

Five “Cutting Edge” Speed Secrets

By Jon Ackland (Performance Lab)

If you have done all the training basics well, this means you have got the **technique** right first, **you have improved your ability to perform the action**, you have done the **endurance** which allows you to **do the activity for a long time**. You have improved your **strength** which means you can **perform the action for a long time at the required resistance**; the stride length. And you have zapped up your **speed** which means you can **do it all fast** and you have an improved stride rate. Well, if you've got the basics right, here are a few extras to add that are the absolute latest in “go fast”, “cutting edge” and “state of the art” tricks that you can apply to your training program.

Secret Number One: Hill Training

After the Tour de France this year there was an interview with Chris Carmicheal, Lance Armstrongs Coach to announce that a totally new method of training had been developed. Because of Lance Armstrongs cancer Chris Carmichael had to give Lance very low intensity training and discovered that this low intensity training gave a huge improvement in Lance's performance, consequently winning the Tour De France. Thomas “hell on wheels” Hellriegel, Ironman bike extraordinaire does long slow very gentle hills! How does this relate to running? Arthur Lydiard has advocated for many years long slow distance for training. Why are they doing this? It works but why does this work? The reason appears to be as follows. If you do lots of easy training, you end up doing more hills and if you did hill work gently how many hills could you do? Lots and Lots right? All day if you had to. If you do them at the moderate intensity you normally do them at, how many could you do? 5, 10, 15 20? Why is this significant?

Well, **if you do your hills gently, you do more hills and that makes you a lot stronger**. So one of the most interesting things about hill work is that you initially need to do hills gently to get the strength that you can use later on. The reason for this is that when you are going **up a hill at moderate intensity** you are **using 2 systems**, the **muscular system** and the **cardiovascular system**. The muscular system is doing quite a bit of work and so is the cardiovascular system; you're puffing as you climb the hill. The problem with this is that the cardiovascular system is the system that creates that primary and most **significant stress on the body**, which fatigues you quickly. If you have the cardiovascular system involved a lot in your hill work then it will be very, very hard to do too many hills. And it takes a lot **more time to recover** from.

But **what if you could remove the amount of cardiovascular effort required?**

In other words, **do the hills gently**. What this would then do is remove the cardiovascular stress with **most of the load going onto the muscular system**. If you did that you **could do many more hills and get much stronger**. As you got towards the end of the program you would then do moderate intensity and high intensity hills as you traditionally do. Imagine how this final training would go with all that initial extra strength already done. So the bizarre thing is that to go fast you need to do hills gently but you have to do 2, 3, or 4 times the number of hills you have ever done before. So you don't run to get to the base of the climbs, you drive to the hills and then go and run in the hills. You become a mountain goat. Mistakes that can be made are doing too many hills too hard and getting shattered, or doing hills gently but not enough of them.

Secret Number Two: Train with a Group

Have you ever noticed that **a race is far easier than a time trial by yourself** of the same distance? Also **group training sessions seem to be easier than training by yourself**. The reason for this is that it is not all your own will power pushing you. It seems that when you train in a squad your mental effort is spread amongst all your training partners, in other words it takes less mental effort to do the same training. **Less mental effort means you can do more training and can do it a lot harder**.

Secret Number Three: Speed & Power training

This is free speed work because it is speed work that does not knock you around. We all know that **speed work is very intense** and once again the **strain on the cardiovascular system** is the thing that really **fatigues you**. So how do we **take the cardiovascular system out of your speed work** while retaining the stride rate and the stride length that make up race pace. Well, it takes about 30sec to 1min for your cardiovascular system to react to that effort, your heart rate on your heart rate monitor steadily climbs over this period even though you are already at your required intensity which might be race pace. In other words, **you can run at the stride length and stride rate for 30sec-1min before your cardiovascular system kicks in**. So if you could **do your efforts at race pace for only 30sec or 1min and pulled out just before you start to puff you would get the speed and power without the cardiovascular stress** on the body. Add this stressless speed to the speed work you already do and you get a whole lot more speed work without it knocking you around. Free speed or very little fatigue cost for what you are doing. Further to this if you did power training earlier in your program and brought traditional speedwork (eg. 4 x 4mins at race pace) in later, your speed would be far more effective when it happens. You will be faster and will be able to cope with more.

Secret Number Four: Tempo Racing

Something I have often noticed is athletes often hammer themselves in their warm up racing and this means they can only race a couple of times before they are toast, often before their peak race. This also limits the development of their speed. They blow up before they reach the speed they are capable of.

If you could race at only 70-80% effort instead of your usual 100% effort and raced a lot bringing in the hard races on top of that, imagine how fast you would go. With all that tempo speed already developed you could really turn on the afterburners. The difficulty though is that tempo racing takes incredible self control. An athlete may do a 5k fun run race every week but instead of doing it at tempo, they have this overwhelming urge to go as hard as they can and beat their mates. The difficulty with this is they will blow up in 4-6 weeks. But with controlled tempo racing this can be carried out in the first 6 weeks of your programme before you start out into the more taxing speed, which lasts for another 4-6 weeks. So if you could run 20min for 5k you might do your tempo racing at 24-25min for the same distance or about 15-20% slower but still faster than your cruising pace. Tempo training and tempo racing is a very under utilised aspect of speed work. If you got your body used to quite a bit of tempo first and then added the really hard stuff on top, you would have a much better speed in the end. The thing people find most difficult about tempo racing is controlling their ego. It's really hard to go out there and not go your absolute fastest and let your fellow competitors go faster than you. The question is does that tiny event really count or does the big one your aiming for count?

Secret Number Five: Progressive Adaptation Verses Crash Training

Progressive adaptation is the traditional way training is carried out. In other words you **put a little bit of load on the body, the body adapts. You increase a little bit more, your body adapts progressively up to peak.**

Crash training is where you shock the body with something that is very different or with a lot more training load briefly and the body reacts very quickly in almost an emergency mode so the reaction is far greater and performance goes up a lot.

An example of a progressive adaptation is a 40 min run, then 50 min following week, 60 min after that and so on. Crash training would be a 40 min run, then 50mins, then suddenly 90 mins at race pace. Progressive overload can be sustained for long periods of time, 12 to 20 weeks approximately. Crash training on the other hand can only be used several times in a build up, anywhere between 1-3 times depending on the distance of the event, the bigger the event the less crash training you can do. Crash training is often utilised in for short distance events by using racing but **a lot of the long distance athletes could utilise this form of training more effectively.** Crash training simulations have to be used.

Consequently what seems to be a useful way to set training up now is to have progressive training all the way through but somewhere between 1-3 bouts of crash training set out at about 2 week intervals back from the event. Someone building up for a marathon may do a

15k time trial 2 weeks out and a 20km time trial 2 weeks back from that so the combination of progressive overload and crash training can bring the athlete up to their full potential.

So there they are, five “cutting edge” speed secrets that you can use in your program and get a little bit more out of you training.

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