

BMC



NEWS

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# The British Milers' Club

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## COVER PHOTOGRAPHS

*Top:* Athens, 28.8.04  
KELLY HOLMES wins the 1500m  
*Bottom:* Athens, 23.8.04  
KELLY HOLMES (Gt. Britain, 1809)  
wins the 800m with HASNA  
BENHASSI (Morocco, 2462) second,  
JOLANDA CEPLAK (Slovenia,  
3010) third and MARIA MUTOLA  
(Mozambique, 2548) fourth  
*By Mark Shearman*

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# Contents . . .

Chairmans' Notes . . . . .	3
Fixtures . . . . .	4
A Combination of Different Training Means in the Preparation of Elite Middle Distance Runners . . . . .	5
Energy Systems and Duration of Effort . . . . .	9
Be Specific in your Training . . . . .	13
An Hour with Chris Moss . . . . .	14
Steve Scott's Training Log . . . . .	15
Basic Principles of Training at High Altitude . . . . .	19
How to Understand Training . . . . .	22
Triple Entente . . . . .	24
Taper Down for Peak Performance . . . . .	25
The Ancient Art of Mile Pacemaking . . . . .	29



Budapest, 7.3.04. JO PAVEY (623) leads from MARTA DOMINGUEZ (Spain, 579)  
in the final of the 3km. photo by Mark Shearman.



# Chairmans' Notes

The 2002 track season commenced with the competitions at Oxford on May 6th to celebrate the 50th anniversary of Roger Bannister's sub 4 minute mile. We were greatly honoured by Roger, the founding President of the BMC, and Oxford University to be the organisers of the mile races. Many of the former "greats" including John Landy, Derek Ibbotson, Chris Chataway, Seb Coe, and of course Sir Roger, were in Oxford to witness, and enjoy, the occasion. It was very fitting therefore that Craig Mottram won the "A" mile well inside 4 mins. Congratulations to all involved!

The magnificent Olympic double by BMC member Kelly Holmes will, I am sure, be equally well remembered in the future as Roger Bannister's great feat. Kelly's exploits are certainly inspiring a new young generation of middle distance athletes in our Sport as proved by the 100 plus of them, with their 28 coaches, who attended the recent Ogmores training weekend. David Lowe and Rod Lock have worked tirelessly on this and other recent training days/week-ends from which the feedback of the younger athletes and coaches has been highly positive. These youngsters are the future of our Sport and it is to them that the BMC Academy is aimed. We will be informing you of the competitions/ training events to be organized via this new initiative in the near future.

Concerning the 2004 BMC/Nike GP Series, the performance statistics suggest that we had a reasonable year. The numbers of competitors are at a record



*Dr. Norman Poole, Chairman*

high and the highlight for me was watching Susan Scott so bravely chase the 800 Olympic Qualifying time on several occasions and thereby dragging so many others to fast times. The GP performances would undoubtedly have improved in all areas but for fixture clashes. Manchester clashing with the AAA U20 and U23 Champs was a disappointment and already we are being informed that in 2005 our Manchester GP will be on the same weekend as the Loughborough v AAA match. We are also informed that more sense will be injected into the organisation of the 2006 Summer fixtures when designated week-ends will be secured for specific meets only. I will keep you informed of

progress in this area.

In recent issues of the BMC News I informed you we would be improving and speeding up our administrative duties and organisation. This has been accomplished by making our first salaried appointment. I am pleased to inform you of the appointment of Pat Fitzgerald, an unstinting servant of the BMC for many years. Pat will now oversee many of the time consuming duties such as responding to new membership applications, renewal of membership, updating the membership list, continuing his role as Treasurer and corresponding with members who apply for BMC coaching/training days.

Pat was much involved in the organisation of the joint BMC/UKA Endurance Coaching Symposium held at Edge Hill College in early September. This was our second such annual venture and with over 105 delegates in attendance we realised that we are beginning to fulfill a need for such events. We will also hold more regional endurance coaching days during the coming months and are planning more focussed coach education days in the future. Such topics as "planning yearly schedules for the young 800/1500m athlete" are expected to be high on the agenda. Please keep a regular check on the BMC website where many of the initiatives, to which I referred, will be advertised.

I look forwards to hearing from you on these and any other areas of endurance which you feel we should focus on in the near future.

# Subscriptions

If your subs for 2004 (due 1st January) are not paid this will be your last BMC News!



# BMC Fixtures - 2004

See [www.britishmilersclub.com](http://www.britishmilersclub.com) for Entries, Timetables, Seedings, Results, New Fixtures

## BMC Nike Grand Prix

Overall Directors Steve Mosley 029 2030 6733, Tim Brennan 01628 415748  
Entry fee £2 for BMC members, £12 for non members (or £5 U20)

22 <sup>nd</sup> May	Solihull	M800 M1500 W800, W1500	Toby Gosnell Maurice Millington Steve Mosley	0121 445 6411 01495 775019 029 2030 6733
12 <sup>th</sup> June	Watford	M800 M1500 W800, W1500	Rupert Waters Philip O'Dell Tim Brennan	020 8881 5181 01234 852038 01628415748
26 <sup>th</sup> June	Manchester (Sport city)	M800, M1500 W800, W1500	Norman Poole John Davies	0161 980 8358 0161 611 9065
17 <sup>th</sup> July	Cardiff	M800, W800 M1500, W1500	Andrew Osment Pat Fitzgerald Steve Mosley	01344 482171 01895 234211 029 2030 6733
8 <sup>th</sup> Aug	Glasgow	M800, M1500 W800, W1500	Mike Johnston John Montgomery	0141 634 9966 01560 483225

The BMC's premier meetings are the combined Nike Grand Prix and UKA Endurance Initiative meetings. The winning times of the "A" races are of true international standard

## UKA Endurance Initiative

(BMC members £2 non members £5)

22 <sup>nd</sup> May	Solihull	M5000, W5000, M3000SC M10000, W10000	Pat Fitzgerald AAA champs & Olympic Trial	01895 234211 enter via AAA
12 <sup>th</sup> June	Watford	M3000STCH M3000, M5000, M3000SC W5000 W3000SC	Tim Brennan Mike Deegan Mike Deegan	01628415748 01457 765416 01457 765416
26 <sup>th</sup> June	Manchester (Sport city)	M3000, M3000SC, W3000	Mark Bryant	01656 880809
17 <sup>th</sup> July	Cardiff	M3000, M3000SC W3000, W3000SC	Mike Johnston John Montgomery	0141 634 9966 01560 483225

Entry to the Grand Prix will be guaranteed for those paid up members entering 7 or more days in advance of the meeting provided they have achieved the BMC senior qualifying standard. They are:

M800 1:56.0, W800 2:20.0,  
M1500 3:56.0, W1500 4:45.0.  
Standards for UK EI are:  
M3000 8:30, W3000 10.00,  
M5000 14:40, W5000 17:30,  
M3000SC 9:20

## Bannister 4 minute mile 50<sup>th</sup> Anniversary Meeting

May 6<sup>th</sup> - Mathew Fraser Moat 07802 501895

Mile race for Senior and U20 Men and Senior and U20 Women

A chance to be part of the celebration of Roger Bannister's great achievement.

Qualifying standards for 1500m, 1 mile are:-

Senior Men 3:44.0, 4:04.0

Senior Women 4:20.0, 4:40.0

U20 Men 3:54.0, 4:14.0 U20 Women 4:30.0, 4:50.0

## BMC Gold Standard

### Watford

May 12<sup>th</sup>, June 23<sup>rd</sup>, July 21<sup>st</sup>, Aug 18<sup>th</sup>  
M1500, W800 W1500 -Philip O'Dell 01234 852038  
M800 -Rupert Waters: 020 8881 5181

### Stretford - M800, M1500

May 11<sup>th</sup>, May 25<sup>th</sup>, June 8<sup>th</sup>, June 22<sup>nd</sup>,  
July 6<sup>th</sup>, July 20<sup>th</sup>, Aug 17<sup>th</sup>, Aug 31<sup>st</sup>  
Mike Harris (Enter on the Day, woman can run open races)

## BMC Nike Young Athletes Meetings – May Bank Holiday meetings

### Millfield – Mon 3<sup>rd</sup> May

Male - Mike Down 0117 973 3407  
Female - Steve Mosley 029 2030 6733  
W800 ALL, W1500 U13-U20, W3000 U15 & older  
M800 ALL, M1500 U13-U20, M3000 U15 & older

### Cardiff – Mon 31<sup>st</sup> May

Steve Mosley 029 2030 6733  
W800, W1500 U13-U20, W3000 U15 & older  
M800, M1500 U13-U20, M3000 U15 & older  
M & W OPEN 10000 incorp Welsh champs

## BMC Regional Races

### Sutcliffe Park David Reader 07968 498706

Wed May 19<sup>th</sup> M800 W800 M1500 W1500  
Wed June 16<sup>th</sup> M800 W800 M1500 W1500  
Wed July 14<sup>th</sup> M800 W800 M1500 W1500  
Wed Aug 4<sup>th</sup> M800 W800 M1500 W1500

### Colindale - Wed 14<sup>th</sup> Jul

M5000 – Tim Grose 01372 466946

### Brighton - Wed 11<sup>th</sup> Aug

M800, W800 - Chris Carter 01273 503446

### Birmingham University

Bud Baldaro 07741051235  
Wed 28<sup>th</sup> Apr M1500, W1500  
Mon 31<sup>st</sup> May M800, W800  
Wed 14<sup>th</sup> July M1500, W1500

### Brunel University

Pat Fitzgerald 01895 234211  
Wed June 2<sup>nd</sup> M800 W800 M1500 W1500  
Wed June 9<sup>th</sup> M800 W800 M3000 W3000



# How Igloi's Magnificent Magyars Trained

by Derek Parker

I remember, in the 1950's, watching, through a TV shop's window, a televised track meet featuring the exploits of the Mihaly Igloi coached Hungarian's Sandor Iharos, Istvan Rozsavolgyi, Sandor Rozsnyoi and Laszlo Tabori. They reigned supreme through 1955 and up to the Hungarian Revolution of 1956.

Half-a-century later, and now a Level 4 coach, with a lifelong involvement in athletics, I am still inspired by the outstanding achievements of these wonderful athletes and their charismatic guide.

At a time when many British athletes prided themselves in not training too hard, I was impressed by the sheer quantity and quality of sessions tackled by Igloi's athletes. A typical day's training for Rozsavolgyi included : 10 x100m in 20 seconds( 50m jog recovery) + 10 x 300m in 45 to 48 seconds (100m recovery) + 5 x 600m in 1.40 (200m recovery) + 10 x 100m (50m jog recovery) + 10 x 300m (100m recovery) + 10 x 100m in 15 seconds ( 50 m jog recovery)(Ed.Note, That's about 71/2 "fast" miles)

Gruelling work-outs like these made me realise why Hungarian m-d runners were as outstanding as their, then, great soccer team which was led by the legendary Ferenc Puskas.

As I grew older and became interested in sports science and physiology, I learned Igloi's training programmes were systematic, with every session carefully planned and programmed to each athlete's

individual needs. They blended the art and science of coaching. Recovery jogs after repetitions were usually half the distance run eg 50m jog after 100m reps.(Ed. Note, as the above example shows this was not always the case).

Repetition distances were mostly 100, 150, 200, 300 and 400 metres with longer runs used sparingly and only to develop endurance if thought necessary by Igloi. ( Ed.Note, one session, said to have taken place on Xmas Day 1955 by Iharos, was 2 x 1500 at 3:43.....the World Record was then 3:40.8)

Peter Coe's theory that, if speed is the name of the game, never get far away from it, was heralded three decades earlier by Igloi who believed it important to train close to race pace as often as possible.

Igloi reckoned too many longer, slower reps would hamper speed development by impairing the contractile efficiency of his athletes' white, fast twitch muscle fibres, which are responsible for stride rate.He described this fast-running process as light speed. He kept oxygen debt low so athletes could emphasise good running form, technique, style and relaxation at speed.

Flexibility of approach was an Igloi trademark. He had an uncanny ability to tune into his athletes' thoughts, moods and physiological requirements. He never planned training sessions too far in advance, preferring to work from day to day, depending on environmental conditions, how the athlete felt etc. If he believed athletes needed more stamina, he

programmed longer sessions as this extract from Iharos's diary reveals: Tuesday- 5 x400m in 56.8 50 to 57.6(recoveries not mentioned); Wednesday-25 x 100m ( 50m jog recovery); Thursday- 15 x100m ( 50m jog recovery) + 10 x300m in 45.0 seconds (100m jog recovery) + 6 x 600m in 1.37 (200m jog recovery); Friday-40 x100m (jog 50m recovery); Saturday- 14 x 100m(jog 50m recovery) = 6 x 150m (recovery not mentioned) =5 x 100m( 50m jog recovery); Sunday(am) 12 x 100m with fast finishes:(pm) 5k race.

Igloi's unique personality and ability to motivate athletes was a major element in his coaching. When he left Hungary to live in the U.S.A. other coaches in his homeland who tried to imitate his methods never achieved the same successes and the great Hungarian distance tradition faded into history.

Igloi confirmed his greatness by taking his skills to America and succeeding in a vastly different social and economic environment. He produced excellent results with men like Jim Beatty, and his methods influenced Bob Schul, Jim Grelle, Billy Mills and Jim Ryun in the 1960's.

Fifty years after becoming acquainted with Igloi and his innovative training methods he still inspires me. I shall be ever grateful to the shop-owner who left the TV sets on his window.

Ed. Note, In 1955 Hungarian athletes set World Records at 1000m, 1500m, 2000m, 3000m, 2 miles, 3 miles, and 5000m.

## Book Review - Stan's little Blue Book by Stan Greenberg

Avid fan of athletics for nearly as long as your editor, in my case 60 years, Stan has compiled hundreds of anecdotes and trivia from around the world on track and field. Not all on middle-distances of course but a fascinating

read. Examples include an item on the early Kenyans, note on Tommy Hampson's even paced gold in the 1932 Olympics. This is an ideal book for the train journey or bed-time. When ever you open it theres something new.

Obtainable from the author, five pounds which includes postage, at 13, Ferncroft Avenue, Friern Barnet, London N12 0LN.



## Mens 1500

Michael East drew the third heat. With knowledge of what had preceded he must have been aware of the times set. With winning times of 3:37.86 and 3:39.71 something of the order of 3:38 would get through even if lowly placed. he rose to the occasion and dominated the race. winning in 3:37.37.

His next race was the first semi-final. With the first five to qualify plus fastest losers it would be in his favour for the race to be fastish, leaving the other race with difficult targets. Things worked out as he managed a fine sixth, less than one second behind the winner whose time was 3:35.69. The other semi was dominated by El-G and his opponents allowed him to saunter home first in 3:40.87.

The final brought together the cream of the world's best. With men who had run 3:27 downwards this year medalling was more a than difficult ask. Michael chose to adopt Kelly tactics and trail the field. The initial pace was slower than the talent assembled , El-G was timed at 60.9, then a 61.0(2.1.9), not the stuff of the GP!!! Then it all happened!!! The next lap took a less than casual 53.3 (all times for El-G) and his final 300 only 39.0!!! Could it be called human? Last lap 51.9, last 800 1:46.7 and last 700 at 1:45.5 pace!!! Michael came through strongly to finish fifth, only 2.15 seconds behind the marvellous Moroccan. He was quoted as saying that there was no way he could have mounted a challenge with his best 800 being no faster than the closing two laps. My opinion is that does himself a disservice. At worst he ran, bearing in mind he was behind El-G at the 800 to go mark, something of the order of 1:48 (perhaps someone has the exact time?) It further suggests given a GP type 800 he could/should advance his PB down to 1:45. Of interest is the last 800.400 of Rui Silva, 1:46.3 and 51.3!!! Michael's time of 3:36.33 was only bettered in this race by the winner, Langat, Silva, Kiptanui and Heshko. It can be said that he has truly advanced to the Premier Division

## Womens 1500

Jo Pavey, the day after her 5k final was understandably not at her best, having missed training earlier in the year her 4:12.50 in heat three, for thirteenth was a gutsy effort. Hayley Tullett ran in the first heat. She was not at her best but qualified as a fastest loser in 4:07.27 in seventh place. Kelly ran in the second heat, using her now familiar tactic she eased through in second place. Next stop the semis. Hayley ran the first but despite finishing only 2.23 seconds down on the winner that only gave her eleventh place such was the rush for the tape. Kelly Holmes, yet again, ran from the rear and comfortably, regally, royally, cruised through in second place.

Now came the final. We have all read about the last Brit to double umpteen years ago but could the Hildenborough Hurricane do it? Kelly's first 400 took 65.2, her next lap took 64.5, not world record stuff but very, very fast. Her pace increased with a 63.9 and by this time our heroine had left her seat at the back of the stalls and was moving toward the stage. As the girls entered the straight she appeared to look across as if to say "Is this all you've got?" At this point she had taken the lead and then shot away to win with what appeared to be some comfort . Her last 800 took 2:04.6, her last 400 59.8 and the last 200 29.4!!! What more can be said? Superlatives have yet to be coined to fully descibe her performances.

## Looking Ahead

It is understood the qualifying times for the 2006 European's are:

	Men	Women
<b>800</b>	1:47.20	2:02.50
<b>1500</b>	3:41.00	4:13.00
<b>5k</b>	13:42.00	15:40.00
<b>10k</b>	28:50.00	33:20.00



Solihull, 22.5.04. Start of the women's 'A' 1500m. photo by Mark Shearman.



# Terminology And Differentiation Of Training Methods

by Dieter Steinhof, Germany

An attempt to improve communication between coaches and scientists through a proposed reconstruction of terminology adjusted to training principles and methods based on the required physical performance capacities.

## THE PROBLEM

Everybody interested in the science of training knows that there is a need for dialogue between theory and practice. The frequent absence of communication between athletes, coaches and sports scientists has been the result of inaccurate terminology and sometimes even contradictions when it comes to the interpretation of training methods. The aim should therefore be to reconstruct methodical training principles, as well as training methods and their characteristics, so that they are based on the required physical capacities.

Such a differentiated new structure is necessary because literature dealing with training sciences divides all conditioning training into four or five basic methods. This allocation is no longer suitable for contemporary specialized training. The

training required for all physical capacities is covered in the following basic methods:

- the continuous method
- the interval method
- the repetition
- the competition and control method

These methods of endurance training were, without close examination, transferred to strength, speed, mobility, and other development. This took place even when the methods did not fit into the accepted practical evidence. At the same time the influences of certain training methods were wrongly evaluated, while others were overloaded because they simply didn't fit into the system.

## TRAINING METHODS AND THEIR LOAD COMPONENT

The "decisive" factors of methodical training have multiple determinations. The decisive levels extend, among others, from the concept, the execution, the organization and the external and internal feedbacks of training to the evaluation and interpretation of it. At the same time the planned procedures for achieving the desired training effects are determined by

the arrangement of the training content and means based on the load components:

- the load volume
- the load frequency
- the load intensity
- the load duration
- the load density

These load components allow the determination of the volume, duration, intensity and recoveries for an exercise to be performed (see Table 1). The load frequency refers here to daily, weekly and monthly periods and depends largely on an athlete's training state and performance aims.

The continuous method is characterized by uninterrupted high-volume loads with relatively limited load intensities. The extensive and intensive interval methods are based on a pre-planned alteration between loads and recoveries. The loads are adjusted according to the task. A high volume and medium intensity represents intensive interval training.

Decisive, next to the volume and intensity of the load, is the length of recoveries. In

	STRENGTH LOAD	SPEED LOAD	ENDURANCE LOAD
<b>LOAD VOLUME</b>	Load (kg) in one training unit of an exercise  Frequency (f)(repetitions) of an exercise (jumps, throws, etc.)	Distance (m) of repetitions and series in one training unit  Frequency (f)(repetitions) of an exercise	Distance (m, km) repetitions an series in one training unit of an exercise  Duration (hours/week training training units/week)
<b>LOAD INTENSITY</b>	Large impulses (N's) in an exercise Load (kg) % of concentric maximal strength  % of isometric maximal strength  Impulse quality of an exercise	% of the highest speed value of an exercise Movement speed (m/s) (maximal, submaximal, medium)  Movement frequency(f) within a time unit	Movement speed (m/s, km/h) Heart rate (HR/min) over a distance % of a certain performance Performance (watt) of an exercise format Type of energy source
<b>LOAD DURATION</b> is determined by	Duration (S, min) of an exercise (series) without predetermined frequency (circuit training)	Time (s) to cover a distance Time (s) for a number of movement repetitions	Time (s, min, h) to cover a distance
<b>LOAD DENSITY</b> is determined by	Recovery times between repetitions, series	Recovery times between part-distances, repetitions, Certain relationship (for example 1:2, 1:3) between load and recovery durations	Recovery times between part distances, repetition, series  Certain relationships (for example 1:2, 1:3) between load and recovery durations

Table 1: Operational base of load components(modified from Martin 1991, 1993).



contrast to the repetition method, interval training proceeds from incomplete recoveries. The breaks are consciously adjusted to prevent a complete recovery in order to create fatigue.

The repetition method is also based on a pre-planned alteration of loads and recoveries. However, the aim is for complete or nearly complete recoveries between repetitions (for example, heart rate < 100/min., subjective feeling, regulated duration). Intensity, as a rule, is usually quoted as maximal to submaximal and the volume is limited.

The competition and control methods serve mainly for an evaluation of an athlete's state of performance. As a rule, intensity is therefore maximal and the volume in the control method is adjusted to correspond to the demands of a particular event.

## TRAINING METHODS IN PRACTICE

The division of training methods and their characteristics in the German sport science literature is certainly useful as a systematization attempt. On the other hand, it complicates concrete planning and conduct of training. Some of the following examples will verify this statement.

### Endurance Training

A prerequisite for the use of a recommended load is its operational clarity. Load recommendations for the continuous method should therefore clarify the background. For example, what does "limited" or "60% to 80%" really mean? Is the load value based on the best competition performance, on maximal speed (m/s), on maximal heart rate (HR/min), or on a maximal watt performance?

All these values are usable, according to the advice and the training aim. Also the pd-values of Conconi, or lactate values, can be used in the determination of intensities. Whatever the chosen value, it will influence the other norms and together with these will have a training effect.

### Interval Training

Difficulties in the determination of load norms apply more so to interval training. What do intensity recommendations mean here? Do the intensity recommendations apply to a single load or to a series of loads? How is the incomplete recovery to be interpreted? What differences apply to

the determination of intensities for endurance development in interval training?

The situation is even more difficult in the determination of the load density. How is the incomplete recovery determined? The rule for medium and longer single loads in cyclic activities recommends a heart rate of 120 to 130/min. before a new load is applied. This can only be valid for short anaerobic loads and never for strength endurance training.



Solihull, 22.5.04. SARAH HOPKINSON. photo by Mark Shearman.

The controversial statements on when recoveries should be incomplete or correspond partly to the obviously confusing statements on training aims. Since interval training is supposed to achieve fatigue accumulation from incomplete recoveries, the aim of interval training should be regarded as the development of resistance to fatigue to improve endurance performance capacity.

Several sport scientists (example, Martin 1997, Letzelter 1978, Weiweck 1983, Letzelter 1986, Martin, et al. 1991), leaning on the theories of Scholich (1965) and Harre (1968), allocate interval training to the role of the development of speed, power, speed strength and explosive strength. However, a closer look at interval training, defined as a method with incomplete recoveries in between single loads, reveals that the recoveries in capacities are in practice rather complete.

Letzelter (1978) recommends in his "Intensive interval methods III" 3 to 5 minutes recoveries in the development of explosive strength. Obviously this crosses the border of the repetition method.

The margin between interval training and continuous training in the development of endurance is also hard to define. This applies to the duration of the load in interval training. Several authors refer here to short, medium and long interval training, corresponding from 15 seconds to 2 minutes, 2 to 8 minutes, and 8 to 15 minutes respectively. The type of stimulus in interval training, based on systematic alterations between work and recovery, is overlooked. Such changes in long endurance are extremely limited and the practical upper limit is in practice around 5 to 8 minutes.

### Repetition Training

The main problems in converting the information from the literature on load components to practical application occur in the repetition method. Firstly, it is assumed that this method, based on complete or nearly complete recoveries, has the function of avoiding an accumulation of fatigue, or at least delay it as long as possible. This makes it possible to achieve training aims requiring high loads (for example, the development of speed, explosive loads can be repeated frequently after full recoveries.

The duration of a full recovery cannot be presented in a time unit, because the recovery interval depends upon the previous load. A full recovery after a highly intensive load of a few seconds can be very short (1 to 2min.), while a maximal load of 3 min. requires a lot longer for complete recovery (15 to 30 min.). Information on recovery in time units is therefore not useful in practice.

Even more confusing in the repetition method are the given intensity ranges (90 to 100%), submaximal, maximal. Whilst high intensities are certainly sensible and necessary for many training means, they can only be repeated after a sufficient recovery interval.

Furthermore, loads of considerably lower intensity in higher volumes also have a place in the repetition method (hypertrophy, coordination). For example, load intensities in hypertrophy training can,





according to the aim, range from 50 to 80% in employment of a high number of repetitions and full recoveries between sets.

### Summary

All training exercises performed with alternating loads and complete recoveries correspond to the principles of the repetition method. Extremely high intensities, sometimes regarded as consonant with this method, are unrealistic for certain tasks and therefore not practical. Intensive training exercises are not as decisive in the repetition method as complete recovery intervals in the prevention of fatigue accumulation.

### ALTERNATE STRUCTURAL TENDENCIES

Recent sport science literature questions the traditional division and characteristics of training methods. Trends towards a different approach can already be found in Weineck's work (1983) on training methods for the development of endurance, strength and speed. Martin (1991) writes:

“The attempted simplification of the training doctrine that divides all methods into the continuous, interval, repetition, competition and control principles cannot be accepted, in view of the known practical possibilities and the number of components that make up a method.”

We recommend as a possible solution the arrangement of training methods based only on their conditioning or coordinative foundation. Grosser, et al. have chosen a similar arrangement (table 2).

The previous proposals of structural change are not convincing for the following reasons:

- The terminology of the different method is presented at the same comprehension level. The methodical principles (for example, interval and repetition methods) are mixed with concrete methodical measures (for example, strength endurance method, speed strength method).

- The arrangement of the methods is questionable (for example, the repetition method as a substructure of the interval method).

- The objective is not always correct (for example, the use of intensive interval training for the development of speed).

- The terminology sometimes differs considerably for identifiable methods and is therefore misleading for practical application.

<p><b>ENDURANCE</b></p> <ul style="list-style-type: none"> <li>• Endurance methods <ul style="list-style-type: none"> <li>- continuous</li> <li>- variable</li> </ul> </li> <li>• Interval methods <ul style="list-style-type: none"> <li>- extensive</li> <li>- intensive</li> <li>- repetition method</li> </ul> </li> <li>• Competition method</li> <li>• Control method</li> </ul>
<p><b>STRENGTH</b></p> <ul style="list-style-type: none"> <li>• Muscular development method</li> <li>• Intra-muscular coordination methods</li> <li>• Pyramid method</li> <li>• Speed strength methods (2)</li> <li>• Strength endurance methods (3)</li> </ul>
<p><b>SPEED</b></p> <ul style="list-style-type: none"> <li>• Repetition method</li> <li>• Intensive interval method</li> </ul>
<p><b>TECHNIQUE</b></p> <ul style="list-style-type: none"> <li>• Ideomotor method</li> </ul>
<p><b>TACTICS</b></p> <ul style="list-style-type: none"> <li>• Movement learning methods</li> </ul>

Table 2: Training methods (Grosser, et al. 1986)

### MODIFIED STRUCTURAL CONCEPT

It appears that, because training methods according to their task-development of strength, speed strength or endurance - have different objectives, it is hardly sensible to arrange the methods based on their typical load components. The repetition method in strength training, for example, has a completely different objective than in endurance training and the load characteristics differ accordingly. From this it appears valid to proceed so that the methodical measures are

orientated to practical objectives that are mostly of a complex nature.

The systematic arrangement of training methods in Tables 3, 4, and 5 can by no means cover all the complex training procedures, although it provides an overview of a large number of combinations and variations. Combined training procedures, mixed formats and modifications occur and become increasingly more important in high performance training. Consequently, the training methods summed up in the tables represent only a selection for different training objectives.

The following are some explanatory remarks for the material presented in Tables 3, 4, 5:

The use of the term interval principle can be justified only when we are dealing with endurance, including such complex capacities as strength endurance and speed endurance. The aim is to accumulate does not force reduction of the load volume.

The temporal classification of short-, medium- and long-interval loads are used with practical training application in mind. the longer the single-interval loads, the less valid becomes the term interval because the training effect will be changed.

The concept of strength endurance is based closely on the definition of Buhrie (1985) and Martin, et al. (1991) as the capacity to apply strength impulses in a certain time unit without a reduction of the impulse level. We are dealing with resistance to fatigue at an intensity level of 30% below the maximal. This level and duration of the load corresponds

PHYSICAL CAPACITY	METHODICAL TRAINING	TRAINING METHODS	CHARACTERISTICS	SPECIFIC TRAINING EFFECTS
ENDURANCE	Continuous principle (without recoveries)	Continuous endurance - extensive - intensive  Variable endurance method - fartlek - variable method	Uninterrupted low to medium load intensity high volumes High intensity, medium volumes  Unplanned intensity changes Systematic intensity changes	Basic aerobic endurance, regeneration, improved fat metabolism  Specific aerobic endurance, improved VO <sub>2</sub> max, improved glycogen metabolism Same as in continuous endurance training with additional improvement of anaerobic performance
	Interval principle (incomplete recoveries)	Extensive interval method - short interval loads - medium interval loads - long interval loads  Intensive interval method - short interval loads - medium repetition - long interval loads	Medium intensity, high volumes - 15s to 1 min. - 1 min. to 2 min. - over 2 min.  High intensity, medium volumes - 15s to 1 min. - 1 min. to 2 min. - over 2 min.	Specific aerobic and also partly anaerobic endurance, capacity to rearrange energy provision, lactate compensation, extension of VO <sub>2</sub> max.  Specific aerobic and also partly anaerobic endurance, capacity to rearrange energy provision, lactate tolerance, activation of glycolytic enzymes

Table 3: Principles and training methods for basic conditioning, their characteristics and training effect—endurance.



PHYSICAL CAPACITY	METHODICAL TRAINING	TRAINING METHODS	CHARACTERISTICS	SPECIFIC TRAINING EFFECTS
Strength Maximal Strength	Repetition principle (complete recoveries)	Hypertrophy method	Medium loads (from maximal strength, repetition sets until fatigued, slow to rapid execution)	Development of muscle cross-section
		High and maximal application method	Maximal and submaximal loads, few repetitions set, fast and explosive execution	Improvement of inter- and intramuscular coordination
		Eccentric method	Supermaximal loads, few repetitions sets, slow execution	As in the maximal application method, recruitment of all muscle fiber units
		Isometric method	Maximal static contractions contractions of 5 to 10s	Static muscular strength, muscular development, intramuscular coordination
		Pyramid method - normal pyramid - reduced pyramid - double pyramid	Changing loads and changing repetitions and sets Medium to high loads, medium volumes Limited to medium loads, volumes Medium to high load, medium volumes	As in the hypertrophy and maximal application methods, adjustment to changing
Speed strength Explosive strength	Repetition principle (complete recoveries)	Speed strength method	Limited loads, medium repetition sets, fast and explosive execution	Improvement of inter- and intramuscular innervation, improvement of strength developed speed
		Sport specific speed strength method - analytical - synthetical - variable	Event specific exercises performed fast and explosively execution Competition load Slight additional load Changing load	Improvement of inter- and intramuscular innervation with event specific loads, improvement of contraction speed, adjustment to changing innervation
		Reactive strength	Plyometric method	Eccentric-concentric strength applications with limited to medium loads (body weight), explosive execution (for example, depth jumps, bounding, jumping exercises, reactive throws)
Strength endurance	Repetition principle (complete recoveries)			
Strength Endurance	Interval principle (incomplete recoveries)	Strength endurance method II	Limited loads, large number of repetitions, sets until fatigued, slow execution, recoveries between sets about 1 min.	As in strength endurance method I, recovery I, recovery capacity
		Explosive strength endurance	Repetition principle interval principles	Sport specific strength endurance method

**Table 4: Principles and training methods for basic conditioning, their characteristics and training effects—strength.**

predominantly to the anaerobic lactic acid energy supply. Longer and lower strength loads (less than 30% below the maximal) change training loads (less than 30% below the maximal) change training into endurance loads under increasing aerobic energy supply and can't be regarded as strength endurance.

Speed endurance is defined as the capacity to keep speed losses minimal in short speed performances of less than 2 min. at maximal or submaximal intensity. Grosser (1991) separates 8 to 12 sec. speed performances (submaximal). Martin, et al. defines up to 30 sec. maximal intensity performances as sprint endurance and up

to 120 sec. submaximal intensity performances as speed endurance. We have, for practical reasons, eliminated this division.

Decisive in speed endurance and its subclassifications is the fact that we are dealing with frequency and high-intensity



endurance performances where the exact limiting factors are not unequivocally explained.

The repetition principle is suitable for several for several different conditioning training effects. However, it is assumed

that the intensity in repetition training is not based exclusively on high and highest possible loads.

PHYSICAL CAPACITY	METHODICAL TRAINING	TRAINING METHODS	CHARACTERISTICS	SPECIFIC TRAINING EFFECTS
Speed	Repetition principle (complete recoveries)	Maximal contraction speed method  Innervation method, coordination method	Highest intensity, short load up to 7s  Coordinating exercises, for example: - downhill - towed runs - assisted jumps	Improvement of innervation and relation capacities under anaerobic speed loads  Improvement of innervation and relation capacities in changing coordination demands and variations
Speed strength	Repetition principle (complete recoveries)	Speed strength method, reactive strength method  Overloading method	As in speed strength and reactive strength methods  Resisting conditions, for example: - uphill running - exercises with additional loads - exercises against pulling resistance	As in speed strength and reactive strength methods  Improvement of movement speed under under increased resistance, improvement of inter- and intramuscular innervation
Speed endurance	Repetition and interval principles	Speed endurance method  Overdistance method	Intensive speed exercises until fatigue reduces speed  Intensive overdistance loads, recoveries reductions according to state of training	Development of fatigue resistance in speed performances, delaying programming fatigue, improvement of anaerobic energy supply, lactate tolerance
Reaction speed	Repetition principles (complete recoveries)	Reaction method  Anticipation method	Reaction to different optical and acoustic signals  Reaction to movable objectives complex reactions to ball, opponent etc	Improvement of reaction and anticipation times
Mobility	Repetition principle (complete recoveries)	Dynamic stretching  Static stretching methods - stretching method I - stretching method II (for example, AED, PNF)	Dynamic (springy) stretching  Static (holding) stretching	Improvement of active and passive mobility, avoidance of muscular imbalance, injury prevention
All physical capacities	Competition Principle	Competition and control method	Competition performances, loads similar to competition demands	Complex event specific performance capacity, exploitation of the functional potential

**Table 5: Principles and training methods for basic conditioning, their characteristics and training effect—speed and mobility.**

Norman Poole offers this verse, written by Theodore Roosevelt, as a thought on middle-distance running.

"It's not the critic that counts,  
nor the man who points out where the strong man stumbles.  
The credit belongs to the man who is in the arena,  
whose face is marred by dust, blood and sweat,  
who knows great devotion, great enthusiasm



# Alan Web Interview

Alastair Aitken talked to Alan Web in the Summer. Here he interviews him for the BMC.

The United States of America have not had any middle distance runners seriously challenging the World's Best over 1500m, since Steve Scott and Jim Spivey in the late 1980's but, they may have found one who might do that and it is in the shape of 21 year old, Alan Webb, who won the 1500 in the USA Championships and Trials in Sacramento in 2004. He won that by over two seconds in 3:36.13.

Aitken talked to him the day before he ran in the Emsley Car Mile at Crystal Palace where he ran a personal best mile time of 3:50.73.

How did it all begin for Webb, who has run at the University of Michigan, George Mason University and now competes for Nike.

"I started running in my first year at High school when I was 14 but I already knew I could run a little bit. We have physical fitness testing at elementary school and I remember we had to run a half a mile and I found I could do that quite well but I was also a swimmer.' He added ' In the area where I lived in Rutherford, Washington

DC we really had no running clubs like you do in England but we did have swimming clubs and so, I was drawn to competitive swimming, as much as I liked to run too. I really did not know much about running or who was the best in the World in those days. Nobody pushed me into athletics. My parents just encouraged me with whatever I decided to do. I was totally self-motivated and I think, it is fatal for parents to push their kids into a sport as they will lose interest later on.'

'I was 2nd in the Virginia State Cross country when I was 15 years old and ran the mile in 4.25 and the 2 miles in 9.30. My first coach was Mark Hunter but it was in the next year I started being coached by my present coach Scott Roscoe. We sat down and decided together, it was best I specialise and do athletics and drop the competitive swimming and then, improvements started to come quite rapidly.'

He points out the most significant race that gave him the confidence for a future in the sport. That was on the 27th of May 2001 in Eugene in the Prefontaine Classic. Although he was only placed fifth in the mile, his time was 3:53.43 which was an American High School Record. (Taking Jim Ryun's record off the books).

He was just behind Moroccan, Adil Kaouch, who ran 3:53.40 and the winner was Hicham El Guerrouj in 3:49.92.

"That was a huge PR for me and I was doing it behind, a world record holder and big games medallists and, it really made me feel I could do something good in the future"

Unfortunately, that form did not continue for him during the next two years.

'I struggled right up till recently but, stuck to sensible training and hard work under my coach. I have had a handful of good races this year which included the American Championships but, having so much success at a young age and then building up my expectations in my mind for what, I thought I should be doing and then finding I was unable to fulfil that potential was 'rough' but I knew, as long as I kept on working hard, I would eventually come through. and now I am moving in the right direction'

He concluded 'I love running and I like most distances. Anything from 400 to cross-country. I just like to compete"



Solihull, 22.5.04. PAUL LASLETT (23) wins the men's 'C' 800m. from ALEX TANNER (24) with MARK SANFORD (22) finishing third, GARETH HILL (29) fourth and SCOTT STERLING (25) sixth. photo by Mark Shearman.



# The End Of Your County?

According to what one reads about the New Order in British athletics, the country will be divided up into zones with a sort of commissar in charge of each zone and a number of sub-commissars to carry out the wishes of the hierarchy. There will be no shortage of applicants for these positions, being well paid and possessing a certain amount of authority. It could be that the zones will see the amalgamation of two or more counties. It's not clear whether the positions of those who control a zone will remain there until retirement or will be subject to annual election, as is the case with the current county associations.

The county athletic associations have come in for some derision of late due to the lack of numbers attending their championships. Time and again there have been reports in A.W., that only one person competed for the hammer title and only one girl had to trot around the track alone to win a 3k gold medal. But, whose fault is this? Lack of publicity, possibly, no money prizes could be a reason, then there is the arrogance of athletes who feel that the event is beneath their reputation. It was a bit different in Coe's day when he won the Middlesex 800 metres title in sub 1:45 to create a new record which may never be challenged because county championships may disappear altogether under the New Order.

I was 15 years old when I ran in the Middlesex Youths Cross Country Championship in 1942 at Ruislip Woods. The war was at its most bitter. While on a training run in Hanger Lane park during the day, a German fighter plane swooped down and started to machine-gun the ground in front of me where a group of Home Guard were holding an exercise. In the same park one night, I was to see, perhaps, the first Flying Bomb zoom across the sky; its engine stopped and then dived into some houses nearby and exploded. I thought it was a German plane shot down. The newspaper next day revealed it wasn't.

In the cross country race, a tall man wearing spectacles ran alongside the runners bellowing through a giant sized megaphone. He bawled at me that I was in

seventh place and added, "You're packing well, Finchley." I learned many years later that his name was Alec White, a noted coach, member of T.V.H. and a Middlesex County official. He died recently aged 90 years.

In 1960, I wrote to the A.A.A. Coaching Secretary about becoming a coach. I was advised to contact the Middlesex county coaching secretary. He replied immediately to me and suggested I join a club (Finchley Harriers were extinct). He arranged for me to take the Hon.A.A.A. coaching award conducted by the national coach for the South. Shortly after passing, I was invited to coach at the Middlesex county week long course during the school holidays. It was held annually. A number of the coached were internationals, one in particular, Colin Smith, the British javelin champion, had links with the British Amateur Athletics Board, his wife was the daughter of the B.A.A.B. treasurer.

Invited to the Middlesex county annual supper held at City University I was to meet more county officials and realised I had seen them all before officiating at various meetings, some televised. It was a Middlesex official, Ron Hopcroft, who held the 100 miles world record, who secured the B.M.C. organisation of the City Mile, sponsored by Chubb, at Motspur Park in the City Charities meeting. The race had fallen into disrepute and needed livening up. The B.M.C. certainly did that, for the next 10 years times never dipped below 4:02 and in one race around 1970, four men broke 4 minutes. On that occasion John Kirkbride won in 3:58.5, coached by the current B.M.C. South West secretary, Mike Down. In another race, Tony Simmons was to break the under 20 European mile record with 4:02. Sadly this great mile ceased when Chubb were taken over by another company who did not wish to continue with the sponsorship.

There was a time when being offered a county vest meant one was a stone's throw away from becoming an international. In fact, I can recall an era in the Middlesex championships where six titles were won by G.B. Internationals. Winning a county

title meant that one was definitely in line for the team to the inter-Counties. Some counties, Hertfordshire for one, got tough on those who didn't support their championships; they weren't picket for the Inter. One such controversy revolved around the leading miler of the day, T.V.H.'s Mike Wiggs (3:57.5/mile). Wiggs was also involved in another incident. He had expressed the wish that the B.M.C. organise an attempt on the U.K. 2,000 metres record. He was notified of the date and venue; the Press turned up, Wiggs didn't. A reporter phoned him only to be told, "I'm cutting the garden hedge." Little do athletes realise that there is a A.A.A. Rule which stipulates that if one accepts to run in an invitation race and fail to attend for a valid reason, the athlete can be banned from racing for a period decided by the A.A.A. Disciplinary Committee. Wiggs escaped that ban, but not another for claiming false expenses to an invitation race. He claimed he had stayed in a hotel the night before the race - he hadn't. He was banned for three months. Wiggs was coached by the late Gordon Pirie; Gordon was no friend of the B.A.A.B. and one must suspect that the ban might not have been inflicted if Gordon had not been his coach. My experience with the Middx C.A.A.A. has been a happy one. They are democratically elected and do what's best for the athlete. It will be a sad day if county associations are swallowed up by a pack of bureaucrats who have probably only run the London Marathon for some charity.



Oxford, 6.5.04. CRAIG MOTTRAM (Australia) wins the men's mile in 3 mins. 56.64 secs. at the celebrations for the 50th anniversary of the running of the first sub four minute mile by Roger Bannister at Oxford on 6.5.1954. photograph by Mark Shearman.



# Sliding Down The Bannister

Roger Bannister breaking the four-minute mile has been hailed as the the defining moment in British sporting history. Yet the run is one of the worst things that ever happened to athletics. Far from being an admirable feat, it was cosy, conniving and dishonest. Its seminal contribution to sport has been to ruin middle-distance running world-wide.

The worst thing about the first sub-four was the pacemaking. It nurtured the belief that this was the only way to race middle distances-which persists to this day. There's nothing wrong with peers agreeing to pace one another , as long as everyone is trying to win. Paid pacemakers are ruining athletics, because they are effectively being paid to lose. How can this be ethical competition?

Their forerunners were Olympic athletes Brasher and Chataway. They were not paid but provided the template. The IAAF rules used to be clear; everyone in the race should be trying to win "honest competition". Pacemakers? The rule has been dropped but the ethical question remains.

History records that Bannister and Brasher tried another spin on this theme in 1953, when Brasher jogged a lap waiting for his chum to lap him before pacing him toward Bannisters finish. The AAA's threw this "record" out.

The scene has deteriorated to the extent that El G had a pacer in two World Championships (99/01) and in Sydney. There was some satisfaction when these tactics failed at Sydney.

Should he feel he is doing wrong? We gave the world the mile race and have produced mind bursting athletes over this distance yet we do it, so why should not everybody else?

The antidote is surely the race ran on 2:2.74 in Auckland. The homage paid to Bannister should be directed to Filbert Bayi who led from gun to tape in the Commonwealth 1500 to set a World Record. That is class.

His effort is an indictment of every middle-distance runner who thinks that they have to be paced to turn in a decent time. The film of the race should be required viewing to all aspiring runners.

## Book Review - The Perfect Couple by Pat Butcher

This book, published at any other time, would without doubt, have no competition for being the Athletics book of the year. This year has seen the issue of a number of books centering on the celebration of the Bannister mile and makes comparison difficult as all of them have merit. But this story, of two runners, rarely competing against each other, but wresting world records one from the other could be the material of a novel and/or a film. It has humour, drama, tragedy, romance, theatre...all the ingredients are there.

The author brings an insight into the families, friends, coaches, and opponents of two of the most charismatic runners, in their different ways, that the sport has ever known. Their joint impact far exceeded the sum of their individual contribution to middle-distance running and athletics in general. The reading of the book brings this out in majestic detail.

To those who lived through their careers, enjoyed, endured, wept and laughed the book allows us to relive those wonderful (on the whole) times. To those to whom they are but names it will enable them to learn of that most marvellous period of British middle-distance glory. It is said that some have greatness thrust upon them these two athletes earned that greatness and with it our respect and admiration. Our thanks are due to the author for putting this whole scenario before us.

The athletics fan would be hard put to justify that "title" if they deny themselves this book.

Published by Weidenfeld and Nicolson at £14.99(UK)

## Benita Johnson's Training

JAN 18-24, 2004  
(Falls Creek, altitude: 1600m)

**Sun am:** 2hrs steady on hilly course  
**pm:** rest

**Mon am:** 70min easy  
**pm:** 30min easy

**Tue am:** 8x1km (1min recovery) in 3:15 but 4th, 5th and 6th rep in 3:00  
**pm:** 35min easy

**Wed am:** 60min on hilly course  
**pm:** 35min easy

**Thu am:** 8x400 (200 float recovery)  
**pm:** 35min easy

**Fri am:** 70min easy  
**pm:** 35min easy

**Sat am:** 2x1km (3min recovery) in 2:55  
3min recovery then 20min at 90% max h.r.



# John Cooper Lecture

As an under 15 boy, Ricky sat with me at Sheffield and watched the English Schools 1500m U15 boys which Mo Farrah won in 4 min 06 with a 60 second last lap. Ricky's PB at the time was 4 min 28 and did not qualify for the Notts team. As a first year U17 boy he qualified for the English Schools 1500m SC with 35.9 going out in the first round at Exeter. As a second year U17 boy he finished second in the English Schools 1500m SC in 4:19.33 (The same time as Steven Murphy in 3rd place. Jermaine Mays winning in 4:18.5. 3rd in the U17 Inter Counties XC at Wollaton to Anthony Ford (2nd and Matt Jones 1st) just beating the late Ed Prickett into 4th place.

Endurance was worked hard that winter with a view to progressing at 2K SC and in fact Ricky qualified for the English Schools in his first year senior boy (17 years old) at 800m, 1500m and 2K SC. He elected to go for 1500m as progress at this event had been good. The aim had been to achieve a World Junior qualifying time for Santiago, Chile of 3min 45 sec (this was a very tall order as in the past this time had only been achieved by one British athlete, Johan Boakes and there was no 2K SC in the World Juniors). Having run 3:47.36 at Watford B.M.C., 1500m times actually started to deteriorate and Ricky seemed not to be able to pinch the other two seconds. We decided to try an 800m at Watford, where he ran 1:51.22. I said to him at that point that progress at 800m would probably now be only 1 sec per year.

In his second year as a junior he ran the Midland 800m, running a 59s first lap, winning 1:51.9, a sub 53 second lap. The following day, he ran the 2k SC, front running all the way, beating the 16yr old championship best performance by Spencer Duval, recording a time of 5:43. In his 3rd year as a junior he ran the Midland Champs 3000m in 8:37 and the following day a 48:5 400m, for a second place to Richard Davenport.

Having won the Midland 800m as a second year junior, Ricky was invited to compete for the Midlands against Loughborough, RAF and others at

Loughborough. Four days prior to this race, he ran a BMC 2k SC at Watford against seniors, running 5:46 and finishing, for him, a disappointing 4th. Because of the high standards Ricky set for himself, he saw this race as being a 'below par' performance and wanted to atone for his relatively poor time. By chance, the 800m on the Wednesday at Loughborough included Chris Moss, the AAA's U23 champion who was coming back from a long term injury. The bell was reached in 54s, 600m in 81s, Ricky kicked off the bend and won in 1min 48.5s, two weeks prior to his 18th birthday. George's comment to me was "a good run for an 18 year old" and I replied, "yes, but he's only 17!".

Ricky went onto the European Juniors, Grosseto, where he finished 3rd in a PB of 1:48.43 to Rene Herms of Germany and Arnoud Okken of Holland, both a year older. In his 3rd year U20, he qualified for the World Juniors, Kingston, Jamaica, where he finished 2nd in his heat and just missed out on a place in the final in a very tight finishing semi-final. He was 10th fastest junior in the world in 2002. This was however a low moment as he and I felt he was worthy of a place in the final. On his return to the UK he ran two B.M.C. races at Watford, two weeks apart, PBing in both, beating the B.M.C. members record for a junior, twice with 1:47.22 and 1:47.18. He left the junior ranks with B.M.C. members records for 2k SC and 800m.

In his first year senior and first year U23, he broke the BMC members record for a senior with 1.46.68, previously held by James McIlroy. He qualified for the European U23 800m, finishing 5th in the final and he won the AAAs senior 800m at Birmingham, front running the race from bell to tape.

He finished 5th at the Crystal Palace GP in a PB 1.46.06 and was selected for the World Champs, France. He ran in the first heat, finishing 3rd in a slowish race and just missed out on a semi-final place.

In 2004, Ricky won the BUSA short-course XC in Scotland and then picked up an injury, warm weather training in South Africa. The Loughborough physio team

worked over-time treating him and his second race was the Loughborough meeting, finishing second to Matt Shone in 1min 50s. Ricky went with George and Lisa Dobrisky to Holland to race, it was unfortunately cancelled due to bad weather.

He then ran in Crete on his 21st birthday (28th June) chasing a fast time, but finished 4th in 1min 48.2.

He came to the AAAs in Manchester far from fully fit and ran his fastest time of the year, winning his heat in 1.47.9. We were impressed with how easily Micheal East had won his heat and regarded him as a serious contender along with James McIlroy in the final. In the final, Sam Ellis stole the show, winning the race and Ricky was second to a fast finishing Joel Kidger. Two races were lined up the following week in Finland as a safeguard if the Olympic qualifying time had not been achieved. He won his first race at Lahti in a slow time of 1min 49s and the second race at Lapinlahti was the day before Olympic selection. He won in 1min 46.09, his second fastest ever time and was selected for the Olympic 800m.

In his heat at the Olympics, he finished second with a PB of 1min 45.7, beating Said Guerni into 3rd place, who was last year's World Champion. In the semi-final the following day, Ricky ran 1min 46.8 and failed to qualify for the final.

## Winter Training 2004/2005

### Week 1

14 x 300 parlauf

### Week 2

4 x 400, 4 x 300, 4 x 200m, 4 mins, 3 mins, 2 mins rest

### Week 3

5 x 600m, 6 mins rest

### Week 4

7 lap run time trial

After Xmas

### Week 1

8 x 300m parlauf



<i>Week 2</i>	3 x 400m 10mins recovery	Apr-98	108	103				
2 x 400m, 2 x 300m, 2 x 200m, 4 mins , 3 mins, 2 mins rest	Jul-98	64	65	63				
	Aug-98	60	60	60				
	Jul-98	61	61	62				
<i>Week 3</i>	Apr-98	64	64	65				
5 x 300m 3 mins rest	May-98	61	61	62				
	Apr-99	57	58	58				
	May-99	57	58	58				
<i>Week 4</i>	Jun-99	55	57	57				
3 lap run time trial.	Aug-99	56	57	58				
	May-00	59	54	55				
4 x 300m 8 mins recovery	Aug-00	56	55	54				
Aug-98	45	45	45	45				
Jul-98	43	44	43	44				
Apr-98	45	43	42	41				
Jun-98	44	45	44	45				
March-99	43	41	43	44				
May-99	40	42	42	43				
June-99	42	40	42	44				
Jul-99	40	42	NR	NR				
Aug-99	41	42	42	44				
Apr-00	43	41	41	42				
May-00	39	38	39	39				
Jul-00	38	38	39	38				
Jun-02	39	36	37	36				
Jun-03	39	37	37	36				
Aug-04	35	35.6	36.2	36.8				
	2003	51.3	51.2	51.7				
	6 x 200m, 1 minute recovery	May-98	29	28	29	30	30	31
	May-98	29	28	29	30	30	31	
	Mar-98	30	31	31	30	29	30	
	Apr-99	25	27	26	28	28	28	
	May-01	27	27	27	27	28	27	
	Jul-01	26	27	27	27	27	27	
	Jun-02	25	26	25	25	25	25	
	3 x 600m 8 mins recovery	Aug-98	99	104	99			
	Aug-98	99	104	99				
	Jul-98	101	104	105				
	6 x 300m or 10 x 300m 100m walk recovery	Aug-98	42	43	48	49	nr	nr
	Apr-99	50	50	49	49	48	48	
	Jul-99	45	45	45	45	45	47	
	Apr-00	46	45	45	46	43	42	
	Jul-00	44	43	42	42	42	41	
	and	42.2	42.4	43.1				
	Apr-01	46	46	45	44	44	40	
	The day after his 1m48.5 he ran	41.26	41.93	40.5	39.78	40.43	41.17	
	41.38average	41.32						
	Jul-01	48	41	41	41	40	40	



Oxford, 6.5.04. LEE BOWRON (88) leads the men's 'C' mile from PAUL ERWOOD (7), JAMES ELLIS (74) and DAN LEWIS (59). photograph by Mark Shearman.





## Men's 800

Our sole representative, Ricky Soos, was again pitched in the deep end, last year the Paris cauldron proved to be boiling and he failed to survive the opening round. This year he was once again in with the big boys. he was not overawed. A personal best was a deserved reward. He ran a close second to Mutua, a much faster man, but, beat Said Guerni ( who would go on to place seventh in the final) and Tadidi who had a better PB than Ricky. Note six of the men in the race were older than our man.

Next day came the semi's. He faced World Record-holder Kipketer (who would go on to win bronze), Ismail (who would make the final) and arguably the top European, outside of Borzakovskiy, Longo. Again he would be second youngest. As things turned out he would have needed not only another PB but one inside 1:45.45 to go further. It proved a tad to far and given that only the first two could gain entry to the final as a right he was not amongst the two (from three races) fastest losers. The lesson for all British runners to note was that they need, not only to be sub 1.46 fit, to get past the first round, but be able of coming back the next day and be capable of holding off sub 1.45 men ...at least.

## Women's 800

Kelly Holmes ran in heat three and with great tactical skill and confidence tailed the field and only pushed on hard enough to win. Jo Fenn ran in the next heat to finish third, seemingly with a degree of ease, and go through to the next round.

The semi-finals saw Kelly again run at the rear of the field, easing through with consummate judgement to win in 1:57.98 ahead of some stellar performers like Andrianova and Miles-Clark. To say she ran majestically would be an understatement. Jo Fenn drew Mutola and Concian. Never entirely comfortable and with an interrupted preparation behind her she finished fifth and out of the final. Her time was only 3/1000 slower than her season's best, beating Hammou, a 1:59.2 performer(2004). As with the men it was first two plus two fastest losers from three races.Very tough.

The final has become the stuff of legend. Once again the pace was brisk and Kelly adopted her, thus far, successful tactics of going straight to the back. The leader went through 200 in 27.5 with Kelly at 28.7-last! At 400 the leader was caught at 56.37, Kelly now seventh in 57.6 ( my mouth was very dry at this stage!). From her she moved forcibly through the field, closing down on Mutola. At 600 the leader notched 86.5 with Kelly now third at 86.8. What followed was a titanic battle between the Gold and Silver medallists from last year in Paris. Our heroine managed a last 200 of 29.6 and a last 100 of 14.9. Mutola faded only in the last couple of strides as Benhassi and Ceplak, both whom had last 100's little short of sensational as both squeezed Mutola from the podium. Another two yards and who knows what the result would have been but medals are handed out at 800 metres and the Tonbridge Tornado had triumphed!

Kelly Holmes has run the swiftest double of the three women who have managed to win the 800/1500m double in Olympic history. Here are my stats - combined times for the two races.

1976 - Tatyana Kazankina	1:54.94	+	4:05.48	=	6:00.42	Average pace per lap for 5.75 laps: 62.68 (2,300m)
1996 - Svetlana Masterkova	1:57.73	+	4:00.83	=	5:58.56	Average pace per lap for 5.75 laps: 62.35
2004 - Kelly Holmes	1:56.38	+	3:57.90	=	5:54.28	Average pace per lap for 5.75 laps: 61.61

Kazankina has the quickest 800m but Holmes has the best 1500 of the three women.

*Dave Cocksedge*

Peta Bee, writing in the Times, has said that what you eat and drink after exercise has long been known to affect your performance.Odours inhaled before and during a work-out may also have an impact on fitness. Treadmill runners were given a variety of odours to inhale. Those given peppermint were reckoned to make less effort and were less frustrated with their performance.They also had "an increase in nasal and lung dilation, allowing more blood and oxygen to reach the muscles, ULTIMATELY ENHANCING STRENGTH AND ENDURANCE". It is thought that minty scents produce a chemical reaction that sends signals to the brain similar to those experienced in cold temperatures . Sniffing ordinary peppermint could produce the same effect.



Steve Scott ran sub-4 well over 130 times! He had a long and successful career although suffered, as did others, from peaking at the same time as Walker, Coe, Ovett and Cram.

By miling standards, and I invite comments, he appears to have clocked big mileages in the winter and arguably, in the summer. Note lengthy post race runs. He showed good road 10k times but did not appear to have followed that event to the track.

My guess at names . . . John Walker, Thomas Wessinghage, Doug Padilla, Mark Fricker, Sydnee Maree, Ray Flynn.

Comments on Scott's training please to [crouch\\_leslie@hotmail.com](mailto:crouch_leslie@hotmail.com)



# Basic Principles of Training at High Altitude

By Felix P. Suslov, Russia

*Based on 40 years experience of altitude, the author offers practical advice in regard to training at different altitudes, the structure of altitude training and transition to sea-level.*

## INTRODUCTION

In Russia we use altitude training as a means of raising performance capacity in competitions taking place at low altitudes. In this way, the athletes are influenced by a complex of climatical and geographical factors, together with the training and competition loads.

I have collected substantial practical and experimental material over the last 40 years, which leads me to the conclusion that training at heights of around 1200-2600m is quite effective, both for young and for seasoned athletes specializing in running at all distances, walking, jumping, throwing and multi-events.

## GENERAL INFORMATION

The improvement of performance upon returning from altitude may be attributed to an increase in aerobic and anaerobic productivity, economy of work and the general and specific endurance of the organism (Figures 1, 2 and 3).

At altitude there is a considerable increase in maximum strength and power. We can observe an improvement in fine neuromuscular coordination, which enables the athlete to overcome the speed

barrier. We note also an improvement in the reaction to moving object and in precision of movement. These positive changes persist for some eight weeks after returning from altitude (Figure 4).

In practice we define the following altitude heights:

- Low - up to 1200m
- Medium - from 1300 to 2500m
- High - over 3000m

At present it is debatable whether it is expedient to use heights in excess of 3000m.

High altitude conditions put athletes of different specialities in an unequal situation in regard to two factors - speed of movement and duration of work. A reduction in air density leads to a lowering of air resistance but diminishes the organism's supply of oxygen.

In the sprints, jumps and throws, where speed of movement is vital but the share of aerobic processes in providing energy is insignificant, performances improve at medium altitudes. In endurance events, where aerobic mechanisms for supplying energy play a fundamental role, performances deteriorate.

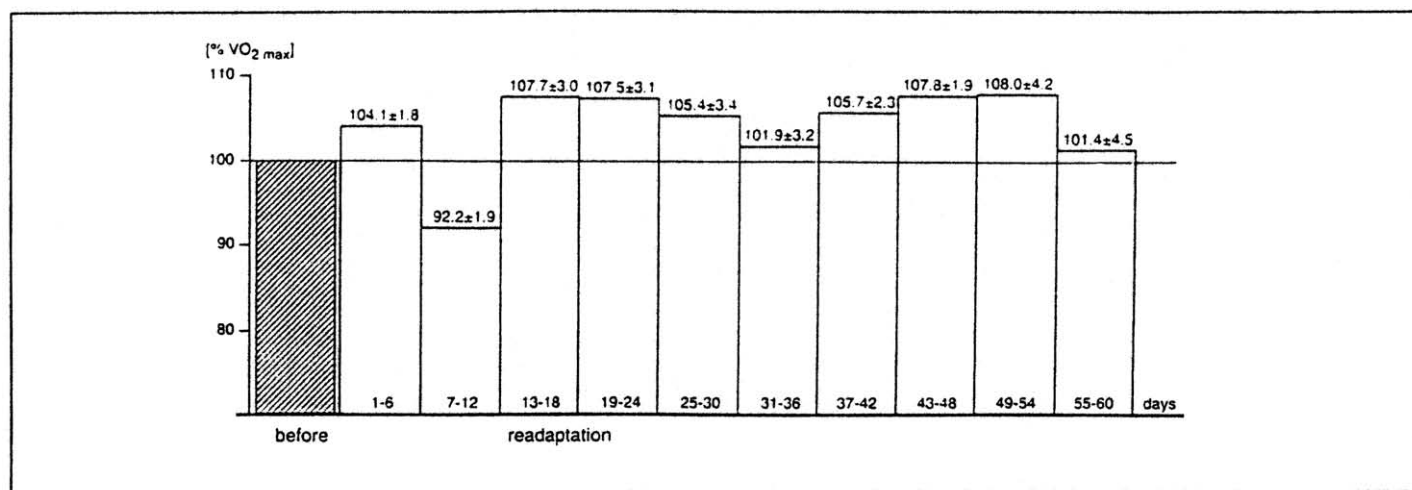
The time the athletes have been at altitude and their overall preparation are both crucial factors affecting the speed of adaptation and the possible increase of the training loads. When training at altitudes of above 2500m, the length of the "acute"

phase of acclimatization, and, therefore, that of the first two microcycles, should be increased.

## PRACTICAL APPLICATION OF ALTITUDE TRAINING

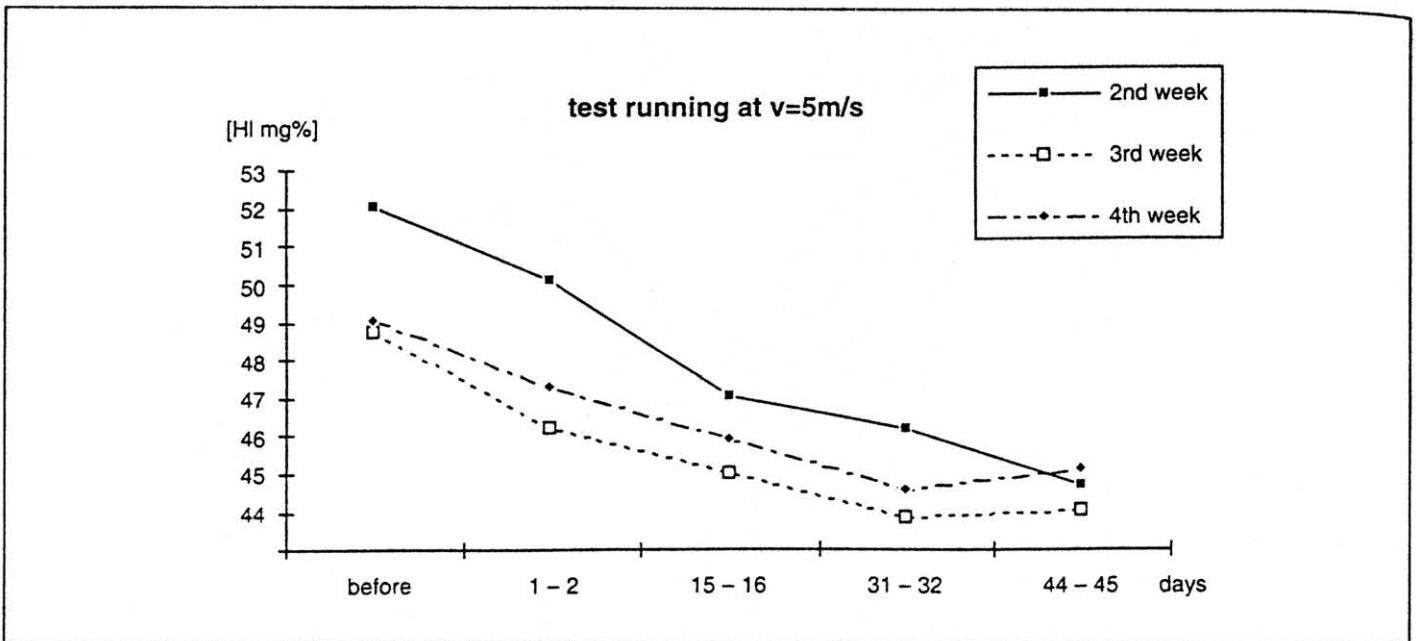
The positive effect of training at medium and high altitudes is concerned with the determination of the tasks to be carried out. We may identify three ways of using altitude training:

- In preparation for competitions due to take place at medium and high altitudes, several training periods of from 20 to 35 days duration at altitude are needed during the annual training cycle, in order to adapt the organism effectively. During these periods one should plan a gradual increase in the load intensity, thereby ensuring a steady and reliable adaptation to the action of climatic factors and the training loads.
- In preparation for competitions due to take place at normal heights, less frequent and shorter periods of altitude training are needed but the load intensity should be progressively increased for each period. The dynamics of work capacity should be strictly controlled during these periods of re-acclimatization.
- In preparation for a series of competitions taking place at varying heights, such as we encounter in the case of winter sports, additional research is needed for us to form any firm conclusions.



**Figure 1: Dynamics of the maximal oxygen utilization (VO<sub>2max</sub>) in runners after training at 1800m altitude (n=20).**





**Figure 2: Dynamics of blood lactate concentration in runners at standard loads after training at 1800m altitude of 2, 3 and 4 weeks duration (n=21).**

### OUTLINE OF THE TRAINING PHASES

During the first few days at an altitude training camp, we observe a considerable deterioration in the general condition of the athletes, shown by a decreased work capacity in tests and competitions. This is due to:

- a) A reduction in lung ventilation, the maximum and current supply of oxygen and in the anaerobic threshold (Figure 3).
- b) A rise in the work pulse rate (up to a

- height of 2500m).
- c) A fall in the indicators of the oxygen debt incurred with a maximum load of submaximal power.
- d) Laboured coordination and an increase in the time of both simple and complex motor reactions.

During the preparatory period, when training loads are high in volume and moderate in intensity, hardly any acute negative symptoms can be observed.

During the competitive period, however, which is generally characterised by a moderate volume and a higher intensity, the negative symptoms are more acutely expressed.

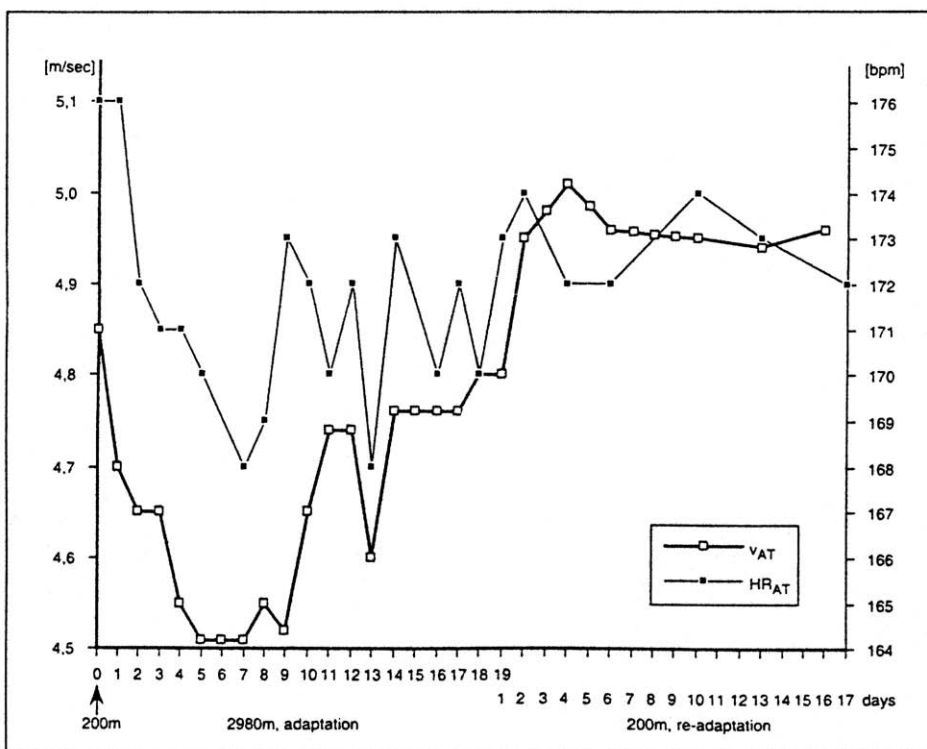
During the first microcycle (5 to 9 days), the load intensity is considerably reduced by means of an increase in the length of the rest intervals and the amount of work of an alactic and aerobic type. We do not recommend competitions at this time.

In the second microcycle (3 to 7 days), the load intensity gradually increases, until, in the third and fourth microcycles, normal training is continued, in accordance with the current stage of training.

### RESULTS

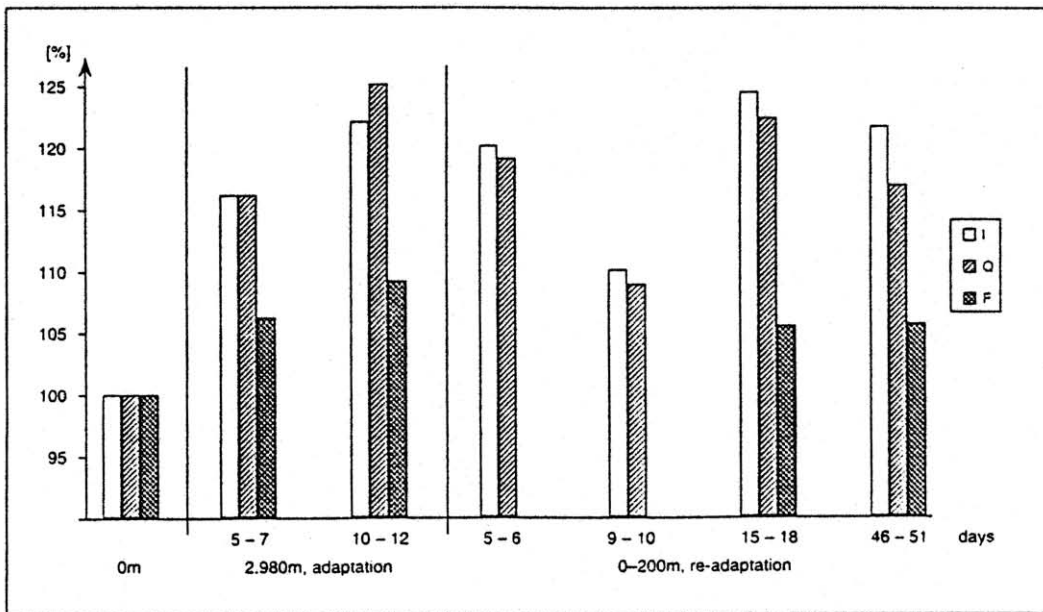
The results of many years of observation show that, during the period of reacclimatisation after a two to five weeks stay at altitude, work capacity, in terms of competition and test indicators, has an undulating character.

The first few days after returning from altitude are affected by problems relating to travel and perhaps, a change in the time zone.



**Figure 3: Dynamics of speed at the anaerobic threshold (AT) of a long distance runner (Conconi-test).**





$$I = \frac{F_{\max}}{t_{\max}} \quad Q = \frac{0.5 F_{\max}}{0.5 t_{\max}}$$

$F_{\max}$  is the maximal force,  $t_{\max}$  is the maximal time, factor 0.5 is the first half of the total incination of the force-time-curves; F=performance

**Figure 4: Dynamics of strength parameters of triple jumpers before and after altitude training. (n=12)**

During days 3 to 7, the first phase of enhanced work capacity may be observed, often followed, during days 8 to 10, by a phase of reduced performance (Figure 5).

Starting with days 12-13, work capacity continues to improve and the best performances are achieved on days 18 to 20.

During the fifth week, the work capacity falls off a little but, between days 36 and 48 after returning from altitude, a new upsurge in performance appears.

These dynamics of work capacity are associated with the level of the training loads performed at altitude. Low intensity training has the effect of greatly reducing variations in work capacity during the re-acclimatisation phase. High intensity work has the opposite effect; not only does it increase these variations but it may

sometimes even destroy the three phases of enhanced work capacity.

### TIMING

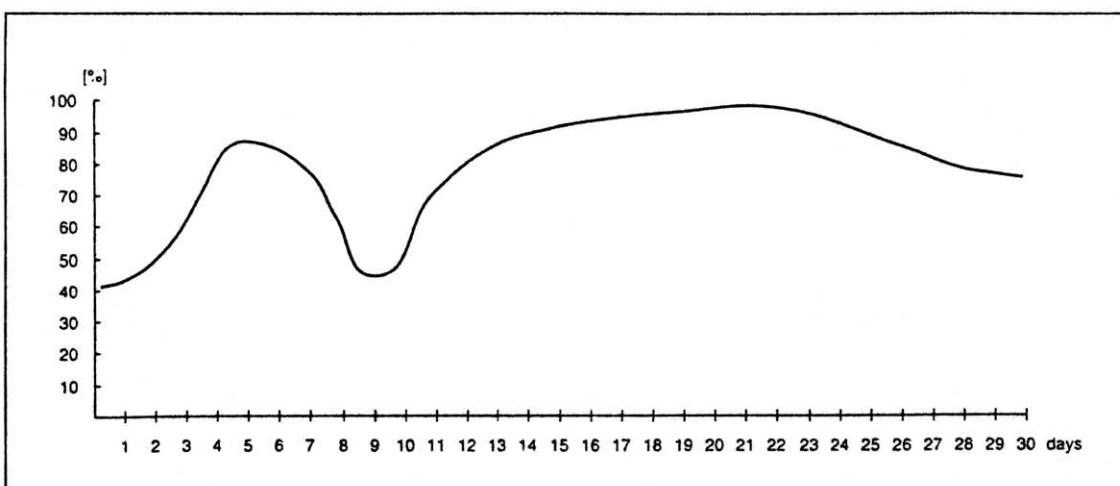
Training at altitude should harmonise with previous and subsequent training and it should be concerned with meeting definite, consistently connected tasks. In preparing for competitions to be held at altitude, there should be frequent periods of altitude training.

When preparing for competitions to be held at low-lying venues, altitude training may be carried out two to four times a year. The optimum duration is two to four weeks (five to six weeks for the marathon and the 50 kilometre walk). Longer training camps do not produce the desired improvement in work capacity. Shorter camps may be used during the competitive period, as 'shock' training or for rehabilitation.

During the transitional period, it is reasonable to use visits to sites at medium altitude for 'active rest'.

In the preparatory period, altitude training is employed after the athletes have reached their maximum training load volume at sea level. This facilitates a further rise in endurance and strength. The same principle applies in the pre-competition period, when there is a transition to training loads of high intensity.

During the competition period training at medium altitude may be used, as preparation for more important competitions.



**Figure 5: Dynamics of competition performance of middle and long distance runners after medium altitude training (~100 results).**



# How to Understand Training

By Dr. Atko Viru, Estonia

Professor Viru of the University of Tartu, Estonia, well-known internationally for his contributions to the theory of training, presents a simplified and graphically illustrated summary of the factors involved in the adaptation of the organism to training.

It is widely accepted that training consists of systematically performed exercises in order to improve the physical capacities and acquired technical skills of an event. Experience and, to a certain extent, the results of related studies suggest to the coach what are the appropriate exercises. The testing of physical capacities, the visual evaluation of technique and, above all, the competition results, will indicate how effective the training exercises have been (Figure 1).

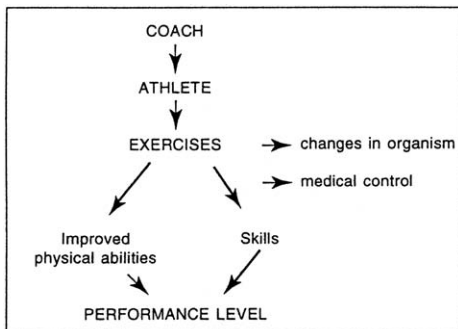


FIGURE 1

The same scheme is presented with a small modification in Figure 2. The modification consists of the additional changes in the organism that occur as the result of the performed exercises. It appears that Figure 2 represents only a small modification that emphasises physiological knowledge. However, this modification actually means a principal change in the approach, as the new approach is based on the following established facts in physiological and biochemical studies:

1. Good performances, and top results in particular, are due to the changes in the organism that distinguishes between the "Homo Olympicus" and a secondary person, "Homo Sedentarius".
2. Certain changes are necessary to improve physical capacities, to acquire

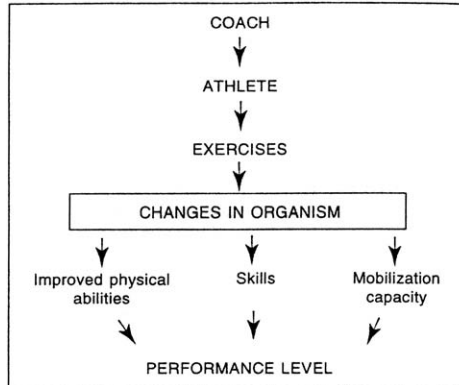


FIGURE 2

technical skills, and to achieve an extensive mobilisation of the organism's motor potential during competitions.

3. The character, intensity and duration of training exercises, as well as the peculiarities in the involvement of various muscle groups and motor units, determine the adaptive changes in the organism when the exercise is systematically repeated.
4. The specific dependence of the changes in the organism on the employed exercises is based on the exercise-induced adaptive protein synthesis. The metabolic and hormonal changes during and after the exercise are the inductors for the specific synthesis of proteins that assures an increase in the most active cellular structures and an increase of the enzyme molecules catalysed in the metabolic pathways.

The idea of the scheme in Figure 2 therefore indicates that each training exercise results in specific changes in the organism which are necessary to obtain the objectives of training. Collectively the changes caused by the various exercises assure an increased performance level.

The advantages of using this scheme in the practical organisation of training are:

- Each exercise will be performed in order to achieve a concrete objective in the form of a certain change in the organism.
- The resulting changes make it possible to check the effectiveness of each exercise (or at least a group of exercises).

"Blind" exercising will be avoided this way and training will become a well-controlled process. However, changes in the organism are not the only objective. They will also serve as means for an operative feedback to control the effectiveness of training (Figure 3).

The feedback from the changes in the organism is more specific in comparison to the feedback obtained from improved physical capacities and competition results. The feedback from physical capacities and competition results is an integral one, summing up the total positive and negative changes that might have occurred during a prolonged period. The conclusions made from this kind of feedback are therefore only relatively truthful, allowing the evaluation of a general trend but not the details of the whole training process.

Carrying out feedback from the changes in the organism is in reality a complicated task. There are two possibilities available to the coach:

- To use the help of sport physicians and special laboratories.
- To be supplied with tests that describe indirectly but with sufficient validity the main changes in the organism caused by certain training exercises.

Whatever the case, coaches must understand the corresponding information in order to use it for the guidance of training processes.

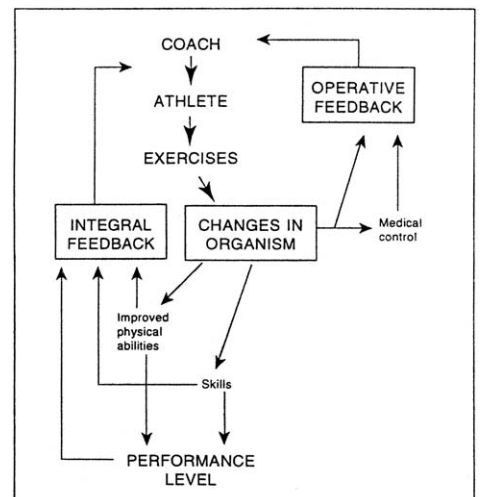


FIGURE 3



The practical use of the scheme outlined above requires an understanding of what are the necessary changes to achieve. The aim or training - a top level performance. This, in turn, leads to an analysis of factors that limit performances in a particular event in order to find the best solution (Figure 4).

Top level competition results depend on training, as well as on genetic characteristics. However, it must be emphasised that there are no genetically induced factors that directly determine competition results in any single event. The positive (or negative) significance of genetic factors become apparent in

training. There is an interrelation. Training makes it possible to use genetically induced manifestations in the improvements of performances. At the same time, the effectiveness of training in various directions depend on the susceptibility of the organism to the various training exercises.

The tasks related to the achievement of top level performances have to be rationally distribution over the whole 10 to 12 year period during which a prepubertal boy or girl is developed into a champion. The *training strategy* has to determine how to distribute the tasks, taking into consideration the development of the

organism during adolescence. This means that the most favourable age periods have to be found to induce the necessary structural, metabolic and functional changes. The distribution of the various tasks within a year's meso- and microcycles also belong to the strategy of training.

The carrying out of the induction of the necessary changes is part of the *training tactics*, responsible for finding the most rational ways and finally the necessary training methods and exercises.

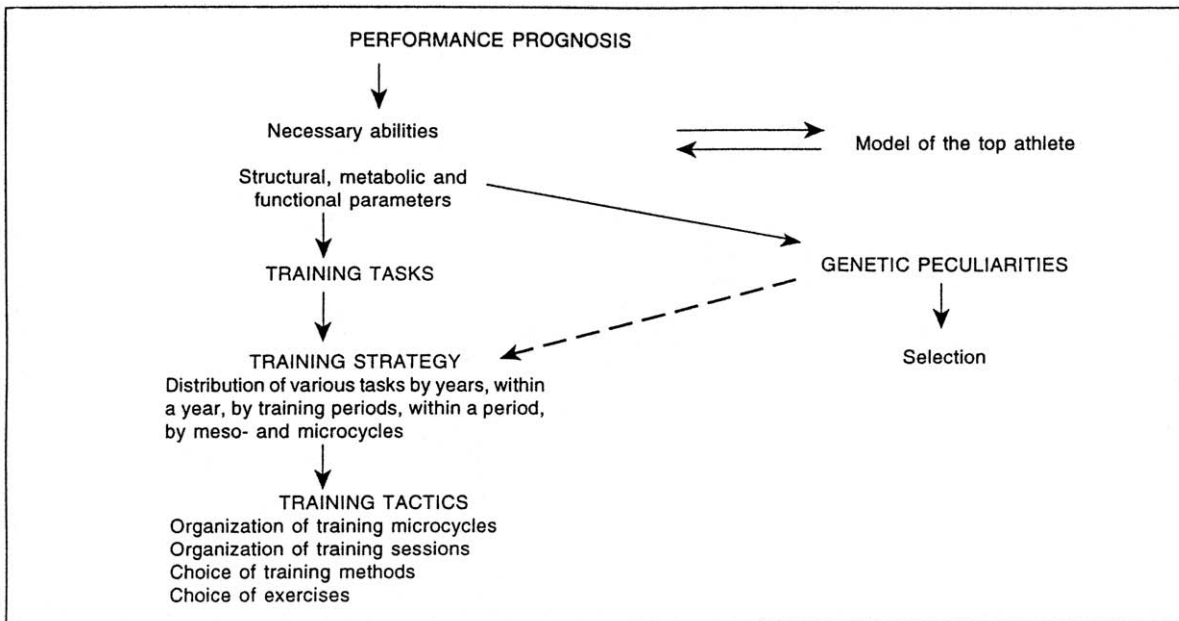


FIGURE 4



# Triple Entente

2003 was not, it might be argued, our best year for men's 800 and 1500 metre running. However away from the headlines the UK depth continues to be no worse and in the case of Germany better than before. Appended are 2003 listings of world ranking as recorded by January 2004. These are not the final lists, particularly below say 2/300 but are a clear indication of the situation.

It would seem that we have the numbers but lack that little something that throws up the top class performers. When looking at the names of the French athletes one cannot help but think, that from a middle distance perspective, our colonists and explorers of a couple of centuries ago went further afield than was needed.

800	GB	FRANCE	GERMANY	1500	GB	FRANCE	GERMANY
	51	9	35			2	
	61	30			32	5	34
	66	42			33	49	77
	87	50			72	53	89
					78	84	
	101	116	119			91	
	158	162	125				
		164	139		107	105	121
		172	182		125	142	150
			198		157	149	168
	210	270	262		178		181
	251		271		185		
	265				210	214	202
	272				211	254	226
	273				232	261	280
	285				241	266	
	286				242	270	
	290				250	278	
	294				256	281	
	329	334	312		282	285	
	338	335	314		292		
	356	345	324		313	315	320
			341		366	353	341
			343		368	358	347
			384		379	377	351
			395		390		367
	410	424	457		397		387
	446	430	459				388
	447	431	466		407	401	446
	457	436			409	412	481
	461	448			438	428	
	468	455			439	434	
	484	470			460	443	
	485	474			461	447	
	488	486			478	490	
	493					495	
	513	524	522		500	521	514
	517	534			505	525	548
	523	542			512	539	594
	538	577			535	546	
	596	575			536	550	
		594			537	555	
	624	603	660		540	565	
	649	611			541	595	
	652	630			597		
	643	637					
	683	669					
	712	700	721				
	730	745	736				
	784	761	793				
		769	795				
		770					
		788					





# Taper Down for Peak Performance

by Derek Parker (Level 4 Coach)

BMC News readers may be interested in the training and racing programme devised by veteran Irish 800 metres runner Joe Gough and me for the 2003 indoor and outdoor track season.

The schedule culminated in Joe winning the silver medal in the over 50 age group at the world outdoor championship in Puerto Rico and gold medals at the European, British, Irish and Scottish championships, all over 800 metres, indoor.

I attribute Joe's success to dedication, commitment, hard work and self-belief. I am privileged to work with him and we have learned much from each other.

Because Joe lives in County Kilkenny in the south of Ireland while my home is in south-west Scotland, all training sessions are planned and evaluated by telephone.

Double periodisation is used because Joe competes indoors during January and February as well as at national outdoor championships in June and July.

This means he attains two major peaks in a single year so an essential aspect of the programme is knowing when to increase and when to decrease workloads to consolidate training gains and avoid breakdown.

A 20 week build up to competition starts with weekly hill, fartlek, track, cross-country and circuit sessions.

A typical week for the first eight weeks is: Monday - Fartlek e.g. 8 x 45 secs at 3k pace with 90 secs recovery jog; Tuesday - 20 minutes recovery run, plus circuits e.g. press ups, sit ups, squat thrusts x 30 secs x 2 sets per exercise with 2 minutes rest between sets; Wednesday - 30 to 40 minutes steady run; Thursday - Track e.g. 6 x 400 metres at 1500 metres pace with 60 to 90 secs recovery + 3 x 30 metres full effort from flying start; Friday - Rest; Saturday - Hills e.g. 10 x 200 metres with jog back recovery; Sunday - 45 minute cross country run.

During the next six weeks, Joe trains regularly at 800 metres pace, e.g. 4 x 400 metres with 3 to 4 minutes rest. These sessions take place on Thursday s with 1500 metres sessions moved to Tuesday s. Fartlek is dropped while 400 metres pace sessions are introduced, e.g. 300 metres + 100 metres x 2 sets (45 secs between repetitions / 15 to 20 mins between sets).

The next four weeks emphasise race pace repetitions as relaxed and economically as possible. Ease of effort, as much as speed, is the goal.

The most crucial phase is the two week taper to major races. This means decreasing the workload, while emphasising sharpness and quality. A typical taper is:

*Sunday:* 1500 metres session, e.g. 2 x 5 x 300 metres (30 seconds between reps / 8 mins between sets)

*Monday:* 30 minutes recovery run

*Tuesday:* 800 metres session, e.g. 300 metres + 300 metres + 200 metres x 2 sets (45 secs between reps / 8 mins between sets) + 3 x 30 metres sprint from flying start

*Wednesday:* 30 minutes recovery run

*Thursday:* 400 metres session, e.g. 2 x 2 x 200 metres (45 secs between reps / 15 minutes between sets)

*Friday:* Rest

*Saturday:* Sub-400 metres pace session, e.g. 8 x 150 metres at 95% effort (250 metres walk recovery)

*Sunday:* 30 minutes recovery run

*Monday:* 20 minutes easy running

*Tuesday:* Split 800 and 400 metres pace session, e.g. 4 x 200 metres at 800 metres pace (30 secs between reps / 8 minutes after final 200) then 2 x 200 metres at 400 metres pace (45 secs recovery between reps / 8 minutes recovery) the 3 x 30 metres from flying start

*Wednesday:* 20 minutes easy run

*Thursday:* 3 x 150 metres fast stride (walk 250 metres recovery)

*Friday:* Rest

*Saturday:* Warm up session

*Sunday:* THE RACE



Budapest, 7.3.04. Women's 3km. final, left to right; MESERET DEFAR (Ethiopia, 595), BERHANE ADERE (Ethiopia), JO PAVEY (Gt. Britain, 623) and MARTA DOMINGUEZ (Spain, 579). photo by Mark Shearman.



# News

Recent research suggests that fish-oil supplements containing Omega-3 acids will allow athletes to experience less breathlessness, chest tightness and other asthmas-like symptoms after exercise.

Other research suggests that the deterioration of performance from running in polluted or ozone heavy air may be countered by ingesting Vitamin C and Vitamin E. Tony Bosworth of Friends of the Earth tells me that often rural areas have high ozone levels so that being in the country is no guarantee of freedom from them. As a general rule of thumb they are highest mid-morning and mid to late afternoon/early evening. These levels vary hour to hour day to day and can be checked on [www.airquality.co.uk](http://www.airquality.co.uk)

American research offers a warning that serious weight training may be harmful for those with an enlarged aorta as the training raises blood pressure and may give rise to an aortic dissection which is a potentially fatal tearing of the heart's main artery. The advice is that one should not attempt to lift more than 50% of ones body weight.

# Quotes

"In Commonwealth countries they refer to the U.K. as 'The Land of Dope and Glory'"  
*Frank Horwill*

"I always remember my first meeting with Frank Horwill. I was 15 years old and had been invited to an 800 meters race at Cophall Stadium. He called us together and said 'The BMC hasn't paid your fares here to F\*\*k about.' As we came down to complete the first lap, it was obviously not fast enough for Frank, who stepped out onto the track and yelled, 'If you can't do better than this, STEP OFF THE TRACK!' We ran the next lap in 56 seconds!"  
*Sebastian Coe*

"You may not remember me. I attended your course at Ogmore. Following that course I had my best cross-country season ever, winning the Country and Midlands title. The course taught me how to train properly and how to eat correctly. Thank you"  
*Midlands under 17 female*

"I thought I had missed the boat. Then, I got an invite to run in a BMC mile at West London Stadium which I won in good time. This got me into Commonwealth Games Trials. The rest is history"  
*Brendan Foster*

"I first broke 4 minutes for the mile in an obscure BMC race called the Brigg Mile at Haringey track. I think I was 19 at the time"  
*Steve Ovett*

"I think weight training injures more people than it does good"  
*George Gandy, 1968*

"Coe's undoubted 'kick' at the end of races is entirely due to his fantastic weight training schedule"  
*George Gandy, 1979*

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# Book Review - The Perfect Mile

This timely volume, written by Neal Bascombe, relates the three or so eventful years leading up to 1954 when sub-4 was born. It portrays a 'three-cornered' advance toward that target. The combatants were, as far as this book is concerned, Wes Santee of the USA, John Landy of Australia and Roger Bannister of Britain.

Their stories are told after much research and the list of interviewees makes the reader's mouth water. However it needs to be said that the stories are presented with a sense of melodrama and the thought might be added that some are if not highly coloured then, to use an expression of recent times, 'sexed-up'. Nevertheless the whole is mightily entertaining and if one did not know the eventual 'culprit' one is carried along as in an Agatha Christie mystery. The reader is fed, page by page, year by year, toward 1954. The climax being the Commonwealth Games One Mile in Vancouver, hence the title.

Inevitably there are one or two oddities. The European Championships referred to as the European Games, a 200 yard lap time is given as 47.4, a reference made to Bannister clutching Lueg's vest at the conclusion of the 1952 Olympic 1500. My recollection, which may be faulty and I apologise if it is, was that he clutched the rear of Bob McMillens shorts. The author mentions that Landy held the world record for two days short of four years whereas it was from 21/6/54 until Derek Ibbotson's effort on 19/7/57. These minor errors do not in any way detract from the whole although I was surprised that Bannister's third place in the European 800 of 1950 did not merit a mention as this, arguably, was the performance that brought him to world attention.

Overall each of the three contestants has been 'microscoped', few stones left unturned in an effort to present a 'dynamic' story. At a time when the media was newspaper and radio based the chase was manna to journalists the world over. If one wants an in depth analysis of a

relatively short period in the history of the one mile record then this is it, but you need to allow, to some degree, for a novelists licence and flavour, but if this serves to make the tale more interesting so what!

*The book is published by Collins Willow / Harper Collins at £16.99. From Harper Collins at Westerhill Road, Bishopsbriggs, Glasgow G64 2QT.*

*As a special offer to BMC members, up to 31<sup>st</sup> July, 2004, the price is £13.99.*

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## Cold Comfort

British middle distance fans will be all too aware of slip in standards since the 'Golden' years of Coe, Ovett, Cram and Elliott. Take heart, we are not alone, far from it.

In the years after WW2 Sweden had world ranked athletes as follows:

	800	1500
1946	7 in top 20	8 in top 10
1947	5 in top 20	6 in top 10
1948	5 in top 20	5 in top 10
1949	5 in top 20	5 in top 10
1950	4 in top 20	4 in top 10

By the end of 1957 Sweden still had two 1500 men in the all-time top 15. But by 2002 could not place one man in the top 100! The 800 was better with their best man placed at 88<sup>th</sup>. So, please, spare a thought for the (elder) Swedish M/D track fan.

The case of Germany, albeit a later period, with more competition around the world they have slid.

	800	1500
1974	2 in top 20	0 in top 20
1975	1 in top 20	3 in top 20
1976	1 in top 20	2 in top 20
1977	2 in top 20	5 in top 20
All time at end of 1977	800 18, 19 and 28	1500 9, 14, 17 and 18

All time at end of 2002

800	49
1500	46
2002 ranked	
800	12, 42, 147 and 172
1500	48, 72, 116 and 145

Of course the advent of prolific numbers

from Africa have made it difficult for Europeans but that does not make the pill any easier to swallow.

When observing these trends in the UK some observers suggest that this 'recession' is cyclical. Surely this is not an evidence based comment. There is no reason why UK standards should ever rise again by themselves. They will only do so if athletes, coaches and the authorities **MAKE IT HAPPEN!!**

There is cold comfort in the current lack of success of Sweden and Germany (their stats for 2003 show some improvement). We should only be concerned with our, UK, standards. This magazine continues to carry coaching articles, expertise and advice of the highest level. We must hope that it is being used.



# How Much Do You Know About Running? - ANSWERS -

- Dave Bedford ran 27:30.8 on the 13th July, 1973.
- Dave Moorcroft ran 13:00.4 on the 7th July, 1982.
- Yobes Ondieki ran 26:58.3 on the 10th July, 1993.
- Kelly Holmes hold U.K. records for 800, 1,000 and 1,500 metres.
- Steve Jones ran 2:07:13 on the 20th October, 1985.
- Five days, on the 6th day endurance will have declined 1% and will decline rapidly, i.e. 7th day - 2%, 8th day - 4%, 9th day - 8%, etc.
- In the morning because this will elevate the metabolic rate for several hours afterwards which means more calories will be burnt even while resting.
- Males are allocated 214 less 0.8 for every year of age. Females are allocated 209 less 0.7 for every year of age.
- How far can you run in 15 minutes is the main point. Then, how far can you run in the same time 12 weeks later.
- The speed of running which causes lactate to accumulate rapidly. For some it's 8mph and others 13mph.
- It used to be for 39 minutes until cases of permanent muscle paralysis were found after such application. Now it's 5 minutes, 5 minutes break and reapply.
- The quadriceps (thigh) are the main supporters of the knee.
- The abdominals are the main supporters of the lower spine.
- Apply ice for 5 minutes, then, hot as bearable water for 2 minutes repeated, every 4 hours, forty eight hours after the initial injury.
- Zinc deficiency.
- A full out 400 metres run.
- Breathing in the same amount of oxygen required for the speed of running is aerobic, inability to do this is anaerobic. Jogging 100% aerobic; 200m sprint 95% anaerobic.
- Sprint a distance, relax a distance, sprint a distance, e.g. Sprint 100 metres, relax 100 metres by lowering arms, sprint 100 metres.
- Instead of doing just 8 x 400 with 200 jog, the athlete walks a lap recovery and repeats the session instead of doing 16 x 400 with 200 jog straight off. This makes for greater speed in the reps. It can also be used to increase the volume of training.
- One lap of the track is run at marathon pace (90 secs), without stopping the next lap is run at 5k pace (78 secs), this continues non stop until the pace drops off. A lap walk recovery is taken and the session continues until 10k total (25 laps) is done on time, several breaks may be necessary to get through this with first attempts. Note that marathon pace may be 100 secs/400m and 5k pace 88 secs/400m.

## HOW DID YOU GET ON?

If you scored over 15, you are a great reader.

Scores of 10-15 denote above average interest.

Scores below 10 mean you are too busy training to do much reading about it!

Compiled by Frank Horwill, 4 Capstan House, Glengarnock Avenue, London E14 3DF. Tel: (020) 7515 3472.

## Rankings

The IAAF have devised a ranking system based upon two main elements, the measured results and the placings during competition. The rankings are based upon ranking scores as under:-

Ranking scores = average of performance scores

Performance score = result score + placing score

Essentially performances in high class competition rate high. Effectively a 3:34 in a low class meet e.g. club meet will score much lower than the same time in an Olympic final. (Hope this makes sense)

GB results in 2003...in world top 100

*Men 800/1000*

26 James McIlroy  
42 Ricky Soos  
69 Neil Speaight  
91 Chris Moss

*1500*

25 Tony Whiteman  
28 Michael East  
43 Tom Mayo  
51 John Mayock  
62 Chris Mulvaney  
66 James Thie  
91 Michael Skinner  
97 James Bowler

ahead of France.

*Women 800/1000*

3 Kelly Holmes  
20 Joanne Fenn  
46 Susan Scott  
65 Charlotte Moore  
69 Rebecca Lyne  
92 Lucy Vaughan

*1500*

4 Hayley Tullett  
11 Joanne Pavey  
57 Hayley Ovens  
69 Kelly Gilibrand  
82 Lisa Dobriskey  
90 Natalie Lewis

World wise Kenya has 17 in the top 800, USA 12, Germany and South Africa 5 each, with Spain and Russia the same as GB.

At 1500 Kenya again leads with 17, Spain has 11 as has the USA, GB has 8, one

Internationally at 800. Russia has 16 in the top 100, USA 8, GB 6, NB Spain and Germany 3 each and France 1. At 1500 Russia has 15 in the top 100 whilst the USA has 14, GB and Spain 6 each with France at 4 and Germany with 1.



# The Ancient Art of Mile Pacemaking

## Dating From 1852!

By Bob Phillips

For those who imagine that pace-making in middle-distance races is a modern phenomenon, it may come as a surprise to learn that the first British mile records – and, for that matter, World mile records – were broken in just such a manner more than 150 years ago. To be absolutely accurate, there was no concept of British or World records in athletics in the 1850s, and the first such official compilation would not be made for another 30 years or so, but there was no doubting the validity of the performances.

During the 1850s and early 1860s Manchester had become the miling capital of Britain, and as there was very little organised competition taking place in any other country in the World that meant that whoever won any of the series of “Champion Cup” races held in the city during this era could describe himself as “World No.1”. These men were professional runners, known as “peds” (an abbreviation of “pedestrians”), who raced for prizes of £50 to £100 which would compare very favourably with what is on offer to many Grand Prix winners in the 21st Century. Their races were largely two-man challenge matches and were attended by crowds of tens of thousands whose primary interest was in the massive amount of betting which accompanied the events.

Manchester was increasing its population at an enormous rate, largely based on the expansion of its cotton industry as one of the cornerstones of the Industrial Revolution, but still had the space to build tracks. It thus became a major centre for athletics competition, while many of the London tracks were swallowed up by even more rapid development. Such facilities in the Manchester area were usually financed by enterprising publicans on their adjoining land and cinder running circuits of as much as half-a-mile in circumference would be built, according to whatever ground was available.

Mile races had been run at least since the 18th Century, and there are accounts of winning times of “four minutes”, or even on one occasion “3 minutes 58 seconds”, on public highways. Neither the distances covered nor the methods of timing can ever be verified, and so the first authenticated mile “record” on a custom-made circuit, and with accurate timing to the nearest one-fifth or one-quarter of a second, is credited to a Londoner, Charley Westhall, who had given up his medical studies to make a living as a “ped” and achieved 4min 28sec on a gravel track at Islington, in London, in 1852. In torrential rain Westhall beat two of the other leading

From 1857 to 1865 the “record” time was equalled or improved on seven occasions – all of them in Manchester. Tommy Horspool, who was Lancastrian-born but lived at Basford, near Nottingham, and was a glove-knitter by trade, also ran 4:28 in 1857 and then 4:23 the following year at the Copenhagen Grounds, at Newton Heath, some three miles from the centre of Manchester, where there was a cinder track measuring just over two-thirds of a mile. This was truly a pioneering athletics “stadium” venture by the proprietor, Tommy Hayes, who had himself been a fine distance-runner, because the track was flat and well-drained, with wooden railings and even grandstand accommodation for 1,000 spectators. On this latter occasion Horspool, who had first been declared mile champion in 1853, had beaten Job Smith by 10 yards and then retired undefeated to invest his winnings in a public house in Nottingham.

The next three mile “records” also involved two-man matches to decide Horspool’s successor. Siah Albison, then aged only 20, beat Bill Lang, also 20, by the narrowest of margins with a time of 4:22 at the Copenhagen Grounds in 1860, and then Lang ran 4:21 at another Manchester venue, the City Grounds, in 1863, winning on the 800-yard cinder track by some 10 yards from James Sanderson. All of these runners had strong Mancunian connections: Albison came from the nearby village of Bow Lee; Lang was born in Stockton-on-Tees but made his home in Manchester; Sanderson came from the neighbouring Lancashire cotton town of Rochdale.

During the next year Teddy Mills – born in the East End of London and loftily known as “Young England” to his supporters – achieved 4:20? at the Royal Oak grounds, beating an Irishman, Patrick Stapleton, on a 651-yard cinder track. Even Mills’s quarter-mile “splits” have survived and we know that he ran 60.0, 2:08 and 3:16 en route. This was a classic example of the way in which milers distributed their effort



Solihull, 6.8.03. LOUISE DAMEN. photo by Mark Shearman.

runners of his generation, Billy Jackson and the American-born George Seward, who had each been given a handicap start of 10 yards. Jackson was more at home at longer distances, having set records of 14:52.0 for three miles and 30:04.0 for six miles in the same race in 1852, while Seward was essentially a sprinter who had run 100 yards in the prized “even time” of 10.0sec. In effect, they were the pace-setters, and the arrangement worked because Westhall’s eventual winning margin was described as “at least 10 yards”.



in those days, with a fast start, a substantial easing-off in the middle laps, and then as much of a pace as could be mustered towards the finish. It was commonplace for an athlete to abandon the race once he realised he was beaten, and Stapleton did so 30 yards from the end. Thus it may be that Mills could have been the first man to beat 4:20, had he been pressed all the way.

Rivalry between promoters at these various Manchester venues was intense, and George Martin was enterprising enough to bring together all of the great milers of the 1860s at his Royal Oak Grounds on 19 August 1865. The race was again for a "Champion Cup", signifying the leading miler in England, and it could as easily have been described as the "Mile of the Century". The eight invited runners were Siah Albison, Bill Lang, Teddy Mills, Robert McKinstry, James Nuttall, William Richards, James Sanderson and Patrick Stapleton. and this was an historic first occasion on which such a numerous collection of "stars" had raced en masse.

Albison, Lang and Mills had each in turn won mile match races in record-breaking times, while Sanderson and Stapleton also had strong reputations at the distance. McKinstry was a Scotsman who the previous May at the same track had run what was regarded as a sensational 880 yards time of 1:56, with the Welshman, Richards, only five yards behind. Yet the most intriguing invitee was Nuttall, who originated from nearby Stockport and was primarily a quarter-miler with a best time of 51sec in 1859 which remained the British "record". The curiosity of the feverishly excited crowd as to Nuttall's role in the proceedings was soon satisfied when he rushed into the lead and sped through the first two laps in a breakneck 60.0 and 2:05. The pace then eased in the third quarter as Lang led in 3:14, with the others in close attendance.

The finish was intensely exciting as Richards came up alongside Lang and both crossed the line together. They could neither be separated in position nor in time by the officials and were both credited with 4:17?. McKinstry was close behind in an estimated 4:18. Sanderson was 4th, at some 30 yards. Stapleton was 5th and Albison 6th. Nuttall failed to finish, which strengthens the impression that he was only ever there to act as a pacemaker. The

winning time was not beaten until the Scottish professional, Will Cummings, ran 4:16 1/5 16 years later in 1881. Lang had also set a two miles record of 9:11? at the City Grounds in 1863, while Richards was to run a -mile in 3:07 on the Royal Oak track in 1866. They can both be truly regarded as among the great runners of the 19th Century, and it was only when Walter George achieved an historic 4:12? in 1886 that their mile times were significantly eclipsed.

After the 1860s professional athletics fell into disrepute as a result of alleged race fixing and rioting by crowds believing they had been cheated out of their bets, and the gentlemen amateurs became dominant with the start of the series of Oxford-v-Cambridge Inter-Varsity matches in 1864 and a short-lived sequence of "Olympic Festivals" in Liverpool from 1863 to 1866. The first "national" championships were held 10 years later and the Amateur Athletic Association was formed in 1880 to co-ordinate administration of the sport – and, incidentally, to ensure that its control remained in London, rather than being established in Liverpool or Manchester. Standards among Britain's amateur milers took a long time to match the "peds" and it was not until the 1895 AAA Championships that an amateur, Fred Bacon (who turned professional shortly afterwards), beat the time of Lang and Richards, and not until 1915 that another amateur – Norman Taber, of the USA – ran faster than Walter George.

What the professionals and amateurs *did* share in common was a training regime which would seem derisory by today's standards. Victorian-age athletes were firm believers in restraint. It was generally accepted that hard training was at best foolhardy and could even prove fatal. The most dedicated of runners would rarely exceed -mile in training at any sort of reasonable pace, and even that no more than once or twice a week. Montague Shearman – the foremost athletics historian of the 19th Century who was himself a leading athlete – declared forebodingly in a book which he wrote in 1889: "If the runner takes a long spin or a very fast spin one day, and finds upon turning out the next day that he feels slack from the previous day's exercise, he will do well to take an easier day's work". In Shearman's reckoning, "a long spin"

meant anything more than half-a-mile. The professionals of the 1850s and 1860s *might* have trained somewhat harder, but they had a tendency to start their preparations only when a match had been arranged, and as their managers tended to be proprietors of public-houses, and their protégé's training was done on or near the premises, much initial effort was expended in shedding excess weight. It was probably not until the advent of Walter George, who claimed with good reason to have run a mile in under 4:10 and 10 miles in 49:49 in training, that the idea of extending oneself began to take hold.

George set his 4:12 in a match race with Will Cummings in which he had no hesitation in taking the lead from the start and haring through the 440 in 58? and the half-mile in 2:02 to take the sting out of his opponent. He then fought off a spirited challenge after passing the bell in 3:07? to leave Cummings collapsed by the trackside. Later mile records, including some of those which were officially ratified after the International Amateur Athletic Federation (as it was originally called) was set up in 1912, were to benefit from circumstances which were decidedly much more artificial. For example, when the Irish-born American, Tommy Conneff, set an amateur record of 4:15 3/5 in New York in 1893 he had a Canadian, George Orton, to lead him through the first half-mile, and then an English-born miler of considerable competence, Eddie Carter, to take the last 300 yards. For Norman Taber's 4:12.6 of 1915 three other runners received starts of 10 yards, 120 yards and 355 yards to help him through.

The first sub-4:10 mile, achieved by the Frenchman, Jules Ladoumègue, in 1931, had the benefit of a first half-mile run efficiently to orders by 19-year-old René Morel in 2:04.2, but the planning for the record-breaking bid by Britain's Sydney Wooderson at the famed Motspur Park track in Surrey in 1937 was far more sophisticated. Wooderson was the only man in the 14-strong field to start from "scratch", and the handicapping was carefully arranged, with a former British Empire mile champion, Reg Thomas, off 10 yards; another British international miler, Bernard Eeles, off 65 yards; Jack Powell, an outstanding 800 metres runner, off 100 yards; and Sydney's brother, Stanley, off 140 yards. Thomas led the first



two laps in 2:02.6 and Powell was ahead at the bell in 3:07.2, with Wooderson on his shoulder and then going away to pass all but one of the handicap men and finish in 4:06.4.

All of these machinations were happily tolerated over the years by officialdom, even including the staid administrators of the AAA, and there was no hesitation in ratifying Wooderson's time, but by the early 1950s views were changing. One "race", more than any other, was responsible for this change of heart. On 27 June 1953, during the lunch interval of the Surrey Schools' Championships at Motspur Park, Roger Bannister ran a mile in 4:02.0, which served to bring much more sharply into focus the prospect of his breaking four minutes, but it was the manner in which this was achieved which caused widespread controversy. There had been only two other starters in the event, and the Australian, Don Macmillan, had led through halfway in 1:59.7 and Chris Brasher had been in front when Bannister reached the bell in 3:01.8 – though in order to be on hand to provide the necessary assistance Brasher had trotted leisurely round two laps and waited for Bannister to catch him. Many of the less attentive youthful spectators thought Brasher was still winning on the last lap.

The media were incensed not so much at the style of the operation as the unannounced manner of it. Even the correspondent of "The Times" was icily dismissive, referring to "the profound secrecy with which this project was carried out" which had "prevented all but a favoured few from being able to give an eye-witness account". Had Bannister beaten the then World record of 4:01.4, held by the Swede, Gunder Hägg, since 1945, or had he – heaven forbid! – broken through the legendary four-minute barrier, one can only guess at what the outcry among the absent pressmen would have been!

The next year, as we now know, Bannister *did* break four minutes, with his close friends, Brasher and Chris Chataway, to help him, and a year after that the British Amateur Athletic Board, which was then responsible for the wider aspects of the sport, decided to put a stop to what were considered to be "organised" record-breaking attempts and stated that future applications for records would be viewed

in the context of "whether the claimant was unfairly assisted towards the time accomplished by pacing from another competitor apparently designed to assist him to achieve the record". In this day and age of the 21st Century, when not a Grand Prix meeting passes by without one or more record attempts being widely advertised beforehand, and the names of the designated pace-makers being made widely known, it all seems very quaint that such a ruling should have been made, and even at the time of its introduction there was a storm of protest from athletes and coaches to the effect that foreign athletes would be at an advantage and that British runners would have to go abroad to seek fast races.

Bannister's historic first sub-four-minute mile would not have been accepted according to this new legislation, but when it was put to the test it became immediately obvious that the rule was unworkable. At the White City Stadium in July 1957 Derek Ibbotson – previously better known as a distance-runner – somewhat surprisingly beat the World record 3:57.9 of the Australian, John Landy, by seven-tenths of a second. Mike Blagrove, an international miler who later had the distinction of becoming the first man to run a mile in precisely four minutes, had led through the opening half-mile in 1:55.8, which was clearly of inestimable value to Ibbotson, but who could say whether it was only Ibbotson that benefited? There were others in the race, including the Olympic 1500 metres champion, Ron Delany, of Ireland, and the World record-holder at that distance, Stanislav Jungwirth, of Czechoslovakia, who were perfectly capable of winning and could be said to have been aided. One

veteran British official at the meeting refused to sign the record application, but it was submitted nevertheless to the IAAF and duly passed.

Pacemaking, 105 years after it was first devised, had become part and parcel of middle-distance running.

**Bob Phillips was a member of the BBC Radio athletics commentary team from 1985 to 2001 and has since written five books on athletics, including a biography of Emil Zátopek and a history of the Commonwealth Games. His latest work is "3:59.4: The Quest For The Four Minute Mile", marking the 50th anniversary of Roger Bannister's achievement and tracing the history of the mile from Ancient Greek times to the present day. The book is published by The Parrswood Press, in Manchester (website, [www.parrswoodpress.com](http://www.parrswoodpress.com); e-mail, [sport@parrswoodpress.com](mailto:sport@parrswoodpress.com); telephone, 0161-226-4466).**



Budapest, 6.3.04. MICHAEL EAST. photo by Mark Shearman.

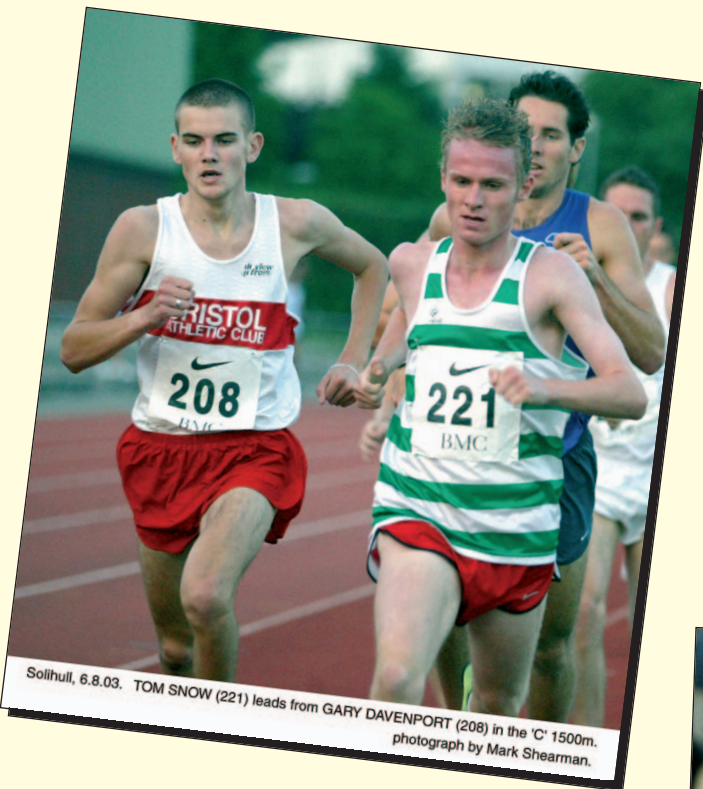




Solihull, 6.8.03. 1. to r. MICHAEL EAST (4), DERRICK PETERSON (USA, 1), JOEL KIDGER (7) and DANIEL CAULFIELD (Ireland, 5) lead the chase after ISMAIL MOHAMED (Sudan) in the 'A' 800m. photograph by Mark Shearman.



Wythenshawe, 31.5.03. JEMMA SIMPSON. photo by Mark Shearman.



Solihull, 6.8.03. TOM SNOW (221) leads from GARY DAVENPORT (208) in the 'C' 1500m. photograph by Mark Shearman.



Watford, 5.7.03. TINA BROWN leads. photo by Mark Shearman.

**BACK COVER PHOTOGRAPHS**

Top: Sheffield, 7.2.04

MIKE EAST (78), leads from TOM MAYO (163) and MATT SHONE (223)

Bottom: Wythenshawe, 31.5.03

JENNY MEADOWS leads from KELLY McNEICE (Ireland)

By Mark Shearman



# Ask ...

“who won the first sub-four-minute mile at Iffley Road, Oxford in 1954?” and the reply will be “Roger Bannister”

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“who came second?” and a good number will reply “Chris Chataway”

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