**Beacon Hill Striders: Performance Running**

Beacon Hill Striders Performance Running - <https://beaconhillstriders.co.uk/> - aims to advise, guide, encourage, & inspire aspirational runners to adopt good/best training practice. To further this goal, I shall produce each month a short article offering both some insight and practical guidance. … This month’s article looks at one of the staple ingredients of a distance runner’s training programme, the Tempo Run.

**BHS Monthly Article: January 2018**

**The Tempo Run Deconstructed**

*The following article first appeared in Issue 10 of the Left Spike Fanzine, published in late 2017 … See:* [*http://leftspikefanzine.com/fanzines/*](http://leftspikefanzine.com/fanzines/) *… It is re-printed here with some additional material (in italics) with the kind permission of the Left Spike Fanzine publishers.*

**The Tempo Run:**

The Tempo Run commonly refers to a continuous run of relatively short duration (20-40 minutes) done at a challenging but not too demanding pace. Since the early 1980s the Tempo Run – also referred to as the (Lactate/Anaerobic) Threshold Run or the OBLA (Onset of Blood Lactic Acid) Run – has become a staple feature of the weekly training of most serious competitive runners.

The primary benefit of Tempo Runs is that the runner becomes over time more efficient at running at the same pace. This means he/she can run faster (or further) for the same effort, or run at the same pace but at a lower effort level. This is important in that it enables the runner to improve his/her race performance across a range of distances.

Tempo Run pace is associated with a pace at which point the body is unable to maintain a stable level of lactate. At slower paces, up to this point, the body is able to utilise lactate as an additional source of fuel (a process known as the ‘lactate shuttle’). At faster paces beyond this point, however, the body is no longer able to fully utilise lactate, and lactate (or more precisely the bi-products of lactate generation) builds up in the body causing fatigue, forcing the runner to eventually slow down.

This specific pace can be determined in the lab by collecting blood lactate readings, using a testing protocol based on the runner gradually increasing running pace on a treadmill. However, for most runners, access to the lab for such a test is not a feasible option. The good news is that such testing is wholly unnecessary. Tests conducted in the lab are unlikely to match the conditions the runner faces in real life, where factors such as ambient temperature, wind-conditions, state of fatigue etc., negate the relevance of an exact pace found in a clinical, laboratory environment on a given day.

A better option is to refer to a runner’s current best times across a range of distances. Data collected over time on thousands of experienced runners reveal that the correct Tempo Run pace matches the best pace that a runner can maintain for just under an hour. For runners towards the quicker end of the scale this corresponds very well with 10 Mile to Half-Marathon pace. Moreover, the benefits of running slightly slower or slightly faster than the exact pace are little different. The same benefits can be accrued by working within a range of paces, ranging from Marathon race-pace on the one hand to around 10K race pace on the other.

So, based on this understanding – that effective training can be garnered from a range of threshold-related paces - how might you more effectively use Tempo Running within your own training programme?

Whilst recognising that the traditional Tempo Run of 20-40 minutes at or near to 10 Mile or Half-Marathon race pace will still have a role, there are some ways that one can gain the same (or even additional) benefits by doing different kinds of Tempo Running (of similar duration) across the broader range of paces identified above. Three options come to mind: Progression Runs; Lactate Shuttle Runs; and Cruise Intervals.

**Progression Runs:**

A staple feature of Kenyan training practice, Progression Runs involve gradually increasing the pace as the run progresses. So, for instance, after 15-20 minutes of relatively easy running (to warm-up) the runner begins to build up pace, spending a little time at marathon pace, before further increasing pace towards half-marathon pace, and finally towards the end of the run spending a few minutes at or just below 10K race pace. With a few minutes of easier running to finish, a productive hour of running will have occurred, with over half of this time spent within the broader Tempo Run range we have identified. *(see Example below)*

*At Beacon Hill Striders (with teenage runners) we use progression runs throughout the training year, though there is a greater emphasis upon this type of training during the autumn/winter period. Where possible, we aim to do this type of training on grass or trail. These runs can vary from 20 to 40 minutes with the aim of very gradually increasing pace as the run proceeds, with the final few minutes of each run approximating cross-country race pace.*

*For adult runners, racing at distances of 10K and beyond, the following may be more appropriate.*

*Example Workout: 60-minute Progression Run*

* *Start off at a relaxed pace for the first (15 minutes)*
* *Gradually increase pace as the run progresses (next 15 minutes)*
* *Spend 10-15 at Threshold/Tempo pace (10 Mile / H/Marathon race pace)*
* *Spend a further 5 minutes at slightly faster than Threshold/Tempo pace*
* *Ease off, & run easy for the final 10 minutes of your run*

*Increasing and sustaining pace during the duration of a run has both a physiological impact in terms of constantly stressing the athlete’s cardio-vascular system, and a psychological impact in developing the ability to withstand increasing discomfort.*

**Lactate Shuttle Runs:**

The principle of Lactate Shuttle Runs is to increase the runner’s ability to utilise lactate (as a fuel) by balancing some running above the lactate threshold with some running below. By injecting small doses of lactate into the system the runner’s body learns how to process the lactate more efficiently (through the lactate shuttle process) and use it to sustain running effort. This type of work could be a continuous run at just below the threshold pace involving short (20-40 seconds) injections of pace just above the threshold every 2-3 minutes. (This is a method I have used with success with younger runners).

Alternatively, a session that I used personally in my competitive days, if I was short of training time, was a 5000m track run involving 400m efforts just above (faster than) threshold pace interspersed with 200m ‘floats’ at just below (slower than) threshold pace. These are but two examples of many similar options.

*Australian distance running legends Rob de Castella and Steve Moneghetti have published data detailing their training practice showing regular use of ‘float’ recoveries between short and relatively fast efforts. Indeed, this type of training fits in well with more traditional ‘fartlek’ type training involving continuous running, with efforts of different duration and intensity built in.*

*Example ‘Lactate Shuttle’ Workout:*

* *Warm-up: 10-15 minutes of easy running*
* *Set 1: 20 minutes run involving 40 seconds efforts and ‘float’ recoveries of 80 seconds (10 efforts) … (5-minutes’ walk/jog between sets)*
* *Set 2: 10 minutes of 20 seconds efforts and ‘float’ recoveries of 40 seconds (10 efforts)*
* *Cool-down: 10-15 minutes of easy running*

*The key to making this kind of workout effective is to make both the effort & recovery relatively short, and to work just marginally above and below your tempo /threshold pace.*

**Cruise Intervals:**

A training method associated with the revered US coach Jack Daniels, Cruise Intervals involve longer efforts slightly slower than 10K race pace interspersed with short (60 seconds) jog/walk recoveries.

*The following is an extract (by Jack Daniels) explaining ‘cruise intervals’ taken from an online source (* [*http://www.k-b-c.com/daniels.htm*](http://www.k-b-c.com/daniels.htm) *) …*

*‘Simply put, cruise intervals are a type of threshold-pace running in which you divide the workout into several segments that are separated by recovery periods. As a result, the lactic acid level in your blood remains quite constant, the same as in a steady tempo run. (I have tested this with my runners, and found it to be true even when they were running 6 miles of cruise intervals) … A typical cruise-interval session should include a warmup, the cruise intervals and a warm-down.  I generally recommend the 1-mile distance for cruise intervals but believe that any distance from 1/2 mile to 2 miles (3 minutes to 10 minutes of hard running per interval) would prove equally effective. The short rest between intervals is essential to the workout; it should last only 30 to 60 seconds. … Generally, my athletes run just one cruise interval session per week. … Cruise intervals also make an excellent transition from a steady-running program to one that includes more demanding workouts.’*

At Beacon Hill Striders, I have found that with older teenage runners, 3 x 6 minutes run in this fashion is very attainable; whilst for more experienced runners 4-5 x 8 minutes should be achievable.

**Conclusions:**

Thus, to conclude, what are our key messages?

I would suggest the following:

* Tempo running should involve a broad range of paces

(Marathon race pace down to 10K race pace)

* The benefits centre upon the runner becoming more efficient at utilising lactate
* The effort should feel ‘challenging’ not ‘demanding’
* Care should be taken to maintain pace discipline … Tempo Runs are not ‘races’!
* Work done at the sharper end of the scale we have identified (10K pace) should be done in Interval format

So, when you next have a Tempo Run scheduled, consider these alternative ways of gaining the same physiological benefits.

**About the Author**:

Alan Maddocks was a successful runner, competing from the mid 1970s to the early 2000s. He represented Wales, British Students, and Leicestershire, winning several local/regional races. Over the past decade Alan has advised and guided a small group of talented young runners/triathletes on to success at local, regional, national, and international level. In addition, he offers consultancy services, and is a regular contributor to the ‘Left Spike’ Fanzine.

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