

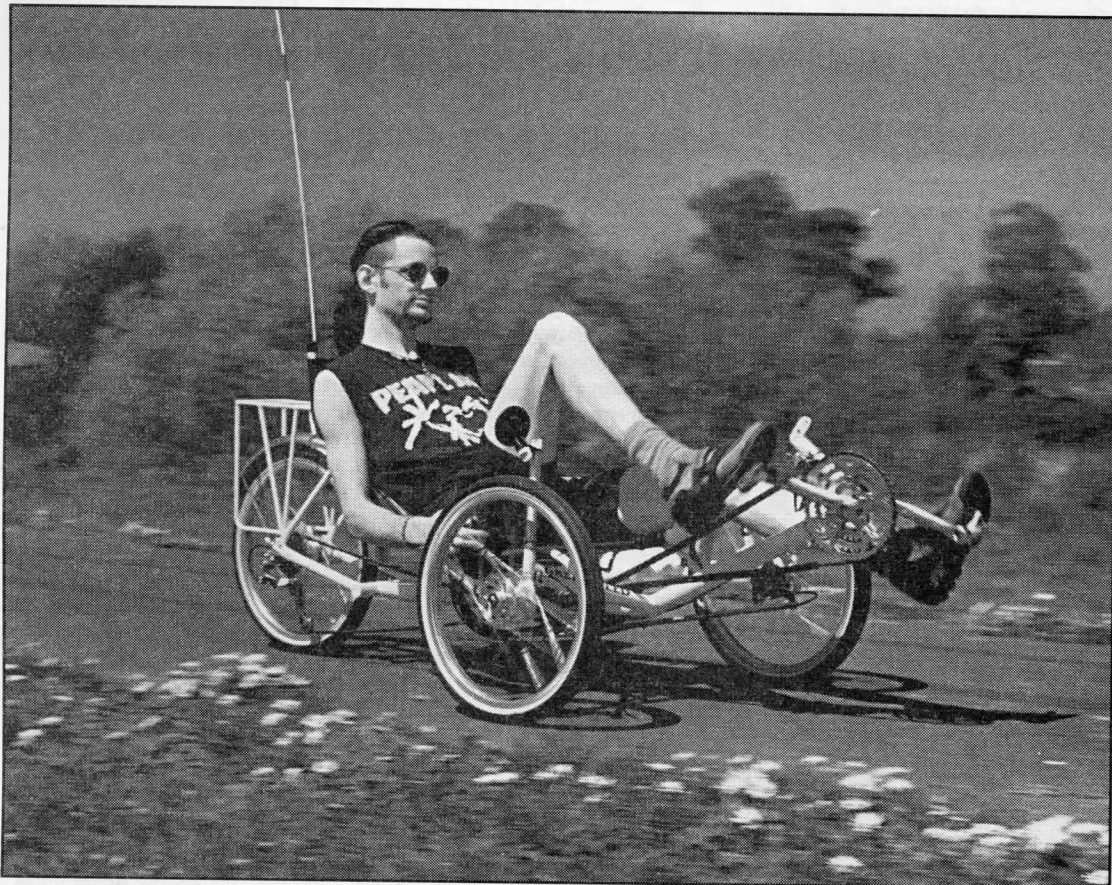
RCN

RECUMBENT CYCLIST NEWS

RCN #30

The Planet's #1 Recumbent Source

Oct/Nov/Dec 1995



The Greenspeed GTR 20/20 63 Speed Trike

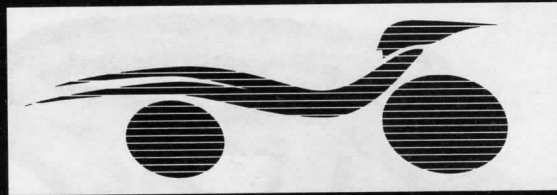
What's Inside!

The Greenspeed GTR20/20.....	5	Cool Bike of the Month-Tricumbent/ Demon.....	22
Greenspeed History.....	10	Recumbent News.....	25
Trike Design 101.....	12	Two New Recumbent Tandems.....	27
Interbike Show Report.....	13	BackSafer SWB.....	28
FLUX Ride/Tour.....	17	RCN Back-Issue Sale.....	30
Bent Backroads of Glacier.....	19	Recumbent Market Place.....	34
Homebuilders Corner: Stik Boy.....	21	ReCycle Classifieds.....	36

Editorial License

By Robert J. Bryant

• Email: DrRecumbnt@aol.com • Voice mail: Ph#206-630-7200 •



BentBOB Busts His Hiney For RCN!

Welcome Recumbent Fans—to the largest regular issue of RCN ever published—40 Pages! 1996 will mark my 10th year being a recumbent rider and our sixth year of publishing RCN. Most of you are aware that I'm a long-time (10 year) LWB rider, however, I have been on a SWB-quest for some time. I am looking for that elusive "perfect SWB recumbent." Earlier this summer on my visit to People Movers, I bothered Jim for several days trying out every bike he'd let me ride—and some he wouldn't—and some I couldn't ride, the Chinkara—more on that later.

Something happened to me in mid-October that really caught me off guard. I CRASHED on a recumbent. Over the last ten years, I've only gone down a few times, all were low speed embarrassing falls where the first thing you do is look around to see if anyone saw you. Only one of the falls was on board my seemingly invincible LWB, and that was due to a sheet of ice on a sub-freezing Winter morning.

Back to the present—I crashed—big time! It was a beautiful brisk clear October afternoon. I unloaded this new test SWB out of the van and prepared to ride it for a second time. I did my pre-ride check, climbed on and powered on down the trail.

I was out about 10 minutes into the ride—comfortable on the bike—cruising along at 18-20 mph when I noticed that the USS handlebar was crooked in the stem. Being a LWB rider, my first inclination was to correct it—this was mistake #1.

I stabilized, and pulled lightly upward on the right handle 3-2-1-0-IMPACT! My lifting on the bar, caused the fork suddenly to dive left, I was pitched straight off the bike and into the air. I landed several feet down the path. The bike dove to the left side, flipped forward and rolled over once or twice. My impact was where my butt hit the concrete pavement. The bike, for all the noise it made doing it's Soos Creek somersaults, it's nearly unscathed.

Impact was so fast, I cannot even remember the time frame between tugging up on my right bar and my hiney hitting the pavement. It caught me totally off guard. One minute I'm riding, the other I'm skidding across the pavement. I'm replaying this over and over in my head trying to figure out what went wrong—no doubt there was some rider-error here. I plan to write more the accident and recumbent safety in the next RCN.

I can tell you that putting this issue out, has been a pain in the rear—with my fractured tailbone.....

One Year Anniversary

January of 1996 will mark our first year of

publishing RCN full time. Thanks to our devoted fans and readers, Things are going pretty well, however, we are not in the clear yet, so your continued support this publication is very much appreciated. When you contact manufacturers, let them know you read about them in RCN! I'm still writing this from my home office in Kent, Washington, and those who've tried calling of even faxing will know that we are could use a third phone line. Keep in mind the easiest way to get our attention is via email or with a SASE.

A Year of Changes

1995 was a wild year. We sold nearly 4,000 buyers guides in 1995! We have decided to cease reprinting of some older back-issues (see sale page 30). These are early tests that are really no longer valid. We will get updates done on the popular bikes ASAP. Look for updates and a new "report card" in 1996. The first two bikes to get done will be the Easy Racer Tour Easy and Lightning P-38.

Things are changing so fast—1996 will most certainly be an interesting year. A few companies bit the dust this year, a few new ones are coming up and one company, BikeE, is in the midst of an out and out market blitz directed at bikes shops—and seemingly NOT enthusiasts. The industry is watching closely and I predict that we'll know if it works by early summer.

Buyers Guide 1996

Back by popular demand—there will be a buyers guide in 1996. By the time you read this, we will have started working on the 1996 Recumbent Cyclist News Buyers Guide. It will be RCN#32/33, a double regular issue of RCN. No more recumbent catalogs around here. This one will be lively! Look for more new bikes than you've ever seen before. Besides all of the hot new USA-built recumbents, we have two reports from Europe with bikes that you've never seen before—in any publication! And it will be a regular issue.

Recumbent Manufacturers: We need complete updated specs, new photos and your complete information by January 31, 1996. There is no charge for a basic RCN manufacturer listing if you follow our guidelines.

Manufacturers/ Dealers: If you are currently an RCN advertiser, expect to receive the 1996 packet very soon. If you are not an RCN advertiser manufacturer/ or dealer who would like to receive our **Buyers Guide/ Ad** send a check for \$3 US/ \$6 Airmail to: RCN BG, PO Box 58755, Renton, WA 98058.

Interestingly enough, not all of the recumbent manufacturers have the free-time necessary to fill out our questionnaire and get a buyers' guide listing. We DO NOT charge for a basic listing,

RCN PUBLICATION INFORMATION

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

SUBSCRIPTION INFO: See page 31

ADVERTISING: See page 36 or call RCN at 206-630-7200 for commercial ad rates.

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nor have we ever. If your favorite recumbent company has not been listed in the RCN buyers' guide, please let THEM know that YOU and RCN want them in the '96 guide!

Donating 1995 Buyers Guide

RCN would like to donate copies of our 1995 Recumbent Cyclist News Buyers Guide to local library systems around the USA. The problem is that the postage would break us. If you wish to donate some RCN issues to your local library, call your librarian, get specifics and then send a request for issues to RCN. We will only mail them to libraries and readers will need to donate postage \$3 for two pounds or \$5 for four pounds. RCN offers library subscriptions for 1/2 price!

Rider Groups

If you would like your rider group, club, or homebuilder group listed in the 1996 RCN Buyers' Guide, please send complete contact and meeting information to RCN ASAP.

Next Issue

Watch for RCN#31 in February—Happy Holidays & Viva Recumbency!

Robert J. Bryant



RECUMBENT MAIL

Send your cards, letters & photos to:
RCN,
POB 58755
Renton, WA, 98058-1755
Email DrRecumbnt@aol.com

WITH YOUR MAIN SQUEEZE

Subj: Re: WYMS!
From: WYMS@aol.com

Readers may contact me at: WYMS@aol.com or write to: Bill Patterson, 3058 Lancaster, Orcutt, CA 93455 Also, I do recommend the Traylor plans for those interested in a single high performance FWD. I have a lot to check before selling geometric drawings. I won't sell production plans just drawings with the proper geometry.

Thanks for the article.

Bill

If you write to Bill and expect a reply, please be sure to send an SASE.

SUBJ: WYMS TANDEM

From: Armandg@aol.com

Dear Robert,

Another great issue of RCN!!! Bill Patterson's article about the WYMS tandem was absolutely fascinating! Only a recumbent-lover could appreciate its looks, especially with the riders on it, but what a great machine! It looks like the perfect touring tandem...easy to transport and comfortable. If I could afford a recumbent tandem, I'd still have reservations about buying one because of the difficulty of hauling them to ride start locations. We readers need to know when specs for this bike are available so we can have them built.

Your report on the trikes was excellent. It made me want to run right out and buy one.

Armand Gibbons
Armandg@aol.com

SUBJ: RE: NIMBUS

From: Chirocycle@aol.com

Dear Robert,

Like your wife, I had been unable to find the perfect bike. Although my husband and daughter have been riding recumbents for several years, I never was comfortable riding one and thought that I would never buy one. But that all changed about a year ago when BJ Strass brought a BikeE for me to try. I rode it on a 35 mile trip that day and fell in love - with recumbents, that is. I thought the BikeE was one of the ugliest things I'd ever seen!

So I started on my quest to find a recumbent. I decided that I wanted a medium wheel base and there aren't too many of those around. I tried out the EZ-1, but it was a little too squirrely for me.

Then I heard about the DH-5000, but that got a lot of bad press in recumbent circles. I really

felt that I might have to wait a long time before I found one, because I didn't want to buy one from some catalog without riding it first. Then BJ left me a message that he had one he thought I'd like.

The first thing I loved about the Rans Nimbus was the color! (That was important.) And the bike was really a nice looking one. When I rode it, I felt like I was in control. (Remember, I haven't ridden that many recumbents.) And, the seat was very comfortable. BJ had done some altering in that department to make it more comfy. The gears shift smoothly and the fit was perfect. (I'm not quite 5'4").

Well, that's about all I can think of to say. I am really not an experienced rider and don't know what technical things to tell you, but I really love the Nimbus. Hope your wife finds her perfect bike.

Kati

Subj: TIRE TESTS, ETC.

From: Robolino@aol.com

Dear Robert,

My brother and I got to spend some time riding together this past Labor Day weekend on our recumbents. I ride a Rans Nimbus (LWB) with a full Zipper fairing - 20" IRC Roadlite front and 700C X 25 rear; and he is riding a Rans Rocket (SWB) with no fairing - 20" IRC Roadlite front and rear. We are pretty similar riders, both of us close to 200# and in fairly good shape. (Of course since he is ten years my junior, he does have a tendency to beat me up the hills around Atlanta.) Anyhow, we decided to do a coasting test of the two machines since there is a big difference in opinion as to whether the 20" wheels of the Rocket are as efficient as the larger 700C wheel on other 'bents. As I said, we weigh within 5# of each other and were running 100 psi in all tires.

We rode into Stone Mountain, and on the back side of the mountain near the campground set up our "test". At the top of one of the hills, my brother began the test by simply lifting his feet and coasting downhill and along a flat area until he came to a stop. Then I did the same thing. Would you believe that I only exceeded his distance by the diameter of my front wheel! And we both hit 34.5 mph as top speed. Now admittedly this was not a scientific test, but it was a "real world" test, and proves at least to me and my brother that there is little difference between his recumbent and mine.

Chuck (l-o) Tank'sTank
Stone Mountain, GA

Continued on page 4

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RCN#30 Cover Graphics

Cover photo of Michael Sims by Ian Sims, Victoria, Australia.. RCN logo graphics by Mark Colliton of Kensington Heights Design.

CORRECTIONS: in RCN#29 pg. 9 we listed the P-38's weight distribution as 55% front/45% rear when it should be 45% front 55% rear.

SUBJ: RE:VISION 20" FRONT WHEEL

From: Polaris211@aol.com

Dear Robert,

I have about 1200 miles on my 20" conversion on my R-45. I love it. I feel that there is more stability and I can hold a much straighter line than I could before. I must qualify that a bit because some of that improvement could be from my increased riding skills. But I also like the way it takes bumps and rough road. I have a better feel of security. And the availability of a much better grade of tires is a great plus.

Try it, you'll like it!

Walt Smith

BENT ZEALOTS

Dear RCN,

Flo and I are enjoying her new Vision R-45. As long-time serious cyclists, we see expanded horizons through recumbent bicycles. I must tell you though, I have the uncomfortable feeling that many recumbent enthusiasts airing their views in RCN are closely akin to religious zealots. These are people I tend to avoid and whose judgement I find suspect. The constant droning undercurrent of criticism of other cyclists only closes their own minds and puts off others, not already predisposed or affected by the virus.

To take advantage of increasing exposure and popularity, recumbency will have to embrace a more diverse audience. That may well include people who enjoy riding all sorts of bicycles, or pedal powered conveyances.

You have a very good publication and the writers do a good job. The current number of issues is enough, more might dilute your effort.

Respectfully,

Paul Walker

BENT WRENCH and gear inches

Dear Robert,

I have enclosed an SASE because I would like to have an answer quick. What is a "GEAR INCH"? I first came across the term in RCN#6 on page 5. I have a recumbent in mind to build for touring and the correct gears will be vital.

Thanks for your help
Wise Fox Walking Treu

Dear Fox, Gear inches can be figured out by taking the amount of teeth in the front chainring divided by the number of teeth in the rear cog (free-wheel/ cassette), and then multiplying that number by the diameter of the drive wheel.

Example:

An Easy Racer recumbent has a 700c rear wheel, a 24/46/54 crankset and a 12-30 freewheel.

For the low gear: 24 (inner front chainring) ÷ 30 (tallest cog) x 28 (700c dia.) = 22.4

For the high gear: 54 (outer front chainring) ÷ 12 (small cog) x 28 (700c dia.) = 126

So, the gear inch range is 22.4-126. Lets say we change the drive wheel size to 26" and see what happens. The gear inch range becomes 20.8-117. If we change the drive wheel to a 20", the gear inch range becomes: 16-90. At this point, larger chainrings, smaller cogs or possibly a Sachs 3 x 7 (internal 3 spd + 7 freewheel gears) become necessary.

I highly suggest learning about how your bike works, select the proper gearing for your situation. The example gearing on the above recumbent is my personal bike. The low is for towing kids in a trailer and the high is for riding fast.

As for learning about the mechanics of your bent, this is also highly recommended. Nobody will work on your bike as well as you, as you won't be billing for your time and the Zen of bent-mechanics is good therapy. Sutherlands produce the industry wrenching Bible, Rob Van der Plas' book. The Bicycle Repair Book is good as is Rob's book Bicycle Technology. Bicycle Technology has information on geared hubs, brakes, and steering geometry. These are good books even though it seems like Mr. Van der Plas does not like 'bents much. Bicycling Magazine puts out a guide to bike repair that is excellent.

Give the Third Hand a call for your wrenching needs, Ph#503-488-4800.

TRIAD REDEMPTION

Dear RCN,

Let me say that I enjoy your publication very much and hope you can continue until recumbents become—"IN"—and of course, beyond that. To establish a basis for comments to follow, I started cycling at the age of 44 in 1968 and prior to medical problems in 1992, I had ridden over 80,000 miles! I bought a Counterpoint Presto since it seemed adaptable to commercial airplane transport. After 600 miles, it appeared that I no longer had sufficient balance to reliably start it in traffic conditions. Not expecting this to improve, I had it converted to a Triad. I have had the Triad for 13 months and by the time you receive this, I will have put 5000 miles on it. So, I think I can comment on the RCN#29 trike article.

First, I like the Triad very much and am saddened that it is being discontinued. Secondly, my experience is entirely different than that of "Alloy Mouse." Like him, I have long legs, fairly big feet and weak knees. But I have NO problem with stability. I can pedal it to 24 mph with a slight downgrade or tailwind. I routinely exceed 30 mph on steeper down hills and have had it to 47 mph on a steep downhill bumpy road—all with no stability problems. There is one difference in our machines, Alloy Mouse has custom straight boom (est. 25" bottom bracket height) and mine is stock at 16.5" above the ground. Could this effect the stability that much? I doubt it, but it puzzles me a great deal that our experience is so different. Let me assure you that if I find the right downhill, I will have no fear in exceeding 47 mph.

This is not to say that all is wonderful with the Triad. My Presto had the suspension fork. I never knew how effective that was until I got the Triad! A fully suspended trike would be wonderful. Also, I don't find the Triad very fast. I estimate that I do about 80-85% of my premedical problem bike speed on flats and about 60-70% on steep hills. I have to "ROW" the gears up and down much more than previously and I use a lower range (19-90 gear inches). I have lost my capability for International touring although I did one tour in British Columbia where I could transport the Triad to the start in my van.

On the positive side, I have rarely found a

situation where I could not ride the Triad, but would never have ridden a two wheeler (one was a Frazier River crossing in Canada). The Triad is extremely comfortable, I can enjoy the scenery and I can do incredible long no-hands track stands!

Don Cockeram

Richland, WA

ALLOY MOUSE RESPONDS

I like the fact that Don Cockeram's Triad handles well. Don, I suspect, is a lot lighter than I. His weight, shorter leg length, and other factors may account for the differences in handling. Kelvin Clark, of AngleTech, has pointed out that some Triad riders have not experienced handling problems.

As far as Don's comment that boom height may alter handling, the answer is not noticeably, based on my personal experience. My major change in boom height had no noticeable handling effect, and I have ridden the trike both ways. I raised the boom only to prevent the chain from rubbing on the cross-member when the boom is fully extended for my extra-extra-long riding position. I was surprised to learn that the Triad handled exactly the same with the boom up or down in front. Also, a Triad's comfort remains excellent with the front boom in either position.

Often, recumbent racers raise the front boom on an HPV to increase the rider's power delivery and efficiency. They say that recumbents are speed-sensitive to boom-height. Since I am only a casual rider, I do not notice any change in top speed. The only things that influence my top speed are hills, wind, and charging Dobermans.

I certainly agree with Don's comments regarding the Triad's great comfort. I also enjoy its ability to handle a variety of terrain. I often go right up over a curb into a yard or field. My rides sometimes include short trails, an occasional meadow, or long bike paths. The 63-speed Triad is geared extremely low. It will climb steep enough that I fear falling over backward. I still ride the Triad every day on the local roads, or as one mountain biker describes road riding - "off-dirt."

Recently I changed to the new Primo 'V-Monster' 20"x1.9" BMX style tires. They greatly improved the Triad's straight line handling. I found the control difference amazing. Furthermore, a 'V-Monster' will go just about anywhere.

James G. Vernon

AlloyMouse@aol.com

SUBJECT: TRIKE RIDE HEIGHT

From: j.riley16@genie.geis.com

Dear Robert,

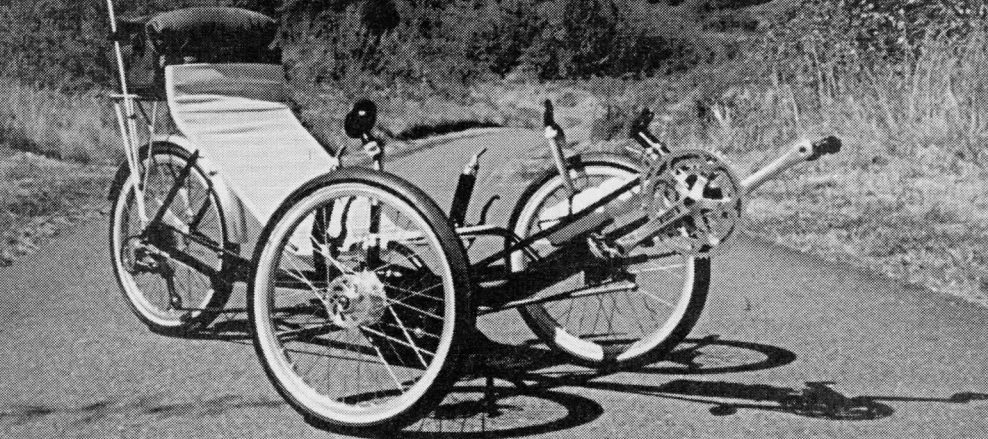
Ian Sims has made the case for a low ride height and a tadpole design here from time to time. In the latest RCN, Alloy Mouse tries a ReTrike, a Triad, and a Zephyr MK II GT. He also concludes the low tadpole design, the Zephyr in this case, is the way to go.

I am not sure the delta design, represented here by the ReTrike, has been given a fair shot. My personal feeling about ride height is that when I am sitting next to a car at a stop light, I want to be visible over that car's fender. I actually like being eye-to-eye height with car drivers as I am

Continued on page 24

A Trike from the Land Down-Under

The Greenspeed GTR 20/20



by Robert J. Bryant

RCN Staff Photo

Ian Sims lives in Victoria, Australia and is an expert builder of high-performance recumbent trikes. You might ask how can this be? He's about as far away from the centers of recumbent activity as he can be. Surprisingly, this is the key. He has not had the outside influences of past recumbent tricycles—nor does his trike suffer from Windcheetah-itis, a bug that seems to be prevalent in the U.K. trike-scene. Ian's trike prowess comes from a passion for the vehicle which is unmatched in the world today—because Ian and his family build, ride, race and market the Greenspeed trike. They specialize in recumbent tricycles—and it shows.

The GTR20/20 is the model we tested. This trike has more than its share of innovative design features and is not a trike clone. It is a very low machine that has a welded CroMo steel frame, three 20" wheels, drum brakes, 63 gears, a sling/mesh seat and is a world class HPV.

THE FRAME

The Greenspeed frameset is a masterpiece in the art of simplicity and function. It is light, stiff and strong—three highly sought after attributes of a high-performance recumbent tricycle chassis. Our test trike is British Racing Green with a yellow seat. The seat is an integral part of the trike frame which will be popular to those who have experienced unwanted frame-flex in other designs. The Greenspeed uses high quality aircraft grade CroMo steel tubing, with Reynolds 531, arguably the finest bicycle tubing in the world.

Several tubes are hand ovalized where mated to smaller diameter tubes. The trikes are custom built for the rider and several measurements are taken to insure perfect fit. Every part on the Greenspeed is worthy of its original design intention—circumnavigating Australia.

The frame tubes are MIG welded, which will be a surprise to many enthusiasts. MIG beads are generally known for their artistic qualities, however, the craftsmanship on the Greenspeed is top-notch. The Greenspeed's welds were nicer than any other MIG'ed recumbent we've seen, with the exception of the Rans Rocket. We asked Ian about MIG welding on his recumbent, "*We find that MIG welding puts less heat into the tubing than TIG, and a lot less than brazing, leading to less of the metal around the joint losing its strength. We have also had superior performance from the MIG joints over brazed joints. In addition we find that the MIG is quicker than TIG, and much faster than brazing, thus it is much better suited to production work.*"

Another highlight of the Greenspeed is the boom-tube arrangement. The Greenspeed trike has undoubtedly the finest boom/ tube arrangement of any recumbent we've seen. Ian starts with the powdercoated main frame-tube. Then there is a boom tube (slider) that is powdercoated, and then an aluminum sleeve that fits in between the two, and a special paper gasket-paper liner is also in the mix. This makes for a stiff well designed boom tube/ slider arrangement that is very easy to adjust with two allen bolts. This is a key feature

that we hope other manufacturers will pay attention too. Boom-tube/ sliders are an under-appreciated design aspect. Some manufacturers slide a powder-coated boom into a powdercoated frame which can result in scarred-up paint, especially if you change riders or slide your boom often. Some may think it is overkill, but there is no doubt that the Greenspeed boom/ slider is a most innovative design feature.

THE SEAT

My first impression of the Greenspeed seat was not one of great excitement—but one "sit" changed my mind. The seat frame is CroMo and an integral part of the frame. It is solid, firm and most definitely aids in frame-stiffness and strength—which is beneficial for the side-loads placed on trikes. The seat mesh is not the finest mesh-quality we've seen—but durable. It is unique in the fact that it's laced on the under side of the seat frame (back side of mesh) with a 1/4" bungy shock cord. This makes for built-in seat-suspension. Riders sink into the seat for a very ergonomic feel—and yet another neat innovation.

With the Greenspeed's 35 degree seat angle, the pressure is off your rear-end and leg muscles. Most of the pressure is centered on your back—which works well. With this seat angle you naturally want to look straight ahead—into the tree tops or the third floor of office buildings. Due to an old neck injury, an impromptu head rest was necessary. My quick -fix was a simple cardboard/pillow head-rest as pictured in our test-bike

photos. I queried Ian about this and he said that a few riders have requested head rests or a higher seat back—and they are now optional. He also said that 35 degrees is the optimum seat angle as per his customers. Greenspeed models have been built using 20 (racers), 30, 35, 40 and 45 degree seat angles, all are much more laid back than most USA built recumbents, which use seat angles in the 60+/- degree range. Greenspeed has also built adjustable seat recline angles, but they do not work as well since the seat is an integral part of the frame design and is partly responsible for the Greenspeed's firm road feel. Other wheel configurations of 24/20 and 26/20 have been built, but the triple 20" seems to be the choice among Greenspeed customers.

Ian wonders why Americans prefer such an upright position. After testing the Greenspeed, I am wondering myself. The Greenspeed riding position has me rethinking SWB riding ergonomics as well. I think most American designed recumbents are too upright. A simple clue is look at almost every Euro-SWB. We will explore this in a future RCN, but for quick reference, if you ever get butt pain—experiment with reclining your seat back.

DRIVETRAIN

Our test-bike's drivetrain borders on perfection. The rear derailleur was the only problem-plagued part. The Sachs 5000 rear derailleur did not survive the trip from Australia, but it's not at the level which this trike deserves, so it was no great loss when I tossed it into the trash. We replaced it with a Shimano Deore LX which is compatible with the 3 x 7 and shifts flawlessly. In retrospect, I would suggest that the derailleur be upgraded to a top-of-the-line Sachs to get a stronger spring (Shimano uses wimpy springs). The front derailleur was a Sachs 5000 and worked fine.

Shifting is accomplished with your choice of Sachs Grip Shifts or Shimano Ultegra Bar-Cons—no difficult choice here, Shimano's Bar-Cons are legendary, tried and true and probably destined for extinction. The Ultegra's are the finest shifters made today and they still have a friction mode. This less glitzy choice offers near silent shifts and lack the twisting plastic-notch feel of the Sachs Grips. The Sachs cassette freehub, Shimano shifters and rear derailleur work in kinetic harmony. In this day of non-compatible components, it was great to find different brands that work so well together.

The triple crankset is a Ritchey Logic cold forged 175mm 32/42/52 and is the finest crankset that has ever been shipped to us on a test bike. The Logic crank is old world bike-racing technology meets with high-tech MTB. This is a great crankset—the only one better in my book is a Campagnolo triple.

The Sachs 3 x 7 must have been designed with recumbents in mind—once you ride with one, going back will be difficult. Internal shifting on the fly is wonderful. Our Greenspeed has 63 easily accessible gears 3 (internal) x 7 (freewheel) x 3 (triple crank)=63. The 3 x 7 clicks all of the time, it's terminally and pleasantly noisy. Riders who grew up with 3 and 5 speed internal gearing won't



RCN Staff Photo

even notice the 3 x 7's natural purr. Thanks to the 3 x 7, the Greenspeed has an incredibly wide gear-inch-range of 17-117. (The 3 x 7 has offers a 27% reduction in low range in first gear, a 1:1 lockup for the second gear, and a 36% increase in the 3rd gear.) The only aspect of the 3 x 7 that we don't like is shifting under load up steep hills. You still need to plan your shifts. After a month of riding, I realized that the range may have been a bit low (it's a fast and efficient trike). High-performance riders may want add to the high end.

Do you need 63 gears? Yes and no—20" drive-wheeled recumbents do need the added range. The Sachs system was originally meant to replace the front derailleur, which is a keen set up. Gear-heads and recumbent technoweenies will love this drivetrain.

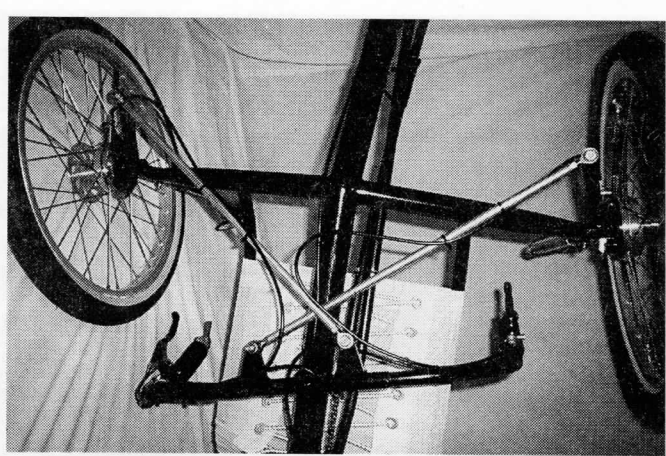
3 x 7 shifting is accomplished with a Sachs trigger ratchet that was placed next to the left side (front derailleur) bar-con. This was our first experience setting up a 3 x 7. The shifter is actuated by this spring loaded lever that when set up properly, "pops" into the next gear with a slight tap on the lever—this is very cool.

The wheels and tires couldn't have been better. All three wheels survived our test and were in perfect true, there were no loose spokes or even wear on the tires. The Mitsoboshi 1.75 90 psi Comp/Pool tires, Araya 1.5 rims and Sachs hubs were exceptional. All three wheels have precision cartridge-sealed bearings in the finely machined hubs. Greenspeed can also set up your GTR

20/20 with 20" x 1-1/8" IRC tires. These look faster and wear out quicker. Ian says, "The Comp Pool tires have a lower rolling resistance than the IRC Road Lites. The faster you go the more air drag from the wider tire. At 30kph and 30kg load on a roller, I found 27 watts resistance with IRC at 100psi, and 20 watts at 100psi with Comp Pool." We found the Comp Pool tires to be the perfect choice for the Greenspeed. They are sticky and tough. I have heard of high performance trike riders wearing out the IRC's in one weekend of racing. The Mitsoboshi Comp-Pool has become a rare tire in the states, but still available from Ian, and a great choice for anyone who likes fat 20's.

CHAIN MANAGEMENT

The Greenspeed has one cartridge sealed bearing chain idler placed under the seat for the upper chain. The lower chain is directed without an idler through a long chain-tube that protects your chain as well as your legs from grease. The chain tubes are made from a 1/2" high density polyethylene tubing primarily used for underground sprinkler systems. The upper chain also rides inside a chain tube from the idler to the crankset. Both are fixed to the frame and work impeccably well. Chain-tube management systems are the future for recumbents—after the test we are sold on them. Manufacturers take heed, these tubes should be standard on every recumbent sold. No other chain-guard system works as well. There probably is a bit of friction loss and



ABOVE: Greenspeed rear-end—staff photo.

RIGHT: Greenspeed steering from underneath—staff photo.

MOVING?

Be sure to send us your new address (along with your mailing label or old address) to RCN.

The USPS DOES NOT forward 3rd class mail—and we would not want you to miss a single issue of RCN!

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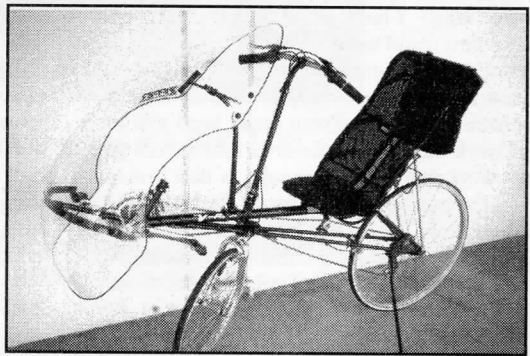
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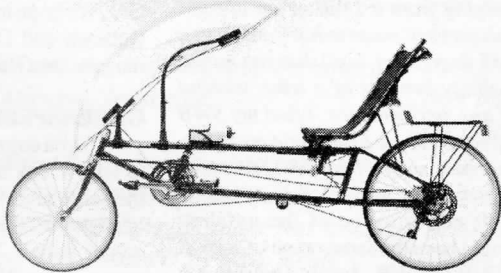
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there may be some noise depending on the bike, but not enough to matter for commuters, tourists and recreational riders. We can't say who first invented this feature, but it's so simple and effective that everyone should use it.

STOPPING

The brakes operate better than any trike drum set-up available. The "centre-point" feature seems to be the key to the systems success. The steering rods criss-cross (handlebars to spindles) as do the brake cables (handle to drum). The brakes were pre-adjusted to perfection from the factory. And since they are actuated independently, equal pressure is not as important as on the archaic one-lever systems.

The dual lever centre-point set-up is superior to those with two cables coming into one lever. Why? I have never ridden a trike where two drums could be centered correctly. If you are a perfectionist, this will drive you batty. Another reason is that single lever systems take much more pressure to stop—and your brake hand will get a real work-out. The single-lever system will probably work fine with a hydraulic or disk brakeset.

The true braking test for the Greenspeed was coming down a local two lane road at 30 mph (the Greenspeed wanted to go faster) and making a left turn onto the Soo's Creek Trail. In order to signal, I had to brake with one hand and lever. I didn't really think about this until it was happening, but the trike only veers slightly under full one-sided braking power. Modulation seems to correct any slight veering. With two handed braking, the Greenspeed centre-point system is five star. The only way to improve upon the Greenspeed braking system would be to order the optional Sachs disc brake set-up. RCN reporter, Alloy Mouse, has done just this on his new Greenspeed.

LIFE ON A TRIKE

There is nothing quite like having your rear end 12" off the pavement, and your head less than 40" off the ground. This baby is low and laid back. There are some wonderful benefits to recumbent tricycles. The two most noticeable are the fact that you never have to pull your feet out of the clips/pedals (supreme recumbent luxury) and you will never want to get up. I found myself riding up to the lake or to the half-way point of my ride and not wanting to get up and stretch. At the lake, I rode up over the grassy hills to get a nice viewpoint for some quiet recumbent thoughts and northwest sunshine.

While on the road, situations can become more hectic—especially during your first on-road experiences. Trikes take up more space on the road, and sometimes more energy to maintain your average speed (debatable). I was very careful to plan my routes and enjoyed my time on this trike.

Ian Sims and Alloy Mouse are proponents of the "I'd rather be low" theory. I felt reasonably safe while on the Greenspeed, however, I was never as comfortable in traffic as on my two-wheeler. I must admit that the low-ness of the Greenspeed takes some getting used to. The roads out here are two lane (one each way). To ride on the road, the cars must steer around you and there is no shoulder.

One lesson learned is that trikes need to have a low center of gravity to handle correctly—and be safe. Some riders may beg to differ—one said to me that just place a phone-book or two on the road to demonstrate how low you really are. When I mentioned this to Ian, he said, "*I would have the customer lie on the ground, because that is where he would be after trying to take a corner at any speed on a high trike!*" Ian went on to say, "*the higher the seat, the more unstable the trike!* *These guys are trying to fix a problem which only exists in peoples minds, and in doing so, have created a worse problem.*"

When you are riding down the road on a recumbent tricycle, you will notice that most roads are curved downward toward the shoulder. You must correct for this via steering pressure. Keep in mind that the whole process is more involved on a trike. It is a constant correction of slight movements to keep you tracking down the road on a straight course. The result is a more active upper body than most two-wheel riders are accustomed to. It is not necessarily a negative—just a difference. Most trikes require a smooth cadence to keep the trike from a slight-wag, or side-to-side oscillation during pedalling. The more time I spent on the Greenspeed, the less pronounced it became.

TRIKE PERFORMANCE

The performance question always draws a lot of commentary. Trikes are different than two wheelers as you are lower, wider and heavier. The Greenspeed GTR20/20 can be considered a performance trike due to it's low stature, even though its design intention is touring/ commuting. Ian had this to say about the GTR 20/20's performance, "*I would expect my low trike to be faster than an upright LWB. And some riders may find it the case and others not! I think one could say that in changing from a LWB or an upright SWB (seat 50 degrees or more to horizontal) to a low trike (seat 35 degrees or less) that you would have all the stability benefits of a trike, without losing much, if any, performance. I find my SWB bikes (35 degree seats) are faster than my trikes, but I prefer the trikes, simply because I feel much safer on them!*"

The overall performance of the unfaired Greenspeed should be in the same range of a good sport touring SWB or LWB. I would have to say that a lightweight high-performance SWB, such as a P-38 or 24/20 V-Rex or a LWB Zzippered Gold Rush Replica will have the performance edge. This is a tough call and very dependent on the rider. It is certain I won't be convincing any Greenspeed riders of this.

A BARGAIN?

So, you've noticed that recumbent trikes aren't cheap. And when compared to two wheelers, they are downright expensive. Just keep in mind that a good trike needs to be strong. They take much more abuse and need tough frames, components, brakes, etc. All aspects should be first rate. A trike owner's worst nightmare would be having something come apart on a steep descent or in heavy traffic. At just over \$4000 USD, I consider the Greenspeed a great value in

high performance trikes—especially when compared to a \$5700 Windcheetah.

THE COMPETITION

The Greenspeed is the best trike RCN has tested. Peter Ross' Crystal Trice is a good value in the \$2000+ US dollars range, however, the Trice lacked the triangulation and stiffness of the Greenspeed. The Trice is also higher off the ground and has a more upright seat angle.

We have been unimpressed by the products and service coming from the US Trice distributor, Eco Cycles. Most recently their phone number in the RCN Buyers' Guide has been disconnected. RCN has not (yet?) been notified of any changes. Due to the inconsistencies, we suggest you contact Peter Ross in the U.K.

After testing the Thebis in '91 and the Trice in '92, I came to the realization that trikes were maintenance-hogs. Constant steering adjustments, brake centering and tightening the many, many nuts and bolts on the Trice were required. With the Greenspeed, I now realize that all trikes are not created equal. Granted, the addition of a third wheel puts more stress on everything, but a Greenspeed may need less maintenance than a two wheeler. The kingpins have zirk fittings and need lube on a yearly basis. There is really no reason why the steering could come out of adjustment and all of the features seem to be very tough and built to last. We have a 1996 Euro-Trice direct from England on the books for a 1996 test.

There seems to be an onslaught of new designs coming out. Just introduced are the Demon and Rubicon, which are both highly influenced by the Burroughs Windcheetah and both from the U.K. These trikes, one bonded aluminum/ carbon fiber and the other welded stainless steel are in the £3000-£3500 range. The Rubicon has a US distributor, People Movers in Orange, CA. We hope to test the Rubicon in '96. Both the Rubicon and Demon will be in the same price range as the Greenspeed, once delivered to the US.

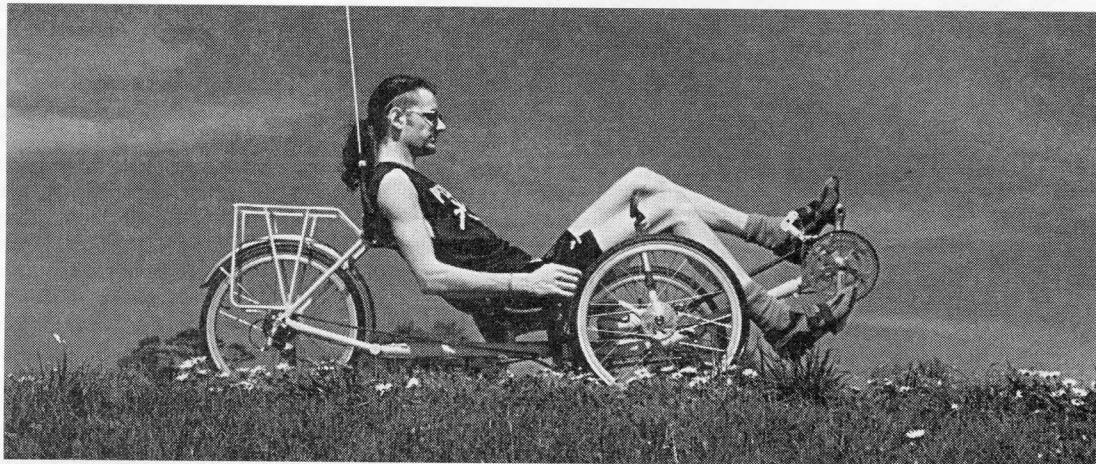
GREENSPEED STUFF

If you enjoy Ian's trike designs, you may want to take a look at his SWB models. They utilize the same seat/ frame design, although they are a bit higher off the ground. Ian's primary trike model comes with a 26/20 wheel combination, under-seat steering, 21 speeds and a drum front brake—although anything is possible. Ian has built some of the most fascinating performance SWB racer's with very extreme riding positions. The SWB tourer appears to be another fine design from this Australian recumbent specialist. Ian is working on a full body for the GTR20/20 and the prototype should be ready by the time you read this. He says this will improve performance drastically.

For more information on the Greenspeed Trike, contact: Ian Sims, Greenspeed, 69 Mountain Gate Drive, Ferntree Gully, VIC 3156, Australia, Ph. +61 3 9758 5541, Fax +61 3 9752 4115, Email: greenshp@ozemail.com.au □



Want Comfort, Safety, and Performance?



GTR 20/20 Touring Tricycle, suggested base retail price \$3,500 US

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, "Encycloepedia" 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, "Encycloepedia" 1993/4, U.K.

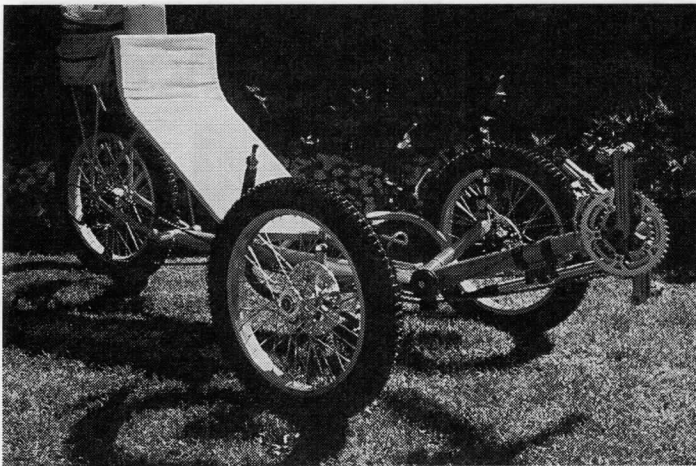
"I will check the alignment but I think it (tyre wear) has been due to my inability to control myself on those corners! It is the best toy I have acquired." - Dr. Lincoln Brett, Perth, Western Australia.

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

GREENSPEED RECUMBENTS

69 Mountain Gate Drive, Ferntree Gully, VIC 3156, Australia.

Phone +61 3 9758 5541, Fax +61 3 9752 4115 E-mail greenshp@ozemail.com.au



Frank Colver, of California, USA has a trick Greenspeed GTR20/20 Offroad Trike with disc brakes—Colver

GREENSPEED HISTORY AND DEVELOPMENTS

by Ian Sims

The Beginnings

I never believed in exercise, and avoided any sort of sport, except for motor racing, in which I had technical interest. Unimpressed with cars on the road in the 60s, in terms of road holding and handling, I built my own small mid-engine sports car, and used it for touring and every day use.

Then I got interested in motor cycle side-car road racing, when my neighbours had problems with an outfit they had built. A quick calculation showed that the outfits would only accept 1/2g lateral acceleration on the left hand corners, before the chair lifted. The steering geometry was also inadequate, as they needed big men to hold them on the corners! So I had great fun designing and building machines that had center hub steering and were designed to corner at 1.5g without the chair wheel lifting. Power from the 5 cylinder two stroke engine was enough to spin the 8" wide slick in on the tarmac in 3rd gear and reach 150mph on the faster circuits. Yet control was so good, the rider was able to hold a power slide for most of the length of the main straight on the shorter circuits in the wet!

A Change in Outlook

I had a look around see what else life had to offer besides technology, and took some courses in philosophy, sociology, and psychology. This led to me doing a number of personal development courses, which I enjoyed immensely, and changed my outlook on life - I no longer needed to drive with my foot flat to the boards! I also noticed I had children, and decided to enter the more environmentally friendly sport of Electrathon racing with my son. I figured the vehicle would be most efficient if it run at constant speed. So we built what looked like a rocket on three wheels, with the batteries overhung at the front, to give it the stability to go through the corners at full speed.

First Bikes

I became disenchanted with my job as a technician with a large chemical company, and ended up losing it. So I looked around for a more economical form of transport than my car. I tried my son's MTBs, but found them too much like hard work, and too slow. I also did not feel safe on them - I felt if I put the front brake on too hard, I'd go over-the-handlebars.

Now I had seen recumbent bike designs in "Bicycling Science" which I had used as a reference for

building the "Rocket", and they made a lot more sense to me than the diamond frame design. I looked at the Avatar 1000 and 2000 designs, decided that the SWB was the better design, and made a monotube SWB with bits and pieces I had lying around.

It took me about two weeks to learn how to ride it, with numerous falls in front of the neighbours. However, now that I was travelling FEET FIRST, I felt much safer, and found I could brake as hard as I liked, without it tipping up. It was also found to be faster than my son's racer in rolling tests. I was so impressed I built another, using alloy wheels and a Sachs Orbit rear hub, giving me 18 speeds.

The First Trike

I was still feeling uneasy on the SWB, especially in traffic when motorists come fairly close. I also worried about hitting things on the road, and falling off. Then a cycle shop owner showed me a road test of a Trice. I immediately saw the advantages of the design, and thought I could do better. Loosing my car licence for doing 94 clicks in a 60 zone speeded up the building of my first trike somewhat!

Once I had it on the road, I found it a real joy to be able to just concentrate on pedalling and not have to worry about balance! At first I only used it mainly on the bike paths, and when I used it more on the roads, I found an unexpected bonus. Whereas on the bike, motorists cut me fairly close as I wobbled along, now that I could steer as straight as an arrow, they rarely came closer than a metre to me! At last I felt completely safe in the traffic! In fact I got so excited about the trike I entered the 1990 Great Victoria Bike Ride, 530kms from Bairnsdale to Melbourne. I had not ridden more than 15 clicks at a time, and could not find the time or inclination to do more than 20 minutes training on the bike path on odd days. So my wife predicted I'd end up in the sag wagon, and asked if my Life insurance was paid up!

On the ride, I was pleased to find that I could do the usual day's 80 km of riding by midday. There was an immense interest in the trike. Cameras followed me everywhere, there was an endless barrage of questions, and many, many requests for test rides. Most people were so impressed with

their brief ride, that when I got back to Melbourne, I took a business course, and started making trikes for sale. I have been keep busy ever since, working over 80 hours a week and enjoying making something that gives pleasure, and helps to reduce the pollution on our planet.

A Racing Trike

While most people were very happy with our early GRT 20/26 Tourers, traditional cyclists seem to think they were rather heavy. So my son, Paul, decided to make a light weight trike. He used Reynolds 531 for the frame, made the seat part of the frame, used 20 x 1 1/8" wheels all round, used only one calliper brake on the rear wheel and put only half the spokes in the front wheels. He also raked the seat back from the 45 degrees I had been using, to 20 degrees from the horizontal. Weight was down from 21kg, to 13kg!

What surprised me was that performance seemed MUCH better that I would have expected from a 10% reduction of weight of machine plus rider! Not only was hill climbing very much better (Paul came 2nd to only RAAM rider Gerry Tatrai in the National HPV hill climb), but performance into the wind was also much better. Another surprise was that the seat was more comfortable that I expected, on a 60 km ride to the city and back.

The Sports Tourer

Paul's racer inspired me to build a "Sports Tourer" using a similar construction, but with a 30 degree seat, and retaining the drum brakes of the Tourer. Slightly larger frame tubes were used, and weight was 16kg. Again performance was significantly better than the GRT 20/26 Tourers, and one was sent to the U.K. for promotion. It was ridden by a number of riders, who proclaimed the handling as better than the original home grown trikes. In Australia, Val Wright and Eric Butcher trialed a Sports Tourer fitted with 20" x 1.75" wheels, against a GRT 20/26 Tourer with its 26" rear wheel. They settled for the 20" x 1.75" wheels all round with a 35 degree seat, for their Around Australia Tour.

The GTR 20/20 Tourer

The trikes built for Val and Eric carried them and their camping luggage (40kg each on the 1st leg) the 15,000kms around Australia without any problems. This led to a new Tourer, using the 20" x 1.75" wheels all round, using the 35 degree seat, and lifting the seat high back to the 12" of the original tourer to give more ground clearance - up to 5" from 3.5". The around Oz trikes used Sachs Orbit hubs (2x6) with 13/32 clusters and 67/42 chain rings. The new tourers use the Sachs 3x7 hub, a 11/28 cluster, and 52/42/32 chain rings, giving a much wider gear range, and have been our most popular machine.

Coming, the Fully Faired Trikes

Before the event of the Sports Tourer, we built a fairing for one of the early tourers that covered the trike and rider, except for his head. It was a classic tear drop shape, front 1/2 fibreglass, tail,

sail cloth. Performance was incredible. Riding into a strong head wind was like having a tail wind behind you. My average speed in city traffic went up from 20kph to 30kph. On a hill coast speed went up from 45kph to 69kph! However with a weight of 32kg, acceleration could have been better, and it was difficult to get in and out of, so work was shelved while the frame was improved.

The fabric tail did not hold its shape at speed, so we felt that with fairing in the rider's head, and making the whole fairing from a rigid material, we should gain even greater performance. Thus we have arranged for a composites expert to build us some new fairings. The first one is almost finished as I write, and should be ready for testing in November 1995.

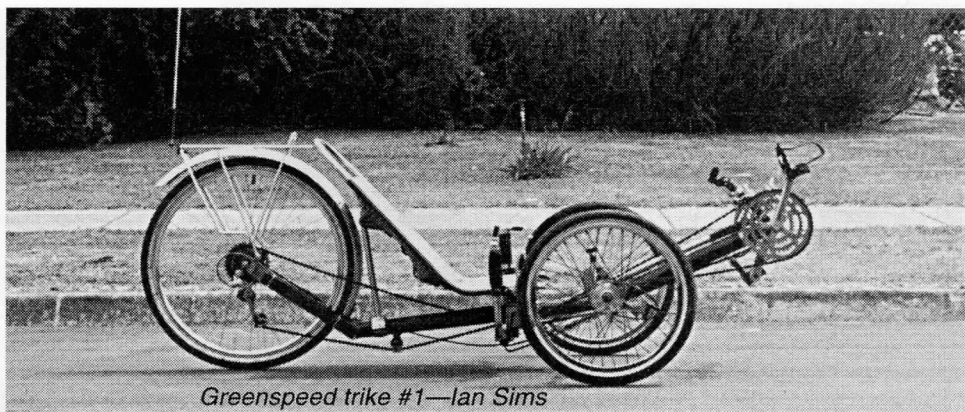
I am hoping that the combination of the Sports Tourer Trike and the new Fairing, will realise my dream of having a weatherproof HPV capable of maintaining 60 kph. Thus rendering obsolete the one ton monsters that pollute our roads, our lungs, and our planet. □

GTR 20/20 TOURING TRIKE STANDARD SPECIFICATIONS

Wheelbase:	39" (100 cm)
Track:	31.5" (80 cm)
Width:	35" (90 cm)
Length:	72" (183 cm)
Wheels	Araya/ Velocity 20" x 1.75"
Tyres:	LHR Semi Slick 50 psi
Brakes:	2 Sachs VT 70mm Drums
Brake levers:	BMX with parking brake
Brake pads:	Modified drum
Gears:	63 speed Sachs 3x7
Derailleurs:	Sachs 5000
Chain wheel	Sachs triple 32/42/52 crank
Rear cluster:	12-28
Bottom: Bracket:.	Shimano cartridge
Frame:	Reynolds 531 Tubing
Seat height:	12"
Weight:	18kg (39.6 lbs.)

RCN TRIKE AS TESTED

Base Price		\$3500*
Options		
Tioga "Comp Pool" 90psi slicks	\$60	
Shimano Ultegra Bar end shifters	N.C.	
Ritchey 175mm cranks	\$200	
Ride On brake cables	\$60	
Extra mirror & mount	\$42	
Total price	\$3862	
Packing & shipping (Airfreight)	\$800	
Australian Tax 7%	\$271	
Total price as shipped	\$4933	
	Australian Dollars	
US dollar-approx. \$.74 Aus.	\$3650	
+ US duties (\$200-\$500)	\$300	
	US dollars	
+ US Shipping (\$50+)	\$37	
(from major US airport)		
+ Sales local and state taxes		
Total Price delivered to our door	\$3987	
Lighting set		
Detachable head rest or Taller Seat		
Tandem Greenspeed trikes start at \$6,000		
Australian dollars.		



Greenspeed trike #1—Ian Sims

THE RIDE

Blast! Writers block. I need a break. A new bent slant on a story. I need a ride. I lean back in my chair, resting my eyes—I get a vision of a recumbent tricycle—it's parked in the garage under a cover—I can't quite make out the lines, but I've seen it in a dream—or the pages of RCN. Unable to resist, I go head downstairs.

I cannot go any farther without a warning: Let me tell you, once you try a high performance trike—there's no going back. If you are ever offered a ride on a Greenspeed, or other high-end low-trike, think twice about taking it. This ride could change your life.

Avoiding my own warning—I walk to the garage. I gaze towards the Greenspeed dream-racer—and smile in anticipation. Picking up the pace a bit, I gather my gear. I lift the cover. Wow! It's so low. I snap the parking brake handle and wheel it out into the sun. The green paint and bright yellow seat shine brightly in the peekaboo northwest sun (partly cloudy). I take a deep breath and lower myself down into the yellow laid back seat. I fit my gloves and select a gear, one of 63—this sounds like something "Q" would build for James Bond! I put on my goggles, helmet and place my waterbottle in the matching green cage. I lean my head back and raise my leg to the power position. I think to myself—what a great job! Power goes to the right pedal, click into the left SPuD and TAKE OFF! Immediately, I enter another dimension, "the Greenspeed Continuum." I leave a patch of Comp/Pool rubber on the driveway pavement. But that's OK, the tires have tread sensors, and I have a few more scrubs left in them. I zoom across the road, merging into traffic. Three lever shifting is cool—recumbent technology at it's finest! I look up to smile at a neighbor mowing his lawn. No big deal—they've seen "the bikes" before, still the look lingers. They are silently wishing they could trade places.

Low trikes—what a thrill! I have only felt at one with a few recumbents—and this was the first trike to fit that bill. Zooming along in a surreal silence with only the clicking of the 3 x 7 and my breathing—the trike is part of me, and I'm a part of it. I ride up the long hill towards the school, the trike seems to fly up the hill effortlessly due to the ultra-laid-back recliner and high bottom bracket—another design theory at work (a story for another time). This is a new experience—getting this much power to the pedals—a few minutes go by—I turn into the parking lot. There's not another

soul around. A sense of deja-vu as I shift up to the big ring on the crank. A smile as I hit third on the 3 x 7—gear#59—at 26 mph. My speed increases as I slip into a closed course dream world. Lelystad, Netherlands here I come—Speedy racers watch out! I close my eyes for a split second, and shake my head. Is this a dream? I open my eyes back up. Welcome to Victoria.....Australia. Is this magic or what. Click, gear#60—I'm in Ohio racing in what looks to be a drag strip—I look at my watch, it's October 14, hmm, it was August 26 when I left home. I accelerate to 21 mph, scrubbing the tires from side-to-side and then my heart nearly stops as I lift the inside tire four inches off the ground—as if in slow motion—the wheel lowers to the ground. Slipping out of the dimension for a moment. Wow! The handling is so intuitive. How do you put that into words? My respect for Ian goes up a few notches as I accelerate away from my first inside wheelie on the GTR20/20.

I'm back on the road—the minutes and miles go by. I make a left turn into traffic accelerating to get a share of the lane. I decelerate at the stop light. Four cars surround me. As I signal, I wonder, can they see me? I hope so, I've got the bases covered. As the AlloyMouse safety flat flaps in the wind. I accelerate down the hill. I click through the gears using all three levers, accelerating from 12 mph to 22-32-37-42 mph in what feels like seconds. Deliberately miss the turn home—let's see what this baby can do—a sharp turn into a half-moon cul-de-sac—almost a power-slide, but the Comp Pools are so sticky, yet fast. My tour-de-cul-de-sac is accompanied by the screech of a hard-left banked curve. I go right, back up to speed on this flat suburban wonderland. Then left, down the hill, accelerating hard and decelerating half-way down the block. I go right into the driveway. Skidding to a stop, I remove my helmet. A moment of silence to relive the excitement. It's back to reality—I'm leaving the the dimension known as "the Greenspeed Continuum."

Back in real-time—it's a Saturday afternoon in Kent, Washington. Don't I have to watch the kids this afternoon—or mow the lawn—or clean the gutters. The Greenspeed is carefully parked under a tarp in the corner of the garage.

For high-tech low-trike thrills, the Greenspeed GTR20/20 is surely the ticket: a human-sized slot-car—state-of-the-art recumbent trike. I need to get a grip on reality. The trike experience is so intense—I get a little crazy just thinking about it. □

TRIKE DESIGN 101

by Ian Sims

Possibly what makes the Greenspeed trike so special is the overall package - careful and thoughtful engineering shows up in every aspect of its being. The machine is so INTEGRATED, it looks, feels and performs as one with the rider!

This sense of integration starts right at the tires - the point of contact with the road. Ian has always started his designs from the ground up! Each of the Tioga "Comp Pool" tires carry one third of the weight of the rider and machine, thus each of the wheels behaves in the same way on the road, giving a secure, "balanced" feel.

The famous "Center Point" steering continues the balance theme by totally eliminating any reaction from bumps or braking from being fed into the handle bars and upsetting the trike's direction. Thus one can even lock up one front wheel and the trike will continue in a straight line! This in turn enables independent brakes to be used on the front wheels and the ability to use either hand for braking with the other for signalling.

At speed on loose surfaces, the independent brakes allow an extra measure of control, beyond the handle bars. On good surfaces they provide braking on a par with cars.

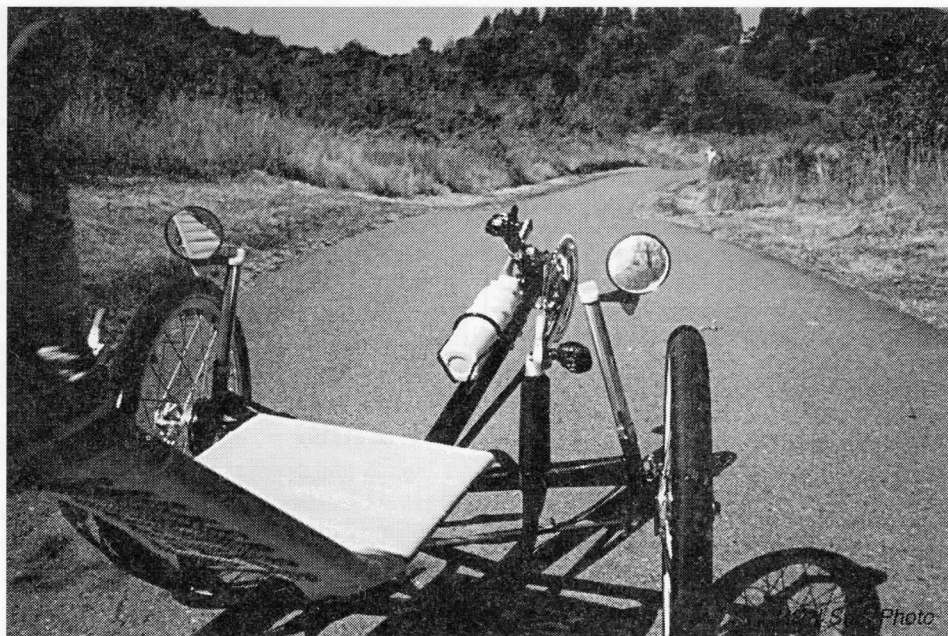
There are a number of other aspects of the steering which enhance this "balance." Caster or trail is set so that there is enough to be able to feel what the wheels are doing in a corner, yet not enough to make it feel heavy. In fact the lightness sometimes requires a little adjustment period. After that, it seems like you just "think" the trike around the corner!

Then we have what is known as "Ackermann" steering geometry. Ackermann noted that when a vehicle turns a corner, the inner wheels are describing a smaller circle than the outside wheels, and therefore they should turn sharper than the outside wheels, so that there is no tire scrub on turning. This is built into the unique Greenspeed "cross over" steering linkage, which also allows a very small turning circle. The trike rolls easily, even on full lock! Finally there is the "Kingpin Inclination" which leans the wheels into the corner slightly as the steering is turned.

Another factor which makes the Greenspeed perform so well in braking and cornering, is its low center of gravity. This prevents it from "doing a header" under brakes like an ordinary bike, or "falling over" on a corner like a high trike. In fact, so long as one leans into the corner, the trike will ultimately side rather than tip up, so that it can be cornered at speed with confidence.

The final piece of the jigsaw in the handling is the frame. The 20" rear wheel means that the rear of the frame is shorter and stiffer for the same or less weight than that of a 26" rear wheel frame. It also means that the rear wheel is closer to the rider, giving better traction than a 26" rear wheel. Having a torsionally stiff frame also prevents the rear of the trike from swaying. Yet, by not fully triangulating the frame, it is compliant vertically, giving a good ride.

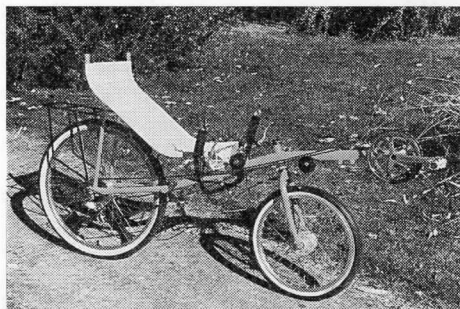
The mesh seat provides further insulation



from road shock with its shock cord lacing, and its open weave allows cooling to the back of the rider, unlike fibreglass seats, which can cause perspiration build up.

At 20 MPH on an ordinary bike, over 80% of the riders energy is wasted in air resistance. This is most noticeable when riding into a strong head wind. So if we halve our frontal area, we can expect it to be 40% easier to push! Thus the further we recline ourselves on our recumbents, the easier they are to push! In fact as we recline our seat from the usual 60 degrees of some LWB bikes, to towards the 30 degrees of our Sports Tourer, we get extra benefits. In order to retain the same comfortable included pedalling angle, we raise the B/B height, which brings the feet into line with the body, further reducing the frontal area. Then we have the fact that there is less weight on the rider's backside, and less compression of the spine, thus most people find the position more comfortable, esp. those with back problems.

Last and not least, the Greenspeed trikes are built to last! The frames are made from Reynolds 531 and Aircraft Grade CroMo 4130. Then they are then sandblasted and powder coated. The front axles are 12mm shouldered cap screws - 90 ton steel! The sealed bearing in the front hubs are calculated to last over 100,000 miles, and the trikes themselves have been thoroughly tested in Around Australia Tours, and in many other counties around the world. □



TRIKE SAFETY

—Alloy Mouse

I have a few personal thoughts on trike safety. Weigh my comments against life's common sense of where and when you hang-out may be vastly more important than what you do.

All motorist scare me. Uprights scare me too. Two wheel recumbents worry me. On a two wheel recumbent I feel safer dealing with cars than on a upright. Any cycle ride on a public roads in Texas is dangerous. You have to pick the time and place carefully, erring on the side of safety.

On a trike, I feel comfortable and safe. I can concentrate more on the cars and drivers, and much less on where my wheels are, or what the cycle is doing. My trike appears to command a lot of space and motorist tend to respect it. A two wheel recumbent has a rather larger footprint that it appears to have. When I ride the Horizon, Mary points out that she has to ride further away from me than when I am on the Triad. I also find it true when she is on a two-wheeler.

Oddly, I've had no insults or confrontations on a trike, might be just luck. May be more of Mary's "baboon in heat" theory (My Keen Fashion Sense, RCN #28). On an upright, I used to get an insult, or threat, or thrown bottle, on average about once a week. Often when on the trikes, motorist do stop and make comments on the trikes or on our bright safety flags. We also ride with multiple flashers back, strobe front, on in the early morning. We use mirrors and obey traffic laws.

If you are in the right place, and if you have a big, bright (12" x 18") safety flag, then a low trike is much safer than a high trike. The reason is stability. Trikes cannot lean and therefore have to have a low center of gravity to maintain control and not flip.

I fell safer on a trike than on a two-wheel recumbent or upright. If I am on a trike, I want it to be as low as possible, because low is safer. □

LEFT: The Greenspeed SWB Tourer (\$2250 USD) —Ian Sims

INTERBIKE REPORT: THE 1996 SEASON

by Robert Bryant

AEROSPOKE—Our new friends Frank and Dorothy from Aerospoke did recumbents proud in their deluxe Interbike booth. They have made a major commitment to recumbents with their new 20" x 1-1/8" five spoke composite wheel. The new 20" combined with Aerospokes 700c, 26" or 20" on the rear provides you with a aero-look and feel unavailable in the past. Aerospoke displayed a very trick Rans Tailwind with trick fade paint and dual 20" Aerospoke wheels as well as an Easy Racer Gold Rush Replica with a 700c/ 20" Aerospoke combination. The Aerospoke crew also gave away many RCN issues at the show in Anaheim and at CABDA (dealer shows). The new Aerospoke color brochure has one entire page page devoted to recumbents in which the Rans, Easy Racer and an ATP Vision are pictured. Lots of good recumbent Karma here.

RCN has two sets of Aerospoke wheels that we are testing. So far, we've tried the 700/20, 26/20 and 20/20—look for a review in RCN#31. The friendly Aerospoke folks were recently in Seattle to see Seattle's finest (Seattle Police Dept.) where the Mountain Bike Patrol uses Aerospoke wheels on some of their bikes. In late breaking news,

ture. ATP will be holding the \$995 R-40 price for the '96 season. Ph#206-789-7323. See Recumbent News in this issue ATP Rumors—suspended bikes for '97?!?! A rain poncho—perfect product for this Seattle company.

AVITAR—A name you should be aware of. No, not a recumbent manufacturer, but as a manufacturer of chainrings. They manufacturer 110mm MTB downhill chainrings from 34T-63T, 130mm chainrings from 39T-60T and 135mm chainrings from 40T-56T. As well as a wide-range other components. Avitar chainrings are found on Rans Rocket recumbent bicycles. Avitar, Ph#1-800-Planet-X.

BEKIK—Jaroslav Belik was one of the hits of the People Movers Ride giving demo's of his micro-SWB with a beam frame, modular frame sections and a 16"/12" wheel combo. Belik offers seven design styles and 35 variations with more expected. [SWB-USS, SWB-ASS, LWB-USS, LWB-ASS, low-LWB-USS, tandem and trike] Lots of good BENT karma here. The new bikes are incredibly well designed—some call it kinetic art, others thought the looks left something to be desired. Each time Mr. Belik demonstrated a new aspect of his design, whether it be the extrusion, an accessory mount or custom bike stand—I was completely amazed. In the booth there was a Nexus-7 CLWB, a SWB, micro-SWB and a long/low LWB on its custom upright stand. Prices range from \$868 for a 7-spd. SWB to \$1247 for a 21 speed low LWB. Also available is a 7/8 spd. tandem which sells for \$1588. Belik buyers can save a few bucks (10%-12%) by assembling the bikes themselves as they are available in kit form. Tell them you read about it in RCN. Belik, Ph#713-341-7197.

BIKEE—The BikeE crew was out in force at the Interbike shows on both coasts with a deluxe island booths and multiple multi-colored BikeE's. The staff was so busy that we had to take a self-directed tour of the '96 offerings. The BikeE has undergone a pretty significant redesign for 1996 and it's looking good.

On the 1996 models, the cushioned, contoured seat is fully adjustable for forward and backward tilt to accommodate various riding styles. The seat contour has been refined to ensure an even distribution of weight over the surface. Also, the new extended seat back provides improved lumbar support. Additionally, the backrest mesh provides full back support and ventilation. Riders

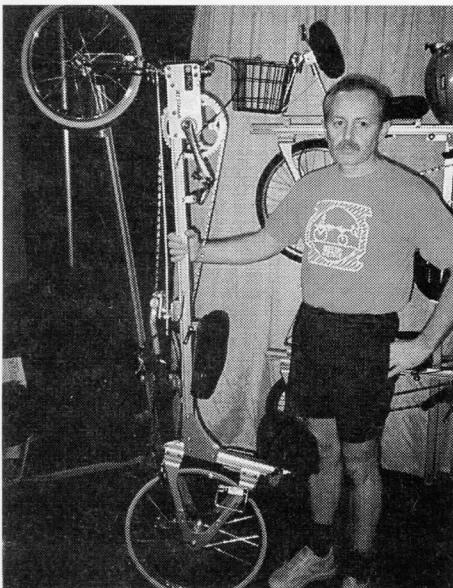


The 1996 BikeE—Staff Photo

can easily move the seat the full length of the frame along a rail to fit heights of up to 6'4".

The frame is a custom aluminum extrusion (6005-T5 alloy) and features a bright, anodized finish. Current colors include violet, red, blue and black. Other frame elements are stainless steel and powder-coated CroMo steel.

Riders will appreciate the more streamlined look, shortened wheelbase (52 inches—down from 54.25" last year.) and weight decrease of 10% from earlier models. The 1996 7-speed BikeE



The Belik modular LWB—Staff photo

Aerospoke has announced that their wheels have been approved and meet all Department of Transportation (D.O.T.) guidelines and Federal Motor Vehicle Safety Standards. You can contact Aerospoke at ph#810-685-9009.

ATP—ATP had a good Interbike presence with both LWB and SWB Visions. There was a trick painted R-45 with an ATP/Zipper fairing mounted on the wall as well as the introduction of the hot new SWB format "DOUBLE VISION" tandem with a unique "independent coasting" fea-



The Belik modular SWB—Staff photo

weighs 27 lbs. Other improvements include an updated front fork and the use of standard headset bearings, an Aheadset stem, a Sachs 6000 derailleur, forged crank and Chang Star brakes."

Also new, are the '96 BikeE graphics, logo and a color brochure. Nowhere in sight were the proposed E-Racer or the thermoplastic show bike from last years show and we've been told both projects have been shelved for the time being.

The BikeE product looks great and the presentation is professional and slick. They have more special programs for dealers than I've ever heard of—though their brochure has become somewhat controversial. We found some bold statements such as, "So fast, it'll blow the spokes off most other bikes." and "so comfortable, you can tour on it for weeks."

We were initially concerned that the term "recumbent" was noticeably absent from BikeE's '96 sales literature, so we contacted BikeE for an update. Jim Boeder of BikeE had this to say, "We are not trying to fool anyone in the cycling world into thinking this is not a semi-recumbent. I am quite comfortable with calling our bike a semi-recumbent when it is useful. If 99+% of the U.S. public doesn't know what a recumbent is, and we can tell a story about our bike that connects with these people without having to introduce a totally foreign category/concept, then we have succeeded in selling a compact-long-wheelbase semi-recumbent without having to introduce the term. Believe me, if the term 'recumbent' was a sales aid, we would be using it more extensively."

There is no doubt that BikeE's move is the boldest recumbent marketing move I've seen to date. I know they will have an industry-wide captive audience. We suggest that you check new BikeE offerings and let us know what you think. BikeE, Ph#1-503-753-9747.

BOB—Lucky for us, BOB trailer designer, Phillip Novotney is a recumbent fan. He is also very excited that his trailers are so popular with the recumbent crowd. The unique one-wheeled trailers that hitch at the rear axle are becoming the standard for touring. For 1996, there is a new silver color and some new hitch options that will help for small drive wheel bikes and bolt on rear wheel bikes. BOB, Ph#805-541-2554.

There seems to be a micro market for custom BOB trailer. We saw one with tie-died Titanium spokes, colored nipples and a Phil Wood hub 16" x 1-3/8" wheel. For custom BOB trailers, give Kelvin Clark at AngleTech a call.

BULLETT BROTHERS—Offers a Hypertension chain tension system developed for downhill MTB Pro racers. The kit includes an aluminum arm that clamps onto your rear axle above the derailleur and hangs horizontal behind your axle. The arm holds a spring that connects to your derailleur cage. For bikes with no idler, or bikes with wimpy derailleur springs (any '94 or newer Shimano), this system helps. The kit retails for \$29.99. You may also want to take a look at the new Bullet valve caps that come in anodized colors are \$5.99 per pair and chainrings up to 60T. Contact Bullet Brothers at, Ph#909-585-7000.

CAMPAGNOLO—While many of the crew are ogling the latest array of CNC space-age doo-hickeys and gizmo's retro-Bob's pulse is quickening by just being in the Campy booth. CNC whatever you like, but nothing comes close to a good old fashioned cold-forged crankset and Campy has them. There is an Athena road-triple 30/40/50, as well as Veloce/Mirage/Avanti 32/42/52 road triple cranks and all three groups have long cage derailleur models, and the ultimate retro meets techno part, the 1996 Campy 8 spd. bar-end shifter. If you want to know more, give them a call. Campagnolo USA Ph#619-931-0106.

CHRIS KING—Chris & Co. makes the finest headsets known to man. RCN Ace reporter guy, Ron Schmid has been riding on one for several years and several thousand miles. At the show, Chris King introduced their new silent cartridge sealed bearing hub that is completely user-serviceable (take it completely apart with an allen wrench). The hub utilizes a Ring Drive system with aluminum splines that run quietly with a watch-like click. The hub also has oversize

20-mm axle, but remains quite light weight. Hubs come in various drillings and anodized colors. King headsets retail for between \$99 and \$145 depending on the model. Hubs are \$110-\$135 for the front and \$240 for the rear—about \$350 for the set, youch! Chris King, Ph#800-523-6008.

COOK BROS. RACING—We couldn't hold ultimate-fan Ron Schmid back from this place. I think he had a sleeping bag behind the Cook shack-like booth. Once Ron saw the mini-crank-arm type quick release skewers it was all over. They come in black, gray, purple, red, silver and turquoise blue to match your E-style crankset. Cook E Cranks are among the finest CNC cranks made. They have the unique feature of offering micro-drive inner chainrings with 110mm (mountain) or 130mm (road) outers, so you can get those wild roller coaster recumbent gear ranges. "Beyond cool," as the ultimate-fan Ron says. Cook Bros., Ph#805-343-2700.

COOL TOOL—Our Cool Tool reporter guy, Dale Clark, reports that a must-have titanium, made in the USA Cool Tool is now available. The cost is a mere \$69.95 and the "tool" comes with a 2,3,4,5,6,8,10mm allens, narrow crescent wrench, slotted nut tool, chain repair tool, tire lever, pedal wrench, spoke wrench, 32-36-40mm headset adapters, bottom bracket lock ring adapter, 14/15mm crank tightening adapter, Phillips screwdriver, chain ring/derailleur straightener, bottle opener and emergency crank bolt. Sold! The standard steel tool is \$19.95. A must have, Ph#916-893-3079. The folks at Cool Tool also build the RetroTech cruiser mountain bike.

CYCLE-OPS—Get ready for winter! Cycle-Ops offers wind, mag and fluid stationary



Envision the performance and price leader!

Vision recumbents have quickly become the country's recumbent performance and price leader.

The Vision offers **advanced performance and comfort** at a **price half that of most recumbents**. Now you can ride fast without a sore back, neck, or wallet. Call or write today for the location of your local dealer.

Still only \$995 Suggested retail for the short wheelbase model



"Best SWB Recumbent 1995"

—Recumbent Cyclist News

Convertible Wheelbase



"Best Recumbent 1994"

—Recumbent Cyclist News

New! New! New!

- 16" or 20" Front Wheel Option available for all models.
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trainers for your indoor recumbent cycling needs. Bicycling rated the wind trainer as "the best magnetic unit we tried." The new fluid trainer provides "fluid technology" providing noiseless progressive resistance. Ph#212-924-6724

HED WHEELS/ Windcheetah—RCN Ace Reporters were doing their homework at Interbike. Ron happened into the Hed booth to look at the selection of 17" and 20" custom wheels when he happened to run into Steve Hed, himself. Steve builds fine high performance spoked carbon fiber aero-wheels and is the importer of Alex Moulton Bicycles. He announced to us that he was the new USA Importer of the Burroughs Windcheetah trike. The Windcheetah trike is designed by Mike Burroughs and is built in England by the Seat of the Pants Company. Previous bonding problems on the legendary aluminum framed trike are said to be solved and with Steve Hed's bonding expertise, can only improve the situation with the Windcheetah here in the USA. Ph#612-653-0202.

KRYPTONITE LOCKS—Kryptonite sells the best locks in the industry. The New York model U-lock was rated with a perfect 10 score by the bike thief that MTB Pro Magazine had help them with a theft test. The thief's comments were, "very strong, only the fully geared up pros will get through this." The New York U Lock is \$74.95. There is also a New York Chain made of case-hardened tempered steel chain that comes in 3' and 6' lengths. They start at \$103.95. Kryptonite also has a \$40 rear rack for toting a U-lock. Contact Kryptonite at Ph#617-828-6655.

LINEAR—Steve Hansel and crew were at Interbike with a LWB and the SWB Sonic that we have not yet been able to review, however, it is in production. The LTD. Edition Black Linear LWB will be available for 1996. There were no Kingcycle's or Windcheetahs at the Linear booth this year. PH#319-252-1637.



The 1996 Stealth—Lightning

LIGHTNING CYCLE DYNAMICS—Lightning was out in force at Interbike. The booth displayed the Stealth, P-38, F-40 and R-84. This is the first time I have taken a close-up look at the carbon-fiber R-84 and this gloss black example was looking good. The bike weighs a feather-light 19 pounds—complete! Pete Penseyres' F-86 Paris Brest Paris bike was parked outside the show for fans to ogle over. Also on display was the Lightning Stealth, which is a very clean looking machine with a 44" wheelbase, a mono-tube frame, above-seat-steering (ASS) and a 26" x 16" wheel combo. We especially appreciated the fact that the booth staff were reading RCN. We want to test a Stealth. If you want to see an RCN Stealth

test, give Lightning call at Ph#805-736-0700.

MAGURA BRAKES—OK, I admit it, these are the best rim brakes known to man. They stop better and have better modulation than any other rim-brake. They come in cool colors and are user serviceable—once you learn how to fill those tubes with oil. After checking out the latest hydraulic brake offerings from IBC, including a complete redesign over last years model, it becomes quite apparent that Magura is the key to your high performance braking needs. The HS22 Evolution is the new redesigned model that is lighter weight, has a toe-in feature and attached quick release lever. Also new for '96 are Magura Kool Stop brake-shoes in Green for wet pavement and Red for dry. RCN Crew Magura fans were hot on the trail of the new super light Kooka/Magura brake levers at a mere \$109.99 pair. Ph#618-395-2200.

MOUNTAIN DRIVE—A two-speed bottom bracket—it all began with the idea of making an ordinary 3 spd. bicycle capable of climbing steep hills. A simple calculation showed that an additional 1:2.5 ratio transfer gear would create an evenly spaced 6-speed gear set, without wide gaps between the gears. The mountain drive unit is a bottom bracket internal gear system. No matter if your bicycle is equipped with a 3, 5 or 7 speed rear hub, the mountain Drive will truly double your number of gears.

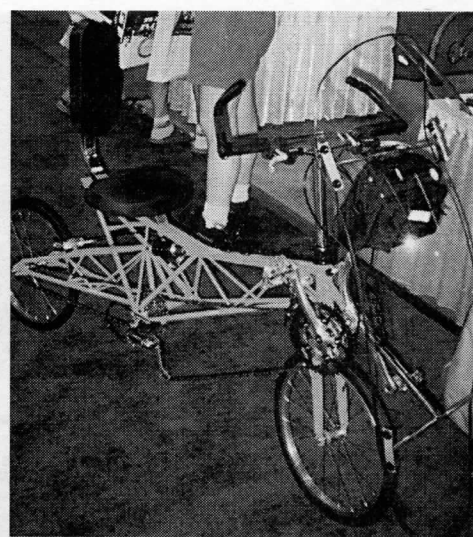
Mountain Drive-1 has a standard chain wheel. The ratio is 1:1. With the drive activated (through a bottom bracket axle mounted toe-button), the transmission ratio is 2.5:1, this means 2.5 revolutions of the crank correspond to a single revolution of the chainwheel. This means a chainwheel of 46 teeth works like one of 19 teeth when mountain drive is engaged.

The price is about \$500 US. Contact: Florian Schlumpf HTL, CH7324 Vilters Switzerland, Ph#41 81 723 80 09, Fax#41 81 723 83 64.

PHIL WOOD—Phil finally introduced their Shimano Freehub compatible Phil hub. In an interesting turn of events, the cassette body is made by Aerospoke, a company with strong connections to recumbency! Phil fabricates some of the finest precision cartridge bearing hubs and bottom brackets known to mankind. Ph#408-298-1540.

PEDERSEN SE—Pedersen builds a unique high power self-energizing cantilever brake. This is accomplished by the use of a patented helical gear on the pivot allowing the forward motion of the wheel to self tighten the brake system when the momentum is increased. These brakes are standard on Ryan Recumbents. Contact Pedersen at, Ph#208-733-2519.

THORPE-ROADRUNNER—Richard Thorpe displayed a unique full CNC'ed prototype aluminum recumbent at last years show. This year, Richard showed his new production bike. The bike has a unique fully suspended space frame just like a Moulton upright, stock Zzipper fairing and a unique riding position. The seat back is nearly upright and the bottom bracket is lower than the seat height. The design is kind of a hybrid, a cross between a CLWB and SWB (boomless)—most definitely a high-performance machine. The interesting design theory at work here is that for power, you crouch forward "into the drops" behind the windsheild. This is a very unique bike



The Thorpe RoadRunner-Staff photo

that deserves a closer look. There was a veil of secrecy surrounding this booth, in fact, we were not allowed to take side-view pictures of the bike. The Suggested retail price is \$3895. Thorpe Consulting ph#714-957-8100.

SAFETY PRODUCTS—RCN Crew members (not me) could barely see straight after checking out this booth. They were beside themselves with excitement—rattling off about hydraulic fluid and derailleur cables. The bike stuff that dreams are made of.....visions of hydraulic oil dancing in their heads. The folks at Safety have a hydraulic rear shifting kit that adapts to many shifters and derailleurs to create quick, precise and crisp shifts on even the longest cable runs. The kit weighs just 89 grams and looks wonderful with its anodized finish. The shifter works with any derailleur or shifter and is said to improve shifting accuracy and ease of shifting. The kit retails for around \$200 (per shifter). Ph#909-592-8739.

SCOTT SUPERBRAKES—These high power brakes were once found as standard equipment on Lightning F-40's before they were taken out of production a few years back (10 year old design). Well they are back, and pricey. Superbrakes are stiffer, lighter (158.8 grams), have greater reach (40mm-54mm/ or with extenders 60mm) and offer a strong scissor action cable pull in a league by themselves. They are truly hi-tech retro-grouch specials. From appearance, the Scott brakes would not work on most SWB recumbents due to boom interference. Price is approx. \$300 per set with levers. Road Bike Action rated them the winner in all categories but one, weight. Contact Scott/ Mathauser, Ph#208-726-5432.

SRAM GRIP SHIFT—GripShift unveiled their new ESP US-Built rear derailleur. The new derailleur has fewer moving parts than the Shimano and is specifically designed for mountain bike racing. It is the end result of SRAM's seven year derailleur study. Aftermarket price is estimated to be \$140. They had one on a test stand with a Shimano XTR along side it for comparison. RCN reporters found the ESP to shift better and offer a shorter throw. GripShift also produces a product called the BASS WORM aids weak springs of Shimano derailleurs. The worm seals

the rear section of cable housing and cable from the elements and springs the rear derailleur cable for quicker shifts. Ph#312-664-8800

REBIKE—Well, the big news is that ReGis the ReBike dog character was not in the booth this year, however, the new “performance” ReBike was. The ReBike 2600 is the newest model from the company that does not use the term recumbent in their brochure. “Named ReBike 2600 because it has a 26” rear wheel and can go hundreds of miles, this 18-speed Shimano version will appeal to the riding enthusiast who wants to ride faster and farther in a comfortable riding position,” from the ReBike 1996 brochure. The spec sheet did not list 2600’s weight, so if you want to know, call ReBike, Ph#407-750-1304.

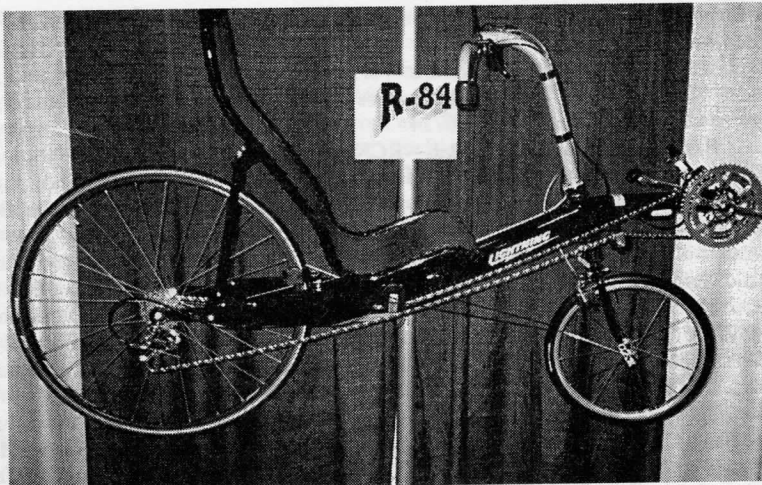
SHIMANO—The biggest news from the component giant comes in the way of internal gears. The new Nexus-7 speed was very apparent at this show. On city bikes, cruisers and even on one of the new Belik recumbents. The Nexus has a strong roller brake and is said to have gearing similar to a 12-30 freewheel. Shimano also makes a four speed internal gear/ brake combo. Shifting and braking have never been easier. Some industry insiders think the internal-hub gearing on commuter bikes is the industry’s next big thing. The downside is that internal gearing adds \$100-\$300 to the cost of a bike.

Other Shimano offerings include some neat XTR upgrades that have shaved nearly a pound over the ‘95 group. There is a new cold-forged, hollow crankarm XTR 24/34/46 crankset. A new top-swing” front derailleur is something else we probably cannot use. The ‘96 hubset uses titanium axle and freehub body. The best component, at least one that us recumbent guys can use, are the new “V” cantilever brakes with longer arms for better leverage. These will at least work on the rear of most cantilever equipped recumbents. Also, look for Rapidfire SL levers with titanium parts, a shorter throw and compact brake levers with adjustable mechanical advantage and reach.

SACHS—Sachs had a great display with cut-away parts and working displays. For ‘96 Sachs has a new lower priced 3 x 7 as well as new upper-priced 3 x 7 with upgraded bearings and an attachment for their disc brake. Sachs also lists electronic shifting for the Torpedo-7 speed internally geared hub.

The New Success rear derailleur looks good. It is cold forged, has cartridge bearings in the pulley wheels and an extra strong scissor-action

return spring. New Success front derailleurs are available in micro or standard crank sizes. A new top-of-the-line Quartz ATB group with optional disc brake, and redesigned Power Grip Shifters was also introduced. And if this is not enough, you can send \$2 for a Sachs Catalog and sticker. Sachs, 22445, E. LaPalma Ave. Ste. J, Yorba Linda, CA 92687.



The 1996 Lightning Cycle Dynamics R-84—Staff photo

TWO-FISH UNLIMITED—This guy comes running up to us in the hall. “Hey, you’re recumbent guys!” We said, “Yes.....” He said, “do I have a product for you!” He appeared a minute or two later with a really unique product called a BIKEBLOCK (\$6.50). It’s a multi-use fastener that hugs your frame or handlebars and holds onto hard to haul accessories. They also make a LOCKBLOCK (\$10.95) to hold your lock. Their best product is the QUICKCAGE (\$11.95), a mount anywhere waterbottle cage utilizing the BIKEBLOCK. These ingenious accessory mounts are made from Kraton elastomer with wide Velcro fasteners. Be sure to tell them that the “recumbent guys at RCN” sent you. Two Fish Unlimited, 1442A Walnut St., Ste.132, Berkeley, CA 94709. Ph#510-524-2309.

SHORT-TAKES—Carbon-Fiber Cranksets? Yes! TNT, Qranc and Sampson all offered mega-\$\$\$ cranks that weigh 300-350 grams, which is a savings of approx. 200 grams over an alum. crankset. Prices—around \$700-hurry, hide the check book. **Gorilla Billett** was just rated the highest honors of the super-deluxe US-made CNC derailleurs. Both **Gorilla** and **Paul** introduced new front derailleurs at the Interbike show. Get out the check book as these are expensive. Gorilla also has CNC machined

twist-grip shifters that offer a 20 degree shorter shift for \$130. **IBIS**, the mountain bike guys, have a \$50 “Hot Unit”, a stainless steel vacuum bottle for hot/ cold beverages. AngleTech sells these. **Grunge Guard** rubber derailleur boots are perfect for commuter/ rainy NW rider- types. Shimano type front or rear \$12.99 ea. (AngleTech). **Ritchey**—offers high quality mountain bikes and parts. Cranks, brakes, pads, grips, tires and clipless pedals. The product in the Ritchey line that really stands out for me is the crankset. Our Greenspeed trike was delivered with the Ritchey crankset. It is a timeless, durable cold-forged mountain bike crankset. Micro-drive and road doubles are available as well. Check these out when you spec your new bike. Ibis “hot unit” stainless hot or cold container with its own “cage” mount. \$69.99 **Rhode Gear** had a new “Multi Mirror” with a new oval shaped lens and mounting system. \$19.99 (AngleTech). Then there’s the **Cruiser stuff**, if you are a retro-grouch or just like retro-beach-cruisers, the show was filled with them. Most major manufacturers have a stylish cruiser ride offering for ‘96. Many were showcased in Shimano’s Nexus-7 Design Show.

Is this the mainstream bicycle industry’s answer to comfort and cycling in the ‘90’s? □

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1996 BUYERS GUIDE ANNOUNCEMENT

Due to popular demand RCN will produce a 1996 Recumbent Buyers’ Guide Double Issue. Expect to see more specs, comparisons, opinions and new bikes for ‘96!

This issue will go out to regular subscribers as—RCN#32/33 and will be mailed in early April, 1996. RCN will remain on a six issue per year schedule just as we have done for the past three years. Expect RCN#31 in your mailbox in early Feb. ‘96.

Recumbent Manufacturers: We need complete updated specs, new photos and your complete information by January 31, 1996. There is no charge for a basic RCN manufacturer listing as long as you complete the proper paperwork.

Manufacturers/ Dealers: If you are currently an RCN advertiser, expect to receive the 1996 packet very soon. If you are not an RCN advertiser manufacturer/ or dealer who would like to receive our **Buyers Guide/ Ad/ Listing info Packet** send a check for \$3 US/ \$6 Airmail to: RCN BG, PO Box 58755, Renton, WA 98058.

Flux Ride

Chapter I

by Oliver Zechlin
Photos by Oliver Eichhorn

00:15am Central European Summer Time. Aside from a handful of street lights which illuminate the scene you couldn't see your hands before your eyes. A quiet suburban German town. I am to embark on my first ride on a recumbent. Not any recumbent that is. It is the one I am taking with me on a plane heading towards New York City 10 days down the road. Influenced by too many sports shoe commercials—JUST DO IT. Taking a strange looking vehicle, bought untested, to propel me across the US of A. My friend and mechanic Peter Keller called it a night, having a road-race in the morning.

The machine isn't finished yet, but rideable. I have to try it! I push it out on the deserted street, luckily all the neighbors are asleep. Lowering myself down on the seat, which is quite an act since you sit approximately 40cm above the ground I am having doubts about the driveability of such a thing. Hmm, what type of racer is it anyway?, I wonder. 40cm doesn't qualify for being a low-racer. Maybe it is, and all the others like the M5 low-racer are in fact ultra-low-racers. Yeah that's it. Both feet flat on the ground I lean back into the not-too-soft-not-too-hard foam pad (with vent holes all over) velcroed on the wooden seat (with matching vent-holes). The seat alone weighs a ton. 1.5 kg to be precise. But it has its advantages, too. You can mount all kinds of things on it. In my case a couple of bottle cages and a stripped apart Blackburn low-rider. I reach for the handlebars. Wow, it sure feels comfy! As mentioned above the bike wasn't completely assembled yet. No front brakes and no front derailleur. Well, the front derailleur was actually mounted but didn't work. Peter mounted some old pedals with cages. The Speedplay FROGS were still in their cardboard box home snoozing away. The 1st time on a recumbent and the 1st pair of clipless pedals at the same time, I don't think so... I put my right foot on the underside of the pedal, avoiding being strapped into the cage. Time to find out if I made the right choice. I push forward. Gosh, that thing is twitchy! I choose to not ride that turn but instead walk it while being seated. This time I press harder on the first stroke. This works better. I put my left foot on the underside of the left pedal. And off I am. Gosh, that thing is twitchy! By the way, I am sitting on a FLUX S-COMP (German brand) SWB ASS. After picking up some speed everything gets easier. I don't even have that much problem with the touchy steering anymore—I grin like a mad cat! Having enough confidence in myself I actually ride the U-turn back to Peter. Wheew! I accelerate quickly and have to brake hard with my rear brake before Peter. Now I have an even bigger grin on my face. I hand it over to him. He is taller than I so his knees touch the handlebar (the



FLUX come in different frame sizes, depending on the length of your inseam). He doesn't have much problems riding it either, in fact he is doing better than me. Maybe he oughta board that plane instead of me... After a couple of minutes of talking about our experience I put the Flux in the back of the car and drive home. No crashes on the first night out. A good sign I hope.

The next day was a sunny Sunday. After dinner I take my 'bent out for the first real spin. Before leaving the house I dig out my helmet and gloves, never leave home without them kids! Pushing the bike through the living-room I knock over a plant, have to get used to that turning-radius, feels strange to turn the handlebar and there is still something sticking out straight ahead of the wheel. Without further havoc I reach the outside. I seat myself, grab the brake-lever, put my foot on the pedal, release the lever, and off I go. A bit shaky at first, but I manage. I experience what joy my egg-yolk-yellow Liegerad (German for recumbent) is bringing to people. There is so much positive attention. If I would get \$5 for everyone who put a smile on after seeing me, I would be a rich man by now. Children tend to sayings like "cool bike" without further thought, while adults often don't know what the heck I am on. After about 1 mile I have my first crash, though. My front-wheel slips trying to get on a bike-path at an 40 degree angle. I wasn't going very fast, and sitting at such a low height, nothing happened to man or machine. Have to be more careful. This ain't a Mountain Bike ya know... Heading for a different part of town to collect some money from a friend and soon I had covered approx. 10 miles. And all 10 miles were accompanied with laughter, waves and turning heads of people. I truly enjoy myself cruising along under a blue sky. After saying good-bye at my friend's house I head for my grandmother's apartment. I made it a habit to stop by her place every day to bring some fresh brewed coffee, which I have with me this time in

a thermos in a pannier put on the Blackburn rack. Another 4 miles. Heading home I soon realize that I better put on my flag and the rear-view mirror. With the ASS I can pull myself forward to turn around and look, but it is a nuisance.

After a brief break at home, having some tea and cake, I am anxious to hit the road again. I feel great. No numb butt or hands. I only feel my knees, but that doesn't surprise me. Not enough gears, wrong seat-position, soft tennis-sneakers, wrong pedals. I also feel some muscles at the lower end of my butt which I guess is a result of having to keep up my feet without the help of clipless pedals. Anyway, I hit the road again. On my way to Peter's, I even got invited to a have a beer with some folks who wave me over, celebrating the official "Beer Day" (honest, no joke—this is Bavaria after all) at a local Biergarten. Later, I get to Peter's, where we put on the mirror, fix some more stuff after which I head home. 7pm by now. Emptying my pannier I come across that envelope I wanted to mail all day long, now all the mailboxes won't get emptied until the next day. Shoot. But hey, no problemo. I hop on the 'bent and spin to the main post office downtown. Heading home at 8pm it is still warm outside. Wow, what a great day! In total I rode 50 miles.

FLUX CHAPTER II: PUTTING MY LIFE ON THE WHITE LINE, OR: WHO IS AFRAID OF THE BIG, BAD PICKUP

Well, I am back. I quit my ride in Duluth, Minnesota, where I hopped on the Greyhound. After 36 hours I arrived in New York City (NYC) again. A city with thousands of cabs, but no station wagons. Arriving in NYC, at JFK or Greyhounds Port Authority with a boxed bike stinks! Why did I go in the first place? To meet people

and see the country. Yes, I did meet plenty of very nice folks. But seeing the country, I don't know. Venturing out in the world with all of your stuff sitting in a tent doesn't seem to work anymore. Why did I quit my TransUSA ride? It adds up to: I was spending money and not having fun. What happened? I don't like Pick Up Trucks running me off the road.

- I don't like Pick Up drivers firing a guns.
- I don't like Morons of which there are way, too many on (US) roads.
- I don't like farm dogs chasing me.
- I don't like Sarajevo-like roads & shoulders.
- I don't like knee-pain which didn't get any better fighting major headwinds.

I had a crash the first day after leaving NYC. I was riding on a smooth shoulder which all the sudden transformed in to pot-hole-hell underneath an overpass— I crashed. Result: road-rash, psyched out; my front fairing took most of the impact, though. On day 2 I recieved the front-fairing from People Movers (Thanks for your prompt service) the Vision Zzipper mounted on my FLUX lower because the Flux seat height is much lower than on the Vision.

•LESSON 1: Don't tour with equipment you couldn't test before. After about 2 miles it slowly made its way down on my chainring leaving me riding with one hand holding the fairing. I disassembled it, boxed it, and sent it home.

On day three, while flying downhill, the right rear pannier got stuck in my rear wheel ripping out most of my bladed spokes. Luckily I didn't crash but could slide over to a stop. The police picked me up in a truck and shuttled me over to a motel. I found a retired school teacher in Montecillo, NY who was able to rebuild my wheel. On the 1st day crash one of the buckles holding the pannier broke. I trashed the pannier and sent home all my cook-ware-stuff.....cold beans from then on...

I then developed knee pain (left, inside). In Imlay, MI I went to a doctor who wrote a prescription for an anti-inflammatory and muscle-relaxant. Unfortunately that stuff made me drowsy. He told me to quit if it doesn't get better.

•LESSON 2: Don't tour on a bike you couldn't ride before going on an extended tour for a long time. I got my first 'bent about 2 weeks before heading to NYC. Not even enough time to develop 'bent-muscles. I intended to take it easy, but easier said than done. New York state isn't exactly flat. I don't know how many miles I rode. The new Avocet 50 I ordered had the good life riding in my bag—since I lost the mount in NYC and couldn't find a replacement. Hitting every bike-store I encountered along the way.

Duluth, MN—Ah, relief, friendly drivers, actually waiting to pass you until it is safe (gasp!) clean, and no guns. Yes, I liked it there. Well, and then slowly rolling back to the main street after buying some Powerbar in a supermarket it happened.....the front wheel stopped moving. Cause: the radially-laced (32) super-lightweight & super-expensive front hub broke at the flange. The result of riding in Michigan I suppose... And that did it, I quit my US tour.



The headwinds made riding a drag as well. I knew I would encounter headwinds, but as everything else, everything is bigger and better in the US of A... It was actually easier riding, because of sitting really low than walking and pushing the bike. What I couldn't stand about the USA is their over-dependency on cars.

About touring on a recumbent-bike: I truly was glad to have chosen a ASS-model. Much easier on your back if you have to, or want to push your bike...

Did I like my bike? You bet! Would I do it again? Maybe. But then from West to East, and not necessarily alone. But I am kind of fed up with the USA at the moment (not wanting to step on someone's patriotic toes...) and guess I will tour Europe first (Scandinavia preferred, maybe ride up to the HPV-championships).

What I found remarkable is no flat tires, my heart rate never was higher than 145 and putting in 8-10hrs/day and not feeling a thing at day's end.

Oliver on safety: I bought some pepper spray in NYC (asked a cop where to get, told me it is illegal in NYC—but told me where to get it anyway), however, I never used it; I carried Vistalight front and rear flasher, I had the usual safety-flag, but people who passed me told me I am very hard to see, if the flag points rearwards there isn't much bright. Next time I would strap on one of these bright triangle reflectors.

FLUX CHAPTER III: WE STILL ENJOY EACH OTHERS COMPANY

Now that some weeks have gone by since my quitting TransUSA, being able to use the FLUX S-COMP in normal riding situations like commuting, leisurely spins etc. what do I think of my two-wheeled friend?

We still enjoy each other's company. On my trip I had "only" one major component fail on me, and that I can blame partly on me, not at all on the FLUX because I ordered only the frameset. I would not use a radially laced wheel on a SWB recumbent again. My wheel's hub, a German made "Tune," was designed for road-bikes (wedgies that is) and for riders not weighing more than 75kg. I don't exceed that weight. But I reckon that on the SWB I have more weight on the front wheel than on an upright bike. And I was touring with all the weight in the back. For city-riding I would much prefer a suspension-fork. FLUX is offering one, a "Ballistic EX 500A" (elastomer). But the weight... And that brings me to my only

beef about the S-Comp. FLUX uses custom-made Mannesmann tubing (square but with rounded off edges) for the main frame which is sturdy but heavy. That with the recycable wooden foam padded seat brings it up to at least 5kg (frame plus seat). Being a moderate weight weenie, I would like to see some weight shaved off.

If you order a FLUX with above seat steering you have the choice between an S-COMP and the S-RX, differing only in componentry. Specify the front wheel size that you want. For US customers, the IRC-size would be the way to go. I have a Schwalbe City Jet on my front wheel and am quite content with it. FLUX also offers all kind of accessories for it, like fenders, chainring-guard, chain-guard-tubes, carbon-fiber-seat, rear-fairing/trunk-combination, or an optional custom-paint-job.

By the time you read this FLUX will have rolled out a new addition to their line, the S-60. It is basically a full-suspension S-COMP with a 20" instead of a 26" rear tire. The most successful model so far is the ST-E / ST-2 line, a "typical" Euro-bent with USS. On race-tracks one can admire the looks of the Z-PRO a no-nonsense ultra-low-racing-bent. Unlike other European recumbents, the FLUXs don't have an adjustable boom. Instead you order your specific frame size depending on you leg-length. The seat can be adjusted ~7.5 cm.

I truly think FLUX did a wonderful job with their new offspring, the low seat-height with the ASS makes it a recumbent suited for every occasion. After test-riding Lee Weismann's Lightning P-38 in New York City, I much prefer the more reclined seating position of my Flux to the more upright P-38, but that is personal preference. The FLUX seat gives great shoulder support. For touring I would advise to mount a headrest onto it. Our next tour is up north to the HPV-championships in Lelystad, Netherlands. This time I will tow a BOB Yak single wheel trailer, instead of loading up the Blackburn rear rack.

FLUX no longer sells framekits and the Z-PRO is only sold to individuals who sign liability-waivers and they not ship Z-PROs to the USA because of the potential liability problems.

For more information on FLUX bicycles, contact:

FLUX Fahrraeder GmbH
 Kreuzbreitstrasse 8,
 D-82194 Groebenzell
 Germany
 Phone/Fax: +49+8142 +53180 ☐

Bent for the Backroads of Glacier

Story & photo by Mark Graber and Hetty Hall



Is it really possible to use the words rain, cold, recumbent, and fun all in the same sentence? Our trip to Glacier National Park with Backroads Bicycle Tours was all of these.

First, the bikes. I was riding an ATP R-45 with an XTR rear cluster (not a stock item on the ATP). My low gear was 32 (rear) by 26 with a 26" rear wheel=low gear of 21 inches. My wife was riding a RANS Stratus-XT with a 28 rear and 24 front (requested from AngleTech when we bought the bike) with 27 inch wheels=23 inches low gear.

Our departure from Cedar Rapids was complicated by a storm in Minn-St. Paul that closed the airport. Our flight was canceled and we were shunted to a commuter plane that would take us to Kansas City. This was great!!! Except for the, Oh, by the way. We aren't sure if your bikes will fit. This was after charging us \$45 for each of the bikes!! Of course, showing up in Glacier without our bikes was not an option. Fortunately, they did manage to squeeze them on. The joke is that they used to be regular bikes until they were bent by the airlines. A couple of folks actually believed this until we set them straight.

The night that we arrived in Montana, we stayed at the Good Medicine Lodge in Whitefish, Montana which was more like a bed and breakfast than a hotel. Excellent breakfasts, great rooms, and gracious owners. Also, excellent cookies—highly recommended. Backroads has a van that will pick you up at your hotel and bring you to the start of the ride. The logistics that Backroads has

to contend with are complex. Not only do they have to pick up all of the riders (21 on this trip), they also have to be able to adjust to contingencies such as a broken down bicycle, rain, wind, illness, etc. The Backroads staff was always able to accommodate to any problem without missing a stride (pedal revolution).

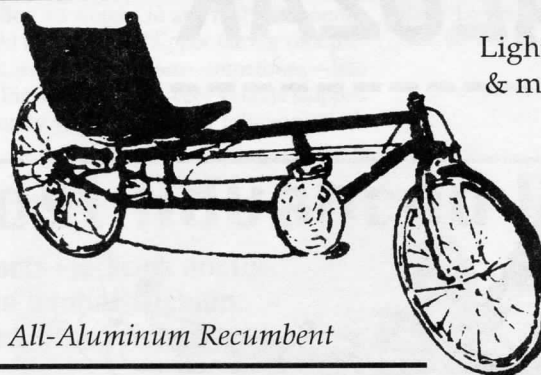
Our first bicycling day started out at 5:00 in the morning. Because of the traffic, bicycles have to be over the summit of Logan Pass, via Going to the Sun Road, by 11:00am. It is 28.6 miles, all uphill, and, in our case, in 37 degree weather with sleet, rain, and fog. This was supposed to be the highlight of the ride with majestic peaks, peaceful lakes, waterfalls, and glaciers around every awe-inspiring corner. All I saw was gray. It was actually fun, though. Making it to the top really gave me a sense of accomplishment. Until this, I was

worried that taking a 'bent to Glacier's hills was not too wise. This was not the only long uphill of the trip. There were 8-24 mile uphills everyday except for the last. The ATP seemed to do better uphill, mostly from a stability point of view. It was difficult to control the long wheelbase at slower speeds. We both made it OK. Speed wasn't an issue, after all, this was our vacation. I don't think that the 'bents are particularly speedy. Nor are they slow. We were frequently in front of many of the old-fashioned bicycles. I think that a lot of this reflected the shape of the individuals rather than the shape of the bicycle.

Of course, with all of those uphills, there are bound to be some downhill. The RANS is truly awesome on a long downhill. The character of the two bikes reflects in part the character of their owners. The fast response, tight steering, quick

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short wheelbase ATP suits my style, but my wife's main concern is stability. The RANS Stratus XT is one of the longest wheelbase recumbents on the market and is even lower to the ground than the Nimbus which is the other RANS long wheelbase.

The RANS stretched its neck out like a race-horse on the final stretch and there was no stopping it. It zoomed around the wet, slick curves in perfect control, and pedaling at 35 mph was no concern. By the final day my wife was getting used to its amazing stability and let out all the stops once she topped the crest. The only bike she did not pass was the tandem with its two athletes who run marathons or bicycle 500 mile uninterrupted races in their spare time, and she had caught up to them before she slowed down to wait for me after another of my flat tires.

The other days of bicycling were less cold but generally as wet. We usually had some breaks in the rain mid-day. The weather was unusual for Montana this time of year. This was the wettest summer they have had this century. Of course, this was the summer we decided to go to Glacier. Still it was a wonderful trip with incredible scenery. We got to do a 12 mile ride (uphill, of course) on a road that was closed to traffic due to a number of large cracks in the road from hillside slumps. I think that this was the best ride I have taken. The background of mountain glaciers, green glens, lakes, areas of sage brush, and trees was awe inspiring. There was time for hiking every day if one elected to. I took an 11 mile hike with a couple of others to Grinnell Glacier. This was one of the most scenic hikes I have ever taken.

Most of our nights were spent in campgrounds sleeping (or trying to with the wind and rain) in tents. Our last night was spent in Glacier Lodge. Most of the campgrounds had hot showers and flush toilets. If you don't like camping, Backroads also offers "Inn trips."

The Backroads tour staff were amazingly helpful and cheery especially since they were having to work in the same rain and cold that we biked in. On a typical day, they were up well before day break cooking breakfast. This varied each day from hot cereal to French toast, pancakes, scrambled eggs, and some delicious coffee cakes. The meals were always tasty, plentiful, and laid out in such an attractive manner that it was almost a shame to eat them and ruin the art of the presentation. They offer vegetarian entrees at all meals if requested. The staff would clean up after we left camp (we did set up and take down our own tents). One of them would act as the pack rider who would ride with the pack. A second would ride sweep with the slowest rider so that no-one would get left behind. The van would shuttle back and forth during the day offering help, rides, food, etc. to any riders who needed them. I used their floor pump often having blown 5 tubes (a new Backroads record) and the sidewall of a tire. If you bring your own bike, you need to supply parts and do repairs yourself. However, the Backroads staff was always willing to help out as well. After a long day of biking, we were greeted at the campground with appetizers and wine. Once again, I don't think that you can get better food almost anywhere. Dinners included salmon, fajitas (chicken and beef), lasagna, always desert and

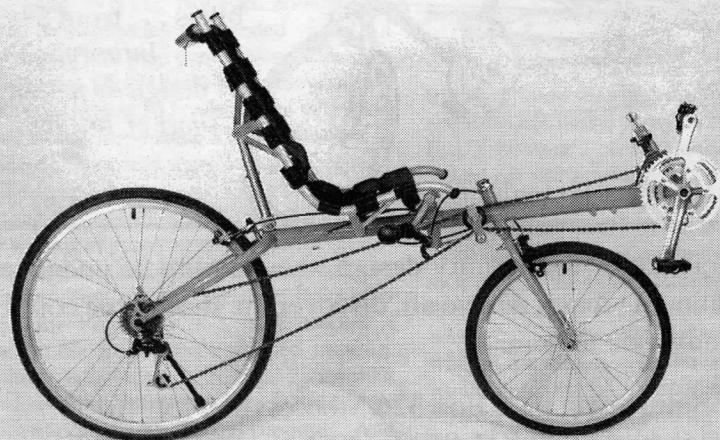
usually hot bread cooked in big pots covered with coals—quite ingenious.

The 'bents were a source of curiosity among the other riders, many of whom had never seen a recumbent before. We spent an evening at one on the campgrounds letting people take trial runs on the bikes. It was actually quite amusing watching them teeter, weave, and try to turn. Before they tried the two bikes everyone expressed skepticism about the ATP short wheelbase with the hands down by the ground and legs out in the air in front. After trying the two bikes head on, however, the consensus was that the ATP was easier to ride and get the hang of, definitely a shorter learning curve.

The last day of the trip was about a 55 mile downhill (some short segments of uphill thrown in for good measure). Of course, it rained, in fact it poured. This was the only time I got discouraged on the whole trip. 15 miles to the end of the trip. My training rides are longer than that. "No problem," I thought. It was the slowest 15 miles I have ever ridden, with minimal visibility and an endless parade of trailers, RVs, and trucks that are not allowed on the Going to the Sun Road. It was a sense of real accomplishment to reach the end. Dry clothes never felt so good. All in all the fun outweighed the struggles. I'm going to sign up to do it again in a couple of years. After all, I have to bicycle up Logan's Pass and see it in the sun. □



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Homebuilders Corner Stik Boy

Story & photo
by Benton Levensgood

I credit my brother, Robert, "Buck" Levensgood with infecting me with recumbent fever. My initial contact with the bug was during Memorial Day weekend 1994 when I devoured his 1994 Recumbent Cyclist News buyers' guide. My next exposure occurred last November when Buck loaned me his ATP Vision R-40 for an extended period. My experience on this bike led me to purchase an ATP Vision R-45 this past March.

Buck and I agree on many topics concerning recumbents, but one that we don't see eye to eye on is how to get the recumbent. I'm only too happy to cough up the money for a good bike. Buck, on the other hand, is more of a tinkerer. His need to disassemble and reassemble things eventually became an urge to build his own bikes. Armed with only knowledge from a recent Voc-Tech welding class and a somewhat limited supply of bike parts from his basement, Buck formed Stik Boy Recumbent Bikes. The name comes from a Beavis and Butthead episode (*recumbent bikes are cool, huh!*), the one where they're in gym class and the coach barks out "hey, stick boy." It effectively describes my brother's manly physique.

The bike pictured here is Stik Boy #2. It is a direct descendant of Stik Boy #1—in fact, it was Stik Boy #1! The frame is all 4130 CrMo. The 41" wheelbase makes this MWB design incredibly stable. The seat height and bottom bracket height are level at 22." Combined with a relaxed seat-back angle, this geometry makes for an extremely efficient pedaling, especially up short, steep hills, a frequently occurring surface feature here in southeastern Pennsylvania.

Perhaps the niftiest piece of craftsmanship on this bike is the collapsible handlebars. Also fabricated from 4130 CrMo, they lock via a quick-release skewer and a specially designed internal bushing. All cables are internally routed.



Gimmicks are nice, but exquisite brazing has sold more bikes throughout history. The joints on Stik Boy look quite professional—a fact that I'm amazed at given Buck's relatively small amount of brazing experience. The frame was topped off with three coats of bright yellow Duron enamel.

Components on the Stik Boy seem a bit of a patchwork, but it is completely functional. Most of the drivetrain is Shimano Deore DX that was robbed from one of Buck's trusty mountain bikes. Look closely and you'll notice another piece of mountain bike history at the rear—a Shimano U-brake. Talk about stopping power! It more than makes up for the Weinman sidepull up front. Shifting is accomplished via SunTour Grip Shifters while power is supplied to the bike using a SunTour 26/38/50 crankset with road pedals, clips and straps. The 26" rear wheel sports a 1.25" IRC Metro while the 16" front is a Kenda 1-3/8."

Stik Boy #2 weighs in at a hefty 35 pounds fully loaded including a Zipper fairing (not pictured). The weight is an asset—sometimes—like the time a Pizza Time™ delivery vehicle stopped rather abruptly while Buck was following a bit

too closely. The fairing was ripped completely off the bike (and had to be driven home by the pizza dude) but the Stik Boy came away largely unscathed. This bike is built like a tank!

Buck uses his bike for everything—pleasure riding as well as commuting to several jobs (one of which is teaching kindergarten at a day-care center, where most of his students refer to the Stik Boy as "Mr. Levensgood's Funny Bike"). The man doesn't own a car so you know that he takes his bike seriously.

Unfortunately for me, Buck will have moved his Stik Boy recumbent operations from Reading, PA to West Lebanon, NH by the time you read this. It's unfortunate because now I have no one to share the joy of recumbency with. Buck's got numerous other Stik Boy designs, some of which are underway as building projects.

You can contact him by writing to: Buck "Stik Boy" Levensgood, 382 N. Main St., W. Lebanon, NH 03784. □

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RCN's Cool Trike of The Month # 1

TRICUMBENT INTRODUCES STUNNING NEW 3 WHEEL RECUMBENT CYCLE

by Larry Page

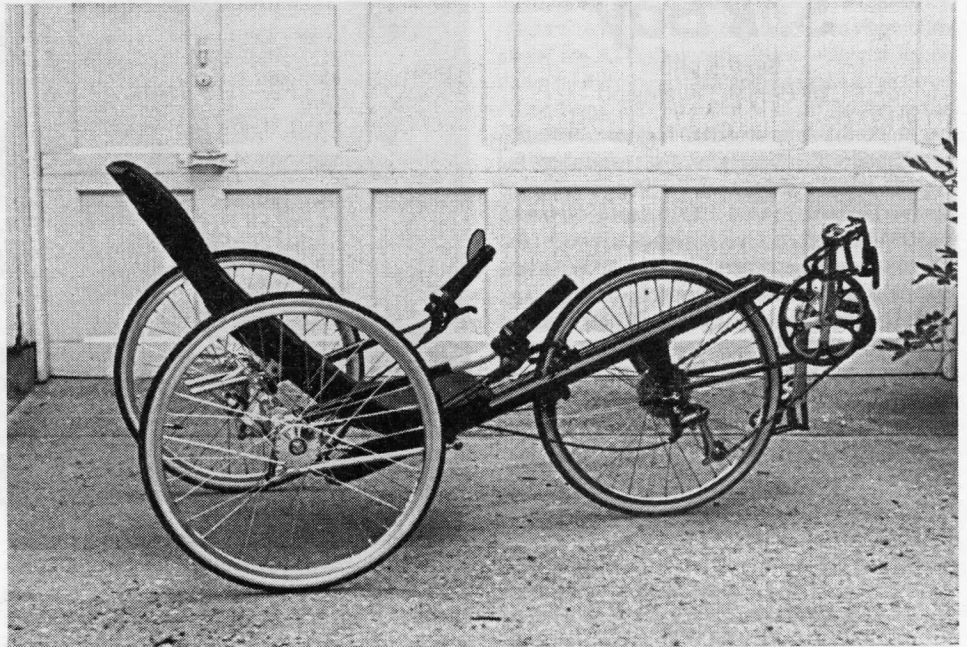
Tricumbent Productions LLC announces that a limited number of its new three-wheeled recumbent tricycle are now available for sale. Prototypes of the trike, which goes by the name "Raven," have previously been displayed at the University of Wisconsin Engineering Expo in Madison, WI and were demonstrated at the Midwest Recumbent Rally in Amherst, WI. The typical response after an initial test ride is 'WOW!' This is probably the most efficient description because the Tricumbent is so non-traditional that it takes some doing to explain why it is that it handles so well and is so much fun to ride.

The Tricumbent design begins with the comfort and pedaling efficiency of a recumbent cycle but then adds significant improvements over typical recumbent design. Its front wheel drive utilizes a very short drive train which allows low maintenance and high pedaling efficiency. A stiff frame design and use of the new Sachs 3x7 internal gear hub helps make the 21 speed front wheel drive particularly effective and provides ease and quickness of gear changes. The 3-speed internal gear allows use of one front chainring without a derailleur for the crankset which provides a very clean look.

Shifting is done through the use of Sachs grip shifters and braking is accomplished with two cantilever brake sets which are applied to the front wheel over and under the frame assembly. The rider is comfortably positioned slightly forward of the rear axle in a high backed seat shell which provides comfort and rigidity. The seat can be adjusted both forward or back and for the reclining angle.

Steering is truly unique in that it utilizes a synchronized motion of both the frame and the rear axle. The steering is done by the side handlebars which move in unison but in opposing directions. As one handlebar is lowered and the other raised, the front wheel and frame (including the rider) will bank into the turn. The result of the turning movement is to shift the rider's center of gravity into the corner. This steering technique is not only effective but truly adds to the fun and excitement of riding the Tricumbent.

Because the Tricumbent has a low profile which helps reduce wind resistance and a very efficient drive train, it can easily achieve or exceed traditional bicycle speeds. Riding a Tricumbent is one sure way to get noticed. I received an amazing variety of favorable reactions and comments including anything from the typical double-take to one recent incident where I passed a car and then the driver, once he got over



The 1996 Tricumbent "Raven"—Larry Page

the initial shock, tried to trade me his car for my Tricumbent. The Tricumbent is ideal for trailing, short or long trips or just for fun. It can also easily accommodate a child trailer and we have used it frequently for this purpose. A standard backpack is adaptable for mounting behind the seat. The Tricumbent can also be transported on a car roof bicycle rack.

For more information contact::

Tricumbent Productions
111 S. Main Street
Deerfield, WI 53531

Paul Ballweg
Ph 815/877-6173

Bill Mason
Ph 608/764-5302.

Please call for pricing information, delivery availability, or if you would like further information.

The Tricumbent cycle is proprietary technology (Patent Pending).

SPECIFICATIONS

Hubs:	Front- Sachs 3x7 Rear- Phil Wood
Drivetrain:	Sachs grip shifters, 21 speeds with Shimano: 12-28 7 Speed Cassette & 46 T.
Gear range	25" to 104"
Rims & Tires:	Sun Rims, 20" x 1.125" IRC Roadlites
Brakes:	Shimano Deore LX Cantilever
Seat:	Contoured Fiberglass Shell with Pad (Turner Enterprises)
Frame:	TIG welded Cro-Moly (3 sizes)
Axle:	Aluminum with Titanium stubs
Finish:	Powder Coat Black
Weight:	34 lbs.
Price:	\$2600 (approx.)
Dimensions:	Wheelbase: 30" Overall length 62" Overall width 36" Overall height 28" Seat height 11" Track width 32.5"

Please send a picture and short article for "RCN's Cool Bike of the Month" feature to: RCN's Cool Bike, POB 58755, Renton, WA 98058. It can be a homebuilt, commercially built, personalized bike, commercial prototype or you can be a new manufacturer or an old one with something new!

RCNs Cool Trike of The Month # 2

SLIPSTREAM OF THE U.K. INTRODUCES THE NEW "DEMON"

Slipstream Cycles, a newly formed English company has introduced to the recumbent trike market, the "DEMON."

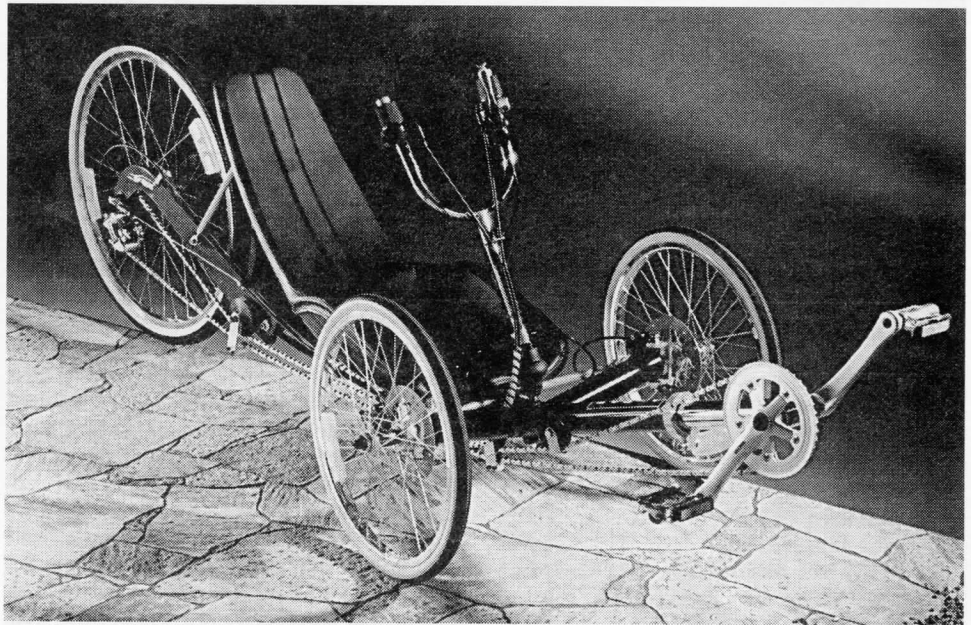
Although Slipstream is a young company, the team which designed and now builds the DEMON has had experience by successfully producing sixty production Burrough's Windcheetah trikes.

The Demon has been designed using up-to-date components and materials as well as taking past Windcheetah customers' comments into account.

Its tubular frame is anodized aluminum, the rear forks and seat are carbon fibre. Being aware that comfort has a high priority, the seat cushion is made from a high tech foam which moulds itself to suite each individual rider's shape. The cushion cover is also made from a technical fabric which wicks away perspiration.

The drivetrain is the popular Sachs 3 x 7 rear hub with the gear changes being actuated with Sachs Power Plus Pro grip shifters.

Hope Technology hydraulic disc brakes are used on the front wheels giving a balanced,



powerful and safe straight line stopping capacity.

A Hope bottom bracket and Grant hubs, both made of Titanium are also included in the Demon's high specifications.

For more information, contact: Slipstream Cycles Ltd., POB 204, Rackheath, Norwich, England, NR13 6ES. Tel. 01603 721967. Fax: 01603 721112. □

Cruise in Comfort on a Linear Bicycle



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LINEAR

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Linear Bicycles

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See our new SWB model
"Sonic"

North American Importers of: Kingcycle, k3, Windcheetah, and Brompton

Letters continued from page 4

on my two wheel 'bent. For an experimental delta trike, I gave up some of that height in favor of stability, but with a 15" ride height, I was not radically low and still visible over fenders.

Alloy Mouse found the high Triad to be scary at speed. Here is my point: If you are pushing ride height up on a trike, a tadpole design, which is relatively SWB, is not the way to go. The SWB is not a problem on a two wheeler, but it is not your friend on a high trike.

On my LWB delta trike, the LWB slows down the handling. I could tip it (track about 32"), but I did not feel like I was going to tip it by accident. I think the Triad ride height is too high even if it were a delta design, but if one were interested in a ride height higher than the other tadpole designs, I would look into a delta design. There are a few of these available commercially in Europe.

John Riley

DUPLEX PLANET

Dear Mr. Bryant,

We just got RCN#29 and were thrilled as usual. Congratulations on your decision regarding publishing RCN full-time. RCN is "THE" publication around here.

We now have three recumbents; a Rans Nimbus, an ATP Vision and a Ryan DuPlex. This letter is in response to your comments regarding the Ryan in RCN#29.

We ordered our DuPlex last year from Jim Wronski at People Movers, and have been riding it since last Thanksgiving. My daughter rode with me on an organized ride the day after the box came; we did our first recumbent tandem ride as complete novices, without a hitch, unless you call trying to start up out of a river bed from a dead stop in front of curious witnesses a "hitch." We have enjoyed the DuPlex immensely. You may notice in the picture that my wife, Sandra, is knitting while riding. We rode in the Hotter 'N Hell Hundred in Wichita Falls in August and she knitted virtually the whole 100 miles. We had, I believe, the only recumbent tandem in that ride, and may be the first to ever had a knitting stoker. She plans to tell our grandson he has a sweater with sleeves 100 miles long!

Comfort? Absolutely! Try that on our now-neglected, dust-covered, Burley. We ride a quite hilly 25 mile loop several times a week and find the DuPlex the best ride we've ever had. It is unbelievably stable at slow speeds as well as high (downhill) speeds.

As for negatives, there are some. I found that the front wheel had no rim strip, and the spoke-ends must have been tightened by a machine; the jagged edges of the slots gave us a flat early. I had to smooth them down with sandpaper. Also, the spokes in the rear wheel became so loose after a second attempt at tightening them, that I had the wheel completely respoked by our local bike shop (Pro Bike, Oklahoma City). They also sell the ATP Vision. The elliptic adjustment on the front crank comes loose and you need lock-tite on the screws to keep them in place. I hope Ryan puts water bottles for the stoker on new models. We keep a

cheap backpack strapped to the back of the captain's seat for her water bottle. And the new seat position adjustment should help immensely. We have to use a wrench and four bolts plus the knurled hand-screw to change seat position for different riders. Mounting a rear-view mirror takes some guessing. We use a bar-end on the left bar, but your arms get in the way of your view, and a mirror is a must, you can't see back there without it. But I feel that most of these things are minor considering the hard riding we do. Sandra has threatened to make sandwiches while riding on our next organized ride.

All of the things you printed about the Vanguard are true of the DuPlex; the handling is perfect, and who else can boast that they can climb a steep Oklahoma hill at 3 mph on a ten-foot bike without wobbling? The brakes are fine; and the standard rear hub brake gives the stoker a lot more confidence at 45 mph on a mountain descent.

Forgive all the comparisons to the Burley tandem; but they are our best source of reference. For example, a couple of years ago we crashed on a slick spillway in the Arbuckle Mountains. I lost some skin and the knee of my pants; Sandra got banged up worse, with a lot of bleeding and swelling of an injured elbow, etc. Well, this week we hit the same spillway on the Ryan. We almost made it across about 100 feet of water maybe six inches deep, then hit the slime. We crashed, but the Ryan being so near the ground and a recumbent as well, we picked up our senior citizen wet bodies, remounted laughing and rode away unscratched, the bike unharmed, and were even more convinced that the Ryan is the best investment we ever made. It is so smooth and quiet that we have ridden as near as 30 feet to wild deer on it. We do twist a few necks and get lots of questions from motorists. We have the greatest bikes on earth, and people need only to ride them to be hooked.

Well, I must apologize for sending such a long letter; this word-processor just sort of gets away from an old guy who goes all the way back to Big Chief tablets and three cent stamps.

Viva Recumbency!

Doyal and Sandra Swinney

SUBJ: RCN NEWS

From: wolfson@statcan.ca

Hello Robert,

Just reading your latest (fall 95) issue. Glad to see the letter from Wade Nelson r.e. my article last issue, plus your favourable comments (RCN#28; page 15).

A brief followup to the article: I have installed a Magura front brake — it really is excellent; and I picked up a Lexan fairing from Cambie Cycles in Vancouver (cheapie, due to a few bubbles — they're making them locally), so I'm now trying to figure out the simplest / lightest and most flexible mounting system.

Keep up the good work.

Michael



Photo courtesy of Doyal and Sandra Swinney

ADVANTA WEDGE FAN

Dear Robert,

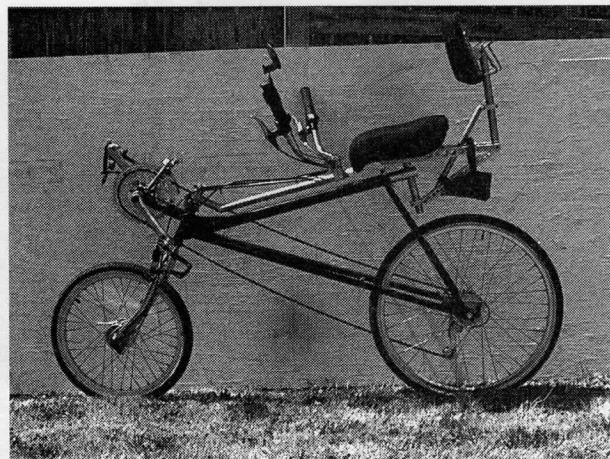
The Buyers Guide had a listing for Ernie Buckler's high SWB design (Advanta). An intriguing idea, as I have been looking for a combination of the best of both long and short designs. Ernie custom built this one for me. I'm 6'4" and 180 lbs. and this rig is a traffic stopper. The wheelbase is 45" (the same as my MTB), overall length 67", front wheel 20" rear 26". The components are Sachs and the seat height is 36." The back rest tilts as you lean back against it.

I've ridden recumbents before and this one is all I dream of. I need a lower gear for Lopez Island hills.

We've ordered an Easy Racer EZ-1 from Easy Racers for my wife. Keep up the good work.

Marvin Queen
Lopez Island, WA

Marvin, Ernie Buckler's bikes are very unique. I have had the opportunity to ride one and to help set up a custom home-built version. Ernie has an interesting pamphlet available suitably called, "Why Get High" which explains his unique design theory. For more information on Mr. Buckler's Advanta Bikes, send an SASE to: AABC, 1408 Shamrock, Veradale, WA 99037—Robert.



Marvin Queen's Advanta Wedge—Queen

Letters continued on page 28

RECUMBENT NEWS & RUMORS

COUNTERPOINT CEASES PRODUCTION

Kent, WA—Just prior to press time, we received 'official' word that Counterpoint Conveyance, LTD., of Edmonds, Washington, builders of the Counterpoint Opus semi-recumbent tandem and Presto SWB recumbent will cease delivering bicycles when the current inventory is gone. Counterpoint was successfully sued by a customer who received injuries related to a crash on his Presto.—RCN.

COUNTERPOINT-ANGLETECH- update

Woodland Park, CO—AngleTech has enjoyed a long association with Counterpoint Conveyance, LTD., builders of the Opus and Presto bicycles since 1988. As riders of these bikes know, they are great designs, and our part in the program has been to assemble components and accessories to these framesets to enhance the initial design to their fullest through distinctive models of the highest quality. Many of you have not known that we have been involved with other recumbents other than Counterpoints since 1978, first through Angle Lake Cyclery, then through Angletech Cycles. As stated elsewhere in this issue, James Weaver of Counterpoint has chosen to cease delivery of these framesets when current inventory is gone.

While this marks the end of Counterpoint bicycles, this does not mark the end of Angletech! We have, and will continue to offer versions of recumbents from the best manufacturers, as well as other worthy designs with the Angletech touch as they develop. Our bikes will always reflect the best in fit to your body, as well as the format and components that are your preference. Refurbishing your favorite recumbent, and supplying HPV parts and accessories will also continue to be part of our service. We will continue to provide customer to service to riders of Presto's, Opus', and other bikes in our line into the future. Thanks for your continued support of Angletech—Kelvin Clark, President.

TURNER ENTERPRISES

Durango, CO—Well, I've got good news and bad news. The bad news is Milt has added YET ANOTHER model to his line of "Laid Back" recumbent bikes. Who can keep track of them all? The good news is he sent me photos, and has convinced me his new T-LITE is the ABSOLUTE BEST recumbent model he's ever fabricated. All around, it looks very impressive.

The T-LITE is a complete SWB selling for \$950. Round CroMo tubing, 16" front, 24" rear wheel, Sachs componentry and Sun Rims. The frames are being fabricated by some guys who do roll cages for top-fuel dragsters and are experts at making precision bends. Total bike weight should be between 25-30 pounds, depending on componentry & accessories. Production models should be available by the time you read this.

Milt claims he's really hit the nail on the head this time. He's not quite sure what it is about this

design, but he says "It really works." It reportedly provides a very comfortable ride, good ergonomics, and he claims he's faster on it than anything he's built previously. I believe him; he's been building 'bents 20 years and has a lot of experience to refer to. Looking at it it looks like it ought to be plenty rigid and unbreakable: 1.75" x 065" main boom/body tube. The production model will be of slightly thinner/lighter tubing.

Milt has decided to unload all his square tube bikes/frames at bargain prices. Square tubing makes a lot of sense, makes for a strong bike, but many people are put off by its appearance. It appears heavy, even it is actually lighter and stronger in many recumbent applications. All you folks whining "WHERE CAN I GET AN AFFORDABLE RECUMBENT", this is your chance.

Turner takes his bikes off-roading. They're stable, have a very laid back head angle suitable for MTB type riding, are rugged and reliable.

I recommend anyone looking for a sub \$1000 'bent seriously consider one of Turner's fine models, especially his new T-LITE.

Call Milt at Ph#520-290-5646 and cut yourself a deal on one of the frames he's unloading for \$200-\$300. Learn something about bikes while you are building it up (and learning all the pitfalls about chain alignment, bottom brackets, etc) and you'll end up with a fun, very rideable SWB you can eventually sell for more than you paid for the parts. Hey, its not a P-38, but its not \$2000 either.

You can also write away for literature on his bikes to Turner Enterprises; 1350 E Flamingo Rd #73, Las Vegas NV 89119.—Wade Nelson.

PAINTING YOUR RECUMBENT

Renton, WA—Do you want to make your recumbent a rolling masterpiece. Are you searching for that special painter who can turn your dreams into reality. Dave Wilburn's Cycle Fantasy in Orange, California is the place. Dave has done custom work for Lightning, Mongoose, Haro, Mantis, Iron Horse and others. Dave is recumbent friendly and personally owns a Presto, Lightning and Easy Racer—three of the best looking recumbents in the country. Cycle Fantasy does blends, graphics, candies, pearls, flames of all kinds, fades over pearls and more. They can even do logos or names in contrasting colors. Dave & Nutzo have 25 years painting experience including ten years painting Ferrari's in Newport Beach. Prices start at \$150. Tel. 714-637-6146.—RJB

RECUMBENT SEA News

Grand Rapids, MI—Recumbent Sea is one of the few bicycle shops in North America that primarily sells Recumbent Bikes. Over the past year I have seen customers from all over the US and Canada. The most common question they ask is why don't they have these bikes at my local bike shop. (If you do have a local bent shop please



The 1996 Turner T-Lite—Milt Turner

support them!) While I can not answer this question I can do something about it. I can make these bikes available to bicyclists everywhere! I urge all buyers to test ride the bike they want to buy before buying it. I realize that this is not always possible so I am offering a new rental program made possible by our heroes at UPS, call for details on this new experimental program, free test rides are free at our shop and catalogs will be available shortly. RecumbentSea, sheldonhe@aol.com, Ph#616.454.3260 / Orders only 1-800-354-6916—Sheldon, Recumbent Sea

ROTATOR IN JAPAN

Ogata Mura, Japan—On July 22 and 23, Stephen Delaire, owner of Rotator Bicycles (Santa Rosa, CA) competed against over 100 others in two solar events held in the small village of Ogata Mura, near Akita Japan. This 40 year old owner/builder/competitor raced his own Rotator Super 7, a fully faired recumbent bicycle, winning a second place in the 1km drag race and a third in the 100km endurance race. Delaire led the pack during the first 90 kilometers, until a flat tire slowed him down. Delaire pedaled the disabled vehicle the final 10km, managing to place third overall.

The Second Annual Wold Solar Car Rally in Akita, Japan attracts international competitors. In addition to the many Japanese Teams, there were three US teams, entries from Switzerland, Germany, Russia, and Zimbabwe. The purpose of this event is to encourage alternative, clean solar energy in transportation. Vehicles compete in one of three categories, depending on their design. All are equipped with a small motor and solar panel. Sponsors of the Rotator Team include: The Village of Ogata Mura, US Dept. of Energy, Aerospoke, NuSun, Zzip Fairings and Zap. Rotator, Ph#707-539-4203.—RJB

NEW V-REX SEAT BAG

Woodland Park, CO—ANGLETECH has announced a seat bag for the Rans seat: It mounts with a sleeve over top with straps at sides. The bag has a foam core lined bottom, back, and front, is lap top computer compatible, has a mesh internal pocket and shoulder strap. ANGLETECH, Ph#719-687-7475—Kelvin Clark.



The new Ronander \$350 recumbent

\$350 RECUMBENT!

Kent, WA—The new Ronander Recumbent is designed by Bryce Ronnander of Minneapolis, MN and sells for \$350!

The bike weighs 39 pounds, has a 60" wheelbase, a MIG welded steel and CroMo frame, 24"/20", Weinmann side-pull brakes wheels and has a Falcon/Sunrace 5 speed drivetrain. The bike is painted Krylon black. For more information contact: Bryce Ronnander, 3515 14th Ave. S. Minneapolis, MN. 55407.

S & B UPDATES 1996 LINE!

Los Angeles, CA—Jack Baker called to tell us about his new product line. The big news is that S & B has lengthened the wheelbase of their SWB bikes by THREE INCHES! (Is this a trend, or what?). Jack had this to say, "we found that this made the bike handle much better at higher speeds." S & B recumbents start at \$520, complete!

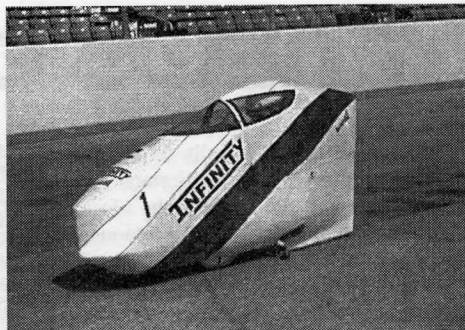
A new optional fiberglass seat will be available by the time you read this. It has a taller back offering much improved shoulder support as well as a lower back lumbar and a new seat cushion. The seat retails for under \$80+ shipping or is a \$55 upgrade on any S & B model.

The S & B Trike has been redesigned with an extended wheelbase and a steering dampener. "A stiffer frame will improve handling speeds at top end," says Jack Baker of S & B. Also available are optional front drum brakes (single rear drum is standard) and above-seat-steering. Drivetrains of 14-18 speeds are now available on the trike with the addition of a new idler pulley. S & B Trike prices start at \$ 785. S & B, Ph#310-608-0008. —RJB

MAJOR EXPANSION AT MT. AIRY

Mt. Airy, MD—One of the World's largest dealers in Tandems, Recumbents, Specialty Bikes, and Classics just announced a major move - exactly 20 feet west! Mt Airy Bicycle (Rural sister of World Famous College Park Bicycle) has expanded to a space double its former size. "We want to service our customers even better" said Larry Black, owner and founder of the shops," and not necessarily increase our volume."

Mt Airy's location features a large off-street test area as well as mapped rural test-rides from the shop. Dozens of recumbents are parked in the lot every day for easy test comparisons. The 'new' shop will feature an expanded display of peripherals and a greatly expanded service area, where

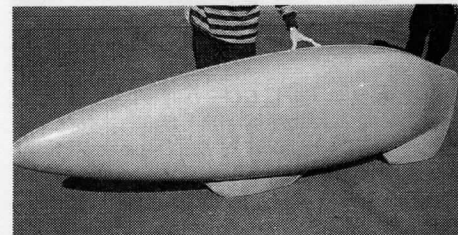


ABOVE: The Infinity Banshee FWD and chassis—Don Barry

RIGHT: Top-secret spy photo:

A. Believed to be a new top-secret Russian underwater torpedo?

B. Eskimo totem carving of a Polar Bear
C. Matt Weaver's new super slick, low-drag, hermetically sealed hpv designed to exceed 80 mph. (complete with nose video camera periscope steering.



VECTOR RACING TEAM NEWS

Neuss, Germany—The following are new world records by a the Vector Racing Team

- 4/14/95—12 Hour/ 607.617 km
- 5/6/95—1000 kilometers/ 23.2 hours
- 5/6/95—24 Hour/ 1021.359 km

The location was the Olympiastutzpunkt Buttgen 250 Meter wooden indoor bicycle track in Neuss, Germany. The rider is Axel Fehlau, member of the Vector Racing Team. Axel is a 24 years old student living in a Bergisch, Gladback, Germany. The vehicle is an M5 Low Racer produced by Bram Moens from the Netherlands. The total weight of the carbon framed, faired race bike is just 18 kg.—Gunnar Fehlau, Germany

HPV RACING RUMORS: The RCN racing rumor-monger, "Deep Sprocket" reports west coast racer, Matt Weaver, is working on a top secret streamliner that will have a small frontal area, lower drag and be faster than any hpv racer ever built." A yet unknown source from a Santa Cruz, California area exotic materials (Kevlar-carbon-fiber) reports, "someone is building a racing HPV capable of going 80 miles in one hour." Out in the mid-west, Don Barry has a top-secret FWD (front-wheel-drive) "Banshee B-2" racer that weighs 23 pounds, has 20" wheels and has a 38" wheelbase. On the Canadian front, Team Varna Racing, which usually has ultra low/ on-your-back racers, is building a more upright model as the rider, Sam Wittingham, feels he can put out more power in the "Gold Rush-like" position. On the other side of the world, M5 racer, Bram Moens is said to be building an 80% laminar-flow streamliner. Our source says, "Bram Moens plans to break all HPV records, including personally riding 100km in a one hour time trial," Deep Sprocket says, "it cannot be done." In other European racing news, we had a top secret report from the U.K., where Miles Kingsbury reportedly said, "a rider output of 120W will propel it to 50 MPH, which means Pat Kinch should be able to do 100 -theoretically! Watch out next year - Miles is talking about some altitude work! □

Oh My, My! Two New Tandems!

ATP INTRODUCES "DOUBLE VISION"

Seattle, WA—ATP is proud to announce their newest development, the R-80 "Double Vision" recumbent tandem. Featuring comfortable seating position and clean design of the standard Vision recumbents, the R-80 maintains our commitment to providing you with the best recumbent design, the best construction and the best recumbent value on the market today. The captain sits in the forward position, with easy access to the handlebar mounted controls. A sliding boom tube on the nose of the bike adjusts the captain's leg length, exactly like the single Visions. The stoker's leg size is set by sliding the rear section of the frame fore or aft. This way, you get to ride the shortest possible wheelbase machine you can, depending on the size of your stoker.

The most unique innovation featured on the R-80 is the Independent Pedaling System (I.P.S.). Our proprietary design double roller clutch intermediate gear gives our bike advantages no other tandem has. The two crank sets are totally independent of each other, so either rider can pedal or not, with instantaneous engagement or disengagement from the drivetrain. With the R-80's I.P.S. system you can stop, settle your foot, tie your shoe, or just rest for a moment, and then simply start pedalling again. The I.P.S. makes starting and stopping the bike a breeze, and also allows for overall gearing adjustment and independently varying the cadence ranges. Once again, Vision Recumbents are the industry leader with insightful design and superb engineering.

Details are still being finalized, but we expect to retail the bike between \$3200 and \$4500 depending on configuration. There will be four models to choose from, two with I.P.S. and two without. The weight is 48 pounds without I.P.S. and 54 pounds with I.P.S. Wheelbase length will vary dependent on the size of the stoker, but will average 78 inches. Custom colors will be available. ATP, 952 Republican St., Seattle, WA. 98109. Ph#206-789-7323—Greg Bower.

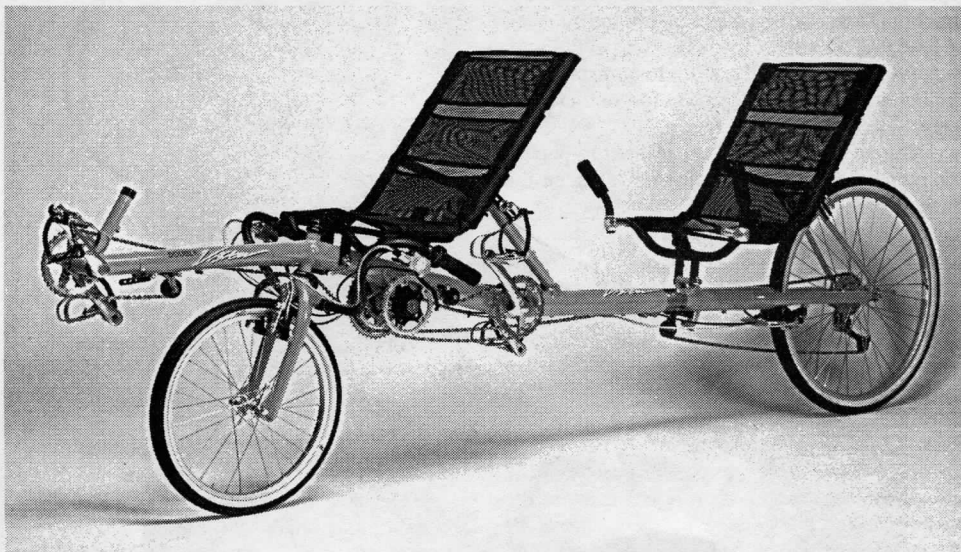
INTRODUCING THE RANS SCREAMER

Hays, KS—It's a screamer! The new tandem recumbent from RANS dutifully earns its name from the speed and handling. The compact tandem sports a 73.5" wheel-base and a trim 45 pounds total weight. To scrunch the wheel-base and trim the weight, RANS elected to tuck the stoker under the captain. "This design also instilled the type of handling we were looking for: tight, responsive, yet road sure," says Randy Schlitter of RANS. "The bike doesn't feel like a bomber and it's a scream to ride, hence the name."

Some serious chromoly goes into the TIG welded frame. The main beam tube is 2" on the production model. The smallest tube is 3/4" on



ABOVE: The 1996 Rans Screamer—Rans
BELOW: The ATP Double Vision—ATP



the chain and seat stays. Frame geometry was frozen after three attempts. "It was a graphic less on dynamics," said John Schlitter, co-developer of the Screamer. "We found a new set of rules apply when dealing with something with this speed potential and two moving masses...the riders!" The bike is nimble at the low end and secure at the top. The Screamer loves speed. It gest more solid as it builds. A downhill brake is standard, so down the mountain doesn't turn into a short flight.

We see the screamer as being an ice breaker to the idea of recumbents. The willingness to try it has met with little resistance. The locals and visitors have all come off the Screamer with smiles. It takes away their doubts about how well they can ride a recumbent. After a little stoker time most riders are ready to captain. A tandem is a very necessary part of selling recumbents, it allows experience at the wheel. The Screamer attracts the new blood.

For more information, contact your local Rans dealer or: RANS, 4600 Highway 183 Alternate, Hays, KS, 67601 USA. Ph#913-625-6346—John Schlitter.

ANGLETECH TO OFFER SCREAMER

Woodland Park, CO—AngleTech will offer custom-spec Rans Screamer tandems for 1996. Expect to see a Sachs 63 speed version, upgrade specs including Phil Wood, Chris King and Magura components. Also, available will be independant coasting! Ph#719-687-7475, Email: Anglezoom@aol.com □

COMPONENTS

FRAME/ FORK:	4130 CroMo
HANDLEBAR:	Rans V-Bar
HEADSET:	Tange Levin
BOTTOM BRACKET:	Shimano UN51
CRANKSET:	Specialized 32/4454
DERAILLEURS:	Shimano Deore LX
SHIFTERS:	Grip Shift SRT600
BRAKES/LEVERS:	Ritchey Logic/ canti.
WHEEL(rr)	Sun Rhyno Rim 26" x 1.25", Phil Wood hub 40°
WHEEL(fr):	Sun Rim, 20" x 1.5" Phil Wood hub, 36°
COLORS:	Hot Lips, Midnight blue
PRICE:	\$3875 Suggested Retail

THE STORY OF THE BACKCYCLE™

by Paul A. Lester

About ten years ago, I experienced back disc problems. As an avid bicyclist, this caused major problems for me. A friend that I met on one of the century rides built bicycles for a hobby. He was saddened by the fact that I would no longer be able to ride with him. So, together we developed a recumbent bicycle. This recumbent was designed for people, like me, with lower back pain and/or related problems. Initially, the first bicycle was built for my personal use. I still have it and ride it frequently. One day, I rode the bicycle to my chiropractor and the rest is history. He loved the design of the bike, he loved the ride of the bike and he loved the fact that it would offer people with back problems the ability to do long distance bicycling or to exercise in the comfort of their own home.

Together the three of us decided to perfect our product and to market it. I have ridden the Backcycle™ on many rides this year along totaling approximately 2000 miles. I even rode it 200 miles in one day. With the Backcycle™ I have the opportunity to do this with my back condition. I ride long distances in comfort and pain free, both during and after my ride is over. I do not at any time experience any back, neck, shoulder or other body pain. While I primarily use the bike for long-distance rides, my wife strictly uses the Backcycle™ with the accompanying stand as a stationary exercise bicycle. She has osteoporosis and cannot use a "regular" bicycle because of the compression of the spine. With the Backsafer™ seat and the position of the handlebars, there is no stress on her body. We believe that the Backcycle™ will provide an opportunity for all people to ride in comfort.

Backsafer™ (RCN)
11400 N. Kendall Dr. Ste. 100
Miami, FL 33176



Suggested Retail Price: \$999
Wheelbase: 37" (94mm)
Head Angle: 68 degrees
Bottom Bracket Height: 21-1/4" (55.3cm)
Seat Height: 22-1/2" (57.1cm)
Speeds: 12
Weight: 28 pounds
Color: white
Sizes: One size fits all riders from 4' 11"-6' 7"
(sliding boom & seat).
Frame: 1-1/4".049 CroMo steel TIG welded True
Temper tubes

Components highlights: Backsafer™ computer designed, ergonomic fiberglass moulded seat with lumbar support, orthopedic insert and waterproof canvas cover; seat also has three fixed recline adjustments and custom support brackets;

dual channel chain pulley with guard; adjustable telescoping stem and vertical adjustable handlebar with friction bolt for easy exit and entry. Backcycle™ also comes with a stand featuring sealed, easy rolling drum to convert to fixed rear wheel stationary bicycle for indoor use, a feature unique to Backcycle™.

Other components: Shimano SIS front and rear thumb-shifters; Shimano Altus front and rear derailleurs; Sugino alloy 40/50 crank; Sachs Sedis chain; 14-26 freewheel, Pyramid pedals, alloy brake levers with Pyramid side-pull brakes; steel fork; front wheel-16" x 1-3/8" 100 psi mixed tread tire, steel 14 gauge spokes, quick release hub; rear wheel-20" x 1-3/8" steel with IRC 100 psi fine-tread performance tire, steel 14 gauge spokes, with quick release hub; rearview bar-end safety mirror. □

Letters continued from page 24

A CASE FOR VERTICAL STEERING?

Dear Dr. Bob,

At the risk of introducing yet another new term into the world of 'bents (I'm one of those guys that thinks that MWB as a term for 38"-40" wheelbase recumbents should be dropped in favor of keeping these bikes in the SWB family), I bring you VASS, Vertical Above Seat Steering. This is a format of recumbent that gets lost in the general ASS (Above Seat Steering) category, but is dramatically different than what people generally imagine as ASS.

Which is better ASS or USS? is the common question. I always submit that there is a 3rd cat-

egory that must be considered. With a name, maybe it will be uncovered and noticed!

The ideal VASS bike will be: As relaxed in body position as an USS bike. Picture yourself sitting on an USS bike with your arms reaching for the handlebar as usual. Now pivot your forearm 90 degrees (keeping in mind backrest angle should be in line with your upper arm). At this point your hand should be gripping the handlebar, not "reaching" for the 'bars. You are now in a position of better control of your bike at speed, a tighter turning circle, direct steering with minimum if any "tiller effect", improved aerodynamics (yes, even for the recreational kind of guy), and a convenient place to mount your favorite computer, bell and mirror!

How is this adjustment accomplished with various sized human beings wandering the Earth? A steering column that adjusts away from your body, as well as a vertically telescoping handlebar is ideal. Examples: The Presto illustrates this in the ideal form. The V-Rex and Rocket can achieve this by seat backrest angle adjustment in conjunction with vertically adjusting the steering "riser" (with possible surgical assist), and the possible need for a custom reach steering riser. The Lightning P-38 is VASS with reach of ASS, not the ideal arrangement.

So, when making your recumbent choice, and you're thinking of passing over ASS, don't forget to consider VASS!

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Dear Gardner,

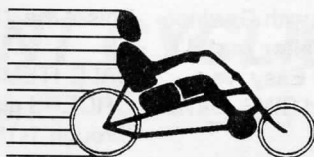
I had meant to write long before this, but I wanted to put some miles on the Gold Rush Replica before dropping you a line. In a word: I totally love this bike! However corny it may sound, the GRR really is the recumbent I've only dreamed about. The awesome speed, stability, and traffic-stopping good looks (the bike, not me) thrill me every time I hop on the machine.

We recumbent hardcore are fond of talking mystically about being "one-with-the-bike." I know I feel that way about my Gold Rush Replica.

Man, We are one happy machine.

Best Regards,
Vic Sussman

Nationally published writer



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- RCN11 The Counterpoint Presto Road Test; The Opus tandem; Choroplast HPV Body Construction;
- RCN13 The Easy Rider 3 Trike
- RCN15 ReBike & Tim Brummer's P-38 design theory.
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- RCN18 Presto vs. Easy Racer Shootout, Speed Champs. Report, Cannodales Recumbent!, Homebuilders Corner-In Search of the Instant 'Bent (monobeam LWB).
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- RCN21 Gold Rush Replica Road Test/ ATP Vision R-40AU Road Test, Homebuilders Corner.
- RCN22 The Infinity Road Test/ Haluzak Road Test, Enhancing your Vision.
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If you have items for the RCN calendar, please send them to: RCN Calendar, POB 58755, Renton, WA

Loose Assemblage of SouthEast Recumbent Riders event, December 2nd and 3rd, 1995. Daytona Beach, FL rides from 24 to 65 miles and up, all classes. Tell your friends, spread the word. For info SASE to LASERR, 1964 Forest Avenue, Daytona Beach, FL 32119-1591 or email to fredu@america.com

Summer '96 Tour: I plan to ride from my home in Fort Collins, CO, to Waterton National Park in southern Alberta. This ride would probably total about 1270 miles, and would generally follow this route: Fort Collins to Steamboat Springs via Walden, then to Vernal, Utah,

north to Jackson, through Yellowstone and out the west entrance, through Virginia City and the Big Hole Battlefield, north through the Bitterroot Valley and the Swan Valley, along Flathead Lake and over the Going-to-the-Sun Road in Glacier National Park, and finally up to Waterton National Park.

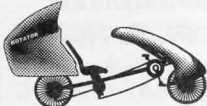
I like to do about 50 miles/day at a relaxed pace (our maximum was 65 miles in one day) with some rest days thrown in. I would estimate the tour at about 4 weeks to a month, and I would like to depart by about mid June. A friend of mine would be willing to drive my car to Waterton to

pick us up in mid July; my car will haul three riders in addition to the driver, and I have racks for three recumbents. We can split transportation expenses for the car and driver.

Are there any 'benters who would be interested in joining me? If this looks like a good plan, or like a good idea but the wrong route, or like a good plan but the wrong time of year, we could start a dialogue.

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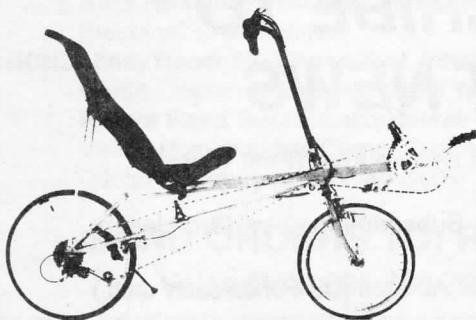
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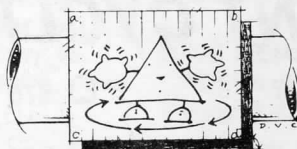
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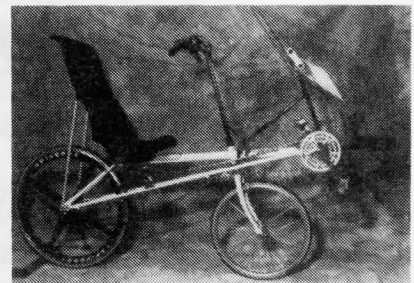
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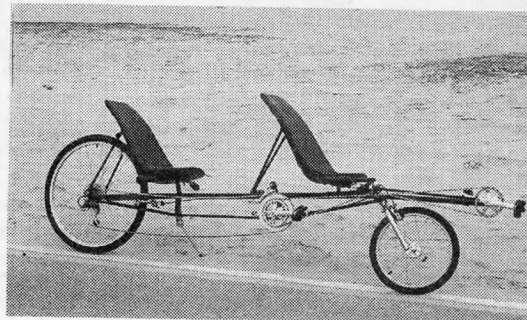
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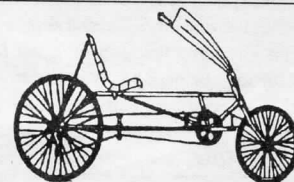
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1995 BFK Year End Recumbent Clearance Sale 20-30% Off Demos and Floor Models Easy Racer Gold Rush Replica, EZ-1, Lightning P-38s, Stealth, Rotator. Factory authorized dealer. Call for stock availability and prices. Shipping available, all major credit cards accepted. BFK Sports 2500 E. Imperial Hwy. #122 Brea, CA 92621 (714) 529-6589

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USED RECUMBENTS

FOR SALE: Recumbent Tricycle, 2-Passenger Enclosed Runabout. Pedals and 1 hp assist, safety lighting, 6 x 6 x 12 closed trailer, ramp, winch, \$1500. Ph#313-835-0403. (MI/30).

FOR SALE: Recumbent Trike Super Heavy Duty Chopper style, 5 speed, adjustable seat, fits all, cool LWB trike in good condition. The most fun your \$395 can buy. Call Gary in LA at Ph#310-822-2533 (CA/30)

FOR SALE: 1994-1/2 Haluzak Horizon-dark red, fully equipped, 28/38/48 front, ridden 100 miles, perfect condition. \$900. Call Bill @ 510-531-3774 (CA/30)

FOR SALE: Easy Racer Gold Rush Replica-aluminum (25 lbs.) Shimano Deore XT/ 105 equipped, Zzipper Road Fairings. \$1950. Call 503-359-5596 (OR/31)

FOR SALE: '95 BikeE, 21 spd., violet, Zzipper, racks, bottle cage, chain-guard, computer, immaculate. Call Bob, Ph#516-698-5939 (NY/30).

FOR SALE: Counterpoint Presto, Blue, Excellent condition, low miles, Traverse Trunk, computer, mirror. \$1500 OBO call Eric Viken @ (507) 252-3721 days or 282-0266 eves. Email:EViken@AOL.com (MN/30)

FOR SALE: LIGHTNING P-38, teal, large frame, many modifications & goodies (Magura hydraulic front brake, Pit Bull rear, Alex Moulton 17" front wheel + spare tire & tube, shocked fork, Bullseye hubs). \$1350 or best offer. **FOR SALE: Lightning F-40 nose section,** near new. Yellow, size large, unblemished. \$450; includes shipping & insurance (new \$600 loong back order wait). **WANT TO BUY:** large frame Rotator Pursuit, Eric Warp Ph#916-965-1950 evenings. (Sacramento, CA/31)

FOR SALE: RYAN VANGUARD. 1994, Red with bar-end shifters, Very good condition, Price \$1150 plus shipping. Call Jeff (616) 458-9174. (MI/30)

FOR SALE: New 1995 Rans/Angletech Stratus GL63. Maguras, 63 speeds, fat tire format, red. Immediate delivery! Call AngleTech ph#719-687-7475 (CO/30).

FOR SALE: 1994 Rans Nimbus demo. Perfect shape. Paint literally lights up at night (not neon). Call AngleTech ph#719-687-7475 (CO/30).

FOR SALE: M5 Low Racer frameset, new, never used. One of the fastest unfaired bikes. Ovalized aerodynamic steel frame. Monoblade fork. 700/20 \$1500. Zach 415-381-5723, e-mail: zakaplan@sirius.com (30)

FOR SALE: New Lightning P-38L double butted frameset with front suspension, Ti bolts, and alloy BB. \$1800. Complete F-40 fairing kit new gortex fabric and spare fabric fairing. \$1200. Zach 415-381-5723

USED RECUMBENTS

FOR SALE: ATP Vision, under-seat steering, assembled and tested, less than 10 miles \$900. Call (607) 734-2802 (NY/29)

FOR SALE: 1995 Linear, blue anodized, like new (20-30 miles), \$800 plus shipping PH#408-996-3954 (CA/29)

FOR SALE: Ryan Vanguard, 92/93 model, black, bar- end shifters, Zzipper fairing, 1200 mi., excellent condition. \$1300 Carole, Ph#607-547-8571 (NY 29)

FOR SALE: 1994 Vision Imaculate with < 500 miles, Shimano Deore LX throughout, MT twist shift; rack; seat bag; chain guard, and extras. Price: in western WA \$1195, elsewhere \$1195 + shipping (C.O.D.) Call Richard (206)463-3360 (IL/29)

FOR SALE: 1995 ATP Vision R-45, Deore XT, 26" rear 16" front Primo, custom ice blue paint. This bike has "0" miles. Cost \$2250 new, \$1800. Call Doug, Ph#906-789-2088 (MI/28)

FOR SALE: Greenspeed GTR 20-20, Sachs 3x7 New Success, Tioga Comp-Pool tires, slightly used. Test ride or purchase. New also available. RCNA 1-520-779-3818 (AZ/30)

FOR SALE: 1995 Haluzak Horizon, dark metallic blue, ridden less than 200 miles. With extras was \$1500. Will sell for \$1000. Whit Ph#408-688-8906, Email: whit@scruznet.com (CA/30)

FOR SALE: 1995 AngleTech Presto Custom Performance version, XTR, custom forged crank, Hugi hubs, Magura hydraulic brakes, Grip Shift, Phil Wood bottom bracket, way too many extras to list, \$2900/OBO absolutely must sell. Available for immediate delivery. Please call Mel Nathanson @ (919)755-3741 (NC/30).

FOR SALE: 1993 FLEVO-BIKE. Black, Magura brake, 12-speed, light system. Second Nature Bicycles Ph#503-343-5362 (OR/30)

FOR SALE: 1993 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 \$2100 + shipping. Call Kim or Dave Ph#916-791-6276. (CA/31)

WANTED: PARTS

WANTED: EASY RACER Building Plans. Please contact: Elmo Butler, PO Box 897, Washington, MS, 39190 or Ph#601-446-5607. (MS/30)

RECUMBENT PARTS

FOR SALE: Presto Root's-In-The-Sky Aero Trunk System with mounting hardware. Never used \$200 + shipping. Call Kim or Dave Ph#916-791-6276 (CA/31)



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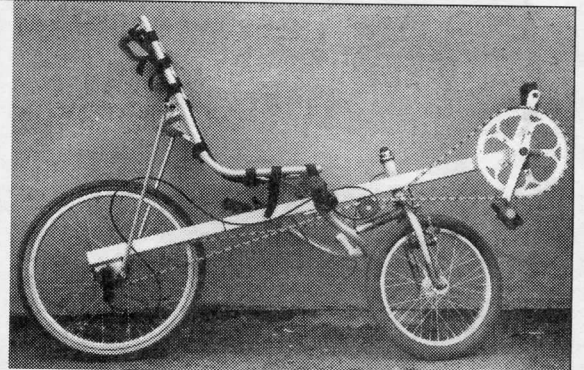
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WANTED: PARTS

WANTED TO BUY—my first bent, want an Easy Racer Gold Rush Replica (with ASS) or other light-weight bent with high quality components in near new condition. I am 5'10" tall. Elmer Werre, 1428 21st S. Fargo, ND, 58103-3811. Ph#701-235-8997 Email: EILEENW248@aol.com

WANTED: CORSA INFO, MANUAL, or contact for info for a HP Corsa trike made by HPE Corp., formerly of Kent, WA. Contact Earl at Ph#503-469-8002.

WANTED: Root's in the Sky/ Presto Nose Fairing and Darlex rain cover. Ph#301-933-1947.

PARTS FOR SALE

FOR SALE: New LOOK MOAB double sided clipless pedals. 3-degrees of float, wide platform, red. \$70. LIGHTNING 700c Wheel Disc, black \$75. Sell or trade. Call#619-452-3889 (CA/31).

FOR SALE: Campagnolo Components, New in box-Campy Euclid MTB brake handles, 6-spd thumbshifters and U-brakes (2) \$90. New Campy triple crank with bottom bracket 175mm cold forged, polished 26/36/46. \$130. Campy Nuovo Record Side-Pull Brakes with drop-bar levers \$150. Aerospoke wheel set: 700c/ 20" both with IRC tires/ tubes, Dura Ace QR's and a Sachs 12-30 freewheel. 100 mi. \$599. Ph#206-630-7200.

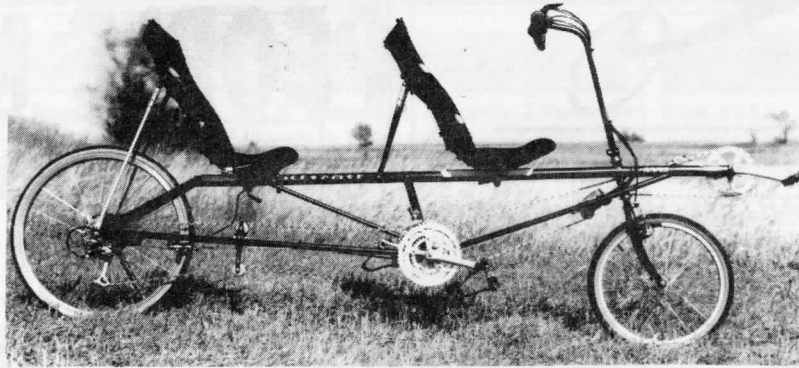
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FOR SALE: Bridgestone XO1 '92, 48cm, 21 spd., 26" wheels, bar-end shifters, side-pull brakes, tour/ commute bike, road bike for small person. Immaculate. Sell or trade. \$500. Ph#619-452-3889. (CA/ 31)

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SCREAMER

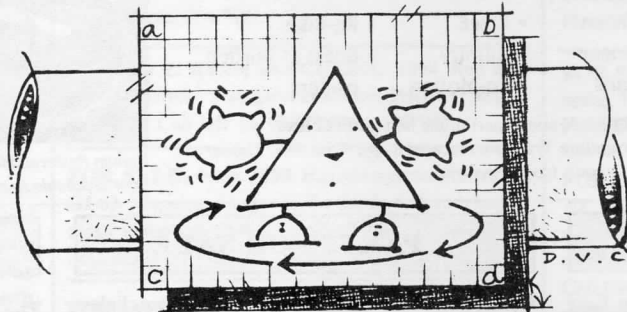
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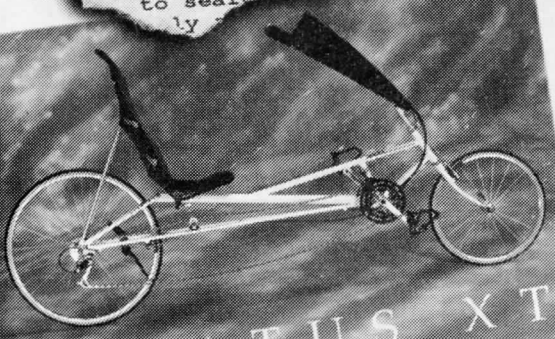
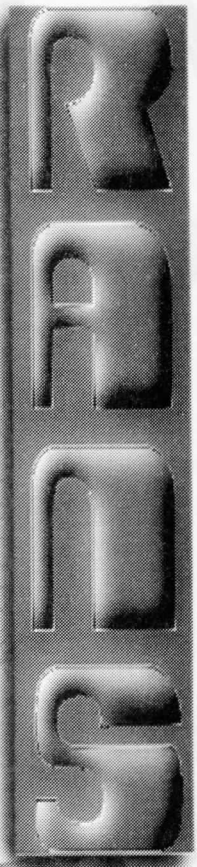
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 anger, irritation and annoyance or

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ran·sack (ran-sak)
 to search and
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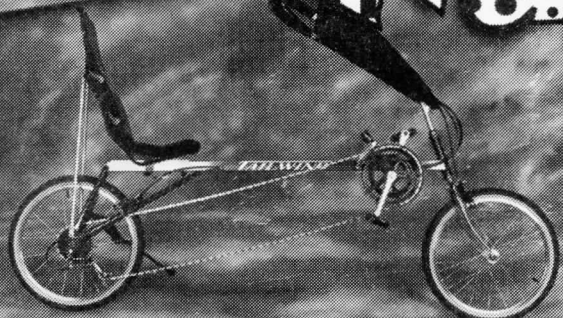
defining
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Ride



STRATUS XT

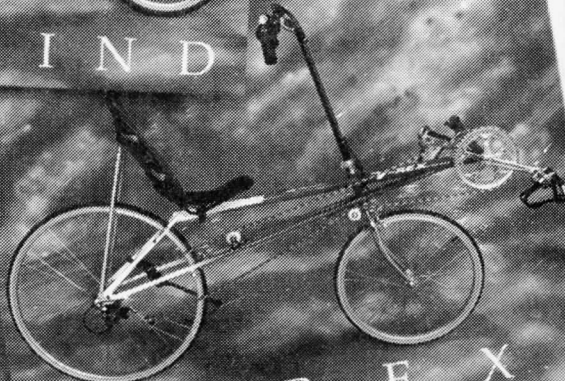
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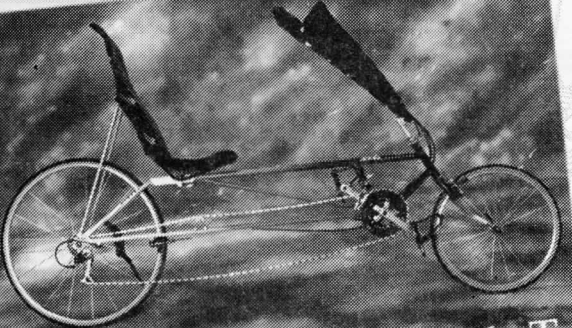
TAILWIND



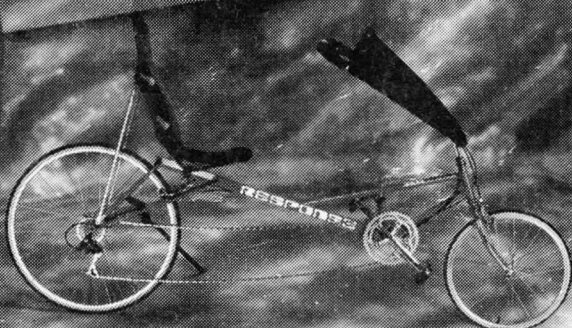
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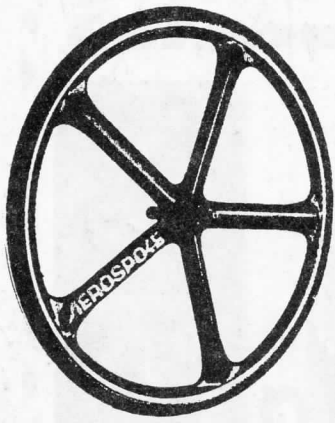
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