

## Road Test—Lightning Stealth

Lightning's are known for low seats with upright seat-backs, feet-flat-on-the-ground jet fighter cockpit-like feel and bottom brackets that are higher than the seat base. These are the design aspects that Lightning fans have come to know and love. Lightning models have race-proven designs, quick handling, are very responsive and excellent performers. The Stealth is no exception—if you're a fan of the Lightning of Lompoc guru and looking for a budget version of the space frame or carbon fiber dream bikes—this just may be your bike.

### THE TEST BIKE

Our test bike was a well-worn shop bike that had old specs and one of the notorious Kenda 90 PSI front tires (discontinued). We had hoped to see a glowing example of a Stealth, but no such luck. After six years of trying, we have yet to receive a Lightning test bike that equals what you get from the competition in quality control, component selection, service or warranty. Some feel the performance-oriented design is worth the trade-offs, though we'll leave that decision up to you.

Lightning builds expensive cutting-edge high-performance recumbent bicycles. Rotator, builds affordable entry level as well as high-end performance bicycles. The 1996 Lightning Stealth is a team effort between these two companies, though is seemingly underplayed by Lightning in the hot entry level SWB/MWB market.

The Lightning beginnings of the Stealth came about in the late 1980's with the inception of the rather heavy and clunky Lightning F-14. This model was probably ahead of its time, however, due to its weight, it was quickly put out to pasture and is seldom spoken of today. The actual design for the Stealth came from Steve Delaire (Rotator) as the MWB version of his Rotator Pursuit LWB. The LWB Pursuit has the same rear stays, monobeam frame design and materials, though the geometry is different. Tim Brummer added his comfortable aluminum sling/mesh seat, seat stays and ASS to the design—and the Stealth was born.

### FIRST GLANCES

If we had a lineup of all entry level \$1000-\$1200 short and medium wheelbase recumbents and had the ability to ride with our eyes closed (do not try this at home), our choice would be the Stealth. The low "feet-flat-on-the-ground" fighter plane like cockpit initially feels better than similar models. The center of gravity is low and the wheelbase is the longest of any short or medium wheelbase listed in the RCN buyers' guide. Ergonomic considerations do not arise until you lift your feet up to the high pedal position. Even if this feels OK at first. You won't really know if the position suits you until you are rolling—even better, after an hour or two ride. A parking lot test on the Stealth is not enough to know if you'll acclimate to the high bottom bracket design. Some beginners feel the upright seat back instills more confidence, which may be true.

The Stealth has a simple, yet high quality CroMo monobeam frame, matched with the



The Lightning Stealth up against a brick wall—photo courtesy of Gunnar Fehlau

excellent seat and ASS, along with several mediocre features in some component choices and the six hose clamps that hold the seat to the frame. Here is what else we found:

**FRAME/FORK**—The first impression is that the Stealth has sloppy braze joints, though as it turns out our test bike was not representative of what a customer gets (more on that later). The Stealth is brass brazed with the beads left natural and then powdercoated painted. The braze beads are more apparent on the Stealth as the tubes are bigger (than the P-38). According to contract builder Delaire, the braze joint is stronger than comparable TIG welds. We ran this concept by a few recumbent designers, some agreed and others did not. The fork is an off-the-shelf J & B CroMo 16". Arguable aspects aside, the Delaire brazed 2" CroMo (main tube) Stealth frame is pretty nice, though don't expect the refined TIG beads that you see on similar Rans models or the Delaire welded Gold Rush Replica frames.

**ASS STEERING**—The Stealth above-seat-steering (ASS) is an excellent example of a simple fixed system. With the Stealth's longer MWB, the position makes for a roomy and comfortable cockpit. The riser is simply clamped to the fork steerer tube and rises up to meet a stem clamp with nice wide alloy handlebar that could be trimmed or replaced to make it as wide as the rider requires. The Stealth ASS was a pleasant surprise.

**DRIVETRAIN**—The Stealth has an uninspiring mix of components that made for lackluster drivetrain performance. The derailleurs and shifters worked fine, though the shifting is compromised by the KMC chain and the lack of a Shimano Hyperglide cassette/freehub. Our crankset was a Suntour XCT, a long out of production low-end model. Specs call for an Suntour X-1 or Sachs 3000, which are equally poor. The Stealth has both upper and lower chain idlers that cause some noise/vibration, though the idler de-

sign and chain management is excellent.

The best way to handle the component shortcomings is to build the Stealth up from a frameset. If you buy a stock Stealth, consider upgrading the crankset, rear wheel/ tire.

**BRAKES**—The Stealth is outfitted with Shimano STX cantilever brakes. The front is mounted on the back side of the fork which hampers its performance, makes it harder to adjust (as if cantilevers needed to be any harder to adjust). Cantilever rants aside, once adjusted correctly, the STX brakes on the Stealth are excellent stoppers and are all you will ever need.

**SEAT**—You'd be hard pressed to find a better seat on any recumbent. This is a very comfortable seat whose only detracting feature is the way it's hose-clamped to the frame via six generic hose-clamps. Rotator fans have commented favorably about the hose-clamp seat fastening, though we are not aware of any other bike manufacturer using them, nor would they be acceptable in any other aspect of the cycling world.

**WHEELS**—The Stealth comes stock with a rather generic 26" x 1.5" rear wheel with a Sovos hub. The rear tire is a wide and out-of-place City Slicker/Metro type tire. The front wheel is a 16" x 1-3/8" with the same Sovos hub and one of the world's last remaining Kenda 90 psi tires. Separately, these are acceptable, though when used together they do not work well. The front tire is narrow, the rear wide. As you corner, you can feel the squared edge of the rear tire and hear the hum of the tread. Simply change out the rear to a Fat Boy 1.25 or similar and all is corrected. Current spec Stealth's may have the tires updated.

**WARRANTY**—At three years, Lightning's factory warranty is too short. The competition, ATP and Rans, offer lifetime on the frame. This consideration is important as the Stealth design is a monotube frame with a monostay rear-end where one single joint connects the rear wheel/stays to

the mainframe. Had the Stealth come with a lifetime warranty the design would be a non-issue.

### THE LIGHTNING MYSTIQUE

For many riders, the Lightning ergonomics is the center of their cycling world. The low seats allow the rider to place his feet flat on the ground. The seat is wide and comfortable. The handlebars are ergonomic and with the 45" wheelbase, spaced away from the rider for optimum control. Lightning seat angles have always been upright, though the Stealth seat recline angle is adjustable.

The high bottom bracket and upright seat angle force your body into an extreme inverted road bike position. Some riders feel the "sprinter position" makes for incredible short bursts of power, though its probably not the best choice for casual riders or tourists. Lightning recumbents are known for excellent acceleration and hill-climbing abilities. Some high bottom bracket riders complain more of foot/toe numbness (tingling "asleep" feel) as with each stroke you must lift the weight of your legs. Other riders feel this position stresses the knees more. One thing is certain, the Lightning position utilizes different muscles which extends the learning curve.

We found that when you drop the bottom bracket height down equal to or just below the seat height, the ergonomics issues slip away, and Lightning riders may agree that performance slips away as well.

If you make it through the learning curve, you may be set for life with Lightning recumbents. Riders of this brand are among the most loyal we've seen. They take the bad with the good and rave about their chosen design.

### STEALTH HANDLING

The Stealth offers a taste of what you get with a P-38 or R-84, though the detractors made to keep the price down are apparent. At 29 pounds, the Stealth weighs six noticeable pounds more than a P-38 (by factory specs) and ours was a bit heavier. This combined with the fat tires and wide bars give the Stealth a more stout feel. The handling on our test Stealth was quick—too quick for some and definitely less predictable than a P-38. The Stealth climbs well for it's weight. The stiff ASS and seat made steep hills a breeze, though you must pay attention to the heel interference at low speeds. Fast descents were a bit unnerving with the skittish handling possibly caused by the Kenda front tire. Acceleration is very good as has been

the case with all Lightning models we've tried. Flat land performance is also excellent once you are accustomed to the riding position. The smooth spin over long distances takes practice.

The Stealth demo that we tried at People Movers in mid-April handled better than our shop-bike loaner, and was a much nicer bike overall, which leads me to believe that the front tire on our Stealth played a part in the quirky feel, or maybe the shop demo test bike was actually a prototype.

We inspected the poor quality Kenda tire prior to each ride and there were no rips, tears, splits down the tread or side bulges. Given the history of this tire, we limited our speed trials and wore full safety garb. Any flaws in the tiny worn Kenda 90 psi front tire were aggravated by the blustery NW winter riding conditions—ice, snow, sleet and plenty of wet riding. The People Movers bike we tried in LA had the Raleigh 16" x 1-3/8" 55 psi tire and the bike was more stable and predictable. This is not a pitch for the Raleigh tire, but rather a discussion about the importance of a high quality 16" front tire on a SWB/MWB recumbents.

The dream of many recumbent enthusiasts may have come true—ATP in conjunction with Primo have just unveiled the new Primo/ATP 16" x 1-3/8" 85 psi tire. This tire is now available from ATP and recumbent dealers. Riders can also purchase the Stealth with an optional 20" front wheel which alters the geometry of the bike.

### RECOMMENDATION

When all aspects of this bike are considered, our once decisive blind test decision erodes, and the bike doesn't make the cut in side by side comparisons with the competition. The primary reason for going with the Stealth would be the Lightning design, riding position and performance heritage which is not duplicated by any other SWB/MWB recumbent manufacturer.

The Stealth isn't competitively priced, but no Lightning model is. We'd also like to know why we've had so much trouble getting to see and ride a Stealth. Lightning's reluctance to market this bike against the Vision and Rocket leads you to wonder if they are afraid of open market competition and the educated RCN readers.

If you buy a Stealth, you may not get the best components, nor will you get the best value. If we based our recommendations on Lightning's road test antics and the way they respond to us, well, we won't get into that here. Enthusiasts buy

Lightning's for performance reasons. If you can live with the shortcomings and attitude, then the Stealth is a worthy entry level speedster.

**LATE UPDATE:** The Stealth we rode in late April at People Movers had improved braze-joints and overall construction. Contract Stealth frame-builder Stephen Delaire, said that one of his employees built our Stealth test bike. The People Movers bike had improved craftsmanship, an updated crankset and had four (of six) of its seat hose-clamps refitted with neat "twist-dial" clamps.

We would like to thank Steve Delaire of Rotator for his hard work, patience and the part he played in getting RCN a Stealth test bike. □

#### RCN STEALTH ROAD TEST FACTS

- The Stealth test bike was provided by Rotator, though it was on loan from Lightning seemingly for the sole purpose of an RCN road test.
- Our last "official" loaner test bike was our first Lightning test bike back in 1991. A second P-38 (1993) and F-40 (RCN#24) were purchased for testing.
- We've had a variety of quality control issues with our Lightning test bikes: preassembly, poor brazing quality, pin-holes in the paint and component incompatibility to name a few.

These issues have never been dealt with to our satisfaction. Lightning continues to be stand-offish and uncooperative. We had requested both a new in the box (our standard request) P-38 and a 20" Stealth, however, Lightning canceled all future RCN test bikes this past month.

RCN would much prefer that Lightning cooperate in our tests and participate with RCN. If you are a Lightning fan, please take the time to write Mr. Brummer and tell him that you would like to see a Lightning presence in RCN.

#### LIGHTNING STEALTH SPECS

Design/ Steering Type	MWB ASS
Wheelbase	45"
Seat height/recline angle	20"/30-40°
Weight (mfr. supplied)	#29
Weight distribution	55/45 (bk./ft.)
Headtube Angle	N.A.
Frame/ Fork/ cons.	2" 4130 CroMo/CroMo/Brazed
Seat frame/ material	Alum. heat treated/mesh/foam
Derailleurs (fr./rr.)	Shimano RSX/Alivio
Shifters	Grip Shift SRT400 21 spd.
Crankset	XCT/X-1/Sachs 3000 24/36/46
Freewheel/ cassette	Shimano Alivio 11-28 7 spd.
Gear Inch Range	22.3-108.7
Braked (fr. & rr.)	STX Cantilever
Rear Wheel:	26" Alloy/36°
Front Wheel:	16"x1-3/8" Alloy/36°
Bottom Bracket/Headset	Suntour SL/YST
Paint/ colors	Red or Black
Rider Height	5'2"-6'8"
Suggested Retail Price	\$1195 (\$1550 with P-38 spec)

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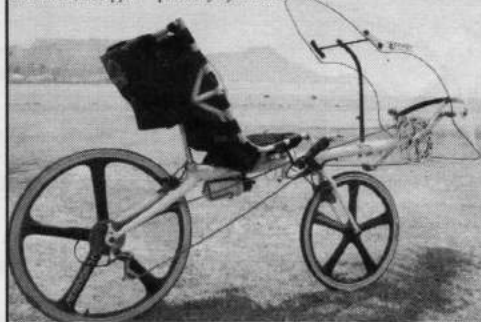
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