

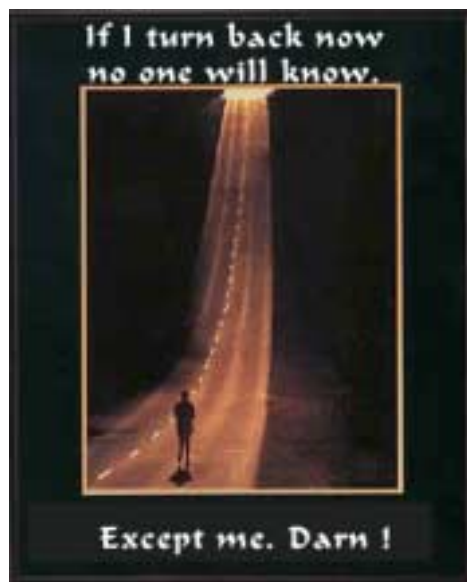
# THE THREE D'S OF RUNNING

**DESIRE -----You have to want to do it!**

**DEDICATION -----You have to commit to doing it!**

**DISCIPLINE ----- You have to stick with it!**

While writing this, I am reminded of a picture my wife, Donna, has by the computer. It is a post card picture from Nike depicting a runner, running up a mountain trail in the early morning. The sun is just starting to break through the morning haze and the runner is alone. In the background you can see the starkness of the lonely landscape. The caption reads. *If I turn back now no one will know. Except me. Darn!* The picture says it all. This is what running is all about. You run only for yourself and the pure enjoyment that it brings.



**WINNERS MUST HAVE TWO THINGS:**

**DEFINITE GOALS  
&  
DESIRE TO ACHIEVE**

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# PREFACE

In the early 1980's, Donna and I attended a running camp in North Carolina, the camp was called "Florida Distance Running Camp." The director of the camp was Roy Benson. Roy's knowledge and enthusiasm piqued our interest in improving our running, and I decided I wanted to learn about it. The interesting thing is, years later it was Roy who tested me for certification in RRCA. He still has his running camp, it is located in Ashville, North Carolina. You can find information regarding Roy's camp by going on the internet at <http://www.coachbenson.com/>. I guarantee that you will enjoy every minute of it!

Having been a runner for 20 years and coaching for nearly as long, I consider myself to be a mix of many coaches with Roy Benson heading the list. I have studied the works of Jack Daniels (not the drink), Bob Sevene, Bill Dellinger, Bill Freeman, and especially Dr. David Martin, as well as many others. Dr. Martin's works were recommended by a friend, Keith Brantly. Keith was coached by Dr. Martin and he represented our country as a marathoner in the 1996 Olympics. It is my hope that I have chosen all the right things from these coaches and can put them to good use in training others. We, as coaches, must always be aware of constant changes taking place with the concepts of training. The days are gone of wearing combat boots, eating salt tablets or dextrose wafers and redlining it every day.

This booklet is intended to give some introduction to the sport of running/training. Also, it may help understand the why and wherefore of running/training. Actually, in this day and age it has become very scientific. I suppose one could say there isn't much to running, put on a pair of shoes, go out the door and put one foot in front of the other. This could work to some degree, but the chances are good a lot of things might happen which you don't consider enjoyable. You will certainly be limited on your level of improvement, or reaching your full potential. Take it from an expert on doing the wrong things early in my running career. Unfortunately my wife paid more dearly than I. The old saying "no pain, no gain." That old saying is just that... old! Becoming knowledgeable and training smart will get you much further and in much less pain in your running. In this sport even a little knowledge is better than none.

While there is still much left unsaid within these pages, possibly you can glean something from them which will help you with your running/training. Just maybe, like Roy did for me, you will step into the coaching circles and help others with a great lifetime sport. Could happen, you never know...

# FINDING A COACH

Everyone should have a coach. That doesn't necessarily mean you need an expensive, high priced professional, it could be an experienced runner who knows about running. Someone who can be a sounding board or mentor, offering occasional advice. This type of coach may not lead to world class times, or even age division times, but they can still help you to learn the basics of running. You can generally find a coach through a running club. This especially applies to the person who is new to running. You may even find a coach through the Internet. You should be aware that there are about as many ways to coach as there are coaches. Seek a coach who meets what you are looking for in a program.

For those runners who are trying to reach competitive goals, there is a need to have a well-versed coach, one who has had years of experience, success and keeps up with changes. It may well be a High School track or cross country coach. If the coach has credentials such as United States Track and Field Level II Certification or Road Runners Club of America Certification, all the better. Generally coaches that are certified are those individuals who have a great deal of interest in knowing all they can about coaching. RRCA has a list of certified coaches on their website.

In 1994, RRCA published a book written by Hal Higdon, [How To Find A Running Coach](#). This book does an outstanding job of addressing the subject. You can also reach Hal Higdon by going to his site. See how easy it is to find a coach! However, finding a "hands on coach", someone who can sit down and discuss your program, go to the track with stopwatch in hand, that is a little more difficult.

Here are some suggestions in finding or having a coach:

- Contact a local running club
- Sit down with the coach and explain what you want and try to determine his/her coaching philosophy. Does the philosophy fit your needs?
- What credentials/experience does he/she have in the sport?
- Call someone they have or are coaching.
- Try to get a feel for the coaches knowledge, especially as it relates to what you are seeking.

It amazes me as to how many runners are running competitively in their age group, and they are doing it with no assistance but their own experience. Some may rely on programs out of a running magazine or they copy programs from other runners. I suppose it could be said that something is better than nothing, but then again I have seen runners get into trouble by following another runner's program or using a "Cookie Cutter" type of program, especially one that may be a spin-off of an elite runner's schedule. Nearly every elite runner has a coach. The coach may be some distance from the Elite runner, but the coach is nonetheless there for them. Now, it stands to reason, if an experienced Elite runner needs a coach, surely we neophytes should have one. However, I confess, my view is that of a coach.

My personal philosophy in coaching runners; if you succeed in running it is because you have done all that is necessary in training. If you fail, it's my fault. My reasoning for this philosophy is actually very simple. Based on your profile and listed goals, within an educated reasonableness, I should be able to advise and guide you, obtain feedback along the way in order to maintain focus on your objectives. Now having said this, if a runner chooses to go beyond reasonable coaching advice given by me, or decides to use other training techniques, now that's another story! A runner must remember, it is their body and their program; I am simply an advisor, a guide. I do not dictate, nor do I have daily control of what a runner does.

The only thing I ask of a runner before they start a program is to be certain of the **Three D's of Running** and **Communicate** with me. I don't want to waste a runner's time, nor do I wish to waste my time developing a program that takes time and energy. If their desire is to just get in shape, all they need to do is run three (3) times a week for 30 minutes. This doesn't require the need of a coach. While I, as a coach, can provide some external motivation, the runner must be self-motivated. They must have that inner burning to achieve "their" goals.

At this point I would like to address Tri-Athletes. Because of their multi-discipline of training, there is no doubt they are conditioned, all around athletes. However, as a running coach I don't wish to compete against those other disciplines that are required in training for their sport. That being the case, I am always willing to offer advice if asked, or help with a running program, but I don't wish to be extensively involved in that type of program. It is simply too difficult to compete with swimming and biking.

I am often asked by runners and fellow coaches; why don't you charge for your coaching? My answer is very simple. Running has been very good to me from the standpoint of health, as well as meeting some of the friendliest, nicest, most interesting people you could ever want to meet. It was introduced to me in 1980 by my family physician and friend, Dr, Richard Dillard. Dr. Dillard encouraged me to give up smoking and try to catch him. I gave up smoking, but still, 20+ years later, I can't catch him! Then, running again saved my life when I had a heart attack in September 1999. Lastly, there is great deal of satisfaction in having a small roll in the success of a runner, watching them grow and compete in the sport. To say nothing of the social aspects that I have enjoyed for many years.

## CONCEPTS OF TRAINING

The concept of training covers a broad spectrum. I will narrow it into two areas; *Periodization* and *General* training. While these are specific in their own right, they have many common features. Training is training, no matter how you do it, or what you call it. As a matter of fact, *General* training still has many of the features of the more specific *Periodization* training. It just doesn't have all the fancy words. I feel that the vast majority of runners use the General training method rather than the more specific Periodization concept of breaking their training into periods of time called cycles.

## **PERIODIZATION TRAINING**

Periodization training is an extremely effective way to train runners who have a desire to be highly competitive, and are willing to set goals over a long period of time, sometimes years. Many elite runners from other parts of the world use this type of training.

Unfortunately it is not as highly utilized in the United States. I feel the basic reason why it is not as highly used is due to the fact that once a runner leaves college; they are generally on their own with the exception a very small number of elite runners.

Periodization training is set of plans (cycles) that separate an entire year or even years into specific segments. It divides a program into a number of periods of time, each period having specific goals. This would be defined as follows:

**Macrocycle**.....Considerable length, possibly as much as a year.

**Mesocycle** .....Generally a period lasting a few weeks to possibly a few months.

**Microcycle**.....A week to possibly two weeks.

As seen by the definitions, the later two fit within the first. The first is the framing, and the others are designed within this framing. By doing this you have checks or benchmarks along the way to measure and adjust the program in order to meet the goals leading to specific end.

While attending courses given by USAT&F at Purdue University, we were given a project to set up a program for a High School runner who was just entering college (see chart next page). The program was to cover a year having two peaks, taking into account an indoor season and an outdoor season. It was necessary to show the Energy Systems being used through the entire Periodization training.

As you can see by the chart, this concept is very specific. The runner must be continually monitored to see that specific goals are met and adjustments can be mad. This requires adjustment to intensity levels and constant feedback from the runner. In addition to that, the coach needs to be “Johnny on the spot.” The coach should monitor weekly.



## **GENERAL TRAINING**

General training is where most runners will fit. They may have a coach, or they may be using guidelines from their favorite book (shame on you if you are). Their training may have some specificity to it, but is generally a generic program, a “fit all” program related to the masses. One of my favorite coaching friends refers to this type of general training as “Cookie Cutter,” programs. These are not all bad as anything that gets you out the door is good, but these types of programs do have their limits. You should have a good understanding of the How, When and Why in order to follow this kind of training.

To give something of an idea of a good general program, it should be based on the principle of base building by running 5-6 days a week. The days should generally alternate hard/easy, with about 60-65% being Aerobic running. This percentage would remain the same regardless of whether you are running miles per week or running by time. In addition, about 20-25% of your total would be very close to Anaerobic Threshold, which is often referred to as Lactate Threshold or Target Heart Rate. This state of running is what I called the “comfortably-uncomfortable” area. If it becomes totally uncomfortable, you have gone above the threshold and are now running Anaerobic. That won’t last very long. It won’t help nearly as well in developing your VO2 Max., which is the name of the game in gaining stamina. Last is the Anaerobic Capacity, the Alactic System—Speed. This should account for about 10% of total miles run. You can define speed in many ways, but suffice it to say this is very fast, controlled, quick leg turnover. This is also an area where bad things can happen if not approached in the proper way, or if you do too much too often. So, I caution you to be careful. These percentages change somewhat depending on the level of the runner. To use one example, you wouldn’t want to incorporate speed into a new runners schedule, at least not until a base has been set. The new runner would spend the bulk of their time in the Aerobic area.

Some elements that a runner should keep in mind are:

- **Set Goals.** You should set realistic goals and monitor progress of these goals.
- **Have a Schedule.** Write it down 30 days in advance and commit to doing it.
- **Build a solid base.** This is your running foundation, build it slowly.
- **Seek Advice.** When in doubt check with other runners, you can always chuck it.
- **Treat as a lifestyle.** This is something that you should do the rest of your life.
- **Be Careful.** Rome wasn’t built in a day, you must be patient and realistic.
- **Train with others.** Train with those of like ability, don’t train with speed stars.
- **Maintain Variety.** Be it on the track or road don’t get into a rut, keep it interesting.

- **Never too hard.** Training may be hard sometimes but never too hard to complete.
- **Rest.** Rest and recovery is extremely important.

As you can see, there are some elements of general training that are very much the same as Periodization, but there are some differences.

## TERMS AND DEFINITIONS

I suppose all sports have a plethora of terms, but no sport has any more than in running. Many of the terms actually mean the same thing, it just depends on who is using them and when they are being “buzzed” around in conversation.

Most terms aren’t necessary to know unless you are intent on impressing your fellow runner. However, it is nice to know some of the terms so you can be on the same wave length when they come up in conversation. Actually, I feel the only thing a runner really needs to know are the terms tempo, repeats, intervals, aerobic and anaerobic. Dr. David Martin, in his book “Training Distance Runners,” addresses this very well. My friend Keith Brantly recommended his book to me. Dr. Martin coached Keith and Keith represented the United States in the marathon in the 1996 Olympics. For those who are into coaching, I highly recommend this book, it is invaluable.

Terms that I won’t address at this point are those mentioned earlier in Periodization Training.

The following terms with simple definition might be helpful:

<b>Aerobic</b>	With oxygen.
<b>Anaerobic</b>	Without oxygen.
<b>Tempo</b>	Pace.
<b>Pace</b>	Tempo
<b>Interval</b>	Recovery time between repeats or sets. Often referred to as repeats.
<b>Repeats</b>	Often referred to as intervals. Reps done on a track such as 4 x 400.
<b>Sets</b>	Repeats done in sets such as 3 x 4 x 400
<b>Endurance</b>	Ability to run aerobically over long distance or time.
<b>Stamina</b>	Ability to maintain tempo (pace) over given distance.
<b>Speed</b>	Anaerobic Capacity work, of short duration. 95%+ effort.

**Periodization** Setting training plans into phases or cycles over a period of time.

**Max VO<sub>2</sub>** The point where your body can no longer buffer oxygen debt.

**Plyometrics** Exercises of speed and strength. Explosive type of exercise.

**Fartlek** Swedish term meaning Speed-play over short distances and time.

Plyometrics can be of major benefit in development of greater resiliency of the muscle-tendon complex, especially the Achilles Tendon. These are explosive type of exercises such as bounding, skipping and jumping, or on and off a box, but should be done with speed and strength combination. You must use caution in doing this kind of exercise by having plenty of warm-up, recovery and not doing too often. Too much of this type of exercise...too bad!

Also, in doing Fartlek, there are two kinds, both are speed play; the beginning type should be limited to about 10 minutes. The advanced type should be limited to about 20 minutes. These should be done at a very fast, but controlled pace, with the distance being varied within the time frame.

There are a few other terms that haven't been mentioned as I feel they only lend to "buzz" type of conversation. The point is to be able to communicate with the runner so they understand what they are doing and why they are doing it.

## TRAINING AIDS

When I refer to a training aid, I mean something that can be used to enhance your running/training on a daily, weekly or monthly basis. There is the Watch, Heart Rate Monitor, Coaching Companion and possibly the Measuring Wheel.

WATCH: The most important aid is a good watch. There are many on the market. A runner should have a watch that is easy to read, possibly with nightglow. It should be able to give you splits or lap timing for a minimum of 10 splits to as high as 30. This is so you can keep track of the number and the time of each repeat on the track as well as some other things.

HEART RATE MONITOR HRM: There are many on the market, some having every bell and whistle you can think of, some will even connect to your computer. Unless you are a computer whiz, I would steer clear of these. The only monitor a runner needs is the Polar Edge. It has a moderate price, but it gives you all you will ever need for training. A runner should try a HRM before buying one. Too often they are purchased and not used. A HRM is a great training aid, a coach on your arm, telling you to stay in a zone, or if you are working too hard it will tell you to back-off. It is important to find out what your maximum heart rate is, and the formula of 220 minus age is not a very good way to do it. The best way is to have a Cardiologist do a stress test, especially if you are over 40. However, many coaches are well versed in determining max heart rate, so you may get an accurate heart

rate that way. You could even wear one while running a 5k and near the end really push and check to see where your max is, chances are, you will be very close to it.

THE COACHING COMPANION: Is an Energy System Calculator, and can be purchased via Internet at [coachingcompanion@uswest.net](mailto:coachingcompanion@uswest.net). Their mailing address is: 1975 Palace Ave. St. Paul MN. 55105-1731. It is designed in a slide-rule fashion, giving you the distance to run and the length of time based on your Max VO<sub>2</sub>. If you understand Energy Systems and how to determine your Max VO<sub>2</sub>, this is an excellent tool. These are particularly good for coaches in helping to set workouts based on Max VO<sub>2</sub>.

MEASURING WHEEL: The wheel comes in standard or metric measurement. I find that the standard one, which measures in feet, to be the best. This wheel will give you an accurate measurement on the roads in your neighborhood. It will allow you to measure any distance so that you could even do your track work. The only other things you would need are a little spray paint, but don't get caught by your neighbors, and a pencil with a paper to convert feet to yards, or miles or whatever distance you need.

## INJURIES

Having been exposed to years of running, experience has shown me that nearly every runner at one time or another is going to have some form of injury, this just comes with the territory. Obviously, the most common injuries are going to be from waist down, with the biggest one being the knee or foot. I do not claim to have any medical knowledge regarding running injuries, but experience leads me to believe that the first thing to consider is shoe wear, especially if you are a runner who is heavy, let's say over 145 lbs. Once you have reached 500 miles on a pair of shoes, you can figure they are about done. This mileage could be even less if you are really hard on your shoes with scuffing or whatever. Some ultra-light runners may be able to get another 100 or so miles. It is very important to keep track of your shoe wear, just like you keep track of your tire wear on your car. The second thing to consider is the strengthening of the Quadriceps. Strong Quadriceps help the knees and they help top prevent knee injuries.

Other than falling or stepping in a hole, most injuries occur from over-training by increasing your mileage to quickly, or speed, doing too much too soon. There are two schools of thought on increasing mileage;

1. Don't increase weekly mileage more than 10% of your base.
2. Increase mileage only by the number of days a week you are running and stay at that level for 2-3 weeks before the next increase.

For the beginner I would suggest the 10% rule. For the experienced runner I would suggest the number of day's method. But, for any runner consideration should be given to age, and distance you are training to run. If patience is not exercised in this area, it could lead to being the patient...your choice, choose wisely.

An article in a Penn State Newsletter, written by Dr. Ben Kibler, "Rating Pain". He suggest, Levels as follows:

Level 1: Pain that starts after you exercise, but subsides by the next day. Stretch after exercise, apply ice, and take ibuprofen.

Level 2: Pain that occurs during exercise but doesn't interfere with continuing. Same as level 1, but reduce intensity of exercise to prevent further injury.

Level 3: Pain that occurs throughout an exercise and interferes with ability to go on. Seek medical evaluation and treatment immediately.

Level 4: Pain that persists even when you are exercising and severely limits your ability to continue. Seek medical evaluation and treatment immediately.

For myself, I use the gauge of; if the pain seems to lessen with running and is no worse after running, I don't get concerned. I will continue with my training, but monitor how it feels, possibly cutting mileage back. I will also consider reducing intensity of workouts for a few days. However, should it become worse during or after a run, I won't hesitate to seek medical advice. It is well to look for a physician who is a runner, or one who is well versed in Sports Medicine.

The most common initial treatment for an injury is **R.I.C.E., Rest, Ice, Compression, Elevation**. It is my firm belief; if you are not certain as to using ice or heat, always use ice.

Taking time off to give an injury a little time to heal is better than having to take a lot of time off because you have allowed the injury to become severe by attempting to train through it. It rarely works in attempting to push through an injury. Generally, a few days off prevents a few weeks off!

Some of the more common injuries are:

**Knee Area:**

Condromalacia (runner's knee)  
Iliotibial Band Syndrome (IT Band)  
rare  
Popliteus Tendonitis  
Patellar Tendonitis

**Leg:**

Shin Splints (inside or outside)  
Anterior (Tibial) Compartment Syndrome --  
  
Achilles Tendonitis  
Hamstring Muscle Injury  
Greater Trochantric Bursitis -- Hip area  
Quadriceps Muscle Injury

**Foot:**

Plantar Fasciitis -- very common  
Metatarsal Fractures  
Retrocalcaneal Bursitis -- Heel

**Butt:**

Ischial Bursitis  
Discogenic Buttock or Back Pain  
Piriformis Syndrome

**Stress Fractures:**

Pelvis  
Metatarsals  
Tibial  
Femur  
Fibular

There are many Internet sites that can provide you with all the information you will ever need regarding these or any type of injuries. All you have to do is go to a good search engine and enter “running injuries”. I would suggest that you select a good site such as [Sports Medicine Institute](#) or [Dr. Pribut](#), simply because a lot of information on the internet is garbage. Again, there is no substitute for a physician who is certified in Sports Medicine.

When it comes to running injuries, there are two kinds of runners, those who have been injured and those who are going to be injured. This just comes with the territory, it happens to us all.

## NUTRITION

We all know what good nutrition is. We all know what foods are good for us and what foods are not so good for us. Yet, nutrition is still a difficult subject to address, especially with the mind-set that we runners sometimes get, “I will burn off all of these calories.”

Several years ago I met an Elite female runner who had just completed a 5K run in a blistering 15:20! During our conversation she said that she had no concern regarding her nutrition as her furnace got hot enough to burn anything. Further, she said she runs between 80 and 100-mile weeks, burning calories at the rate of about 100 per mile! I suppose she could eat about anything she wanted, but we know that won't work for us mortals. I gain weight just salivating over food, doesn't everyone?

I also know a runner who felt if 1 multi-vitamin was good for you, then 2-a-day would be even better, twice as good. I really don't know how or why they figured that, but you should never mega-dose vitamins without a physician's advice. Some vitamins don't get eliminated from your system, but build up in your system over time, becoming harmful to your health.

Food is fuel, the body needs this fuel. We need to be certain that we get all of the daily vitamin and minerals through this fuel, so that we have the necessary energy, not only to run, but also to make it through the day. There is no better place to get your vitamins and minerals than from your friendly grocery store, in the produce department. Especially, fruits and vegetables of “color.” For me, there is no better substitute than using the basic

food groups as a guide to obtaining the fuel needed. I especially enjoy “carbo-loading” with pastas and such. However, nutrition for a runner is much more than carbo-loading because of the need for iron and protein, this again gets back to basic food groups.

By continual use of the basic food groups and preparing tasty meals, a runner should be able to maintain all that is essential to their training. I shall leave the carbo-loading and high-energy foods to be determined by the experts. If you feel there is a need for expert advice, get this from a physician who is Certified Nutritionists, or a Dietitian, either of which should be well informed regarding sports.

There are some sports bars and gels that may be some benefit for long distance runners, and there are certainly some sports drinks that are of benefit to runs lasting an hour or longer. These sports drinks not only assist with hydrating, but they contain those things necessary to enhance long distance running. At this point I would like to add, there are no food or substances, which are legal, that will give you great powers in your running. Over the years I have seen it all, Bee Pollen, Km, Creatine syrup, Dextrose wafers, Blue Green Algae and possibly Cat urine. Forget these, they make the seller rich, but could be extremely dangerous to you. They are not subject to FDA testing or approval. Their claims are just plain silly. You can rest assured, if there were a special food supplement that would really enhance a runners performance, it would not be shared with the world, it would be kept in a vault with armed guards. Eat properly and you will have all the fuel you need to do whatever training you desire. Especially be aware of carbohydrate needs.

We have become too watchful of the low-fat, no-fat foods. There are problems if your fat intake becomes too low, for one thing you will trigger cravings that become difficult to keep under control. However, do watch your fat intake and the kind of fat. It is my understanding from recent research, monounsaturated fats such as olive oil, seem to work better in delaying the time it takes for you to feel hungry again. We should also remember the need for dietary fiber. It is wise to elevate your intake of fiber.

Calories, regardless of where they come from, carbohydrates, fat or protein, will turn to fat if they aren't burned through daily exercise. In general, food that grows in the ground is carbohydrate rich unless it is nuts, corn or beans. Hard-shelled foods are high in protein. Food that comes from animals may be high in protein and/or fat.

As individuals, we absorb and burn calories a little differently, but it is safe to use the formula of 15 calories per pound of body weight in determining the number of calories your body needs for you to maintain your current weight. Let's say that you weigh 100 pounds, if you wish to maintain that weight you will have to consume 1500 calories daily. If you go over that consumption, you will gain weight, if you go under, you will lose weight. This, of course, is not considering exercising to burn calories.

It takes 3500 excess calories to gain 1 pound, or 3500 calories less to lose 1 pound. In running you burn about 100 calories per mile. This is an average. So, if we take a 100-pound runner who eats 1500 (15 calories per pound) calories per day in order to maintain their weight, then consider they have run 5 miles (100 calories per mile run) that same day;

they have a loss of 500 calories for that day. If they maintained that same routine for 7 days, they would lose 1 pound. I would like to add that you will burn the same number of calories if you walk or run, as long as you are moving the mass over the same distance, yes I said mass, it just takes longer.

When it comes to taking off those few extra pounds, when will we learn those “State of the Art” diets don’t work, and will never work! How often have you heard a person say they are going on a diet? You never hear them say they will cut back on what they eat. How many diets are there? Go to your friendly bookstore and check the shelves, it is amazing! I would bet all those who wrote the books have become very rich, but we are still one of the most obese country’s in the world! Instead of dieting, what if we said we were going to make a lifestyle change of our eating habits? Try it, it works. Eating habits can be changed and new habits can be developed, it takes time, but in the meantime you are shedding those extra pounds. Your heart will love you for it. Eat healthy and remember, what you take in but don’t burn off...turns to **FAT**.

For each 5 pounds plus or minus, it affects your 5k time about 15 seconds per mile give or take a couple of seconds. However, should you get too thin, that can also cause major problems, some severe medical problems...so, be careful, especially female athletes.

If you are considering taking off a pound or two, remember how long it took you to put on the weight. Above all, remember good nutrition. I suggest the following:

- ❖ Maintain a healthy lifestyle by eating from the basic food groups.
- ❖ Don’t pay attention to those diets that proclaim a “quick fix”.
- ❖ Stay in safe zone of no more than 1 to 1½ pounds per week loss of weight.
- ❖ Eat foods of color. They contain additional nutrients important to health.
- ❖ Consult with a Certified Physician Nutritionists or a Certified Dietitian.

There are places on the Internet such as Mayo Clinic, which can give you information. However, caution should be used on what sites you seek information from. There is also a place on the Internet called Quakwatch. The party who has this site has debunked many nutritional claims over the years. He has an excellent staff and credentials. This is an interesting place to visit, ask questions, or do research. You do not want to be taken in by those claims of the wonder drug, supplement or whatever. Some things that go into your system, don’t leave, others that do leave, may leave something behind you would rather not have.

# ENERGY SYSTEMS

Running in any form, whether it be jogging or world record pace, depends on use of Energy Systems. These systems are all interdependent on each other while you are training and racing. As I had mentioned earlier, the use of the Coaching Companion, Slide Rule, developed by Dave Emmans and Brian McConnel, is a useful tool to help with using Energy Systems. You must remember that Energy Systems are time dependent, distance dependent and intensity dependent. Recovery also plays a very important role. In order to use the appropriate Energy System, you must understand the How, When and Why. You must understand the need for recovery.

Should you wish to use the Slide Rule, in order to get full benefit, you must also know your Max VO<sub>2</sub>. Outside of the laboratory testing, the best way to determine your Max VO<sub>2</sub> is to go out and run an accurate, timed, 2-mile run as fast as your legs will carry you. Divide the time by 2, this will give you your Max VO<sub>2</sub> pace per mile. This pace is then used to determine when and how to use the Slide Rule for the appropriate Energy System. Different training such as cruise intervals or other tempo pacing can be set.

This is why “cookie cutter” programs are difficult to sue, and to understand why you do certain things at certain times. Use of Energy Systems becomes so important in a runners program, they are the key to a runner reaching their full potential in the distance they want to run as well as the pace they want to run for that distance. This gets back to term *Specificity*.

Without getting into too much detail, but for the purpose of giving some meaning, I am going to break Energy Systems into three(3) components, *Aerobic Threshold*, *Anaerobic Threshold* and *Aerobic Capacity*:

## **AEROBIC THRESHOLD**

It is in this area that the bulk of your training will be. It doesn't matter if you are a beginning runner, seasoned runner or an elite runner. This is where base work, the foundation of your program is maintained. Within this threshold you will be able to carry on a conversation with relative ease. If we were to use a percentage in determining effort, it would be about 65% up to 80%.

## **ANAEROBIC THRESHOLD**

The effort in this range would be 80% up to 90%. At the low end of this range you will be comfortable, but you are leaving the Aerobic range. As your effort increase within the range, your conversation will become somewhat broken, and the closer you move to the top will start to accumulate blood lactate faster than your body can use it as fuel source. At a point somewhere near the 85%-88%, you will exceed your Max VO<sub>2</sub>. If training in this area is done properly, this is where you will be most effective in increasing your Max VO<sub>2</sub>, in other words, better shape. Coaches often refer to this range as the LT Zone or AT Zone.

## **ANAEROBIC CAPACITY**

This is “Fast”, you can’t stay here long as you will get into oxygen debt very quickly. You have long since passed your Max VO<sub>2</sub> and blood lactate is building at a very fast rate. In training, if you try this for too long, a 400-pound bear will jump on your back! The percentage of this range is 90% to 100% effort.

So, if you don’t have a Heart Rate Monitor, how do you determine the percentages? I suggest you use the conversation method, it works well. If you can carry on an easy conversation you are Aerobic. If that conversation becomes broken, but still able to carry it, you are becoming Anaerobic. If your conversation becomes labored and really broken, you have an attitude of “talk to me later, this is hard”, you are at your capacity and you have far exceeded your Max VO<sub>2</sub>.

## **WEIGHT TRAINING**

Distance runners often question the need to do weight training, especially for the legs. The question can best be answered in the following manner; if there are two runners of equal running ability, the one who lifts weights is going to be the stronger, better runner. This would be especially true the greater the distance. Weight Training will also help to make a runner less prone to injury, that is a big plus.

While there is no substitute for free weights, your gym may not have them, or you may simply prefer machines. Whatever the case may be, the important thing is to do weight training. You want to pay special attention to the mid-part of your body, the abs, hip flexors and buttocks. It is this area that supports the entire upper body. Again, this is of great importance to the long distance runner.

In order to have success in weight training, I recommend the following:

- Don’t do weights on the same day as a hard workout, or the day before.
- Allow adequate recovery between weight sessions and running.
- Alternate upper body with lower body.
- Always work muscles through their complete range of motion
- Increase weight very gradually in order to produce overload stimulus.
- Train on a regular basis of at least 2 x a week. If you can get in 3 x...good.
- Work both Agonist (generating movement) and antagonists (opposing motion either relaxed or stabilizing) muscles.
- Mid-section 3 x a week. Working Abs, Hip Flexors and Gluts (Butt). Even if you don’t do weights at least do this.

## **EXERCISES FOR WEIGHT TRAINING**

Sit-ups	Quadriceps Extensions	Cycling on back
Half Squats	Hamstring Curls	Bench Press
Barbell Curl	Modified Lunge	Seated Barbell Press
Leg Raises	Push-ups	

Leg raises are where you hang from a bar and bring your legs up 90 degrees, parallel to the floor. This is very good for Hip Flexors and Abs.

Sit-ups are done with knees bent, lifting your shoulders about 10% off of the floor.

Half Squats should be done by squatting halfway and holding for a short period until you feel the tension in your Quads.

Modified Lunge is done as a normal lunge but don't go down all the way down.

Cycling on back is when you lay flat on back; raise legs just high enough so that you can start a cycling motion. This is great for the entire mid-section. Don't raise legs 90 degrees to cycle. This is proximal training.

The last thing a runner wants to do is build bulk, you are only interested in becoming stronger. Obviously, muscle weighs more than fat. This being the case you would want to work on strength, while it will be necessary to increase weight load over time, the important aspect of weight training is high number of reps, low amount of weight.

Since I have mentioned weight gain from muscle mass, I would like to point out there is a rough formula when it comes to speed and weight over distance. Roughly, with each 5 pounds of weight gain a runner will slow down by 15 seconds per mile in a 5k. the same holds true with weight lost, a runner will decrease their time by 15 seconds per mile.

**CAUTION**—This only holds true to a point...Don't try to turn yourself into a twig!

## **STRETCHING**

The benefits of stretching seem to change on a daily basis. Some feel stretching is absolutely necessary, while others feel it isn't necessary at all. There have been some recent studies done in exercise laboratories indicating stretching may be of negative affect on running economy. These studies found that runners who stretch then run, use more oxygen at the same given pace as runners who do not stretch. They also felt that muscle tissue was much like a rubber band, as the muscles contract, the stored energy releases and bolsters the energy generated from their contraction. The conclusion indicates that too much stretching causes elastic loss. In some ways this makes sense to me, but I never was one to do any stretching beyond just the minimal amount.

I would not be so bold as to say that stretching has no benefits, but sometimes I have seen runners devote a great deal of time and effort, and do some stretches that hyper-extend joints far beyond their range of motion as it relates to running. So, I wonder?

If you feel that stretching is beneficial to your program, start stretching after you have warmed-up somewhat. Either start by doing some walking or slow jogging, once you feel warmed-up, and then start your stretching. Take your time, and make your routine easy to complete:

- Don't stretch before your muscles are warmed-up.
- Do active type of stretching, stretches that mimic the motions of running.
- Don't hyper-extend muscles, tendons or ligaments. Stay within the normal range of motion. Hyper-extending can weaken joints.
- Stretch slowly and deliberately, taking time to hold about 8-10 seconds.
- Do 2-3 sets of 8-10 repeats.
- Be sure to devote equal time to both sides of your body and to the front and back of your legs.

## **STRETCHES**

**Achilles:** Stand with feet together, take a step forward keeping your back foot flat, and slowly bend your front leg until you feel the stretch. This will also help the calf muscle.

**Thighs:** With feet together (you should hold on to something) raise your knee up towards you chest, allow it to go comfortably high. After completing this stretch, spread feet apart to about shoulders width, hands on hips and do ½ squats, holding for a few seconds, then repeat the squat.

**Back of Legs:** Standing with feet hips width apart. Contract the lower back muscles to lock the lumbar spine in its normal, slightly curved arch. Hold the spine rigid and the legs straight, bend forward from the waist until you feel a strong stretch of the hamstrings. Push hips back as you bend forward. Hold for a few seconds, rise up and repeat.

**Hips:** Standing with feet hips width apart, take a long forward step and plant the foot with the toes facing forward. Keep the trunk erect and slowly lower the body. Keep the rear leg straight but relaxed and the toes in line with the leg. As more weight falls on the front, it won't take long before you feel a strong stretch of the hip flexors, but you must keep the trunk erect. Hold for a few seconds, then push off with the forward leg stop assume the initial position. Remember...**KEEP THE TORSO ERECT AND REAR LEG STRAIGHT BUT RELAXED.** If you lean forward or bend the rear leg, you won't effectively stretch the hip flexors.

**Groin:** Sitting with legs apart but with bottom of feet facing each other, rest your forearms on your legs, grab your ankles and pull your feet towards the groin area (almost like Indian

style, sitting position), you should be applying gentle pressure with your forearms on your legs. Do this stretch very slowly and gently...you don't want to strain the major adductor.

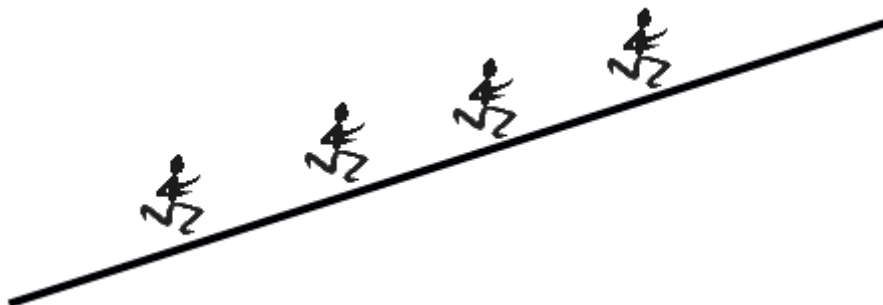
## RUNNING FORM

Over the years I have seen some of the strangest running forms that can possibly be imagined, some of these were even elite athletes. It could be speculated that many of these athletes could have run better had they worked on their form. However, we must be aware of the fact we have been practicing our running form from the time we started to walk. Also, there may be reasons why our form appears as it does, due to our physical make-up. If you were able to work with a runner in their early life, you may well be able to correct many aspects of their form, but you may also do more harm than good. It would be interesting to see some quantitative evidence showing significant gains being made in a runner's performance by improving form. Generally speaking, coaches know that really bad form can hurt a runner, but even if we go there, I have seen some very strange forms doing a super job of running.

Now, having talked about the good, the bad and the ugly, let's address what I feel can be done. If the runner is young, more concentration should be given to improving form than would be given to a master's runner who has spent years doing it their way. The best time to work on form is during track work, hill work or strides on the roads. A couple of times a week is enough. Hopefully, good biomechanics will be developed during these particular times of training. It is not wise to become so focused on form that you lose focus on other important aspects of training:

- Stay relaxed, especially if doing fast tempo work.
- Keep head up so that you don't block airway. Focus 20 or so yards ahead-Arms should be at about 90-degree angle, don't pass mid-line of your chest with hands. Hands should be relaxed and slightly cupped, thumbs should gently brush your hips as they move back and forth.
- Stride should not go beyond center of gravity, as you don't want to break with heels by overstriding.
- Get knee lift, but don't exaggerate this to the extent sprinters do. Too much lift creates bouncing effect --- **Don't Bounce**.
- Quick leg turnover by keeping in contact with the running surface. You don't want too much float, which is that period of time when both feet are off the ground. Think of the pawing effect, somewhat like what you have seen a horse do.

# HILL TRAINING



I question the need for us flatland runners to do hill work, but it is certainly necessary if you are going to race/run in hills. There is the argument that hill training will make you stronger, and stronger could mean better. So, it is hard to argue against hill training, but it must be remembered that hill training does put one on the edge for injuries. Caution must be used for those wishing to train on hills.

Hill training should be considered only after you have built a solid base and you have started a more intense type of training. It should be moderate by building very slowly as to effort and distance of the repeat going up the hill. Hill work need not be of great distance, because you are seeking to build strength. There is a specific way to maximize the benefits of this type of training.

Because of the intensity of this type of training, combined with other training you may be doing, you might want to consider cutting back your total miles by 10-15%. This, of course, depends on your level of fitness and what you are training for. It is in this area there may be some variables.

Choose a hill with a grade of about 6-8 % and about 200-300 yards long. Be sure you are properly warmed-up, stretched, especially the Achilles. Stay on the conservative side; you never want to do this, or any other workout to a point where you can't complete it. Start with 4-6 repetitions of 80-100 yards. The effort should be about 85%. You want to drive (so to speak) into the hill, a bounding type of technique, good knee/leg-lift, good arm swing and toe-off by using the ankles to get the necessary drive. Your recovery between repeats should be to walk down the hill or very slowly jog. Do this for no more than 8 weekly sessions, and then take a break from hill work. After a week or two off then repeat another 8 sessions. Remember, walk or slow jog back down hill. There is no benefit to running back down as it creates too much stress on the lower back, knees, hips and legs. This stress can be as much as 3-4 times your normal body weight. Once you feel comfortable with the workout you can gradually increase intensity by either extending the distance or the number of repeats, but not both at the same time. Leave feeling you could do more, not crushed and feeling like you have just climbed a huge mountain.

# ROAD WORK

Actually road work is for everyone, but in the context that I wish to use it, we will separate it from those who do track work. Some runners simply don't wish to run in circles, but do wish to get in some quality work in their weekly training. As a matter of fact, all you need to do is use a measuring wheel and measure the appropriate distance on a quiet street and do all track work, or road work on your own track, and not run in circles. Your workout on the roads can be by perceived effort or use of a Heart Rate Monitor, you don't necessarily have to have a watch, but for me personally, I would want to use a watch for keeping track of splits. If you want to use a Heart Rate Monitor, I would suggest you learn your maximum heart rate so you can set percentages of ranges.

The best way to find out your maximum heart rate is to have a stress test, especially if you are over 40 years of age. However, it is also possible to get a fairly accurate maximum heart rate when running a 5k, or doing some specific track work in order to determine maximum heart rate. If you can get to within 5 or so of maximum beats, that is plenty close enough.

## PERCEIVED EFFORT

If a runner doesn't wish to work with a Heart Rate Monitor, but would rather go by perceived effort, that will still allow for training within particular Energy Zones. This will work okay, however, it is not as good as using the Heart Rate Monitor. Perceived effort would be as follows:

### ***Aerobic***

Able to carry on a conversation very easily with unbroken sentences. Effort in this range would be 70-80 percent of maximum heart rate. It is in this area that the bulk of your weekly running will fall. These would generally be your recovery days as well as your longest run day. This is for endurance. This is the base building area.

### ***Anaerobic Threshold***

You can still carry on a conversation, but in this range your sentences will be somewhat broken, especially the higher you go. This will be somewhat comfortable/uncomfortable, reaching uncomfortable at the top of range. Recovery can be shorter. You can best increase your Max VO<sub>2</sub> at this stage, and most workouts are specific to achieve this goal. This is not something you should do every day, as it is moderate to fairly hard. The effort is 80-90 percent.

### ***Anaerobic Capacity***

Your conversation in this area will very quickly become "talk to me later, this is really hard!" The effort here is 90-100 percent, sometimes called the Red-Line, really fast paced.

Training in this area should be of short duration, with considerable recovery. In this range a runner can work on form, leg-turnover and kick.

## **TYPES OF ROAD WORK**

### ***CRUISE INTERVALS***

Based on a benchmark time from a race, you will establish a specific tempo, or tempo range. Then, over a specific distance, which is generally a mile, you will work within this tempo and have a short (1 minute recovery) between each repeat. The number of repeats will be based on your weekly mileage and your running experience. This workout is good for increasing your Max VO<sub>2</sub>. See Lactate Threshold. (LT).

### ***LACTATE THRESHOLD(LT)***

This is basically the same as Cruise Intervals, with the exception that you will use about 10 % of your weekly mileage in determining the distance you will go for each workout. If, as an example, you were doing 40 miles per week, the workout would be 4 miles of continuous run, the tempo would be based on a benchmark time from a race, a specific tempo range. There is no interval between each mile. It is in this type of workout you will best increase your Max VO<sub>2</sub>.

### ***ANAEROBIC THRESHOLD (AT)***

Actually this is somewhat like the LT as far as effort, you are working in the 80-90% range. In order to best accomplish this type of workout you need the use of a Heart Rate Monitor. Using the same distance as the LT, you go into the Heart Rate Zone and gradually go to the top, then gradually back down. This you continue to repeat, possibly as much as 5- 7 times over the course of the run. This is not an easy workout. It takes practice/experience in order to do it right.

### ***ANAEROBIC CAPACITY***

This is an extremely tough workout zone. Working in this range means you are at maximum. While there is use for this type of work in your training, you must be careful that you don't do too much, and you are prepared to do this work. This is generally implemented during the time a runner is coming to peak, however there should be some limited injection of this earlier in your schedule. The point is, the closer to peak, the more AC. Experienced runner's will often do what is called 2-1' s, which is 2 minutes very fast with a 1 minute recovery. There are also variations of this such as, 3-2's, 4-2's and so on. Then there are the pick-ups or strides; these will be short but very quick with a short recovery. During these kinds of workouts it is good to concentrate on form. Just remember, whatever your tempo on the first, so should it be on the last. If you are too fast on the first and can't hold on the last...shame on you!

## **FARTLEK**

A Swedish term meaning "speed play." This is especially good for cross country running with a group as it requires tempo changes along with distance. You want to go into this type of workout with a good positive attitude of having fun, feeling the wind run through your hair, so to speak. The principle of this type of training is to:

- A. Keep it short but varied, anywhere from 50 yards up to possibly 200 yards.
- B. Keep it fast but controlled, having fast leg turnover, with concentration on form.
- C. Those new to running, no more than 10 min. total time. Experienced runners up to 20 minutes.
- D. For both the experience and inexperienced runner, pick out a point of varying distance and accelerate to 95-100%, stay in control of your form by being relaxed, then take a brief recovery, and continue the process until the time is up. The key to this type of training is to make it as much fun as possible, being sure your last is as fast as your first. This is a very fast tempo workout.

## **TRACK**

Track is for anyone who wants to do some serious form of training in order to gain a competitive edge over his/her fellow runner. Running on a track is safe. You don't have to worry about cars, dogs, crossing streets, jumping curbs, or people. It is also an accurately measured distance, which allows for accurate timing of any given distance. Often you have the advantage of the company of other runners, like the saying goes "Misery Loves Company," just kidding about the misery.

The surface of many tracks is a rubberized type of material, which makes it easier on the lower extremities. This forgiving surface gives you more bounce for the ounce. Also, the track gives you better footing should it rain.

For the purpose of training, it makes no difference whether the track is measured in yards or meters. However, if one is a real stickler about time and distance to the second; if you are running on a metered track, simply run in the second lane, this will make up for the slightly shorter distance. A standard track is 1760 yards, (4 X 440). A track measured in meters, which is 1600 meters (4 X 400). If you add 9 more meters it will equal a standard mile. As you can see the difference really isn't very much.

Runners sometimes mistake track work as speed work, and that just isn't so, far from it. Track work is for addressing all the Energy Systems; obviously that of speed is just one. There are many circumstances governing how and when to work on those Energy Systems depending on factors such as; experience of the runner, where they are in their current training, distance they are training to compete in, etcetera.

Then, it must be considered as to the amount of recovery during workouts. If there were any one particular aspect of doing track work that is the most important, it would have to be, never leave feeling "you mean I have to come back and do this again next week!" You should always feel as though you had a good workout and you could do one more repeat if need be. It would be easy to set up a workout which can't be completed, the key is a workout that is just right. In the beginning it may take a couple of sessions before hitting the perfect workout, but you will know, as you will leave the track punching your fist in the air saying that it was hard but good! You will have gained confidence and be hungry for the next session.

In doing track, or for that matter, in doing any kind of workout, you must keep in mind the intensity levels and their possible need for adjustment. Under normal circumstances you want to adjust no more than one at a time, unless for some reason the entire workout need adjustment. This is where a coach can be of help. In addition to adjustments, you must also consider the necessary recovery based on the intensity level. Years ago there was a Russian by the name of Yakovlev, he developed a "Model of Super compensation." This model simply states that once you do a workout and have fatigue, you must have recovery so that your body can adjust/supercompensate, and be prepared for any future workload. Models by others essentially express the same thing.

There are several ways to adjust intensity levels:

- ❖ Increase number of repeats.
- ❖ Increase number of sets.
- ❖ Change to a faster tempo (pace).
- ❖ Decrease recovery time between repeats or sets.
- ❖ Increase distance of repeats.

The time between repeats or sets should always be active. Never stand around, either walk or jog until you have reached the recovery time for doing the next repeat or set. Should you be feeling tightness, you may want to do some gentle stretching while you are recovering. This is also the time to stay hydrated, so drink.

Track work is *specific* to the individual, and to the event they are training. It is difficult to write a generic "fit all" program. Since that is the case, I will outline some general information that might give an individual an idea of track work. There are some books on the market, which do give some excellent information. A couple of those books are; The Competitive Runner's Training Book, written by, Bill Dillinger and Bill Freeman, who has also written, Peak When It Counts. Then there is the book written by Jack Daniels, Daniels Running Formula. Just keep in mind some of the workouts are for advanced or elite runners. Don't try to do those workouts unless you are prepared and understand the concepts behind them.

## **ADVICE ON TRACK WORK**

- ✓ Each session should begin with proper warm-up and end with a proper cool-down. I recommend a runner should do at least 1 to 1 & 1/2 mile warm-up and 1 mile cool-down. It is always nice to be on the track while others are there doing their workout. You should never do another runner's workout unless you are of equal ability. Rarely do two runners have the same goals, genetic makeup, fitness level or general ability. As such, they should be doing their own thing unless abilities are equal. You also have to remember, some runners are so competitive they will turn a workout session into a racing situation and that is not good for you or the other runner.
- ✓ Keep variety in your workouts. Don't get stuck in a rut of doing the same thing all the time. The only difference between a rut and a grave is the depth. You sure don't want to end up in either!
- ✓ Early in the training year, focus should be on the longer repeats with short interval recovery. This type of training is referred to as Aerobic Capacity training. You are in the process of gearing-up, so to speak, and preparing your endurance level for the more difficult work ahead. However, all Energy Systems have their place in the mix and must be applied where appropriate.
- ✓ Runners generally train over the period of a year, hence the term Training Year. As your training year progresses, so should the intensity of your sessions. You would gauge this by benchmark times in racing or time trials. A 2-mile time trial, at the appropriate time in your training, is a good way to measure your Max VO<sub>2</sub>. If you run this 2-mile time trial as fast as you can, you will obtain an average per mile. This average becomes your current pace, or Max VO<sub>2</sub> pace. This again gets back to the Coaching Companion, mentioned earlier. Runners usually have a recovery time at the end of their training year (season).
- ✓ Adjustment to intensity levels must be closely monitored so that they can be adjusted up or down, and be certain that your recovery time is sufficient to allow for completion of the entire session. How do you perceive the effort?
- ✓ A good rule to follow is: The shorter and faster the repeat, the longer the recovery. The longer and slower the repeat, the shorter the recovery. However, there are exceptions depending on other factors. This is where experience and knowledge becomes important. Hopefully, you or the coach will have this knowledge.
- ✓ There is a time and place for "pain," as it relates to the callousing effect. The callousing effect can be put to good use in racing, when you have to reach down deep within yourself for that little extra when it hurts. However, the old saying of "No Pain, No Gain," went by the wayside a long time ago.

- ✓ Always allow for an easy day before and after a track session, especially after as this is illustrated in *Yakovlev's Theory*.
- ✓ NEVER stand around between repeats or sets. Always have an active recovery by either walking or slow jogging.
- ✓ Track sessions are a good time to concentrate on form and focus on your running as you generally don't have distractions at this time. By continual assessment during your workout, it can help to maintain you being relaxed. Focus your attention starting with the head and working down to the feet.

## **RACE DAY PREPARATION**

Race day preparation should start the day before the race, and included in the preparation is the warm-up the day of the race. A runner should have a nice racing bag to keep their routine items in such as, band-aids, Athletic tape, vasoline, water bottle, and any other personal items. In addition, the bag should be big enough to carry a change of clothes or your running gear that you will be wearing during the race. This should be checked in order to be certain you have everything you need. When I first started running, I had a check list until it became a habit as to my needs. Then, I added and subtracted to that list until I reached exactly all that I needed.

On the morning of the race make sure you are well hydrated and have made all necessary pit stops about 20 minutes before race time. Start your warm-up with some jogging, then light stretching, return to jogging, gradually increase tempo to about race tempo. You are preparing your mind and body to get ready, and increasing your cardio-vascular system for the work ahead. After you have sufficiently warmed-up, do a few strides with a tempo faster than your race pace. This should all equal about 1 mile and be timed at about 10 minutes before the gun goes off. Get your last pit stop in and start your mental focus for the race. This, of course, wouldn't apply to long distance races such as a Half marathon or up, where you can get your warm-up after the race starts. Especially don't do this for a marathon. You don't want to start glycogen depletion before the marathon starts!

When you get lined up in the race, stay somewhat active, don't just stand around.

## **RACING STRATEGY AND TACTICS**

Jack Daniels says it best in his book, [Daniels Running Formula](#):

*"Racing is the ultimate expression of a runner 's ability, training and motivation. A race should be thought out, prepared for, and performed with determined intensity. Results of every race should be analyzed and used to adjust the training for, and tactics used in future competitions. For any runner, the first couple of minutes of their race will decide the outcome of that race."* AMEN!! Think about what he has said, the comment is very profound. It not only makes sense, but it says it all!

When I speak of strategy and tactics, it is always within the context of the runner's ability, motivation and training. There is no doubt that the best strategy in racing is to go out and race at even or negative splits. As a matter of fact, if a runner goes out as little as 10-15 seconds too fast in their first mile, it could have disastrous effect leading to oxygen debt. If that 400-pound bear jumps on your back early, well, the rest is history. But, there are tactics to be applied if you are running within your ability, know the competition, the course and your positioning. There are also some other factors to consider, as you become a seasoned competitor.

Since I have mentioned ability, motivation and training, let's give it some meaning:

### ***Motivation***

While there can be a short term factor to External Motivation, such as a parent, or a coach, it is the Internal Motivation that is the key to success in racing/training. It is this type of motivation that will keep you focused to meet your goals, to run your best from the start through the finish. It is this motivation that won't let you quit. It will be that burning desire to not settle for mediocrity, as you will want to do your best and become the best you can be. You will never depend on external motivation, but you will get a boost when you hear someone cheering you in. The point is; when a runner is all alone, whether it be in a race or out training on a daily run, he/she will reach down for that internal motivation, that little extra, to get the job done. When you come across a competitor who you feel is better, chances are there internal motivation is simply stronger, which in turn gets applied I their racing or training.

### ***Ability***

We are all subject to one thing that governs how good we can become, Genetics. What we have or don't have is the gift that is given to us by our parents. How we use this gift is another matter, but we must all realize there is a certain limit in our ability. The secret is to maximize the use of our abilities in order to bring out the best that is within us. Hopefully, coaches will recognize the runner's ability and help the runner to train accordingly, to train properly.

### ***Training***

You must train for the intensity of the race performance that you wish to achieve. This training centers on *Goal Pace* and *Date Pace*. These paces are spun off of *Benchmark Times*, either from racing or time trials. A good example of this is the runner who is currently trained to run 7 minute pace per mile, but goes out and runs the first mile in 6:30. This would be a very costly mistake, it just doesn't work! The runner has not been trained to do that kind of pace in the first mile. The time gained in that first mile will be more than lost before he/she has finished the race. Within reasonable limits, you must work at present training abilities. To do otherwise is simply foolish.

I offer the following suggestions I feel are useful in racing:

1. Run your own race. If your competitor surges, be patient. Surges are energy costly and the most experienced runners only use them. However, if this surge takes place at the end of the run, it may be that start of their kick, you must answer or be left behind.
2. If you are in a race for a training/race, still have a specific pace in mind. Never enter a race to just "do whatever." I suppose the one exception might be if this is totally a social affair and you want to jog and talk.
3. Know your competition. This allows for judging what tactics may best be used during the race. An example of this might be; if you know you have a stronger kick, be a sitter, you can control from the sitting position and 9 out of 10 times the sitter beats the front runner.
4. Know the course, especially if there are hills or anything else to consider.
5. Take note of weather conditions and adjust accordingly.
6. Don't start your kick until you are certain you can hold it through the finish.
7. While racing, use other runners as pace setters so you can maintain the pace you need. Should you get caught in a void of no other runners being around, well, this is where you have to reach for that internal motivation.
8. Focus your energy and thoughts into your pacing, breathing, and general form. Internalize your thoughts with concentration of what is at hand.
9. Win or lose, never lose sight of having fun. The most important aspect of running is the fun of it.
10. Run even splits or negative splits. If your first mile is as little as 15 seconds faster than what your normal average pace per mile is for that type of race, you will be in oxygen debt, what you have gained will be more than lost by the finish of the race. Should you find yourself out too fast adjust back to the proper pace, don't try to hold thinking you will "gut" it out. Out over your head means you are dead!

## **MARATHON TRAINING**

There are all types of Marathon training programs. You can find them in books, or go to the Internet. A good example of this is: Hal Hidgon or Jeff Galloway's web sites. They have programs to fit different levels of training. The problem with doing this is, you are selecting a generic type of program, one that is designed for the masses by using general parameters

that you must fit into, rather than specific parameters based on your specific needs. *Specificity* is still the operative word; a program **MUST** be specific to your ability and goals. There is just no substitute for a coach! Someone to discuss and guide you on your journey through your running program. Someone who can assist should there be a need to make adjustments because of injury, illness, or whatever.

When I speak of marathon training, I am again speaking of specificity. This is not only for the run itself, but also for the individual who is going to do the marathon. While many aspects are general to anyone who is training, they are still specific to the level of that individual and what their goals may be. Lactate threshold training, as a part of a marathon program, is an example specific to the individual. This training is set according to benchmark times. Then, there are track schedules set according to the individual's ability. There are many variables to be considered and applied, this becomes especially true for the first time marathoner.

It is my belief that anyone training for a marathon should have a minimum base of 25-30 miles per week. This base should have been maintained for a period of at least 8 weeks prior to the start of training. The longer this base has been set, the better. Having said that, I feel a runner should have been running for a minimum of 18-24 months prior to starting a program. Once you decide to do a marathon, you want the training to be a part of an already established program. The marathon should not simply become a means to an end in running. Having a base for a period of 18-24 months indicates that the runner is just that, a runner. Also, this allows time for the strengthening of all muscles and connective tissue; they will have built some endurance and increased capillaries in tissue, which will allow for transporting of blood to the muscles. Because of endurance, they will have increased their Max VO<sub>2</sub> somewhat. Most important, they will know what running is all about.

I have heard people refer to them self or others, as being "A Marathoner." Sometimes these are individuals who only did survival training in order to walk/jog in the marathon distance. It may have taken them 5-6 or even 7 hours to complete. I admire what they have done, but I do not consider them to be a marathoner, at least not in the same breath as a runner who has trained through a, so to speak, blood, sweat and tears in order to be prepared to run a marathon. So, what I like to use in defining a marathoner, anyone who can complete the distance in 4 hours and 30 minutes (10+ pace per mile). I am certain this definition of time would meet with some argument. It is just my personal feeling that this pace means the individual actually ran the course. So, I shall stick to my thoughts on this subject.

Water has always been my choice for maintaining hydration, but studies at Ohio University as well as studies done in Zurich, indicate that ingesting carbohydrate drinks during long runs, is beneficial. These are runs that last longer than an hour. The studies indicate that the drinking of these carbohydrate drinks should be about 6- 7 ounces every 20 minutes or so, with some research indicating 6- 7 ounces every 15 min. It is noted in these studies that the drinking of these fluids can extend the "Wall" out to as much as the entire distance of the marathon. The "Wall" is that time in the marathon when you run out of glycogen stores and your system must convert to fat for fuel. This is also discussed in detail in Pfitziner/Douglas's book, Advanced Marathonng. Be certain that you experiment

with the drinking of a sports drink prior to doing it in a marathon in order to become adjusted to it. This is also a good time to practice drinking while jogging. You might want to start with a diluted form of the drink and work up to full strength.

In order to give some perspective to a marathon training program, I suggest the following:

- ❑ A solid weekly schedule would consist of 6 days of running, with the principle of Hard/Easy days. However, there are other factors that determine the number of days.
- ❑ The bulk of your training will be base work, primarily "Aerobic." A marathon is an endurance event. This would mean base should ultimately reach 45-50 miles per week with the longest run being about 30-35% of your base. However, depending on other factors, the longest weekly run could reach 40%, as you get closer to the event. These longest weekly runs are gradually increased over the length of your training, finally reaching in the area of 18-22 miles.
- ❑ About every 4th week you should have a recovery week. This allows for your body to adjust to training loads. As your longest run approaches the 16-18 mile range, you should have a short recovery day following the long run.
- ❑ Lactate Threshold work should be a part of your training program. The tempo for these would be based on benchmark times from races or trials. This is an area where specificity comes into play for the individual.
- ❑ Goal pacing is also an important part of your training program as it is the pace you intend to run in the marathon.
- ❑ Occasional racing should be sprinkled into your program. These should be races of distances ranging from the 10k up to the 30k distance. It is during these races that you will establish benchmark times as well as practice all of those things you will be doing during the marathon.
- ❑ Two a day workouts should not be considered unless you are a very experienced marathoner and your weekly base is near the 70 miles per week range.
- ❑ The most important aspect to remember in training for a marathon, or for that matter, any training, is; Recovery/Rest. Remember Yakovlev's Law of Super compensation. If you stress the body and allow for recovery, it will adapt to the current stress you have given it, and be better prepared for the stress that will come...and so it goes.