

Simple Cycling Performance



Cycling Performance
For All Of Us

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Foreword by Mjr T.G. Taylor

(Cover photo Courtesy Bill Salaz; www.actionpic9.com)

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Who am I?

I've spent more than half my life racing and riding bikes. To put that in perspective, at the time of writing this I am 38yrs old. 25 years! Who knew?! My parents, to this day, are still incredulous that I would still be at it. Only now I'm a coach and advisor as opposed to competitive athlete.

I started when I was 14 years old. We lived in rural New Hampshire and bikes were the only transportation I had. My folks worked and we lived in a town where everyone knew everyone and where you were when it was dinner time (in the summer) was where you stayed the night. At that time, in NH, the pool of athletes was minimal. I quickly rose up through the ranks. By the time I was 18 in my last year as a junior I was already a category 2 cyclist. My first two years as a cat . 2 I spent, more or less, in obscurity. I was pretty much tail-gunning every event but, I managed to pull out a couple of results here and there and that was enough to keep me at it.

At the end of my 2nd year as a senior 2, I happened to win a race in northern Maine where the Canadian national team had shown up. Our district representative was also at that event and he agreed that performance warranted an upgrade to cat. 1.

As a category one cyclist I was guaranteed an automatic entry to the Olympic trials the next year, 1992 in Altoona PA. Wow! Was that an education! I struggled like I had never struggled before. The speeds, the distances, I thought I had been well prepared but it really opened my eyes about racing at that level.

After that debacle I decided to go back to college and get my degree under way. I moved to Fort Collins, Colorado and attended Colorado State University. In Colorado, a world of opportunity opened up. I got on some good teams, raced overseas and eventually turned pro in 1996. Actually, as I recall, I got my pro license and my diploma on the same day (I graduated in December).

I raced for 3 years as an independent pro hitting all the races on my own: Philadelphia USPro Championships, Redlands, Sea Otter, Tour Le Fleur, Super Week, Colorado races and USPro Criterium championships.

In 1999 I scored a good ride with a good, but small, team. Of the riders on the team, now one guy is riding at the Tour de

France. Another rider has gone on to be a fixture of US Pro racing. We hit all the NRC events. It was a dream. Good team, good support, good races. But, that fall, many of us were given walking papers. I was hurt, pissed. I had done everything they had asked of me. I even pulled out a few results on my own. That team went on to merge with another small pro team and all the riders could not be accommodated.

I told my girlfriend (now my wife) that if I didn't have a contract by January 1, 2000, I would quit. Well, despite a massive amount of phone time, mailing out my resume and emailing teams, no options presented themselves. So, I quit. I sold my bikes, my stuff and I stopped organized training.

I was on my way to getting into working as a personal trainer when I got a call from a team out of the east coast. The team was run by an old friend of mine from when I was racing as a junior in NH. He said that he was assembling a small, well funded regional team based on the east coast and was I interested in one more year. After discussing the terms I agreed to race with them for another year.

At the same time, I found out that based on NRC points, I was invited to the 2000 Olympic trials. I hadn't been doing any training and it was February so I went on a crash course of training. My new bike and kit arrived a week later and I was back in action!

The Olympic trials were in Jackson Miss. in May. The agreement with the new team was I would do the May Olympic trials and then meet them up on the east coast. The short version is I had a respectable ride at the trials that set me up with a lot of confidence for the season to come.

I met the team up at the prestigious Somerville criterium in New Jersey. I had one of my best races and ended up in the top 12 riders. I was thrilled and the team was thrilled. Our next event was the American Cup criterium series. We rolled out a good team and had a reasonable day on the first day.

The 2nd day however, was a different story. The race was fast and flat and all the major heavy hitters showed up. I was having a fair race and riding at the front when I crashed with some other guys. I did what we all do and got back up, took my free lap and got back into the race. But, 20 or 30min later there was another crash and I got dragged into that one too. In the fall, I hit the curb with my ribs. I decided two crashes in one night was enough and I

abandoned the race. On the trip back up to New Hampshire that night I just laid in the team van wondering what had I gotten into.

I was thirty, racing for a small stipend and due to get married that fall. When I got back to my folks house in NH, I was doubled over with pain and bleeding from multiple wounds on my right side. My dad was an emergency room doc and took me straight to the emergency room. Ultimately it turned out I had broken some ribs in addition to the road rash.

I contacted the team the next day and let them know I had to take some time off to recover. I took 2 weeks easy and returned to Colorado to be with my fiance. After the two weeks I decided to come back to racing. I went to a small criterium in Colorado and wouldn't you know it, in the first lap I went down in a crash. When I fell, I went over the bars and landed on my neck and back. Once again I was laid up with some strains and sprains in my neck.

That was a trying time. I was staring down the barrel of recovering from another injury. My fiance holds a masters degree in exercise psychology and she managed to get me through that time. In August I flew back to the east and resumed racing with the team.

My final race of the season was the Univest Grand Prix. Univest Grand Prix is a European style road race held in rural Pennsylvania. A lot of the European amateur teams show up also and it's a big deal. I managed to finish in 25th, the 11th American and the top performer on the team. I was pleased with that finish given what I'd been through.

After my fiance and I married in the fall, I decided I couldn't go back to racing with a small amateur outfit in the east again. All along I had been starting to develop this thought that, after all I'd learned over time, there had to be a way to make a living from cycling. That's how I got into coaching. Sure, I still raced for some amateur teams and I even pulled out a 10th place at amateur nationals one year but, I was in my 30's, married, and we had young children. I couldn't go back to being a pro, and quite frankly, I'm not sure I would want to now.

In 2005 and 2006 I was the head mens coach for the University of Colorado (CU Boulder) collegiate cycling team. That year at Collegiate Nationals we won the team omnium which is a combination of all the results garnered by the team in all the events.

The next year in 2006, we got on the podium in the team omnium and placed one of the mens riders in 5th in the individual omnium.

In 2007 I was the Director Sportif for the Rio Grande Elite Cycling team based here in Colorado. It was a great job but the hours were tremendous.

In 2008 and 2009 I was the head coach of the Colorado State University cycling team (CSU Rams Cycling).

In 2008 we won the western collegiate conference title AND won the criterium at collegiate nationals and placed in the first 3 teams in the team omnium.

In 2009 we again placed in the first 3 teams in the team omnium at collegiate nationals but failed to win an individual event.

Finally, I am a co-owner of Orchards Athletic Club in Loveland CO with my twin brother, Hugh MacEachran.



Me (kneeling on right) with the CSU cycling team at collegiate nationals

Cycling has been my passion for 25 years and that continues to this very day. The following is what I've learned and I'd like to share with you. One of the things I've always struggled with is that, much like swimmers, cyclists place a lot of emphasis on volume. Long hours and miles. I can remember a lot of the times,

the guys I was racing and training with were tired, broken down or sick. That is a consequence of burying your body with upwards of 20hrs a week of training.

If you live in the vacuum of training (which less than one percent of cyclists do) maybe you can accommodate all the hours AND the accompanying rest. Of all the cyclists I've worked with over time, I can count on one hand the ones that had gobs of time to train.

The fact is that most of us live in the real world so a high volume model is not a reality. Bearing that in mind then, the focus has to be on **quality versus quantity**.

Bike racing has been gaining in popularity over the last 20yrs. With the advent of American athletes performing at big events like the Tour de France and the Olympics, and larger, more high profile events being held in the USA more and more people are either riding bikes recreationally or tinkering around with racing. Racing is a different animal and involves somewhat more specific preparation. A lot of the athletes indicate that their biggest confusion lies around getting organized, sequencing and getting enough rest. Many competitive cyclists have confusion about managing the day to day training AND seeing the 10,000 foot view.

A plethora of books have been written about how to prepare for this sport. And they all have fabulous information BUT, one of the most common sentiments from cyclists who have read these books that I've spoken with is they don't know how to synthesize the information, there's too much information, how do they know when they need rest? How do they identify heart rate parameters? How does power work....the list goes on.

Like swimming, cycling is full of garbage mileage. That is, cyclists at the Pro 1, 2 level may legitimately have a need to go crazy on the mileage if they're doing a steady diet of NRC type races. But, in my experience, this is infrequently the case for the remainder of us. The balance of cyclists tend to only race in the neighborhood of 3hrs or less. With this in mind, workouts can be shorter in duration, to the point and targeted. If we had all day to ride, we could cover our bases riding in every zone and train multiple energy systems. Most cyclists don't have this experience so it's necessary to take a different approach.

So, here's the deal. I'm going to share a few things with you in this book that will help you get ready to race. Furthermore, let's

keep it simple and to the point.

That's right, not going to talk too much talk about physiology, energy systems, ATP's or count calories. I'm a big fan of the K.I.S.S principle: KeeP It Simple Stupid!

If you follow the basic principals here, you can arrive to your first race ready to go. Understand though, that for every coach you ask, there'll be a different opinion. At some time in the future, you may choose to work with a coach. This is to get you started. Got it? Ok, let's get to it.

Training

When I first started out riding and racing bikes, we used to train on feel. We felt that we knew our bodies well enough that we could estimate the intensity we were at. We also operated on the paradigm that, in addition to the base type training, we would race ourselves into shape. Those first couple of races then, you would suffer like ten dogs because, while your training had been somewhat hard, it was imprecise, you were feeling around in the dark.

As we've moved through time, training methods have become quite a bit more precise. Consequently, cyclists are arriving to the start line of the first races of the season in better and better fitness. This is due to access to targeted training through the use of heart rate monitors and watt meters as well as improved training methodology and science. All are great training tools.

Heart Rate Training:

Heart rate lets you know, with a fair amount of precision, at what percent of your maximum heart rate are you functioning. For the most part, heart rate training is reasonably accurate. There are several methods for getting an idea of what your max heart rate would be. Max heart rate would be the highest possible level that your heart would beat and you couldn't operate at that level for more than a couple of seconds.

Lab Testing:

The first, of course, is lab testing. Lab testing would involve a graded exercise test that ramps up in a progression designed to take you all the way to a max heart rate. The potential pitfall here is that if you actually manage to achieve your max heart rate without keeling over first, you have to bear in mind that it was in a laboratory setting, a highly controlled environment. In the real world with environmental influences the numbers may look different.

Karvonen Formula:

Another method that predicts max heart rate is the Karvonen formula:

$$220 - \text{Age} = \text{theoretical max HR}$$

This, for a good portion of the population, is a better than

average way of predicting max HR. The problem with this prediction is that because it's based on a bell curve, there will be outliers on either end. For trained athletes, it's not quite as accurate. Trained athletes are capable of much more.

Predictive Formula:

A more accurate way to formulate a heart rate prediction would be to subtract half of ones age from 220 to be more precise.

$$220 - \frac{1}{2} \text{ age} = X$$

In my case: $220 - 19 = 201$

This may seem shocking but, even though I'm approaching 40, as recently as last winter I hit a 201 heart rate. I've been riding and racing bikes for 25 years and therefore have a reasonably large aerobic base. This demonstrates that a trained athlete doesn't necessarily follow the regular rules regarding heart rate prediction.

Power Training:

Power training is quite a bit more precise. Heart rate can be influenced by environmental factors such as heat, wind, etc while power doesn't have that weakness. Power keeps you in the zone for every second of every ride. Watt meters have brought a new level of sophistication to training at the elite level and allowed coaches and athletes to gather and archive data from season to season and reproduce or improve on previous performances.

There are now multiple brands of power meters that vary in price and levels of sophistication. Picking one for your self can be confusing. Talk to your coach or bike shop to determine which one will suit your needs. Bear in mind that you need to fully understand how to use this tool for it to be useful.

My personal feeling regarding power meters is that if you are getting one from a team or can get it significantly below retail, get it. But, if you have to pay straight retail, your discretionary income might be better spent on entry fees, travel or a coach. Also, try not to be slave-ish to the numbers (be it power training or heart rate training). At the end of the day, there are occasions where the numbers are meaningless in the real world. Too much structured riding can get old in a hurry too.

Constructing a Plan:

Training plans come in all shapes and sizes. As mentioned

before, for as many coaches you ask, there are going to be as many philosophies. I'm telling you what has worked for my athletes. The trick is to find the combination of days, weeks and months that when sequenced correctly with appropriate physiological stressors/training will elicit the desired physiological adaptations.

Let's begin here:

3 days micro block

3 week macro block

3 month meso block

Let me elaborate:

For instance, a cyclist who is a successful domestic pro that I used to live with when I was racing full time could only ever train hard for 3 days in a row (8 times in ten). AND, he could only manage 3 weeks in a row before he was too fatigued to execute hard, productive rides. He once apologized to me after a 3 week block for being a jerk in the last week because he was fully whooped.

This individual has been a pro for over 10 years now and despite having put in a tremendous amount of miles, his training (for the most part) follows the 3 day, 3 week and 3 month rhythm. He can absorb a huge amount of suffering and yet, his limit follows fairly traditional rules.

3 Days:

An effective block of training seems to be a 3 day block. 3 days followed by a day of rest and then an additional 3 days seems to kick your butt enough to create significant gains. And, from a mental perspective, it'll keep you from going mental because you can see the light at the end of the tunnel. 3 days builds just enough fatigue to elicit a physiological response from the body. These micro blocks allow for some fine tuning to the overall process without exacting a gross toll in terms of fatigue. Like dialing in a radio station with small, fine turns of the knob.

3 Weeks:

Stringing together the above mentioned three day blocks through 3 weeks will act to build your ability to lay waste to the competition as well as rebound from multiple hard efforts over multiple days. From having executed this type of training and

training with other pros over time, I can say three weeks seems to be the limit for most people. Enough small periods of the 3 days spread thru 3 weeks requires your body to “reset” its set point to accommodate the training stresses equalling improved fitness. It’s the SAID principle: Specific Adaptation to Imposed Demands, or because you expose your body to a stressful environment, it is forced to adapt to achieve equilibrium. Otherwise, as part of classic overload training; the body has to operate in a stressful (physiological stressors) environment. This triggers a physiological response from the body to try and get back to equilibrium. (Because all biological entities strive for equilibrium. Biology 101 duh!)

3 Months:

Now scale up the 3 weeks above to 12 weeks. There you are at 3 months and, if you’ve been diligent and listened to your body, ideally you are at or near a fitness peak. BUT, it’s important to add in the rest (something which some cyclists fail epically at). Look at it like so:

3 weeks hard

1 week rest

3 weeks hard

1 week rest

3 weeks hard

1 week rest

Target Event

That’s 12 weeks or, approximately, 3 months.

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