

MY TRAINING OF A WORLD CLASS 800M RUNNER

A PERSONAL PERSPECTIVE

Relating to the preparation and programming of Mbulaeni Mulaudzi from 2000 to 2003

Introduction

In January 2000 a somewhat awkward young man walked into my office and asked to join our training group. I could neither spell nor pronounce his christian or surname. He explained that he had come to register as a Sports Marketing student at my institution and that he ran the 800m in 1:48.00

Somewhat disbelievingly I asked him what his 400m time was and he immediately responded by saying 47.20 – I was starting to take notice. I phoned Gert Le Roux, our internationally renown statistician in Pretoria, spelt the names to him but before I could finish he said ‘Oh you've got a good one there, that's Mbulaeni Mulaudzi'

Indeed I had – I had inherited the 1999 All Africa Junior 800m Champion a partnership that lasted from January 2000 to literally the eve of the IAAF World Championships in Paris a period of 3 and a half years

Personal details

Date of birth :	8 September 1980 (23 years of age)
Place of birth:	Muduluni Village in Venda (part of the Northern Province of South Africa not far from the town of Louis Trichardt)
Height :	1.76m
Weight :	65kgs
Previous Coach :	Makonde Makhumisane
Club :	Mr Price/VaalTech (Mr Price is a major retail clothing company in South Africa that sponsors clubs and more especially individual athletes.VaalTech is my Institution –the Vaal Triangle Technikon – and our athletics club)

Annual Progression/Personal Best Performances

Year	400m	800m	1000m	1500m
1999	47.20	1:48.00		

2000	47.34	1:45.55	2:23.08	
2001		1:44.01	2:19.77	3:44.05
2002	46.20r	1:43.81		3:39.70
2003	47.6	1:42.89	2:18.45	

Major Titles and Competitive Record

- In 2000 he ran a 4km cross country trial in 12:06 and a 10km road race in 31:42
- In 2001 he was 6 th in the IAAF World Championship 800m (final) in Edmonton, Canada
 - In 2002 he was the Commonwealth Games 800m Champion
- At the same Commonwealth Games he ran the 3 rd leg of the 4 x 400m relay in 46.20 with the South African team coming 4 th in the final
- In 2003 he was the 800m bronze medallist in the IAAF World Championships in Paris, France
 - In 2001, 2002 and 2003 he was the South African 800m Champion
- Currently ranked No 2 in the world for 2003 and No 17 on the world all time 800m list

The Shaping of a Coaching Philosophy

My very early thoughts were influenced by the inspirational writings of Percy Cerutti and Arthur Lydiard whose ideas are still very relevant today

However I am very much a product of the British coaching system having spent 4 and a half years in England from 1968 to 1973, 3 years of which were as a Physical Training Instructor with the Royal Air Force. I did my AAA and BAAB coaching awards through John Le Masurier, Harry Wilson and Bill Marlow

I trained and competed mostly with Thames Valley Harriers at West London stadium under the guidance of Ron Roddan

I am afraid my competitive record was humble to say the least. Irrespective I ran nearly every day for 14 years and that helped shape my thoughts. The actual doing and self experimentation was invaluable

On my return to then Rhodesia I continued to read as much as I could and ideas were shaped by the training theory expounded by Tudor Bompa and Frank Dick and the creative practical thoughts and writings of Harry Wilson and Frank Horwill

Exercise physiology was made relatively easy for me by reading David Costill, David Martin and Jack Wilmore

There is no question that the greatest influences, from a practical point of view, were Harry and Frank and that wonderful magazine 'The British Milers Club Newsletter' Link that to Jess

Jarver and 'Modern Athlete and Coach' and you have the crux of my syllabus. The old East German literature was always too stiff and stilted for me to digest

Frank Dick and Jess Jarver, in my view, should be credited with making a lot of the East German material palatable

Any form of distance running relates to the expansion and efficiency of the energy systems all underpinned by speed and strength. Then find an athlete with the right genetic makeup, well motivated in terms of work, a natural sense of tactical competitiveness and you are in business

Mbulaeni came to me with a limited exposure to physical education, as we know it. He had some background in football but soon found a natural aptitude for running. However it appears he was a very much a distance and hill trained athlete with some speed sessions thrown in. It was apparent that he lacked a certain degree of strength but that the area for greatest improvement was speed endurance, strength endurance and a marrying of the two as they relate to the 800m

A well-developed VO2Max may be well and good and whilst we cannot dispense with it, a highly effective anaerobic threshold holds a greater key to successful 800m running. He had this in abundance. He is an extremely efficient runner

He adapts to sessions very quickly. Professor Tim Noakes of South Africa would call him the classic 'supercompensator'. Give him an 'inch of work and he improves by a yard' as opposed to the other way around

Mbulaeni on the third leg of the 4 x 400m relay for South Africa at the recent Commonwealth Games ran 46.20 accordingly to your statistician Bob Sparks. Coe in comparison ran 46.87 in the 1979 AAA Championships at Crystal Palace and in the same year a 45.5 in a 4 x 400m relay at the Europa Cup. Mbulaeni is there or thereabouts given his limited exposure to the event

Programming

(Training 1 – The Aerobic Component)

The aerobic component remains as relevant today as it always has. Lydiard, more especially, and Cerutti taught us that over forty years ago. It lays the foundation for the harder anaerobic work to follow and as a solid base allows the athlete to

- run more economically at a given speed
 - to be able to train more intensely
- recover faster after intervals of work, after whole sessions and even periods of sustained work ie several microcycles
 - compete at a more constant or consistent level throughout the competitive season

Given our time constraints we schedule around 4 weeks of steady state running and recovery runs as an early preparatory phase

Before the end of this period we have already introduced circuit training. This training can be

viewed under the heading of Strength

Slowly we introduce 3 morning sessions of a maximum of 35 minutes of easy running

Frank Shorter was once quoted as saying that 5000m training was the crux or pivot for all distance training. In other words it was endurance work for the events like 800/1500m and endurance work, but also speed work, for the events like 10 000m and the marathon

I subscribe to that theory given my particular interest in the 800m provided the athlete is of the 800/1500m type and not the 400/800m type

800m running is not just about developing a high VO2max. More importantly, as with all distance running, it is about creating a high anaerobic threshold

We work around sessions which I call aerobic intervals. They are

- 10 x 1min with 3 mins recovery
- 6 x 2mins with 2mins recovery
- 5 x 3mins with 2-3mins recovery
- 4 x 5mins with 2-3mins recovery

None of this work is done on the track and we alternatively use undulating cross country courses with the occasional session on the road

This progression also includes 'split' sessions

- 30mins of 10 easy, 10 hard and 10 easy; or
- 30mins of 10 easy, 10 hard, 5 easy; 5 hard;
- 30mins of 10 easy, 15 hard and 5 easy;
- 40mins of 10 easy, 10 hard, 10 easy, 10 hard
- 40mins of 10 easy, 20 hard, 10 easy

This work would lead us into a 'time trial' type sessions of 30-35mins hard

All these sessions are solid, of a building nature and finished in a way that will not induce any breakdown within the athlete ie always a little something left at the end of the session

We do a mixture of this work twice per week, 4 times within a 14-day microcycle together with strength work and plenty of 30-40min recovery runs

Our longer recovery runs are 50mins or 1hour or 1hr:10mins in duration

With my aerobic intervals ie the repeat 3mins, 5mins and with some of the 'split' sessions I allow for a 10min break and then we will introduce 4-6 x 100m strides at a fast but relaxed

pace with a 100m walk back recovery

Towards the end of the preparatory phase we may introduce 16 x 200m (3200m) with 200m recovery or 10 x 300m (3000m) with 300m recovery or 8 x 400m (3200m) with 3mins recovery. They are done relaxed and with an element of speed, more like a cross between an aerobic interval and an anaerobic repetition

In fact we are never too far away from fast aerobic bordering on anaerobic work

They say that the 3000m is the first distance event to become truly aerobic. You will see that many of the 'split' sessions mimic that distance (or thereabouts) and the aerobic interval totals are around that distance as well

If life has it's up's and down's then putting together a training programme and implementing it has, at times, to be a nightmare. With all the proverbial hurdles to be crossed you sometimes have to coach 'off the seat of your pants' but a good solid plan and lot's of experience will get you through

Mbulaeni has never been injured from this type of training

Our philosophy is to work at a relatively hard level whilst becoming more and more specific in terms of our racing needs. Then add judicious amounts of complete rest and active recovery

The distance work and strength training will provide the cement

(Training 2 – The Anaerobic Component)

Within this pre-competition phase of training work has, of necessity, to become very specific

I subscribe to Frank Horwill's 5-tier or multi-tier system of training and the 4 and 5 second rule. I do not make a conscious effort to follow them rigidly but more as a guideline. Frank's 'trio-training' is common sense and in effect alludes to the 'law of specificity'

Mbulaeni and I knew instinctively what the needs were and how sessions could be adjusted

During this phase of training aerobic intervals were used sparingly as was circuit training and hill sessions

The emphasis now is on speed, speed endurance and strength endurance as they relate to the event. We use the following Anaerobic Repetitions:

350m, 300m, 250m, 200m, 150m with double the distance recovery

250m, 200m, 150m, 100m (same recoveries as above) plus 4-5 x 60m (with same distance walk back recovery)

6 x 400m with 5-6mins recovery moving down to

4 x 400m to

3 x 400m to

2 x 400m (occasionally)

6 x 300m with 4-5mins recovery moving down to

2 x (3 x 300m)(300m between reps) to

3 x (2 x 300m)(300m between reps) to

3 x 300m to

2 x 300m (occasionally)

8 x 200m with 200m recovery – ½ walk ½ jog recovery moving quickly down to

3 x (3 x 200m) with 200m walk/jog recovery between reps and 5mins between sets

4 x 200m with 5mins recovery

15 x 100m very fast concentrating on relaxed effort with 100m walk back recovery

With the exception of the 400's and the volume end of some of these sessions they are all faster than race pace. All are speed, speed endurance based with the sets and reps introducing strength endurance at the latter part of the session

I have always had difficulty incorporating 600m into my 800m track sessions and therefore do not use them. My 3 x 400m (1200m = double 600m) and my 3 x (3 x 200m)(which = 3 x 600m) tell me exactly what sort of shape he's in and what I can expect in racing. I have never been proved wrong. This all assumes that your base work is right

These two sessions (a) 3 x 400m and 3 x (3 x 200), more than any other, tell me what state of fitness Mbulaeni is in. In my book they are absolutely magical

Other coaches will naturally have other ideas and variations. I know this is what suits Mbulaeni because he responds to it so well

I have a rather unusual way of measuring the specific endurance of an 800m runner. It is only valid, of course, if you apply the same principle each time

* Sebastian Coe : 800PB = 1:41.72; 400PB = 46.87

Remove the 1 minute and subtract 41.72 from 46.87 which = 5.15

This figure equates to -5.15

* Mbulaeni Mulaudzi : 800PB = 1:42.89; 400PB = 47.20

Subtract 47.20 from 42.89 which = 4.41 which equates to -4.41

However I am sure these figures could be adjusted if one looks at their exceptional 400m relay leg times and the fact that Mbulaeni has never consistently raced 400's They have been rare

and 'one off affairs'

Interestingly enough Kratochvilova and Mutola and all other female 800m runners for that matter equate to a + figure. On average Mutola is roughly +3

(Training 3 – The Strength Component)

In November 2002 I visited England and three of your very successful coaches to 'pick' their brains on strength training it applies to 800m running

They were Norman Poole, George Gandy and Carl Johnson

I believe that an 800m runner's strength to bodyweight ratio is crucial and following this visit still agree that strength endurance and elastic strength are the main areas of strength we need to improve. However I also believe that maximum strength, in our case probably the least understood, also plays a role

What are we strengthening?

- The stabilizers ie arms, shoulders and head (the camera) to help counter the movements of the prime movers (the legs) and to assist in running posture
- The second group of stabilizers in respect of Core Strength ie the stomach and back to again assist in posture particularly when reacting to a mid-race break or at the end of a race when fatigue has set in
- The Prime Movers in respect of the legs (the main propellants) or the lower limbs and their relationship to the hips

The popular forms of training for strength are

- Circuit and/or Stage Training with elements of weight training
 - Hill Training
 - Running Drills
 - Plyometrics

I concentrate on circuits as opposed to stage training and unlike my British colleagues do not mix circuits with plyometrics nor do I do the same volumes of work. Rightly or wrongly I believe there is a ceiling or saturation point where any further gains in strength are of minimal value. But that's just my way of doing things

My ideas are from Scholich and George Gandy and I try to keep the exercises as specific as possible. Here they are

Circuit Training (CT1) - Session 1

- Squats
- Bench Press
- Leg Extension

- Sit-up's
- Leg Curl
- Back Raise
- Leg Raise

Circuit Training (CT2) – Session 2

- Leg Press
- Press-up's
- Alternate Dumb-Bell Press
 - Step-up's
- Lat Pull-down
 - Sit-up's
 - Back Raise

We do all these exercises on a strength endurance format ie 3 x 8 to 3 x 10 / 12 to 4 x 12 to 4 x 20 to 4 x 25. Weights are lighter and we look for the 'burning' sensation. Obviously we do not get these high reps on the press-up and the leg raise

With the squats, which we have also incorporated into the second session, we try and work on a maximum strength format ie 3-4 sets of 6-8 reps. Mbulaeni is now up to a ½ squat (ie thighs parallel to the ground) with 70kgs with relative ease. Done this way one achieves increased levels of strength with a minimum of hypertrophy

Following my visit to my three coaching colleagues I remain convinced that

- There is a role for maximum strength but only in the prime movers ie the legs
- That there is a saturation point or ceiling whereby any further gains in leg strength cannot be expressed

And that strength contributes to the following

- An increased stride length
 - An effective overall movement structure
 - An optimal combination between stride rate and stride frequency
 - Helps maintain the required running speed for a particular distance
 - Helps prevent injury
 - Improves the strength mechanism of the central nervous system
- An improvement to the VO₂max through an improvement in speed

Moving onto hill training Mbulaeni has done little this season because of congestion and injury. When fit and time is available our specific sessions are 10 x 200m (200m jog down recovery) moving onto 15 x 150m (150m jog down recovery)

Throughout the preceding periods of training he will have run over hilly routes or hilly circuits

With regard to Running Drills these are done as part of the warm-up and we restrict ourselves to High Knee's and Butt-Kick's, sometimes we will do a series of High Knee Jumps off both legs with the knee being brought up to the chest. They are normally done over 30m with a run-out at the end

Drills can be used either as a technical drill or as a strength endurance session

We don't do Plyometrics. Mbulaeni is quite bow-legged and I am concerned with impact stress given the other training he is doing. He is an extremely bouncy/springy athlete even when he is doing the easier recovery runs. I would suggest that running in itself is a plyometric activity and he has done enormous amounts of what I would call 'aerobic plyometrics'

If I saw a need I would do power hopping over 25-30m with both right and left legs, some bounding and no hurdle jumps

One also has to bear in mind how you fit all this into an already crowded programme. Therein lies the art of coach. Take what you need for a particular athlete and discard the rest (for the moment)

Mbulaeni is very much a running, and more running, some hills, no plyometrics, circuit, some weights and a few drills athlete

I have not attempted to involve myself in such activities as Swiss Ball, Philates, Thermaband and such like. Perhaps they have a role for injured athletes or where a particular weakness has been identified

(Training 4 – The Periodisation Component)

In a normal Northern Hemisphere environment I would be dividing my year in half. The first half would be made up of 2-2-2 months and the second half of 2-2-2 months to include varying proportions of preparation, pre-competition, competition and rest or recovery

In the Southern Hemisphere it's a bit harsher with February/March containing certain compulsory races which may extend into April. The SA Senior Championships are towards the end of April then there is a 6-week break before the IAAF Grand Prix/Golden Leagues. The end of August is a major Championship followed by a return to the IAAF Circuit. Another 4-week break and then the African Championships in the middle of October

Leading into the 2003 season Mbulaeni was exhausted, on the edge of injury, listless, studying, trying to get himself settled again and then accidentally tripping and spraining his ankle getting out of his car

It was not surprising then that he only really starting training in December

You will find attached a copy of his Competitive year

December/January and February would have been solid base work

March/April would have been pre-competition with races

The following 6 weeks would have been a little base training and back to pre competition

He started his European account on 9 June Rehlingen, Germany

He stopped after the Special Grand Prix in Madrid on 19 July where he specifically wanted to race Wilson Kipketer

3 weeks, back to training

The Golden Leagues in Berlin and Zurich were his entrée to the World Championships

Then Brussels and Monaco

A month back in South Africa with somewhat subdued training before leaving for the All Africa Championships in Abuja, Nigeria from 14-17 October

21 races in all with a high level of consistency

(Training 5 – The Tactical Component)

There is little or no room for error in a fast 800m. It is seldom won from the front

If the race slows other athletes, perhaps not so durable but with good 400m speed and strength, can express themselves

Mbulaeni and I have studied most videos of his races and the things we stressed most are

- Maintaining a position in 3rd or 4th but in touch with the leaders so as to cover any breaks from the front and from behind
- In the second 400m, if on the kerb, and the pace is relatively slow try not to lose it for fear of being overtaken and then being boxed in
- Staying alert to (a) how fast are we running ie time at the bell and (b) to all tactical moves by the rest of the field ie the unexpected

Holding the kerb is exactly what we spoke about at the 2002 Commonwealth Games and which he applied so effectively in the semi-final and final

The World Champs was a relatively slow first lap. Borzakovsky was predictable, Mbulaeni went to sleep and didn't react quickly enough and Said Guerni took his chances. Only two athletes have broken 1:43 this season (perhaps as a prelude to Olympic Year). Neither of them won gold or silver

The single feature that stands out in most spectators minds is Mbulaeni's fierce competitiveness and his superior tactical awareness when compared to Hezekiel Sepeng

The Training Environment

Of course having all the theory and a highly successful athlete doesn't tell the full story. I immigrated to South Africa in 1988 to take up a position as Senior Sports Officer at the Vaal Triangle Technikon 50mins south of Johannesburg. I had one athlete who could just manage

1:59 for the 800m. Today, nearly 15 years later, we boast the likes of Mbulaeni Mulaudzi at 1:42 and Chris Harmse, the Commonwealth record holder in the hammer at 80.19m

I currently coach 5 international runners who have competed for South Africa

We also boast of athletes who have run 1:42.89 (800m), 3:39.70 (1500m), 8:35.67 (3000m Steeplechase), 13:36.55 (5000m and still the South African junior record for the event), 28:39.22 (10 000m), 61.42 (1/2 Marathon) and a 2:14:16 (Marathon). We are generally regarded as the most talented and diverse training group in South Africa

We are an open club with a current membership of 68 athletes and attract many of South Africa's top runners. Two of the Special Sports Bursaries mentioned in the next section are awarded to non-students. This has, more than anything else, pulled up the standard of our athletics and in particular the middle and long distance events

Financial Considerations

For the financial year 2003 we distributed a total of R106 000.00 in Sport Merit Bursaries between 17 student athletes

In addition to this I negotiated 3 Special Sports Bursaries valued at R23 000.00 each, one whom was awarded to Mbulaeni

The above funds come from my Institution

We are supported in a variety of ways by Athletics South Africa and NOCSA our National Olympic Committee in terms of financial support, medical bills, travel etc

Mr Price, our local clothing distributor, provides monthly salaries to 6 of our runners worth a total of R207 000.00 per annum

The South African Student Sports Union (SASSU) provides a total of R17 500.00 which is distributed to 9 of our athletes

For 2003 I secured R400 100.00 for the athletes not counting the help from ASA and NOCSA

The athletes are focused, generally well disciplined and have knitted well together within the club environment

A sponsored vehicle for the hammer thrower and clothing, shoes and dietary supplements also help to make up the total package

But the greatest amount of support comes from my Institution. Together with my department, our Executive Sports Council and last, but not least, my Rector Professor Aubrey Mokadi the Institution has been unrelenting in it's unselfish financial and moral support

Mbulaeni is assisted by two Agents, Peet van Zyl in Johannesburg and Jukka Harkonnen in Helsinki, Finland

The Future

Mbulaeni has fulfilled all his goals to date ie the final in Edmonton the Gold in Manchester

and a medal in Paris. I believe it was going so well that the gold should have been his.. He failed in one goal though as it was his intention to break Hezekiel Sepeng's national record of 1:42.68. However .2 of a second is not a 'train smash'

We have parted company at this point

3 goals lie ahead. They are an Olympic gold, a new South African record and then to be a member of that exclusive sub1:42 club. That could make an assault of the world record a little more realistic – who knows?

To do that a number of things are needed

- An expansion of the preparation phase for a more solid foundation
- Continued work on the speed and strength endurance components
- A lowering of the 400m time to a low 46secs under normal race conditions

I am convinced he has the machinery to do it and think that the lowering of the 400m time may well be the missing link in the jig saw puzzle

Thank you UK Athletics, the British Milers Club and Norman Poole for the invitation

What an honour!

Thanks also to Pat Fitzgerald, John Cooper, Bud Baldaro, Dave Sunderland, Liam Cain, George Gandy and Mathew Fraser-Moat for looking after me

Thank you for listening to me – hardly 'rocket-science' is it?

IAN HARRIES

(Senior BAF Coach/IAAF Lecturer)

ENDURAMAX RUNNING CONSULTANCY

Birmingham – October 2003