Race Strategy and Tactics for the Endurance Events: 800 - 5000 meters
By Scott Christensen

In track and field and cross country, the race is the assessment tool that endurance coaches use to determine the present day fitness of their athletes. Race performance is a complex cumulative blend of various physiological variables as well as known and unknown factors that hinder or help race performance on the psychological side of development. In addition, race fitness is influenced by medical plusses or minuses that the athlete is currently coping with. Other variables that help determine race performance are nutrition, hydration and sleep issues. The seemingly endless list of variables that the coach and athlete deal with in assessing race fitness eventually reaches a settling point at the actual race itself. Since solving problems and gaining measurable data is about the elimination of variables, one needs to approach a race as one approaches any test, with the best plan available; one that eliminates variables beforehand and not during the moments of highest mental and physical stress. Coaches can prepare their athletes for racing by answering these three questions:

- What are the end-all requirements to be successful in any given race at any given distance?
- What are the needs of the race and what are the wants of the athlete?
- What is the most efficient means for achieving measurable success given present day fitness?
- The answers to all of these questions can be addressed with the single question: what tactics of competition should be used today in this particular race to achieve the highest level of measurable success?

We thus can call the racing tactics the action plan of the race. Like most concepts, racing tactics will have a basic structure determined by the race distance itself and an advanced method which will account for the strength of the competition, the weather, the importance of the race, and the strengths and weaknesses in the athlete’s current fitness.
All of the races that are included in the endurance running domain are termed combined zone races by physiologists. This term defines the fact that race distances of 800 meters and greater have substantial aerobic and anaerobic energy contributions that must contribute to racing success in every runner (Wilmore and Costill 1999). The degree that each will need to contribute is based on the amount of time needed to complete the particular race distance. The endurance events also have a race breakdown that both physiologists and psychologists term the comfort zone and the critical zone (Johnson 1994). These four terms interrelate with one another in the basic idea that the comfort zone will be most influenced by aerobic energy system development and the critical zone by the development of the anaerobic energy system of the body. For most coaches, the concept of the critical zone refers to the stage of the race where success or failure is most up for grabs. This is the point that the race is won or lost. Since the critical zone is usually near the conclusion of most distance races of any length, success in this zone is highly influenced by how effectively the athlete handled the comfort zone stages earlier in the race.

Endurance race distances in high school track and cross country have a very wide parameter. The 5000 meter distance is 6.25 times greater than the 800 meter distance and the time to complete it is more than 8 times greater for most athletes. Due to the extreme limitations of the anaerobic system in humans, the longer the race is reflects a greater duration of the comfort zone in that race. The physical ability to maintain the most efficient running economy during the longer races will be the most important racing tactic during this stage of the race. Running economy in distance running is unique to the events of track and field and it is what separates these events from all others. Sprinters use strength and power in an attempt to maintain a very high but deteriorating velocity as the sprint distances increase. Distance runners use running economy to maintain their velocity over increasing distances. Table 1 indicates the 100 meter pace splits for world records from 100 meters to 30,000 meters for men. While the sprinting events are based on a logarithmic decrease in velocity, events greater than 800/1500 meters indicate a subsequent leveling off in velocity which shows the 100 meter splits for the 5000 meter world record are not that different from the 100 meter splits for the 30,000 meter world record. An analysis of Figure 1 indicates the eventual leveling off of running velocity as race distance increases and emphasizes the concept of the importance of maintaining the highest running economy possible as the races moves to the critical zone.
While every track and field has a comfort zone and a critical zone to a degree, no other event group besides distance running has such a long lead-in to the critical zone. The most effective racing tactic a distance runner can possess is to reach the critical zone in the best physical and mental condition that is possible under the circumstances. This will ultimately be achieved by a combination of physical skills and development and the psychological skills most influenced by confidence and motivation.

While much shorter in duration than the comfort zone, the critical zone of an endurance race usually determines the outcome of that race. As stated earlier, just reaching the onset of the critical zone in the best possible physical and psychological condition is a key tactical component to any endurance race. Once an athlete engages in the critical zone, a new form of racing begins to emerge that is quite different than maintaining the best possible running economy. This is the time of toleration by the systems of the body to an ever increasing level of acidosis. This ability to tolerate decreasing pH levels in the fluids of the body is developed through unique and well timed training components. However, trained ability and racing application are two different concepts. The athlete will have to be in a good position to apply this development coming off of the comfort zone. This positioning will not only be based on actual strategic body position in the race, but also on the desire and skill to have to run the fastest possible velocity of the race near the end of the competition. Remembering that the 800 meter race is significantly shorter than even the 1500 meters, a shorter comfort zone is going to mean a much more intense critical zone. This ability to physically and tactically close at a very fast pace makes the 800 meters a self-selecting race. That is, if one does not have the skill to do it, it is time to move up in race distance to an event with a longer comfort zone.
There are three possible approaches to planning and implementing racing tactics in an endurance race. One can advance a plan based on purely biological means. Treat the body like a living machine and ignore the competition, then attempt to get the greatest energy system efficiency possible. Usually, this means some sort of even pacing throughout a long comfort zone and then a mad dash through the critical zone. Another scenario is based solely on competition, thus ignoring the biological issues. Usually this is a very hard to maintain comfort zone that ultimately uses too much of the anaerobic energy available and the critical zone becomes a time to simply hang on and hope the competition is not too close behind. The third scenario is based on a combination of the first two and is the most effective strategy to implement because it utilizes the concepts of comfort zone and critical zone, but it also adds the human factor that is so important on the psychological side of competition. The implementation of correct tactics for the appropriate race distance will be an important coaching point for the coach-athlete interchange. It is easier to teach proper tactics for each event than it is to correct improper habits and strategy during the race. It is important to teach the concept that racing tactics are not a one size fits all strategy. All factors for each race distance and for each competition line-up should be brought forth in order to be the most effective plan.

A look at the events and how to implement race tactics for each of them follows:
800 meters

The mental cues for this race distance are based more around awareness than concentration. In order to make a good start from the starting line despite the drawn lane calls for a great awareness of pace from the athlete. The field tends to settle down in this race once the gradual break occurs on the backstretch. Avoid the urge to suddenly collapse to the rail but make a more gradual route that will get to lane one while eliminating much of the jostling.

From this point front running is an acceptable tactic in its own right, providing an athlete is definitely faster and stronger than the rest. Otherwise, holding on to a position from which a break can be covered is essential (Coe 1996). The physical objective for the athlete should be to complete their first 400 meters as close to 93% of maximum 400 meter pace as possible (Vigil 1995). This completes most of the comfort zone of the 800 meter race.

The start of the second lap of the race gets the athlete around the corner to the break-point again. This is where the critical zone of the 800 meters commonly begins. It may be advantageous to make a more gradual move here or wait until just before or after the last turn. This will depend on the decision making of the shoulder to shoulder competitors that are still in contention, but it should be based on the historical ability or inability to have good quick turnover over the last 100 meters of the stretch. The second lap should be about 89% of maximum 400 meter speed (Vigil 1995).
1500 meters

Since this race takes twice the time as the 800 meters if mistakes occur there is enough time to correct them. At world record pace the 1500 meter runners run 29 meters less per lap than the world record 800 meter pace runners do and this makes the whole race seem less urgent. The high school 1500 meters has a much different start than the 1600 meters. The 1500 starts from a curved line on the backstretch and a free-for-all results as the gun goes off and runners attempt to position themselves in the inside lanes. In the 1600 meter race starting at the traditional start/finish line the runners are in boxes or alleys and are given the first curve unimpeded before making a break to the inside lanes. The most important strategy for the first lap is to not get pinned for very long along the inside rail.

The second and third laps should be safely within the comfort zone of the athlete for this race distance. Surging and breaks do occur during this portion of the race and the runner should be competition savvy enough to recognize a real break from a false break. To cover every surge and break is very expensive to the energy systems. The last lap of the 1500 meters should be run in the same manner as the last lap of the 800 meters with the critical zone starting about 300 meters out and decisions made at the start and finish of the backstretch or coming off the final curve. Unlike the 800 meters which has a faster first lap than second, the 1500 meters is characterized by an ever increasing tempo to the finish and is the fastest lap.
3200 meters and the 5000 meters

These two races are the classic VO₂ max races where aerobic power fitness will be the ultimate physical determiner of success or failure and will ultimately carry the runner through the comfort zone. It is important to not run too fast too early in these races. The early onset of acidosis promotes the inhibition of muscle tension and leads to rapid discomfort. These conditions bring accessory organs into play in an effort to keep pace. This will affect running economy profoundly (Vigil 1995). Early laps should be as evenly paced as possible. Yet, there should be a guarded watch for an authentic race surge from a competitor. The body should be positioned off of the outside [right] shoulder of the leader. In this position in the race a great deal of concentration is needed to maintain the greatest running economy possible. Wind is a factor on some days. Using the leader to break some of the wind is effective in energy management, however if the pace begins to lag, the best runner should take control and push the pace despite the conditions.

The last two laps of the 3200 meters and the last three laps of the 5000 meters are the critical zones of these races. The tempo of the race will increase during this stage leading to the fastest lap of the race which will be the final lap. The runner must be very careful not to be out of position when a serious break or surge is made. Being pinned along the inside rail is usually not the place to be when one of these breaks occur, as the runner will have to really surge and tax the anaerobic energy system to do it. The final 200 meters will resemble the final 200 meters in the 1500 meters as the runners enter and leave the final turn. It is important at this point to look ahead and not be obstructed by lapped runners as the sprint to the finish occurs.
The proper racing tactics and strategy can win races for runners. Instructions and directions from the coach are important in setting up proper tactics as are the many good and varied experiences that the athlete will gain on their own through the tribulations of maturing as a runner.

Table 1. Mean Time per 100 m for Men’s Track World Records

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Figure 1. Mean Time per 100 m vs. Distance
References


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Coach Scott Christensen

• 14 year USATF Level II Lead Instructor (Endurance Events)

• Seven different Minnesota State Champions in the 800 and 1600 since 1996.

• Four Stillwater alumni have broken 4:00 in the mile since 2003.

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