



TRAINING STRATEGY

Build a Better **Race Pace**

by Chris Puppione

Part 2 of 2

Aerobic Support Pace Training

The purpose of training at aerobic support paces during the specific period is to improve your ability to carry specific speed over a greater distance. This is often called “extension”. An athlete in any distance race needs to develop specific aerobic support that is slower than goal race pace, but faster than the general lactate threshold pace of 4 mmol, in order to achieve this extension. Remember, your GLT (General Lactate Threshold) is the base of specificity for distance events ranging from 800 - 10000 meters, and that GLT must be developed in order for an effective specific training program.

“The aerobic support pace for each event is one race up in distance,” says Hudson, coach to many of America’s top distance running talents in his Boulder Performance Training Group; Hudson likes to use 10000-meter race pace as aerobic support for

his 5000-meter runners. These aerobic support paces can be closer in proximity to goal race pace. Canova, an Italian-born coach who functions as the national coach of Qatar, as well as personal coach to steeplechase world-record holder Saif Saaeed Shaheen, has his athletes perform sessions where the intervals are a shade slower than goal pace, as did Jeff Johnson, the former coach of the Nike Farm Team, when training such athletes as Olympian Matt Giusto and World Cross Country bronze medalist Kim Fitchen. These aerobic support workouts generally involve longer intervals at speeds just slower than goal race pace. “The athlete must be able to perform long intervals near goal race pace with ease,” says Hudson. “These workouts, like 2K repeats at 10K pace for a 5K runner, are where extension comes from.” Canova even suggests (for the 5000-meter specialist) to test efforts of 4000 meters at 98% or 6000 meters at 95% of goal race pace. These sessions also serve as lactate management for the specific race distance by developing “crisis” (as Hudson and Canova often refer to stress) in the system, leading to adaptation and the systematic improvement of lactate tolerance and lactate clearance under race-like conditions for

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both the middle and long distance events.

Specific Speed Pace Training

“It is unnecessary to train at velocities faster than 10% of goal race pace.” Interestingly enough, Canova, Hudson, and Cabral, who has coached Olympians in his native Portugal, all make this explicitly clear when discussing the process of building a better race performance. Most coaches find this alarming at first until the actual numbers are examined. If you’re looking to run 14:10 for 5000 meters, which is 1:08 per 400 meters, the speed 10% faster than this is 1:01.2 per 400 meters. This speed correlates very closely to your comparative 1500-meter race pace, which is more than ample to improve your buffering capabilities and enhance your anaerobic capacity.

Hudson furthers this argument by calling attention back to the need for specificity in training. “My feeling is that it is better to develop the specific endurance,” says Hudson. “Running more than 10% faster than race pace is unnecessary, although I am not counting the alactic hill sprints, because that is a function of the muscular and nervous systems, and those always need to be utilized.” Canova supports Hudson’s assertion, noting that

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the finishing speed in a distance race is not associated with your maximum velocity, but rather with your ability to use a *higher percentage* of your maximum velocity. “It is a bio-energetic problem of fatigue resistance, not a bio-mechanical issue of absolute speed,” says Canova.

While Canova and Hudson use alactic hill sprints, Cabral uses short, fast strides to continually stress the muscular system, as do America’s own Olympic medalists Meb Keflezghi and Deena Kastor. These sessions are exceptions to the “10% faster than race pace speed limit” because they are specific in their capacity to train your nervous system to recruit more muscle fibers, leading to improved muscle contractions and the enhanced ability to call upon a greater percentage of maximum velocity under racing conditions. Furthermore, in all the above training situations, these

maximum velocity sessions are a component that can be found throughout the annual cycle, not just in the specific period. Hudson also stresses that part of specific speed training is learning the techniques required to run fast, hence the need for using sprint and proprioceptive drills. Although some of these may be explosive in nature and defying the “speed limit”, these exercises are helpful from a neuromuscular standpoint, and this aspect of building a better performance cannot be ignored.

As for the actual specific speed sessions, these are carried out over intervals of shorter distances at speeds faster than race pace. The objective in these workouts is not too dissimilar from those performed at aerobic support paces. Basically, by training in close proximity to goal race pace on the faster side of the coin, you’re teaching your body to run easier at race speed with less lactate accumulation. In addition to accruing less lactate at goal race pace, you’re also improving the capacity of your system to tolerate and clear speed-inhibiting waste products. Although these sessions are not run at break-neck speeds, they will aid in your development of a more specific MAX LASS in the longer track events, and it will certainly

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strengthen the middle distance runner’s fatigue-resistance at greater velocities. Yet, while every event is a test of speed, the speed that matters most is goal race pace.

Goal Race Pace Training

There is nothing that addresses the SAID principle better than goal race pace training. Arthur Lydiard, the famed coach from New Zealand, termed this “coordination training.” Sessions such as these are designed to improve efficiency of movement at race speed, as well as instigate central nervous system adaptations to the specific task being performed. There will also be further neuromuscular stimulation during these workouts, as you’ll begin to establish specific motor patterns for performance at the goal race pace. With all the benefits to training at this effort, it’s hard to deny that regular sessions such as these should be scheduled regularly during this specific training period.

“Race pace is the mother of all training,” says Cabral. “No training session can be formulated without being mindful of this.”

The common thread between Canova, Hudson, and Cabral’s approach to training at goal race pace is the idea of never changing the speed of your sessions, but rather manipulating the length of your repetitions and your

Table 1

Building Your Race Pace

For the athlete looking to run a 27:30 10000-meter race (2:45 per kilometer, 1:06 per 400 meters):

- 1) 10 x 400m in 1:06.0 alternated with 1000m in 3:20 (14 km in 44:20)
- 2) 10 x 500m in 1:22.5 alternated with 900m in 3:00 (14 km in 43:45)
- 3) 10 x 600m in 1:39 alternated with 800m in 2:40 (14 km in 43:10)
- 4) 10 x 700m in 1:55.5 alternated with 700m in 2:20 (14 km in 42:35)
- 5) 10 x 800m in 2:12 alternated with 600m in 2:00 (14 km in 42:00)
- 6) 10 x 900m in 2:28.5 alternated with 500m in 1:40 (14 km in 41:25)
- 7) 10 x 1000m in 2:45 alternated with 400m in 1:20 (14 km in 40:50)

recoveries performed. “The idea is to start at goal pace and extend the length of the repetitions from there,” states Hudson. “This is easier on the athlete’s system, and is much more efficient than the Stampfl approach of keeping the repeat length the same, while gradually dropping the times.” By manipulating the length and repetitions, the two main principle ideas of this training are addressed – extension and specificity. Another perk to performing goal pace sessions is to mentally prepare yourself by familiarizing your body with a feeling of race rhythm.

To illustrate how a better race performance can be built during the course of the specific training period, Canova provides the following example (see Table 1 p. 12) for the athlete seeking to run 27:30 for the 10000 meters.

“In this way,” Canova says, “the athlete can build their specific endurance. By using a session like this once every two weeks, the athlete will see an improvement in race performances as the MAX LASS is raised.”

A point of interest regarding this workout is the continuous nature of which it is performed. By making the recoveries active, as well as requiring them to be

Building Your Race Pace

Table 2

For the athlete looking to run a 30:00 10000-meter race (3:00 per kilometer, 1:12 per 400 meters):

- 1) 8-10 x 400m in 1:12 alternated with 1000m in 3:45
- 2) 8-10 x 500m in 1:30 alternated with 900m in 3:22.5
- 3) 8-10 x 600m in 1:48 alternated with 800m in 3:00
- 4) 8-10 x 700m in 2:06 alternated with 700m in 2:37.5
- 5) 8-10 x 800m in 2:24 alternated with 600m in 2:15
- 6) 8-10 x 900m in 2:42 alternated with 500m in 1:52.5
- 7) 8-10 x 1000m in 3:00 alternated with 400m in 1:30

performed at an honest pace, you’ll be enhancing your capacity for extension at race pace velocities. While the times in Table 1 are certainly fitting for the elite athlete, it could be quite daunting for the local or national level runner. With this in mind, Table 2 & Table 3 are adapted versions that may be more palatable for you. If you would like to customize your own workout for your specific goal pace, just follow the simple directions below:

1. Convert your 10K time to seconds
i.e. 42:00 = 42 x 60 = 2520 seconds
2. Divide by 100 to get your pace per 100m
i.e. 2520/100 = 25.2 per 100m
3. With your race pace portion completed, determine 80% of race speed pace

4. Take your race speed and divide by .8 (80%)
i.e. $25.2 / .8 = 31.5$ per 100m or 2:06 per 400m (8:24 per mile)
5. Now you have your 80% of race speed pace and you’re ready to rock

Hudson approaches goal race pace training even more simplistically when it comes to the actual sessions. “Five to six times 1K at goal pace for the 5000-meter runner seems to do the job here,” he says. “We use these race speed sessions, but we do not stress these workouts more than the others during the specific period. We want to be sure we are addressing the support paces more often.”

Cabral believes hard training that does not emphasize the specific skill element is unlikely to produce further improvement. “The response to training is specific,” Cabral insists emphatically. “There are neural adaptations that must take place, and specific training effects are directly related to the formation of new coordination mechanisms. There is scientific evidence that shows performance improvement can take place without any measurable physiological changes taking place.” Cabral iterates that, when it comes to race specific

Table 3

Building Your Race Pace

For the athlete looking to run a 35:00 10000-meter race (3:30 per kilometer, 1:24 per 400 meters):

- 1) 6-8 x 400m in 1:24 alternated with 1000m in 4:22.5
- 2) 6-8 x 500m in 1:45 alternated with 900m in 3:56.25
- 3) 6-8 x 600m in 2:06 alternated with 800m in 3:30
- 4) 6-8 x 700m in 2:27 alternated with 700m in 3:03.75
- 5) 6-8 x 800m in 2:48 alternated with 600m in 2:37.5
- 6) 6-8 x 900m in 3:09 alternated with 500m in 2:11.25
- 7) 6-8 x 1000m in 3:30 alternated with 400m in 1:45

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training, nothing beats an actual race over the chosen distance to develop specific endurance – the key to building a better performance.

Things to Keep in Mind

When developing specific endurance during the specific training period, no training elements are really eliminated – the emphasis merely shifts and new training stimulus is introduced. “It is up to you or your coach to decide what needs to be added to the existing recipe,” says Hudson. “Because this varies between individuals, there is no formula. Just do what works best for you in your situation.” Hudson also urges coaches and runners to be open-minded in their training. “You can’t just say, ‘Well, this is what we have always done,’” he stresses. “Success is not necessarily rooted in methodology, but in the application of proper training for the individual you are working with.” Canova presents another important caveat that is in step with these suggestions. “I write out schedules in advance, but once we are through a training period, I will note that I have changed nearly 50% of what I had planned.” It would seem,

Canova insists, that without the ability to adapt to the specific needs of the individual athlete, the coach would be doing that runner a disservice.

There are also some things to consider regarding the actual training sessions within the specific period. As Canova noted before, length of recovery during the specific period must be monitored closely. You must be able to perform each session successfully, so the rest interval must be set to allow for this, but within reason. Canova further warns that proper rest and recovery must be provided between particularly hard specific endurance sessions. He suggests following the more demanding workouts with one of moderate intensity in order to reinvigorate

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your body. You must be challenged, but not to the point of risking failure come race day. This is, again, where you or your coach must make a decision based on perceptions – not based on science, not based on a textbook formula. This is something Canova, Hudson, and Cabral consistently stress in their discussions of training – deal with each athlete in each situation as necessary based on all the variables. Overall training volume during this specific period is left to the discretion of you or your coach as it relates to your

accumulated career mileage. The same rules apply regarding volume of the individual workouts, although there seems to be the adherence to an unwritten rule of performing workloads equal to and up to two times the race distance. Frequency of these specific endurance sessions is also up to you, based on your training experience, your seasonal plan, and your needs at that particular juncture.

In the End

There are no universal truths when it comes to training distance runners, as individual needs can only be accounted for on a one-on-one basis. Renato Canova, Brad Hudson, and Antonio Cabral are all fine coaches in their own right, each leading athletes to an array of achievements. Their collective ideas on building a better race performance through the development of specific endurance is compelling, informative, and slightly enigmatic.

Do they have all the answers? “If anyone tells you he has all the answers,” says Hudson, “run for the hills.” Well, surely these men are worthy of recognition for their intricate methods of coaching. “I coach, but do not call me a coach,” says Cabral. “It’s just something you do.” Well then, should you follow their advice?

It would seem that, once again, it depends on the individual.



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