

I read Ed Peterson's Rant today on Pelotoneast.com and figured I would have one of my own. I recently went to the 2008 USA Cycling International Coaching Summit. I learned something great each and every day. One subject that is near and dear to my heart is weight training. Believe me; I am FULLY aware that weight training for cyclists continues to be a point of great contention. My problem with almost every argument I hear against weight room strength training for cyclists is one of two things, either people have no idea how to weight train or, in my opinion, they are quoting inadequate research.

First, people that don't know how to weight train really shouldn't have an opinion, should they? If I have never been to Sacramento would you be interested in listening to my opinion about your potential trip there? As for those that like to quote the "Research", maybe someone should design a study a little more "specific" to cycling before you use the "specificity" argument against weight training for cyclists. I mean seriously, how a "person of science" can read a study that showed that a 5 set, 5 exercise, 10-12 rep strength routine done with 80% of 1RM for 6 weeks DID NOT decrease the test subjects times in the 40km time trial, and then proclaim "see strength training doesn't work" is beyond me. Why not check and see if that routine improved their memory. There just might be a better correlation.

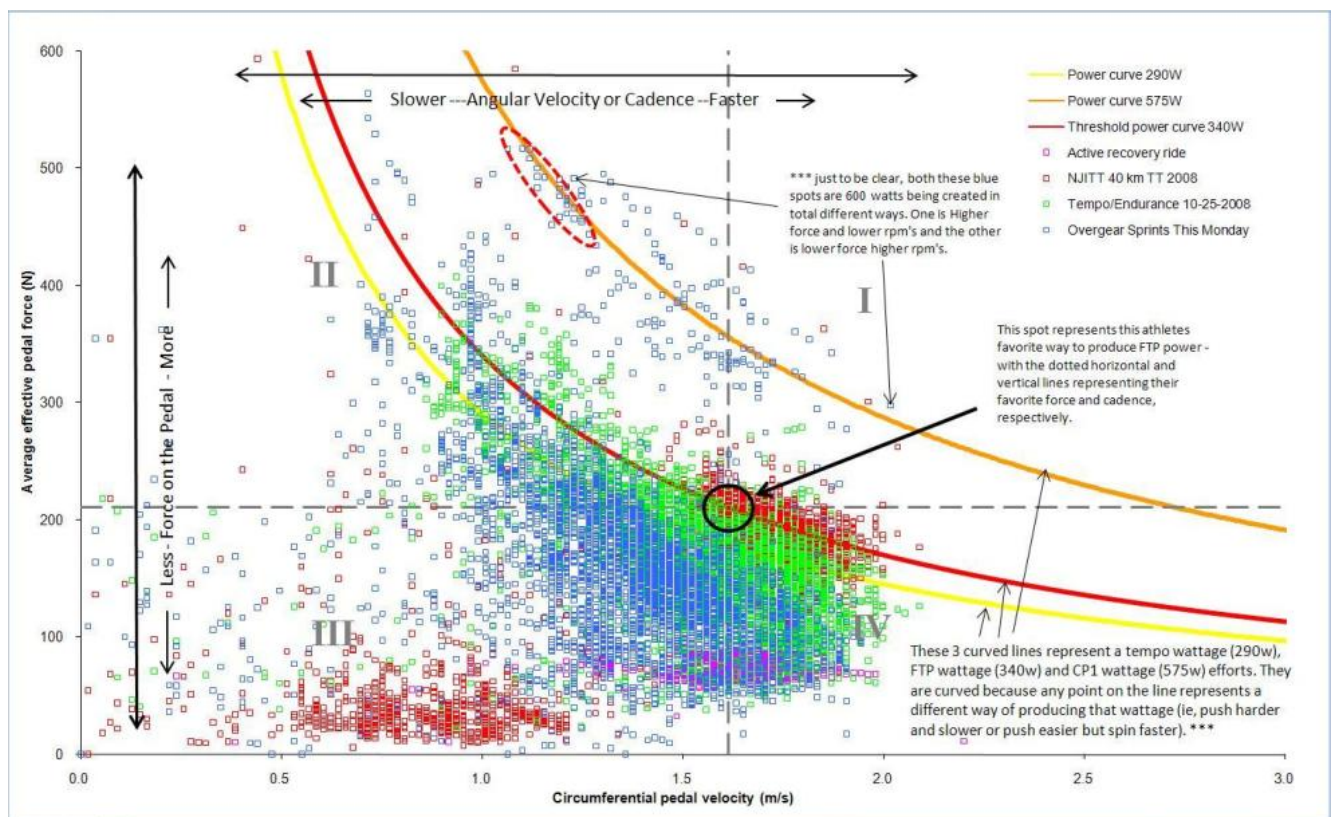
Let's address specificity since the other argument is coming from those that know nothing about weight training. I listen to the critics when they describe the exercises and the routines used in these studies and I think "what a garbage study". A squat done using a shoulders width stance with a full range of motion (butt even with knee) for 10-12 reps at 80% of your 1RM doesn't help an athlete cycling, I agree. Instead, how about using "Q" factor stance when squatting and leg pressing, limiting the range of motion to that used in the cycling motion, using a weight that is closer to the force used on a tough uphill climb and using a number of reps that is similar to that same climb, say MINUTES rather than reps? My athletes have been using 110 rep SETS for years. They love them and hate them of course. More importantly they know they work. The load is much less than 80% of 1RM but slightly higher than the force they would need to produce while climbing. This type of exercise overloads the athletes' muscular endurance capacity.

What about on the bike strength training? Well, it CAN be a good way to build maximum strength since it is so specific but overloading the force mechanism is tough if you don't understand what you are doing. I have included a quadrant analysis of four different workouts from one of my rider's. First thing you need to understand is that QA is a way of looking at a power file so that the physiological aspects being used to create the power can be taken into account. Using a QA chart we are not just looking at the power produced but how the power is being produced. In other words, QA tells you how much force and how much pedal speed were used to create a certain power output.

Next, to use a QA chart you must understand a few other things. First, look for the 4 quadrants in the chart below. They are numbered in Roman numerals 1-4. They are divided in a very particular way. The dotted lines that intersect in the center of the page represent the specific force and the cadence that this rider likes to use to produce FTP. So, any colored dot on the chart represents a specific moment in one particular workout. Now, if that dot is to the right of the vertical dotted line it represents a power output that had a cadence higher than their self selected favorite and if to the left of that dotted line a cadence lower than self selected favorite. As for force, any dot higher than dotted horizontal line is

more force than self selected favorite and below the line if lower than self selected favorite force. Understanding these last two facts will help to understand the next. Any point that falls on the curved colored lines (red, orange and yellow) represents the same exact power output. They just represent different ways that specific power output can be produced. So, a dot that falls right on the RED line is 340 watts AND if it is to the right of where the dotted lines intersection it was being created with a slightly higher cadence than the riders self selected favorite and slightly lower in force than the riders self selected favorite.

Let's look at specific examples. The big clump of red dots is one specific ride, actually it is a race. The red dots are power points from the New Jersey State Time Trial Championship. It was a 40+km TT and took just under an hour. If you understand FTP this athlete should have been able to do this race at slightly higher than FTP. Look where all the dots fell, just over the Red Line. More importantly for this discussion is the fact that most dots also fell to the right of the vertical dotted line. In training, we had been practicing riding at a higher cadence. For this time trial we set a higher than average cadence goal. He was successful at accomplishing the task (hitting his power goal and how he hit the power goal) and his result was also excellent. He won a third State TT title in record time.



How about force or strength training on the bike? Well, the other day we did some Over Geared Sprints (blue dots). In this workout I asked him to choose a gear that was too big to actually sprint in and then sprint. Nice coach huh? Well the product of the workout was exactly what we wanted. The dots in the dotted red circle represent the time spent creating 575 watts, or there about, using higher than normal force. The further to the left and up that orange curve the better. The dots that fell closer to the right on

the line, and lower, were not so effective. While I liked this workout, I think that if I could see a QA chart of an actual high rep, 30% of 1RM weight workout in the gym I would see MANY more dots and therefore more time in that little dotted red circle. Knowing how to use this QA chart you can check to see if your “cycling specific” strength training is hitting the mark.

The other dots on this QA Chart, as you might be able to see from the legend, represent other workouts. The pink dots are a recovery ride. See how they are all low on force but all in the “favorite” cadence range? How about the green dots? Well that was a tempo/endurance ride. Notice that they are all near that yellow line (which is 290 watts- a good tempo effort for this rider)? Look at the blue dots again. A big cluster of them is also below the tempo ride (green dots). That is because he had to spend time recovering from the Over Gear Sprints.

While strength training can be done on the bike I don't see enough dots in that red dotted circle to convince me that this workout would have been more effective than a good SPECIFIC high rep, moderate weight strength workout in the gym. This is the END of my rant.



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