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ROTATOR
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By Robert J. Bryant
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WHAT BOB DID THIS TIME... AND HE RANTS

As the most vocal recumbent promoter... and critic, sometimes I just can't win. After a long year of working hard on RCN with buyers guides, issues with tight deadlines, along with trying to squeak in a family camping trip and a trip to Interbike. In October, things really started to catch up with me. Just when I thought I'd be the saviour of the recumbent off-season by rushing out RCN#36 first class mail (that was a taste of deluxe service) along comes a rash of RCN criticisms. Just so readers know that I do consider each and every RANT that comes through the door, let me address some of the situations.

STEALTH HEAT

The Lightning Stealth article heat was delayed one issue. When I commented about it in RCN#35, the boulders started to roll. Several readers believe that anti-Lightning propaganda is my personal vendetta. This makes good conspiratorist copy, but it's not true. The Fesler P-38 article was planned ten months before it ran. The RCN hidden agenda is that I don't think Lightning sends RCN good enough test bikes. Good press, bad press, we cannot seem to get their attention.

R-44 RANT

Those lucky Vision guys. Heck, "Bob must own stock in the company." Well, at this point, I wish that I did. This company is on a roll and an industry role-model. A reader (who works in our industry) sent me a really strong letter telling me how biased that I was, how fleshy the R-44 is and how I blow the heel interference issue completely out of proportion.

Well, the Vision R-44 does flex more than other Visions, but most boomed (non-space frame) SWB recumbents have some boom flex. They don't get that weight down by osmosis! I didn't make a big deal about this because Vision offers a full line including heavier stiffer bikes and all have the same great warranty. As for the heel interference thing, it's a serious issue for some riders. Granted, it only happens at very low speeds, but it does happen. The amount of heel interference is the difference between a SWB and a true MBW. That and up to ten inches of wheelbase. I'm not against bikes with heel interference, in fact, I personally prefer a longer (median) wheelbase. The fact of the matter is that it came up in two tests in two different issues and was a differentiating factor between those models.

I have yet to hear a complaint about an R-44/45 from an owner. It's a well thought of bike and a great value as high-end recumbent go.

The bias issue comes up occasionally. Am I biased? I don't think so. At least I try not to be.

I consider the bias possibilities each time I do a review. I like to see RCN reader treated right with decent bikes at acceptable prices from conscientious manufacturers. Owners get mad at me when I criticize their marque. What it usually comes down to is the level of cooperation, quality of test bike and the amount of trouble (or grief) that comes with any given test. I pride myself on being the only critic in the world who can compare bikes to each other for print. Certainly others are qualified, but having current examples of the bikes makes all the difference.

When I request a road-test bike, I ask for perfect example. If they send a bad test bike, this is strike one. If they don't offer a correction or send a better bike, this is strike two. If they refuse to communicate or cooperate, this is strike three— you're outta there and the game is over.

NINE WORDS—YOU'RE OUT OF BUSINESS

In a recent online message to the entire internet HPV list readership, the owner of defunct recumbent company intimated that I had a hand in putting him out of business by a response in a letter to the editor last year. My comment went something like this, "...you may want to look at the XXX. It is a gorgeous machine and built very tough." Is this what supposedly put them out of business? This snippet from the summer of 1995?

This particular manufacturer never once followed through in setting up for an RCN road test. I never once saw a live example of this manufacturer. My simple response is how can you complain about coverage if you won't cut loose with a test bike?

I suppose I was as good a person as any to blame for a failed business. From his perspective it probably looks like a secret agenda or plot. As a one-man editorial department, I juggle a million info-bytes and talk to a lot of manufacturers and wannabes. If you want press or a road test, make it your business to set it up and follow through, and follow through, and follow through...

Some of these guys don't understand HOW EASY IT IS to get RCN press in the form of a press release. Many are 'whipped up' by me from phone conversations or email bits.

"PROFESSIONALIZE THE RCN?"

This is what a reader wrote to me recently. This guy is a military officer and maybe not even a recumbent rider who had lots of neat ideas about industry wide cooperation, a marketing plan and a single unified frame design. Yes, just one design...and how do we determine whose design? He offered his organizational skills and saw RCN has the key to keeping the recumbent world unified, which is cool. In the same paragraph, he mentioned that we need to, "Professionalize the RCN." Okay, where do we begin with this professionalization? I hope its with a huge grant or millionaire benefactor because an office, staff, glossy full color pages etc. would have us out of business before the first bank loan installment was paid. This means that a full page ad in RCN could jump ten times overnight. How many manufacturers could handle that? Don't raise your hands all at the same time.

I get one a letter a few times per year. I always ask, who is going to pay the bill? And get no reply. So far, none of these "idea-men" have ever followed through.

The right person may be able to put this together, though don't plan on getting down to one unified design (it will NEVER happen), let alone get manufacturers to cooperate. I don't mean to put down these readers or their visions, but we need obtainable public relations goals.

RCN MISTAKES

Yes, we have our share of typos and other problems. Luckily, RCN's proof reading has improved, we have a great copy editor in Paul Arends and Marilyn gives the final okay. The problems usually happen in last minute editing changes in the final document. This is where our small staff becomes apparent.

We pride ourselves on the ability to offer last minute changes and updates. The downside of this is the potential for mistakes. Here are the gliches and apologies from RCN#36:

- **Glitch#1**: We forgot to list one question in the readers survey: Question#2.5 BEST LWB. Feel free to answer this one. Answers will be tabulated separately to insure fairness.
- **Glitch#2**: Milt Turner was upset because we made the mistake of saying that the Creekers Team used a Turner chassis, when in fact they used a complete (modified) bike, sorry Milt.
- **Glitch#3**: Dave Yust submitted the great photo of the three Lightning riders at the Swetsville, Colorado Zoo. The photo credit actually belongs to Chet Rideout, sorry Chet.
- **Glitch#4**: Some readers got the idea that I disliked the BenTech recumbent building plans. Absolutely on the contrary, they may be too complete. My points about the simplicity came from my lack of experience building recumbents. The biggest mistake in the entire issue is that the paragraph on the BenTech designer was deleted. Dominc Benchvengha has put a lot of hard work into these plans, sorry Dominic.

Manufacturers, dealers please be aware that it is time to make buyers' guide plans!

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RCN#38: March/April 1997 will be the DOUBLE-SIZED single issue Recumbent Cyclist News Buyers’ Guide. Subscribers expect distribution throughout April. Standard subscribers may want to consider sending a check for $3 to upgrade your buyers’ guide (BG) mailing to PRIORITY MAIL service. This can get you your buyers guide issue as much as four weeks faster (reply by March 15th for the Priority offer/see page 36).

RCN is printed on a bimonthly schedule—6 issues per year. See pages 17 and 39 for details. Manufacturers/dealers this is the last call for BG ads/listings.

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What’s Coming Up!

Above Photo: Bud Elder’s TriStar (see page 18 of this issue)—photo courtesy of Bud Elder
Recumbent Mail

DE-ZAPPING YOUR BENT

I tried the ZAP electric motor on my Vision R-45. I am a small woman without a lot of time for training to build muscles and I live in a very hilly country. While I love my Vision R-45 it would be great to have a "hill assistance" so I don't fall behind on the hills in group rides. Typically I ride 30-50 miles in a day. I purchased a ZAP electric motor and installed it on my bike. I found that using the motor was a wonderful experience the first 10 miles, turning the motor on only when going uphill. What a kick on the uphill to zip by even the fastest bikers. There were two problems, first to recharge the battery going downhill you had to get off the bike to engage the motor to the wheel. Second, the battery was exhausted after about 10-12 miles of uphill use. The rest of the ride I was hauling an extra 20 pounds which wasn't helping me. The ZAP people gave me a full refund. I'm hoping they find a way to lighten the weight of the motor and battery and increase its power. When that happens I'll be first in line for an electric assist.

My husband and I both are extremely happy with our Vision R-45s. We've convinced a number of riders to purchase Visions. We also love RCN. It is the only publication we get that we both read cover to cover.

Maureen Hlavacek
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20 POUND V-REX!

I think your magazine is great! I look forward to its arrival and read it cover to cover. I own two recumbents, a Counterpoint Triad and the other is a V-Rex. I bought both from Kelvin Clark at AngleTech. I can't say enough about this guy.

He is willing to do whatever it takes to make your bike perfect!

I commute about 20 miles per day on the Triad, which is great for all kinds of weather conditions, including snow. I mount a 20" mountain bike tire on the rear and it can go just about anywhere. It also has a Sachs three-speed rear hub (3x7). I have 8,000 miles on it!

The other is a Rans V-Rex with the folding steering column. I wanted a ultra-light bike and Kelvin put together a bike that weighs in at 20 pounds. After riding the Triad all week, the V-Rex feels super-charged.

The best thing that happened to my biking was Kelvin's moving to Colorado. The only problem is that my wife won't let me go to his shop without her because if it's new and cool I've got to have it.

Viva Recumbency!
Armand Cuffe

EASY RACIN'

RCN Just keeps getting better. RCN#36 for Oct/Nov/Dec '96 may be the best issue yet. There's something for everybody, from the hot-shot century rider to the round town cruiser and even the homebuilder.

Your coverage of the LA Interbike was very informative and will certainly help your readers who are looking for some neat new things for their 'bents. Sounds like the highpoint of the Interbike '96 was Saturday's recumbent river ride. The party following at PeopleMovers wasn't too shabby either.

So keep you feet out front and your head held high. The EZ Crew is proud to have a guy like you spreading the gospel.

Gardner Martin
Entry Racers Inc.

VIRTUAL INTERBIKE?

The latest RCN arrived today! I'm trying to read it a little at a time, so as to savor each article. Your Interbike coverage was so good I felt I attended! Lots of good stuff about the Metro.

Thanks,
Tom Bunch

OOZING WITH COOLNESS?

The latest RCN is oozing coolness all over the place! I really liked the Interbike report, and when it comes to detecting and quantifying coolness, it definitely takes one to know one! It's really great to know I'm not the only boomer with remaining neurons dedicated to preserving "Big Daddy" Ed Roth's contribution to cultural art. "Odd Rod" collector cards! No Way! This proves the '90's are the 60's turned upside down!

Is Peugeot/Quetral "Rustic Forest Green" the color of the paint, the texture, or is it some new environmentally-correct frame material?

Danny Ray Burdick

DREAM RECUIMBENT?

I just received RCN #36 and read your musings of the new ATP Vision VR-30 with great interest. Ooooh, are they ever so close to the ultimate recumbent! I have four suggestions for improvements to the VR-30 design from my perspective:

Offer an under-seat steering option, increase the front wheel diameter to 20 inches, add a chinguard and keep the price in the $800 range. Volta! ATP Vision has just created my dream recumbent. I will buy one in a heartbeat.

Peter Mui
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Peter, the 16" front wheel and sloping top tube are the keys to the user friendliness of the "compact" design. Add in a 20" front wheel, and the BB and top tube get higher both are more advanced design traits. The compact 20/20 US bike you are describing is now available from Linear.

VISION VR-30 METRO!

The new RCN just arrived today and the new Vision Metro looks like its Everything a CLWB hybrid bike should be. I'm considering getting a CLWB for my wife and have not been quite satisfied with the Bikes E or EZ-1 and haven't yet seen the Rans. Here is why I think the Metro looks like a winner. I bet it quickly becomes Vision's best selling bike. Foremost, the seat should be a major plus for this bike. Combine it with the rear suspension and this bike is going to just kill the competition in terms of comfort. For me, it's ability to fold for transport is also a big plus. I'm glad I waited so I can get this for my wife in the spring. This is very subjective, but I think the VR-30 also looks alot better than the competition, much cleaner and more elegant. Contrast this with the Peugeot/Quetral which looks like a bad garage built bike. So the designers of the Quetral were unaware of other recumbents when they designed this. It looks it! A seatbelt?! This has to be in the running for stupid bike product of the year! The frame telescopes but there is no steering linkage adjustment?! Duh! THIS is the sort of product that could set recumbents back 10 years.

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RECUIMBENT MYTHS

A couple of us at work are planning to buy recumbent bikes in the near future. We are set on Ryan Vanguard due to the comfort and stability that a LWB offers.

Our only concern is based on comments from a dealer that the LWB models can get wobbly while pedalling up hill, and therefore can present a safety hazard (some cars may run you over, while you're trying to maintain balance).

Another issue, that came up during our discussions with this "experts" is the potential your heel can get caught in the front wheel. Are these issues really something to worry about?

Janyo

Janyo, I hope that you have read the RCN#29, the Ryan review with recumbent design history by David Gordon Wilson. LWB bikes take more room to turn around, are pleasantly slower handling and they don't have heel interference. They usually have a lower bottom bracket pedal height as well. SWB models sometimes climb easier at lower speeds, but your feet are higher off the ground—potential nerve injury (if you loose balance). On an upright bike, you can swerve side to side, and throw your weight back and forth to climb a really steep hill. With a LWB you can't do much.

Continued on page 30
Steve Delaire could be the most cutting edge recumbent designer in North America today. With his Pursuit, Interceptor and Tiger, he is rewriting the books on performance recumbent design in his own way. The Rotator bikes are low, have high bottom brackets, intermediate drives (I.D.) and slingmesh seats. Oh yes, they are all fast.

Steve is one of the busiest guys in the industry. He welds the Easy Racer Gold Rush Replica frames, builds Lightning Stealth frames and runs Rotator Bicycles. Steve has ideas about recumbents, HPVs and performance that differ from most every other designer in the industry. He likes long and low high-performance bikes. The Pursuit is the result of years of R & D, prototypes and testing new designs. The idea for the Pursuit was the result of the evolution of Steve’s race bikes, primarily the “Super-7,” which up until a few seasons ago was still a production model. The Pursuit is simpler, easier to build and offers an upgrade path to the streamlined Interceptor.

This review spans three years and several test bikes. We’ve had our ups and downs and certainly Steve Delaire must be tired of my picky rants about this and that. Well, the hard work has paid off. This is one heck of a cool bike. For ’97 the Pursuit with the optional “Interceptor” fairing package is probably the best high-performance recumbent value in the world today.

DESIGN THEORY

Last fall, Steve dropped by with a prototype faired Interceptor and a Coaster to leave for a few weeks of testing. We had this great conversation about performance, speed and handling as it relates to recumbent bicycles. Steve’s background is in race-car fabrication/design, HPV fabrication/design, preparation for Lightning/Easy Racers and Rotator HPV/Solar electric racing. If you care to argue Rotator theory, Steve’s responses are based on his experience with race cars, solar vehicles or other realms beyond recumbency.

Steve believes that recumbents should have 60%-70% front weight distribution and that the center of gravity (c.g.) should be low. He thinks that even 50/50 isn’t good enough on a SWB/MWB as the c.g. is too high, and that SWB recumbents are too “heavy” feeling and handling at high speeds to suit his personal taste. Delaire said that most all race cars and motorcycles have 60%-70% front weight distribution. Basically, his experience shows that the c.g. for any given rider is at his/her belly button. He explains this by drawing a triangle. The lower points emulate the wheelbase and axle points and the upper being the c.g. He demonstrates that the problem with many SWB/MWB designs is that besides having the weight distribution too far forward, it’s too high. He says this tends to weight the front wheel and potentially cause problems when road hazards such as rocks, ruts or irregular pavement are encountered. Now, if you bring the seat down to 14 inches, the c.g. comes down and weight distribution is improved and the triangle becomes lower. Interestingly enough, Rotator’s low-seat MWB “Tiger” fits all of Steve’s design criteria. There is no doubt that these points can be argued by those who bring the safety issues of a low seat height into consideration. How low is too low is a personal decision for each individual rider.

The Delaire designs are very seriously rooted in racing. In fact, Rotator is the most active recumbent/HPV manufacturer involved in racing at this time. Performance aspects of Rotator bikes are tested on the race tracks of the world. Steve Delaire has been to Japan to compete in the International Solar Federation’s World Solar Rally where he took first place in the Production class this year on the “Solar Cut,” which is a production model based on the Pursuit. The Rotator’s also did quite well at the World’s HPV Championships in Las Vegas, NV this year. Brad Duns won Junior Class-World Champion, Dean Pederson won World Champion in the modified class and Robert Gepford was a bronze medalist in the modified class. 1996 was the year for Rotator.

I am often asked which are the fastest recumbents. My advice is watch the manufacturers who actually race and have the victories and records. This is real, not just speculation.

Jan/Feb 1997

FRAME/FORK/BARS

The Pursuit frame is a simple, yet high quality brazed-steel CruMo monocoque. The brazed-beads are left natural and the tubes are powdercoated Black. For 1997, the Pursuit uses a CruMo fork as standard equipment. The forks are built along side the Rotator Tiger and Lightning Stealth. They have many parts in common, including the seat, 2" main tube, and brazed construction.

The built-in passive suspension of the Pursuit frame noticeably smooths out the road. Delaire claims that it lowers rider fatigue which will improve performance. One drawback is that the suspension can induce a slight bounce when bumps are encountered. In hard acceleration, the main tube slightly lifts and causes chainstay/main tube joint to arch and flex. Whether you’ll like it will depend on your view on suspension in general. Many riders love a suspended ride, others feel it makes tracking through a tight curve more difficult and less predictable.

In a frame flex test where I held the brakes and applied pressure to the pedals, I noticed that the chain stays/main joint rises and the stays flex. When riding and powering, I noticed the suspension bounce causes the frame to flex and the handlebars actually come back at you slightly as part of the flex cycle. Delaire says, “this is an odd quirk that doesn’t seem to matter much.”

The single brazed connection between the chain stays and the main tube may be a concern to some as this is where all of the frame flex/passive suspension originates. The Pursuit has a very active frame and no frame triangulation. Whether this effects the frame-life will remain to be seen.

At five years, the Rotator factory warranty is shorter than we’d like to see though Delaire reports that there have been no frame failures.

TILLER STEERING

The Pursuit has dramatic tiller effect like no other recumbent, it is the design trade-off for this fast bike. The custom steel stem and aluminum riser/handlebar combination works well. It offers a
Intermediate drives don’t usually shift as well, or as quietly, nor are they initially as intuitive to use. Designers who use intermediate drives tend not to be fans of the Sachs 3x7 (three speed internal hub + 7 gears) which can optimize gearing with 20-inch drive wheels.

This version of Steve Delaire’s Pursuit shifted better than any intermediate drive recumbent I’ve tried. Though it’s still less smooth and quiet than most standard drivetrains. The system literally works like two indexed rear derailleur. There are two chains, both shorter than a standard recumbent. It takes an hour or so to acclimate to the new shift style and having five ranges versus three on a standard 21-speed—and all are indexed!

The 97 version is improved over past models as the intermediate gear is fixed to the frame. The addition of the Shimano hubs and Hyperglide cassette has improved the Pursuit’s shifting. Most riders like the intermediate drive once mastered.

The chain tubes do add friction to the drivetrain. For a demonstration put the bike on a stand and backpedal. Though this does not seem to effect performance.

Some have questioned the life-span of the intermediate gears and bearings. Certainly, the system will need more maintenance than a standard set-up. For this reason, I suggest that users master the art of drivetrain maintenance, derailleur and index shifting adjustments. It will be a good idea to purchase some replacement parts considering the planned obsolescence of bicycle components these days.

**BRAKES**

The Pursuit uses Sachs 3000 cantilever brakes. These are not super high-end brakes, though they work just fine and adjustments were easy. The only glitch we found was the rear straddle cable nut occasionally and annoyingly rubs and clicks against the bottom of the main tube.

The Pursuit is an ideal candidate for upgraded aftermarket brake pads or even Shimano V-brakes.

**SLING/MESH SEAT**

The Pursuit’s sling/mesh seat is comfortable, though if you are accustomed to a foam pad on top of the mesh like a Vision or Lightning, the Rotator’s mesh may feel somewhat firmer than you are accustomed too. The seat has a CroMo frame with a laced mesh. The lower mesh is laced with bungy cord offering another level of built-in suspension. The seat also has an adjustable recline.

The seat frame is elevated above a half-round tube that is hose-clamped to the frame. Concern about the hose-clamp fastening has always been the possibility of the seat twisting on its mount, as there is not fixed or flat track to hold the seat on a horizontal plane. During our time with this latest Pursuit, the seat slipped only once. It happened on the fast test ride up our steepest test hill. Delaire said that he would not be replacing the hose-clamps anytime soon. Concerned about the hose-clamp reliability, I asked Delaire how long the hose clamps last, his response was, “At 80 cents each, who cares?” We recently heard comments from Peter Ross about hose clamps being used on Rolls Royce radiator hoses (The Trice has hose-clamp seat fasteners). I’ve also heard the stories about how they are used in the

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**THE RIDE**

The Rotator Pursuit design is the most extreme LWB around. The bottom bracket is a few inches above seat-base level, which is an ergonomic position very similar to the Lightning. The pedal-angle is the most “closed” of any LWB, though the seat does have an adjustable recline angle that is fixed way back. The Pursuit is a lot like a race car as you climb down into the cockpit. The low speed handling is not the Pursuit’s strong point. The wheel flop is very apparent at low speeds and getting going takes some practice. Once rolling, the Pursuit shows its personality. It gets up to speed quickly once you have mastered

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**DRIVETRAIN**

The Pursuit has a 35 speed drivetrain that includes a single front chaining on a Sachs 170mm crankset. The front chain goes back to an intermediate freewheel that is bolted onto custom fixed frame mounts. The intermediate drive is shifted by a rear derailleur with five cogs, and a sixth cog that is the rear chain driven back toward another rear derailleur. Both derailleur are Sachs Centera matched with Sachs Pro Twist (twist grip) shifters. The chain has my least favorite KMC and my immediate inclination was that installing a set of Sachs chains would improve shifting. The dual chain drive has four short tube chainrings mounted with custom aluminum mounts. These guides hold the chain onto the intermediate drive (2) and the single front chaining (2). The tolerances between the intermediate gears and the chain tubes are tight and the chain rubbed on both of our test bikes, though it was just a matter of a five minute adjustment and all was corrected.

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**Steve Delaire on his Pursuit with Interceptor fairings—photo courtesy of Rotator**

reclining and telescoping stem/bar matched with an integral mountain bike style flat bar that is 20" wide (can be narrowed to suit the rider).

I’m over 6’ tall and had the adjustable handlebar/ stem combo set out to 26.5 inches, which demonstrates just how this bike achieves the tilter effect. Riders must learn to control the bike’s tendency to wheel-hop’ by offering counter-resistance as you get to the centerpoint. The Rotator’s steering is rather heavy until the bike is pointed straight ahead.

New riders may question the refinement level of the Pursuit/Interceptor steering geometry, specifically as it relates to the wheel/fork flop issue. Delaire responds, “Anyone who questions the wheel flop hasn’t ridden the bike enough to feel how stable it is at speed.” Delaire said that he had experimented with different fork and geometries and the current set-up is the best.

Doing away with the “tilter” would mean more upper framework and cable (Super-7) or “U” joint steering (Velocir). Another option would be remote steering like Kevin Hopp’s “Penell” homebuilt (RCN #18) or a USS Haluzak. All of these variations offer trade-offs and are more complicated. I once rode Delaire’s Super-7 which seemed more difficult to manage than the Pursuit.

Because of the Pursuit’s high bottom bracket, the seat must be farther away from the handlebars than on other LWB ASS direct steering bikes. For this reason, the Rotator steering geometry and handlebar set-up work well for the bikes design intention. However, it will be the “tilter” aspect of this design that may or may not closes the sale.
WHEELS
The Pursuit wheels have been upgraded dramatically for 1997. Delaire has gone to quick release wheels front and rear. Shimano hubs (and cassette/sprocket sets for improved shifting) on 406mm rims. The Pursuit comes with 115psi Schwinn City Marathon tires as standard equipment. I feel this BMX size is a much better choice when wheel and tire and durability are considered. They are knobby, bald slicks and the brand new Continental 120 psi 406mm road tire. The BMX 20" wheel/tire combo will improve tire wear and dependability.

OPTIONS
The Pursuit has no braze-ons for mounting accessories, though there are plenty of places to do so with clamps or velcro. There are fenders, light and mirror kits. For cargo hauling, the best options are the Rotator offerings. There is an optional rear "Interceptor" tail fairing/cargo box ($500) and a smaller open-top aluminum Aerocrafter ($250) that was used on Delaire's "Solar Cat." Delaire says the new Aerocrafter actually costs less than the Interceptor tail box which was surprising. Delaire can do custom work and builds HPV racers, solar/electric assists and even HPV artwork. His bikes have even been shown in the Pasadena Art Center HPV display.

As for front fairs, a Super Zippier ($190) is offered as well as the Interceptor front fairing ($400). The Pursuit's new "Interceptor" package ($900 in fiberglass) consists of the front and rear fairing pictured. We were able to try three Interceptor tail fairings sets over the course of the last year. The first was a prototype done in natural clear fiberglass with no color or trim. The second was pigmented with yellow coloring (bike on page #5). It had a misaligned mounting hole, an extra hole as well as spider web cosmetic cracks. The fit, finish and trim needed some improvement.

At the People Movers Bent Bash we were able to see a new kevlar Interceptor fairing that was done in natural gold, with gold edging and a black stripe down the rear fairings center-seam. This version had all of the flaws corrected. It was trimmed better and near perfection.

I didn't care for the appearance of the pigmented fiberglass yellow finish of our test fairing. The easiest way to correct this is to upgrade to kevlar. The natural gold tone is beautiful and the stuff is very strong. There is no weight difference between the standard fiberglass and kevlar. The fairing front and rear seat weights nine pounds. The kevlar material upgrade adds $250 to the Interceptor package ($125 each, front and rear). The design and performance of these fairs is excellent and matched perfectly to the Pursuit design. This package makes the "Interceptor" one of the hottest performance recumbents in the world today. Delaire has put a lot of time and effort into the design of the Interceptor fairs.

RECOMMENDATIONS
If you've experienced the Rotator Pursuit or Interceptor in the past you will be pleasantly surprised. The "97 Rotator"s are much better than previous models and the intermediate 35 speed drivetrain is now standard equipment and is the perfect application for this design. The price has been increased to $1300, though the upgrades make it worthwhile. The Pursuit is the best performance value in the recumbent world today.

Rotator is a small company and long delivery times are possible. Our experience on the early test bikes was that Rotator places the emphasis on functionality and performance more so than aesthetic refinement and details. The most recent bike we saw at the Bent Bash was a truly refined machine with lots of attention to detail.

My only pet peeve with Rotator bikes are the hose clamps. The lack of a seat-mount/clamp that locks the seat onto a horizontal plane leaves the possibility for slippage under heavy torque. Correcting this would be the optimum update for this bike.

The only thing left to rant about is that sometimes unpredictable KMCH chain. See the continued chain rant in the Rocket review (this issue). The best fairing choices are the custom Interceptor fairs or a combo Aerocrafter and Interceptor front fairing, though I highly recommend the upgrade to Kevlar for the Interceptor package.

RANT OF THE LONG AND LOW
I don't have to tell you how stable a long and low LWB can be at speeds. Especially when compared to SWB/MWB models. Before I get any mail on that one, I expect you to compare your SWB versus a LWB on a really fast descent.

After you've ridden a LWB for many years, you start sketching your ultimate dream bike. For fans of the long and low, your considerations can be a lower seat, slang/mesh seat and a slightly higher bottom bracket. If you want to make the bike more compact, you can add smaller diameter wheels. If you want wider gearing you add an intermediate drive. Amazingly enough the bike comes out looking like a Rotator Pursuit. If this is you, you've found your bike.

Mark Coliton checks out the Rotator Interceptor at the People Movers Bent Bash (note the Kevlar fairs and 45mm Aerospace wheels)
NEWBIE VIEW OF THE PURSUIT

I’m a Category 3 USCOC racer that has been racing for about five years in Road and Cyclocross. I’m also a NORBA expert mountain bike racer. I’ve raced many races, and like to go fast. I like a bike that climbs well, time trials in the flats, and descends smoothly. My upright saddle includes a Litespeed, a Rock Lobster and a KHS Pro-FZ.

For the last year and a half I’ve had chronic lower back problems that has virtually kept me off for my bikes. Instead of riding 300 miles a week, I’m riding 20. I can’t do steep out of saddle climbs without major lower back spasms.

I’ve really been missing the joy of riding and decided to look into recumbents as an alternative. Based on some experimentation, I determined that my lower back problems were coming from being bent over the bike. I figured that the back position offered by a recumbent might really help.

I test rode the Lightning P-38, a Biko, a Tour Easy, and two Haluzaks. I also test rode the Rotator Pursuit and the Rotator MWB/ASS Tiger. After riding all of these bikes on the flats, steep climbs, and descents, I felt that the Pursuit was the best all-around combination of handling, performance, and price available. In particular, I really liked the bike’s climbing and descending characteristics. The other bikes were generally much more sluggish when climbing, and didn’t shift very smoothly. I had a hard time on some of the super steep climbs you can find around here in Sonoma County (over 18%). The Pursuit has very smooth shifting and low gears due to its use of an intermediate drive. This allowed me to constantly adjust my gear to maintain a constant cadence over the changing terrain. The shorter chains allowed by the use of the rear derailleur means that shifting is quick, and you don’t get a lot of chain slippage and delayed shifting which is seen in other recumbents. It shifts through all the gears as quickly and efficiently as the best upright bikes. I can keep the bike going in a straight line even at the lowest climbing speeds. So I purchased a Rotator.

I got the frame, wheels, and all of the parts I needed directly from Steve Delaire. He provided me with special recumbent parts, such as wheels, tires, tubes, extra-long chains and cables, etc. I’ve put a number of bikes together in the past, and there is always something that is difficult: the bottom bracket is the wrong size, or the front derailleur clamp rubs the tire, some hassle always comes up that requires a couple of trips to the local bike shop for different parts. Needless to say, I was worried that I would have even more problems with such a strange bike with its own special parts. I was pleasantly surprised to find that all of the parts went together smoothly.

The Rotator frame is very sound. All of the cable guides and other fittings are nicely welded in just the right places. The welds are clean, and the black paint job is smooth and durable. The bike tracks straight. One-handed riding is possible.

The seat mounting system is solid and easily adjustable. The seat is quite comfortable. The bike responds quite well, there is a springy feel that absorbs the bumps.

As far as upgrades go, I plan on getting the front and rear "Interceptor" fairings. The Sachs drivetrain and brakes work perfectly. The Sachs canti brakes were some of the easiest canti brakes I have ever had to set up. They provide plenty of stopping power, which is essential when you really get going.

My only concern right now is the front wheel. While reasonably reliable and serviceable, the hub and rim aren’t of the best quality. In particular, the weld point on the rim is fairly rough, which affects the braking somewhat. I think I will eventually replace the front wheel and hub.

I can hang the Pursuit on a J-hook in my bike stable alongside the other bikes, and I can carry it on my Yakima rack using a standard tandem bike mount. Another plus is that it was easy to mount a standard bike rack onto the rear. Now I can do some serious touring. Overall, I am very satisfied with my purchase.

I have a very satisfied customer! I have a great bike, and I can ride long, fast rides once again. Even if I eventually go back to road racing, I am sure that I will use the recumbent for centuries and bike touring, or when I want a change of pace. So I’m sure I’ll end up riding this bike as much or more than any of my other bikes.

I also greatly appreciate Steve’s obvious passion and promotion of recumbents as a transportation alternative. His frequent trips to solar-bike racing contests, recumbent rallies, Critical Mass Rides, and bicycle messenger races must make a lot of his time and money-time that could be spent on himself and his family. As a fellow environmentalist, I salute Steve as someone who is making a real difference in the world by living and working according to his beliefs. He sets an example for the rest of us.—Chris Mobley, mobley@sonoma.edu

DELRAIE’S PURSUIT

Nearly three decades ago a friendship with Bill Haluzak, a single-handed circumnavigator, piqued my interest in sailing. One weekend my wife, Marian, and I were at a lake where a sailboat manufacturer was demonstrating its craft. We took our turn with the boat, and soon could sail it quite competently. The next week I told Bill I had found our boat. He advised against it. "Its only because it is such a basic, exciting boat that you learned to maneuver it so readily. You will soon tire of it and its pedestrian performance." So eventually we bought a recumbent that challenged us for years.

Three years ago when friends (Feet First Cycles in Goleta, CA) encouraged us to try recumbent bicycles I kept Bill’s advice in mind. We wanted to be able to keep up with my strong cycling buddies after switching to a recumbent. I tried a number of bikes including Linear, Tour Easy, Ryan, Presto, Vision, Haluzak, and Steve Delaire’s Rotator Pursuit. The Linear and Ryan were sound bikes, but slow. The Presto was extremely comfortable, but very expensive. The Vision was quick, but so stiff that it jarred my teeth even on city streets. The Tour Easy has an established record as a fast bike, but I felt the non-bleedable seat would not be suitable for the 100 degree plus days of the upper Sacramento Valley where we live. I narrowed my choice to the Haluzak and the Pursuit, both built in Santa Rosa.

Steve suggested a roll down test. Bill Haluzak graciously loaned me a Hybrid Race with narrow tires. Steve and I took both bikes to the top of a small hill and coasted down. The Pursuit finished the roll down many lengths ahead of the Haluzak.

My Pursuit is equipped with narrow tires, a Zippier frame, and Steve’s paniers which function as a rear fairing. It climbs about as well as my Trek mountain bike. A recent tour in Oregon included a climb from Medford to Crater Lake and later an 11% grade as we crossed the coastal range to the Pacific. I kept up with the mountain bikes. On the flats the Pursuit allows this 54 year old to keep up with a much younger crowd. A club ride in our valley’s western foothills concluded with nine flat miles into a strong wind. I pulled out from the pack and sped past several pace lines! The Pursuit doubles as a commuter bike. Even with its paniers stuffed with books, the Pursuit’s handling does not deteriorate.

The long wheelbase helps absorb some...
The Pursuit next to a Gold Rush Replica

Steve Delaire on his Pursuit with Interceptor fairings—Rotator

Interceptor Comments

My bike is a 35-speed Rotator Interceptor, I've ridden it over 5,000 miles and I love it! It's just the best all around bike I've ever ridden. I've ridden it at 25 mph with no hands, something I wouldn't do on other recumbents.

The shock absorbing monotube frame offers a very comfortable ride. I've climbed every hill I have come across. A couple of the toughest are up on Vancouver Island, around Ladysmith. The gearing gives a very wide range, from lows right down in the MTB range to high gears that let me drop tandems, along with the aerodynamics so I can commute 35 miles a day on my Interceptor. It is stable, fast and comfortable, and reliable.

Rotator uses a couple of hose clamps to mount the bottom of the seat. All I can say is that in 6,000 miles and a number of repositionings, I've had no problems at all, and I like the idea that if I did have a problem on the road it is easy anywhere to get a replacement.

The bottom line is when you see me on the road you will always see me with a big grin.—Robert Gepford, RBComBob@aol.com

Steve Delaire in Japan—photo courtesy of Rotator Bicycles

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The Beautiful Zzipper—photo by Larry Miller

Jan/Feb 1997
THE RANS ROCKET

1997 will be year that the RANS ROCKET really blasts off. The Rocket started life as the little brother to the V-Rex with the square main-frame tube. The Rocket is one of the simplest, most straight forward recumbent bicycle designs available today. In its most basic form, the Rocket costs $380 less than the V-Rex. It has a slightly lower seat height, a more aggressive riding position matched with the versatility only found with the dual BMX/406mm 20'' wheels. This bike can be at home on a century ride with slicks, on a hybrid with the stock tires, or you can even get mountain bike knobs to fit. This makes for a very versatile recumbent bike.

The Rocket's bottom bracket (BB) is a few inches higher than the seat. This makes the ergonomics comparable to the P-38. The pedal angle can be as close as a Lightning, but is adjustable by 25'' thanks to the telescoping RANS sprint brakes. This allows a full range of positions from Euro-laid back to extreme closed.

FRAME

The Rocket is a medium-wheelbase (MWB). I stand corrected, the Rocket is a short-wheelbase (SWB). Actually the 39.5 inch wheelbase moves the Rocket into a grey area between the two. (May be our terminology is due for a revamp?) The Rocket should labeled a MWB by virtue of its design characteristics, though the 20'' wheels shorten the bike, just edging it into the SWB category.

For 1997, the Rocket has a round 1.5'' CroMo mainframe, triangulated stays and a CroMo fork. The new round main tube replaces the 1.5'' CroMo square tube design of years past. The new frame uses a thicker wall 1.5'' CroMo mainframe tube and the boom has been shortened (aka Screamer). The aesthetic improvement is amazing! This change has truly transformed the Rocket. The CroMo frame is MIG welded, although you'd be hard pressed to notice the MIG weld beads. Overall, the welds are better than many TIG welds we've seen. The frame fabrication quality is impeccable, especially the aircraft quality metal work done in house by RANS aircraft welders.

The fixed seat arm levering (ASS) works great and can offer near ergonomic perfection. Keep in mind that there are three different variations of stem/bar for the Rocket. For taller riders or those who like the bars closer to their bodies (ala Presto), the new "XL" stem brings the bars back an additional three inches. This works particularly well for those who like their seats laid back. The optional Flip It riser is available and makes the cockpit even more adjustable.

DRIVETRAIN

The Rocket's entry-level drivetrain works pretty well even though several of the components have been downgraded for 1997. There are a few dated and out of production Suntour parts in the front derailleur and Suntour X-1 crank, though it looks pretty good with the black crank arms and larger 36/46/58 chaining set. The Shimano Altivio rear derailleur (STX last year) and Suntour XC LTD front are shifted by Grip Shifts SRT400 twist grips. The drivetrain shifts pretty good, though front shifting takes added twist effort because of the strong spring in the Suntour front derailleur. The SRT 400 Grip Shifts are entry level, noisy and take more shift-effort than we'd like to see in a recumbent drivetrain. However, Grip Shifts are generally trouble free and work well.

And then there's the chain. It's our least favorite KMC brand. The more miles I put on the Rocket the worse the shifting became. Constant index fine-tune adjustments just don't bring shifting up to my picky standards. Those who use KMC, think I'm "out-to-lunch" on this one, but those who've stopped using KMC, agree. ATP and RANS use KMC. Easy Racers and Angle Tech won't use KMC and spec the better and more expensive Sachs-Sedis. Kelvin Clark (AngleTech) recommends that owners remove the KMC from new stock bikes and has a regular upgrade quote.

My point is that Sachs Sedis chain may add a few bucks for the manufacturer, though when the customer upgrades to Sachs, it could set them back $40. For this reason, I will continue to rant.

The Rocket chainring is managed very well and the two RANS idlers work perfectly. Some perceptive riders may detect a slight vibration because its an upper chain idler.

The Rocket's gear inch range of 26-105.5 is fairly wide range for a bike with a 20'' drivewheel. The gearing works pretty. Taller gearing is available on the upgrade Sprint V Rocket. If you require even wider gearing, you may need custom drivetrain components.

TIRES, WHEELS and BRAKES

The Rocket has an excellent wheelset that includes the new Shimano Alivio hub, 11-28 7-speed cassette and 36 hole 406mm 20'' x 1.5'' (BMX size) rims. This has become the optimum choice for the 20'' wheel connoisseur. The tires are 65 psi Haro slicks, one of the best recumbent tires ever made. I've heard recumbent-tourist rumors of Haro's lasting 18,000 miles. I'd forgotten just how smooth this tire rides.

Tires make a really big difference in the ride of a bike. There is no end to aftermarket tires for this wheel size wheel. Be sure to check out the Schwalm City Marathon, Avocet Fatgrip 1.75 85 psi slicks (designed for solar cars) or the new Continental Grand Prix tires. Our favorites for this bike are the Avocet Fatgrip and the Mitsubishi Comp Pool available from Jan Sims at Greenspeed (see RCN #30). There is no US source at this time.

Some early Rockets with dual caliper brakes were known to have marginal braking. Since there are a few new old stock '95 Rockets still available, you may want to upgrade the brakes.

Our test bike had a very strong Deore LX rear cantilever, though 1997 spec calls for Suntour XC LTD, which is a downgrade. The rear brake is pretty strong and will lock up if you try. The front brake is a Dia Compe Bull Dog-long reach BMX front caliper. Even though this is a decent quality brake, under pressure the arms flex and feel mushy. Kelvin Clark of AngleTech suggests upgrading the brake levers, cable, housing and adding aftermarket Aztec brake pads.

Just as we were going to press, RANS announced optional Mgura hydraulic brakes for the Rocket. As long as you don't mind cooking oil running through the veins of your bike, the Mgura's offer the best rim braking known to recumbent-kind (I really do like Mguras).
RANS SEAT

The Rocket sports the newest incarnation lower-back RANS seat (high-back is an option). The upper and lower sections of the seat now bolt together and the high quality mesh section is fastened by heavier duty multiple zip ties. This seat now comes standard on all RANS models and is very comfortable. It is a hybrid by design, having a molded mesh back with a foam-covered composite bucket-base that is larger than last years model and has a full three inches of foam beneath the finely crafted RANS seat cover.

The new Ritchey skewer offers a more effective camming action for the seat quick release (Q.R.). Most new users of the RANS seat are surprised that the Q.R. is more difficult to adjust than it appears. The Q.R. really acts as a twist-nut and must be wound-up to lock the seat down properly (and wound-down to move the seat). Strong riders may notice that it often takes over-tightening. RANS manufactures a saddle as the Q.R. nut. We did have one break earlier in the season and this part could leave you stranded. We suggest that you order and carry a spare just in case. This is not the most perfectly refined set-up, though it's better than any previous Rans seat adjustor.

MAGIC DUAL 20’S

When you ride the new Rocket you are hard-pressed to believe that you are on a recumbent that retails for less than $1100. The Rocket can almost be described as the Counterpoint Presto meets the Lightning P-38. In mid-96, RANS cross-bred Screamer front-end design technology to the Rocket. This gave the bike even more heel interference, and improved the balance and road feel of the bike.

The 406mm 20” combo makes for a distinctive ride. It has a neutral steering geometry matched with the indescribable balance and road feel generally found on SWB bikes with 20” wheels. Those who’ve seen the light call it, “butt-steer.” You either get it or you don’t and I am a fan. I loved riding the Presto, the Rocket, the Tailwind and the Rotator, and all have dual 20s.

The diversity of the 406mm wheel combo suits my northwest riding style. For varied terrain, urban commutes and country roads, the 20” wheels offer everything you need. On the RCN test loop, we hit gravel shoulders, rough pavement, wet pavement, side-walks, smooth bike paths, wooden bridges and gravel parking lots. I much prefer the versatility of the 406mm BMX 20” wheels for an all weather season bike.

Some say the 20” drive-wheel slows you down. Gardner Martin (Easy Racers) has mentioned before that wheels smaller than 700c have more rolling resistance, which makes sense to me. However, look at the performance and records of the Alex Moulton AM uprights that use 17" wheels.

Regardless of which theory you subscribe to, I think it comes down to your personal riding style and where you ride. If you ride on one of the LA river bike trails, you may be better off with a V-Rex or another 700c drive wheel equipped model. And if you want to give the big wheel crowd a run for the money, throw on a set of Continental Grand Prix 406mm 20’s on a Rocket and give the big-wheel guys a run for the money.

HANDLING

The new round tube frame feels livelier, more resilient and less stiff (a good thing), though it is certainly stiff enough. The bike feels lighter, and is by nearly two pounds. The specs call for ‘97 Rocket to weigh 28 pounds. Ours was slightly heavier with our own SPD pedals.

The Rocket has a more advanced performance geometry than a V-Rex or Vision, and the heel interference to prove it. Some medium wheelbase riders think that I’ve been beating the heel interference drum too loudly this year, and I have. As it is an important issue for new riders. And those interested in a laid back cruising attitude may not want to deal with it. For those who do, there are distinct benefits of a (longer) medium wheelbase over a short wheelbase. When you push the front wheel outward and shorten the boom, the bike has less tendency to pedal steer’ and some track easier. The Rocket tracks effortlessly.

The Rocket is a very intuitive bike, more so than other SWB/MWB models. It doesn’t really have that overly-quick sensation. The closed pedal angle/higher BB initially seems to take more effort to pedal and more time to get accustomed too. After a few weeks, I became so comfortable with the ride. I’ve almost been able to balance it with no hands. Though the key word here is “almost.”

ROCKET vs. VISION

Even though the Rocket appears to be competition for the Vision, the pedal angles are drastically different. The Vision offers a relaxed pedal angle with an adjustable laid-back seat and minimal heel interference. The Rocket is more aggressive with a more closed pedal angle, more wheelbase and some heel interference. The Vision may have a slight edge in components for ‘97 and the frame is TIG welded. The Rocket’s frame is full

CroMo and the Vision is not. I still prefer the Vision seat comfort by a slim margin, though the Rocket’s handling is more intuitive. Both are great bikes and excellent values, though be aware of the differences when you compare the two.

ROCKET vs. V-REX

See the Rocket as an incredible value. It has a lower seat than the V-Rex and a less complex frame, The Rocket is MIG welded (vs. TIG) and costs $380 less than a V-Rex. I prefer the ride and handling of the Rocket over the V-Rex as well. My issue with the V-Rex is wheel combinations.

RANS ROCKET

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RANS CONTACT INFO

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Jan/Feb 1997
The 24" rear wheel is the better choice over the 26" for handling and seat height, though tires and tubes will be difficult to track down (they are available by mail order). Also, that 24" wheel's diameter is not that much larger than a 20." There is some serious emphasis being put on the Rocket for next season. RANS has the factory hot-rod Saturn-V and AngleTech has several new Rocket variations as well.

RANS OPTIONS

There is a new RANS seat bag that sells for $69, and a rear-rack can be mounted, though it takes some persistence due to the rearward placement of the sprint bracers (seat stays). This means limited use of the rack at best. We recommend using the stock seat bag or the AngleTech mult mount SWB seat bag (both bags cost the same), and use a BOB trailer for heavier loads.

RANS will offer optional Magura Hydraulics for those desiring stronger brakes and there are custom paint options. The Schwabke City Marathon ($32) and Continental Grand Prix ($78) tire upgrades are available on Rockets as well as a mirror and kickstand.

Some other cool options would be dual 20" fenders from Easy Racers (Kevlar for the 406mm or 451mm wheels) or a bit less expensive ones from GreenGear/BikeFriday.

RECOMMENDATIONS

Our only criticisms of the Rocket come down to a few component and dial-in choices. Most riders will see a difference in changing out the KMC chain and making the brake updates (stock model). Consider bar-end shifters or GripShift SRT800 X-Ray as (non-factory) upgrades. Keep in mind the importance of a correct stem/bar "dial-in." The simple way to figure this out is do you ride in an upright or laid back position. More advanced riders may want to consider the new Rocket Saturn-V or a custom spec version.

The Saturn-V looks like the hottest Rocket model with updated components: Deore XT, taller gearing, Grip Shift ESP shifting, Continental Grand Prix tires, Magura brakes, Flip Dt stem/bar, custom paint and $1800 price tag.

The previous RANS woes of soft paint, scuffed seat tracks, and sometimes slipping seats have been corrected. With the introduction of the new round tube Rocket, square tube bikes should be on sale and used ones will be good bargains. Keep in mind that you will need to do some upgrading to get your bike to the current level.

The one ergonomic aspect worthy of consideration is that the Rocket's bottom bracket is nearly three inches higher than the seat. This makes ellipses pedals nearly a necessity (since you are accustomed to the bike). This is also the same position that I have previously discussed as "extreme" in other road tests. The only reason this closed position worked for me is the 25 degree adjustable seat-recline.

The Rocket's simplicity may be its best virtue. The RANS Rocket is an exceptional value. It has the feel and quality of much more expensive SWB/MWB wheelbase recumbents. It's a smooth riding performance SWB (by RCN definition), that handles like and has all of the SWB traits. The Rocket is an under-rated bargain at $1095. With the introduction of the new RANS SATURN V, the Rocket has really come into its own as the SWB/MWB performance/value leader in North America."

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We ship bikes anywhere in the world!
The Slumgullian Tour

My Rans V-Rex 24 was shipped out to Colorado on Friday. That afternoon and again on Saturday I rode about 25 miles on my Trek 1500. My butt painfully reinforced why it is that I now ride a recumbent!

I flew out late Tuesday night. United Airlines was offering a special $141 round trip fare Chicago O’Hare to Colorado Springs. After a terrible day I gave the idea of waiting for the train to New York and taking the bike on a boxcar. Then I wanted to arrive by Tuesday, it cost more to ship the bike than to ship me.

On Wednesday morning I drove to AngleTech in Woodland Park. The 20 minute drive passes through the Garden of the Gods and Cave of Winds areas near Manitou Springs.

In the morning, I set up my bike and hung around the shop for a while. In the afternoon I took my first ride “at altitude.” Woodland Park has an elevation of 8,600 feet and looks smack dab into Pike’s Peak.

Thursday afternoon was travel day from Woodland Park out to Gunnison. I rode 14 miles in the morning just to get the feel of it again and increase my lung capacity.

We had 12 people in our group, 11 riders and rider Armand’s wife Patty who drives the big Ford van. All but one of the riders rode recumbents. Sue, who is about 5’8” and rides a lot, rides a Giant carbon-frame upright.

My roomy for the tour was Tom Barbour, a school teacher from Littleton, Colorado. He has a history of riding major miles in the mountains. Some of the people on the ride belong to the “bent animal” class. As it turns out, I ride near the back, but usually ahead of some riders. The “bent animals” in front sometimes finish an hour or more ahead of the last guy over a 75-mile day.

Thursday night everyone stayed at the Holiday Express in Gunnison where management gives us sheets to cover the bikes so they don’t get grease on the furnishings. One smartly asks for a blanket, too, because her bike is used to warmer climates.

Dinner Thursday is at Gaelic Mikes, a 4-star restaurant in my estimation. Many of us do the carbo load with pasta. Mine is penne, pesto, and it is extraordinary.

Breakfast the next morning is at the pancake house where for $1 you get a pancake that is bigger than my Rans seat base. Mark Purdy, the guy who inspects all bikes at Rans before they ship, saves most of his pancake for a noon meal.

And now, “The Old Man and The Mountain,” or how I survive my first-ever bike tour. Our first day’s ride brings everything that Kelvin assures me will not happen — four storms, including lightning, hail and 60 m.p.h. winds.

We finish breakfast and check out of the hotel before 8:30 a.m., eager to get onto the road. This is the day we ride 75 miles because there are no towns, gas stations, convenience stores nor even crossroads until we reach our destination at Sagouche (pronounced Sah watch’).

The first 12 miles out of town is on Hwy 50, a main route. Everyone is in jackets because the temperature is in the high 40’s. Patty has packed the van at our turn off for the hilly lands. When we reach it, the sun is warming the day and riding has built up our body heat. Patty happily collects our jackets and rain gear to lighten the load because as we move away from Hwy 50 we begin our first climb (North Pass at 10,149 feet) which doesn’t peak until the 35-mile mark.

It’s now that our collection of animals and mortals begins to separate. Our bikes include something representative of most recumbent styles: a 700/20 titanium fitter V-Rex; a 24/20 V-Rex with front suspension and fat tires and a Sachs 5x7 internal hub; my skinny-tire original 24/20 V-Rex with its 22-108-inch gear range; a 20/20 Rocket round-tube test-bike from the factory; a Haulzak with under seat steering; a LWB Rans Status and an Easy Racer Gold Rush Replica with extra ordinary wide-range gearing.

Personally, I’m communing with nature and loving every peep from the birds, squeak from the prairie dogs and moo from the herds. I see the deepening black clouds at about the 20-mile mark, but trusting Kelvin’s comment that it usually rains a little around 3:30 p.m. I’m not worried. Not only is Kelvin’s evaluation all wet, so am I. Now my seat is puddling (no, I’m not paddling). I learned later that all Rans seats now are drilled to drain the water, but my bike, being the concept bike for the 24/20 idea, is not prepared this way. I’m getting cold. The rain drops the temperature from the comfortable 70’s down to the wind swept 50’s. Patty soon finds me. I put on a dry shirt and my Gore-tex jacket. The Gore-tex in my shoes has kept my feet dry and with a wet seat, there’s no way I can have a dry bottom.

Somewhat drier, I press onward and upward. Because this is my first time on the bike in the mountains and my first time on this route, I’m not sure how far it is to the top of the pass. It’s seemingly a never-ending uphill, switching back and forth between towering pine, spruce and canyon walls as I climb. But it’s gorgeous.

Rain comes again, drizzle at first and then steady for about 10 minutes. Lightning that has been miles away moves closer, and closer. I’m feeling very humble amidst God’s magnificence. I’m starting to count seconds between lightning and thunder...one thousand one...one thousand two...one thousand three...it’s still not really close. Then I get the scar of my life. Dead ahead of me the lightning strikes the road, the simultaneous, deafening thunder smashes off canyon walls that have closed me in. My heart explodes in an adrenaline rush. “Take me, Lord, you know I’m yours, but please don’t fry me first.”

Patty is a short distance below me on the hill and I high-tail it to the van for cover. We pick up two other riders within a quarter mile and “sag” to the top, just another mile away. It’s now that we learn that Doug and Sue, caught in a canyon, are hit by “half-inch hail.” Doug is nearly a victim of hypothermia, but blankets and the van heater soon restore his desire to continue. While not affected much by the cold, Sue bears the marks made by hail on her thighs for the next three days.

At the top we sit out the rain for another 10 minutes. Even before the rain stops, we see brilliant sun across the valley ahead of us, maybe only 5 miles away. We are not going to waste the down-

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hill we so laboriously earned. It’s my first. I’m apprehensive about the steadiness of the bike, about the brakes and about the rain-slick road. Kelvin says not to worry and leaves first, confident in his front shock and fat tires. I fall in not so confidently behind him. Kelvin says “Let it roll out (you don’t need to brake).” But I brake for the very first 35 mph curve. The V-Rex is amazing steady both over the bumpy pavement and the curve. I gain confidence. Despite the wet pavement, the water fan-tailing back into my face and my apprehensiveness about it, I pick up speed chuckling to myself. I may be 57 years old, but I’m as giddy as a little kid. Between switchbacks, which in truth are not severe, I see my computer building from 35 to 40 mph. Ahead I see what looks like a clear, straight downhill, so I’m off the brakes completely. 42, 43, 44, 45, up to 47.6 mph.

The sun indeed shines as we hit the valley and the temps rise again into the 70s. But as we begin our next milder climb we catch a freak of nature. We can see rain coming toward us rapidly over the canyon wall behind our left shoulder. We can’t outrun it. It starts to drizzle, and we stop to put on our Goretex once more. Too late. The 50 mph gusts whip at us so savagely that I can’t get my second arm into the coat. Between gusts I manage to struggle into the coat, but we can’t ride for fear of being blown off the road. In less than 5 minutes, however, the rain stops and the wind eases and we skidaddle.

By this time we have less than 15 miles to ride to our motel just beyond Saguache. In one of those rare instances proving all’s well that ends well, we are treated to an exhilarating tailwind that propels us along a slight downhill at 37 to 38 mph in eerie stillness (I hear little sound and feel no wind). This is double my normal cruising speed.

As we settle into 6 rooms of the town’s largest (and only) 10-room hotel, the owner regales us with tales of his neighbor just last night bringing home a new pot-bellied pig and Mr. Bear rummaging the grounds intent upon a late-night pork-feast. I’ll never know if the bear showed a second night. I would have slept through any commotion.

The first 30 miles of Day Two take us through a part of Colorado that easily can be mistaken for the flat lands of Kansas or Nebraska where they grow hay and potato crops. We hit rain again before the breakfast stop 55 miles down the road at Del Norte. I was able to photograph a rare horizon-to-horizon double rainbow. It will rain again before lunch. The pack stays close together. We all met at the restaurant and changed clothes for the third time this day. The bikes became clothes drying racks in the restaurant parking lot, and lots of people ask us questions about our “lawn chairs with wheels.” After lunch we settle in for a bulging ride along the Rio Grande into the picturesque upscale canyon community of Creed, elevation 8,854 feet.

Since the second day has the least amount of climbing, we arrive early in the afternoon with plenty of time to finish drying our clothes in the sun and enjoying a gentle breeze. Dinner is at the Creede Hotel, another 4-star experience where they have time and ginger scallops, duck or ginger glazed salmon, herbed pork chops, and inventive salads, pastas and sinful desserts. Our dramatically beautiful waitress is in costume for her role in Brighton Beach Memoirs at the adjacent repertory theater. Strange how a table of 12 consumes three pitchers of water before drinks are served and continues to ask for refills throughout the meal. Altitude and mileage demands hydration.

Unfortunately, Day Two also sees our first and only mechanical problem. Doug breaks a spoke on the rear wheel of his Stratus. Although there is a shop that rents mountain bikes in Creede, population 400, their mechanic is out of town (riding) and the shop tools don’t include a free-wheel puller so Doug, an auto mechanic, can do the job himself. So, in the morning, the sag takes him 55 miles into Lake City, population 200, and the famous “Dude” who can do the job for him.

Day Three dawns as Kelvin has prepared me to expect. Crisp in the early morning, but a single long-sleeve T is fine by the time we hit the road. This is the day we tackle our namesake pass, “Slumgullion” at 11,530 feet. The first 20 miles take us past some of the largest, most lush river valley pastures and herbs I’ve ever seen. This is a picture book, movieland, better-than-you-can

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CHAPTER III

As most of you know, my wife and I have successfully escaped the pressures of urban sprawl and settled down in Skookum, a little, rural dot on the Washington State map nestled on the western slopes of the Cascade Mountains. To our surprise, Skookum proved to be a bustling center of recumbent action rivaling towns in California, Colorado, and Maryland that sometimes pretend to be the center of the recumbent cycling universe. We even have a club, the Low Down and Laid Back Cycling Club of Greater Skookum. My wife, Felicity, and I are bona fide members, and we feel right at home here.

The winter months in tiny Skookum shift recumbent activity into a slightly different gear. It’s a question of light, really. Remarkably, you see just as many recumbents out and about, but riders are usually on purposeful winter missions like returning videos, picking up the odd screw or bolt from the hardware store, or rendezvousing with the county library bookmobile on its bimonthly visit to town. As the light fades, you see ‘bents decorated with blinking red LEID’s, halogen head-lights, and dazzling displays of reflective tape scurrying about like fireflies.

I teach English at Skookum High School, and I commute to school each day about three miles each way. These winter mornings are dark, but, rain or shine, I roll out and pedal to school. The only thing that stops me is compact snow or ice. At such times, I’ll drive my car if I must repeating “$300 deductible” all the way to work and back.

The Low Down and Laid Back Cycling Club changes to monthly meetings in November, and the meetings switch from the church basement to Vern Bob’s Recumbent Barn because Vern’s got enough floor space to allow some purposeful indoor recumbent riding. In fact, Vern Bob’s spacious showroom and warehouse shop have given rise to some impromptu winter riding events that have become the highlights of our winter meetings in Skookum.

Vern Bob is a legend in our little town. Fifteen years ago he drove into town in a battered, old camper with seven recumbents lashed to the sides and back. His life before his appearance in town has always been a mystery because Vern Bob doesn’t talk much about what he calls “his lost years.” People know he had money because he leased the old, abandoned International Harvester Farm Implement Shop and Showroom and quickly set up a storefront dealing in recumbent bicycles. Skookumites are a practical lot and dropped in to examine Vern Bob’s strange and exotic wares. The local populace looked the ‘bents over and decided that the bikes “made sense.” At first business was understandably slow, and Vern Bob had to augment his income by doing freelance seat design and backside work. Little by little, however, Skookum took to recumbents and the rest is, as they say, history. There isn’t a day now when there isn’t a wonderful mix of locals and out-of-towners down at Vern Bob’s Recumbent Barn trying out his inventory, talking ‘bents, and exchanging the obligatory vicious dog pursuit story. Vern’s been so successful that he hasn’t done backside work in ten years.

Recently Felicity and I loaded our recumbents on to our car rack to head down to the November meeting of the L.D. and L.B. C.C. of G.S. The weather was too dicey to allow a safe ride on our ‘bents. Four inches of snow had fallen and had gotten compacted pretty good. It was going to be a slow go even in the car, but we were bound and determined to make the meeting. It was, after all, the right of Vern Bob’s Recumbent Winter Olympics, and everybody in the club warned us not to miss it. We arrived safely, unloaded our bikes, and rolled them inside.

Vern Bob liked unnumbered space and over the years had removed most of the non-supporting walls in the old building. As you come in from the front door, all of his recumbents are on display, but the rest of the shop is open space. In fact, the only bigger open, indoor space in town was the bowling alley. Vern Bob was November’s Acting President of the club, and he greeted us as we came in.

“Gern, Felicity. Good to see you. This is your first Recumbent Olympics. We’ll find out what you’re made of tonight.”

“Be easy on us, Vern. We’re just novices. Remember that,” I reminded him.

It took another twenty minutes for the rest of the membership to roll in. While we waited, we looked at Vern Bob’s machines and got to closely examine other members’ bikes before he got the meeting going.

“There’s no old business as far as I’m concerned. We’re here to have a little fun, so let’s get right to it. You’ll notice that my showroom floor and shop is strewn with old bicycle parts. Tonight our first and only Olympic event is called “The Recumbent Bike Part Pick-Up.” Each contestant has thirty seconds to ride around this cluttered hall of recumbency and pick up as many bike parts as she can. Points will be deducted for each time a foot touches the ground during your ride. Bonus points can be earned for the numbers of parts carried and the total weight of the parts that are successfully transported across the finish line. Nough said? So let the games begin!”

Felicity and I watched in awe as one rider after another started their timed round. One of my students, Emily Harlowe’s, was the third contestant and obviously the class of the field. In the summers she did competitive barrel racing on her horse, Smokey, and she looked right at home on her sweet little SWB. She was poised at the starting line on one side of Vern Bob’s vast floor space, Vern rang the starting bell, and she was off. Emily was careening wildly around the floor picking up wheels, forks and cranks as she rolled along. At times she was all speed, and, then, in the next moment almost motionless as she delicately picked up a rear gear cluster and a length of chain. Although there was the occasional wobble, Emily rode clean and gathered an amazing twelve items totalling twenty-two pounds. After her ride, we all knew who would win, but we all gave it a go anyway.

Felicity and I were on LWB’s, so maneuverability was difficult. During my run around the floor, I wobbled crazily running over more items than I ever picked up. My feet hit the ground more times than I could count. I did manage to pick up an old tire before ignoromiously grazing one of Vern Bob’s showroom walls. My score was the only one in negative numbers that evening. Felicity fared much better and crossed the line with three items and only one foot foul. She was awarded the best run on a long wheel base by a novice and received a ribbon. I didn’t get any award, but Vern did let me keep the old tire I picked up.

After the awards ceremony, Vern turned the meeting over to me. I was to make a special introduction. Since I rode to school each morning and parked my recumbent in my classroom, my students were keenly interested in my bike. Skookum,
of course, had more "cents per capita than most places, and the kids had an abiding interest in alternative bike design. Capitalizing on this interest, I had given an assignment in class. Students were to compose a poem using the style of their favorite poet. The subject of the poem was the recumbent bike. My class took to the assignment with creativity and enthusiasm. Vern Bob heard about the assignment and asked if a student might read their poem to the club at one of the winter meetings. Tonight was the night.

Wayne Dinkler, a freshman in my second period English class, had written an excellent recumbent poem in the style of Edgar Allen Poe. Wayne agreed to do the reading so long as I gave him extra credit points in class and since he was really proud of his work.

"May I introduce Wayne Dinkler to you. He's one of my students and son of Madge, one of our many past acting presidents. Take it Wayne."

Wayne stepped forward and the room became very quiet.

"This is my recumbent poem written in the style of Edgar Allen Poe. Hope you like it:

'Once upon a midnight dreary
While I pedaled weak and weary
Over many a forgotten byway in Skookum town,
It was comfort I was lacking,
My neck and back were aching.
My old upright bike was making
My smile fade into a frown.

So into town I quickly biked,
To try to find a bike I liked.
Vern Bob sold some strange new bikes
That didn't make your rear so sore.
Vern did show me bikes of wonder,
Long and short, steering over...under
I picked one out called ROLLING THUNDER
And tried it for an hour or more.

Ah, distinctly I remember
It was in mid-September
That I bought that 'best with legal tender
Down at Vern Bob's Recumbent Barn.
Now my wrists and rear ain't sore
Since my 'best rolled out Vern's door.
Laid back, biking's what's in store.
I'll be a wedgie.... NEVEMORE!!!'

Wayne politely bowed, and the gathered members gave him cheers and applause for a job well done. As a prize, Vern Bob gave him free tune-ups for a year and the promise of first rides on any of his new rolling stock that would be arriving in Spring.

Well, that's it from all of us out here in Skookum where all the shoulders are wide and all the bikes are recumbents. 

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- RCN#37—Jan/Feb '97
- RCN#38—Mar/Apr '97
- RCN#39—May/June '97
- RCN#40—July/Aug '97
- RCN#41—Sept/Oct '97
- RCN#42—Nov/Dec '97

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Story and photos Bud Elder

My first exposure to recumbents was on the 1985 Florida Safari, a Six Day Bike Tour across the state of Florida. During the ride I met Ken Gulla from Indiana who came down with his Tour Easy to ride this tour. I was so impressed with this bike and the comfortable riding position that I ordered the plans from Easy Racers in California and began to build the LWB. It was then after ten years of pleasurable riding I decided to build and ride a full-suspension SWB.

I spent about five months planning the design before actually drawing up the plans. My desire was to have a bike that could be used on the road and then with a quick change be used for off-road riding. My intention was not to design this bike to compete with road bikes or mountain bikes but to be versatile for both types of riding. It has fulfilled these expectations.

I began construction in January 1995 and completed the bike five months later. The frame is built of aluminum and the road fork is steel. The suspension fork is an RST. The dropouts and other components of the rear suspension were all machined from solid stock. Being a machinist by trade and having my own home machine shop made the job easier. I also did my own TIG welding. The main frame is 2.25" diameter by .062 wall, and the rear tubes are 3/4" diameter by .062 wall 6061 T6 aluminum. Titanium was used for the intermediate drive shaft.

The main frame and road fork are powder coated bright red. The rest of the frame was anodized in red, blue and gold, and both the powder coating and anodizing have held up very well.

For the gearing, I used a 13-32 freewheel and a 14-40 secondary drive and a 19-40 on the primary side. This gives me a gear range of 24.8 to 131.1 gear inches. For a little more serious off-road riding, I can change my 19 tooth primary sprocket to a 22 tooth and adding three links to the chain and have a 21.4 to 113.2 inch combo.

The components I used were a Shimano Deore LX headset and derailleur, Gripshift for index shifting and Phil Wood hubs. I used the IRC 20" x 1-1/8" tire on the front and a Cantonal 27" x 1-1/4" on the rear. The weight of the bike in road trim came out at 29.5 pounds.

For the rear suspension, Fox Engineering provided me with one of their shocks. It has turned out to be by far one of the best shocks on the market. By being able to adjust the air pressure, this shock will accommodate most any weight and riding condition. It only took me two or three rides to get it adjusted to my weight and comfort of riding. I have been very pleased and would highly recommend this particular shock.

Changing from the road mode to off-road is quite easy. There is a tube welded to both forks that holds the handlebar. By loosening the clamps, the handlebar will slip out with all the controls, and the forks can be exchanged. The brake cable is left attached to the brake calipers on each fork. The cable end can then be inserted into the brake lever and with a small adjustment on the brake handle nut is ready to go. For the rear brakes, I have two mounting positions for the caliper pivot post. I found it was easier to have two sets of calipers, one set adjusted for each rim as they are of different widths.

The under-seat steering took some practice to get accustomed to, but to me is far more relaxing, especially on longer rides of 60 to 160 miles. With the hands on the under-seat steering, the position is comfortable and more natural for me.

My recumbent was finished in time to do the Bicycle Ride Across Georgia (BRAG), from Rome to Augusta. Rome is located in the northwest corner of Georgia. This ride took seven days, 383 miles, and about 1,800 riders participated. The first three days of riding were in the mountains with some interesting climbs. I spent a lot of time in my low gears, but the down-hill runs were fantastic and worth it. There were a number of 40 mph plus down-hill runs including one at 50 mph. The bike was very stable at high speeds and gave me no indication of getting out of hand. I planned this high gear of 131 inches for down hill runs. I totally enjoyed the speed and didn't spin out as quickly as I had on my LWB.

My new recumbent attracted a lot of interest wherever I stopped. A lot of people, including those riding standard bikes, had never seen a recumbent and had many questions. One of the most often asked were where did I purchase it, and were surprised to hear that I had built it. One feature of building and riding a recumbent is that you meet and talk to many more people as this unique vehicle attracts attention, a great way to expose the recumbent bicycle.

I'm very satisfied and pleased with the results of the construction of my SWB recumbent. The intermediate drive adds a little more weight, but to me this offsets the disadvantage by being able to have the wide gear range that I wanted. The SWB bike is also easier to transport and lighter in weight than my LWB. I now have about 1,200 miles on the odometer, and there isn't anything I would change if I were starting over today.
Recumbent Tech: Unscientific Testing of Chain Lubes

by Richard Dr dul
E-mail: dr dul@ mindlink.net

It seems like I've been searching for the perfect chain lube forever. Many years ago, in the dark ages of friction shifting, I used oil. Not motor oil, but not a whole lot better. Sure, it lubed the chain well, but it got dirty—really nasty dirty. At the end of each ride, I had at least one chainring tattoo on my leg. Repairing a flat rear tire was not a pretty sight, and you could forget wearing your clothes for anything but cycling if they accidentally brushed the chain. Since becoming a recumbent convert, my desire for a clean and effective chain lube has increased tremendously. I have big calves, and they often rub the chain on my SWB. Greasy legs are a drag. So is spending half an hour every week cleaning and relubing the chain, especially a long recumbent chain.

So I set off on a quest to discover the best chain lube. Because the RCN research and development budget is so small, I couldn't afford to emulate the wildly popular, high-tech test procedures of the big-name bicycle magazines. No fancy viscosity-measuring devices and durability graphs here. Instead, I simply lubed the chains on my bicycles with various chain lubes, and rode them.

The fact that most of my bicycles are uprights, and that this did not deter me from my chain lube testing is evidence of my dedication to the cause.

THE PERFECT CHAIN LUBE

Before I reveal the results of all this unscientific testing, it's worthwhile to first consider what makes the "ideal" chain lube.

- It should lubricate the chain. This is the primary function of a chain lube, and if it doesn't do this, forget it. All the chain lubes I tested met this criterion.
- It should be durable, meaning that it will remain on the chain for a reasonable period of time before more lubricant must be added, and it should resist washing or rain.
- It should be clean, allowing a cyclist to handle the chain without getting dirty.
- It should be easy to use, meaning that no equipment is required nor large amounts of time.
- It shouldn't be expensive. No chain lube that I tested met all of these criteria. Some were clean, but wore off quickly. Others hung on for dear life, but required frequent and time-consuming cleaning and relubing. Your choice of the perfect chain lube will depend on what's important to you. For what it's worth, I'll tell you which lube I liked the best, and what I didn't like about others.

MY FAVORITE

My choice for best chain lube is White Lightning. This stuff is clean and easy to use. It's not long-lasting, but it's so easy to reapply that this isn't a concern, and it's reasonably priced (I can buy it locally for $5 per bottle). White Lightning is a mixture of waxes and other chemicals, suspended in hexane. To use it, you shake the hell out of the bottle so that all the good stuff is in suspension, then squirt it on the chain as you backpedal. Get enough on to saturate the chain without putting so much on that it runs all over the floor. When it dries a few minutes later, you're left with a whitish wax on the chain and inside the rollers. By the way, make sure you do this at temperatures above 10 degrees (50 Fahrenheit), or else all you'll get is a white goo in your chain. When it's colder, I stick the bottle of White Lightning in my armpit for a few minutes to warm it up.

White Lightning is a bit apart from the other chain lubes is that it actually cleans your chain. When dirt gets on the chain (or if it's already there), the wax bonds to the dirt. Then a flock of wax commits chain lube suicide and dives off the chain, taking the dirt with it. What you get is light black waxy flecks on the road, on your chainstays, on your rear derailleur and on your rear wheel—but these flecks can be easily washed off. What you don't get is a dirty chain. In fact, you can grab a fistful of chain, and your hand comes away clean.

Obviously the dirt you get on your chain, the more flecks of wax will commit suicide, and the sooner the White Lightning will wear off. All you need do is when the chain starts to squeak (or before it reaches this point), is simply re-apply more White Lightning. I find that in dry conditions, I can go several hundred kilometers on my 'bent before I need to apply more lube. When it rains, I usually need to apply more afterwards (there's a water dispersant in the lube, so you don't have to wait for the chain to dry completely). White Lightning claims the lube is waterproof once it has dried, and notes that in rain there's usually a lot more grime thrown up from the road, which wears the lube off faster. I carry a small squirt bottle of it with me on long rides in case the chain needs more.

If you plan to switch to White Lightning, you have two choices. The best way is to switch when you replace your chain. I clean my new chains with solvent to remove all the old crud, let them dry, and then apply the White Lightning (if you use a citrus solvent, be sure to rinse the chain thoroughly as the solvent will dissolve White Lightning—this is not a concern if you use paint thinner or varnish).

If you plan to use White Lightning on a chain that has another lube on it, first clean it as well as you can. It's worth removing the chain from the bike and soaking it in a solvent bath, to get as much of the crud as possible out of the rollers. After applying White Lightning, you'll notice lots of black flecks coming off the chain for the first few hundred kilometers or so, as the White Lightning cleans out the rest of the crud that you didn't get. Once the chain is clean, the spray of black flecks dies down, and re-applications are needed less frequently.

Before giving White Lightning my absolute endorsement, I felt that I had to subject it to the ultimate test of any chain lube—a weekend of mountain biking. We're talking dry dust, wet mud and everything in between—stuff you don't usually encounter on the road. The result? White Lightning performed flawlessly (note that I did need to reapply it once during 100 km of riding).

If you decide to try White Lightning, be sure to read the small booklet, which contains answers to frequently asked questions about the product. One question not addressed in the booklet is accelerated chain wear, which a couple of cyclists on the Internet have reported. White Lightning claims that the opposite longer chain and component life—is the case. I'm measuring my chains and inspecting my cogs and chainrings carefully especially on the tandem, and have had no wear problems to date.

THE OTHER LUBES

I tried a half-dozen or so other lubes for various amounts of time, depending on how much promise they showed. I eventually gave up on all of them, and have converted all our bikes to White Lightning.

- Rock 'n' Roll: This stuff goes on like White Lightning (shake it and apply only above 13 degrees or 55 Fahrenheit), dries to a waxy coating, and keeps the chain clean. There the resemblance ends. It does not clean dirt off the chain like White Lightning does, and it doesn't wear off. In fact, you have to scrape the stuff off the chainrings and cogs where it builds up. As an indication of how wear-resistant Rock 'n' Roll is, consider this—1 accidentally spilled some on the rear window of my car (which I never wash), and it's still there a month later, despite plenty of Northwest rain and the frequent use of the windshield wiper. Also, if you smoke, don't use this stuff—it's flammable.

- Boeshield T-9: Originally developed by Boeing to protect metal parts in aircraft, this product gets a lot of use in marine applications (you'll find it at marine supply stores), and has recently been promoted as a chain lube. Supposedly, it dries to a waxy film. Maybe, but it also attracts dirt, and both chains that I tried it on (one on my 'bent, the other on my upright commuter) eventually became as grimy as if I'd used oil.

- Finish Line Bicycle Lubricant/Tri-Flo: They're probably completely different chemical compositions, but they work the same. Reasonably durable, good for road riding, but eventually the chain gets grimy and needs to be cleaned before applying more lube. Too much time, hassle and grime for me.

- Phil's Tenacious Oil/Finish Line Cross-Country Lube: may still use these lubes on my mountain bike during the wet winter riding season, because they stay on no matter how much slop you ride through. But both lubes get dirty real fast, and then it's the old clean and relube routine again.

- Wax: I actually bought a can of wax to try (with all sorts of nitro chemicals added to it to justify the $7 cost), before I realized what I was about to do. I was going to remove the chain, clean it thoroughly, hang it up to dry, heat the wax, dip the chain in it, etcetera, etcetera. So I took the can of wax back to the store, squirmed some more White Lightning on the chain, and went riding instead.
Custom Gearing Alternatives

by Zach Kaplan and Conrad Oho

Photos by Conrad Oho

Recumbents generally need lower low gears and higher high gears than even wide range mountain bike gearing can provide. Unfortunately not many recumbent bicycle manufacturers provide appropriate wide range gearing. This is due in part to a lack of readily available economical off the shelf components.

To increase gear range some recumbent designers incorporate intermediate drive systems. These are two chain systems with an additional cogset or chainrings located in the middle of the bike. While these systems can provide for very wide gear ranges the disadvantages include significantly increased weight, higher friction losses, greater complexity, and the need to specially design the frame to accommodate the intermediate drive with adequate reinforcement for the stresses involved. The additional bearings also need to be properly sealed and sized for the loads involved which adds to the cost penalty of intermediate drive systems.

The Sachs 3x7 3 speed internally geared hub with 7 speed cassette body was originally introduced as a multiple front chainring/front derailleur replacement for city bikes. It has since been adopted by some recumbent riders to increase gear range in conjunction with existing multiple front chainrings. While the 3x7 hub is fairly simple to retrofit requiring no structural changes to the frame it suffers from a number of drawbacks. According to Sachs while it has the 96% efficiency of a derailleur system when in the middle direct drive ratio, the efficiency drops to 93% in the upper and lower ranges. It is also heavy adding approximately 600 grams to the drive system. The internal gears shift poorly if at all under load and it is not possible to change the internal ratios as it is with cogs and chainrings. When in the direct and overdrive ranges the 3x7 hub makes a continuous clicking noise. Finally it is not possible to use a quick release skewer as the 3x7 hub uses a solid axle, requiring a spanner for wheel removal. These problems led us to design a lightweight, smooth shifting, high efficiency ultra wide ratio gearing system.

We design and manufacture the following wide range gearing components:

1. Triple pulley extended cage Shimano rear derailleur. I have been using one of these on my R-84 which requires 60 teeth of chain wrap. We are now on our second generation design which has proven to be extremely trouble free during one year of hard use. The largest capacity stock Shimano derailleur is rated at 38 teeth capacity chain wrap. The triple pulley rear derailleur range in weight from 359 to 392 grams depending on configuration. Price ranges from $80 to $150.

2. Extended cage front derailleur with 42 tooth capacity. The largest capacity Shimano derailleur is rated 26 tooth capacity. Having smooth shifting with a 20 tooth inner chain ring and 60 plus tooth outer ring becomes a reality with the extended cage front derailleur. Our extended cage front derailleur weigh approximately 150 grams and cost approximately $100.

3. The widest range stock Shimano 7 or 8 speed cassettes are 11-30. We offer a custom modified 8 speed Shimano Interactive Glide cassette with a range of 11-32. Interactive glide is an improvement over Hyperglide in that it smooths the shifts going to the smaller cogs as well as going to the larger cogs. The 32 tooth cog is available in steel or titanium with Hyperglide shifting qualities. The 11-32 IG steel cogset weighs 349 grams and costs $65. The 11-32 IG with titanium large cogs weighs 284 grams and costs $100. We also offer Hyperglide shift quality cogs with more titanium cogs at higher cost. For the truly budget conscious we have a $25 for a front hub conversion and $35 for a rear hub. For front hubs less expensive clip over hole option is available for $15.

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Jan/Feb 1997
A Tour Of North Dakota

by William J. Cook, bcook@drake.net
Photo by David Butow

For seven days last August, I rode the CANDISC Cycling Around North Dakota In Sakakawea Country. A total of 247 riders from 24 states and two Canadian provinces covered 454 miles by my speedo. (Sakakawea was the Blackfoot Indian woman who was the guide for Lewis & Clark. The huge reservoir behind Garrison Dam on the Missouri River in North Dakota is named Lake Sakakawea.) The riders ranged in age from 10 to 77, with the average 41 years. Forty per cent of the riders were female. The group seemed exceptionally able, with no amateurs in over their heads on crummy bikes. Lots of big calves, but it was a tour, not a competitive ride.

Bottom line: My bottom felt great at the end. No aches, no pains, no knee hurts, no neck hurts — a big contrast to several upright riders who were complaining by the last couple days about sore knees and other body parts.

The trip was, in all respects, simply superb. I rode with three experienced recumbent bikers who'd been on many multi-day rides, and they said several others said this one was their best ride ever. It was also not usual North Dakota weather. Last year CANDISC riders faced head winds nearly every day. One day, I had to slow, the head winds were 30 knots gusting to 50. Many sagged home. This year, we all worried about the wind.

For the first five days, however, we had lovely tail winds. The other two days the winds were calm. Temperatures ranged from 50 degrees at night to high 70s during the day, with low humidity and visibility extending 50 miles or more. Absolutely perfect. The scenery was starkly spectacular wheat

fields, pastures, buttes. The night before we left Ft. Stevenson State Park to begin the trip, we were hit by a sensational thunderstorm that flooded my tent. But the next morning, it was clear and weather was never again a problem.

Why North Dakota? I live in northern Virginia? Well, I'm from there originally, and I have relatives there. I wanted to go on my first multi-day ride. I got a ticket to RAGBRAI but was deterred by the logistics. I'd recently become reacquainted with a Minnesota cousin I'd last seen in 1958, he is a major bike person, and when I mentioned the ND trip, he said his friend was trying to get him to go. His friend, Quentin Robley, rides an Osell recumbent, and his cousin, Dick Bowden, has a Rans Status which he calls Rockimate, after Don Quixote's scrappy horse. So that meant we'd have at least three recumbents. Mine is a homebuilt, the Barcroft Dakota, finished in July. It's a longish crouched monotype SWB with high bottom bracket, Rans seat angled steeply back, Rans handlebars, AMP suspension fork, Shimano V-brakes, wheel disc in the rear and an Aerospoke 20" front wheel. It is a discreet candy purple color.

There were two other bikes on the ride. Elmer Weere of Fargo was on an Osell and Ken Covey of Moorhead rode a P-38. Dr. Covey, 77, the oldest rider on the trip, had a ham radio on the back of his bike that he monitored as he rode along. Covey caused a small stir on the next to the last day. When we camped at a high school in Bismarck, Covey didn't show, and the organizers sent out cars looking for him. Finally, Covey drove up in his pickup to get his luggage. He'd ridden all the way to the end 145 miles that day because he had to return home a day early. The tail winds were so high, he said, that he cruised at 25 mph.

The Osell is made by Terry Osell of Minne-
apolis, who runs a bike shop that I visited on my trip. He told me he makes about 15 LWB bikes a year and he's booked solid. His beautifully made bikes are laid out a bit like a Tour Easy, and they use Tour Easy handlebars and Rans seats. The drive line, however, is tandem style. The pedals are linked by a tandem chain to a second bottom bracket under the seat.

My bike, I must say, was the most comfortable I've ever ridden. With the seat tipped back, about half my weight was on the seat back, about half on the seat bottom. The suspension fork makes the bike ride like velvet. I'm a terrible hill climber (I went up some hills at 4 mph and was passed by lots of other riders). But with the rear wheel disk, Aerospokes front wheel, and reduced frontal area (because my feet were directly in front of my body), the bike was a downhill rocket. I could easily out-coast Quentin's Osell that was equipped with a Tour Easy Zipper fairing. Because I'm a coward, however, I never exceeded 40 mph downhill. I'd put on the brakes. I'm sure I could have gone much faster.

With five tents on the trip, we attracted quite a bit of attention. The Bismarck Tribune ran a very thoughtful story about us with a nice picture. We all managed to hold our stomachs in for the photo, so we looked half-way trim. I'm still upset about one line in the story, however. It was the first time I'd seen "60-year-old Bill Cook" in print. That was offset, however, outside a little cafe north of Bismarck where several of us were standing. A farmer wearing bib overalls stared at us in incredulity at all the grey hair. "Jeepers," he said, "you don't need to be a young feller to ride in this."

There were very few people in ND, so that means very few cars. Since we could hear cars coming for a mile or more (up to 20 minutes before they passed) we sometimes rode 2-4 abreast and chatted. One rider said the highways could be treated like very wide bike paths.

Our route was from the state park near Garrison down the west side of the Missouri River on state route 1804 (the year Lewis & Clark went up the Missouri through the area) to Mobridge, SD, then up the east side (on Route 1806, for the year the expedition came through again headed south) through Bismarck and back to Garrison. The highways over the often-steep rolling hills were billboard-table smooth. There were rest stops every 10 to 15 miles operated by local volunteers, there was an excellent bike mechanic along, a motor home from St. Alexius Medical Center with full emergency medical gear aboard patrolled the route, and another motor home pulling a trailer acted as a sag wagon. Our luggage was hauled by truck from campsite to campsite.

The portable toilets at the rest stops were on a trailer pulled by a volunteer who always wore a top hat. The johns had cut flowers inside and a boom box outside playing music to mask the activity. In case you didn't recognize the potlites, they were always marked by lifesize cutouts of The Three Stooges. Our only complaint was that the driver pulling the johns drove so fast between stops. Continued on page 29.
Recumbents in China

Story by Stephen Rieder
Photos courtesy of Stephen Rieder

About a week before we returned to Wuhan, People's Republic of China, where my wife and I have been teaching for the past two years, I walked into Fritz's Bicycle Shop in Worcester, MA and there it was, the recumbent bicycle of my dreams. The dreams all started when I saw an ad in the back of Bicycling Magazine about recumbents. I sent in my check and soon watched the video about the P-38 Lightnings. I played it over and over and soon I could think of little else. I've always enjoyed biking but after thirty minutes the wrist and butt pain took much of the joy away. So I could hardly wait to see if I could ride this beautiful, almost new P-38 sitting there at the front of Mr. Fritz's showroom. It was a bit shaky at first, but soon I was rolling along the back streets of Worcester on the most comfortable bike I had ever ridden. To say the least I was ecstatic. But I did not get my hopes up, it would probably cost close to $2 grand. Mr. Fritz explained that it was owned by a racer who had had an accident and could not ride his racing bike. To keep in shape while he was mending, he bought two recumbents. He was back to racing now, and wanted to sell both of them. The bike had been on the floor over a month and had been reduced in price. When he told me the cost, my heart leaped, it was only about half what they cost new. After talking it over with Irene, my lovely and agreeable wife, soon I was riding it back to our son's apartment several miles away.

For the next three days, I could hardly leave it alone. I transferred the rack from my Nihiski road bike and it fit just right. It seemed to glide along effortlessly and I experienced no pain or discomfort. On the fourth day, I decided to really try it out. I started early in the morning and headed east towards Quincy, MA, over fifty miles away. It was a foolish thing to do perhaps, but at least I did two things right. I had a gallon of Gatorade on the rack, and I didn't push hard; just cruised along. About 6 hours later I pulled up in front of my sister's house on Main Avenue, tired, but with no pain or discomfort and I had just pedaled 55 miles, the longest bicycle ride of my life. It was not easy to leave it with our son, Ron, but I really couldn't see trying to pack it up and take it half way around the planet to China, besides I was afraid that something bad would happen to it.

After we returned to our teaching there at the Zhongnan University of Finance and Economics, I greatly missed the joy and comfort of riding the perfect bicycle. My son sent me Bicycling Magazine, and one day I noticed an ad for RCN. I sent a check to Ron and asked him to subscribe to it. When he sent me several back issues and the 1994 Buyer's Guide, a new day dawned in my life. Now I was really hooked. I read and studied each article over and over.

While reading Homebuilders Corner the idea came to me. Why not make a 'bert here in China. So I began collecting bicycles for parts. First a student gave me his old work bike that he no longer wanted. It was a big black 28" wheel work horse. Later I bought a cute little pink mountain bike that I also planned to use. The problem was finding a welder who could weld bike tubing. The thought occurred to me to find a bicycle factory and see if they could help me. I was disappointed to find out that in this great city of six million people, the only bicycle factory had gone out of business. My friend Dai Ping came to the rescue. He borrowed his brother's car and took me to Huanghai, an hour and a half away to the Gold Dragon Bicycle Co. Some of the top people were quite interested in the photos of my new and strange kind of bicycle. I was happy to see they had MIG welders and all sizes of frame tubing, unfortunately, they had no CroMo steel tubing, so I decided to continue to look.

For three months I looked, but nothing turned up. Finally, I called Mr. Xia, the head of the bicycle factory, and explained my desire to make a recumbent bicycle and asked him if he was interested in the idea. He welcomed me to return to his factory, and so the next day I flagged down a bus and rode down to Huanghai. Mr. Xia had assigned Mr. Gau to take care of me, and we met in the factory restaurant. Using my limited Chinese along with his basic English we got along real well. Later he introduced me to Mr. Yu and Mr. Chen, their engineers, who actually construct new bicycles. I wanted to work with them, but they did not allow me, so I drew the plans for a SWB, USS model based on several I had admired in RCN.

Mr. Gau called after the first week to say they had a problem. I went to Huanghai again and discovered they had decided to use a 26" wheel instead of a 24" that the plans called for causing the pedals to rub the front wheel. I pointed out the problem, suggested alternatives and soon they were working on prototype #2.

Several weeks later I returned to take a look at #2. The underseat steering was difficult for them to understand and the sent extended so low, the handle bars could not be turned. We took a hacksaw to the seat and after some adjustment, I actually was able to ride #2. The seat was not supported and the boom was so long I could hardly reach the pedals. I made suggestions about this and other things that needed improvement.

After two more weeks I went to see #3. What a surprise! They had changed to above seat steering. It steered okay so I decided not to resist it and instead tried to persuade them to shorten the boom and move the seat back so more weight would be on the back wheel. Also, please could I have handbrakes. They said they would try but #4 would be it, and they asked me what color I wanted. I asked for purple with fireworks on it. Fireworks are splashes of several metallic colors which you don't notice until you look closely, quite attractive. I took the workers out to lunch that noon and we celebrated the progress that had been made on the bike. It was fun to see how much they enjoyed riding it around the factory alley.

Several weeks later Mr. Gau called and told me it was ready. He said to bring 450 RMB for the materials and 200 RMB for the engineer. This comes to US$77. When I saw #4, I was pleased. The paint job was the best part. There were still some problem areas, I couldn't get it to shift much, and the brakes weren't right. But I could ride it with no problem to the bus station to get it home. At the bus station I almost made the mistake of leaving it parked on the street when I went to buy the $1.18 (US) bus ticket for the 70 mile ride back to Wuhan. The bike was quickly surrounded by curious bystanders, and one grabbed it and asked if he could take it for a ride. I politely explained my lack of time and carried it up the steps and over to the ticket window. How do you take your bike with you when you travel by bus? No problem in China, you buy an extra ticket, and the driver will hand it up to you after you climb up the

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Jan/Feb 1997

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Me and My SuperBike

Story by Jeff Potter
Photos courtesy of Out Your Back Door

I once wrote a story about how recumbents opened my eyes from being a bike snob. How suddenly I saw the world full of bikes of all brilliant stripes—instead of just a black and white world where only uprights were worthy. Suddenly my eyes opened to Bents...and old fashioned bikes, trikes, folders, you name it. That was then, this is now.

Now I go into bike shops and they seem barely half full despite how jam-packed they are. Where are the rest of the bikes, I wonder? I came here to look at bikes and there’s only two kinds! What kind of bike shop is this? When I visit a shop I want to see what kind of cool design the bike makers have been getting themselves up to. In the upright scene, we have fractional subtlety multiplied endlessly. If the shops opened their doors to Bents, our eyes would pop! The bike shop would once again be a place to go to see What’s New?!!! Because Bent makers come out with the niftiest, wildest inventions.

OK, you say I’ve been talking big. What have I been doing? Ahh, I will not disappoint. Last fall my pal Tim and I visited the best bent shop in the midwest, Shel’s Recumbent Sea in Moline, Michigan, a rural suburb of Grand Rapids. We test rode a dozen different Bents and trikes all day. We were like kids. They all were so different from each other. We noticed strong points left and right. We changed our entire orientation to bikes. “Man, this puppy is slow, but guess what? I don’t care! It’s great!” we both said about our first undersat- steering experience. We felt guilty, too. What were we doing for slow bikes? Having a great time. That’s what! What a view! What comfort! City kids were all yelling at us—“Cool bike!” We’d been bike racing for years. Tim and I, and had never had a kid say anything to us. We were spazzin’.

So I bought a Vision ATP R40, underseat maroon SWB (short wheelbase) recumbent. It was rock steady and stiff under max-torque; it performed like the best (some costing 3 times as much), it was way cozy, it was beautiful, light, simple, elegant...and a blast. I had no other option when you get down to it. The bike found me.

Over the next months I rode all over town. I didn’t touch the other bikes. I avoided the car. “Want some groceries, hon?” Sure I hadn’t adapted to the slack power angle yet, so I wasn’t that fast, but boy was I happy!

The kids are great. They used to ignore me on my uprights, but now everywhere they come up, wave, yell hip slogans like “Fat!” and other inscrutabilities. Actually, people of all ages and types seem to be friendly to the new bike and me along with it. And guess what else? No homicidal auto assault! None! Cars give me lots of room and hilliabilities wave their beers at me! Happy day!

My brother says that I like being on parade just like my Grama. I take that as a compliment. Another swell benefit is that the ladies obviously know a good thing when they see one. They know that regular bikes are closely aligned with suffering. When I first pulled cautiously into our dirt driveway with the New Bike on the roof, I thought I’d get a funny look from my mom and Martha who were both in the yard. Instead, they beamed. And Martha didn’t even wait for me to tell her how it worked. Off she rode. Well! (And the ‘other’ ladies? Well, they just keep yelling from their cars and waving and such. I don’t mind!)

Sadly, Martha on her upright and I on my Vision went on a breezy ride together. I suffered for her, watching her push her way through that headwind. I just coasted most of the time.

Here’s a funny thing: my racey pals took it less well. Some didn’t even want to try to ride it. When they did, it looked like they were purposefully trying to throw themselves off in order to say that it was squirrely. Others said it handled funny after they’d had the first blissful, pain free riding experience of their lives. People don’t like it when their pain is threatened. The kids, the ladies and inexperienced, though, hopped on and off they went, smiling.

I can’t leave well enough alone. As soon as it got cold, I built a full fairing for my new bike. With a full canopy. For $75 I bought a couple sheets of yellow coroplast board, some clear plastic paneling, 6 rolls of duct tape, velcro, 2 hose-clamps, and a couple dozen zip-ties, plus some electrical conduit and a BMX post-clamp and a couple old stems and handlebar for my homebrew ASS conversion. The 2x4 for my nose-cone tee-support, I got from the garage. After a couple evenings of cut-n-paste, I ended up with a beautiful, lightweight (10 pounds) full fairing with doors and a trunk.

The new SuperBike easily cruises at 25 mph, and 30 mph if even a slight grade or wind is in our favor. On winter days at 20 degrees all I need to wear is a t-shirt and pants (I keep a coat in the trunk for when I get out at the store.) It’s a quiet ride. I don’t notice headwinds anymore. But I notice hills more if my speed ever drops. Smooth rollers I can power over with great aero-advantage.

The cars go truly ape now. They usually stay a nice distance away from the SuperBike when—and if—they pass. In heavy traffic, I can often go past them now! Still lots of waves and friendliness. No nasty words at all yet.

I live a few miles out of town and it’s easy to be totally car-dependent. But most of it is such traffic hell, despite the overall scenic niceness, that I’m going bonkers from car-driving. I’m really trying to perfect my SuperVision so that it’s comparable to car-speed around here so I’ll really use it as often as possible. It’s close already. I think I can do a bit more easy tweaking to get it right where I want it and then we’ll be on easy street.

Of course, I realize that I’m in trouble. It’s a good thing that feeling with this bike is so cheap and so much fun! The Vision truly is a versatile bike—I really appreciate how it has been so easy to adapt it to my growing experience and demands.

For starters, I really wanted to improve the power configuration. I hated the uphill winching experience. Even with the full fairing, uphill killed my speed if I wasn’t careful. I love uphills on my upright bike. I’m like a rabbit over them. So I converted the bike to a 20” rear wheel. I added a home-
made bolt-on brake bridge for a sidestop. Then reversed the fork, which, along with taking the seat fabric off the "horn," gave me a 20" seat height with 27.5" bottom bracket (BB) height and a power position that makes me smile. I can now blast the hills! And with the full fairing I hardly have to gear down. I just keep the Big Mo rolling.

I really like my new custom position and appreciate how easy it was to modify the Vision to get there. I notice that US sportbents all seem too upright to me. When I ride a P-38 too much weight is on my butt. The ultra-laid-back M3 seems too extreme still. All I do is smile when I have an angle that lets me push against the seat yet keep weight off my butt. Any steeper and I seem to lose power, any steeper and I lose comfort and if the BB is any higher I feel I have to lift my legs too much.

My new position is just right for me...which seems to be a great argument for makers building versatility into their designs.

With the first taller rig and 26" rear wheel, an uprighter could sometimes keep up with me coasting, sadly enough. But with the new 20x20 rig, which is overall lower and shorter, I just walk away from all uprights. And the hills roll away! It's also better in sidewinds. It's such an easy conversion for the Vision.

The new reversed fork rides as steady as a rock. In slow speed turns I hold the bars firmly and turn. I use a toe-strap-on lever parking brake to avoid embarrassing flop-and-roll while parked. I have zero heel interference.

The whole fairing is easy on/off, too. The rear is held on by a few snap buttons. The front has two hose-clamps to the main frame.

I've also installed the fastest high-pressure street-legal tires I can find. The ride is still fine and smooth. Our roads are OK around here anyway. I think American bent makers and sellers often pitch to a very casual maybe older crowd. Even the sportiest bent I've tried is five times more comfy than any upright bike. Upgrading tires helps speed and hurts nothing as far as I can tell.

A couple HPV insiders say I'm trying to make a casual commuting bent do what it wasn't made to do. Well, I saw them and their like at the Great Lakes HPV Races in June. My Superbike and I held up fine. We averaged 24.5 mph over the wonderfully hilly and twisty 14 mile race for 3rd place. And I got her up to 34.5 mph in the sprint. I did both events with a 100 inch top gear which was the only gear I used all day except for the steep uphill. What was neat to me is that it looked like my rig was the only streamliner that was easy in-and-out and had a full size trunk!

I only have a couple hundred riding miles in my legs this year, so I figure all I'd be able to average on the naked Vision is 16 mph. The Superbike configuration is adding 10 mph and looks to add more. So much for the naysayers!

The HPV Races were a gas. My pal Tim and I were allowed to test ride all sorts of interesting custom vehicles. What a nice, small world scene this is. I especially like it that John Simon always seems to win with his 15-year-old low-tech streamliner, while the big city club gang plays catch up with their carbon, titanium and FWD! But everyone was a great sport. This is what bicycle road racing used to be like...and what MTB racing used to be like. Let's keep it that way!

Then I went and did the local upright club 10 mile time trial (TT) and beat the upright racers and averaged 26 mph. Everyone was friendly and mildly curious...and then quite surprised that I whipped em.

I'm preparing my persuasions for them. If they say I have an unfair advantage I'll just point first to the racer dude with aerobars, carbon frame and Trispokes' then I'll point to the gal with the heavy 1970's race bike who's also out there TTing. For $2000 he bought 2 minutes compared to her bike, for $1000 I bought 4 minutes. But the bargain didn't stop there! I also bought a world of comfort. Plus I bought a ton of fun as I mess around with my cheap comproast concepts. A board here, a zip-tie there. I might add another mph! He has to spend $500 to do the same. He gets to be part of the UCI, for what's that's worth. I get a super-quick trip to the grocery store and an extra cozy century ride! The only thing I can't do is get a bunny hop or get out of the saddle...—The funny thing was that the questions the uprighters asked were much more basic: they couldn't even believe the Superbike would work! They'd never seen such a thing. I overheard them talking about how I smiled and waved as I went past them and how the bike looked steady, I think they have reason to.

I've since installed a beautiful new 66-tooth Paragon chainring ($85 from the most helpful Zach Kaplan) that gives a lovely 132" high gear. The TNT 10-speed rear cog which I added earlier seems to be holding up well and installed easily.

What have I got myself into? Martha is a bit worried. But she needn't...I only have a few more mods in mind. I notice that the fairing is about 4" too rooney above my riding position, as well as 4" too rooney below it. I've also been told that a floor helps a lot. So just a few more mods and we'll be dinked in. I won't lose my head. Just one HPV meet a year. The rest of the time I'll haul groceries and do errands and jaunts. I can hardly wait to go on my first big upright group ride with the Superbike. Maybe I'll ease them into it first by showing up with the bike SuperNaked!—Terminology...what are we to do? So if anyone wants to sporterize their Vision, it's easy to do and you can't go wrong!

SUPERBIKE UPDATE

Well, everybody keeps telling me that I'm trying to make silk out of a sow's ear, but I'm still having fun adding speed to my Vision R-40. Zach has written about the wonders of Ground Effect. He says that a low-racer is more stable in crosswinds and is also down low enough that whatever wind there is is moving more slowly. Thus headwinds are slower, letting you ride faster. Sounds good to me! But does anyone know what might be an effectiveness cutoff? Zach likes a low-racer to be 8" off the ground.

By lowering my seat I would #1 void my warranty, #2 get down to 16" seat height (from 20") and also end up with more recline, thus lowering my head even more. Worth it?

I don't really like the laying down on the ground feeling of a true low racer. I use my bike mainly for 5-20 mile commuting/errands with occasional 30-60 mile rides thrown in. My current rig can average 26 mph easy. The 20" seat height is a bit unstable at stops for me, lowering it to 16" would make for nice flatfoot stops.

If I lower the bike, I'd also be able to fair the fork ends and maybe the rear derailleur with my existing fairing. Should my priority instead be to minimize size of fairing and fair only my body and forget fairing the bike?—If I leave the bike seat 20" tall, I could eliminate 4" of fairing from the bottom. Any chance I should blast off trying to lower my head? I could get the fairing to just clear my knees and lower it 4" thereby and extend it well into my lap...and forget about the face shield. Maybe that would be faster. A guy at the Michigan HPV meet out coaxed me a good deal with a screenless rig. He's an experienced builder ("Doc") and he said that sometimes it makes more sense to make the top of the fairing flat and forget about the head.

I really only wanted a windscreen for speed and riding in rain, but now I've been told that #1 they might not be faster, and #2 gentle sloping screens are blinding in a rain. So how's what? Maybe I could add a little detachable steeply sloping screen...I've heard they work OK in rain and it would work in winter, too. Ha! So much for just a couple questions! Any advice appreciated! ?

1 Printed in Out Your Backdoor #9 (OYB).  
2 Trispokes used generally for composite wheels. For recumbents, these include those made by Spin and Arose. HPD also manufactures 17", 20", 24" and other sized maximally spoked aero-namic wheels.

Jeff Potter is the publisher of Out Your Backdoor—a friendly network of informal culture, affordable adventure. Enough hard-to-find bike culture gems to quench the truly jaded...along with an inside line on the rest of the world. Bikes, boats, kids, sleeper movies, old books, made-from-scratch restaurants, hoboos and homebrews...all from cheapest, besetst Long Rides perspective. Since 1991. 4 issues. $9. OYB, 4686 Meridian Rd., Williamston, MI 48895; http://www.brainlink.com/~gp/pob/.

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Be sure to send us your new address (along with your mailing label or old address) to RCN.  
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Jan/Feb 1997 25
THE NEW 1997 RANS TAILWIND
Hays, KS—The 1997 RANS Tailwind is a much improved ride over the ’96 version. For starters, we’ve chopped a couple of vertebrae out of the spine and laid the head-tube angle back a few degrees. The wheelbase is the same, but the handling is oh so sweet! The Tailwind comes with an extremely adjustable “T” style handlebarstem combo. The new RANS T-bar features 4” of height and 4.5” of reach adjustment! The union of the laid back head angle with the T-bar all but eliminate the tiller effect evident on past Tailwinds (and most other LWB ASS models). No B.S., this bike is one chino ride! It comes standard with 1.5”, 65 psi tubeless tires or, for a slight upcharge, you can get Schwinn City Marathon or Continental Grand Prix sneakers. Tailwinds are available in Gloss Black, Hot Rod, or for a slight additional fee, any custom hue you desire (within the bounds of decency, of course). Contact your local dealer or the factory for more information. RANS, 4600 Highway 183 Alt., Hays, KS 67601, 913/625-6346.

BIKE E RECEIVES NEW FUNDING
Corvallis, OR—Bike E Corporation, designer of unique semi-recumbent bicycles, today announced it has received $550,000 in funding from private investors. Bike E has experienced rapid growth over the past year, and this investment will help fuel continued expansion.

“With the tremendous demand for a bicycle that is comfortable and easy to ride, Bike E’s only recent constraint has been working capital,” said John Moreland, president and CEO of Bike E Corporation. “These funds will allow us to invest in areas that benefit dealers, as well as maintain and build on the company’s overall growth pattern.”

Bike E Corporation designs and produces bicycles that are both fun and comfortable to ride. The Bike E places the rider in an upright position on a padded, contoured seat with back support. The unique, comfortable design has earned Bike E recent accolades from consumer publications such as Recumbent Cyclist News, Outside Magazine, Prime Health & Fitness, and Bicycling.

Bike E is based in Corvallis, Oregon, where it manufactures both 21- and 3-speed bicycles and a complete line of accessories.

EASY RACERS EZ1 PRICE REDUCTION
Watsonville, CA—Easy Racers is proud to announce that the Easy Racer EZ-1 will have a lower $869 Manufacturers Suggested Retail Price for the 1997 season. The standard EZ-1 will come with the “Speedwheel” 21 speed option and Primo high pressure tires. Also new on the EZ-1 for next year are front and rear cantilever brakes and an optional larger, wider base seat with more generous padding for more rear end comfort.

For more information, contact Easy Racers, Inc. Ph: #408/722-9797.

ANGLETECH INTRODUCES NEW MODELS
Woodland Park, CO—For those interested in the Streetglider, and would like full spec and option information available on this Euro recumbent in Angletech GL format, please leave name, address, and telephone here for information packet. There are still 2 available on an in-house order that would be a fairly “quick turnaround” situation.

Trike fans, Richard Rau of Pedalcraft and Kelvin Clark of Angletech have reached an agreement to offer the high quality Arm/Leg powered Quadraped recumbent trike, and the leg powered Tri-Speeder trike to the planet Earth through AngleTech. We hope to have a continuous supply available starting around year end.

We have a fresh order of AngleTech trunks with specific versions to fit: Rans low or high back seats, Haluzak, Lightning P-38, Counterpoint Presto and ATP Vision. The price is $699.99 for most bikes. For more information contact: ANGLETECH, 318 N Highway 67, PO Box 1893, Woodland Park, CO 80863, Ph/ Fax: 719/687-7475.

MT. AIRY ANNOUNCES EXPANSION
Mt. airy, MD—Mt. Airy Bicycles announces the opening of its expanded store in Maryland. It was only just over a year ago that RCM announced a “doubling” of their original 900 sq. ft. shop, one of the world’s top tandem, recumbent, and specialty bike shops.

Due to increasing popular demand, Larry Black signed on to take another unit of the center giving the “new shop” nearly 3000 sq. ft. The shop retains its “small, country store flavor” and customers appreciate the extra space and the ability to find things easier.

In addition to the expanded shop, Larry and Linda Black announced that their original store, College Park Bicycles, adjacent to the maga- School University of Maryland, is adding more and more recumbents to their fleet.

Opened in 1979, the shop is convenient to the Nation’s Capital and is only three short blocks from the Metro station and the College Park Airport and Museum, the oldest continually running airport in the US.

“Recumbent Cyclist News #37
Fast Freddy Markham on the "Black Gold"

The new RANS seat bag—RANS

RANS ROCKET SATURN V (SS)

Take the round tube Rocket. Let Eugene (RANS Company’s master TIG welder) lay down his patented bead. Send the beautiful raw frame to James (RANS man of many colors) to do the customer’s choice of any two colors, within good reason or good taste. In the SATURN V split, right down the riser through the head tube and down the fork.

Propulsion for the SS, of course, is human power. To tie this source of raw power to the SS we select a mix of fine components. Start with a Shimano BB-UN52 bottom bracket, Shimano XT crank arms 170mm or 175mm, 42/52/62 chaining selection, connected to an 11-28 eight speed cassette via a Super Shuttle 915 chain. To control the drivetrain we use a GripShift ESP 9.0 rear derailleur and a Shimano Deore XT front derailleur with GripShift ESP-900 shifter. This turns a set of Shimano XT hubs connected by D.T. Stainless steel straight gauge 2.0mm spokes to Velocity Aero Heat 406 rim with the hot new Continental Grand Prix tires. Controlling the descent of the SS is a Magura Hydraulic HS11 brake.

Add in the RANS Flip-It handle bars and the famous RANS mesh back seat, you have one hot ride that will launch you into orbit. Suggested Retail price of the ROCKET SATURN V is $1800. Contact your local dealer or the factory for more information. RANS, 4600 Highway 183 Alt., Hays, KS 7601. 914/625-6346.

EASY RACERS BLACK GOLD

Watsonville, CA—Easy Racers has announced an upgraded-spec Limited Edition Easy Racer “Black Gold” Gold Rush Replica model for the 1997 line. “Black Gold” will come standard with the following:

- Limited Edition Mirror Black, extra glossy powdercoat finish over the 6061 aluminum frame.
- Boone Technologies CNC “Twisted” crankset and titanium bottom-bracket.
- Boone custom for Easy Racers rammed chairings for superior shifting.

- Shimano XTR rear derailleur, 8-speed 11-28 cassette and GrippShift X-Ray indexed shifters.
- The manufacturers suggested retail price for “Black Gold” is $2995. The fairing and Body Sock are optional equipment. The fairing is an opaque Black carbon-fiber custom fairing that weighs 1 pound less than the former Body Sock/fairing combo. The improved Body Sock will be available in three colors, Red, Yellow and Blue. The optional carbon-fiber fairing and body stock retail for $895. For more information, contact Easy Racers, Inc. P.O. 408/722-9797.

SKI CONVERSIONS, MIRRORS AND BAGS

Woodland Park, CO—For those looking for a US source for Ortlieb Waterproof Gear. AngleTech now offers these bags and panniers.

We have the new Sportster rearview mirrors mentioned in RCN#36. These mirrors have quality mounting hardware, a great shape and will work on a variety of handlebars including USS. We also have a high-quality ski conversion for winching your recumbent. Included are aluminum ski’s with first class mounting system, and foot pegs to replace your bottom bracket. This would be ideal for LWB and CLWB recumbents.

ANGLETECH, Ph/fax# 719/687-7475. Email: Anglezoom@aol.com

SPINNIES FOR YOUR BENT

Orange, CA—Spinney is in stock! For those who don’t know, a Spinnie is a nylon gizmo that looks like a beach ball that is cut in half and attaches to your bike. Spinnies are great for high winds, they’re round, and they move from side to side. $7.99 plus $3 shipping. People Movers Ph# 714-633-3663.

DIMENSION EDGE

RECURBENT ENGINES

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Dimension EDGE makes power engine kits for uprights, folders and recumbents. Call 1-406-245-5380 www.wtp.net/edgekit

GOING OUT OF BUSINESS SALE

After five years we are calling it quits. Recumbent components, tools and more. Send SASE for a complete inventory list. Call for specifics. Lots of great stuff still available plus we have added more new items to the list. 1 Meridian and 1 Meridian frameset, Custom Maxam Reveille, Gas booster engine kit, Control Tech cantis’, Kenda 20” HP, 20” suspension fork, and much more at closeout prices. Upload our updated list on the WEB at: http://www.bikeroute.com/BicycleRepublic.htm or send SASE to: Introspect Cycle/Bicycle Republic, P.O. Box 418364, Sacramento, CA 95841. Call: 916/331-9317

Jan/Feb 1997
The Velocar is a once-famous four wheel pedal car that later evolved to a two wheeled record setting recumbent racer. This particular design has filled the dreams and sketch books of recumbent/HPV designers/enthusiasts the world over for the past fifty years. Here is the abbreviated story with quotes from Arnfried Schmitz, Cycling Science article, “Why Your Bicycle Hasn’t Changed in 106 Years.” The Velocar lives on! It inspires many recumbents, both commercial and racers. Two commercially available recumbents that are seemingly inspired by the record setting Velocar are the Rans Tailwind and the Rotator Pursuit, which seems to be a Velocar for the 90s.

"The Velocar was a sleek recumbent bicycle, and when raced by several professionals of the day, it proved to be much faster than a standard bicycle. The reason was pure and simple—aerodynamics."

The pedal powered Velocar was developed in the early 1920’s as a four seat pedal car. Charles Mochet was the designer. According to the Schmitz article, "Mochet had constructed a one seat, four wheeled pedal car for his son Georges. He was able to amuse himself by pedaling fast and passing ordinary bicycles with ease. This started a demand for the vehicle." The idea for better performance was based on the fact that the four wheeler did not turn as fast as a regular bicycle. "The idea occurred to Mochet to cut the Velocar in half (figuratively) and to build a two-wheeled sport model recumbent bicycle."

As the story goes, "By 1932 tests on the new Velocar were complete. The professional champion Henri Lemonne tried it and found it to be comfortable and easy to ride. But it was Francis Faure, a second class category, professional track cyclist, who was fascinated with the Velocar’s possibilities and became Mochet’s most famous rider. At first, other cyclists laughed and said ‘come on Faure, you must be tiring laying down like that, why not sit up and pedal like a man.’ Their laughter stopped when they tried to keep up with him as he accelerated away from the start. With the Velocar, he began to defeat all of the first category riders in Europe."

In 1933, at the Paris Parc des Princess, Faure set a one hour record of 45.055 km. This is a record that surpassed the most famous record of the day, 44.247 km set previously by Oscar Egg. On April 1, 1934, United Cycliste International (UCI) officially rejected Faure’s record and passed rules banning recumbent bicycles from records competition. Charles Mochet was devastated and passed away later in 1934.

The story does not end here. On March 3, 1939, Francis Faure set the Velocar Streamliner one-hour record of 50.337 km. “This feat gained much press notice in Europe, but was hardly mentioned in the USA. I hope you note the date. On the heels of this event began World War II, and once again, cyclists became soldiers, the interest in recumbent bicycles and streamliners vanished once again.”

"Amazingly at this moment, four wheeled Velocars are still in use. In the Park Borely in Marseille, France, customers happily pedal them through the park. The owner of the rental business has more than 30 vehicles and says that the Velocars are the only ones that can endure the constant punishment by the customers."

The legend of the Velocar lives on.

RANS VELOCAR CONNECTION

Earlier this year, while at the Oshkosh Experimental Aircraft Fly-In, John and Randy Schlitter, and Mark Purdy of RANS, had the opportunity to meet Mr. Henri Chaix of Geneva Switzerland. Henri’s brother built a Velocar back in 1934 and gave Henri in 1937. Henri rode the Velocar many thousands of kilometers. Henri enclosed the photos on this page as well as the Peugeot graphic on page 31 and the original Velocar ad on page 36.”
Commuting With The Metro

by Tony Lieuwen

WEDNESDAY, NOVEMBER 13th

I received a phone call from Greg Bower of ATP, home of the Vison recumbents. He says, “Hi Tony, we need to put more miles on the Metro... We need more input on the bike, would you like to borrow it?” Hmmmm... the Metro is one of the HOTTEST recumbents for 1997 and Greg Bower is asking me if I would like to commute on it, everyday, for a week! This is a real tough decision to make. I gotta think about it... I could say that I’d consider the possibility. Oh, heck with it, I agreed. Of course deep inside, I’m this little kid going, “YAAAAAAH!!! A New Toy!!!”

I picked up the Metro from ATP in Seattle. At home, I can’t help but to admire the Metro’s simple approach to its function, beauty and elegance. While looking at every part of the design and the work that went into this bike leaves me speechless. Picking apart every weld and detail on the frame, gives me the security of knowing that this recumbent is not going to fall apart. The mono-tube is very clean looking, yet it has rugged suspension. It’s cute, light, and very strong. The R-30 is a machine of beauty and quality.

In preparation for my commute, I added a few accessories: a reaview mirror, a Vista Light on the back of the seat, and fenders to keep that sweet Seattle rain off of my back.

5 DAY REPORT

Real world performance is what it’s all about. The bike has proven very smooth with no worries in regards to slipping and sliding. The suspension is a very nice feature when riding over railroad tracks, potholes, puddles and road hazards. I went over them as if they weren’t there. There’s a bit of pedal induced pogo-ing present, however spinning smoothly takes it away.

When it comes to speed, the Metro is no bullet, but that’s why the R-45 exists. The bike is no slouch either, as a matter of fact, it’s a fairly quick bike. Stopping and starting is a breeze and requires no thought. Maneuverability is excellent and I can make U-turns as good as any SWB. A front Zeppin fairing would be a nice option, for it would help on the speed as well as in keeping the rider warm and dry.

The Nexus 7-speed drivetrain is surprisingly adequate for my hilly downtown Seattle commute. The internal gearing shifts smoothly under load, unlike the Sachs 3x7 that I currently use on my other ’bent (CAT, see RCN#35).

Overall, the Metro R30 is such a perfect commuter that I ordered one for myself immediately. If you think this bike is for you, don’t hesitate as there is already a back log of orders for this model.

The closest bike I could compare the Metro with, is the BikeE. They both handle quick, predictable and are extremely user friendly. I prefer the Metro over the BikeE because of the rear-suspension, high pressure tires, the superior ATP seat and the sleek looks of the round CroMo tube. I just don’t think square extended aluminum is very attractive. Furthermore, the Metro is definitely a lot of bike for the money...

Recumbents In China Continued from page 23

Recumbents In China Continued from page 23

ladder on the back of the bus and using a rubber inner tube, tie it to the rack on the top of the bus.

Half way to Wuhan, as we were zooming along the limited access toll road, suddenly I heard this loud banging noise and I could hardly resist jerking my head around to look back, expecting to see the bike crashing to the highway having come loose from the top. But the driver quickly slowed the bus and I soon realized it was engine trouble. We limped along the rest of the journey and I found the ‘bent still securely tied to the rails of the rack when we arrived home in Wuhan. Now the trick was to ride safely through the crowded streets of the city as it was already night. By riding slowly cautiously, I encountered no problems.

As soon as I had a free afternoon from teaching, I took it to the mechanic who services my Diamond Back mountain bike. He bent the brakes so they would align and work, and installed the Shimano SIS derailleurs I had bought for both the front and back. I also replaced the cranks as the pedal threads had stripped on the right hand side. The complete upgrade came to about $50 (US). I made two inch thick pads for both the back and bottom of the seat. They got the seat angle right and I find it quite nice. However, both the frame and seat are not quite so it does a bit of a “dog-trot” as it rolls along the streets, but for less than $200 (US), I have the most comfortable bike in China.

China is known as the Bicycle Kingdom and most families have one or more. I have found anyone who had ever seen a recumbent bicycle before so it continues to draw considerable interest whenever I ride it. The Chinese are very conservative and slow to change, so I doubt that it will catch on here. I brought it to an evening lecture and explained its advantages to the university students. Many were interested but most seemed to feel the old traditional bikes were better. One was afraid you would not be able to see the street in front of you. Another pointed out that you would find it more difficult to wear a rain poncho in a reclined position and asked if a lady would appear modest while riding one if she were wearing a dress. I had to concede that point but I only smiled when one young lady faulted it saying that if it was as comfortable as I described it to be she feared that people would fall asleep while riding it and have an accident. Well, I guess if a bicycle has to have a fault, that’s as good a fault to have as any.

Tour of ND Continued from page 22

that we never had a chance to fulfill our lifelong dream of drafting a shifter.

One goal of tour director Dick Messerly was to prove that ND is not flat. (The eastern part of the state is flat as a table.) Our route was hilly for the entire distance, and a few of the hills were long and extremely steep. In fact, I walked up one of them. Other riders said that with the hills the ride was quite difficult, but I have no other rides to compare it to.

We camped in little towns along the way. North Dakota people are wonderfully friendly and open and they went out of their way to show us a good time. There were showers at every stop and cars to shuttle us there. At Center, ND, as I waited for a shuttle, a local lady asked, "anyone drive a stick?" I held up my hand. "my car's over there, get four people and take it." A polka band entertained us at Center and the community band played at Linton. We learned to eat the local foods, such as knoephla soup, which has little dumplings floating in it. Ulmer Wroe, who like many in ND is of German extraction, explained the German food triangle to us: Any dish, he said, can be made from lard, cream, and dough.

At Ft. Abraham Lincoln, south of Mandan, we camped next to the rebuilt home of Gen. George Custer. He had left from Ft. Lincoln with his troops to go to his last professional military engagement at the Little Big Horn. The significance for me, however, was more personal. From our hilltop campground we could look east, across the Missouri River bottom land toward Bismarck, the capital, on the other side. Lewis & Clark had camped on those bottoms in 1804. A hundred years later, my grandfather homesteaded the same land. There in 1909 my mother was born in a log cabin in a February blizzard on what is now a big wheat field. I like to think that the 20th century can be summed up by noting that my mother was born in a one-room homestead cabin and now she has a Cadillac with electric windows. My Aunt Georgie, 85, who still lives on the family farm, came to see the bikes.

At Ft. Yates, on the Standing Rock Indian Reservation, we were treated to Indian drumming and dancing — and we all joined in a round dance. We visited the grave of Chief Sitting Bull: At the Prairie Knights Indian casino I lost $10 in four minutes and 30 seconds.

Next year, the ride will run through the northwest corner of the state and swing for a day into Canada. Given the number of very serious questions we received during the ride about recumbents, I suspect there will be more than five on that trip. To find out more about next year's trip, write CANDISC, PO Box 459, Garrison, ND 58546-0459, or call 800-799-4242.

O' sell has not responded to any of our info-requests, however, you can reach them at: Custom Bicycles St. Anthony Shopping Center, 2908 Pentagon Drive NE; St. Anthony, MN 55418. If anybody has a picture of an O'sell recumbent, we'd love to print one in the upcoming buyers guide.
but go straight, they climb just fine as long as you can track a fairly straight line. Riding a LWB at walking-speed takes practice. I use a technique where I pull my handlebar from side to side (Easy Racer) just enough to keep my balance (low speed climb) but not enough to change the direction of the bike. The same can be done on a Ryan with practice. Also, dealers can sometimes be biased by what they sell, and there are those who are not very well (bent) educated (Roans are currently not sold thru dealers). Heel interference occurs on MWA models and some SWB models with 20" front wheels. It can be a concern for new cyclists, though it’s apparent at over 5 mph, though you do need to remember that it exists—RJB.

**RECURBVENT CONVERTS**

I began dreaming of recumbents about ten years ago when I saw the CycloDyne in the League American Wheelman magazine. In the summer of 1982, I drove all the way to Boulder, Colorado to test ride this beautiful HPV. I was able to climb right in and out of the cockpit without removing the fairing. During my short test ride, my impressions of the machine were that it was fast, comfortable, fun, high quality, easy to handle and not too heavy. Naturally, the fairing transmitted quite a bit of road noise.

The CycloDyne was advertised as a commuter and sport HPV. It was outfitted with a lightweight aerodynamic body, 21 speeds, front-wheel drive, rear-suspension and disc brakes. It had an incredible gear-inch range of 40-230 and speeds of 40 mph were attainable. The cost was slated at $3800 or 1982 dollars.

At the time, I could not afford to buy it, but I would be happy to do so now. This fully faired trike was way ahead of its time and may be the closest ever to the ultimate HPV.

I put the dream on hold because I wanted to try racing before I got too old. I bought a top-of-the-line racing bike and gave it my best shot for about three years.

I then began my search for the perfect recumbent. In early 1995, I decided on an Counterpoint Presto from AngleTech, because I could get full suspension, 3x7 (63 speed) gearing, tilt-steering, quick release boom adjustment and it received consistent great reviews from RNC.

My dreams have been realized and exceeded. I’ve never had this much fun on a bike ever before. I use the 139 inch high gear more than I ever thought. What a mish riding downhill through town and keeping up with traffic. Also, the suspension really smooths out the bumps.

My wife Barb wouldn’t try the Presto. She felt it would be too difficult to ride and she didn’t want to crash and hurt herself (or the bike).

On our way to the Midwest Recumbent Rally last summer, I had made arrangements to stop in Ames, Iowa, on the way to test ride an Easy Racer, which I thought would be more user-friendly for Barb. On the way there she told me she was apprehensive and didn’t want to try it. When she met Janet, who was an avid recumbent rider with two Kingcycles, she thought, “I can do this, too.” With Janet’s encouragement, she rode the Easy Racer and liked it.

We arrived in Stevens Point and stopped in to check out the Hostel Shop. It was very impressive with one wall of recumbents lined up and ready to ride. Barb had told me that she, again, felt apprehensive and didn’t want to ride, but the shop staff were very helpful and actually got her on a Vision for a test ride. She rode it like a pro, came back all smiles and said, “I want one!”

After much test riding, Barb decided she liked the Vision R-40 USS with 16" front wheel because of the lower pedal height. Both of us are now having more fun on bikes than ever before—Randy Phillips

**LIGHTNING RESPONSE**

I enjoyed reading Nick Fessler’s review of the Lightning P-38 in RCN#36. Having put some significant miles on Lightning P-38s I agree with most of Nick’s findings.

Nick mentioned having cramps in his glucose muscles and how training decreased but did not eliminate these muscle problems. I’ve had similar experiences riding the P-38, particularly on long and hard rides. My research indicates the problem is due to the relatively upright seat back angle which places more of the rider’s weight on the working butt muscles. I have found reclining the seat transfers more weight to the back and off of the working muscles, greatly reducing cramps and discomfort. One way of accomplishing this without giving up the relatively close pedaling position is to install a smaller rear wheel. I have converted P-38s to 559mm 26x1 rear wheels. I know of another rider who converted his P-38 to a 20" rear wheel and have seen a photo of a P-38 with dual 17" wheels. The smaller rear wheel has the added advantages of creating a more aerodynamic unfaired position, reducing rotating weight, improving wheel aerodynamics of a spoked wheel, and increasing wheel strength. The only real disadvantages are a slightly harsher ride and a reduced top gear. The top gear can be raised back up to previous levels through gearing modifications. Replacing the stock foam seat insert with a Thermarest pad helps absorb road vibration in addition to further reducing pressure on the gluteus muscles and allowing some degree of on-the-fly position adjustment.

Nick also noted the P-38 has very quick steering response which takes practice but once mastered it’s second nature to control. While I agree with this and did become accustomed to the quick handling. I don’t think it’s necessary to have the handling of a general use bike be this responsive. The average rider will find the bike much more stable and easier to handle with the zero offset fork option which significantly increases the trail. I think the straight fork should be standard with the raked one a special option for those planning on riding primarily criteriums and or tight city traffic conditions.

For taller riders, I highly recommend the 20" fork option which not only tames the straight line handling, but improves rough road handling. It puts the rider of an unfaired P-38 into a more aerodynamic orientation, and has a multitude of high performance tires available, in addition to readily available BMX tires for emergency replacement while touring.

**GOLD RUSH vs. ROADIES**

I have owned four different recumbents over the last three years. I would like to recount a recent riding experience which exemplified the joys of recumbent cycling for me. For the record, I’m in my mid-fifties, 6’2”, 205 pounds, and have been described as others as a “strong rider,” I love long-distance rides.

I purchased my first recumbent bike, an Easy Racers Gold Rush Replica, three years ago. Due to an insatiable curiosity about recumbents, particularly their potential for performance and handling characteristics, I have since purchased three other recumbents: a Lightning P-38, a Gene Lemle Lightning Tailwind (boy, is that title a misnomer!), and most recently, a Rans V-Rex XT. After giving each of the additional bikes at least a year long trial and riding each of them a minimum of 1,200 miles, I have sold all of them. When I compared
of them to my Gold Rush, in terms of performance, long-term comfort, stability and customer-friendliness of the manufacturer, the Gold Rush won in every category. Plus, the bike is such an exhilarating blast to ride!

While I have owned the three other recumbents described above, I have ridden at least another dozen types of machines. On the basis of my experience, I am of the firm opinion that the Gold Rush Replica is the most brilliantly engineered recumbent bike available, a conviction that is reaffirmed every time I take the bike out on a ride. Let me provide a recent example.

Last month, I took the Gold Rush on a 62-mile Potomac Peddlers “A” (fast) ride up in Frederick County, Maryland, a largely rural area characterized by rolling to moderately hilly terrain, unless you care to venture into the surrounding mountains (Camp David, the presidential retreat, is in Frederick County). The final 25 miles after the food stop turned into a road race among the fastest seven riders on the ride, consisting of six riders on diamond-frame bikes and me. Using the speed, acceleration and unique aerodynamic qualities of the Gold Rush to best advantage, I attacked the flats and in rolling terrain where I could count on the Gold Rush’s ability to carry its downhill speed far up the next hill. While I had to work hard to maintain the 30-35 mph pace, the guys trying to chase me down on diamond frames were dying and there was a moderate headwind to boot! After 20 miles of alternately attacking, chasing and recovering, five of the guys have up and the last five miles came down to a two-way duel between my Gold Rush and the strongest ride. He faded after I reeled him in and blew past him for the last time about a mile from the finish point—on an uphill grade, yet!

I have to tell you, it sure felt sweet when all six of those twenty and thirty-something guys gave up! I know this sounds silly, but I despise forty-seven year old’s round of applause in the parking lot afterward. As one incredulous rider said, “We couldn’t believe you were even staying with us, much less challenging us and beating us all back to the parking lot.”

Now, I realize that this small victory means little in the context of life’s larger issues. But I have to tell you, it sure as Hell made my Saturday! I never could have staged that performance at this point in my life on a diamond-frame.

I really appreciate the way Easy Racers supports its products and customers. As a former P-38 owner, I believe I speak with some authority when it comes to customer service and willingness to be helpful. Choose carefully!

Tim Webb
Falls Church, VA

THAT R-44 FEELING

In RCN#36, you stated: “At 25.5 pounds the R-44 is 3 pounds lighter than the R-42 and a full 4 pounds lighter than the R-40. On the flats you can ride in a higher gear!” I dare say, the last sentence is a FEELING (and I know this feeling very well from my recumbents), but it is ONLY a feeling.

Provided you do not change your Input (Power) and your cadence, but only by changing one gear you ride about 10% faster (only a thumb rule). In this case the wind- and friction resistance must be at least 20% lower. But when you ride at a speed of 15mph with a total weight of 195 pounds, a rolling resistance factor of 0.004 lowering the weight by 4 pounds makes only a difference in the total resistance of less than 2%. I have learned in 62 years: Man is the most marvellous thing on earth and perhaps in the universe but when used directly as a measuring device brings very poor results, because he is always (consciously or unconsciously) influenced by feelings.

SifteiW@aol.com

Imagined or real, this “feeling” really does make

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Jan 4, '97 and Feb 1, '97 (first Sat of every month).
Pedal 20 miles RT from Lake Meriden in Kent, WA to the Black Diamond Brewery.
Rain or snow? Show up anyway and we'll go for coffee. Kent, WA (Lake Meriden Park 9:30 am)
Contact: SASAE to PO Box 58755, Renton, WA 98058.

6TH ANNUAL HUMAN POWERED ICE RACES
Sat., Feb. 1st, 1997 - 10:00 AM (Rain Date, Feb. 2nd)
White Bear Lake, MN
Contact: Mark Stinson @ 612-824-2372 or Dave Knauff @ 612-829-2978

CHERRY PIE CRITERIUM
February 9, 1997
Napa, CA
Contact: Robert Gepford at: rober@ilcs.net, or Box 79 Yountville ca. 94599, P#707/963-9232

SEATTLE BIKE EXPO
February 15-16
Seattle Center Exhibition Hall

INTERBIKE ANAHEIM INTERNATIONAL BIKE EXPO
September 4-7, 1997
Anaheim, CA
Contact: Interbike @ 714-376-0161

EVENT PLANNERS: Let's get those events planned and into the RCN's Recumbent Rider Group Listings Calendar ASAP.

RIDER GROUPS: Would you like your event listed on the Calendar? Please send to RCN, PO Box 58755, Renton, WA 98058. Readers, please send to SASAE with any correspondence.

- ALABAMA / GEORGIA (North east): Monthly Rides 1st Sat of each month. 9am CST from Hokes Bluff, AL. City Hall - Call Dave @ 205-462-3304 or Email: burgess@cybertyne.com
- CALIFORNIA (Sacramento): EASY RACERS: Dad's Birthday ride. 9:00am, 2nd Sat of each month, 9am CST from Easy Racers, ph#916-722-6737.
- CALIFORNIA, (Los Angeles area): Monthly ride, 3rd Sat of each month, 9am CST from Easy Racers, ph#916-722-6737.
- CALIFORNIA (Orange County): PEOPLE MOVERS: Monthly ride to the beach in Orange County, ph#714-633-3663.
- CALIFORNIA (Sacramento): Monthly ride to the beach in Sacramento, ph#916-722-6737.
- CALIFORNIA (San Diego): Monthly ride to the beach in San Diego, ph#619-325-5147.
- CALIFORNIA (San Dimas): Monthly ride to the beach in San Dimas, ph#909-969-5698.
- COLORADO: Rides to the beach in Colorado, ph#303-586-1201.
- FLORIDA (Tallahassee): FOOLS CROW CYCLES: 2nd Sat of each month. 9am CST from Easy Racers, ph#916-722-6737.
- FLORIDA (Daytona Beach, FL GA, AL): LASSER: Monthly ride to the beach in Daytona Beach, FL. ph#904-777-9118.
- FLORIDA (Dayton Beach): Monthly ride to the beach in Daytona Beach, FL. ph#904-777-9118.
- LONDON (Chicago area): Monthly ride to the beach in Chicago, ph#773-725-0331.
- MICHIGAN (Lions Club): Monthly ride to the beach in Michigan, ph#313-421-2375.
- MINNESOTA (Minneapolis): Monthly ride to the beach in Minneapolis, ph#612-421-2375.
- NEBRASKA (Omaha): Monthly ride to the beach in Omaha, ph#402-661-2375.
- ORANGE COUNTY (Orange County): Monthly ride to the beach in Orange County, ph#949-367-9118.
- TEXAS (Austin): Monthly ride to the beach in Austin, ph#512-421-2375.
- WASHINGTON DC AREA: Monthly ride to the beach in Washington DC, ph#202-421-2375.
- WASHINGTON DC AREA: Monthly ride to the beach in Washington DC, ph#202-421-2375.

Featuring a suspension frame, this nimble about town machine is an ideal spur-of-the-moment bike. It's easy to ride, easy to maintain, and fits on most standard car racks.

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- KMC UG 50 Chain
- 1-1/8" threadless headset
- Alloy front quick release front hub
- Alloy rear rim, 20" (406)
- Alloy front rim, 16" (349)
- 29.5 pounds
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- 21 Speed: Sachs 3x7 Internal hub
- Starting at $825 MSRP

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NEW/DEMO RECUMBENTS
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• Vision VR404-FU-WB-16S 20” FWHL Aque.....$795
• Vision VR408-FU-WB-16S 20” FWHL Aque.....$995
• BikeE 20” FLD-Exl. frame Blue...$500
All bikes with full warranty, EZ Rider Cycles, Jeremiahs & Karen Mangini, PO Box 996, Davenport, WA 99112. Call 509/725-4249

WANTED: EASY RACER or TRAYLOR PWD Plans. Call 909/624-7230 for Todd.

PLANS WANTED
BUILD YOUR OWN RECUMBENT: Our detailed plans show how the pros do it. CAD designed with fully illustrated building guide. $33 (N. America), $37 (overseas). BENTECH, P.O. Box 198, McKean, PA 16426 (http://members.aol.com/domore/bentech.html)

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USED RECUMBENTS

FOR SALE: 1996 LIGHTNING F-40, only 300 miles, large suspension fork, 17” Mouton, covers, rack, hydraulic brakes, GriipShft. Quad front, 8 speed Shimano rear and MUCH MORE. Medical forces sale. $3000 invested/ $2550. Ph:510-463-8021 (CA/36)

FOR SALE: INFINITY LWB, 21 spd., Rapide fire, new seat, paint, USS or steering bars, fairing $550. Ph:609-967-2639 (NJ/36)

FOR SALE: LINEAR LWB, brand new, fully assembled for tall riders $900. HALLUZAK HORIZON, one year old, great condition with upgraded wheels, front shock and other extras. $1250. Upright Woman TERRY 53cm (22”), 20 pounds, perfect. Call evenings 704/858-2615 EST/MD(36)

FOR SALE: RANS V-Rex, very low miles, blue color, 21 speeds, Veto C-20. $1200. Call 617/429-3501 Email ghirs@gnm.com (MI/38)

FOR SALE: VISION R-40, SWB, 16” front wheel with Phil hub, 21 speed, excellent condition $750.00, ph:802/775-5968 (VT/37)

FOR SALE: COUNTERPOINT PRESTO, 1993 model, high-performance version, full XTR package, RST suspension fork, transverse trunk, Avocet computer, 20” x 1-1/8” 100 psi tires and rims, Black with black fork. Less than 200 miles. $2300.00. Call Steve @206/432-3049, (CA/36)

FOR SALE: LIGHTNING P-38, 1992. Large size. Blue, Shimano Deore equipped. 16” or 17” front wheel. $1600. OBO. Ph:303/333-4527 (CO/37)

FOR SALE: VISION R40 SWB, Suntour Equipped. USA, used two short seasons in Minnesota. $550. Ph:507/645-2337 (MN/37)

FOR SALE: GREENSPEED TRIKES, Taking orders for Greenspeed trikes to be delivered next March or April. $1000 down holds your trike. Cost: $3495 shipped anywhere in U.S.A. First 3 orders get a 10% ($350) discount. Call Jim at People Movers 714/633-3663 People Movers


FOR SALE: EASY RACER TOUR EASY, 1990 Red, medium frame, full Zipperr, Sachs 3 spd, hub 2 sets of tires, double kickstand, new pedals, 3 sets of fenders, pedal set, Rack, two sets of panniers, two water bottle cages. Cateye computer, pump, less than 3000 miles. $1150. Call 319/624-1898. (IA/38)


FOR SALE: EZ-1 Red, 21 speed, underseat pannier rack, GriipShifts &500. Bill Michel b:michel@aol.com Ph:415-336-7737 (37)

FOR SALE BIKES AND PARTS: 41 Rotator MWB -22.5 lb, ASS, 40 speed, 20” IRC tires. Sun Tins, TMT hubs, Sweet Wing crank, Tcogs, Speedplay pedals and extras. Very comfortable and zero. Ready to ride. - $2400. Will replace expensive parts and sell for less or as a frame kit. #2 Double Vision Tandem IPS- 3 mos. old. New tires (and orig.), chains, front derailleur, dual speeds and mirror, 2 bags. $3,300. Wife loves tandem riding. I need a new customtricked out tandem before spring!! Call Roy 423/926-5097 EST (TN/37)

FOR SALE: RYAN VANGUARD-set up for touring, 21 speed Doore XT, Rapid Fire shifters, Phil Wood rear hub, less than new $950 also Zipperr fairing for some $200. Call Dave @ 205/492-3454. (AL/37)

FOR SALE: Beautiful new red F-40 for sale: Large with XL seat, Yellow cover, Cantilever brakes. Rear wheel cover, Nucoo freehub (17”). Stock fork, $3495. OBO. Jim at People Movers 714-633-3663

FOR SALE 1995 HALLUZAK HORIZON: USS, GriipShift. 21 spd, computer, kickstand, extra seat cushion, rear rackpack, pump, 2 1/2” cages, dl. green, Exc. Cond. $1100 Ph:919/742-4970. Email: BDODG @JUNO.COM (38)


PARTS FOR SALE
FOR SALE: TANDEM REAR WHEEL, 26” -48 spoke Phil Wood hub threaded for drum brake. Sun SST Rim 140 spacing with Sachs 8 speed 12-32 freewheel, approx 100 miles $125. Call Dave @ 205/492-3454 (37)

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FOR SALE: CLEPPED PEDALS, 2-pair, Onza brand $45 each. Ph:704/586-2615 after 7pm EST (37)
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SIX riders who purchased bikes from People Movers were filmed in a commercial for Chevrolet. They had to travel out to the Mojave Desert, but they were treated to catered meals, and given a mileage allowance and paid $240! Riding a recumbent does have its benefits.....

LAST MONTHS CONTEST WINNERS
Jody Wiley was chosen from the correct entries and won the cycle computer. Alex Karanevich and Carlos Aguirre placed second and won T-shirts.

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A blue Lightning P-38 #733, a blue BikeE #196272, a red BikeE (#19680), a purple BikeE (19646), a Black BikeE (19601) and a red E-Z-1 (#189) were in the six bikes stolen from People Movers.

EASY CONTEST #1

This is one easy contest. Count the number of times the letter "e" is typed on this page. Put the total on a page of paper with your name and address and send it to People Movers. What could be easier? Winner will be drawn from correct entries. Entries must be received by 2-14-97. Winner gets a $30 rear rack. Second place gets a pair of cycling gloves.

WINDCHEETAH TEAMS UP WITH PEOPLE MOVERS IN 1997!!!

PEOPLE MOVERS is now the official rep for WINDCHEETAH (Speedy) recumbent trikes in Southern California, Arizona & Nevada. There will be a trike on display beginning in January of '97. Stop in and see the fastest thing on three wheels!

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IF YOU ARE A "baby boomer" you may have an advantage on this one. Remember the good old days when we played records and listened to music? Well, the question is: HOW MANY GROOVES ARE THERE IN A SINGLE RECORD THAT PLAYS AT 45 RPM? Send your answer with your name and address to People Movers. Entries must be received by 2-20-97. Winner will be chosen from correct entries. Prize: Sigma Sport Cycle Computer.

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