

INTO THE RIDE #57

Mid Racer Part I

by Randy Schlitter



What is a mid racer? As you would guess it is a recumbent with a seat height somewhere between a low and high racer, and the rider position is maximized for low drag. To me it represents possibly a new angle on a performance recumbent.

Advantages are pretty obvious; the over-all lower profile is a drag reduction, yet it is still high enough that you are noticed by traffic. The long wheelbase is a dream to ride, and bikes like the V3 have proven a long wheelbase poses little if any weight penalty.

For the endurance racer comfort is an important issue, and capturing the svelte ride of a good long wheelbase and stoking it with plenty of performance has become our specialty. It was only natural to take the V3 concept a bit further to the extent of what we now call the Xstream. Not extreme in terms of trade-offs to capture minute morsels of performance, but hopefully extreme in expansion of the performance envelope of open-road endurance racing.

Keep in mind this is an early exposé of a work in progress. We have no firm plans for production but high hopes to set a couple of these bikes loose on RAAM 2008, and any other races from now until then.



Space Frame

Most bikes are space frames, simple triangle arrangements of a few tubes, just enough to make a bike a bike. On the Xstream we choose smaller tubes for less weight and the ability to truss the frame and dial in ride feel. I might add that the smaller tubes also have less drag, even though there are two of them. Any round tube at a very shallow angle to the relative wind will present a nice thin oval, which is a decent aerodynamic shape. The frame of the Xstream is odd looking, but close study shows the logic in the simple truss, and if you use your imagination you can see all the classic tubes of a bike frame. The ride feel is passive, but since the BB is tied closely to the headset there is great power transfer, due to so little frame twist. There is however pedal steer, revealing ones need to learn to spin like a pro. You do not notice the pedal steer unless you are riding without hands; otherwise keeping a hand on the helm totally dampens the effect.

Handlebars

The first blush handlebar is right off the Stratus XP and seems to be very enjoyable. However, the lust for less drag has us playing with some combinations like a topside short span bar and possible mini fairings. This allows the rider to assume a tuck position similar to a triathlete. A progress report on the merits of this bar will be forth coming.



A Heavy Duty Crossover Idler

Some may recall how I disdain power side idlers, and it really pains me to install one on a bike. But what was it I really did not like about such arrangements? The lack of big bearing for one, and very stiff mountings; both are present in the Xstreams idler set up. The bearing is huge: .625 axle, and 1.375 O.D. The mount is stiff and light, a machined section of .625 cro-molly tubing welded into the frame. The photos show the lack of a chain keeper, which despite our wishes was needed, but not as of yet installed. The benefit from both the big bearing and integrated “hollow” axle mounting is less power loss and quiet operation.



New Seat Clamp System

The smaller tube sizes on the frame presented the need to create a new seat clamp system. The unit featured in the photo is for a 2" tube, but you get the idea. It is very light and clamps like it is welded to the frame. The seat clamp actually on the test bike is something we are cooking up for the more "non-race" version, if it enters production.



New “Hoagie” Seat

The Hoagie seat is super light, a frame of .625 Ti tubing, a bit of mesh and some foam around the edges. It is surprisingly comfortable, but not recommended for the masses. No doubt we will give this seat some more attention; perhaps a thick layer of AC foam? Oddly enough I have become accustomed to the feel of this seat, with its very attached-to-the-bike sensation. It is sized perfectly for my height, with a built-in headrest. We have had some discussions about making the seat custom to the riders, since we fab it at the Hays plant and could offer such a service. Careful placement of the sprint braces and choice of materials has allowed this seat to transmit very little road shock.

Room For More Improvements

OK, so this is the first blush on a new concept bike, mid-racer. There is obvious room for improvement, but for a first draft the bike is turning up some impressive numbers. In our preliminary roll down test it was beating a typical High Racer by almost a half MPH in 400-meter runs. Room for improvement in aerodynamics may see that gap spread even more. The exciting point is we are pretty sure we have matched, if not exceeded, the drag coefficient of some pretty slippery bikes, in a riding format that many will find comfortable, easy to mount, dismount, and ride hard with rail-like tracking.

We will be showing draft II of the mid-racer concept at InterBike, all dressed up for RAAM in Ti and lightweight gear. It should be a bike that will keep the edge on the ever-exciting arena of improving performance. See you in a couple months for Part II when we get up close and personal on some performance and new developments. Until then ride safe and stay into the ride!

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