

front-end shifts and position your hand in the correct position for the length of the shift there is usually no problem. The rear is flawless, just one short click per gear. Grip Shifts come in several different models for all different speeds and derailleurs.

There are two models for grip positions. The road model has the grips on the end of the bars. (This is the model used on the Ryan.) The ATB model moves the grips inboard next to the brake handle. This model may not work on some

underseat steering recumbents due to the clearance between the seat and handlebar. On the Ryan Recumbent, the road model Grip Shift's placement on the handlebar makes you want to ride using them as handlebar grips. Most riders like this hand position. The majority of the Ryan riders that I talked to preferred the Grip Shifts to Bar-Cons or thumbshifters. SRAM Grip Shifts cost (approx.) \$90. For more information contact: SRAM Corp., 2039 W. Carroll Ave., Chicago IL 60612 or (800)346-2928.

## The Next Generation Road Bicycle

by Gerald Pease

### The Death of the Traditional Road Bike

The road bike is dead; long live the road bike. In the past few years I have talked to many bicycle owners concerning how they feel about their bicycles. After a century of unquestioning acceptance of the same old thing, the winds of change are finally stirring. The number of bicyclists of all kinds trading their lightweight, skinny-tire road bikes in for mountain bikes is nothing short of amazing. Even more significant to me is the very recent recognition by the cycling public of the recumbent bicycle. Racers have stopped trying to race me when I pass them with my Lightning F-40. They know they don't have a prayer of staying with me longer than 30 seconds on a flat road. And I know exactly how they felt when they first discovered that they couldn't keep up with a 53 year-old arthritic desk worker pedaling a 40 pound enclosed easy chair. **That's not fair!**

With time comes acceptance, and the realization that the old rules of how things should have changed. Road racers have to train with aero bars to avoid being humbled by triathletes. Mountain bikers delight in inviting their 14-speed friends to accompany them on roads that invariably turn out to be in a shocking state of disrepair. Recumbent bikes fly past club pacelines on descents. In Southern California it's getting so the roadies are becoming an extinct species, hiding out in remote canyons. Even there they are outnumbered by fun-loving mountain bikers who snicker at the pretentiousness of the lighter-than-thou disciples. Always they have to live with the awareness that if they don't stay in peak condition, they could be passed on a climb by a mountain biker or even (horrors) a recumbent rider.

### The Identity Crisis

Probably the biggest problem facing acceptance of the recumbent bicycle is, paradoxically, the wonderful variety of these machines. Their owners are exceptionally

individualistic, often designing and building their own unique vehicles. The absence of standards for such fundamentals as wheelbase, handlebar location, or even the number of wheels proves to most people that the recumbent concept must be fatally flawed. It's high time an established manufacturing company looks at the best recumbent bikes available and integrates their finest features into a single rational design. My humble guess is that this bike will have two wheels, direct

steering, and a short to medium wheelbase. Why? Each of these choices is the most familiar to the average cyclist, and has been well proven with practical recumbent applications. Yes, there have been brilliant and successful three and four wheel designs, some bikes with handlebars under the seat that can hold a line through a turn, and many long wheelbase designs that are extremely easy to ride. But the compact two-wheeler with direct steering will be lighter, less expensive, more maneuverable, and easier to transport. Equally important, it will have satisfactory recognition and buyer acceptance from the decidedly non-individualistic buying public.

### The Wonderful Future

Here's where there is plenty of time to expand on the basic theme. The conservative design I've just outlined is ideal for a full-length yet lightweight frame-mounted fairing. Crosswind side forces could be converted to forward motion by using the fairing as a sail. This is perhaps best accomplished by independently steering the rear wheel to "crab" it off the front wheel tract and point the entire "sailfaired" bike and rider into the wind a little. Since the rear wheel would not actually be used to steer the bike, three clickstop positions would suffice, corresponding to left, right, or straight-ahead pointing. Suspension systems will lower rolling resistance and greatly improve ride quality. Because pedaling forces are horizontal with the SWB recumbent design, a dampened suspension will not resonate or

bounce with hard pedaling.

A regenerative braking system consisting of a two pound rubber band attached to a bevel gear on the left side of the rear wheel, three lightweight clutches, and a simple rotation-reversing gear mechanism could drastically improve pedaling and braking efficiency. In fact, Dr. Paul MacCready has calculated that one pound rubber band can store enough energy to accelerate a 200 pound rider/vehicle combination to 20 mph from a reversing mechanism and bevel gear to wind the rubber band while stopping the bike, another would hold it under tension until the energy to the back wheel. Only one clutch would be engaged at any given time; the other two would freewheel. More aesthetically appealing, but less efficient and more expensive, would be an electric motor/generator and battery system. A compressed air pump/motor system using frame tubing for storage would probably work very well. Valve timing could be used to switch from pumping to driving. Also, there would be no need to carry a separate tire pump! Even if the whole thing ended up weighing six pounds, you can bet it would be the hot setup for stop-and-go traffic or a course

with tight turns.

All this stuff isn't even high technology compared with today's computerized cars. Yet it seems wonderful when you look at existing bicycles. I can imagine a bicycle so superior that I would even be happy to trade my Lightning F-40 for it! I am somewhat disappointed that the best HPV inventors and tinkerers are apparently not yet up to the task of building such a "superbike." It probably takes a company with the vision and R & D resources of Honda to design and build this dream machine. Right now it only exists in my imagination and on crude sketches that encourage me that it can be done (no, I won't publish them yet—but I hope you draw your own). Projects like this require a lot of money and time; are rare commodities in the HPV world. Sadly, tradition-bound companies like Schwinn are out of the running. Who will buy such an exotic bike, you ask? Well, how many car buyers do you see shopping for a 1900 style horseless carriage? That's how many serious, well-heeled cyclist won't buy a better bike. Dream on, you say. Yes! It's only a matter of time before such dreams come true, you know.

## RECUMBENT NEWS

**Zzip Designs** announces NEW windscreen/ fairings and mounts for both the Linear underseat steering model and the Infinity. Both designs are very similar to the Ryan mount. The Linear model comes with either a slide on mount or a clamp on version. The Infinity version has a square insert in the fairing mount clamps for a better fit. Both fairings with mounts are priced at under \$300 complete. Zzip Designs, PO Box 14, Davenport CA 95017, Ph. (408)425-8650. We welcome the **RANS INC.**, recumbent manufacturers to the R.B.C.A. Company President Randy Schlitter writes that they are considering a bubble type canopy for their bikes similar to the one that goes on the airplanes that his company builds. They are also experimenting with a new drivetrain, tension-field seats and a new seating position. No indication was given as to when these changes would hit the market. Rans Inc., 1104 E. Hwy 40 By-Pass, Hays Kansas 67601. **THEBIS INTERNATIONAL** builds a classy new recumbent trike with an unusual design: short wheelbase (SWB), rear wheel steering (RWS), two wheels rear/ one in front, magnesium frame and a total weight of only 28 pounds! For more information write: Thebis, 2031 Malaview Ave. Suite #110, Sidney BC Canada V8L-3X9, Ph.(604)656-1237. **TURNER LAID-BACK** The all-new LB-E made

its debut in late May. The bike has a much cleaner frame design eliminating the mess at the main tube and chain stay junction. Other changes include a front derailleur post, (Yeah!) english size bottom bracket and headset, replacing the BMX size. The frame is still mostly square mild steel stock with new round seat tube and seat stays. This new frame is a remarkable improvement over the old LB-Jr, I had a chance to see frame #1 just as we were going to press. The LB-E comes as a frame-set only (including frame, seat, forks and handlebars) and the seat is Turner's low back design. The new frame-set's suggested price is \$300. The new tall seat options is around \$100 extra. Turner Enterprises, PO Box 36158, Los Angeles CA 90036. **CYCLOPEDIA** has just announced a couple of new recumbent parts that should be of interest. First of all, an upright steering kit for Laid-Back Recumbents. The kit includes steering extension, stem, handlebars and grips. The extension is hinged and folds backward and forward for ease of entry and exit. The kit is \$150. Another innovative new part is the **Lightning-Hyper-Drive**, an intermediate idler freewheel (like CycloPedia's Econ-Bent) that will bolt onto your frame and create a two chain drive system. The kit uses the idler freewheel as a triple crank shifted by a front derailleur usually mounted under the recum-