

ASA COACHING MANUAL

**MIDDLE AND LONG DISTANCE, CROSS COUNTRY, ROAD RACES
AND RACE WALKING**

UPDATED FROM ORIGINAL MATERIAL

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GUIDELINES FOR COACHING

GENERAL

1. INTRODUCTION

In order to be able to understand and apply the basic training principles relating to distance running, it is important to be aware of general training principles and of the specific characteristics of distance athletes.

The goal of this training manual is to familiarise the beginner coach with the main energy systems involved in exercise and the various training sessions which can be used to develop these energy systems. It also provides the beginner coach with training guidelines and suggested training schedules for training athletes.

All students of physics have heard of Isaac Newton's laws of motion but but of more direct relevance to distance running are Arthur Newton's laws of running which may be found with a very useful commentary in every edition of Tim Noakes, *The Lore of Running*, and on the Internet.

Arthur Newton was a famous South African ultra-marathon athlete who won the Comrades five times in the 1920s. His nine rules of training are:

- Train frequently all year round
- Start gradually and train gently
- Train first for distance (only later for speed)
- Don't set yourself a daily schedule (adjust training according to how the athlete is feeling on the day)
- Don't race in training and run time-trials and races longer than 16km only infrequently
- Specialise (that is, devote enough time to training)
- Don't over train
- Train the mind
- Rest-up before the race.

2. TALENT IDENTIFICATION

The human body form is divided into three basic types:

- Mesomorphs – strongly built, well-muscled individuals who tend to be sprinters and rugby players
- Ectomorphs – thin, slightly built individuals
- Endomorphs – heavier individuals who at times suffer from obesity and who tend to be swimmers and field event athletes.

Distance runners are generally smaller and thinner than the average person and correspond to the ectomorph category above.

Nevertheless, build aside, probably the most important consideration in determining whether a runner is best suited to sprinting or middle distance running is basic speed. One can test this by getting an athlete to take a 30 meter sprint from a standing start.

Those who can run the distance in 3 to 5 seconds (depending on age) can be genuine sprinters, while those who are slower must settle for being middle and longdistance athletes because they do not have the basic speed to have any chance of success in competitive sprinting.

3. BIOMECHANICS OF THE DISTANCE RUNNING

It is generally inadvisable to attempt to change the running style of an athlete. Never the less strength and stretching exercises under the supervision of a trained bio-kineticist (someone trained in human movement studies) can help correct biomechanical imbalances which negatively affect an athlete's style and can lead to injury.

When an athlete has reached a good level of fitness through regular training, the athlete should be encouraged to focus on relaxation in racing and training. This is achieved by keeping arms low and keeping the jaw relaxed. This is achieved by asking the athlete to feel the skin bouncing on the cheeks when running. Clenched jaws and gritted teeth are to be avoided.

The secret of success in all sporting endeavour, although it might take an

entire sporting career to achieve the desired balance, is to be totally relaxed while giving 100 % effort.

5. ENERGY SYSTEMS

- AEROBIC

- External source, ie the oxygen that is breathed in.
- This occurs when an athlete runs comfortably at moderate to medium effort at a pace at which talking is possible.

This is the most important aspect of the training of middle and long - distance athletes.

- ANAEROBIC

- Exhausts external sources.
- Obtains energy internally

Operative when athlete's body is performing at a level of intensity at which not all the athlete's energy requirements can be satisfied by oxygen obtained via the lungs.

- ALACTIC (0 – 6 SECONDS) – primary energy system operative in running at maximum speed
 - High intensity
 - Activity up to 6 seconds (about 50 m)
 - Draws reserves from muscles
 - Recovers after 2 – 3 minutes
 - Recovery capacity can be developed
- LACTIC (7 – 38 SECONDS)
 - At intense levels of exercise the oxygen needs of the athlete's body exceed the capacity of the body to supply oxygen
 - Toxins in the form of lactic acid build up
 - This causes muscle fatigue (evident in last 100 meters of a 400 meters race)

- Speed decreases after about 250 meters of sprinting
- Recovery occurs after 60 minutes
- Recovery capacity developed – training from 7 - 38 seconds
- Higher intensity = higher lactic acid build - up
- Light movement through jogging enhances recovery
- This is why is important to jog about 2 km after a race or anaerobic training session.

6. PERIODISATION

1. TERMINOLOGY

- Short term cycle (3 – 12 months) divided into:
 - Micro 1 week
 - Meso 3 – 9 weeks
 - Macro season
- Medium term (1 – 2 years)
- Long term (3 – 4 years) – the Olympic cycle is 4 years

2. CYCLES

- **PREPARATION 1 (WINTER)**
 - GENERAL CONDITIONING
 - Volume high
 - Intensity low
 - Rest short
 - Non specific

This training phase is characterised by easy aerobic running of between 5 to 10 minutes (for beginners of 6 years and up depending on fitness) to regular runs of 90 to 120 minutes for elite senior athletes. In the case of marathon and ultra-marathon athletes the duration can be up to 3 hours.

- **STRENGTH AND PRE-SEASON PHASE (6 weeks)**
 - Shift to more specific conditioning
 - Exercises more specific to event
 - Strength developed through hill sessions and Plyometric exercises such as bounding and hill-springing
 - Volume still high
 - Intensity lower but strength exercises introduce Anaerobic element into training
 - Rest short
 - Running exercises to promote efficiency and style
Such as 6 to 10 relaxed 100 metre strides and downhill running,

In this phase the emphasis is on strength as a transition to and preparation for anaerobic work in the co-ordination phase that follows.

- **PREPARATION 2 (Pre – competition phase) (Co-ordination phase)**
 - Training for competition
 - Volume decreases
 - Intensity increases – anaerobic track sessions introduced
 - Rest still short
 - Technique emphasised
 - Focus on co-ordination of different training aspects for optimal results in competition phase, namely:
 - Strength
 - Endurance
 - Speed / Rhythm
 - Technique

▪ **COMPETITION PHASE (6 to 8 weeks)**

- Focus on competition – 5 to 6 weekly races before target race
- Volume low – less emphasis on long aerobic running
- Intensity high – less training reps than in co-ordination phase but at greater intensity
- Stabilise performance in competition and ensure body is fresh
- Psychological Preparation through visualisation for peak performance

The key to this phase is the principle that is impossible to train hard and race well at the same time – volume of training in terms of kilometers are decreased and the goal is to ensure the athlete is fresh and ready for the 6th or 7th race of the competition phase being a school, provincial or national championship.

Research shows that the athlete's 6th or 7th race is his or her best race and plan accordingly - if races are not available run time trials.

• **POST COMPETITION PHASE**

- Active rest --- recovery – easy jogging or light volumes
- Total rest of 1 to 3 weeks to recover for next cycle
- Planning for next phase

RUNNING TECHNIQUE

7. TECHNIQUE FOR RUNNING EVENTS

Correct running technique leads to a faster and more economical race pace. The technique of an athlete should only be changed if his/her time can be improved and if injuries can be avoided. Generally an athlete has a personal style which cannot be greatly altered.

By way of illustration, one of the greatest distance runners in South African history, Matthews "Loop en Val" Motshwarateu, born in 1958 in Soweto, gained his nickname from his awkward running style but in competition over cross country and 10km he defeated athletes who won Olympic medals and set track world records. He was the first man in history anywhere to break 28 minutes over 10km on the road.

At the end of the day, running should be as natural as breathing or walking and, if changes in technique are required, coaches must avoid making their athletes feel inhibited or self-conscious. What follows are guidelines and not rules.

THE HEAD

The athlete's head should be kept still with the eyes looking at the ground approximately 10 meters in front of the athlete. As has been pointed out above, the mouth should be slightly open to improve inhaling and to avoid tensing of the neck and shoulder muscles. Observe the relaxed open mouths of Kenyan and Ethiopian runners in competition.

THE SHOULDERS

The shoulders should not be pulled up in a tense manner and should therefore not appear square. A symptom is a burning sensation in the neck and shoulder muscles.

THE UPPER BODY

The upper body should be kept in a relaxed upright position on the hips while running at an even pace and leaning slightly forward when accelerating. The body will also lean forward when running uphill or downhill in cross country or road races. If the athlete leans back, a braking action will occur in the legs.

THE ARMS:

The arms should be held at an angle of approximately 90° or greater and must be moved beneath the shoulders from the front to the rear. If the arm angles are too small, too much energy is used to maintain the angle and tension and fatigue is created.

THE HANDS

The hands must be held in a relaxed manner and must be slightly open. If the hands form fists, unnecessary energy will be used.

THE LEADING LEG

The leading knee is lifted straight up until the thigh is just below the horizontal line (360°) otherwise the stride length will be too long. It also uses too much energy.

THE BACK LEG

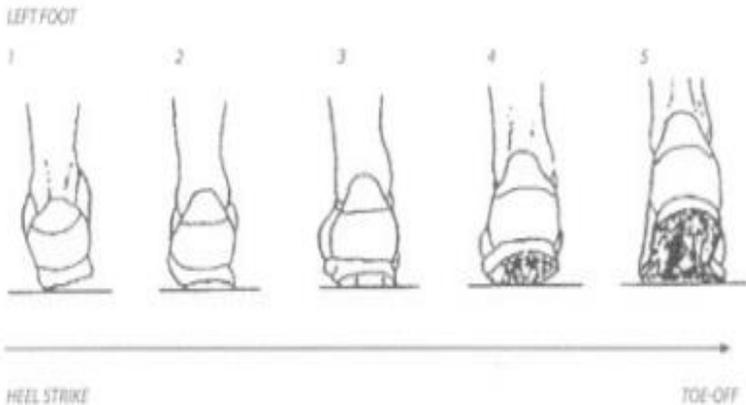
The back leg must be in an extended position before it leaves the ground otherwise the stride length will be too short.

THE FOOT

The foot must make contact with the ground in such a way that the outside part of the foot drives the body to the front of the foot pointing forwards.

If the foot is placed sideways the body will move away sideways instead of moving forward. (That is why the shoulders sway from side to side)

FOOT PLACEMENT



THE TOES

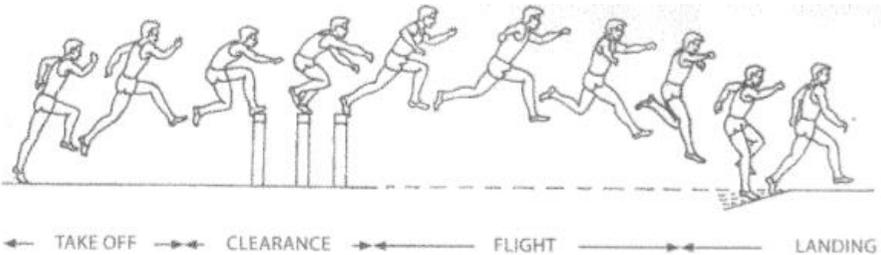
The toes must be used effectively and the athlete must learn to drive every stride with his toes, so as to increase stride length.

CORRECT SHOES AND PRONATION AND SUPINATION

When exposed to increased training volumes beginner athletes with flat feet (low arches) tend to pronate (the feet rotate inwards when they strike the running surface) and those with high arches tend to supinate (the feet rotate outwards when they strike the running surface). Both processes can expose the athlete to possible injury. It is important to ensure all serious athletes (but particularly pronators and supinators) are provided with appropriate training shoes to correct and cater for their running style. In this regard the assistance of a specialist running store is strongly recommended.

STEEPLE CHASE

9. STEEPLE CHASE TECHNIQUE



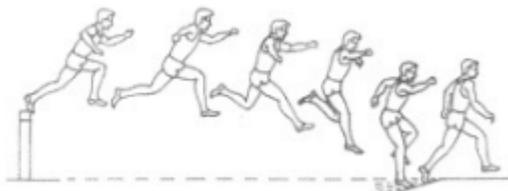
- It is important for the athlete to maintain concentration during the race because a mistake at any barrier could lead to costly lost split seconds or, at worst, cause a fall and injury. After each barrier the athlete should regain rhythm as rapidly as possible.
- For effective technique over each barrier a marker may be placed on the track a few strides in front of the barrier prior to the race. In the race the athlete should try to ensure the correct stride pattern before the mark and to maintain an even pace across the hurdle
- The athlete must approach the hurdle directly to avoid the foot from slipping off the beam.
- When approaching the barrier the athlete must ensure that there are no athletes in front of him or her in order to be able to judge the distance to the barrier.
-



- The athlete should attempt to cross the barrier without touching it, like a hurdler. However if the athlete is too tired to do so his/her foot must make contact with the beam in such a way that the toes stretch over the other side to enable him/her to drive away from the bar. In the driving process the athlete must look down with the chest bent forward to avoid driving upwards.

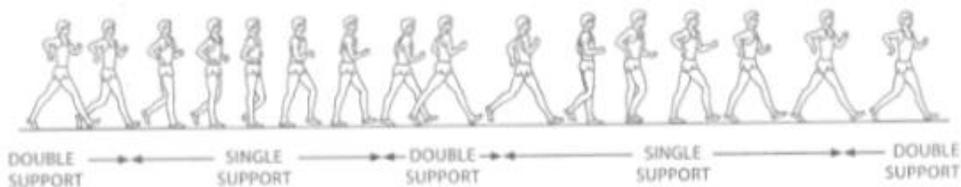


- When the foot makes contact with the ground the athlete should try to keep the upper body forward until rhythm is regained.
- The athlete should not try to jump across the water hole. Aim for a spot approximately 0.5m from the far edge of the water hole. Keep the angle of the upper body forward and drive forward of the water hole with the upper body in front of the feet.



RACE WALKING

10. TECHNIQUE FOR RACE WALKING



1. As the rear foot begins to come forward, the body weight is transferred onto the front foot until the single support phase is completed.

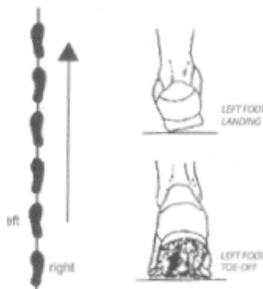


2. At this point the full weight of the body is supported by one leg and the whole momentum of the walker comes from pushing strongly of the rear foot.



3. The leg should remain straight for as long as possible.
4. The rear foot should be brought forward as close to the ground as possible, landing with the foot approximately 45° to the ground.
5. At this point the weight of the body is equally distributed between the two points of contact in the double support phase.

THE FEET



1. The toes must be pointed straight forward, without any outward deviation.
2. If the foot does not land pointing forward, there will be a loss of stride strength.
3. The push off the rear foot will not be in line with the body, which means corrections have to be made when the foot is brought forward.
4. Both feet must land on one single straight line.

THE KNEES

1. The knees must be straight (locked) on the landings.
2. The other knee must remain straight as long as possible while the rear foot pushes off.
3. If the leg is not locked on landing, the athlete will start running (and risks disqualification) when he/she increases speed.
4. A bent leg will also cause the athlete to walk flat-footed rather than the heel-foot-toe rolling action.

THE HIPS

1. When the foot in front has made contact, the hip of that leg has also thrust forward leaving the opposite hip behind.
 2. As the rear leg is withdrawn from the ground and is in the process of being brought under the body, that hip is allowed to drop and it reaches its lowest point as the foot of the swinging leg passes the stationary foot.
 3. There must be no side to side hip movement as this would destroy balance and shorten the stride.
- It is important that the hip mobility is developed, because hip movement increases stride length considerably.
 - Good hip movement will force the toes to stay down longer, and thus gives the heel that extra moment needed to make contact.
 - One heel must always be in touch with the ground to avoid disqualification.

THE ARMS AND SHOULDERS

1. The arms must be used to balance the body.
2. The arms are moved across the body and then forward, rather than just forward as in the case of running.
3. The elbows must be bent at 90°.
4. The elbows must be tucked in closely to the side of the body.

5. The shoulders must be kept low, relaxed but upright.
6. The shoulders must remain at a right angle to the direction of the movement.
 - If the shoulders dip sideways, the hips are moving wrongly sideways, in the opposite direction
 - If the shoulders lift, the movement of the arms will be exaggerated.



THE TRUNK

1. The trunk must be slightly forward, not more than 5°.
2. A forward lean will affect the hip movement and will cause the walker to land on a bent leg.
3. A backward lean will impose unnecessary strain on the muscles supporting the spine.

THE HEAD

1. The head must be kept upright and the athlete must look in front of him at all times, even when tired.
2. The head must move in a straight line parallel to the ground. If the hips are not used, the head will move up and down while walking.

WALKING UPHILL

1. When walking uphill the stride must be shortened and the arms must be swung higher in order to keep in motion with the feet and to assist the feet.
2. The body should lean only slightly forward to compensate for the hill.

WALKING DOWNHILL

1. The walker must lengthen the stride to meet the road that is falling away from him.
2. The arms should drop considerably.

CHANGING FROM UPHILL TO DOWNHILL

The walker must change technique immediately with both feet and arms to avoid losing contact.

10. RACE TACTICS

The athlete's race tactics will have a major influence on success in a race. The following points must be kept in mind.

10.1 TRACK EVENTS

1. It is important to be familiar with the track where the race will be held and its surface, for example, is the track synthetic, grass or ash. Possible weather conditions must also be taken into account: in Port Elizabeth, for instance, it is often windy, while the air in Johannesburg is very dry, and in Kimberley, conditions are likely to be very hot.
2. Be aware of the abilities and tactics of rival competitors. If you know the main opposition's strengths and tactics before the race, you and your athlete will be able to prepare a counter-strategy and neutralize the opposition's strengths. For example, if you know the race favourite is a front runner who likes to run away from the opposition, be sure to advise your athlete to keep in contact but to avoid being forced to run a suicidal early pace to keep up.
3. You and your athlete should have your race plan but be prepared to change or adapt the plan according to the situation. For instance, the frontrunner might not go out fast as expected, and the pace might then be slow. In such circumstances it might be advisable to for your athlete to lead the race, or at least keep close to the lead, to avoid being bumped and boxed in within the field.
4. If your athlete is well known, be aware that the opposition will know your tactics and work out their own tactics accordingly. It is important that your race plan makes maximum use of your athlete's strengths to give him/her the best prospects of success. If your athlete has a strong finish, the best strategy would normally to be to stay in contact with the leaders until the last 150 to 250 meters and finish fast. Obviously, if there are faster finishers over the last 100 meters, alternative tactics should be employed such as accelerating from 400 meters to go.

5. A good start is important. This will allow the athlete to occupy the pre-planned race position and start relaxing and focusing on the race plan at an early stage of the race.
6. Through regular racing the athlete will learn his/her ideal race pace and ability. The athlete should “Listen to the body”, during the race and be able to assess if the athlete has sufficient energy to accelerate or to wait until later in the race.
7. The athlete should not adjust to the race pace of the opposition but rather attempt to run at the athlete’s optimal race pace, especially when competing against superior athletes. Thus, in a 1500 metre race, if the athlete’s personal best is 4 minutes (64 sec average per 400 meters) – the athlete should not attempt to follow a leader running 60 sec 400 metre pace on the first lap).
8. The athlete should only set the pace if he/she if taking the lead is not beyond the athlete’s abilities or the athlete is superior or is at least equal to the other athletes in the field. A front runner takes a lot of psychological strain, which can take its toll at the end of the race.
9. In general it is best to run in the 2nd to 4th place during the race. The front runners tend to “pull” the runners behind them, causing them not to tire as quickly.
10. Stay in contact with the front runners as far as possible. The pace in middle distance races is very fast. Once contact is broken (more than 10 meters) it is difficult to regain contact.
11. An athlete should not be afraid to pass the opposition around a bend. Maintaining rhythm is more important than the few extra strides expended due to running in the second lane on a bend.
12. Don’t let your athlete get boxed in: when other athletes are around her, she will be forced to adapt her rhythm. When the front runner’s surge, she will not be able to respond.
13. Discourage your athlete from looking back unnecessarily. In the finishing stages all energy must be focused on getting to the line as quickly as possible.
14. Run behind the outside shoulder of the front athlete. This will enable the athlete to pass anytime he or she likes.
15. If the wind is blowing from the front, ensure your athlete runs behind the other runners to avoid wind resistance, but avoids being boxed in.
16. Particularly in the longer races from 3000 meters upwards, a common mistake is for an athlete to run outside the shoulder of the leader. By running on the outside of the first lane an athlete is running about 7 to 10 meters extra a lap. Over 10 000 meters, this could be an additional 150 to 250 meters. Accordingly it is best for the athlete to commit to

either leading or tucking in behind the leader. The benefit of slipstreaming off the leader can be 1 second per lap.

17. An athlete should pass the opposition during the race at an even pace, because acceleration uses large volumes of energy.
18. The athlete should use only one final attempt to surge for victory or a good placing. It is important to wait for the right moment before accelerating and then maintain acceleration up to the finish line.
19. The athlete should stay relaxed during the race, otherwise too much energy will be used to maintain a pace.
20. The final effort should be maintained until the winning line. The other athletes will also be making their final effort and will pass an athlete if he or she slows prior to the winning line.

CROSS COUNTRY

10.2 CROSS COUNTRY

The lengths of cross-country courses differ from school competition and club competition. Confirm in advance which distance will be run in a particular race.

The athlete's training programme and race strategy must be adapted to the distance that will be run.

Cross-country requires greater strength, agility, mobility and physiological resilience than road races. Road running on the other hand, is a better measure of basic endurance.

The training programme devised for an athlete must make provision for these differences in emphasis.

The key to success in cross country to run a race at optimal pace and to avoid starting at a pace that cannot be maintained. In general, an indication of optimal performance in cross country is a race that it is run at even pace.

In the closing phases of a race, particularly in the last kilometer, it is crucial accelerate to the finish as far as possible to avoid athletes passing you in the final stages. If there are athletes in the race with a faster finish, the athlete must increase pace as far as possible from the finish to run the kick out of the faster athletes or run away from them.

Before the race, check out the whole course in detail. Pick the best spots to apply for the athlete to apply tactics and note the potential trouble spots, e.g. bottlenecks, blind turns, hills, patches of bad footing. In road racing, it's often possible for a runner who knows his or her pace to run a strange course "blind", with considerable success. In cross-country, the outcome is more dependent on how well you have taken advantage of the main pitfalls and opportunities on the course.

Prior to the race make sure the athlete knows how many laps will be run. Some courses have laps of 3 km and 2 km and other have laps of only 2 km. The athlete should pay careful attention to the laps on the course to pace him/herself properly and to avoid being caught off guard towards the end of the race.

If your athlete has a realistic chance of finishing amongst the leaders, it is important to get a good start. Getting into a good position early is much more important in cross-country than on the road. Most cross-country courses have bottlenecks, sharp turns, funnels into narrow paths, footbridges and the like. If an athlete gets caught behind a number of slower athletes in the first 400 meters, she/he may never be able to work back to the leaders again.

Although a lot of energy will be used to sprint at the start, there are great benefits in getting ahead early. As a front runner an athlete will get out of the "heavy traffic" of the mass of the field who will be slowed down in such traffic. It is better to expend energy getting free in a decisive burst, so that an athlete can concentrate on running at the athlete's own pace for the remainder of the race.

In cross-country you must run against other runners and the competition is more personal whereas in a road race the runner will ignore other runners and concentrate on a fixed pace. Be prepared to take advantage of the opponent's weakness. In a cross country race between equally conditioned athletes, the winning edge is often a matter of who is best able to exploit his opponent's vulnerabilities.

On a typical cross country course, with its sudden changes of direction, speed or footing, every competitor will have moments of weakness such as surges of lactic acid, breaks in rhythm, losses of momentum at bottlenecks,

etc. You must try to make ground during this moment of weakness. By the time the opposition is back in the groove, it is too late.

If the athlete has worked hard to catch up with a fellow competitor, he should pull up to within a few strides, then ease off and tuck in behind until his own breathing has settled down. Then the athlete should gather himself together and pass decisively. Advise your athlete: if you pass gradually, your rival might use you as a pacer.

As the athlete reaches the top of a tough hill, it is a good opportunity to accelerate until well on the way along the flat, or down the other side, before easing off gradually to the pre-hill pace. When climbing a steep grade, there is a natural instinct to slow down sharply once the top has been reached. Nine-tenths of the field will yield to that instinct. This is a good time for the athlete to open a gap on them. Care must be taken, however, in the athlete's efforts to gain a competitive advantage in the race not to exhaust him-/herself in the process. All tactics must be used within the comfortable range of the athlete's own efforts.

As an overall race strategy, it is best to attempt maintain a strong race pace for the first three quarters (75%) of the race, and attempt to have a strong last quarter or last lap. The race strategy devised with Tumisang Monnatlala for the junior men's race at the 2013 World Cross Country Championship was to try to be strong at the end. On the last lap he passed five athletes including a Kenyan and an Ethiopian to finish 19th, the best finish by a South African athlete in the category since 1998.

As the athlete approaches the finish, the emphasis should be on running fast and efficiently rather than on pure speed. The finishing stretch in a cross country race is seldom smooth and even underfoot. The athlete should concentrate maintaining a fast pace and accelerating without losing rhythm.

10.3 ROAD RACES

Road races are generally run over much longer distances than track events or cross country and are test more of straightforward endurance rather than versatility. Race distances can vary from 5km, 10km, 15km, 21.1km, 42.2 km. Ultra-marathons can be any distance from 50km to 100km, the two

most famous South African ultra-marathons being the Two Oceans (56km) and the Comrades (about 87km).

It is important to state at the outset while road running is integral part of distance running in South Africa and internationally, young athletes should be discouraged from running too often or too far on the road.

As a guideline, athletes should not compete in 10km race until the age of 18 and be rather encouraged to devote their energy to track and cross country. To obtain optimum results an elite athlete should not attempt the Two Oceans or Comrades, before ensuring that she/he has fulfilled her/his potential over half marathon and standard marathon in their late 20s or early 30s.

Some suggestions for clothing in road races include:

1. Put baby powder in the shoes to reduce friction
2. Wear sunglasses when you are running into the sun
3. Wear a hat that can ventilate
4. Clothing must fit comfortably.
5. Wear gloves on cold day to keep blood circulation normal during the race
6. Put Vaseline above the eyebrows to avoid sweat from dripping into the eyes.

Where possible view the race course before race day. This will allow the athlete to plan race effort and tactics in accordance with the course and position of the various hills and downhills. This will enable the athlete to race with confidence and to surge appropriately at crucial stages in the race.

If your athlete is an elite runner, he or she must ensure starting at the front of the race start to avoid being caught behind in the mass start.

Once a race has started, the athlete must try to establish the planned race pace as soon as possible. This is often a matter of "feel" depending on how the athlete is feeling on the day but the athlete should encouraged to run regularly at race pace during training sessions to develop pace judgment. While running, the athlete can check pace by comparing the time on the

watch with the kilometre markers on the side of the road. The athlete must ignore other runners and concentrate on his/her own pace.

Because of the duration of the race, it is sometimes difficult for the athlete to concentrate on her/his pace for a long period of time and it is important to monitor progress by watching the kilometer markers.

It is helpful to find a group of runners who are running at more or less the target pace in the early part of the race. This will give the athlete an opportunity to relax, but pace must still be constantly monitored. When a headwind is blowing other runners should be used as a windshield by running behind them without disturbing rhythm. It is advisable for the athlete to write target times for every kilometer on the hand where they are easily noticeable in case they are forgotten.

In races over 10km, it is important to drink about half a litre of water before the race to be properly hydrated and then to drink to thirst at water points. When passing water points athletes should try to keep pace while taking water from the helpers. If it is hot, when the athlete is finished drinking water, excess water can be poured over the head and legs to cool down your head and muscles.

When running uphill there is a tendency to slow down once the athlete reaches the top. On reaching the top of the hill, the athlete should accelerate comfortably until well on the way along the flat or down the other side, before establishing pre-hill pace.

An athlete should experiment with surging to break away from the opposition but a surge should only occur when the athlete is at least comfortable with the pre-surge pace or feel that it is a little slow.

If the athlete has a realistic hope of placing among the leaders at the finish, it is important to get into a position where the leaders can be seen at all times. To ensure the best possible result for the athlete, it is important to keep her/his optimum pace. If the leaders run away from an athlete while the athlete is running optimum pace, they are simply too good. On the other hand, the leaders might have run faster than is optimum for them and they may slow down and be caught later in the race.

During the later stages of a race, the runners will have thinned out and conditions may be lonely and mentally challenging. Due to fatigue the

athlete may experience negative thoughts and the athlete should be encouraged to concentrate on positive experiences during previous races, especially those which have been won or positive results achieved.

11. PHYSIOLOGICAL ASPECTS OF TRAINING

By using the term training we mean the gradual increase of the physical and physiological demand on the body to achieve an optimal athletics performance by an athlete at the relevant stage of the athlete's career. In the process, muscles, heart, lungs and nervous system are developed by various training methods to:

1. Increase the body's resistance against fatigue/tiredness;
2. to improve the capacity of the body to recover: and
3. ensure adaptation to continuous physical demands on the body brought about by training and competition.

In the middle and long distances, an athlete's performance is limited by the following physiological factors:

- The maximum amount of oxygen that can be utilized by the athlete in a given period:
- The athlete's aerobic capacity;
- The athlete's anaerobic tolerance.

PHYSICAL PREPARATION OF THE DISTANCE ATHLETE

In the middle and long distances there are three components of physical fitness, which should be considered in planning a training programme namely, stamina, power and speed.

12. STAMINA (MUSCLE ENDURANCE)

The goals of this aspect of training are:

1. The increase and development of the lung capacity to get oxygen faster into the blood.

2. The increase of the stroke volume of the heart to carry oxygen more quickly to the muscles (that this amount of blood pumped in one heartbeat);
3. The increased development of the arteries (outgoing blood) and veins (incoming blood) to carry oxygen faster to the muscle fibres (also known as capillary development).

The athlete must develop stamina base during the off - season and pre-season.

Optimum development occurs at a pulse rate between 120-180 beats per minute.

TRAINING METHODS TO DEVELOP MUSCLE ENDURANCE

LONG DISTANCE TRAINING (800 meters - 40KM DEPENDING ON THE RACE, WHICH YOU ARE PREPARING FOR)

Pay attention to:

1. Varying distances
2. Varying surroundings
3. An increase in distance as the season progresses, variation between longer, slower runs and shorter faster runs.

To avoid boredom, distances, and sessions should be varied continuously.

FARTLEK

The “play with speed” (the meaning of fartlek in Swedish) training method is a very important method to develop muscle endurance and to a lesser extend speed endurance. A few examples are:

- 10 x (1min @ 3000 meters race pace / 1 min jog)
- 2 x (3 min @ 5000 meters race pace - jog 1 min / 2 min @ 3000 meters race pace) rest 2 min between sets
- 5 min @ 10 000 meters race pace / 4 min @ 10 000 meters race pace / 3 min @ 10 000 meters race pace- jog rest between reps.

INTERVAL RUNS (for building adaption to fast, anaerobic running)

1. Performed over distances between 100m – 400m
2. Repetitions must be done (Between 20 and 2 depending on repetition distance)
3. More emphasis on quantity than quality
4. Rest phase is relatively short
5. Rest is generally not in the form of walk
6. The effect of training is in the rest
7. Pulse rate varies between 120-180 beats per minute during reps
8. The pulse rate must never drop to normal during the rest phase. Guideline is start again when the pulse rate is less than 120 beats per minute.

An example for an athlete capable of running 800m in 2:00 minutes

1. 3 x (3 x 400m @ 64 sec. With 1 min jog rest between rep) 1 lap walking between sets
2. 9 x 300m @ 50 sec – jog rest 1 min between reps
3. 15 x 200m @ 33 sec – jog rest 45 sec between reps

Other examples for interval running

Break down interval runs e.g

2 x (500m, 400m, 300m, 200m) @ 800 meters race pace- jog back – rest 5 min between sets – for 1 500m athletes

Build up interval runs

2 x (150m, 200m, 300m, 400m) @ 800 meters race pace - jog back – rest 5 min between sets – for 800m athletes

Pyramid interval runs

3 x (300m, 400m, 500m, 400m, 300m) @ 3000 meters race pace- jog back – rest 5 min between sets – for 3000m athletes

BACK TO BACK RUNNING

Run 5 min @ 5000 meters race pace - rest 2 min – run back on the same route and finish where you started with 5 min

An example for an athlete capable of running 3000m in 10:00 minutes
3 x (3 min back to back – rest 2 min) rest 5 min between sets

TERRACE RUNNING

Uneven grass surfaces e.g. golf courses, are used where the tempo is determined by the gradient/slope of the surface. 500m – 1000m courses are measured out and must be run uphill and downhill at a pace that varies between easy and medium effort.

An example for an athlete who is preparing for a 4km cross-country competition:

3 x (2km terrace at 10 000 meters race pace- take time – the athlete must try to run each repetition in the same time) rest 2 min between reps.

POLISH CROSS COUNTRY (for variety in winter season)

A route of 1km to 8km is marked out e.g:

5 km route:

- 1 km jog, 30 sit – ups
- 300m @ 1500 meters race pace
- 1 km jog
- 800m @ 5000 meters race pace
- 100m walk on hands and feet
- Jog 1km
- 800m at 10 000 meters race pace

AN EXAMPLE OF A 3KM POLISH CROSS COUNTRY COURSE

1. 800 m (3000 meters race pace)
2. star distance running – 400m steady recovery pace
3. 30 sit ups – 1000 m steady pace (5000 meters race pace)
4. 30 push ups – 400m 1500 meters race pace)
5. 30 chin-ups – 400m steady recovery pace

PAARLAUF

Athlete A starts to run around the track. He passes the baton to athlete B who waits at the 200m. Athlete A runs a short cut across the track to the start line, to recover the baton from B again. B begins to run to the 200m to receive the baton from A, etc. The coach determines how many repetitions and speed of repetitions. The speed of the repetitions determines the amount of repetitions. The speed also determines the rest period (short cut) of the receiver.

Example

4 x (3 x 200m) – rest 3 min between sets

13. SPEED ENDURANCE

- Speed endurance training must only be done after proper basis of muscle endurance is developed. The more stamina is done, the more effective the speed endurance training will be.
- The emphasis is this training moves from basic fitness to specific (competition) fitness.
- More quality work is done with fewer repetitions, at a faster pace with relatively longer rest periods between repetitions.
- The energy for these exercises are not supplied by normal oxygen intake, but by the energy stored in the muscle itself. For this reason the body takes much longer to recover after a strenuous training session. Normally 48 hours (2 days). The days in between training of lower intensities (50% - 75%) must be done.
- Rest must now be build into the training program much more frequently, to prevent over training.
- Through this training method the following benefits are obtained
 - Reaction time of the muscle is improved
 - Local muscle endurance and speed endurance improved
 - Metabolism in the muscle is improved
 - To teach the body to develop an oxygen debt faster
 - General speed is improved

TRAINING METHODS TO DEVELOP SPEED ENDURANCE

All the training methods discussed under the muscle endurance can also be used for speed endurance, except intervals. The tempo changes from 50% - 75% to 80% - 90%. However, the rules must be applied to avoid overtraining.

TEMPO RUNS

Tempo runs are done in the place of intervals when the intensity of training is stepped up. Tempo runs differ from intervals training as follows:

1. Run over distance between 50m – 3000m
2. Greater quality than in interval sessions
3. Less repetitions than in the interval sessions described above
4. Emphasis on quality rather than quantity
5. Reset phase is longer than in intervals
6. Rest is in the form of walk. With intervals, rest is in the form of jogging.
7. The effect of the training is in the actual running. During interval training it is during rest.
8. Pulse rate during repetitions is 180 beats per minute and faster
9. The pulse rate must drop to 120 beats per minute during the rest phase. Start again when the pulse rate is 110 beats per minute.

Examples of tempo training include:

BREAK DOWN TEMPO RUNS e.g.:

(1200m, 800m, 400m, 300m, 200m) @ 90% - rest 3 min between reps – for 3000m athletes

BUILD UP TEMPO RUNS e.g.:

(150m, 200m, 300m, 400m, 500m,) @ 90% - walk back – for 1500m athletes

PYRAMID TEMPO RUNS e.g.:

(400m, 600m, 800m, 1000m, 800m, 600m, 400m) @ 90% - rest 4 min, between reps – for 5000m athletes.

COMBINATION TEMPO RUNS e.g.:

600m in 45 sec rest 1 min and sprint 200m

STEP DOWN 200'S

Each successive 200m is one second faster. Walk or jog between. When you can do 27-26-25-24, you can run faster than 2 min 00 sec over 800m.

An example of training for an athlete capable of running 800m in 2:00 min

1. 3 x (3 x 300m @ 42 sec with 3 min walk rest between reps) 2 laps walking between sets
2. 6 x 200m @ 27 sec – walk rest 2 min between reps
3. 2 x 600m @ 1 min 25 sec – walk rest 6 min between reps

PACE DEVELOPMENT

Pace development must be done during the pre-season and more often during the season.

Examples of pace running are:

800m in 2 min 00 sec.

5 x 300m in 43 - 45 sec – rest 2 min between reps

5000m in 15 min 00 sec

7 x 1000m in 2 min 50 – 2 min 55 – rest 4 min between reps

Marathon in 3 hours

2 x 10 km in 40 – 41 min – rest 10 min between reps

14. STRENGTH TRAINING

Strength training helps develop the athlete's power and efficiency, assisting with running faster with less effort. Strength training will also assist the athlete with the jostling and shoving that are an inevitable part of middle distance running.

General physical power in the distance races can never be over emphasised. The following goals are achieved by it

1. General power improvement leads to a higher basic speed.
2. Structural weaknesses in an athlete are corrected and a more effective technique is ensured.
3. Local muscle endurance of a specific part of the body is ensured and a specific pace can be maintained for a longer period.
4. Strength training early in the season enables the athlete to do more intensive training later in the year when anaerobic training is done.
5. The athlete's performance profile is more stable.

For the avoidance of injury, athletes must warm up properly before any strength training session. Examples of strength sessions include:

- **Hill running** e.g. 8 x 100m @ 400m race pace
- **Pulling of tyres** e.g. 10 x 100m @ strong effort. The weight of the tyre should not exceed 25% of the athletes body weight
- **Running in loose sand** – the calve ankle and toe muscles work the hardest
- **Distance running on one leg** e.g. 3 x 30m on each leg. Alternate the leg after each repetition
This exercise must be done on a soft surface
- **Circuit training** – various exercises are done in various places in a gym, against time
- **Weight training** – training weights should be done under supervision of a trained person in a well equipped gym
-

TIME TRIALS

Time trials may be done on a regular basis to monitor the progress of the training program. The existing program must be adapted according to the result of the time trial. Examples of time trials are:

1 x 600m for a 800m race
 1 x 800m for a 1200m race
 1 x 1200m for a 1500m race
 1 x 3000m for a 5000m race

1 x 15km for a half marathon
 1 x 32km for a marathon

SPEED TRAINING

Only the shorter middle distance races (800m – 1500m) have a need to develop pure speed. The longer races must concentrate on speed endurance. A few examples of speed work are given below.

50M DOWNHILL SPRINTING x 5

The slope must not be more than 6°

FLYING 50'S

The athlete takes a flying start and the time is taken between two beacons when the athlete is full speed.

30 meters acceleration – 50m sprint x 5

15. DRILLS TO DEVELOP TECHNIQUE OF RACE WALKERS

1. The best time to practice these drills will be during warm-ups before track sessions.
2. One or two laps can be devoted to each drill.
3. Concentration is required to perform a drill correctly; therefore, each drill should not be carried out for too long.
4. It is also best to do the drills near the start of a session when the walker is not too tired.

ROLL WALKING

Walk at a moderate to fast pace and emphasise the correct rolling action of the feet. This means pushing strongly off the rear foot right up until the toes leave the ground.

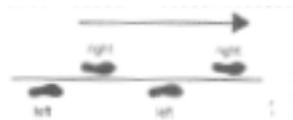
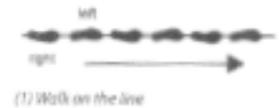
Secondly, making sure that the toes of the leading foot are high on landing so that the landing itself takes place right on the corner of the heel.

STRAIGHT LINE WALKING

Walking at a moderate to fast pace along a marked straight line making sure that the inner borders of the feet fall on, but not over the line.

The lane markings on a track could be used to good effect here.

At first the walker will need to look down at the line, but he should progress to being able to complete the task looking straight ahead.



STRAIGHT LEG WALKING

Walking at a slow to moderate pace and emphasises leg straightening. This means swinging the leg relaxed until the heel touches the ground and then tensing the leg, keeping it braced as it drives the body forward.

HIP EXERCISE	ARM ACTION WALKING
Walking at a slow speed with long strides to emphasize forward motion of the hips	Walking at various speeds with special concentration on the correct arm action. The arm should be pulled virtually straight back with the elbow high whilst in front of the body, the hand should not cross the mid-line of the trunk.

SNAKE WALKING

Walking at a moderate speed in a snaking path e.g. rapidly and continuously swinging several meters to the left and then to the right of a straight line. This should help to improve the mobility of the walker's hip joints and his sense of balance.

FIGURE OF 8 WALKING

Walk at a moderate speed in a figure 8 path. This serves the same purpose as above but requires better control.

ZIG ZAG WALKING	TECHNIQUE WALKING
<p>Walking slowly with shorter strides than normal but placing the left foot to the right side and the right foot to the left side of a straight line. This deliberate crossover of the feet will develop the mobility of the hip joints.</p>	<p>Walking at a moderate speed with correct technique but trying to achieve a feeling of relaxation and flow. This is perhaps the most difficult skill to master. Firstly, the walker has to learn to recognize just when he is tense.</p>

WALKING ON THE SPOT

Walk on the spot with correct leg, hip and arm actions, preferably in front of a mirror.

This is a useful drill for improving the walker's co-ordination and for teaching beginners in particular the feeling of the straight supporting leg in the vertical position.

TRAINING

- Training schedules for track events in South Africa normally start in September after the winter sports are completed. The various championships from zone to national level take place in March to April.
- Training for cross country normally starts directly after completion of the track events.

- Road races occur all year round over the various distances: 10km, 15km, 21, 1km marathon and ultra marathons. Road runners often use cross county races to alternate with road races and to change training venues to avoid boredom. The serious roadrunner will also run track events such as 5000m and 10 000m races to develop their speed endurance.

As mentioned elsewhere the young distance athlete should be encouraged to avoid road racing as far as possible.

- Long distance track athletes also run road races to develop their muscle endurance but must avoid racing too hard or too often.
- For all the approaches above the following is applicable
 - Use an over distance approach
 - First quantity, then quality
 - Build a foundation of endurance and then develop speed gradually as this will prevent injury
 - For the first month of training the athlete should do no speed work and the coach should not time sessions
 - The volume of work should be gradually increased over weeks
 - As the season progresses, you will do less work but faster work
 - Workouts will generally be a hard day followed by an easy day, with a lightening up of work two days before competition or time trail
 - Your schedule is flexible. You may change the daily routine because of weather, body condition or emotional outlook.
 - You should completely recover from one workout to the next if you are not completely recovered, do less work or rest.
 - You should never run when you are ill or have an injury
 - If your training schedule is limited, you may telescope this schedule into two-week periods instead of month periods
 - Your workouts must be fun or rewarding or preferably both.

16. WARMING UP BEFORE WORKOUTS

All workouts should always start of with a general warm up session followed by a stretching session and followed by a specific warm up session.

WARMING UP: THE RATIONALE AND WHAT TO DO

It is important that the athlete should perform a warm up session, followed by a stretching session and followed by a specific warm up session, because:

1. It helps to prevent muscle stiffness.
2. It helps to relax the muscles and allows the muscle to contract faster during a race for better muscle co-ordination.
3. It improves blood circulation to enable the muscle to contract faster.
4. The body temperature rises which improves metabolism in the muscles.
5. The body (heart) can adjust to the race when there is a sudden increase in pace or a fast start.

A light jog twice around the track can be regarded as a general warm up session.

200m acceleration runs can be used as specific warm-up exercises.

17. STRETCHING EXERCISES

- Light stretching exercises must be done prior to a training session or race, while more intensive stretching can be done after the training session. These can be regarded as “warm down” exercises.
- Static (gradual) exercises are better than ballistic (jerking) stretching exercises. Because muscles are stretched evenly and without a jerking action and thus prevent injuries to muscles during a race.
- The thicker muscles must be stretched more than the thinner muscles.
- Stretching must be functional.

Stretching exercises have the following advantages:

1. If stretching is done regularly, suppleness of the muscle is regained and maintained
2. Supple muscles lead to faster reaction
3. They improve the mobility of the limbs
4. Regular stretching helps prevent injuries.

RECOMMENDED STRETCHING EXERCISES FOR MALE AND FEMALE ATHLETES CAN BE SEEN BELOW

1. Squat – sit on the haunches for stretching the quadriceps
2. Hurdlers position – touching the toes on with the hand of the outstretched arm on the same side of the body – for stretching the hamstrings
3. Seated on the ground place knees on the ground pointing left and right with feet together and pull feet towards athletes body – for stretching groin
4. Push against a tree and bend the knees towards the tree to stretch the calf muscles.
5. Also for the calves, stand with the ball of the foot on a step and push down the heel to stretch calf muscles.

18. TRAINING PROGRAMMES FOR VARIOUS DISTANCES

It is important to point out that the training programmes that appear below are guidelines only. For high school athletes, depending on the athlete's level of fitness and talent and their response to various types of training, the suggested training volumes and number of repetitions indicated below can be reduced appropriately.

As a rule of thumb: when in doubt let the athlete do less volume, less repetitions and run at lower intensity: for the young athlete, **“less is more”!**

18.1 COACHING SUGGESTIONS FOR THE 800M

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Key: ' = 1 minute; CT = circuit training; e = easy; med = medium

Phase (One)	Base or Foundation Period (Building the Foundation of the House)
Mon	Strength/CT(1) + 35'e
Tues	Week (1) : 10'e + Stretching/Striding + 4 x 1000m/2'rec + 10'e Week (2) : 10'e + Stretching/Striding + 5 x 800m/3'rec + 10'e

	<p>Week (3) : 10'e + Stretching/Striding + 1200m/1000m/800m/600m/400m with 3'rec + 10'e</p> <p>Week (4) : 10'e + Stretching/Striding + 8 x 400m/3'rec + 10'e</p>
Wed	45'e/med
Thu	Strength/CT(2) + 35'e
Fri	No training
Sat	<p>Week (1) : 35'fast over a measured course</p> <p>Week (2) : Accurate 8km Time Trial</p> <p>Week (3) : 10'e + Stretching + 10 x 150m fast uphill Strides + 15'e</p> <p>Week (4) : 40' (10'e/20'fast/10'e)</p>
Sun	1hr:10'e/med over a Hilly Route
Total Mileage	Approx. 55 Kms

Phase (Two)	Pre-Season Period (Build the walls of the House)
Mon	Strength/CT(1) + 35'e
Tue	<p>Week (1) : 10'e + Stretching/Striding + 3 x (3 x 200m)/100m walk rec between reps and 6' between sets + 10'e</p> <p>Week (2) : 10'e + Stretching/Striding + 350m/300m/250m/200m/150m/ 100m with a 200m (100m walk/100m slow jog) rec + 10'e</p> <p>Week (3) : 10'e + Stretching/Striding + 1000m fast/12' walk rec + 4 x 200m fast/200m (100m walk/100m slow</p>

	Week (4) : 10'e + Stretching/Striding + jog) rec + 10'e 4 x 400m fast/6' walk rec + 10'e
Wed	45'e/med
Thu	Strength/CT(2) + 35'e
Fri	No training
Sat	Week (1) : 10'e + Stretching/Striding + 15 x 100m uphill sprints/100m slow jog down rec + 20'e Week (2) : 10'e + Stretching/Striding + 10 x 60m very fast from the 800m start line into the first bend/100m slow walk rec + 20'e Week (3) : 10'e + Stretching/Striding + 4 x 200m very fast/200m (100m walk/100m slow jog) rec + 20'e Week (4) : 10'e + Stretching/Striding + 3 x 300m very fast/300m (150m Walk/150m slow jog) rec + 20'e
Sun	1hr:00'e/med over a Hilly Route
Total Mileage	Approx. 45 Kms

Period (Three)	Competition Period (Placing the Roof on the House)
Mon	40'e
Tue	Week (1) : 10'e + Stretching/Striding + 5 x 300m/300m (150m walk/150m slow jog) rec + 20'e Week (2) : 10'e + Stretching/Striding + 3 x (3 x 200m)/100m walk rec between reps and 6' between sets + 10'e Week (3) : 10'e + Stretching/Striding + 600m Time Trial/12' walk rec + 6 x 100m fast/100m slow walk back rec +

	10'e Week (4) : 10'e + Stretching/Striding + 15 x 100m sprints/100m (50m walk/50m slow jog) rec + 20'e
Wed	40'e
Thu	30'e
Fri	No training
Sat	Race over 400m/800m or 1500m (the 800m being the No. 1 event) 'Trio Training' : The 800m runner must know his/her 400m speed and equally their 1500m speed ie speed/strength endurance and aerobic endurance
Sun	1hr:00'e/med over a Hilly Route
Total Mileage	Approx. 45 Kms

Period (Four)	Recovery Period (Planning and Designing the next House)
	Post competition recovery is essential. Reclaiming the desire to train and race. This can be made up of slow runs, swimming, cycling, hiking, another type of sport but with adequate days of complete rest ie recharging the batteries. This recovery period can last between 2 to 3 to 4 weeks. 3 weeks is preferable.
Mon	
Tue	
Wed	

Thu	
Fri	
Sat	
Sun	
Total Mileage	Approx. 0 to 20 Kms

Strength Training Component

Strength/Circuit Training (1)

Squats		
Bench Press		
Leg Extension		
Sit-ups		
Leg Curl		
Back Raise		
Leg Raise		
Alt Leg Thrusts		

Strength/Circuit Training (2)

8 Exercises

Leg Press		
Press-ups		
Alt Dumb Bell Press		
Step-ups		
Lat Pull Down		
Sit-ups		
Back Raise		
Double Leg Thrusts		

Technical/Speed/Strength/Plyometrics Training (3)

3 Exercises		
High Knees x 30m		
Butt Kicks x 30m		
High Knee Jumps x 30m		
Hopping R & L x 30m		
Hurdle Jumps x 8H's		
Standing Long Jump		
Standing Triple Jump		
Running Drills 30/30/30m		

18.2 COACHING SUGGESTIONS FOR THE 1200M/1500M

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Key: ' = one minute; CT = circuit training; e = easy; med = medium

Phase (One)	Base or Foundation Period (Building the Foundation of the House)
Mon	Strength/CT (1) + 45'e
Tue	Week (1) : 10'e + Stretching/Striding + 6 x 1000m/2'rec + 15'e Week (2) : 10'e + Stretching/Striding + 4 x 1500m/2'rec + 15'e Week (3) : 10'e + Stretching/Striding + 3 x 2000m/2'rec + 15'e Week (4) : 10'e + Stretching/Striding + 12 x 400m/3'rec + 15'e
	The above 4 sessions should preferably be done in a measured, undulating park or on a cross country course
Wed	1hr:00'e/med
Thu	Strength/CT(2) + 45'e

Fri	No training
Sat	<p>Week (1) : 10'e + Stretching/Striding + 8km Time Trial + 10'e</p> <p>Week (2) : 10'e + Stretching/Striding + 10 x 200m fast uphill strides/jog down rec + 15'e</p> <p>Week (3) : 10'e + Stretching/Striding + 8km Time Trial + 10'e</p> <p>Week (4) : 10'e + Stretching/Striding + 12 x 150m fast uphill strides/jog down rec + 15'e</p>
Sun	1hr:10'e/med over a Hilly Route
Total Mileage	Approximately 56 Kms

Phase (Two)	Pre-Season Period (Build the walls of the House)
Mon	Strength/CT(1) + 45'e
Tue	<p>Week (1) : 10'e + Stretching/Striding + 4 x (3 x 200m)/100m walk rec between reps and 6'e walk between sets + 15'e</p> <p>Week (2) : 10'e + Stretching/Striding + 8 x 400m/3'e walk between reps + 15'e</p> <p>Week (3) : 10'e + Stretching/Striding + 3 x 1200m/3'rec + 6' fast/100m walk back rec + 5'e</p> <p>Week (4) : 10'e + Stretching/Striding + 15 x 100m fast uphill strides/slow jog back rec + 20'e</p>
Wed	1hr:00'e/med
Thu	Strength/CT(2) + 35'e
Fri	No training

Sat	<p>Week (1) : 10'e + Stretching/Striding + 3 x 1000m/3'rec + 6' + 6 x 100m fast/100m walk back rec + 5'e</p> <p>Week (2) : 10'e + Stretching/Striding + 5 x 300m/3'rec + 20'e</p> <p>Week (3) : 10'e + Stretching/Striding + 350m/300m/250m/200m/150m/100m fast with a 300m/250m/200m/150m/100m slow jog rec between reps + 15'e</p> <p>Week (4) : 10'e + Stretching/Striding + 4 x 400m/6'rec + 15'e</p>
Sun	1hr:00'e over a Hilly Route
Total Mileage	Approx 56 Kms

Period (Three)	Competition Period (Placing the Roof on the House)
Mon	45'e
Tue	<p>Week (1) : 10'e + Stretching/Striding + 3 x (3 x 200m)/100m walk between reps and 6'e walk between sets + 15'e</p> <p>Week (2) : 10'e + Stretching/Striding + 15 x 100m/100m walk back rec + 15'e</p> <p>Week (3) : 10'e + Stretching/Striding + 3 x 400m + 1 x 300m/6'e walk rec between reps + 10'e</p> <p>Week (4) : 10'e + Stretching/Striding + 15 x 100m/100m walk back rec + 15'e</p>
Wed	10'e + Stretching/Striding + 40'e + 5'e + 6 x 60m very fast with a 120m slow walk back rec + 5'e

Thu	35'e
Fri	No training
Sat	Race over 400m/800m/1500m or 3000m (the 1500m being the No. 1 event) 'Trio Training' : The 1500m runner must know his/her 400m/800m speed and equally their 3000m speed ie speed/strength endurance and aerobic endurance
Sun	1hr:00'e
Total Mileage	Approx 52 Kms

Period (Four)	Recovery Period (Planning and Designing the next House)
	Post competition recovery is essential. Reclaiming the desire to train and race. This can be made up of slow runs, swimming, cycling, hiking, another type of sport but with adequate days of complete rest ie recharging the batteries. This recovery period can last between 2 to 3 to 4 weeks. 3 weeks is preferable.
Mon	
Tue	
Wed	
Thu	
Fri	
Sat	
Sun	

Total Mileage	Approx 0 to 20 Kms

Strength Training Component

Strength/Circuit		
Squats		
Bench Press		
Leg Extension		
Sit-ups		
Leg Curl		
Back Raise		
Leg Raise		
Alt Leg Thrusts		

Strength/Circuit Training (2)		
8 Exercises		
Leg Press		
Press-ups		
Alt Dumb Bell Press		
Step-ups		
Lat Pull Down		
Sit-ups		
Back Raise		
Double Leg Thrusts		

Technical/Speed/Strength/Plyometrics Training (3)		
3 Exercises		
High Knees x 30m		
Butt Kicks x 30m		
High Knee Jumps x 30m		
Hopping R & L x 30m		
Hurdle Jumps x 8H's		

Standing Long Jump		
Standing Triple Jump		
Running Drills 30/30/30m		

18.3 COACHING SUGGESTIONS FOR THE 2000M & 3000M STEEPLECHASE

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Key: ' = 1 minute; CT = circuit training; e = easy; med = medium

Phase (One)	Base or Foundation Period (Building the Foundation of the House)
Mon	Strength/CT (1) + 45'e
Tues	Week (1) : 10'e + Stretching/Striding + 5 x 1000m/2'rec + 15'e Week (2) : 10'e + Stretching/Striding + 5 x 800m/2'rec + 15'e Week (3) : 10'e + Stretching/Striding + 3 x 1500m/2'rec + 15'e Week (4) : 10'e + Stretching/Striding + 12 x 400m/3'rec + 15'e
	The above 4 sessions should preferably be done in a measured, undulating park or on a cross country course
Wed	1hr:00'e
Thu	Strength/CT(2) + 40'med
Fri	No training
Sat	Week (1) : 10'e + Stretching/Striding + 8 x Sprint Hurdles then practice the following drills : lead leg; trail leg; hurdle walking;

	<p>running over the hurdles, all with appropriate spacing + 15'e</p> <p>Week (2) : 10'e + Stretching/Striding + 8-12 x 400m/4'rec with a full clearance of the steeplechase hurdle and then 'sighting' the waterjump, strongest leg take-off, foot placement on the barrier and take-off, staying low over the barrier, reaching towards the end of the water, one foot in water, the other back on the actual track and then regaining original speed + 10'e</p> <p>Week (3) : 10'e + Stretching/Striding + 8 x Sprint Hurdles then practice the following drills : lead leg; trail leg; hurdle walking; running over the hurdles, all with appropriate spacing + 10'e</p> <p>Week (4) : 10'e + Stretching/Striding + 10 x 200m fast uphill strides / 200m slow jog down rec + 15'e</p>
Sun	1hr:20'e/med over a Hilly Route
Total Mileage	Approx. 56 Kms

Phase (Two)	Pre-Season Period (Build the walls of the House)
Mon	Strength/CT(1) or CT(2) + 35'e
Tue	Week (1) : 10'e + Stretching/Striding + 6-8 x 400m/4'rec with a full clearance of the steeplechase hurdle and then 'sighting' the

	<p>waterjump, strongest leg take-off, foot placement on the barrier and take-off, staying low over the barrier, reaching towards the end of the water, one foot in water, the other back on the actual track and then regaining original speed</p> <p>+ 10'e</p> <p>Week (2) : 10'e + Stretching/Striding + 3 x (4 x 200m)/100m slow walk between reps and 6' walk rec between sets + 15'e</p> <p>Week (3) : 10'e + Stretching/Striding + 3 x 1000m/6' walk rec between reps + 10'e + 6 x 100m very fast/100m (50m walk/50m slow jog) rec + 5'e</p> <p>Week (4) : 10'e + Stretching/Striding + 8 x 400m/3' walk rec + 15'e</p>
Wed	45'e
Thu	1hr:00'e/med
Fri	No training
Sat	<p>Week (1) : 10'e + Stretching/Striding + 15 x 150m fast uphill strides/ 150m slow jog down rec + 15'e</p> <p>Week (2) : 10'e + Stretching/Striding + 5 x 400m over barriers and the waterjump/3'rec between reps + 15'e</p> <p>Week (3) : 10'e + Stretching/Striding + 1 x 1000m fast + 10'+ 3 x 200m fast/200m slow jog rec + 5'e</p> <p>Week (4) : 10'e + Stretching/Striding + 15 x 100m fast/100m (50m walk/ 50m slow jog) rec + 15'e</p>
Sun	1hr:10'e

Total Mileage	Approx. 54 Kms

Period (Three)	Competition Period (Placing the Roof on the House)
Mon	40'e
Tue	<p>Week (1) : 10'e + Stretching/Striding + 5 x 400m/3' walk rec over barriers and the waterjump + 15'e</p> <p>Week (2) : 10'e + Stretching/Striding + 3 x (3 x 200m)/100m slow walk between reps and 6' walk rec between sets + 15'e</p> <p>Week (3) : 10'e + Stretching/Striding + 5 x 400m/3' walk rec over barriers and the waterjump + 15'e</p> <p>Week (4) : 10'e + Stretching/Striding + 2 x (3 x 500m)/150m slow walk rec and and 20'e between sets + 5'e</p>
Wed	40'e
Thu	30'e
Fri	No training
Sat	<p>Race over 400m/800m/1500m or 3000m (the Steeplechase being the No. 1 event). They must be equally competent cross country runners</p> <p>'Trio Training' : The Steeplechaser must know his/her 400m/800m/1500m speed and equally their 3000m/5000m speed ie speed/strength endurance and aerobic endurance</p>
Sun	1hr:00'e

Total Mileage	Approx. 52 Kms

Period (Four)	Recovery Period (Planning and Designing the next House)
	Post competition recovery is essential. Reclaiming the desire to train and race. This can be made up of slow runs, swimming, cycling, hiking, another type of sport but with adequate days of complete rest ie recharging the batteries. This recovery period can last between 2 to 3 to 4 weeks. 3 weeks is preferable.
Mon	
Tue	
Wed	
Thu	
Fri	
Sat	
Sun	
Total Mileage	Approx. 20 Kms

Strength Training Component

		Strength/Circ
Squats		
Bench Press		

Leg Extension		
Sit-ups		
Leg Curl		
Back Raise		
Leg Raise		
Alt Leg Thrusts		

Strength/Circuit Training (2)		
8 Exercises		
Leg Press		
Press-ups		
Alt Dumb Bell Press		
Step-ups		
Lat Pull Down		
Sit-ups		
Back Raise		
Double Leg Thrusts		

Technical/Speed/Strength/Plyometrics Training (3)		
3 Exercises		
High Knees x 30m		
Butt Kicks x 30m		
High Knee Jumps x 30m		
 		
Hopping R & L x 30m		
Hurdle Jumps x 8H's		
 		
Standing Long Jump		
Standing Triple Jump		
 		
Running Drills 30/30/30m		

18.4 COACHING SUGGESTIONS FOR THE 3000M/ 5000M/ 10 000M & CROSS COUNTRY

Key: ' = 1 minute; CT = circuit training; e = easy; med = medium

Phase (One)	Base or Foundation Period (Building the Foundation of the House)
	These are the truly Aerobic Endurance events requiring enormous amounts of Aerobic Endurance and Aerobic Power
Mon	Strength/CT(1) + 40'e
Tues	Week (1) : 10'e + Stretching/Striding + 5-6 x 1000m/2'e walk rec + 15'e Week (2) : 10'e + Stretching/Striding + 5 x 1200m/2'e walk rec + 15'e Week (3) : 10'e + Stretching/Striding + 5 x 1600m/2'e walk rec + 15'e Week (4) : 10'e + Stretching/Striding + 12 x 400m/2'e walk rec + 15'e
	The above 4 sessions should preferably be done in a measured, undulating park or on a cross country course
Wed	1hr:10'e/med
Thu	Strength/CT(2) + 50'e
Fri	No training
Sat	Week (1) : 10'e + Stretching/Striding + 15 x 150m fast uphill strides/jog down rec + 15'e Week (2) : 10'e + Stretching/Striding + 2 x 3000m/12'e jog rec + 10'e Week (3) : 10'e + Stretching/Striding + 5-6 x 1000m/2'e walk rec + 10'e Week (4) : 10'e + Stretching/Striding + 20 x 100m/100m (50m walk/50m easy jog) rec + 15'e
Sun	1hr:30'e/med over a Hilly Route
Total	Approx. 80 Kms

Mileage	
Phase (Two)	Pre-Season Period (Build the walls of the House)
Mon	Strength/CT(1) or CT(2) + 40'e
Tue	<p>Week (1) : 10'e + Stretching/Striding + 4 x 1200m/2'e walk rec + 15'e</p> <p>Week (2) : 10'e + Stretching/Striding + 1 x 600m/500m/400m/300m/200m/100m with a 3' easy jog between reps + 10'e</p> <p>Week (3) : 10'e + Stretching/Striding + 5 x 800m/3'e walk recovery + 15'e</p> <p>Week (4) : 10'e + Stretching/Striding + 10 x 200m fast uphill strides/with an easy jog down rec + 15'e</p>
Wed	1hr:00'e
Thu	1hr:00'(15'e/35'hard/10'e)
Fri	No training
Sat	<p>Week (1) : 10'e + Stretching/Striding + 8 x 400m/3'e slow jog rec + 15'e</p> <p>Week (2) : 10'e + Stretching/Striding +</p> <p>Week (3) : 10'e + Stretching/Striding + 12 x 200m/200m (100m walk/100m slow jog) rec + 15'e</p> <p>Week (4) : 10'e + Stretching/Striding + 400m/350m/300m/250m/200m/150m/100m with a 200m slow jog rec between reps + 15'e</p>
Sun	1hr:20'e/med over a Hilly Route

Total Mileage	Approx. 76 Kms

Period (Three)	Competition Period (Placing the Roof on the House)
Mon	35'e
Tue	<p>Week (1) : 10'e + Stretching/Striding + 8 x 400m/3'e slow jog rec + 15'e</p> <p>Week (2) : 10'e + Stretching/Striding + 350m/300m/250m/200m/150m/100m with a 200m slow jog rec between reps + 15'e</p> <p>Week (3) : 10'e + Stretching/Striding + 4 x 1000m/2'e walk rec + 15'e</p> <p>Week (4) : 10'e + Stretching/Striding + 15 x 100m/100m (50m walk/50m easy jog) rec + 15'e</p>
Wed	45'e
Thu	30'e
Fri	No training
Sat	<p>Race over 800m/1500m/3000m or the ½ - Marathon (with either the 3000m or 5000m or 10,000m or the Cross Country being the No. 1 event). They must be equally competent cross country runners. It is unlikely that the 3000m and the Cross Country will be absolute priority events.</p> <p>'Trio Training' : The must know his/her 800m/1500m speed and equally their 10,000m and ½ - Marathon speed ie speed/strength endurance and aerobic endurance</p>
Sun	1hr:00'e
Total	Approx 70 Kms

Mileage	

Period (Four)	Recovery Period (Planning and Designing the next House)
	Post competition recovery is essential. Reclaiming the desire to train and race. This can be made up of slow runs, swimming, cycling, hiking, another type of sport but with adequate days of complete rest ie recharging the batteries. This recovery period can last between 2 to 3 to 4 weeks. 3 weeks is preferable.
Mon	
Tue	
Wed	
Thu	
Fri	
Sat	
Sun	
Total Mileage	Approx. 20 Kms

Strength Training Component

Strength/Circuit Training (1)		
Squats		
Bench Press		
Leg Extension		
Sit-ups		
Leg Curl		
Back Raise		
Leg Raise		
Alt Leg Thrusts		

Strength/Circuit Training (2)		
8 Exercises		
Leg Press		
Press-ups		
Alt Dumb Bell Press		
Step-ups		
Lat Pull Down		
Sit-ups		
Back Raise		
Double Leg Thrusts		

Technical/Speed/Strength/Plyometrics Training (3)		
3 Exercises		
High Knees x 30m		
Butt Kicks x 30m		
High Knee Jumps x 30m		
Hopping R & L x 30m		
Hurdle Jumps x 8H's		
Standing Long Jump		
Standing Triple Jump		
Running Drills 30/30/30m		

18.5 COACHING SUGGESTIONS FOR ROAD RACING & THE MARATHON

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Key: ' = 1 minute; CT = circuit training; e = easy; med = medium

Phase (One)	Base or Foundation Period (Building the Foundation of the House)
	These are the truly Aerobic Endurance events requiring enormous amounts of Aerobic Endurance and Aerobic Power
Mon	(am) 35'e (pm) Strength/CT(1) + 40'e
Tues	(am) 30'e (pm) Week (1) : 10'e + Stretching/Striding + 5 x 1600m/3'e walk rec + 15'e Week (2) : 10'e + Stretching/Striding + 20'e + 20'med + 5'e + 10'faster + 10'e Week (3) : 10'e + Stretching/Striding + 15 x 200m fast uphill strides/200m jog down recovery + 15'e Week (4) : 10'e + Stretching/Striding + 70'med
Wed	(am) 35'e (pm) 1hr:20'e/med
Thu	(am) 30'e (pm) Strength/CT(2) + 50'e
Fri	No training
Sat	Week (1) : 10'e + Stretching/Striding + 5 x 1000m/2'rec + 15'e Week (2) : 10'e + Stretching/Striding + 20 x 100m fast uphill

	<p style="text-align: center;">strides/100m jog down recovery + 15'e Week (3) : 10'e + Stretching/Striding + 70'med Week (4) : 10'e + Stretching/Striding + 6 x 800m/3'e walk rec + 10'e</p>
Sun	<p>Week (1) : 3hrs:00'e/med over a Hilly Route Week (2) : 2hrs:30'e/med over a Hilly Route Week (3) : 2hrs:00'e/med over a Hilly Route Week (4) : No training</p>
Total Mileage	Approx. 150 kms

Phase (Two)	Pre-Season Period (Build the walls of the House)
Mon	(am) 35'e (pm) Strength/CT(1) or CT(2) + 40'e
Tue	<p>Week (1) : 10'e + Stretching/Striding + 40'hard Week (2) : 10'e + Stretching/Striding + 5 x 1600m/3'e walk rec +15'e</p> <p>Week (3) : 10'e + Stretching/Striding + 20 x 100m fast uphill strides/100m jog down recovery + 15'e Week (4) : 10'e + Stretching/Striding + 8km Time Trial + 10'e</p>
Wed	(am) 30'e (pm) 1hr:00'e
Thu	(am) 35'e (pm) 1hr:00'(15'e/ 35'hard /10'e)
Fri	No training
Sat	<p>Week (1) : 10'e + Stretching/Striding + 21.1kms @ Marathon pace Week (2) : 10'e + Stretching/Striding + 15 x 400m/3'e walk</p>

	rec + 15'e Week (3) : 10'e + Stretching/Striding + 70'med Week (4) : 10'e + Stretching/Striding + 4 x 1000m/5'e walk rec + 15'e
Sun	Week (1) : 3hrs:00'e/med over a Hilly Route Week (2) : 1hr:30'e/med over a Hilly Route Week (3) : 2hrs:00'e/med over a Hilly Route Week (4) : No training
Total Mileage	Approx. 145 kms

Period (Three)	Competition Period (Placing the Roof on the House)
	The Marathoner should consider running a 25km trial 10-12 days before the event.
Mon	Week (1) : 10'e + Stretching/Striding + 8km Time Trial + 10'e Week (2) : 10'e + Stretching/Striding + 5 x 1600m/3'e walk rec +15'e Week (3) : 10'e + Stretching/Striding + 8km Time Trial + 10'e Week (4) : 10'e + Stretching/Striding + 15 x 400m/3'e walk rec + 15'e
Tue	45'e
Wed	35'e
Thu	30'e
Fri	No training
Sat	Race over 1500m/5000m/10,000m/Cross Country/the Road/ ½ - Marathon (the Road and the Marathon being the No. 1 events). 'Trio Training' : The Road runner/Marathoner must know his/her

	1500m/5000m10,000m speed ie speed/strength endurance and aerobic endurance
Sun	35'e
Total Mileage	Approx. 80 kms

Period (Four)	Recovery Period (Planning and Designing the next House)
	Post competition recovery is essential. Reclaiming the desire to train and race. This can be made up of slow runs, swimming, cycling, hiking, another type of sport but with adequate days of complete rest ie recharging the batteries. This recovery period can last between 2 to 3 to 4 weeks. 3 weeks is preferable.
Mon	
Tue	
Wed	
Thu	
Fri	
Sat	
Sun	
Total Mileage	Approx. 30 kms

Strength Training Component

Strength/Circuit Training (1)

Squats		
Bench Press		
Leg Extension		
Sit-ups		
Leg Curl		
Back Raise		
Leg Raise		
Alt Leg Thrusts		

Strength/Circuit Training (2)**8 Exercises**

Leg Press		
Press-ups		
Alt Dumb Bell Press		
Step-ups		
Lat Pull Down		
Sit-ups		
Back Raise		
Double Leg Thrusts		

Technical/Speed/Strength/Plyometrics Training (3)**3 Exercises**

High Knees x 30m		
Butt Kicks x 30m		
High Knee Jumps x 30m		
Hopping R & L x 30m		
Hurdle Jumps x 8H's		
Standing Long Jump		
Standing Triple Jump		
Running Drills 30/30/30m		

Alternative approaches to training

Ian Harries' programmes above provide a sound set of guidelines for beginner coaches and athletes approaching a particular event.

Ian's coaching philosophy is more speed-based and similar to that used by coaches such as Harry Wilson (coach of Steve Ovett), Frank Horwill and Peter and Sebastian Coe, in contrast to another leading school of training embodied by Arthur Lydiard and his followers. All these coaches have produced outstanding results in international competition.

Simply in order to allow the coach to develop her/his own approach, differences between Ian's programmes and the Lydiard school include the following factors:

- Lydiard believed in minimal or no intense speed in the base/endurance period and the athlete is encouraged to do long, relatively easy aerobic sessions to build stamina and basic fitness
- Lydiard's pre-season period had two phases, the first of 4 to 6 weeks of strength work focusing on hill repeats and hill-springing (bounding up hills) two to three times a week
- Lydiard's second pre-season phase was 4 to 6 weeks of anaerobic sessions as in Ian's pre-season Tuesday session with fast 10 x 100 strides on the Thursday
- Lydiard did not believe that an athlete should take a day off training and believed in "active rest": he would advocate 30 minutes of jogging on the Friday where, by contrast, Ian suggests rest.
- For fit, elite senior athletes competing from 800m to the marathon, Lydiard believed that a minimum of 160km a week was required in the base phase to achieve complete aerobic development. While this may be necessary for marathon athletes, it is probably excessive for 800m and 1500m, but it has worked for a number of athletes, including Steve Ovett, Steve Cram, Juan van Deventer and Johan Cronje.

At the end of the day the coach must decide what works best for the individual athlete and Ian's and Lydiard's approach follow the same broad principles and a beginner coach can follow Ian's guideline programmes with complete confidence of optimal outcomes.

It is nevertheless important to emphasise that Ian's programmes are designed for the fully fit, elite school athlete and the coach must use his or her discretion in applying the guidelines.

19. RULES OF COMPETITION & TRAINING GUIDELINES

GENERAL RULES FOR DISTANCE RACES

- In all events, competitors must wear clothing which is clean, designed and worn so as not to be objectionable. It must not be transparent even when wet.
- The direction of walking and running on a track is left hand inside and anti-clockwise.
- The start line is curved so that all athletes start the same distance from the finish.
- At the start, the athletes must remain motionless from the command "on your marks" until your starter fires the gun. Otherwise, a false start will occur.
- The athlete will be disqualified after one false start and disqualified after two.
- Interference of any sort, with other athletes also constitutes a false start.
- At the finish the athlete are placed in order in which any part of their trunks, reaches the finishing line. (not the head, neck, arms, or feet)
- Hand timing is acceptable, provided 3 official time keepers timed the winner.
- For track events, 5000m and longer, the refreshment table will be open for 5 minutes at 20 minute intervals.
- In events of more than 20km, refreshments will be provided every 5km. For all events longer than 10km sponging/drinking water stations may also be provided at suitable intervals.
- In events longer than 20km, a competitor may leave the road or track with the permission, and under supervision of a judge.

SPECIFIC RULES AND GUIDELINES FOR DISTANCE RACES

800 meters

In the 800m, the first bend only may be run in lanes and the start is staggered accordingly.

Ian Harries, who coached the greatest South African 800 meters exponent, Mbulaeni Mulaudzi, suggests the following guidelines.

This is an event that consists of 2 laps of the track amounting to 2 x 400m. It is clearly the one running event that demands all of our physical attributes, that is, aerobic capacity plus aerobic power, a high anaerobic threshold, speed, speed endurance and strength endurance in equal measure.

There are two types of 800m runners. The 400m/800m (speed based types and 800m/1500m (endurance based) types.

An 800m runner must have very special qualities over 400m. Rudisha and Amos have posted mid-45secs for the event. Mulaudzi and Coe have registered sub-46secs on relay legs.

This is essential for what we call 'protection' time, that is, if you can run 46secs for 400m going through the bell in 50secs gives our runner 4secs of protection.

Similarly our runner should be capable of a very respectable 1000m. It is not that important to be a great 1500m as additional specific training is required here.

As a Coach my favourite sessions for this event include the following:

- 3-4 x 400m/5-6mins recovery (to cope with the 1st 400m of the race);
- 3 x (3 x 200m)/100m slow jog recovery between reps and 5-6mins between sets (3 x 200m = 600m, $\frac{3}{4}$ of 800m and a very tough session). Mulaudzi's best average for this session was 23.8; and
- 15 x 100m/100m slow jog back recovery.

Needless to say there were many others.

Never forget that to do these sessions effectively the runner must possess great aerobic endurance, efficiency in fast uphill strides and have completed specific strength work in the weight training centre.

1500 meters

What follows are Ian Harries' guidelines for the 1500m.

$3\frac{3}{4}$ laps of the track = 3 x 400m + 300m.

Physiologists tell us that at optimum pace the race is run 50% aerobic and 50% anaerobic. The runner needs additional quantities of aerobic capacity and power plus speed and strength endurance. Top 1500m runners must be able to run between 46.5 and 47.5secs for the 400m.

Additionally they must be very competent over the 800m and a lesser extent the 3000m. Striving to improve one's 800m time impacts directly on the 1500m.

It is about running 1200m as efficiently as possible and then sprinting 300m.

His favourite sessions are:

- 3-4 x 1200m (3600m-4800m)/5-6mins recovery;
- 8 x 400m (3200m)/3' jog recovery (a very classic 1500m session);
- 5 x 300m (1500m)/300m jog recovery;
- 4 x (3 x 200m) (600m)/100m jog between reps and 5-6mins recovery between sets; and
- 15 x 100m (1500m)/100m jog recovery between reps

Needless to say there were many others.

Never forget that to do these sessions effectively the runner must possess great aerobic endurance, efficiency in fast uphill strides and have completed specific strength work in the weight training centre.

Steeple Chase

1. Runners are not allowed to run around, or underneath the hurdle.
2. The athlete can go over the hurdle any way they choose provided that there is no interference with other athletes.

DB Prinsloo, a former national senior steeplechase champion and coach of SA 1500m record holder, Johan Cronje, advises that the steeplechase is a combination of the training for the 1500m/3000m/5000m with hurdles training once a week

3000 meters & 5000 meters

These races require a blend of strength, endurance and intense speed endurance. Lungile Bikwani, coach of Tshamano Setone, the South African junior 3000 meters record holder, gave him the following sessions in the build up to his 13:25 5000 meters and 7:49 for 3000 meters personal bests. The key sessions he did with Setone were as follows:

Sunday (am) 80 minutes

Monday (am) 10x100m hills; (pm) easy 8km

Tuesday (am) 10 km; pm 6x1000m in 2-40 -45 - rest 200m jog

Wednesday (am) 50 to 60 minutes

Thursday (am) 8km; (pm) 12x400m 4x60-62sec 4x58-60sec 4x56-58sec
rest 3min

His training cycles would consist of 4 week blocks

His work with Setone would start with doing 2000m untimed in the first 2 cycles; an Endurance cycle and a Strength cycle and then fast intervals in the last 2 cycles and then co-ordination and racing cycles.

5 days before a championship his athlete would do a 3000m time trial as a sharpener at race pace

CROSS COUNTRY

1. The course will be confined, as far as possible to open country, veld, heathland, and grasslands. Roads should be kept to a minimum.
2. Any form of hindrances or obstructions must be avoided for the first 1500m of the course.
3. An athlete may not run outside the official course.
4. The course shall be marked out in such a way, that the leading athlete will have no difficulties finding his or her way.
5. A course must never have a narrower running surface than 2m.

6. Obstructions considered dangerous must be clearly marked with ribbon on flag.
7. Drinking/ Sponging stations shall be provided at suitable intervals of approximately 2-3km.

ROAD RACES

1. There is no restriction on the number of times that the a runner may be offered refreshments during a road race, or what the nature of the refreshment shall be provided that:
 - Illegal stimulants in terms of the IAAF ruling are not used
 - The domestic rules of the race organizers are not transgressed.
 - Seconds do not create traffic hazard along the road.
 - Seconding is not conducted directly from a vehicle (including two-wheeled) – whether stationery or moving.
2. A second may not run alongside an athlete for a distance exceeding 100m on either side of an official water point.

WALKING

1. At least one foot must be on the ground at all times during the race.
2. The supporting leg must be straightened for at least one moment when in the vertical position.
3. The leading foot must make contact with the ground before the other foot leaves the ground.
4. A walker will be disqualified when 3 judges agree that his walking does not comply with the IAAF definition of race walking.

20. HOW TO PEAK FOR A CHAMPIONSHIP

Ian Harries describes **peaking** in terms of an athlete's maximum readiness for major competition or "athletics shape" as follows:

"Athletic shape is an extension of the degree of training and is characterised by performances close to the athlete's maximum, sport specific fitness, technical, tactical efficiency and a psychological base from which peaking can be initiated. Peaking is the highlight of athletic shape."

To ensure you athlete peaks effectively one should employ the various training phases described in this manual and set out in the training guidelines. As Ian's guidelines suggest peaking is like building a house. The peak is the chimney or highest point of the house. This process of working and building an athlete to a peak is known as **periodisation** which Ian defines as:

“the systematic planning of athletic or physical training. The aim is to reach the best possible performance in the most important competition of the year. It involves progressive cycling of various aspects of a training programme during a specific period.”

WHAT FACTORS WILL INFLUENCE THE OVER COMPENSATION CURVE?

1. The more balanced the training program in the early part of development, the more effective the compensation curve will be when needed.
2. The athlete's fitness level e.g. training load capacity and rate of recovery will determine the performance level and duration of peak performance.
3. The greater the training background of the athlete (that is how many years have been spent in full training) the better the peak performance will tend to be.
4. The athlete's physical maturity, for example age, experience in the sport, capacity for effort and performance. A higher maturity level will lead to a more effective control of the performance.
5. The athlete's health status.
6. Personality type A individuals can expose themselves to excessively high levels of tension which can reduce the effect of overcompensation.
7. Body build: stronger muscles will cope better with the increased energy level.
8. Sexual differences especially during puberty. Males and females react differently.

OTHER FACTORS THAT WILL HAVE EFFECT ON PREPARING FOR A PEAK

1. The athlete must understand clearly the goal and reason for each training session.
2. Due to the intensity of and need to recover from training, variety must be built into the training program.
3. The intensity of the training will cause mental as much as physical strain. A change of environment or an entirely different type of physical activity for a period of time might assist recovery.
4. The goal to achieve must be as vivid as possible. Use audio visual aids, such as video tapes of the athlete's performances. This feedback useful in setting the goals. Visualisation of the athlete's target race by getting the athlete to mentally think through the likely race scenarios and his/her appropriate tactical and physical responses will help enhance confidence and performance on the race day.

21. RELAXATION

Relaxation is the key to high level performance. Relaxation skills can not be taught in a short space of time and must form part of the preparation of the athlete. The advantages of physical and mental relaxation are:

1. One can concentrate better when relaxed.
2. One can learn faster and retain better when relaxed.
3. One can learn physical skills faster and develop good habit patterns more quickly.
4. One will have faster reaction time.
5. One will be better co-ordinated.
6. One can get to sleep more quickly and sleep a more restful sleep.
7. One will not fatigue as quickly.
8. One will feel better.
9. One will be more confident.

RELAXATION SKILLS CAN BE DEVELOPED AS FOLLOWS:

1. Every day as part of a training session, help the athlete to learn to keep his/her hands and jaw relaxed. No matter how fast the athlete runs or how important the competition he/she must try to relax the face and hands.
2. Go through a relaxation routine before every run, jump or throw, trying to relax all the muscle groups. For example, take the wrinkles out of the forehead, let the face sag, drop the shoulders low, collapse the chest,

take all the bones out of your arms, shake your legs, let your feet go limp, etc.

3. Check the ability to relax daily during technique exercises. (The coach can help here)
4. Before a run, jump or throw, go through a routine of relaxation exercises.
5. During hard training session, when you are very fatigued, concentrate on good form and stay loose (relaxed)
6. During the execution of the event stay relaxed.
7. When doing a time trial, use 90% effort while concentrating on relaxing. Evaluate the performance. You will find it is better than 100%, even though it will not feel that good a performance.

RELAXATION EXERCISES & TECHNIQUES

- The runner must have prepared correctly and believe that he/she is at the peak of his/her powers at that moment, otherwise anxiety and self-doubt creeps in;
- The runner must accept the race situation as it is, ie “can I win and if not, how can I get to the next level of performance, using the situation to perform better than ever before?”
- Visualisation: seeing in one’s mind’s eye what has to be done in the race and doing it in a very positive manner;
- There are two lines of focus, an internal focus and an external focus;
- An internal focus is withdrawing into oneself, ie how do I feel, talking oneself into a state of calmness, feeling your pulse and heartbeat, cutting oneself off from everyone and everything around you;
- An external focus is the opposite, absorbing the presence of other competitors, the occasion, the people in the stand, the commentator, the hype;
- One calms you and the other will excite you, either system can work or even a combination of the two;
- For the calming effect relaxation drills can be worked out, one’s conduct, actions and behaviour leading up to the race;
- Tape recorded music that calms or arouses you and/or your own voice talking to you and placing you, hypothetically, in your ‘peace’ room or ‘nook’ in the garden; and then
- Total focus on the job at hand;
- Irrespective of the outcome, stay positive and benefit from the lessons learnt.

21. REST

Rest plays a very important role in the training program. For an athlete to improve on his/her previous best performances, or to peak at the right time, (s)he will have to plan rest periods constructively. The duration and frequency of rest periods will depend on a number of factors. The three laws of training also apply to rest.

LAWS OF COACHING

LAW OF OVERLOAD

When an athlete trains on a lighter level of intensity, the initial response of the body will be fatigue. When the training (loading) stops, there will be process of the recovery from fatigue and adaption to the training load during the rest period. The body will overcompensate to prepare for the next training session. Every new level of training load, followed by a correctly applied rest phase will lead to a higher level of fitness. The athlete in training needs more rest than non-athletes. The body repairs its own tissue, but it requires its "off" time every day. The average athlete requires 8 -10 hours sleep each day to recuperate sufficiently for the next training session.

LAW OF REVERSIBILITY

The training ratio (training with a higher load followed by a recovery phase) has a direct influence on the increase or decrease of the performance level of the athlete. The level of loading can be increased by means of:

1. the number of repetitions
2. faster repetitions
3. heavier weights or
4. shorter recovery

Once the body has adapted to a particular training load, adaption ceases. If the rest periods are too long between repetitions, the athlete's fitness level will increase very slowly. However, if the training load is repeatedly excessive or occurs with insufficient space rest, the athlete will not recover sufficiently to cope with the next training load, causing overtraining and load must be reduced. An active rest phase is suggested. With young athletes

this means very high intensity training session every 4th day rather than every 2nd day. If the athlete does not respond to the increased active rest, the training session load must be reduced, e.g. reduced number of repetitions, lighter weights, etc.

LAW OF SPECIFICITY

The training loads must be specific to the event the athlete is preparing for, to ensure an increase in the performance level. However, specific training will be of very little value, without a proper general training preparation period.

As a general principle, the greater the volume of general training, the greater will be the capacity of the athlete to cope with the specific training.

This means a smaller risk factor of overtraining and the need for a longer rest period to recover from overtraining.

LAW OF VARIETY

An exercise should from time to time be replaced by different exercises with the same effect in order to maintain the interest of the athlete. Otherwise it becomes boring.

LAW OF INDIVIDUALITY

Each athlete has an own personality and physical attributes that needs to be evaluated and taken in account. Every individual reacts in a unique manner to exercises and loads and intensity.

LAW OF INVOLVEMENT

It is important for the success of a training program that the athletes buy into it and participates full in the execution thereof.

LAW OF ADAPTATION/REST

The rest or recovery after an **overload** allows the body time to adapt to new levels and the adaptation that takes place allows the athlete to perform better.

SUMMARY

Rest is the most important cornerstone of three very basic rules:

1. Moderation must always be kept in mind during training to avoid serious injuries. The human body can take far more stress than we generally give it. However, it needs to adapt to heavier stresses gradually, by making use of sufficient rest periods.
2. Consistent training on a reasonable level should be done every day. If a few days of training are missed, the body loses its form. A day or two of extra hard training does not make up for the loss, and will lead to injury and illness due to a lack of rest.
3. To rest is very important. More training load creates extra physical stress, which call for more recovery time. The body makes its adaption to stress when the body is at rest, rather than during stress. This is part of the principle of overloading.

IMPORTANT: Peak performance can only be achieved after a moderate, constant increase in training load, followed by sufficient rest.

As a general guideline and advice to coaches and athletes, if ever in doubt, undertrain rather than overtrain, and rest and recover in place on working too hard. It is natural characteristic of an ambitious athlete and coach to want to push too hard.

23. BIBLIOGRAPHY OF RECOMMENDED READING

Brook, Norman - Endurance Running
 Coe and Martin – Training Distance Runners
 Daniels, Jack – The Daniels Running Formula
 Dick, Frank - Sports Training Principles
 Harries, Ian – www.runningfromheart.com
 Horwill, Frank - Obsession for Running
 Labuschagne, Pieter, - Coaching Athletics – the Road to the Top
 Livingstone, Keith, Healthy Intelligent Training: the proven principles of Arthur Lydiard

Lydiard, Arthur and Gilmour, Garth – Distance Training for Masters
Lydiard, Arthur and Gilmour, Garth – Distance Training for Young Athletes
Lydiard, Arthur and Gilmour, Garth – Distance Training for Women Athletes
Lydiard, Arthur and Gilmour, Garth – Distance Training for Young Athletes
Lydiard, Arthur and Gilmour, Garth - Run the Lydiard Way
Lydiard, Arthur and Gilmour, Garth – Running to the Top
Noakes, Tim – The Lore of Running
Sandrock, Michael, Running with the Legends
Van Niekerrk Owen Talent identification and testing
Wilmore and Costill - Physiology of Sport and Exercise
Wilson, Harry, Running my Way
Zatsiorsky - Science and Practice of Strength Training