



Recumbent Cyclist News

The Recumbent Enthusiasts' Newsletter — Since 1990 — #095 July/August 2006



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The 2006 Catrike Road

"With the 2006 Road, we've gone back to our roots — offering a user-friendly, direct-steering (no linkage) and lightweight performance trike. Our entire line now shares the same steering system and the benefits of the direct steering: lively feel, intuitive steering, simplicity in adjustment by mechanics and customers alike, reliability of mechanism and light weight. The handling is superb, assembly is quick, adjustment a breeze." — Catrike

TRIKE: 2006 Catrike Road

PRICE: \$2,250

CONTACT: www.catrike.com

By Bob Bryant

Catrike is well known for sporty and stiff aluminum trikes. The big surprise for 2006 was the unexpected redesign of the Road model. Gone is the indirect linkage steering of previous years. The new Road has direct steering (the bars DO NOT pivot on a bearing on the mainframe, they are mounted directly to the kingpins). While this may raise the eyebrows of some trike purists, direct steering tadpoles have become Catrike's speciality. While initially skeptical, I have found this to be an impressive change. I very much enjoyed testing this ultra simple and gorgeous tadpole trike.

USE: The Road is probably the most touring-oriented Catrike model, and there is no reason you couldn't tour on it (if you are comfortable touring on a low trike). However, the Road feels more like a sport touring trike to me — leaning more towards the "Sport" side of things. It has 1.375" Comet performance tires, and that stiff Catrike aluminum frame and laid back seat angle.

SEAT & COMFORT: The Road has a 39° seat recline (compared to 33° on the Speed and 45° on the Pocket), and comes with a headrest. The riding position feels very sporty to me: laid back with feet up. While I was comfortable for shorter rides, after several hours my neck began to fatigue and my toes numbed slightly. The headrest was a MUST for me, as it afforded me some neck support,

Continued on page 7

Recumbent Cyclist News

Recumbent Cyclist News was published by Bob & Marilyn Bryant from 1990-2007, 101 issues. RCN was closed in December of 2007 when it became no longer financially feasible to publish a print newsletter. bryantrj@gmail.com

Editorial License

Blogging & Recumbent Toe Syndrome

by Bob Bryant, Publisher
bob@recumbentcyclistnews.com

RECUMBENT TOE SYNDROME

I got an email the other day from an RCN reader who was concerned that he was experiencing numb toes or what I've started calling "Recumbent Toe Syndrome" (RTS) when riding his tadpole trike (high bottom bracket or BB). He was asking me what he could do about it. I suggested that he should check shoe fit (orthotics?), perhaps adjust his clipless cleat placement (move cleat towards the center of the shoe) and if that didn't solve it, try riding with platform pedals and different shoes and try to trace the problem one step at a time.

RTS affects at least 10% of recumbent riders and can be caused by either nerve issues on your feet or blood circulation issues of pedaling uphill on bikes with high bottom brackets (BB). I have experienced RTS my entire recumbent cycling career when riding or testing recumbent bicycles with BBs at or above my hip height. No different shoes, pedals, seat or design changes made a difference for me, nor have I ever heard of a guaranteed cure for it (or I'd have used it myself). Some riders may find a solution that fully or partially cures RTS and some won't. There are no guarantees.

It's common for RTS to show up 60-90 minutes into a ride. A foot or a toe will start to

tingle and go to sleep/lose circulation. Taking a rest stop or shaking your toe out can help. Getting off your bike and walking also helps. However, RTS usually comes back quicker the second time.

No scientific studies have been done about RTS as, aside from the space shuttle, there are few vehicles that you propel reclined with your feet up in the air. Those who don't suffer from RTS, and some sellers of high BB bikes would like to pretend RTS doesn't exist, but it does.

If you are looking to buy a recumbent it's a good idea to figure out if you suffer from some level of RTS and if this should be a consideration in your purchase. For those who only ride for 60-90 minutes at a time, it's unlikely to become an issue. However, it can become a serious issue on a long ride. I once had a toe go completely numb on a three day tour.

ROAD TESTER WANTED: Do you own a 2006 Actionbent, Linear, RANS Seavo, Hase Tagun, Angletech/Challenge or recumbent with Staton, Golden Eagle, Wilderness Energy or Crystalyte power assist? Please email me if you'd like to participate in our review.

Viva Recumbency
Bob Bryant ♦

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Recumbent News



The Hostel Shoppe 2006 catalog is hot off the press. Order your copy at: www.hostelshoppe.com.

RECUMBENT NEWS & RUMORS

ANGLETECH: Kelvin Clark has built up a RANS Stratus XP TO 27 D with an XtraCycle conversion. Check out our blog for a color photo.

EASY RACERS: We're hearing rumors of a carbon-fiber Fast Freddy Rush as well as an updated and perhaps even an S&S coupled Tour Easy. There is nothing official from Easy Racers as of yet.

HOSTEL SHOPPE: The 2006 recumbent catalog is out. Contact the Hostel Shoppe to get your copy. www.hostelshoppe.com.

RANS: Rumors of an aluminum Stratus XP and another LWB (the V3) persist. It's my guess that a V3 would be a dual 26"-specific update to the V2, perhaps with an improved chainline. Could we see Titanium RANS bikes in the future?

RANS FUSION: John Rooker, has started a Yahoo group for Fusion enthusiasts: <http://groups.yahoo.com/group/CFBIKES>.

RCN: Be sure to check out our blog, we usually update it several times per week: <http://recumbencyclist.blogspot.com>.

BUY RECUMBENTS MANUFACTURER DIRECT

Bacchetta, Easy Racers, and RANS (Fusion) have all introduced programs where customers can buy bikes direct from the manufacturer. All have different rules about who can participate, refunds (shipping and/or restocking fees), but they all three manufacturers are doing it.

BACCHETTA calls their program EPO, for Easy Purchase Options. There are three options, two that include local dealers, and one that has measurements taken, and shipping of a pre-tested, pre-built Bacchetta that requires just a few small adjustments. Bacchetta offers a four week return guarantee. Shipping is not refundable, and there is a 10% restocking fee if you should return the bike.

RANS is offering retail assembly for their Fusion Crank-Forward model as some dealers are slow to stock these bikes, despite relatively hot sales.

EASY RACERS ships with the seat, handlebars and wheels off (all cables are connected) and states that customers can be riding in 15 minutes. They offer a 30 day money-back guarantee.

In comparison, WizWheels offers a 30 day/5% restocking/no shipping refund guarantee and Volae offers a two week/5% restocking (including shipping costs) guarantee.

Direct sales have long been a big part of the recumbent scene. The reason for the direct sales resurgence could be that recumbent dealers are rare and not every town has one, and small bike shops are disappearing. In fact, RCN was started back in 1990 was because most people were purchasing their recumbents sight-unseen by mail.

Contact the above manufacturers if you are interested and to find out any limitations the programs have.

RECUMBENTS PAST & FUTURE: I can't help but be obsessed with this concept. A few months ago on the *Bentrider* message board, this topic was discussed. Here is my extended response about the current

and past states of recumbency:

The Golden age of recumbents was most definitely the 1990's. The mfrs geared up for the big market increase that has never come (we're still <1%). We then lost the two biggest recumbent mfrs, BikeE and Vision. Their specialty was entry level enthusiast bents. ReBike, which was the low end was purchased by Huffy, sold in Sears and then disappeared.

The industry lacks a ReBike-like entry level bent, unless you acknowledge the Crank-Forwards as recumbent cousins. As we've seen in the pages of recent RCN issues (091 & 093), not everyone embraces these (seat) backless recumbents — the crank forward bikes. Despite what the recumbent-minority thinks, my humble opinion is that this represents the mainstreaming of recumbent bicycles.

As far as standardization goes, I'm not sure that our vast array of recumbent designs and styles is a good thing. Some standardization would help the bike industry to understand recumbents better and become educated.

On a positive note, we have some incredibly good bikes available from respected manufacturers. Recumbent awareness has never been better. Getting people on them is still the key, as is finding dealers to support our mission.

UPDATES: If you are interested in the ERRC Lloong panniers discussed in RCN 094, you can contact Laurie Smith from ERRC at: ERRCMagazine@hotmail.com and my website (http://www.geocities.com/e_r_r_c), and come to think of it, my mailing address for people who don't have access to a computer (ERRC Magazine, Laurie Smith, PO BOX 1688, North Plains, OR 97133-1688 ♦

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Letters

Please write us. Letter limit is 300 words (or write an article).
We edit for clarity, content and space limitations. bob@recumbencyclistnews.com



BAD DAY . . . FLATS

I am shaking my head in wonderment of how my hero could fail so miserably at something so basic. I have extended experience with flats (up to 6 in one day) so maybe I can help.

Removing the tire from the rim: Make sure the tire is really flat then take the tire next to the rim and squeeze it inward to break the seat, do this all around the tire back to the start. Then lift the tire away from the rim, if you have broken the seat well you can often see light between the rim and bottom of the tire. Then move the tire to the side of the rim, pushing the bead over the top of the rim and down. If done successfully the tire will come off the rim. It takes some effort but saves having to use tire tools.

Tubes: Carry two or three spare tubes and not necessarily new ones. A patched tube works just as well if you have made a good patch.

Patching your tube: I have a device on my drill press that is nothing more than a bunch of emery cloth strips attached to the center piece. You can buy one at any hardware store. I turn the drill press on, press the hole area to the whirling emery cloth and presto blanko the sheen on the tube is gone and I can apply my glue. The glue comes out of the tube in a kind of small pool. Take the butt end of the glue tube and smear the glue around the just cleaned area. This thins out the glue and helps it dry making it ready for the patch. Apply the patch. Take a role of duct tape or round bottle and role it over the patch with pressure. Next roll it up, rubber band it and put it in an old sweat sock and put somewhere on your bike ready for the next flat. Surrounding your tube with cloth prevents it from rubbing against something and wearing a hole in it, which you don't need. Patches done this way have never failed me.

Installing another tube and tire: Pump air in the tube until it holds its shape and fit it into the tire, next take the tire and fit one bead around the rim and work it on. Then start the other bead at the stem and begin to work it on the rim. When you can't work the bead any more let a little air out of the tube and squeeze the tire as you did when taking it off. NOT ALL OF THE AIR. Next try to work more of the bead and if done right you can usually get the tire on the rim without using tire tools and pinching your tube, causing all kinds of expletives and etc.

Inflating your tire: My bike has a 26" x 1.5" tire and takes a lot of pumping to get it to pressure. So, by the time I have the tire on my bike, along with the usual commentary from my friends who are impatiently waiting for me to

finish so we can all go, I'm not in a mood to start pumping and sweating more. I grab my trusty CO2 tube dispenser insert it on my stem, press the lever and presto blanko my tire is full of air and we are on our way. I know the CO2 tubes are expensive but they have saved me many friendships and so I feel they are worth it.

I know all these tubes, CO2 dispensers etc. are heavy but I am interested in having a good time with my friends and hammer-head speed isn't necessarily a priority.

Tony Leap

PUBLISHING

Thank you for the fine job you do with RCN. I've been a subscriber for several years, and find your articles and reviews are excellent. It's always interesting to read your musings in your editorial section—publishing and writing is a time-consuming, and often unappreciated job! You bring a lot of wisdom and experience to the recumbent world, and you should know that a lot of us appreciate your work more than you realize (we publish two area Apartment guides). I started riding recumbents about ten years ago, and the info in RCN has led me to practically all of my equipment decisions. We own a Linear, Burley Koosah and an Easy Racers Fold Rush. We live near the Blue Ridge Parkway in Virginia, so most of my rides are reasonably mountainous. There are very few recumbents in this area, I suppose because of the terrain. In my opinion, however, the tradeoff of a less efficient climbing for significantly more comfort is more than worth the difference. But then I'm 68, so maybe comfort means more as one gets older!

Stan Kingma

Editor's Comments: Thanks for the kind words. I've just turned 46 years old and COMFORT is what recumbents are all about.

MORE FLATS & CATRIKE

I rarely find myself hanging on every word of any article, but the *Bad Day*, *Blowout* and *a Long Walk* piece really had me chuckling. I lost three tubes riding from Concord New Hampshire to Montreal, Canada in 1984 (one of those tubes I had to borrow from my cousin). All three popped on smooth road, apparently for no reason! I thought I was done for on those back roads with nothing for miles. Ironically, the last tube endured broken glass, broken pavement, etc. It also endured that process where they dig up the road, crush it, and grind it back into pavement. The pavers left a 10 mile stretch

of road in the gravel category. You lose your fillings on that stuff. That was a 335 mile trip accomplished in 5 days. Afterwards, I could take a flight of stairs in one leap. I was 19.

Now I'm the proud owner of a 2006 Catrike Road (tested this issue -ed.). I love this trike. It's smooth, fun, comfortable, cool, and did I mention comfortable?

RCN helps fuel the whole feeling of excitement about it. Triking is FUN!

Joe Jazz

RECUMBENT TANDEM

My wife and I just took our first tandem test ride; a RANS Screamer. Think about how rare this is: Recumbents make up less than 1% of the adult bicycle market, tandem bicycles are an even smaller group, and tandem recumbents? I checked Amazon for books on tandems and found one, about uprights, out of print, with only one user review saying it was out of date. You can count all the production tandem makers on one hand with fingers to spare. On the other hand, the few bikes that are out there are easy to read up on. Tandem riders are very vocal (for good reason it seems). The reviews may be a few years old since models don't change much, but what else are they going to write about? The strengths and weaknesses of any model are very well documented.

In the hour it took us to drive to the nearest recumbent dealer that had a tandem in stock, RANS announced that their 26/26 wheel line has now extended to tandems in the form of the new Seavo. From what I can see, they have nailed every performance issue ever mentioned against recumbent tandems. So what happens when the most universally praised recumbent tandem gets a new and improved big brother? We have never so anxiously awaited a review! I doubt we will have to wait long.

John Duval

CURE FOR RECUMBENT BUTT

I am a new recumbent cyclist that enjoys riding my Lightning P38 although I occasionally suffer buttock pain that is related to the seat cord stretching out and the firmness of the stock foam cushion. After a journey of self discovery that included sitting on memory foam, a gel pad and air pillow, I discovered two items that have virtually eliminated my pain!

1. I bought Kevlar cord which never stretches out once the mesh seat is secure.
2. I bought a Therma Rest Lite camp seat (available online) which is the same dimensions as the Lightning foam pad and is a composite of both

foam and a thin layer of air. It is like sitting in my Lazy Boy yet has enough firmness to push against for lightning speed.

Paul M. Kell DC

SHORT CRANKS

I've been following the short crank debate for a while now and want to clarify something. It may seem obvious but here it is: I would assume short cranks mean you spin faster. In other words more rotations per movement at the wheel than you would have with a longer crank. This is great if you really like to spin like a high rpm race engine. I tend to be the diesel type, less rotations and lots of torque. In fact I prefer to get off and walk up a hill to slowly crawling up while spinning like mad in a low gear. So, my question is: Are short cranks for the faster spinning crowd and the brute force riders might as well stay away?

Randy Roberts

Editor's Comments: It isn't that I like to spin at rpms similar to a racing engine, it is that I've had a difficult time being able to spin properly on a recumbent with standard size crank arms. The 155mm cranks solved this problem for me. My official recommendation is that recumbents can utilize shorter crank arms than uprights. How short is up to you. I used to ride with 175mm and even 180mm cranks for a season. I now ride with 170mm on my recumbents. When I get the chance to order short cranks, I'll go with 155mm if I can get them, but not 165mm (seems like a compromise). The biggest problem for short crank enthusiasts is the lack of available cranks. They are very difficult to find — you have to really want them. For this reason they will always be for serious enthusiasts (of all fitness levels).

If you're going the short crank route, you also need to rethink your gearing. Remember to reduce your gearing the same percentage that you reduce the length of your crank arms. The difference between 170mm and 155mm is about 10%. I like the idea of a 24/38-39/50-52 triple with shorter cranks.

Lastly, I'm hoping to build up a 20" drive wheel short crank test bike. I want to use a 20" wheel because 155mm double crank arm sets are available right out of the parts catalog (no custom ordering or cutting arms). An 11-32 cassette combined with a 39/52 double crank will still offer a range of 24-94 gear inches with just 16 gears.

SUN EZ1

I saw your current articles (blog and RCN 094) on the EZ1. I have installed a 20" front wheel on my EZ1. It is not for the shorter rider as it jacks the seat height up another two inches. Also, I believe this will void the warranty. You might want to check on that. I've put about 7,000 miles on EZ-1 Lite with this conversion.

Loren (via Internet)

OFF-ROAD BENTS

I'm in the market for a new bike and currently have a EZ-1 Recumbent and a Specialized Mountain Bike. So my question is there a true all-terrain recumbent out there?

Will

Editor's Comments: The Lightfoot Ranger is as close as they come. I ride off-road on a daily basis and prefer big wheels, an upright seat position and a low bottom bracket height. An EZ Sport can be adapted as well. The benefit would be the shorter wheelbase. Heck, you could do a 20/20 EZ1 conversion. I rode my Sun EZ Rider off-road extensively and loved it (EZ Rider was a rear suspension 20/20 Sun EZ Sport currently on production hiatus). With 20" drivewheels, your large cassette cog is limited to a 30- or maybe a 32-tooth and your derailleur will hang low. Most low bottom bracket CLWB and LWB will work fine for mild trail riding. The key is if you can fit the tires you want on the bike (along with fenders if you use them).

RECUMBENT TOE SYNDROME

I'm looking to solutions for toes that go numb when I ride. Recently purchased ICE Q trike with 165 Rotorcranks. I'm new to clipless shoes and recumbents but have never had a problem with numb toes on an upright bike. I recently moved to larger carbon fiber sole shoes with SPD floating cleat. I feel fine for first 10 miles or so then I feel my toes slowly go numb. It is not painful just annoying. Any suggestions on how to improve. So far I have shortened the boom and try to keep cadence around 70-80. I know there must be some solution- I'm not giving up my trike.

Brett Fundak

Editor's Comments: See my editorial this issue. ♦

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Stratus XP *Formula 26*



COMFORT AT FULL SPEED AHEAD

however, it isn't as refined or as simple as the Greenspeed neck rest, which is softer and more adjustable. The Road is user-friendly, but laid back and sporty.

RIDE: Catrike has this to say about the ride of the new Road: "The ride is super comfortable and cushioned with its 20" wheels." However, I did not notice any "super comfortable" or "cushioned" feel to any part of this trike. The ride still feels very stiff compared to the Greenspeed, WizWheelz and HP Velo trikes I've ridden recently. This is not a criticism; it's just what you get with a stiff aluminum-framed, skinny-tired sport trike.

The stiff frame means there is lots of vibration when riding on our rough roads. I spent a half day riding recently and I had neck fatigue at the end of the day. Part of this is me (because my neck muscles tend to get tired) and part of this is the local roads. But the laid back seat and the stiff frame are also contributing factors because they accentuate the bumps. Catrike's Paulo Camasmie suggested that riders like me who are interested in more comfort might consider installing pipe insulation foam (tube) on the seat rails (under the mesh) and upgrading to a more comfort-oriented tire, such as a Schwalbe Big Apple.

STEERING: With this new model, the Road joins the Catrike Speed and Pocket with direct steering. Previously, the Road had a handlebar pivot on the main frame with linkage that attached the handlebars to the front wheels. With the new Road, the handlebar levers attach to the kingpin like a threadless stem connects to a fork on an upright bike, and a steering rod connects the front wheels. The kingpin is basically the fork that holds the front wheel mechanism. On the Catrike Road, the kingpin is clamped by a threadless headset (the best possible set up). Some other trikes have bushings, which we like less. The steering is as direct as you can get. The system is slick and it simplifies the frame; however, the handling has changed.

I must say that direct steering as an acquired feel. Admittedly, I was nervous when I tested the Pocket last year. That first generation Pocket had noticeable brake steer and you had to modulate the brakes VERY carefully on fast descents, rough roads and off-camber turns. Last summer I got a bit more used to it when I tested the Speed — which had more refined road manners than the Pocket, but is a rather extreme performance trike.

In contrast, the new Road is by far the best handling of the direct-steered trikes that I've ridden to date. Brake steer is barely detectable, and is vastly improved over the Pocket test trike I rode last year. I could easily use one brake to stop the Road coming down the steepest hill in Port Townsend. I accelerated up to 20 and even 30 mph, and was in full control at all times.

The steering self-centers and requires very minimal effort at cruising speeds. I also found it fine for descents at moderate speeds. However, it can be abrupt in sharp turns. While pushing the trike to its limits on fast tight circles, I could get the tires to hook and scrub the pavement. It is also possible to lift the inside wheel in these types of turns. Also, if you abruptly hit the brakes hard, the rear wheel can lift off the ground.

All in all, I am impressed with the Road's direct steering. It offers a direct connected feel, is lighter, simpler and more attractive — and it is Catrike's trademark design trait, their specialty. For the first time I am completely convinced that direct steering can offer as user-friendly, reliable and stable handling as we've seen from linkage-steered trikes in the past.

PERFORMANCE: The Catrike Road is light feels quick. While the top speed doesn't compare with fast two-wheelers, this is a bargain speedster as trikes go. The small wheels accelerate quickly, though not quite as fast as the smaller wheels on the Speed and the Pocket. However, the 20" wheels offer more forgiving handling and they hold their speed better than smaller wheels. All Catrikes are excellent climbing trikes because of their light weights and stiff frames, though the Road is perhaps a tad slower than the Speed or Pocket because it is heavier. The



Our 2006 Road test trike



performance is definitely on par with other popular trikes that we have reviewed from WizWheelz, Greenspeed and ICE.

FRAME: The Road has an updated frame that looks like a less extreme Speed or a longer Pocket with bigger wheels. The heat-treated aluminum frame is attractive. The red powdercoat looks wet and looks great, especially contrasted with the black accents of the seat and rims.

Another new feature on the Road is the quick-release front axle. You no longer need Loctite and a hex wrench to lock down the front wheels. The downside to the new system is that the quick release must be unwound and axle removed to take the wheel off. The system is similar to that of the HP Velo Scorpion, but the HP Velo trike has a slot on the underside of the axle mount that allows the wheel to drop out without removing the quick release.

Also new to this trike is a steel double quick release boom clamp that slides on the frame and keeps the boom clamped tight to the frame. This new clamp also has a water bottle braze-on ready to go. The only disadvantage is that you still have to insert the slippery plastic liner between the boom and the frame.

The front disc brakes don't require any cable stops or connectors; the Avid discs run a short distance from the handlebar to the front brake. Both derailleurs have long runs from either end of the frame to the handlebars. Each one runs through one "U" snap connector. I used a zip-tie or two to guide the rear derailleur cable out of the way of the frame. As with all Catrikes, they run no naked cable. This works well with this aluminum frame and keeps dirt and grime out of the housing. The Road also has an aluminum bolt-on rear derailleur hanger which is a MUST on any alumi-

num frame recumbent. The fabrication quality of this trike is very good. The red powdercoat looks wet, a great color.

The Road is a lightweight trike at 31 lbs. without pedals, rack, headrest or flag (weighed on our digital scale).

COMPONENTS: Catrike's components are all excellent. We could find no real corners that were cut. The Road is an enthusiast trike with brand-name parts and it's ready for use the day you roll it off the showroom floor.

Catrike uses the SRAM X.7 twist grip shifters as on the Road. They are less stiff and seem to work better than the X.9. Despite my misgivings about twist shifters (on trikes), they actually work quite well on the Road, and I have no problems with them.

Catrike offers both 165mm and 170mm cranks. When our trike was delivered the 170mm as the 165mm were out of stock. Our previous Speed had 165mm. (See RCN 091 for short crank information.)

GEARING: The Comet 1.375" tires make for a 19" overall wheel and tire diameter. With the 11-32 cassette and a fine Shimano Tiagra 30/42/52 road triple crankset, the gear-inch range is 17.8-89.8. This range is rather low, but well suited for trike riding in my locale. For those needing a taller gearing, a Shimano Capreo rear wheel and cassette (9-tooth small cog) or even Schlumpf drive are possibilities — but before you mess with this, be sure you

understand gearing and gear-inches.

The rear derailleur hangs very low on this trike. Part of the problem is the choice of an 11-32 cassette and the other part is the tires. Our test trike came outfitted with Primo Comet tires, which are very low profile. The standard tires are Schwalbe Marathon Slicks (which are a bit taller). When in the 32-tooth cog, the rear derailleur is VERY close to the ground. If the rear tire blows out while you are riding in the low gear, it's possible that the derailleur cage could snap off. Marathon tires will improve this a bit, and Big Apples should solve the problem. Another option is to swap the 11-32 cassette for an 11-28 cassette (which changes low gear to 20.35" gear-inches).

CHAIN MANAGEMENT: The chain travels quietly through a power-side large diameter chain idler and the slack side runs through a chain tube.

BRAKES: The Avid disc brakes set up effortlessly and adjusted perfectly. Setup was a breeze and with the very refined Catrike direct steering, brake modulation is excellent and one-handed braking (while signaling a turn) is quite possible. The brakes are very powerful, and if you pull them too strongly, the rear wheel can come off the ground. Also, the Road does not have a parking brake, so it likes to roll away if you turn your head.

WHEELS: Catrike wheels are hand-built using a Shimano rear hub, Catrike cartridge-

sealed bearing front hubs, stainless spokes and Sun rims. One of our three wheels arrived was out of true (left front). Truing trike wheels is somewhat of a hassle as a jig has to be made to get the wheels on a truing stand.

TIRES: The tires are excellent sport-touring Primo Comet Kevlars.

UPGRADES/ACCESSORIES: The Road comes standard with a safety flag and mount.

Catrike makes two neck rests, the basic fixed version (\$89) should be good enough for most folks, but a spring-loaded one is also available. The standard neck rest is essentially a foam tube fastened to aluminum mount that slides into an MTB threadless type stem.

An Old Man Mountain rack (\$105) fits nicely on the rear. The forward mounts are not quite clear and the clamps fit loosely, so you'll need some tape or a rubber spacer on the frame.

A fender set is available (\$99). The front uses a top mount and an outside lower rearward strut that bolts to the outside axle. We couldn't make the front fenders fit on this new model (mounts are being redesigned). The rear fits well. The system looks good, once the top mount is modified for this new model.

Installing both the rack and a rear fender is a bit involved, as the two fender struts and rack mount need to attach on one bolt (each side). Have your dealer help with mounting both on your trike.

Other options include a FastBack 3.0 hy-



The Catrike Road head-on



The underbelly of the Catrike Road



Note the Road's new direct steering (no center frame pivot)



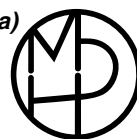
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dration system (\$49.95), Arkel Samurai pannier (\$185) and Mueller Windwrap XT front fairsing in clear or gray tint (\$106-\$116 + \$99 for mounts; weighs 2 lbs.). Catrike will have t-shirts and jerseys available by late 2006.

VALUE/RESALE: Catrikes have excellent resale value, better than most trikes (as long as the model hasn't been outdated).

COMPARABLES: The closest trike to the Road is a Catrike Pocket, which has a shorter wheelbase, direct steering and 355mm front wheels (349mm for 2007). WizWheelz and Greenspeed trikes are a bit heavier, have indirect linkage steering and steel frames that absorb more road vibration. The Catrikes all feel quicker handling and ride stiffer.

LOW TRIKE SAFETY: The Road was here in the early spring and it was still a bit cold out. I usually wear my reflective cycling jacket, except when it's really cold. My fleece is dark blue. Even with the stock safety flag, my riding pals kept mentioning how difficult it was to see me on the trike, especially from the rear.

If you are riding on busy roads, highways or in any kind of traffic, make sure you can be seen. This means reflective wear, decals, flashers, a flag and a safety triangle. Use a mirror to spot traffic from behind, and be aware of the fact that drivers may not see you.

RECOMMENDATION: Catrike has taken some heat for the company's growing pains,

which have resulted in frequent design, model and component changes. Paulo Camasmie has assured me that the line has now stabilized and that they are quite happy with the current Pocket, Road and Speed models.

Admittedly I've hesitant about direct steering on trikes in the past. With this new design, Catrike has far surpassed what I thought was possible. This trike handles beautifully. It has almost no brake steer, is stable on our old rough roads, feels confident and is a huge improvement over my first generation Pocket.

Some enthusiasts have made judgments about the Catrike Road based on the previous linkage-steered models. While I haven't ridden that model much, this newest Road is a different trike. It looks, handles and rides well, and is the best-behaved direct steering trike I've ridden to date. While I expect linkage steering to be around for a long time, Paulo Camasmie's Catrike 2006 Road makes a good argument that linkage steering may be an unnecessary complication in trike design.

The Catrike Road is an excellent performance/touring trike for the masses. It's truly at the point in the market where price, value and quality meet. The Road is also an attractive and lightweight trike. Surprisingly, I was very impressed with the new Road (I love it when that happens). Kudos to Paulo and the Catrike team.

FOR: Stable; simple; excellent build quality; unsurpassed direct steering; excellent value; sporty.

AGAINST: Stiff riding; reclined and perhaps too sporty and low for heavy loaded touring
NUMBERS: Wheelbase: 38". Seat height: 8.75". Bottom bracket height: 17.25". Weight: 31 lbs. (RCN scale; + .7 lbs. for fixed headrest). Weight limit (rider & cargo): 275 lbs.
FIT: Standard: 39-46" X-Seam std. XL avail.

FRAME & SEAT DETAILS: Frame: TIG-welded heat-treated aluminum. Chain idler: Power side idler, return side chain tube. Kingpin headsets: Cane Creek threadless. Seat: Aluminum frame with mesh. Stem/Handlebar: Catrike direct. Color: red, white.

COMPONENTS: Rear derailleur: SRAM X.7. Front derailleur: Shimano Tiagra. Shifters: SRAM X.7 twist. Crank: Shimano Tiagra 170mm 30/42/52 triple. Bottom bracket: Shimano sealed. Cassette: SRAM 11-32 9-speed. Chain: SRAM 9-speed. Brakes: Avid mechanical disc. Rear hub: Shimano Deore. Hubs: Catrike sealed. Tires: Primo Comet 20" x 1.375 100 psi Kevlar belt. Pedals: Not included. ♦



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ROAD TEST: RANS Formula 26



The 2006 RANS Formula 26, basically a RANS V2 Formula with head tube modification, a 26" aluminum fork and 26" wheels

"Fast gets faster! With dual 26" wheels and a higher crank point for a more aero position, the Formula 26 will please the speed demon in you, and surprise you with the fine handling. A light aluminum frame transfers the power for great climbs, jump-starts, and maintaining high cruise. With tire clearance all the way up to 26x 1.95 (2.3" with a simple fork mod), and standard disc brakes, this bike can be anything from a fat-tired cruiser to an all-out racer. This is the bike that combines long wheelbase comfort and security with short wheelbase performance and road styling." — RANS

BIKE: RANS Formula 26 (F26)

PRICE: \$1,595

CONTACT: www.ransbikes.com

By Bob Bryant

The RANS F26 is the latest 26" long wheelbase (LWB) from RANS. This new model variation has the stunning aluminum V2 Formula frame, slightly modified with a 26" front fork and wheel and disc brakes front and rear.

The V2 frame is the most attractive LWB aluminum frame we know of. It is burnished

natural aluminum (not painted) and clearcoated, and looks fantastic. While the V2 Formula has always been considered the cutting edge LWB machine, adding a 26" front end to the bike updates the design and makes it even better.

Another cool thing about the F26 is that you can convert any V2 Formula aluminum frame to a dual 26". This requires some machining (cutting .7" off the head tube). RANS will do it for you (\$150 + shipping + 26" wheel parts) or you can read how to do it at the RANS website.

USE: The F26 is best suited as a performance machine. It can be set up very light and the stiff aluminum frame transmits power exceptionally

well. The higher bottom bracket makes climbing feel very efficient. Despite the roadie look and feel of the F26, RANS offers optional Chopper bars and Big Apples tires, making for a VERY unique high bottom bracket fat-tire cruiser.

SEAT & COMFORT: The stock RANS seat is extremely comfortable in the laid back F26 position. I had no bottom pain whatsoever. So yes, there is less recumbent butt or any other kind of pain when riding more reclined with your feet up high.

The downside to this more extreme riding position is that I experience numb toes after an hour or so of riding a bike like this. It doesn't matter which one, I just get it, and I always have. I'm not that concerned about it. It's just me (and perhaps 10% of recumbent riders). You can either stand and stretch every hour or so, learn and practice a toe-wiggling ritual or buy a low bottom bracket bike. I do not experience numb toes on the Stratus models, but I do on the Rocket, V-Rex and Force 5.

FIT: Initially I read some criticisms on one of the internet forums of the F26's handling. I knew from experience that adding the 26" front wheel to this bike could make everything about it more extreme. Perhaps this is an issue for new riders, but not for the initiated. The key to the F26 is dialing in the fit. I first set my seat recline, and then raised the RANS stem on the stub to a height that allow the handlebars to clear my toes while pedaling. Once this was done, I set the handlebar recline, and telescoping handlebars. I kept the bars as low as I could (you don't want your hands higher than your heart). Once this was done, the position was damn near perfect and my shake-down ride was a breeze.

On the topic of F26 fit adjustment, RANS' Randy Schlitter writes, "I find that if I keep an open mind about what I need for a bar fit, it turns out I can run them pretty flat and low. I have the bar itself about 2" to 3" up off the headset. The key is having the hand grips fairly flat, and the bar steep to omit tiller. My knees clear the bars, so tight turns are fun, and the handling at near zero speed is fine. No real flop, the flatter wide bar takes it right out. You may want to try this."

RIDE: I have the F26's seat reclined more than I usually ride with, and I fit fine. The bar extension (telescoping) is much shorter than I ride with on the XP and you look down through them. The stem is mounted up a few inches on the stem stub (remember, you can raise the stem on the stem stub), so it clears my feet (it can be lower if you recline seat more). The steering feels floppy at low speeds, but handles like a dream at mid- and high speeds. The ride is noticeably less smooth than the dual 26" Stratus XP. It's stiff and power is transmitted directly to the rear wheel.

Since the 26" fork and front wheel are additions (the bike was designed for a 20" fork and the head tube angle is relaxed 3.2° to about 57.3°). This does make the low-speed handling feel floppy, especially on slow climbs, but you don't notice it once at speed. The F26 is 3.5" longer overall than the 26"/20" model and the seat is less than 1" taller.

PERFORMANCE: The RANS V2 Formula has always been a fast bike, perhaps the fastest unfaired LWB. Adding the big front wheel increases "rollability." You immediately know you have a big wheel up front as the bike seems to roll effortlessly. While flat land and climbing speed are all improved with the addition of the big wheel, user-friendliness is not. The big wheel makes the bike feel longer, which you really notice maneuvering in tight quarters, stopping and starting and climbing. Anytime I couldn't keep pushing the rather high, low gear, and wanted to push and pull on the bars for momentum and balance, my knees hit the bar ends (this technique didn't work so well on the F26). The bottom line is that the big wheel makes the bike more suitable for open road riding, but makes low speed maneuvering (whether in town or up hills) more difficult. Climbing power seems better than the 26/20 version or Stratus XP (the higher bottom bracket is more efficient for some), but the F26 is a twitchy at low speeds. You need to be able to power up the hills. The F26 is a more advanced bike, perhaps not the best choice for the uninitiated.

FRAME: The RANS V2 frames are exceptionally nice. The TIG welds are even and flowing. They are the finest of any of the recumbent imported frames that we've had through here. In fact, this frame is finished more nicely than any U.S.-built aluminum recumbent frame we've seen. The polished natural (burnished) finish looks great.

The fork is also aluminum. I asked RANS' Randy Schlitter about how robust the aluminum fork is. He said, "You should be able to load the fork just the same as steel. Aluminum vs. steel should be equal as long as the section size of the aluminum is greater, and it is. There is this myth about aluminum bikes being stiffer. Not so. Aluminum has a higher deflection per load than steel in same section sizes. The reason aluminum bikes got that reputation is the tubes used on them are always much larger in section size, which is responsible for the stiffness over the material."

WEIGHT: While not a super-light machine, RANS offers a lot of ways to make this bike lighter (seats, pads, light wheels, etc.). The Formula 26 has a unique look and a road feel unlike any other long wheelbase. Our stock standard sized F26 weighed 34 lbs. without pedals or accessories.

STEERING: Purchasers get to pick from the T-bar or Chopper bar set ups. Our test bike had a Chopper bar. I thought the wide lower cross bar of the Chopper bars would be an issue. It

was just a bit, but the RANS stem can adjust by sliding up the stub stem. You want it just high enough to clear your feet. Seat recline can also affect this adjustment.

COMPONENTS: The F26 specs are excellent for the price. The Truvativ Elita crank has the new outboard MegaExo bottom bracket set up (I love these). The crank and bottom bracket slide out when you take the non-drive crank arm off. The mid-range SRAM X.7 drivetrain shifts quickly and works perfectly.

GEARING: The bike comes outfitted with a 30/39/52 road triple and 11-32 9-speed cassette. The gear-inch range is 23.2-117 (wheel/tire diameter is 24.75"). Hill climbers may want to swap out the 30-tooth for a 24-tooth, thus lowering the low gear to 18.6 gear-inches.

CHAIN MANAGEMENT: The chain path is more extreme than other RANS models. The power-side rolls under a RANS idler pulley, and the return side rolls over another RANS idler pulley, both mounted amidships. I did not experience the vibration or noise from previous similar RANS drivetrains thanks to the new larger diameter RANS idlers.

BRAKES: I've been hesitant about Tektro brakes in the past because the name conjures an image of an up-and-comer value brand. However, each time I try them, I'm impressed. I have Tektro V-brakes on another bike and with the right pads they are as good as anything out there — but cheaper. The Tektro Aquila disc brakes fly under the radar, but are the best working, easiest to use discs I've had here. After recently spending far too many tedious hours messing with Avids on a similar bike, the stock Aquilas are a breath of fresh air. The set up is simple, there was no squeal and the aluminum handles give a firm solid feel. In contrast, Avid levers seem a bit mushy to me (we had them here at the same time). Also, it's great to have safely modulating similar brakes on similarly sized wheels.

WHEELS: The F26 wheels are Shimano Mach 210 36° MTB. They have black rims with CNC machined sidewalls and black Deore hubs. Normally this type of wheelset makes me nervous, but these wheels earned my trust. I had zero problems with them during our test. The spokes remained tensioned and the wheels true. The same wheels come on the stock Stratus XP with V-brakes or optional discs.

TIRES: The 1" wide Primo Racers are skinny, light, fast and affordable. This tire has a low profile and the overall diameter is just 24.75" (559mm 26" MTB wheel). While fast and fun, these tires can be a real hassle.

After a week and maybe 100 miles of riding the F26 around town, I headed off on a ride with my local group. Somehow I managed to ride through broken glass from a car headlight and had a blowout flat. I wasn't prepared and had to call for a ride home. The skinny tire F26 requires a 26" x 1" Presta tube, which can't be found in every bike shop (there were none in

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Chopper bars on the F26



F26's 26" aluminum fork and fender

our county). I later installed some Kenda Kwest 1.5s and new 1.5-1.95" Presta tubes. These tires made the bike feel noticeably slower. You can order optional Schwalbe Big Apples but there is no clearance for fenders (at least under the fork crown). The Big Apple is a big tire that will make the front end feel heavier. I think a 1.5" tire (like the Comet or Marathon) is about perfect.

UPGRADES/ACCESSORIES: Owners can choose between T- and Chopper bars. A cargo-carrying Chopper bar fairing is available (\$60). I briefly tried the fairing on the F26. It fits great, but doesn't work as well as on the XP. Being up higher, with the rider more laid back, it does block visibility somewhat.

The bike comes with a stock RANS seat. The carbon fiber pan is available. Optional seats include the M5 and RANS Zephyr. RANS also offers the light weight seat cover with integrated foam, which weighs half as much and saves 11.2 oz.

RANS offers several seat bags. The smaller Tailpack in red, yellow or black; the Commuter bag in yellow or black; and the briefcase, in black, with rain cover. Schwalbe Big Apples are also available.

RANS supplied custom fenders for our test. The front is a wide MTB style Planet Bike Freddy (squarish) and the rear is a narrow hybrid fender (rounded). The mount is complicated by the disc brakes, but with a quick cold set (bending) of the strut, and a stack of washers on the caliper side of the front fork, all was good. The rear fender doesn't have quite

enough support on its tail end. Overall this fender application was just okay. If you want fenders, be sure your selling dealer has experience with mounting them on an F26.

VALUE/RESALE: The F26 offers the best value of any performance long wheelbase. The quality of the frame, seat and bars are comparable, perhaps even surpassing, the Easy Racers Gold Rush.

COMPARABLES: The Velocity Squared Formula was designed as a Gold Rush killer. While offering excellent value and build quality as compared to a Gold Rush, the lack of factory fairing options and a 700c rear wheel work to the F26's detriment. However, these can be overcome by aftermarket add-ons such as the TerraCycles Tailsock and/or Mueller fairing and/or body stocking. On the other hand, the F26's higher bottom bracket makes climbing more efficient and recumbent butt just isn't an issue on this long wheelbase. Check out the 2007 RANS V3.

RECOMMENDATION: The Formula 26 feels light and fast on the road, with excellent power transmission from the pedals to the pavement. The riding position is more advanced and works great for performance minded riders (in contrast to the Stratus' more touring- and cruising-oriented feel). The Formula 26 pushes V2 performance even more, improving performance, but decreasing user-friendliness and low speed maneuvering. I love both bikes, and can't really choose a favorite. I like the Stratus XP for my trail riding, touring and commuting. I like the F26 for sport riding and hot-rodding around town, though it is less user-friendly during stops and starts, and in traffic.

While everybody will be attracted to the dual big wheels and performance attributes of the F26, it isn't for everyone. First, you should be tall enough to hold it up at a stop with at least one, if not both, feet flat on the ground. Second, the F26 is best as an open road cruiser, covering miles at fast road speeds. If you're looking for an urban bike for lots of stop and go, or you venture off-road or on rail trails, the Stratus is a better choice because of its more upright position and lower bottom bracket.

I really do like the feeling of the big front wheel leading me around. I liked what this did for the Stratus XP and even more to the Formula 26. While I always liked the V2 Formula, it is only now that I liked it enough to own one. It will be difficult to send this bike back.

RANS has become the cutting edge LWB builder and you can bet that RANS' Randy Schlitter isn't through yet. What other LWB gives you the so many options to customize your bike: seats, pans, handlebars, stems wheels and brakes. Purchasers will find excellent value, quality and performance in these state-of-the-art LWB machines.

FOR: Affordable high performance (half the price of a Gold Rush); dual big wheels are the thing; excellent "rollability;" increased performance; lots of cool RANS upgrades.

AGAINST: A bit goofy looking; rider ergonomic set up of stem, bars and seat recline is VERY important; more advanced riding position; limited low speed maneuvering and handling.

NUMBERS: Wheelbase: 65"/70". Seat height: 23". Bottom bracket height: 25.5. Weight: 34 lbs. Weight limit (rider & cargo): 275.

FIT: Standard: 35"-45" X-seam. XL: 40"-50" X-seam.

FRAME & SEAT DETAILS: Frame: TIG-welded 2" aluminum. Fork: Polished aluminum. Chain idler: RANS power and return side. Headset: FSA 1-1/8". Seat Back: Aluminum frame with mesh. Seat Base: Foam with cover with Rad-Loc clamp. Handlebar: RANS Chopper or T-bar. Stem: Stub/RANS Top Loader aluminum. Color: Burnished aluminum with clearcoat.

COMPONENTS: Rear derailleur: SRAM X.7. Front derailleur: Micro-shift. Shifters: SRAM X.7 twist. Crank: Truvativ Elita 30/39/52 triple. Bottom bracket: Truvativ Gigapipe ISIS. Cassette: SRAM 7.0 11-32 9-speed. Chain: KMC Z900. Brakes: Tektro Aquila disc. Brake levers: Tektro MT15; Wheels: Shimano Deore Disc Mach 1 210, 36°. Tires: Primo Racer 26" x 1". Pedals: Wellgo platform. ♦

Road Test: Cab-Bike

TRIKE: CAB-BIKE

PRICE: \$7,000 (see below)

CONTACT: www.cab-bike.com
& www.velomobiling.net

By Mary Arneson

On a New Year's Day ride in 2002, I decided to bike at least some distance every day of the year. Within three weeks, that resolution had come up against an impossible barrier: cold/exercise-induced wheezing. Down to about 4° F, everything was fine, but at colder temperatures I was gasping for breath. Air-warming masks provided only a little relief. Left with plenty of surfing time, I turned to the Internet for ideas. It didn't take long to find that the Europeans had a solution for cold-weather biking woes: the velomobile. I was hooked.

Sure, they were expensive, but the dollar was in better shape then. I sent inquiries and scoured the Internet for information. (It helps to be reasonably fluent in German and able to read Dutch.) European velomobiles could clearly provide stable, fast and practical transportation. They started to look like a solution not only for my cold-weather breathing problems but also for our daughter's transportation needs. Erika doesn't drive because of spatial orientation and sequencing problems, but she bikes on paths and quiet streets. She was spending a semester abroad, and it was easy for me to combine some velomobile test-rides with helping her navigate through European train stations on her way to the University of Vienna.

Between the Internet searches and the test-rides, I settled on the Cab-Bike. We ordered three of them and arranged to take delivery during spring break. My husband Dale and I flew over and Erika took the train up from Vienna, meeting us in Giessen, Germany. We took a train across the hilly area between Giessen and Cologne and biked from Krefeld to Rotterdam, passing through the tulip fields in Holland at peak bloom. Erika went back to Vienna, we flew home from Amsterdam, and the Cab-Bikes took a direct flight from the Netherlands to Minneapolis.

We've been riding them for nearly three years now, and we have also done some test rides and looked at other velomobiles. We can compare them with a variety of uprights that we've had, as well as LWB and SWB recumbents and a Greenspeed GTO trike.

USE: My 5-mile commute runs along dedicated bike paths and quiet city streets, but with plenty of stop signs and a couple of busy arterials to cross. Dale can choose between a 9-mile cross-city rails-to-trails route and a lovely 12-mile Minnehaha Creek-Mississippi River path, both with almost no street riding.



Mary and her Cab-Bike

We also bike to grocery stores and run other errands by bike.

SEAT/COMFORT: Our Cab-Bikes have molded fiberglass seats which adjust to allow riders to find the most comfortable position. I tend to ride with a little extra cushioning for my lower back and neck. My first ever 100-mile ride was with the Cab-Bike, and I got up the next morning and rode 30 miles on another bike. Of course the biggest comfort advantage is the extraordinary weather protection. It's possible to bike at 0° F in a T-shirt and lightweight pants. You can ride through puddles without getting splashed. You can bike to work in the rain and arrive clean and dry. The white roof also protects against sunlight. Ventilation is excellent except at low speeds, and a laminar flow pattern keeps the windows from fogging as long as you are moving. The windows can be opened up for extra air and to control fogging at stop signs, and you can ride with the side windows stowed in back (or at home) if the weather is dry and warm.

RIDING POSITION: The bottom bracket is above the level of the seat pan, similar to the position on other tadpole trikes. Riding without clipping in to the pedals is not recommended; it takes more effort, and there's a chance of slipping off the high pedals. However, I do ride in winter boots when it's cold out, and I sometimes wear regular shoes if I don't want to change. It just takes some more attention.

SEAT ADJUSTMENT: The seat recline is adjustable, but short riders may have trouble seeing the road if they ride reclined too far. The aerodynamics of the Cab-Bike are not affected by sitting up straighter, so riders can choose an upright position without sacrificing speed. Seat

angle adjustment is fairly easy, using standard quick-releases that secure the seat support bars to rails. Most velomobiles are either built to size or set up with a limited range of adjustment. (Small riders can't easily handle the extra weight and size of velomobiles built for big people, and providing a full range of adjustment adds weight.) The seat rails on the Cab-Bike can be positioned high and forward for small riders or low and further back for large riders, and there is a several-inch range of adjustment available.

EASE OF ENTRY: The Cab-Bike's entry arrangement is unique. Most other velomobiles have a kayak-style hatch, requiring an agile rider (and risking mud on the seat). The Cab-Bike is entered by putting the "far" foot into the foot hole while leaning on the chassis, then bringing the "near" foot in, and sitting down into the seat. Getting out requires standing up into the foot holes, swinging the "near" foot out, then lifting the "far" foot over. It isn't immediately obvious to people at first glance, but it isn't difficult. For riders who aren't very flexible, the Versatile and Leitra velomobiles are easier to get into.

RIDE: The Cab-Bike is suspended on all three wheels, and the ride is comfortable even on cobblestones. The suspension system, using MacPherson-type struts for the front wheels, is shared by several other European velomobiles and has been in use for 20 years. The Cab-Bike, like other trikes, does not present balance problems when coming to a stop, and does not require clipping out of the pedals. This makes it easy to get started at intersections. I don't notice that I'm any slower than on a regular bike.

NOISE: Faired HPVs can be quite loud inside. The Cab-Bike is noisy on rough pavement when the fairing is vibrating, particularly if the windows are closed. The Rohloff hub is noisier than a derailleur system. It does get quieter after the first 100 miles or so, but a couple of the gears are louder than others. You don't ride along next to another Cab-Bike and hold a conversation unless the windows are open and you're on smooth pavement. Traffic noises can be hard to hear, making riding in busy areas difficult.

PERFORMANCE: What are you comparing it with? If you are looking for something that can bring home 60 pounds of groceries, it's hard to come up with a bike/trike/trailer arrangement that as comfortable and convenient as the Cab-Bike. There are also many conditions in which a Cab-Bike rivals other bikes for speed: on rolling hills, it conserves the downhill momentum and sails up the other side. It cuts through headwinds and picks up a boost from sidewinds and tailwinds. Its aerodynamic shape makes up for its extra weight on flat ground. You do notice the extra weight going uphill. There are faster velomobiles, for those who want to outrace, rather than just keep up with, the racing uprights; in a Quest or WAW, you'll be faster than a matched rider on a standard bike.

FRAME: The Cab-Bike's front-wheel struts, steering assembly, and rear wheel are attached to a self-supporting fiberglass "tub" chassis. A two-piece tail section shields the rear tire and provides some storage space, while a hinged canopy swings down over the main compartment. Aluminum plates close off an indentation in the bottom of the chassis and protect the chain run. The "tub" is sturdy without being overly heavy. The other fiberglass parts are lighter weight, although you can't put really heavy items in back, for instance, and you have to be careful about pushing hard on the tail area.

WEIGHT: Around 71 pounds.

COMPONENTS: The 14-speed Rohloff hub in the rear wheel is low-maintenance and efficient, but expensive. (It makes rear tire changes cumbersome, so some velomobiles have it in a mid-drive instead.) Shifting is by means of a grip shifter mounted on the tiller. The Rohloff shifts through its full range at a standstill, which is a convenience after

panic stops in high gear or when downshifting on hills. The gear range is very large, allowing the Cab-Bike to climb just about anything, while not running out of gears at any sensible downhill speed.

CHAIN MANAGEMENT: The chain run is fully enclosed. There is a little port for adding oil, but chain cleaning requires removing one or more of the three aluminum plates under the chassis. You never see — or touch — the chain unless you really want to.

BRAKES: Sturmey-Archer drum brakes on the front wheels. No rear brake (they tend to destabilize a tadpole trike on downhill turns). The brake handle is on the central tiller, and it has a little catch that allows it to serve as a parking brake.

STEERING: There is Ackerman compensation to minimize tire scrubbing on turns. A central tiller controls the front wheels. A universal joint at its base allows it to tilt forward and backward (for comfort) and side-to-side (for steering). It's also possible to steer by rotating the tiller. It sounds complicated, but it's intuitive and easy. Elbow rests are built into the chassis.

WHEELS & TIRES: 20" wheels all around. It comes with Schwalbe Marathon tires. The wheel-wells are a bit tight, so converting to high-profile tires doesn't work.

UPGRADES: There is an optional conversion kit to allow switching between the closed and open top versions.

ACCESSORIES: Bags for organizing small objects. There are after-market turn signals available, but since Germany doesn't allow turn signals on bikes, so they can't be provided from the factory. Cab-Bike has been developing a power-assist trailer called the Power Box. It uses a small electric motor to drive the trailer, which then pushes a bike, trike, or velomobile.

REAR-VIEW MIRROR: A large mirror is mounted in a housing on the roof. You look up for a nice view of what's behind you, but there are blind spots off to the side. I'm looking at adding side mirrors.

ELECTRONICS: The Cab-Bike comes with a somewhat ordinary European speedometer (mine died at about 4,000 km), a rather small battery-powered LED tail-light, and a pair of halogen headlights. I'm having the lighting re-done right now to convert to LED headlights (so I

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This is one cool velomobile

can ride more than a couple of hours without recharging) and a rear light with turn-signal and brake-light features (so people behind me will have some idea what I'm planning to do -- not easy when you can't see the rider). German lighting systems have to wait for government approval before they can be supplied with a bike, and Cab-Bike has been looking at ways to upgrade their systems. Many European riders add lights and turn signals to their Cab-Bikes.

CARRYING CAPACITY: Organic Engines can probably beat the Cab-Bike for carrying capacity, but not much else carries 70 pounds of groceries as nicely as a Cab-Bike. Touring is great with the Cab-Bike. You just toss in your luggage and ride. There is room for food and drink, and you can eat while riding. A small child can ride behind the seat, and a small- to medium-sized dog can sit next to the rider.

PURCHASE: Velomobiles are very rare in the US so resale is good. Customers who buy them must be very serious and either arrange their own shipping or go to Europe to pick them up. As a result, some resales are at or above original cost.

This Cab-Bike cost: 5,830.00 Euros
(around \$7,000 in Feb 2006)

With VAT: 6,762.80 Euros (about \$8,135)

SHIPPING TO US: 1,200-1,500 Euros (\$1,440 - \$1,800)

US CUSTOMS/DUTY: about \$260 (3.7%)

RECOMMENDATION: I'm delighted with the Cab-Bike, but I don't use it for all my riding, and I don't recommend a velomobile for everybody. The Cab-Bike solves a problem for me: it lets me ride in colder temperatures than I can tolerate on a standard bike. It also reduces the effort of riding on windy days, allows me to be sloppy about carrying groceries, provides entertainment for my Jack Russell terrier (a dedicated car dog), and draws attention like nothing else on the path.

I don't enjoy riding it (or any other trike) in traffic because it's less maneuverable than a bike. Velomobiles aren't for everybody, especially where bikes share the road with cars, SUVs, and trucks. They are ideal for a commute that is mostly on bike trails or lightly-traveled streets. Protection from wind, cold and rain is great (hence the popularity of velomobiles in the Netherlands), but you might as well get out your skis when it snows. Pushing 70 pounds plus a rider on three wheels through snow, using a single wheel in back, just doesn't work.

The Cab-Bike goes a long way toward replacing a car for running errands, commuting, and taking long bike rides, but there are things it can't manage. Potential buyers should think about what problem they are trying to solve by buying a velomobile and should ask a lot of questions to figure out whether it will work for them.

COMPARABLES: Leitra, Leiba, Go-one (closed), Versatile, WAW, Quest, Mango, Alleweder (open).

FOR: Great load capacity, protection from weather, protection from puddles, aerodynamic boost from side and tailwinds, and fun to ride. In comparison with other velomobiles: easy entry and no tracking mud onto the seat; big enough for larger riders.

AGAINST: Claustrophobic for some, takes more space than a bike, interior noise interferes with communication, slow up hills. In comparison to other velomobiles: not as fast, more expensive than some.

NUMBERS: Length: 240 cm (94.5 inches); Width: 75 cm (29.5 inches); Height: 120 cm (47 inches). This is narrow enough to squeeze through a standard door.

FITS: Riders 5'1"-6'6"

WEIGHT LIMIT: 330 pounds (rider and gear).

MORE INFO: www.cab-bike.com and my website, www.velomobiling.net provide links to all of the manufacturers and photos and information on many velomobiles. ♦

Retrospect: The RANS Rocket

By Bob Bryant

The RANS Rocket was designed by Randy Schlitter in 1994, and was introduced as a 1995 model. The Rocket is an affordable dual 20"-wheeled SWB above-seat steering recumbent and was on the cutting edge at the time. The bike was unveiled on the heels of the success of both the RANS V-Rex and at nearly the same time as production ceased on the dual 20" Counterpoint Presto. The Rocket had all of the fine design features of the V-Rex — but simplified and with a 20" rear wheel (instead of the V-Rex's 26"). The Rocket also offered many improvements over the Presto:

- Longer wheelbase (for better weight distribution)
- Less frame flex (because of a shorter boom)
- Improved handling
- Improved cockpit comfort (more room)
- RANS durability
- Improved push-forward "Flip It" stem
- Stronger brakes (on later models)

From the late 1970's through the early 1990's many SWB designs had wheelbases of 36" or less, in order to keep the rider's heels out of the path of the front wheel. With the Rocket, RANS chose to extend the wheelbase out to 40", and later to 41.4". The bike does have some heel/front wheel interference which has become less of a concern to designers in recent years.

Here are the changes over the years:

- 1994** Randy Schlitter designs the bike.
- 1995** RANS introduces the Rocket for \$695.
- 1996** Price increased to \$1,095.
- 1997** Round tube model introduced with fixed riser, Canti & Bull dog brakes.
- 1998** V-Brakes are added, and price is increased to \$1,150. Saturn V upgraded model introduced in yellow with Ritchey crank, ESP 9.0 and a Flip It for \$1,750.
- 1999** Flip It fold-forward stem is now standard; price is \$995.
- 2001** Frame production shifted to Taiwan, wheelbase lengthened by 1.4" with Reynolds frame tubing and 2" main tube. Price is \$999.
- 2004** Rad Loc seat clamp is now standard; price is \$1,149.
- 2006** Color returns to original red; price is \$1,174.

Having wheels of the same size has always been popular among recumbent riders. It's more than just the convenience of having to carry only one size spare tube/tire; the feel of two wheels and two tires of the same size is just more bike-like. The road feel of the dual 20" is very intuitive and a real rider's bike (fun). The snappy, quick handling and the predictable road feel of the Rocket makes the bike well respected in the recumbent community. When accelerating up to speed, the Rocket definitely feels faster than 26"-wheeled SWB models. The 20" wheel arguably doesn't hold its speed as well, but the Rocket is a fine performer. Advanced riders can steer the bike with weight shifts — much like a good road bike. Many riders would argue that the bike handles better and is more fun to ride as well. The 20" wheel and stiff steel frame make for a stiff ride. Running fatter tires at lower air pressure can soften the feel.

The Rocket has a bottom bracket that is slightly higher than the seat — basically what we describe as a "level" riding position. This allows more seat recline, less weight on your hiney and more comfort. This type of SWB is much more rider-friendly and easier to handle than those bikes with very reclined seats and very high bottom brackets.



The 2006 Rocket is the most refined and affordable dual 20" recumbent made today. The upgrades include a longer wheelbase, Rad-Loc seat clamp, Flip It stem, V-brakes, full round frame tubes and a Reynolds 520 Chromoly frame all for \$1174.



The original 1994 Rocket had a square main tube, the old style RANS seat clamp and a fixed above-seat steering. Also note long reach sidepull front brake. V-brakes solved the braking and front cable routing problems with the ingenious V-brake noodle cable mount.


If there is something to criticize about this near-perfect recumbent, it is RANS's extreme stock gearing. The 42/52/62 crankset and 11-32 cassette make for a range of 25.6-110 gear-inches. The numbers are fine, but the big chain rings just don't shift as well as smaller rings. The first change I'd make on my Rocket is to reduce the chain ring sizes. Some owners have installed SRAM DualDrive (3-speed rear hub) as well. The only other minor criticism is the potential for heel overlap with the front wheel, which gets worse when you add fatter tires and/or fenders.

In 2001 RANS moved production of the Rocket to Taiwan, and also upgraded to Reynolds steel frame tubing and, eventually, a threadless fork. The most recent frame upgrade is the addition of the slick Rad-Loc seat clamp. An article on the RANS website, "A High Performance Rocket," discusses converting the bike to a fixed face-forward stem (removing the Flip It) and adding double bend handlebars and Velocity paired spoke wheels (ITR #10).


This is one of my all time favorite recumbents and was my training bike for touring back in 1997. My first Rocket was red. I rode it for a few years and then sold it to Kent Peterson who used it as his primary



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transportation. Later, I bought this well-worn Rocket back and then resold it to another local rider. As far as we can tell, this bike had 18,000 miles on it — back in 1999! I also owned a Saturn V for a short time.

Current recumbent design trends, such as that of using dual big wheels, have caused a decrease in the dual 20" Rocket's popularity. We hope RANS continues to build the Rocket. Perhaps they'll even update the design again, we just don't know. The Rocket is a fun bike to own and ride. It's a proven reliable "all around" SWB with unmatched value in the market today. The 2006 RANS Rocket is the most refined dual 20" SWB ever built and it retails for just \$1,174.

NUMBERS: Wheelbase: 41.4". Seat height: 23". Bottom bracket height: NA. Weight: 29 lbs. Weight limit (rider & cargo): 275. FIT: 36-49" x-seam

FRAME & SEAT DETAILS: Frame: Chromoly 2" main tube. Fork: Threadless Chromoly unicrown. Chain idler: RANS. Headset: Threadless. Seat Back: RANS mesh. Seat Base: RANS. Stem: RANS Flip It (push forward). Color: Rush Red.

COMPONENTS: Rear derailleur: SRAM 7.0. Front derailleur: Shimano Sora. Shifters: SRAM 7.0 twist. Crank: Truvativ 42/52/62. Bottom bracket: Truvativ ISIS. Cassette: 11-32 8-speed. Chain: KMC. Brakes/levers: Avid Speed Dial 7. Hubs: Shimano Deore. Rear rim: Alex DA 16 36". Pedals: Wellgo platform. Tires: Primo Comet 1.5" 100 psi.

CONTACT: www.ransbikes.com.

MORE INFO: RANS Into The Ride: Hot Rod Rocket
<http://www.ransbikes.com/ITRRocket.htm> ♦



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My Recumbent Touring Checklist

by Jon Dittrich
rocketmantn@yahoo.com

My recumbent rider group is called the Rocket Riders (Rocket stands for: Recumbents of Chattanooga, Knoxville and East Tennessee). We decided to ride the longest Rails to Trails ride in the country. This is the KATY trail and it runs from Calhoun to St. Charles, Missouri. This 250 + mile aggregate trail is a haven for recumbent riders. It is mostly flat and has towns sprinkled every 10 miles or so all along the way. This is the perfect way to enjoy riding your recumbent during the day, yet get a hot shower and sleep in a warm dry bed at night. We call it "credit card camping."

To get ready for the trip, there is the every nagging question of what to bring or more importantly what NOT to bring. Weight is your enemy on one of these rides because the tendency is to carry far more than you need.

To give guidance to the novice, I am combining my 20 years of backpacking with 10 years of riding to come up with the ultimate list for touring on a recumbent. I wish to share these pearls of wisdom with my brethren recumbent riders. Here is what I am taking and what I believe are the essential items for touring on a recumbent . . .

0. Your recumbent. Who would want to WALK that distance?

1. One set of bike panniers. They are pretty much empty, but I think I will take them for looks and slow down my otherwise efficient aerodynamic drag. Plus, I don't want other recumbent touring riders to feel bad.

2. One set of biking clothes. Since I can wash them every day, hang dry and they are ready for the next day, this will work — no extra clothes are needed.

3. No rain gear. I am going to bring a can of Rain-X. This is the same product you spray on your car windshield and it keeps the water off when it rains. I plan to spray it all over me if it rains. I figure if it is good enough for my car, it is good enough for me.

3. No personal hygiene items. I will rinse off with water each night, but if the other members in my group don't want to smell my stench, they better ride faster than me. I look at this as a great incentive for them to keep up the pace on the trail. My hero is Pig Pen on the Peanuts cartoon.

4. No sleeping clothes. No further details, don't ask!

5. No spare tube. If I get a flat, I will follow my other hero Daniel Boone. I will just skin a snake, duct tape it together and use it as a spare tube.

6. No spare tire. If I get a hole in the tube, that is what bubble gum is for. If bubble gum doesn't work, then duct tape.

7. No pump. With the group I am riding with, there is PLENTY of hot air to fill up a multitude of tires! Why carry useless weight?

8. No helmet. If my brain was worth protecting, I wouldn't be writing this stuff!

9. No water bottle. Contrary to popular wisdom, water will only slow you down. It is 7 pounds per gallon. So I will plan for it to rain and keep my mouth open when it does.

10. First aid. I plan to carry a pint of Jack Daniels. If I get injured, I will chug the flask first, then I won't care what happens to me after that! "Happy trails to you, until we meet again . . ."

11. Only carry light stuff. I plan to use the stealth approach on heavy items. All of my heavy stuff I am hiding in the trailers of other members. They have so much room and stuff they will never know the difference. I just want to help them improve their cardio vascular system!

12. No lip balm. That is what the stuff on your bicycle chain is for. Just smear it on your lips and go.

13. No food or snacks. Instead I am going to bring the Euell ("Ever eat a pine cone, many parts are edible") Gibbons books on eating everything and anything (literally). If I don't like his philosophy, I'll just eat the pages of the books and think of lettuce.

14. No maps. Maps are for geeks who have to know where they are at all times by using their portable GPS units so they can log it in the travel spreadsheets using their PDAs. The purpose of the ride is to be ONE with the universe. Just riding into oblivion is part of any epic trip. Heck, I am oblivious to most things in life. Just ask my wife if you don't believe me!



(On a historic note on topic — did Columbus know where he was going? NO! Otherwise he would have never found America!)

15. Do bring a credit card with a large credit limit. Anything I need on the trail I will charge. My motto will be, why carry it when I can buy it! Just make sure it is someone else's credit card. I sure don't want to get stuck paying the bill for this trip!

16. Have fun! That is the purpose of any ride. If you can't tell from this message, I plan to have LOTS OF FUN on the trip. Indeed, this is all you really need to carry with you!

There you have it. Everything you need to have a great recumbent touring trip. See you on the trails!

If you would like to find out more about our group, visit: <http://groups.yahoo.com/group/Rocketriding/>. ♦

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Shaping Up An Old Timer

By Dave Mattoon, davemattoon@gmail.com

Find the “Old-Timer” in this picture. Is it the bike, a 1990 RANS Stratus? Is it the rider, a 1941 retiree? Yes. Both are “Old-Timers” in need of a makeover!

This “recumbent odyssey” starts with the birdhouse in the background. While moving it, I fell off the step ladder and broke my right wrist. For the next 11 months my right arm was in a cast. I could not ride every morning on my Trek road bike. A local shop offered a solution. They let me test ride a Burley Koosah, After flopping around for five minutes in their parking lot I walked it back to the shop discouraged, but still with hope that a recumbent might be more pleasurable to ride. Subsequently I visited other local bike shops and searched the web for a recumbent. Finally the Stratus appeared on eBay and my prayer was answered.

The bike arrived from California and looked good for being 16 years old. Tires were iffy – one held air despite threads sticking out. The other held air for an hour or two despite several bulges. I took a short test ride and couldn’t shift the rear derailleur. Back in the garage I readjusted all the hand controls. Now it would go up and down the driveway, but out on the road it would veer left in hands-off mode. Scary!

Back to the garage I concluded that the bike was not in great shape because it was unridable. The gears were too tall, shifting was difficult, and steering straight was impossible. The tires couldn’t easily be inflated (Presta valves). After taking a short ride, riders probably said “Phew! Glad I made it back in one piece!”

I went to work on the various issues. Thanks go to my wife Carroll for bearing with me while I was surfing the web or in the garage. Also, I salute Ronnie Hendershott (RANS), Bob Bryant (RCN), Scott Johnson (scottscyclery.com), Mark Stonich (bikesmithdesign.com), Sheldon Brown (sheldonbrown.com) and ParkTool.Com, all of whom supplied technical advice, suggestions, and parts that are not widely available.

If the Stratus ever goes into a museum I saved and labeled all the old components. But for now it is an active living and breathing relic from the past, just like me!

Here are the changes I made to the bike:

Handlebars: I reversed the handlebar stem – steering returns to center. This made for a closer, less stretched out hand position offering more precise control.

Front Wheel: I tried the front wheel and now the bike tracks straighter.

Derailleur: I replaced rear derailleur cable with a Teflon-coated cable, now it shifts better.

Cranks: I swapped the 170mm cranks for cut down 153mm arms from Mark Stonich.



Author Dave and his Old Timer Stratus



The reversed stem, an articulated riser stem would also work

This has improved my cadence and reduced my pedal arc (less knee motion).

Gearing I: While updating I exchanged the stock 32/42/52 crank for a 24/38/48 crank with lower gears to match the shorter crank arms and provide better climbing over the hills of Connecticut.

Gearing II: I replaced the stock 12-28 freewheel with a 13-34 Shimano MegaRange freewheel – for ultra low gearing.

Gear Inches: The stock gear range was 32-119 gear inches. The new range is 19-102 gear inches.

Chain Management: I installed N-Stop inside the small chainring which keeps chain on small ring.

I replaced the Deore XT derailleur with a Deore XT long cage Rapid Rise derailleur – which downshifts faster.

Safety: A neighbor was following behind me and said the bike was hard to see in shadows and in glaring sunlight. I added a visible orange/yellow reflector in front and rear. This was made by cutting a biker safety vest in half. The rear of the vest fit the front cargo bag perfectly. The vest’s front fits neatly into the top of the seat back. The vest’s opening for the head now goes over the rear tire. Nylon cable (zip) ties secure the lower edges to the seat supports.

The odyssey has been a great experience. I learned a lot about bike technology, mechanics, tools, and continue to make new acquaintances. Once again I’m doing the 12-mile morning ride. My aerobic condition is slowly returning. Each day is better. My hands and seat aren’t numb after the ride and the waistline is starting to shrink! ♦

SportCrafters Mini-Roller Trainer

By Winston Shaw

Trouble In Paradise

Living on picture-postcard-perfect coast of Maine has its perks. Regrettably, year-round cycling is not one of them. Winters here are long, cold, snowy, and wet. And spring? Well let's just say that spring is a dreary 3-week season of rain and mud connecting winter to summer.

All other cycling fitness avenues exhausted, I decided a year ago to bite the trainer bullet in hopes of maintaining at least a semblance of cycling fitness during the off season. This then, is the story of my search for the "Better Mousetrap" of recumbent trainers.

Having had disappointing experiences with various bike trainers years ago it took me only a moment or two to craft a trainer wish list, based largely upon what didn't work back then. It went something like this: Having set my sights pretty high chances for success seemed dim as I launched my search for the perfect trainer when I stumbled upon SportCrafters. A small midwestern company devoted to the fine art of building better bicycle rollers and roller trainers, SportCrafters is the sort of company where the buck stops at the owner's desk because there is nowhere else for it to go.

Founded by Pete Colan in 1996, SportCrafters builds very high-quality roller trainers for a very reasonable price. Both under its own label, as well as for some of the most respected bicycle roller companies in the USA. Hint, a rather famous American cyclist used rollers built by SportCrafters while undergoing wind tunnel tests for the Tour last year. Better yet, Pete is himself an avid cyclist who rides mountain bikes competitively for Cannondale Midwest and his goal is to build quality cycling equipment he can put his name on with pride.

Two brief visits to the SportCrafter's website convinced me that their Mini-Roller Trainer was just what the doctor ordered, so I placed an order.

Great Trainers Come In Small Boxes!

My SportCrafters Mini-Roller Trainer for recumbents, trikes, and uprights arrived three days later and it was love at first sight! Opening the shipping box, I was pleased to discover that the trainer came fully assembled! The front fork stand does require a three minute tool-free assembly. The trainer comes in two sections, the resistance unit, made up of two rollers and a blower fan, and the fork stand, a three legged affair with quick release designed to support the front end of a two wheeled recumbent or upright bicycle. Tadpole trikes do not require the fork stand as the front wheels serve admirably, although you may need to elevate the front wheels a bit to make things level.

Sporting a durable black powder-coat paint job, the tubular rails of the resistance unit are sturdily constructed of 1" square 16 gauge steel. The four feet upon which the roller unit rests are clad in thick rubber boots to keep the unit from sliding around while in use, as well as to protect the floor or carpet from damage. Measuring 30" x 10" x 4.5", the resistance unit more than met my "compact and easily stored" standard.

The fork stand is constructed of the same 1" square tubular steel but it's powder-coated in a luscious shade of candy apple red so close to my RANS Rocket you can't tell them apart. Fork stand dimensions are a compact 18" x 27" x 12" for the 20" version, slightly taller for bikes sporting a 26" front wheel.

Once I had everything unpacked it became clear that the two 3.5" x 5 3/4" rollers mounted between the parallel rails of the resistance unit form the backbone of this trainer, both literally and conceptually. Constructed of PVC and precision lath-turned to a very high run out tolerance of <.001." these rollers are some of the smoothest I have ever ridden. In fact, they literally "disappear" under the spinning wheels of my Rocket!



Author Winston Shaw on trainer — photo by Sonny Gerrish

Better yet, they are small enough to provide good resistance without the necessity of complex resistance unit options commonly required by other trainers featuring larger rollers. While some may worry about durability issues with PVC, Pete assures me that having sold thousands of PVC rollers he has not had a single problem with warpage! As with all other removable parts, the rollers are attached via 2 1/8" knurled plastic knobs for convenient "tool free" access.

Speaking of which, while earlier models featured non adjustable roller spacing this sometimes created chain strike problems for owners of trikes with 16" rear wheels. This new, improved model allows roller spacing to be narrowed via a second set of holes drilled in the resistance unit frame. Making the switch between 16" rear wheels and those 20" or larger is easily accomplished in about three minutes.

In keeping with SportCrafter's refreshing policy of over spec'ing all weight-bearing components, roller axles are constructed of oversized 3/4" steel stock for resistance to flexing. They spin on precision radial ball bearings. Please note, these are true sealed bearings, not the more commonly utilized caged bearings sometimes referred to as being sealed. Thanks to rubber seals on both sides of the bearing they are highly resistant to intrusion by moisture and other contaminants and feature lifetime lubrication with high-temp grease to boot.

To ensure sufficient resistance for a high quality workout, the trainer also comes equipped with a 5" diameter ABS plastic fan, mounted on a 5/16" steel shaft itself supported by the same high quality sealed bearings as the rollers. These bearings are encased in circular bearing holders anchored to the side rails via 1/4" diameter U-bolts. The fan is driven by a 3/16" diameter urethane belt that runs off a groove in the rear roller. The trainer can be ridden without the fan by simply disconnecting the drive belt, although I can't see why anyone would want to do so as resistance is easily adjusted by shifting gears.

Look Out Mr. Mouse

Less than ten minutes after the UPS driver pulled out of my yard I had everything assembled and ready to go. Setup consisted of removing the front wheel of my Rocket, clamping the fork in the fork stand (quick release included), placing the resistance unit under the rear wheel and lining everything up with the main frame tube. Thanks to the separation of resistance unit and fork stand pesky wheelbase related problems are a thing of the past!



*RANS Rocket on SportCrafters Mini-Roller Trainer
Photo by Sonny Gerrish*

All I needed do next was climb on and go for a ride, but before doing so I took a moment to look the trainer over carefully in order to evaluate the overall design.

It's clear at first blush that this trainer achieves "Better Mousetrap" status by successfully combining the very best qualities of rollers and the very best qualities of stationary trainers into one unit. Better yet, the negative attributes of both approaches somehow manage to get lost in the process.

Rollers, for instance, are famous for providing the instant feedback



*Front fork stand for 20" wheel
Photo by Sonny Gerrish*

essential for refining pedaling technique. At the same time they are often faulted as being unsuitable for sprinting or sustained high output training efforts due to balance issues. Stationary trainers, on the other hand, excel at sprinting, and other high output efforts, but fail miserably at helping mashers round off the corners of the squares they pedal.

Much to their credit, SportCrafters managed to come up with a simple yet elegant solution to both these problems. On the roller side they simply added a stationary trainer style fork stand thereby eliminating the touchy balance for which rollers are famous. On the stationary trainer front they added a pair of incredibly smooth running rollers thereby providing feedback aplenty for those mashers hoping to start pedaling circles rather than squares.

If all this seems too good to be true I would encourage you to give the SportCrafters Mini-Roller Trainer a try. Climb on, shift into a 50" gear and crank out 100 rpm and you'll see exactly what I mean about roller feedback helping refine pedal style. Move your shifter a few notches in the other direction to something like 90" and you will also find that high torque sprints are wobble free!

When I first started riding this trainer last year my spin was already pretty smooth but at a cadence of 125 rpm there was feedback aplenty that I needed to work on pedaling rounder circles. Six hundred miles of trainer-assisted refinement later I am able to sprint briefly to as high as 180 rpm with no danger whatever of launching myself into orbit! At the same time wobble-free sprinting sessions made possible by the stable fork stand have both strengthened my legs, and hollowed out my lungs a bit.

All of this is achieved without reliance upon the oft times overly complex, troublesome, and expensive magnetic or fluid resistance sources many trainers are forced to depend upon. The Mini-Roller Trainer's 3.5" diameter rollers provide the increased tire compression that makes such high-tech solutions unnecessary. Add to this mix a simple, trouble-free blower unit, and this trainer is more than up to the task of providing high resistance workouts!

I'm no Lance A but even after putting in about 600 miles I am a long, long ways from tapping out the conditioning potential of this trainer. In fact, I find that I ride most often in a gear of 60 - 70" at an rpm of around 110 so there is certainly plenty of room to grow. In short, I doubt that even the strongest rider will have any trouble whatever working up a good sweat on this trainer.

Tire wear can be a problem with stationary style trainers, but I've had no measurable wear after more than 600 miles (Primo Comet 1.75").

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Gentlemen Start Your Engines

What's this thing like to ride? In a word Fun! In fact I can honestly say that I put in 40-60 minutes at least four times a week all winter and I looked forward to each session.

Thanks to the comfort for which RANS seat I've never had any problem with recumbent butt even after 45 to 60 minutes of fast-paced training. This trainer is also reasonably quiet, extremely smooth, and is capable of providing every bit as challenging or relaxing a work out as you desire.

With the usual environmental distractions of road riding eliminated, I was at long last able to really concentrate on set up issues such as seat angle, seat distance, mast height, brake and gear lever placement, etc. As a result my Rocket is far better dialed in than ever before.

But isn't it boring? I can hear you thinking to yourself. The unequivocal answer to this oft asked question about trainers is a resounding No! I won't bore you with the *Zen And The Art of Riding Bicycle Trainers* lecture. Suffice it to say that the amount of benefits and enjoyment you derive from your time on this trainer will be directly proportional to the amount of effort you put into designing an interesting, challenging, and effective training regimen.

Verdict

The answer to this question is really quite simple. All one needs do is look at the check marks beside every single spec on my clipboard to realize that the SportCrafters Mini-Roller trainer is clearly guilty of filling the bill when it comes to value, quality, versatility, convenience, and user friendliness.

The basic trike version is \$150 — and is an outstanding value. Those riding two wheeled recumbents will need to fork over (pun intended) another \$30 for a fork stand — still a great value. Those, like myself, who own bikes with both 20 and 26" front wheels will need to come up with an additional \$30 for a second fork stand.

When I asked SportCrafter's owner Pete Colan about his warranty this is what he said, "All of our products are covered by a lifetime warranty regardless of condition. I never ask for proof of purchase, I don't really care. If

someone makes the effort to contact me, their issue is worthy of the best service I can provide." Fellow benters, warranties don't get any better than this.

For: Good value, easy setup, durable finish, sufficient resistance for quality workout, excellent tuning stand, easy on bike frame and low Maintenance

Against: PVC Rollers can deform if left in the sun, decals slightly crooked, fan bearing holders susceptible to over-tightning

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