



(<http://www.ransbikes.com>)

---

## ITR114

**Introduction**  
**by Jerrell Nichols**  
**10/26/2017**

As a recumbent manufacturer, some of the questions I find myself facing are: What do we build next; what is needed/wanted; what's already been done; what have we learned from the past, and what is possible from a manufacturing standpoint? The answers can vary depending on who is asked and what resources and capabilities are available.

I have always had a personal bias for the long wheelbase recumbent platform, undoubtedly due to the excellent ride qualities that have long been the standard of Randy Schlitter's designs, in particular the Stratus. This bias was influential in creating a starting point for the next evolution of the long wheelbase design. I guess it could be said that I also have a fondness for building bicycle frames from 7005 aluminum. It is light, strong, easy to cut/bend/shape, and fun to weld. Randy had already successfully tackled the job of creating the basic frame design to start with, the aluminum Stratus XP K-frame. This is no insignificant accomplishment, to preserve the magic of the 4130 chromoly Stratus while building out of aluminum calls for careful attention to a multitude of details. This dialog would be too lengthy to get into at this time but very interesting to those who are intrigued with the topic.

Influencing this train of thought were ongoing conversations with my friend, Jonathan Garcia, of Rose City Recumbents. He brings to the table a wealth of knowledge and experience of recumbents and cycling as viewed from the perspective of an avid cyclist, a bicycle dealer/shop owner, and one who has been involved with bicycle design and manufacturing. He also lives in a part of the country where climbing hills is a common occurrence during almost any bike ride, not a luxury we have in abundance in southwest Kansas. Following is an article he wrote detailing his involvement in the “Rise of the Phoenix”.

### **The Rise of the Phoenix by Jonathan Garcia**

The introduction of a new model, whether a car, a plane, a new phone (or in this instance a long wheelbase recumbent) is an exciting moment. It is exciting for the manufacturer as well as for the end user, especially long time devotees to a brand. There is a certain romance to the story leading up to the inception, design and production of a new bicycle. With that in mind, Jerrell has asked me to help tell the story of the Phoenix and its rise from the legacy created by Randy Schlitter. A legacy that has been nurtured by Jerrell Nichols and his family in the two plus years they have owned Rans.

The story begins with a Facebook post last year. Jerrell had picked up four “new” old stock RANS Stratus XP AL unpainted frames from the former RANS Bike Factory in Hays, Kansas. Hidden somewhere among the last of the frame and parts inventory that Jerrell had purchased a couple years before were these brand new, old stock gems, last manufactured in 2006. With that post, Robert Holler and I, co-owners of Rose City Recumbents decided to purchase two for ourselves and two for stock at the shop.

Every year we look forward to Cycle Oregon. Part of the ritual is choosing which of our vendors bikes to represent at that event. For 2017, we choose RANS. I was no stranger to long wheelbase recumbents, having ridden all types of Easy Racers for the past 20 years, and I had owned a much loved RANS Xstream for a couple of those years. The RANS XP AL was new, yet, in many ways familiar to me. It has the upright posture that I was used to from the Easy Racers, but with the same size wheels, I guessed a perfect combination for an all-around recumbent. Koehn Customs, Jerrell’s good friend and hometown powder-coat guru painted our four horsemen various Illusion powder coat colors that shined brighter than anything on our sales floor. We were already hooked! I should note here that the closest analogy to what we do at Rose City is hot rodding/improving/designing/engineering existing recumbent platforms to squeeze every bit of performance as we can out of it....very much like Carroll Shelby and his team did for the car industry.

First on the list for me was weighing the four frames, which were all standard size RANS Stratus XL AL’s. The lightest was 4.9 lbs. and the heaviest was 5.2 lbs. with the other two falling in between. This is an obvious indication of excellent quality control with the variance most likely in paint thicknesses. I have had the opportunity to weigh dozens and dozens of different upright and recumbent frames in my 30 years in the industry and this

is one of those rare instances where the advertised weight is heavier than the real weight. I am not a weight weenie and I don't think a 'light' bike is always the 'best', but the structure and techniques in building this long of a bicycle frame and still keeping it strong enough to support a rider for years of riding....takes the aeronautical engineering genius of Randy Schlitter.

I built my green one with some high performance parts; a mix of SRAM and Microshift, hand built Son H Plus wheels with carbon cranks etc....and rode it in stock 26" form. Performance was adequate, but not earth shattering. Then I tried it with 650c wheels. This was a bike that had almost no fault to it, except it lacked that little kick that makes it 'great'. Most annoying was that it was as fast up-hill as some of my other long wheelbase bikes, as fast as any recumbent downhill, but it lacked in the average speed on the flats. It was something that my analytical brain couldn't solve, so I went to work.

After analyzing every number and comparing it to my experience on my other long wheelbase recumbents, my first thought was that it was the mesh seat was a little too soft in the lower back to apply any significant power to the ground. My observations are the standard fare for recumbent bike riders and designers and I was just going through my personal checklist. No matter what that check list is for any one person, they usually include one or most of these: boom stiffness; crank height; seat stiffness or height; handlebar reach and "Q" factor. I know from experience that it is not any one ingredient, but the right combination of ingredients that make a classic. My favorite seat at that moment was the Easy Racer Cobra seat, light with a firm back and great comfort so naturally my Easy Racer became my donor parts bike. I custom bent and drilled a flat piece of aluminum to adapt the seat to the RANS slider. Within an hour, without too much fuss, I was able to make a Cobra seat work on a RANS. It felt familiar right away, and I saw perhaps .5 mph average increase, but still not to the level of performance I was accustomed to when I compared it to my other bikes on the same testing loops. Back to the drawing board. I was frustrated at this point, but the final inspiration to solve this dilemma came from an unlikely source: my life partner.

First, I must tell you that we met because she was a recumbent rider. The thing about her as a tester is that she had been on the exact same bike as long as I had known her....nearly 16 years. That is as close to a scientific control subject outside of a lab as you can get. A little background; she is a runner first and foremost with daily workouts of seven miles, seven days a week. She is not "jogger", as she usually completes her seven miles in well under an hour. Cycling has been her second love, averaging 1k to 2k a year. Those numbers have gone way up since we found each other. The most remarkable thing about her in regards to riding bikes is that she 5'2" and weighs 90 lbs., not someone you would expect to be kicking your butt on a loaded 45 lb. Tour Easy on organized, multi-day rides. During these events, she always has a swarm of upright riders crowded around her at the rest stops asking things like: "How do you go so fast on one of those kind of bikes"? I always chime in and point out that their bikes would have to weigh half as much as they do to match her fitness level. Can you imagine an 80 to 100 lb. upright bike manned by a roadie? I just like to put things in perspective.

Her riding name is 'Demoe' which is short for The Demoralizer, because she is always so cheerful when she blazes by you on the uphill. Her secret is that wonderful aerobic power, perfect bike position, the same exact bike and her awesome strength to weight ratio. A person her size does not have a lot of absolute strength so the bike position is absolutely crucial to get her performance returns. All this ties in to our story, because I was determined to get her on a more "modern" bike (or at least a brand we sell at the shop) and we had decided to adapt one of the four XP ALs for her, as well. Her only requirement was that it was Purple like Batgirl's motorcycle. Did she get what she wanted? Eventually. During my testing process I was shadowing the part changes to her new, purple bike as well. She started splitting her rides between her favorite and the new Purple XP AL. My averages were a little slower on the XP AL, but hers were three to five mph slower than her beloved tried and true bike. Back to measuring again.

The most important thing I found was that the comparison in 'drop' between seat and crank was the most significant ergonomic difference. I couldn't change the bottom bracket height on the bike, but I could raise the seat to get the drop in the same range. I asked Michael Hernandez from TerraCycle to design a clamp adapter for the Cobra seat (which turned out to be light years ahead of my homemade bracket) that also raised the seat by two inches. The XP AL has a relatively low seat height so even with a taller seat, Demoe or I could easily reach the ground flat footed. When the brackets arrived and were installed, it completely changed the personality of the bikes, in that it narrowed every performance perceived or otherwise compared to any other long wheelbase platforms on the market. When I modified the fork and rear for 700c, I had the complete package I had been seeking.

During that development process, Robert and I also came up with new fairing, mirror, and water bottle mounts as well. An entire article could be written about the fairing testing, so we will save that for another time. The modified bike finally had that right balance of speed, weight, usability and safety in one package. It took nine months and nearly 2000 miles of testing to arrive there. I had been keeping Jerrell updated every step of the way, the goal, the frustration, the experiments and finally the success. We both agreed that I should fly out to Kansas for a couple of days to see what could be adopted into the RANS line based on what I had learned during my experiments along the way.

The date was set, the tickets bought and for four days in the beginning of July 2017. Demoe and I had a whirlwind working vacation which included two visits to RANS Aircraft, a wonderful evening with Randy and Shelly Schlitter and hours of exchanging ideas in front of a white board with our hosts Jerrell, Kara and Paul. Whatever you may think of Kansas, some of it is true...it is flat, it is windy, but if you are thinking in a stereotypical bias that there is something lacking in the intelligence or drive of its inhabitants, you would be sadly mistaken. If you thought nothing was going on in Kansas, you would be woefully misinformed. These are the kind of people who could and can, build and fly from scratch, not just one version, but several different airplanes. Let that

sink in. Not just our friend Randy S., who does it for a living, but any one of the people of Kansas I met could surely accomplish something equally as awe inspiring. In fact, anything they set their mind to.

Jerrell toured Demoe and me through Montezuma. I could never figure out how a small town in the middle of Kansas inherited an Inca Ruler's name. Maybe I should have asked! He drove us past some of the endless fields of crops that were scientifically and methodically irrigated with huge implements, so bizarre I could barely categorize them in my city mouse brain. This is the type of town and place that you heard stories about as a kid, where neighbors know each other, the front doors aren't locked and when there is an emergency, every person still upright and breathing is there to help. It is a nice feeling when you know everyone has your back. I was on the tail end of this era as a kid, but it is nice to know it hasn't reached its expiration date like so many other places in the USA.

RANS' Ace-in-the-hole is retired machinist/tool & die maker and current genius Paul Krieg. At first glance Paul is an agreeable, sweet Teddy Bear full of Texas soliloquisms and he is very much that, but deeper, is his incredible ability to solve complicated machining/tooling/fixturing problems that would take a committee of average men 10 times longer to solve. Paul builds violins. Then writes books about them. Paul knows everything about violins. Paul builds a tool. Then Paul writes a book about that tool. Did I tell you he writes books? The kind you hold in your hand. Not the kind on a lit up screen. The real thing...just like him. He shares his time, knowledge and genius with the rest of us and that is a very good thing when you have a lot to learn. Paul K... RANS' Ace-in-the-hole.

Jerrell Nichols is cut from that Kansas cloth that must have "G.S.D." imprinted in it. Get Stuff Done. Jerrell was a successful auto shop owner/mechanic and bicycle shop owner before acquiring RANS Bikes a couple years ago. When he took it over he set his mind to learning the craft of frame building so RANS could continue the legacy of having some USA built bikes in their lineup. This is not an easy task, one I am fully aware of having gone through it nearly 25 years ago myself. I only had to learn segments of the art form, because I had my partner Rob Postma (head welder for Co-Motion and Bike Friday for many years) to do the TIG welding. Jerrell learned that, as well as all the mitering and fabricating. Endless hours of practice and patience are required. As Rob always described to me, unlike a lot of welding 'jobs', a bicycle frame has to be strong and beautiful. Bike riders can be very demanding! Think of learning this craft as picking up a guitar for the first time and then within two years being asked to play on stage with Santana...Jerrell's that good at welding. He plays lead torch. Okay I took it too far.

Jerrell has a remarkable way of listening. He doesn't always look directly at you when he is, so you can't always rely on the visual cues that you know from that rare breed called listener. You have to wait for the corner of his eyes to close ever so slightly that moment right before a grin starts to form and you know got something through! He listens, processes and responds without making you feel like an idiot... or a rock star, depending on how good or bad your idea happens to be at that moment. It doesn't matter. His

response is measured, respectful and insightful; what my parents would have called plain talk. Plain talk with the intelligence that makes it resonate in your own brain. He does stuff that makes sense, stuff that works (Guy Clark reference). The expression of himself and team of talent is evident in the finished RANS USA product, you will not find better in the world. So, back to the story of the Phoenix...

I suggested the name early on in the process of our four day visit because it so suited the end goal. The return and rise of the long wheelbase from the ashes of the old...not just what RANS contributed to the platform, but everything that has come and gone prior to my visit. The design goal from the start was to update the venerable Stratus to bring it into the modern two wheel recumbent age. Two wheel recumbents have suffered lately because of the popularity of their three wheel partners, but it is a platform that will survive whatever happens in the three wheel market. Very simply because it can do things that three wheelers can't (and vice versa) and do some of the same things better...I noticed at Rose City that we were selling our share of three wheelers, but then a larger than expected group of customers would return for a two wheeler. That is something that has been unheard of until recently.

It is common misconception that a trike is the last stop of the Baby Boomers. Many customers tell me "That this is the last recumbent (or any bike) I am going to buy in my lifetime". Sometimes a justification to spend all that money-but sometimes a feeling that they have that they won't be around long enough to buy another. On the contrary, many of my customers get out there, put the miles on, improve their health and well-being and are back for more. When they return they want a bike that can do the same kind of things, something sure footed that can carry a load, but do it a little higher off the ground and a lot faster. Enter the long wheelbase...surely you can pannier-up a high racer or front wheel drive machine, but nothing does it with the simplicity, elegance and beauty of a long wheelbase recumbent. They don't require a suspension because when designed correctly they have that wonderful passive suspension built in. They don't require much of learning curve once you get past the physical length. A practiced rider can put a long wheelbase anywhere an upright can. There are only two unwavering limitations to a Long Wheelbase which are: how to transport it and where to store it. If have those questions (our industry has answers for the first, the second is up to you) then there is no better choice.

The long wheelbase (especially with a properly adjusted fairing) is the closest to fulfilling the long promised holy grail of recumbent cycling: all day speed and comfort. That holy grail was part of my personal design requirement for this project. I have found elements of it in my 20 years of riding recumbents but not every box has been ticked for every ride scenario, that's why I own 10 plus bikes. And "If I could only have one zombie apocalypse bike" design criteria was a part of the Phoenix story, as well. Okay, really back to the Phoenix...

Setting the stage: so we had my ride experience (and Demoe's), and Jerrell and Paul all in the same room. First we stood around a Stratus XP AL, Stratus LE and an Xstream on the lofting table and began taking measurements comparing frame dimensions/heights

and construction techniques. I had done my homework already and had immersed myself in everything Randy S. had constructed, so I knew most of the numbers. Jerrell pointed out some things I had overlooked, like the variation of the seat heights and seat clamp tube angle even between the XP and LE's. Through his experience building the Seavo, he had already figured out how the Phoenix seat stays would easily accept the 700 x 35c tires (my test bed could only run 700 x 25c due to lack of clearance) plus fenders and still preserve the classic and beautiful Stratus handling, maybe even improve it. At the same moment we wanted to capture that 'correct' seat to crank relationship that was crucial to getting all the performance out of a given platform. Also high on the list was a new handlebar less clunky than previous offerings. From my EZ and BMX experience I conceived of a four piece bar that allowed the use of RANS stem risers and also had an extra level of adjustment at the top. After Paul and Jerrell said it was possible, the Energy Bar was born.

Long 8-12 hour days followed talking about the market, the configuration, the geometry, the tooling and everything required to make this bird fly. The whiteboard became our first and last stop each day. I felt exhausted, but elated at the end and everyone vowed to make the Phoenix happen. This bike was going to happen thanks to the talent of Jerrell, Paul, Kara and the whole team! The New RANS will have its first bike, based on the legacy of Randy Schlitter and his teams of the past, but now ready for the changes in market, bike technology and customer desires...The Phoenix rises. In the next installment I will cover the dealer and public response when the prototype and production number one was showcased at the Recumbent Cycle Convention in Philadelphia.











INTO THE RIDE

 Facebook

## CATEGORIES

Categories

Select Category

