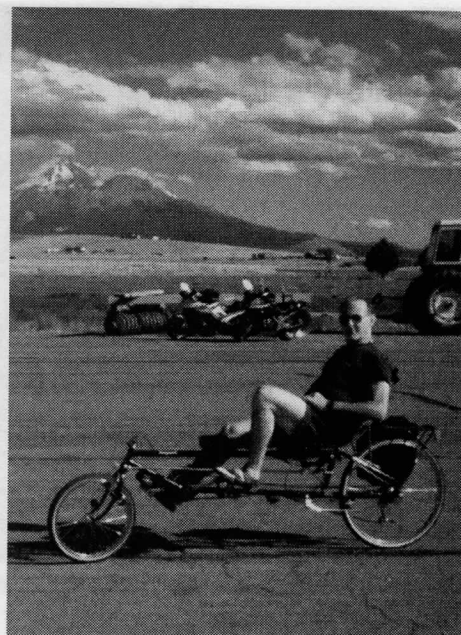
We transport the Duplex in a Dodge Caravan. It fits inside perfectly with the front wheel removed. We transported the bike to Boston for the AIDS ride on the roof of a Honda Accord on a Thule rack with no difficulty. We removed the seats, turned the handlebars parallel to the frame and laid the bike on its side on the roof rack. I used two large rubber Thule windsurfer pads to cushion the frame as well as Thule ratcheting web strap windsurfer hold downs and the bike was remarkably secure. I added a front bumper tie down and two lateral straps for extra safety. Although the wheelbase of this bike is longer than most small cars, this racking system would work on any car with a roof rack.

Recommended modifications

These are shortcomings you may notice on a used Duplex. Dick Ryan is addressing these issues on new models:

1. Fit a higher pressure front tire. I felt that there was excessive rolling resistance with the stock tire inflated at the rated pressure. Our bike is equipped with a 20 x 1.5 Kenda tire rated to a maximum of 40 psi. The Haro 20 x 1.5 looks both more durable and runs at a higher pressure of 60 psi. Try the 100 psi ACS 20 x 1.75 tire.

2. Improve the braking. There is so much cable on this bike that stretch seems to dramatically decrease braking performance. Many innovations from the world of Mountain biking would be worth exploring; perhaps stretch-free gore-tex cables (Ride-On makes them) and aftermarket brake pads would sufficiently improve stopping power. I have fitted Ritchey front pads to my single seat recumbent and dramatically improved stopping. Alternatively, Magura makes a great hydraulic braking system and these brakes would probably be the best bet. There are also a number of new cable activated disc brakes now available for mountain bikes that would warrant further testing.



Dick "the Godfather" Ryan at Yreka, CA

3. Increase the length of the top seat straps. I felt that the seat was too shallow and that I could not get my rear end deep enough into the fabric. As a result, I found myself occasionally sliding forward toward the pedals. If the top vertical straps were longer, I could have shaped the fabric to conform to my needs.

4. Replace the small chainring with one of 24 or 28 teeth. The bike came with a 32 tooth ring which we found insufficient for moving the loaded bike up big hills. In all other areas, I rate this bike with the highest possible marks. It regularly achieves speeds in excess of 40 mph while enabling captain and stoker to relax in the recumbent position and enjoy the scenery. It remains extremely stable at these speeds because of its length.

David Silberkleit owns a marketing firm in Stamford, Connecticut. His firm has worked for a wide range of clients including bicycle manufacturers and retailers.

EDITOR'S NOTEBOOK: *With all of the fuss over the new Rans Screamer and ATP Double Vision, we need to acknowledge one of the pioneers of the recumbent tandem—Dick Ryan. A few issues ago we asked for DuPlex feedback and were barraged with articles and positive comments from readers. The Ryan DuPlex is one of the finest bicycles made in the world today and reviews from the mainstream media, Duplex owners and RCN readers is overwhelmingly positive!* □



Recumbent News

ATP VISION 1996 UPDATE

Seattle, WA—In just two short years ATP has become both the recumbent sales and design leader, and is sold by more bike shops than any other performance recumbent.

The Vision is the easiest recumbent to buy in the market today. Previously, you might have had to look at bikes from several different manufacturers to have a full selection of all the styles available. ATP solved this problem by making Vision recumbents modular. The R-40 and the R-42 are available in SWB or LWB versions. The handlebar position is also modular, so all the bikes can be fit with either the ASS or USS handlebar. We also offer 16"/20" front wheels options. Simple conversion kits are available to switch between configurations.

16" Tire Update: ATP has contracted with a major tire manufacturer to produce a high quality high pressure 16" x 1-3/8" tire for the Vision. We are still awaiting samples of these for testing, and will keep you updated on our findings. All you 16" riders, keep your fingers crossed.

New Seat Design: The seat frame and fabric have been redesigned for 1996. The new system utilizes an integrated foam seat pad and a fuller seat bucket for comfort, and is also modified to make it easier to reach the ground. The seat will retro-fit on all older Vision bikes.

New Model-VR44: Vision Recumbents is pleased to announce the release of a new model for 1996, the VR-44. Utilizing the ultra-lightweight frame of the venerable VR-45, the new 44 features a more affordable component package. Substituting LX components for the 45's Ultegra/Cook Bros. mix produces a bike that will retail for \$1800, but still weighs about 24 pounds; amazingly light for a recumbent. Available in SWB only, the 44 does feature the modular handlebar design of our other models, and is available with either 16" or 20" front wheels. Red or Black glossy powdercoat finishes provide a quality, long lasting finish.

Double Vision Tandem Sheds Weight: The ATP tandem continues the tradition of design excellence that has made Advanced Transportation Products the leader in recumbents. Featuring the comfort of under seat steering and the convenient quick release nylon mesh seat, the Double Vision tandems are sure to be a big hit this season.

In their quest for recumbent perfection, the ATP engineers have come up with a startling innovation; the Independent Pedaling System. Designed to isolate the two crank sets, the optional I.P.S. makes riding a tandem almost as simple as riding a single bike. Either rider can rest for a moment, and controlled starts and stops are a breeze. The I.P.S. also allows for overall gearing adjustment and independently variable cadence ranges. Some last minute refinements have given the new system a clean look and eliminated excess chain lengths. The weight of the I.P.S. system is 1.5 pounds. The weight of the machine will be about 44 pounds without the I.P.S. Wheelbase will vary depending on the size of the stoker, averaging 77 inches, which allows our tandem to be carried by any standard car-top tandem rack. Disassembled, it can be shipped by UPS.

The top-of-the-line R-85 will feature a selection of the best components on the market, hydraulic brakes and custom paint will be standard. The R-82 will feature LX components and come equipped with cantilever brakes, with prices starting at \$3400.

Look for Vision Recumbent bicycles in Motor Books new hardcover; "The American Bicycle"—ATP.

New ATP Vision 20" LWB Model

Seattle, WA—Vision Recumbents is pleased to announce increased popularity and orders of our LWB R-40 and 42 models. We never intended for the 20" wheel to replace the 16", it was offered to meet consumer requests. The percentage of LWB vs. SWB sales has increased mostly with 20" wheels.

Vision has always provided bikes in as many configurations as possible to suit our customers needs. The 20" wheel is a perfect example of this philosophy. We did not develop the fork geometry and source the wheel thinking that it is better or faster than the 16". In fact, we discourage use of the 20" by riders who are unable to firmly place their feet on the ground while seated. We have approached the 16" tire availability problem by designing our own tire, and believe that 16" sales will continue to be strong. ATP is currently testing the new 16" high-psi tire samples.

The VR-45, the Ultimate SWB bike

Seattle, WA—If SWB is what you prefer, consider the Vision VR-45. The seat back angle is adjustable to suit you. The seat is held in place with two quick release skewers, so removal is a snap. We offer either 16" or 20" front wheel sizes, so you can get the ride you want. We offer ASS and USS and our bike weighs 24 pounds...it's one of the lightest recumbents available in the world.

Our bike has less heel/front wheel interference than most SWB/MWB bikes. The 45 is equipped with top of the line componentry, a mix of Cook Bros., Ultegra, and XT components. The 45 is available in any color, simply supply us with the paint color number (PPG). Vision offers a complete line of accessories for our bikes, including fairsings, bags, chain guards and mirrors.

There has never been a main frame failure on a Vision—never! The VR-45 is one amazing bicycle.

ANGLETECH DOES V-REX

Woodland Park, CO—Do you want the world's nicest Rans V-Rex or Stratus? Do you want a bike with 63 speeds? Do you want a custom-spec bike with the latest in high-tech/high end componentry? AngleTech will build it.

AngleTech will build you a fat tire front suspension V-Rex or a skinny-tire HED wheeled race bike. The V-Rex seems to be a popular bike out in Colorado, "this is the best hill climbing recumbent I have ridden" exclaimed one customer about his V-Rex 24/20. Kelvin Clark of AngleTech says, "the 24/20 format is the friendliest handling, most efficient pedaling position and fastest acceleration of any V-Rex model and is the model we recom-



The V-Rex 24—Rans

mend." The GL63 (Sachs 3x7 equipped) can be ordered as a 26/20 as well. New this year are tilt-forward adjustable steering riser, Magura hydraulic brakes for low maintenance and the new lower back Rans seat.



The Ultimate commuter—BikeE

BIKEE EVOLUTION

Corvallis, OR—BikeE's revolutionary design places the rider in a relaxed, upright position, providing both comfort and support for commuting and longer distances. BikeE bicycles put the rider in an upright position on a padded, contoured seat with back support. Reviewers have praised the bicycle as ideal for city use, commuting and touring, as well as recreational riding. The new 1996 models, available in 7- and 21-speed bikes, feature improved rider comfort, reduced weight and improved aesthetics.

Check out the April Outside Magazine issue—BikeE gets a rave review! "The BikeE may be the perfect cruiser."—BikeE.

BOB—TRAILER WITH A COOL NAME

San Luis Obispo, CA—B.O.B. Trailers has a low center of gravity (c.g.), light weight, low aerodynamic drag, single wheel bike trailer that is specifically not for kids and definitely for anyone that has ever cared to carry gear/cargo/goods on their bikes. Weighing in at just over 12 pounds, it is the lightest trailer available. It is no wider than your handlebars (17") and mounts to recumbents using a modified CroMo and SS steel quick release

skewer that replaces the one in your rear hub. It comes with a 16" alloy wheel with QR hub, SS spokes and works great for on/off road use. The capacity is 70 pounds with a powder-coated 4130 CroMo frame. The trailer retails for \$229 including skewer. The "Yak Sak", a modular 94 liter (5700 cubic inch), weather resistant, Cordura nylon duffel sack is available as an accessory for \$34.99 retail.

For touring on narrow roads with no shoulders, the Yak 16 accomplishes two things: 1-the low c.g. cargo space keeps your bicycle handling like a bicycle (panniers raise your c.g.) 2-the narrow profile of the Yak 16 keeps your gear tucked in behind you where it is visible, accessible and aerodynamically clean, and tracking the rear wheel of your bike.

The B.O.B. is perfect for commuting, deliveries, and shopping. Faced with needing to transport things around town or two and from work and not wanting to use the "fossil love" machine? Do you have a bike and no means of carrying your purchases? What are the options? Backpacks are awkward and sometimes too small. Panniers are space limited when it comes to grocery shopping or carrying bulky items. Using a two wheeled trailer is an option, yet they are heavier and wider than your bike making you a target in the urban automotive environment. The agile Yak 16 fits between cars, jumps curbs, misses car bumpers and skirts sign poles! An urban survival tool for the '90's—*Philip Novotny.*

CRYSTAL ENGINEERING NEWS

Cornwall, England—Crystal Engineering has moved to new premises at PENRYN in Cornwall to cope with the increasing demand for our products. For 1996, The Trice recumbent tri-cycle has been updated and the Ross SWB has also benefited from the updates.

The Festina won the unstreamlined class in the British Human Power Club Championships for the second year running, and was competitive in the streamlined class in the few races entered. The Festina body shape is being developed in a full-size wind tunnel at Bath University.

Development of the Arm Powered Trice (and leg powered) proceed, and details can be provided.

Our latest recumbent design in nearing completion: the Crystal GEM is a compact side by side two seat HPV with two wheels at the rear, one in front. Initially offered as an open two seater for adults, it may be adapted for the disabled to assist an adult by arm, or combined arm & leg power. The final version will be completely enclosed with sliding canopy, offer vast luggage space/child seat and have electric assistance for hills and/or where arrival at destination not covered by sweat is essential.

21st CENTURY BIKES

Mooreville, IN—The INFINITY 21st Century recumbent cycle delivers a ride as you've always dreamed it could be. With comfort unmatched. A responsive, unrivaled ride that is one of simple ease and joy.

The all aluminum INFINITY 21st Century beckons to your every cycling demand. With a comfort rating of "10" you'll glide smoothly and effortlessly across miles with unbelievable ease.



Counterpoint Presto with BOB in tow—Philip Novotny

The seat and frame design places your body in the most efficient position with maximum comfort for those century rides.

The INFINITY 21st Century is a precision machine designed to increase the speed and range of any cyclist. One ride and you will see why the INFINITY 21st Century remains the best value in a long wheelbase touring recumbent.

The INFINITY GRAND TOURING is our 15th Anniversary limited production model. The GRAND TOURING will come complete with a special "Silver-Vein" powdercoat finish, Aerospoke composite wheels, upgraded 24 speed drive system, rear rack and cycle computer—*Donald Barry, Ace Tool & Engineering.*

EASY RACERS EXCELLENCE

Watsonville, CA—Excellence is a word that gets lots of ink these days. At Easy Racers we take that word seriously. Seriously enough to run on a bit about why Easy Racers recumbents are so often cited as "the bikes to beat" in the industry.

First, there are the speed records. World records have fallen to "Fast Freddy" Markham and the Gold Rush one after another since 1979. But recumbent designers/builders think of closer-to-home records when they think of Gardner Martin and his designs. For seven years running he's won IHPVA events in every category from 200-meter all-out speed to most-practical vehicle. Head-to-head showdowns, on the same track, on the same day. That's how the word-of-mouth legend was born and spread throughout the world of recumbency. Excellence in design and performance proven over time against all comers.

Translating racecourse excellence into street-worthy excellence ain't no "gimmic". Easy Racers frames are TIG-welded by "Fast Fred" himself. Industry-standard, leading edge components go on every street bike under Gardner Martin's personal supervision. Ask anyone who's visited the factory. They'll talk about attention to detail, knowledgeability and just plain cycling savvy. Excellent components intelligently chosen, professionally installed.

Industry leaders in more than technology,



The Tour Easy—Easy Racers, Inc.

customer care counts at Easy Racers. Call about installing Aerospoke wheels or other custom components and you'll often get a personal briefing from Gardner himself. Open the box containing your new bike and find extra tools, spare cables and tubes as well as a bike that's ride-ready in minutes. Check out their Internet homepage at <http://www.easyracers.com> or send Email to toeasy1@aol.com to order or to get answers to your questions. First in the industry on the net.

Their next "first" will be the 15-16 June 1996 "Freedom Easy Tour" featuring a full-on century series for recumbents beside the beautiful Monterey Bay. Excellence in customer service since 1979 and well into the 21st Century...seriously.

First in touring. From New Zealand to Vietnam, from Alaska to South Africa no other recumbent brand has been so many places or been ridden so many miles. Total miles ridden by Easy Owners since 1979 are estimated at more than 25 million miles.

First in Performance. Stability at speed has always been a feature of Easy Racers designs. Most other recumbents have a tendency to go out of control when hitting large bumps or potholes at speed, especially the SWB bikes with overloaded front wheels and a sling-type seat which like a trampoline. The longer wheelbase of Easy Racers designs have the ideal weight distribution of a Formula One race car and a shock absorbing,

thickly-padded seat allowing better control and stability under adverse conditions. One customer has this to say: "I have found the Gold Rush Replica with the body stocking to be the fastest recumbent I have ever ridden. It is also quite stable in all situations, which is something that cannot be said about all performance type recumbents."

Take a look at the well-triangulated design of the Easy Racers frames. There's no wasted bottom bracket flexing when you push hard on the pedals. Compare that to the single, long, flexible boom on most other recumbents. Efficient—stable—reliable—define Easy Racers recumbents. Another hallmark is the user friendliness. It's easy to get your feet on the ground with our seats unlike the lawn-chair style sling seats which hold your thighs up so high its hard for shorter people to get their feet on the ground.

Another easy-on-the-body feature of our recumbents is the low pedaling height. Compare it to the others with the pedals two feet off the ground which strains the knees and is less efficient. The high up pedals make it harder to get started and contribute to numb feet.

Most other recumbents are kind of geeky looking, like a wheelbarrow with a lawn chair and the pedals high up and way out in front of the front wheel. If you want strange and geeky then don't get our bike because racers do have the right look...long and low and fast-looking. Many people have said: "It's the Harley-Davidson of bicycles". So if you want to ride the real thing, get the original, get the ride, get the performance, get the looks. Get the Easy Racers experience.

NEW KID'S RECUMBENT

Sharpes, FL—Flying Dutchman introduces a SWB for kids. Pride in craftsmanship, computer design for simplicity and strength, and the use of United States materials and components wherever possible combine to make this the right choice in a "Junior Recumbent."

With a little help from Mom or Dad, in five or ten minutes our son or daughter can 'solo' and be part of the recumbent revolution. Built for kids, the seat is low and the boom position eliminates the dreaded heel-front wheel interference. yet, the ride is stable, providing confidence with sure-footed stops and starts. Sand and gravel pose little trouble for the wider BMX style wheels.

The frame profile and seat parallel each other representing a clean, pleasing streamlined appearance, built to take the punishment which kids can mettle out. The bike looks "right", not forced or cobbled together.—*Rusin Van Dyke*.

HALUZAK NEWS

Santa Rosa, CA—Bicycles by Haluzak is looking forward to a great season in 1996. With four solid models and increased interest as a result of articles in RCN # 31 sales are already ahead of last year at this time.

We have built a new production facility which is three times the size of our previous facilities and consolidates all our functions in one building. We have also added two more employees to our staff and they are settling right in.

Our bicycle line has added above seat steering to its list of accessories. It folds forward and is telescoping to accommodate all sizes of riders. To

date there has been little interest in above seat steering however we have decided to accommodate future orders. We can also retrofit Horizons with 16" wheels and forks.

We are equipped to accommodate all types of special customer requests: custom forks, frames, seats wheels and componentry.

The Haluzak fully suspended Traverse is the first recumbent cycle in the world specifically designed for off-road use. Most customers who have purchased this model use it for rough street riding. New for 1996, above seat steering is now available for the Horizon, Leprechaun and Hybrid-Race models for an additional \$50 retail.

B.B.H. will continue to give our customers the vehicles and the support they need and expect—*BBH*.

THE NEW S & B TRIKE

Compton, CA—The three wheel tricycle market has seen many interpretations regarding the appearances of the ultimate cycle. Lately, a new type of bike has been showing up on the streets and bike paths around America. This redesigned cycle has multiple speed gearing, baggage capacity for shopping, reliability, and ease of operation—no balancing needed!

This new cycle is marketed by S & B Recumbents and is known as the S & B Trike. The cycle was built to provide three wheel transit for a long neglected market. This new trike encompasses style, design and individuality into a three wheel package. S & B Trike prices start at just under \$800—*S & B Recumbents*.

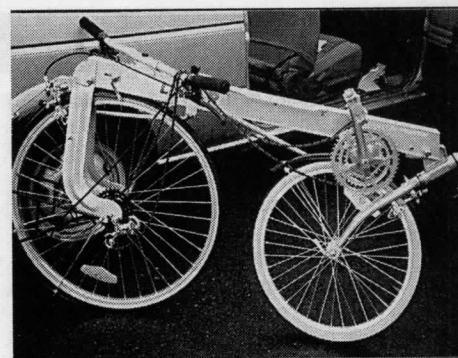
S & B GUIDE TO SWB RECUMBENTS

Compton, CA—A short wheelbase recumbent must have four attributes to really make it appeal to the serious rider. 1. It must go fast. 2. It's got to be comfortable. 3. It's got to look good. 4) It's got to be an affordable machine. The S & B has all these features built into a triple tube design and finished to a brilliant powdercoat finish—a really first quality job.

Handling is quick and very predictable. The vehicle turns on a very tight 9 foot radius. All welds are precision TIG welded for strength and beauty. The form fitted seat with it's pleated custom velour is really a work of art. The basic machine is carefully appointed and can be upgraded to satisfy even the most demanding consumer. This machine can be purchased as a frame-kit or a complete bike. Even frame sizes for kids and heavier riders can be ordered. There is an S & B combination that will satisfy any recumbent rider in the market—*S & B Recumbents*.

THE RECUMBENT THAT FOLDS!

Kent, WA—Every year at the Interbike trade show, the annual recumbent-folder rumor gets re-issued by fans of a popular folding upright bike. Every year we explore the rumor with disappointing results. If you want a folding recumbent, there is no need to wait. Steve Hansel has the bike for you. The Linear LWB hinges at the headtube and the front of the once-piece formed chain-stays have quick release locks for fast and easy folding. You get the advantage of the longer wheelbase recumbent design and the convenience of the reduced folded size. When you've finished riding, you can



Linear LWB folded-Linear Mfg.

fold the Linear up for easier transporting and storing. It even fits in compact car trunks and on standard bumper racks. It stores easy in apartments, dorms, RV's and even airplanes! The Linear is also available in SWB and tandem models.

RANS RECUMBENTS 1996!

Hays, KS—RANS design theory has always been to build from the ground-up. From the very beginning in the 1970's, we fabricated every component and never succumbed to adapting upright frames. We've always felt that to design from the ground up has been the best way to solve problems of the recumbent design. You will notice we have no qualms about manufacturing custom hardware such as seats, handle-bars, forks, bottom brackets, drop-outs, etc.

Our mission is that we have been seeking methods of human conveyance that are kind to the body and efficient. We've enjoyed riding our road bikes and have always been avid cyclists and in love with the speed and efficiency of a good road bike. Of course, we have wanted to instill that speed and efficiency into recumbents, and as we both grow older, the comfort factor gets more important. Safety is also an issue recumbents tend to enhance.

For 1996, we plan to continue with refinements to our existing bicycle line. We are very excited about the tandem. We feel it is just the beginning of the learning curve RANS will be in there 110% developing ideas to make tandem recumbents that we feel are one of the bigger, brighter aspects of our business—*Randy Schlitter*.

RANS TILT-FORWARD STEERING

Kent, WA—RANS has announced that the Screamer fold-forward steering column will become an option on V-Rex and Rocket models in 1996. The "flip it steering" column is available from RANS dealers, AngleTech or RANS directly. The price is \$200 outright, or \$150 as an option on a new bike—*RJB*.

RANS BECOMES B.O.B. DISTRIBUTOR

Hays, KS—RANS, Inc. is pleased to announce its distribution agreement with B.O.B. TRAILERS, INC. of San Luis Obispo, CA, producers of the YAK—the single wheel trailer that provides a great solution for cargo transportation on recumbent bikes (not intended for carrying children or pets). The YAK fits all RANS models, including the Response and Tailwind! The Yak PLUS Package includes a YAK Trailer, a universal quick release mounting system, a YAK SAK

(weather resistant cargo bag), and a two piece safety flag. The Trailer mounts directly to the skewer, not to the frame like all other designs. Solid axle adapters are available. The YAK'S CroMo frame weighs 12 pounds (5.5kg) and has a maximum carrying capacity of 70 pounds (32kg). The YAK SAK is a heavy duty, weather resistant nylon cargo sack that holds 5700 cubic inches (94 liters). The YAK is available now from your local RANS dealer.

ZERO-G—THE ULTIMATE UPRIGHT

Hays, KS—Our new suspended cruiser is a bicycle we had used to test a landing gear shock absorber. The bike is called the Zero-G. This new model represents a departure from our usual recumbent bicycle. It is an attempt to break into the upright bicycle market. The design features many innovative ideas that we feel would make the enjoyment of an upright bicycle greatly enhanced. It has what we call relaxed geometry. This means the seat angle is more laid back which allows the use of a very unique seat. When adjusting the seat up or down, it also moves fore and aft, therefore one frame size will accommodate many. The shock absorber has been switched to an air shock to provide a cushier ride with dampened recoil. This is more important on a bicycle and is not so relative on an aircraft. The other feature is the shock absorbing handle-bar stem. This takes care of road shock into your hands. The intent of the Zero-G is not as a mountain bike, although it has that appearance; it is to turn casual riding into a comfortable, safe experience. The Zero-G is available through all Rans dealers. Prices start at \$995.

CALYPSO—TOTAL WORKOUT BICYCLE

Chicago, IL—WERNER-Advanced Bicycle Design prepares for the approach of the millennium with Calypso, a total workout concept recumbent bicycle. This bike is arguably the most comfortable recumbent on the market. Its relaxed seating position permits the rider to enjoy hours of travel without discomfort of the neck, hands and shoulders. The biker's derriere sits approximately 26 inches off the ground. Calypso's center of gravity and 50/50 weight distribution provide for excellent braking capabilities; far surpassing those of a standard mountain bike. Its seating angle creates a greater aerodynamic profile, thus enabling the rider to attain greater speeds with less effort. The stable design of this recumbent allows for nimble handling. Its wheelbase, turning radius is similar to that of a standard mountain bike. First time riders easily adjust to Calypso's recumbent riding position and master sharp turns quickly.

For transporting purposes, Calypso is the same size as a standard bike and can be conveniently carried on most car racks. The size also makes for easy parking and storing. Calypso's frame and fork are constructed with TIG welded 4130 CroMo tubing. The seat frame, supports, and adjustable boom are fabricated from 6061-T6 aluminum. The seat cover is made with Cordura nylon mesh. Open-cell foam inserts in the seat support the small of the rider's back and add softness to the bottom of the seat. The suggested retail price for Calypso is \$1679—*Frank Werner*.



The 1996 Rans Zero-G cruiser. The basis for Rans recumbent suspension testing?—Rans

THE GREENSPEED TANDEM TRIKE

Victoria, Australia—The Greenspeed Tandem Touring Trike neatly combines the advantages of the Greenspeed Recumbent Trikes with that of a tandem bike, and adds a few more as well. The tandem arrangement means that two people of different fitness levels can work well together, with each doing as little or as much as they choose. It also means that the machine is about 30% more efficient than a solo machine, because only one person is breaking the wind, and two are pushing. This builds on the better aero efficiency of about 20% of the recumbent trike over say a mountain bike, giving a double bonus. This advantage is most noticeable riding into a strong head wind. On top of this you have the comfort of the bungy cord laced, open weave, reclining seats, which some people say are more comfortable than their lounge chairs! And no weight on your hands and wrists. Then you have the fact that you do not need to balance the machine all the time, like you do with a bike - no need to dismount and remount at traffic lights etc., no need to worry about hitting something on the road and falling off! And the stoker can around, without upsetting the balance of the machine. No problems with hills either.

With a trike you can gear it down as low as you like, because it stable at any speed. It comes as standard with 63 gears, giving a rage from 16" in bottom to 125" on top. Unlike a conventional tandem, where starting and cornering can be a problem, the cranks are set up at 90 degrees out of phase, so that when one person is at the end of their pedal stroke, the other is in the middle, giving full power. This makes for smoother hill climbing. Finally the twin Sachs Power Disc hydraulic brakes give phenomenal stopping power. These brake exceed the German standard for bicycle brakes by two and half times, and have excellent modulation.

With a turning circle which belies its length, the Greenspeed Tandem Trike is both a handy practical everyday machine, suitable for picking up friends, transporting long objects etc., and a superb long distance tourer—*Ian Sims*.

A NEW CANADIAN RECUMBENT

Toronto, Ontario—Just as we were going to press, long time RCN reader John Riley faxed us this info sheet that he picked up from the Toronto bike show about a new Canadian Recumbent.

This new LWB USS machine is called the Quetzal. It has a 20 x 1.75" rear wheel, 16 x 1.75" front wheel and 21 speeds with five overdrives (intermediate) making for 105 speeds. The USS features side stick controls and the steering ratio is adjustable. The bike has a sling/mesh/air cushion seat. The frame is built of 1.9" heavy duty 6061-T6 aluminum and comes in a one-size fits all by a telescoping monotube frame.

The components are a Shimano Alivio front derailleur, STX center and rear derailleur and Grip Shifts. The brakes are Shimano cantilever.

An interesting comment on the faxed information states that, "The director of the Chicago College of Osteopathic Medicine's High Tech Fitness Laboratory states the riding a <recumbent?> positioned bike is 40% more effective in working the cardio vascular system." That's what is says!

The Quetzal is produced by PROCYCLE, a self acclaimed, "large Canadian manufacturer". You can reach them by phone at 418-228-8934/1-800-361 2577 or by fax at 418-227-2768.

ROTATOR WOMEN—3 GENERATIONS

Santa Rosa, CA—Stephen Delaire, owner of Rotator Bicycles, surprised his mom this Christmas with her very own bright red *Rotator Coaster*. Sibyl Delaire, a 65 year old mother of 10 and grandmother of who knows how many, is quite proficient on her Coaster. Despite inclement weather in Bremerton, Washington, Sibyl has found time to try out her new bike.

Two other female members of the Rotator family are also pedaling in style and comfort. Stephen's wife, Chaney, is a recreational cyclist who has become spoiled by the comfort of the recumbent seating and handlebar position. "You always hear about men's discomfort on the traditional saddle, but it's just as bad or worse for a woman. I've always wondered why more women aren't clamoring for a recumbent."



Rotator Mom—Steve Delaire



Rotator Kids—Steve Delaire

Rotator's passive suspension system, a single beam main frame, combined with heavy duty elastic chord around the seat, creates one of the more comfortable recumbent rides available.

Recumbent riding is old hat for eight year old Cibyl Delaire. Before she got her own Pursuit in 1994, Cibyl was a regular rider on the back of her Dad's recumbent tandem. When she rides her *Pursuit* through the local park, other kids stop what they're doing to "ooh and ah" over her bike, a Pursuit that has been scaled down to fit a child. As she sails past, she usually hears someone say, "cool bike!"

The youngest member of the family, seven year old Lily, is patiently awaiting for her turn! For more information contact Rotator Bicycles.

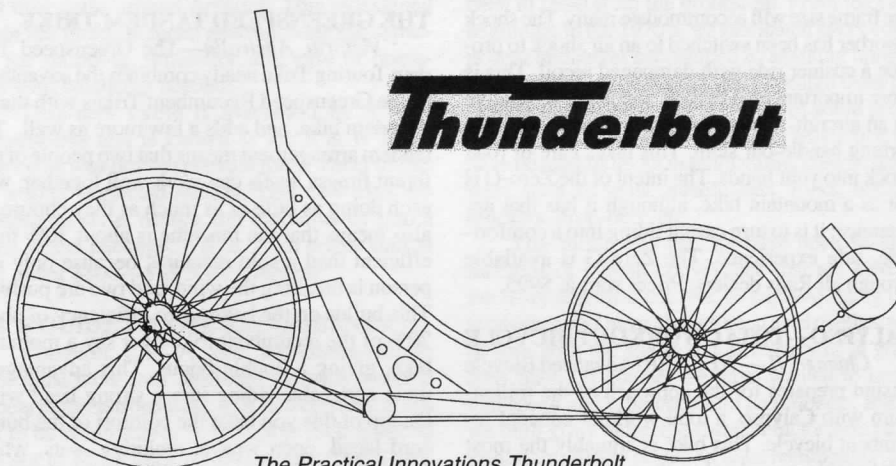
THE COOL ZEPHYR

Morgan Hill, CA—Our new line of recumbent trikes is destined to keep us very busy this year. To meet the demands of our customers and to keep us competitive, we have adopted World Class manufacturing processes currently being used by many Silicon Valley companies.

The Practical Innovations Mk III represents the third generation of the award winning Zephyr. The styling of this extraordinary machine sets it apart from anything in the recumbent industry. All Zephyrs include custom built disc brakes, active front suspension and integrated safety frame that no other trike builders can offer. The Zephyr is a state-of-the-art machine that has no equal in styling and performance. New for 1996 is a lighter, stronger frame and bottom bracket tower, redesigned seat, improved steering and drivetrain and improved Front suspension system.

The Zephyr Mk III is the Cadillac of recumbents. The active front suspension and ergo designed seat provides a featherbed ride. A built-in roll bar, lateral support rails and front safety bumper provide added protection to the rider. Braking is excellent thanks to the ultra-light weight mechanical disc brakes controlled by our exclusive Syncro-Pull brake cable control system.

The Mk III GT offers you total comfort, high performance and reliability. Features include a Shimano Deore LX drivetrain, dual tiller steering



The Practical Innovations Thunderbolt

system and a Ritchey crank. This a very capable machine for both touring or serious sport riding.

The Mk III GTX is the ultimate luxurious human powered vehicle. It has all the features of the GT, plus Shimano Deore XT components. Additionally, we loaded it with extras like a Zipper fairing and SPD pedals. You want attention? Get the "GTX", it will not disappoint you.

New for '96 is the lower-cost 'Thunderbolt' which shares some commonality with the Zephyr including a heat treated 6061 T6 aluminum frame. The T-bolt takes a no-nonsense approach being lighter and smaller than our flagship Zephyr. Despite its simplicity, the T-bolt promises to be one of the best handling trikes on the market! Prices start at \$2,495—Rick Horwitz.

BOMB-PROOF WHEELSETS

Missoula, MT—The Bike Doctor Bicycle Service Center in Missoula is now building the new Trans-America Wheelset for the Adventure Cycling "Cycle Source" Catalogue. These new wheels are nicer than ever with White Industries tandem rated 40 hole hubs in cassette or free-wheel versions. The hubs are 100% field serviceable right

down to the inner workings of the cassettes. The rims are Mavic ceramic (lathe turned with double eyelets) in 26" or 700c. The standard set comes with 36 holes in front and 40 or custom requests. The Rear Wheel can be purchased individually and would make a bomb proof upgrade for the rear of loaded touring recumbent. These wheels are impeccably hand built by us. We have built wheels for delivery riders as well as the top local racers. Contact: The Bike Doctor (Scott Eldon or David Bixby) at ph#406-721-5357.

EASY RACERS TO OFFER RANS SEAT

Watsonville, CA—For those who need extra back support and a more breathable seat-back, Easy Racers, Inc. will offer the new Rans hybrid mesh back seat as an option on Tour Easy and Gold Rush Replica models. For more information give Easy Racers a call. □

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Bob Gepford on his Interceptor—courtesy of Bob Gepford

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—Buck Levengood, W. Lebanon, N.H.

"Today we rode our first 20 miles and love the bike"

—Tess Machlan, Carpentersville, IL

"The speed is addicting! I love the feeling of passing all the diamond frames on the century rides!"

—Robert Gepford, St. Helena, CA

For a Free Color Brochure Call:



Rotator Bicycles, 915 Middle Rincon Rd. Santa Rosa, CA

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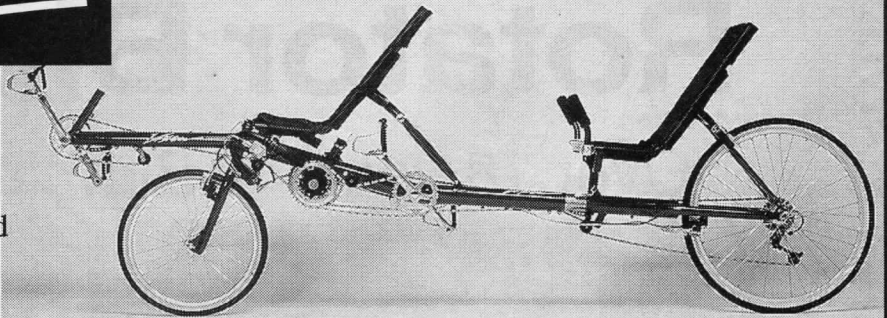
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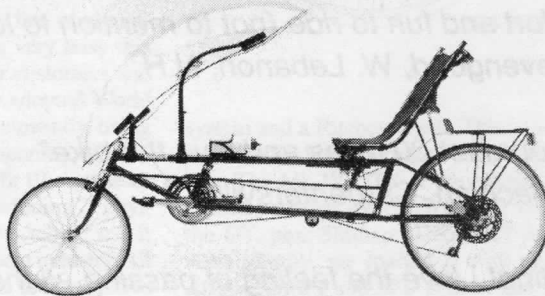


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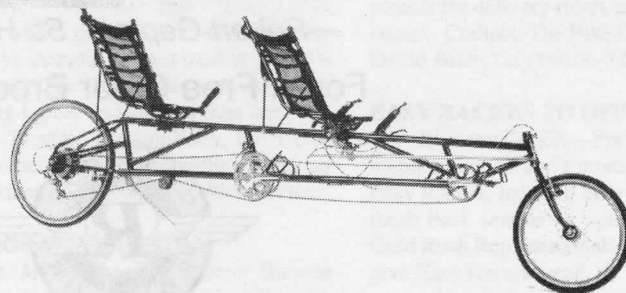
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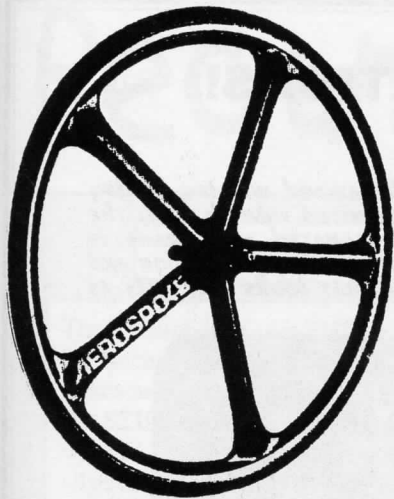
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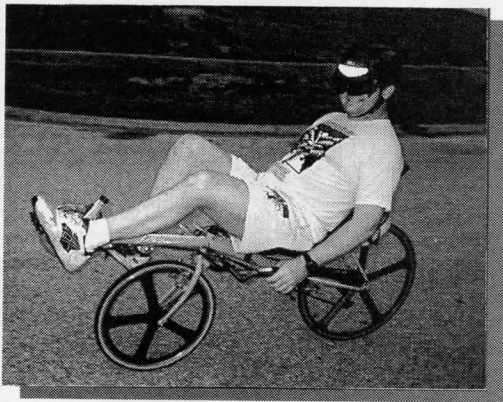


Photo courtesy of Bill Dowling



Photo courtesy of Easy Racers, Inc.



Photo courtesy of Lynn Miller

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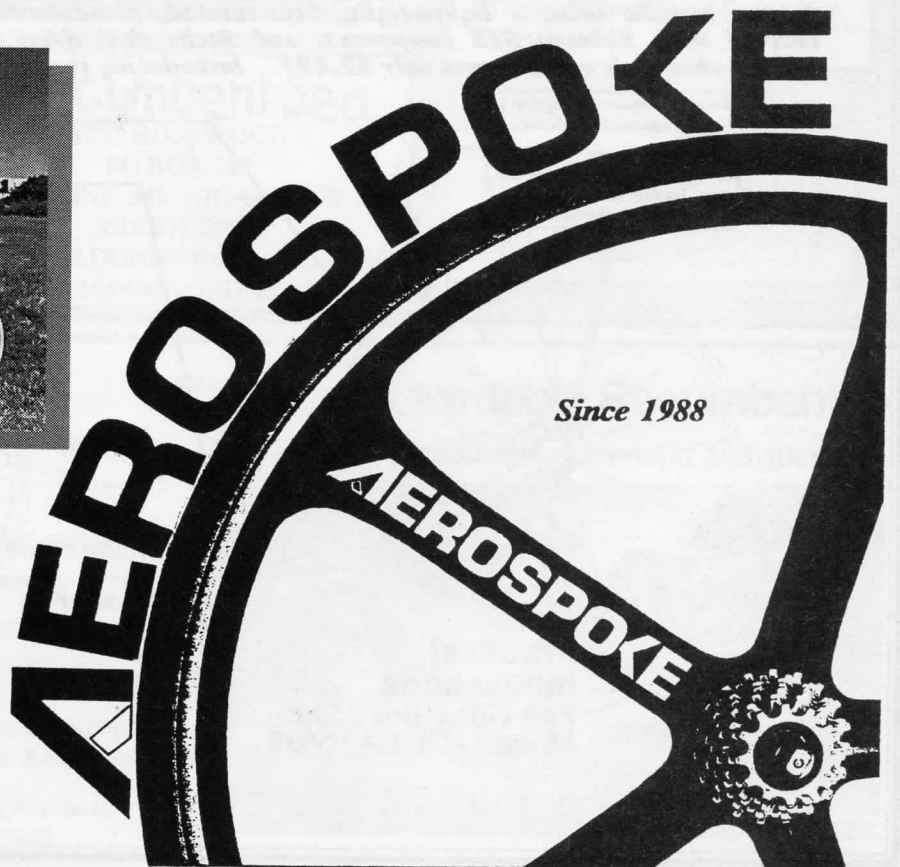
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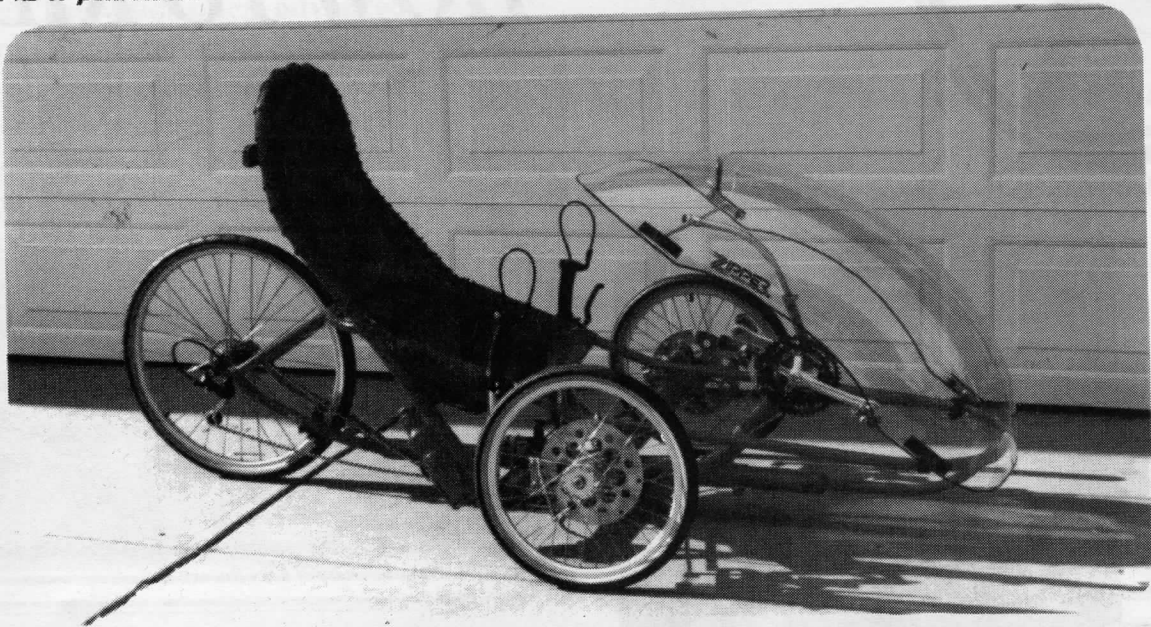
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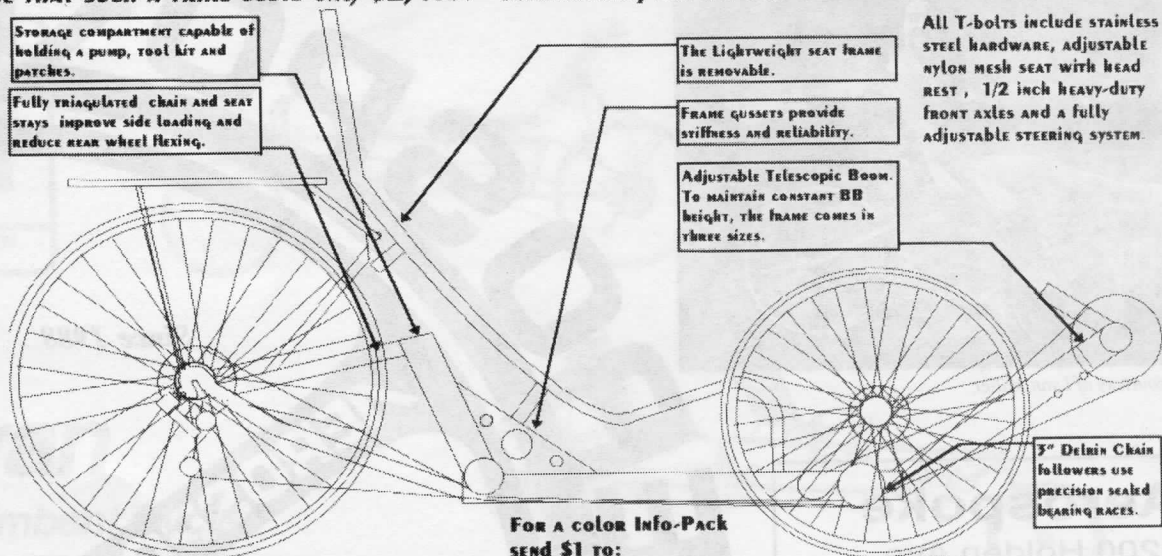
The Newly Designed ZEPHYR Mk III

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rhorwitz@hooked.net
Our phone number:
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Recumbent Sea News

Your source for Recumbent Bikes in the Great Lakes area of the USA and Canada

The Recumbent Sea is THE source for Recumbent Bikes in the Great Lakes area of the US and Canada. We STILL offer free test rides but we'd like you to know that it actually costs us nearly \$100 to provide you with a day of test riding. Please show you appreciate this service by supporting our shop.

Our test ride fleet includes ATP, all Rans models, Easy Racer and EZ-1, BikeE, Linear, Trailmate, ReBike and occasionally a Lightning and many others. We also sell many special needs trikes and quads. Don't let your physical challenges keep you from riding a bike! We also mail order if you have no local recumbent shop. Overseas orders OK too.

We support our bikes by stocking a full inventory of the things you need to keep your Recumbent happy. Need that unusual tire or tube? We have it!

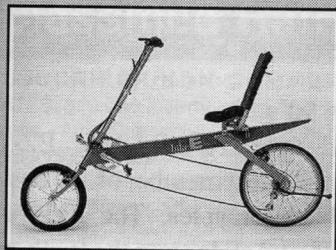
BIKES NOT CARS

The Recumbent Sea believes we should be responsible for our own mess. This includes all the awful stuff that comes out of your car's tailpipe. Arrange your life so that you can meet all your transportation needs on a bike! Please wear a helmet!

Full spec sheets and price list available by Email



Recumbent Tandems are starting to move at the Recumbent Sea. Rans, ATP and Ryan all build Recumbent Tandems!



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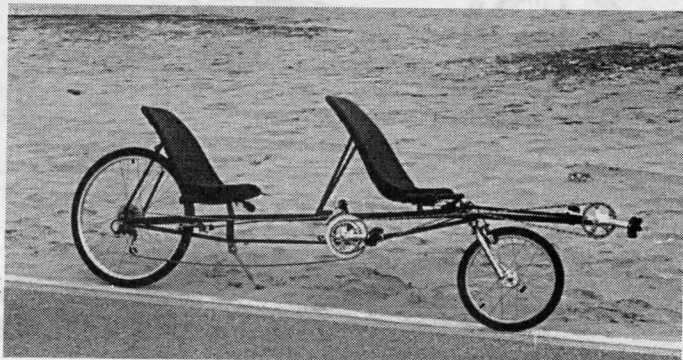
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...our aluminum Gold Rush Replica is a thoroughbred. A sleek, fast and refined machine. It's lightweight and stylish. You won't find any performance claims double-talk around here, the Gold Rush Replica is the real thing. The race version now rests in the Smithsonian Institution for winning the Dupont Price and breaking 65 mph. How many other manufacturers can say that?

The Tour Easy....

...our CroMo steel Tour Easy has been the mainstay of the Easy Racers line for years. It's a proven bike. No flash-in-the-pan whiz-bang technology here. This is a proven winner. You won't be prototyping the bike for us. We did that years ago and this is a refined bicycle. It's at home on a trans-USA tour, the daily commute or riding the trail with your kids.



The Easy Racer Gold Rush Replica

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Comfortable and user-friendly, the EZ-1 continues the heritage as the latest member of the Easy Racers family of laid-back bicycles. The EZ-1 is shorter and more compact, and slides into the trunk or back-seat of your car for a mid-day ride. Put a pair on the back of your van or RV and enjoy breeze-in-your-hair cycling on a moment's notice. Packs up tight for that New Zealand or Bahamas flight. Even the price has been run through the compactor. The Easy Racer EZ-1 start at just \$795!

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RECUMBENT SALE: We have some used, floor models and closeout Recumbents available for sale at the **RECUMBENT SEA**. This includes 1995 Rans models, a Ryan ,an EZ1 and last years bikeE. The selection changes constantly. E mail me or call for a current list. Recumbent Sea , your recumbent source in the Great Lakes area International orders accepted .Credit cards OK. Call Shel at Recumbent Sea Ph#616.877.2050 or order line 1800 354 6919 Email: sheldonhe@aol.com

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AD DEADLINE FOR RCN#34: May 1, 1996.

Important Notice

CLASSIFIED ADS listed in this issue of RCN were effective from April 1, 1996 through June 1, 1996. Please keep in mind that bikes and parts advertised in this issue may be sold if you are reading this past June 1, 1996. Please be most courteous when contacting classified advertisers past this date. Thanks You.

USED RECUMBENTS

FOR SALE: LIGHTNING P-38, large, red. Excellent condition and treated with TLC. Grafton crankarms, Amer. Classic fr. hub with 17" Moulton, NukeProof Ti rear hub, Speedplay pedals, Gripshifts, two Zzipper fairings-handlebar and full size bubble. \$1750 or best offer. Roy Ph#423-538-9791 (TN/32)

FOR SALE: ALTERNATIVE BIKESTYLES CLWB experimental model. 3 speeds. \$275. Ph#419-534-2431 (OH/32)

FOR SALE: 1995 RANS Stratus, high-speed green, Sachs 3 x 7, Super Zzipper, Grip-Shift, quality components throughout, excellent condition \$1250 Ph#604-384-4545 (BC/32)

FOR SALE: 1993 COUNTERPOINT PRESTO, like new condition, less than 100 miles, blue, Magura hydraulic brakes, XT hubset & front-rear derailleur upgrade, fenders, transverse trunk, Avocet computer, other extras. \$1900 + shipping. Call Kim or Paul. Ph#916-791-6276 (CA/33)

FOR SALE: 1994 EASY RACER TOUR EASY, red, large model, full Zzipper, \$1250. **1995 Rans V-Rex**, blue, 40" frame, \$1000. Both are like new and have too many extras too list. Call John@Ph#618-931-2769

FOR SALE: CUSTOM BUILT CLWB all CroMo, above seat steering, 16"x1-3/8"/20"x1.5", 21 speed Deore LX, Grip Shift, Roller-cam brake. Fits riders 5'8"-6'. \$800 + shipping. Call Tom Ph#207-583-4183. (33)

FOR SALE: 1995 RANS ROCKET, dark red, <200 miles. Mirror, Incredibell, Grip Shift, safety flag, PowerGrip toe-clips, 21 spd. (w/63-T. chainring). \$950 new plus \$100 worth of extras—sell for \$750 OBO/trade? Contact Dylan at 213-468-1080. (CA/32)

FOR SALE: 1994 LIGHTNING P-38, large frame, blue, low miles, Suntour components, with Eccosport commuting bag, Cateye computer, Lightning seat bag and rear wheel cover, Thermarest seat pad, rack, mirror, and Esge dual kickstand. \$1650 or best offer. Dave (602) 937-9729 (AZ/32)

FOR SALE: 1995 RANS RESPONSE. New Aug. 95, used 12 times, blue, cloth fairing, 700c/20", twist shifting, comfortable new mesh seat, 30 lbs. Blue, exc. condition. \$975+shipping. Bob English 314-532-5240 or Cycle Fun@AOL.COM

FOR SALE: RECUMBENT TRICYCLE, 2-Passenger Enclosed Runabout. Pedals and 1 hp assist, safety lightning, 6 x 6 x 12 closed trailer, ramp, winch, \$1500. Ph#313-835-0403. (MI/32).

FOR SALE: EASY RACER TOUR EASY Medium/large size, 18 spd., New LX derailleur, complete overhaul last year, std. Zzipper fairing, new tires, C-15 speedometer, rack, panniers, \$1050. Ph#206-362-5032. (32)

RCN CLASSIFIEDS WORK: Send us your ad today for the upcoming RCN#34.

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FOR SALE: 1994 RYAN VANGUARD XL, Bright Yellow Imron, Very Very Clean and Well Cared For, Suntour, Asking \$1250/OBO Ph 713-292-0291 (32)

FOR SALE: LINEAR LWB, new condition. Less than 300 miles. A steal at \$650 firm. Jerry. Ph#805-489-5368 or 805-481-6110 (32)

FOR SALE: RCN TEST BIKES: Save \$! '96 Rans V-Rex 24 with "Flip it" steering column; ATP Vision R-44 USS/20"; 1996 BikeE 21 speed. Send SASE to: RCN BIKES, POB 58755, Renton, WA 98058 for flyer.

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FOR SALE: DISC BRAKE ROTORS. Same as Sachs 3x7. Contact: AABC, 1408 S. Shamrock, Veradale, WA 99037, Ph#509-924-9480/Fax-1029 (WA/33)

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SUMMER TOUR: CO, to Waterton National Park in southern Alberta, Canada. 50 miles/day @ relaxed pace. Chet Rideout, 3183 Worthington Ave., Fort Collins, CO 80526 Ph#970-226-4363. Email: CBRideout@aol.com

LOOKING FOR BENT RIDERS: Independence, Missouri area. Call LeRoy Evans at Ph#816-461-5722.

LOOKING FOR BENT RIDERS: Western NY and Southern Ontario. Call Ed Weiss Ph#716-634-9660

LOOKING FOR RIDERS: Glacier to Yellowstone EZRiders of San Dimas, CA are planning a ride from Glacier Park to Yellowstone in mid-July and would like to invite other "Bent-Tourist" along. It will be mostly by Credit Card. For more info: Leo D. Ketterman, 718 Knollwood Lane, San Dimas, CA 91773 Ph#909-599-0698, Email: EasyRider_1@msn.com

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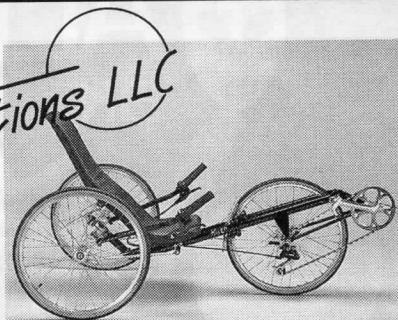
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1) Ronny was going too fast down a hill when he lost control and crashed his recumbent two days before he lost his waterbottle.

2) He popped a spoke when he hit a pothole sometime before he ran over some glass and got 2 flats and one day after he had broken his pedal.

	Crashed	Lost water bottle	Broke pedal	Popped spoke	2 Flat tires
Monday					
Tuesday					
Wednesday					
Thursday					
Friday					

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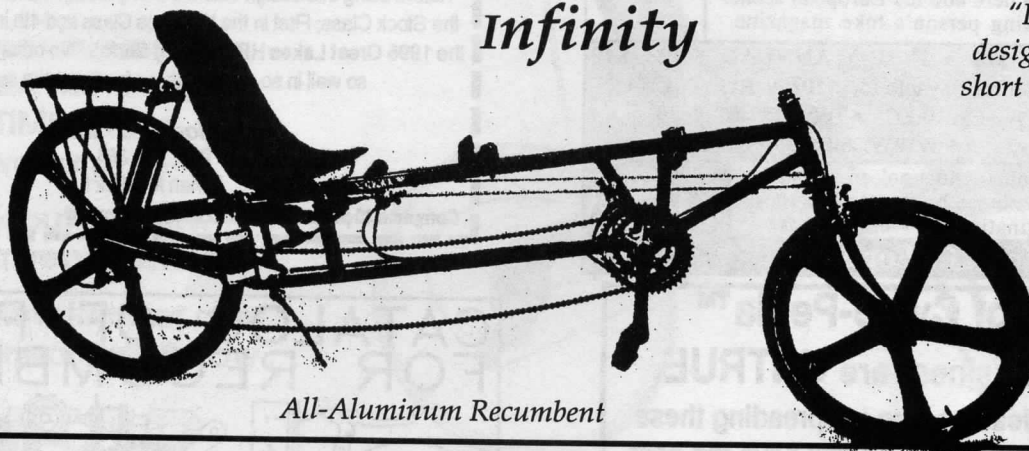
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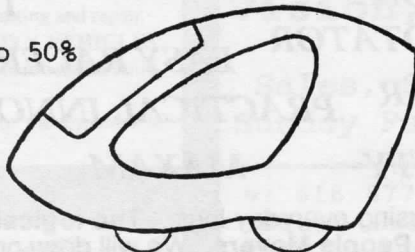
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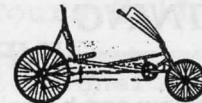


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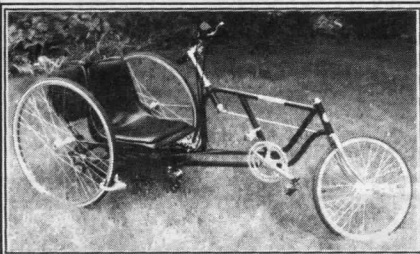


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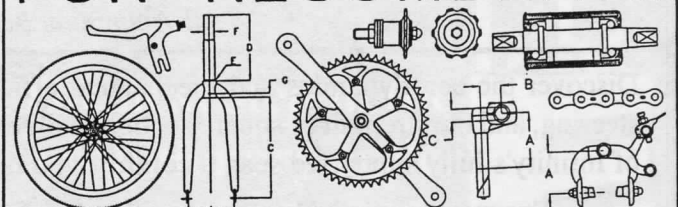
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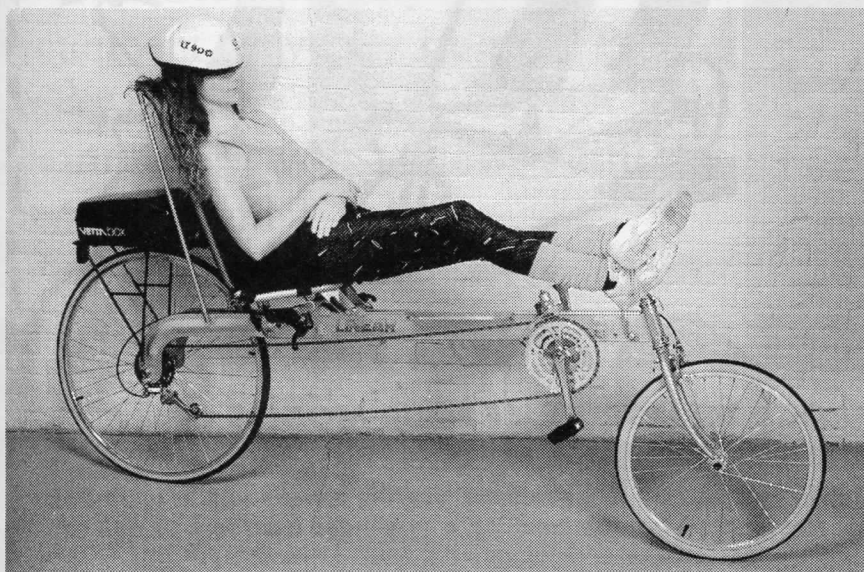
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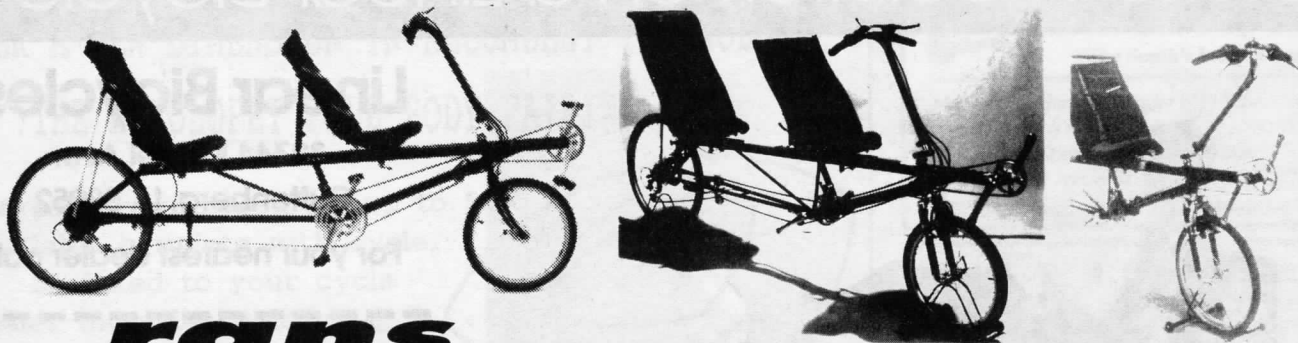
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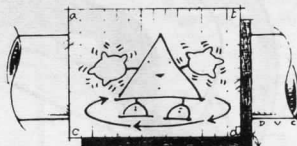
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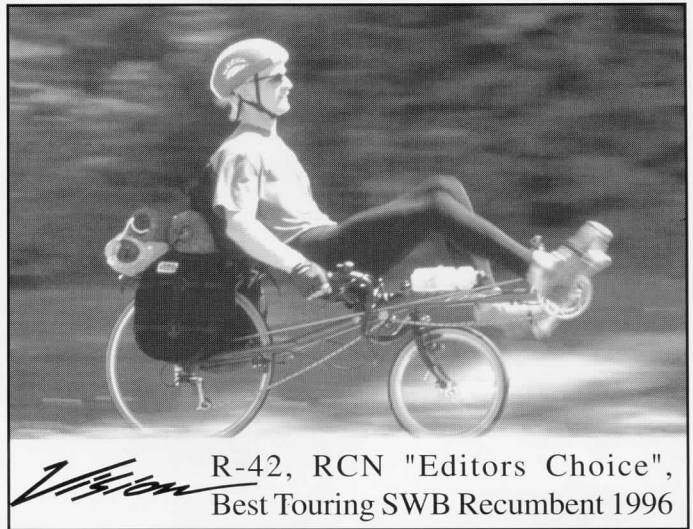
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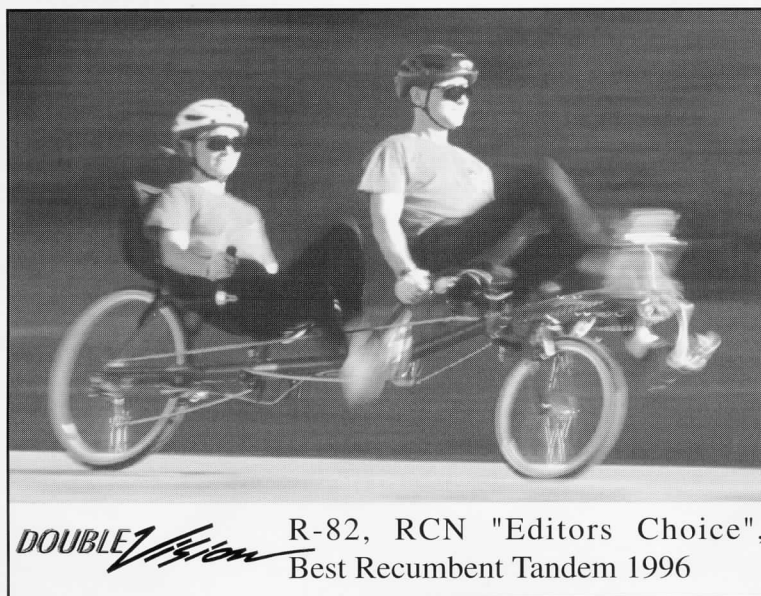
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