TO RUN A MARATHON

The sessions shown below can be adjusted in terms of distance and pace to accommodate the level of starting fitness.
To estimate a sensible race pace for the marathon take a good personal 10K time and multiply by 5. For example a 10K time of 35 mins would see an overall time of 2hrs 55 mins. Using a half marathon time multiply by 2 and add on 10 mins

Depending on the level of fitness and once a race pace had been decided, a 10 mile run should be undertaken once a week. A mile should be added every two weeks up to a distance of 20 miles. The following examples show a mile pace and a finishing time.

6 mins per mile = 2hrs 37 mins
7 " = 3hrs 03 mins
8 " = 3hrs 30 mins
9 " = 3hrs 58 mins

Alan Storey a former National Coach for the marathon suggests that there are four key sessions that should be included in a training schedule and done on a regular basis. Each session should be followed by a recovery day of very easy paced running for 30/45 mins and done preferably on grass.

SESSION ONE
Run at the speed required to reach the marathon target. If the target time is 2hrs 30 mins the mile pace will be 5.48, if 3hrs 30 mins then an 8 min mile pace. The intention should be to reach an 18-mile run at this target pace. Again, this should be a building process beginning with 10-mile runs or less but eventually reaching 18 miles.

SESSION TWO
Run for a period equal to the estimated total time to run the marathon. If the aim is a 3-hour race then the run should be for 3 hours. A build up routine would be to begin with a one hour run adding 10 mins each week. Over a 12-week period the three hours would be reached. This should be continued for a further 6 weeks. The use of a heart rate monitor using the formula shown later can be used to determine a sensible pace for this session.

SESSION THREE
Develop a repetition session where a total of 10K are run. The pace for the session should be at 10K race pace. For example if the 10K race pace is 35 mins then the session would be 13 X 800m in 2 mins 48 secs with 1 min recovery, or 8X1200 in 4 mins 12 secs with 1.5 mins recovery. To calculate this divide your 10K time by 1000, then by 100. This will give you a time for 100m then multiply up for 800m, 1000m, or 1200m. This session will produce a higher heart rate than that required for the marathon but will provide a physiological and psychological cushion for the additional effort required in the race situation.

SESSION FOUR
A hill schedule. The hill should be moderate i.e. not too steep not too flat. The session should equal 6 miles up hill. The return is the recovery and should be walked or jogged depending on fitness level. A hill of 800m is ideal for this session. Again, a lower mileage should be used to begin with eventually reaching 6 miles.

A key feature of these sessions is that should the target times fall below previous then an extra day of easy paced running should be taken.

PRE RACE PROCEDURE
The ten days before the marathon should see a reduction in training of at least two thirds with no training activity for the 48 hours prior to the race. Training during this wind down period should contain some repetition work 25% faster than the target marathon time. This ten-day period will allow the body to go into semi resting mode recovering to some extent from the strenuous training programme. Carbohydrate loading to build up muscle glycogen stores requires a 15 mile slow run 7 days before the race followed by a 24 hour fast taking in only quality water.

After the fasting period 700 grams of carbohydrate should be consumed daily.

WHAT IS A GOOD RACING WEIGHT?
A weight statistician Dr Stillman uses the following formula to determine the average weight of a person living in the Western world. For a man allocate 110lbs for the first five feet in height then 5.5 lbs for every inch thereafter. This would see a 6ft average non-active male weighing 176 lbs (12st 8lbs). For an average non-active woman use 100lbs for the first 5ft in height then 5lbs for every inch thereafter. Runners should come in under these averages and if not, but nevertheless on a good training programme, should examine their dietary intake. Calories in and calories out is the determining factor. Between 3000 and 4000 calories a day is required to maintain body function. Job or household requirements should be taken into account when using calories as a measure.
It is estimated that one hour of moderate running uses about 1000 calories. If 5000 calories a day are going in then there is likely to be a weight gain and weight for a runner is a handicap. It is not eating less but eating non-fat food that is the answer. A gram of carbohydrate or protein produces 4 calories, a gram of fat 9 calories. Butter has 23.4 grams of fat per oz, which equals 210.6 calories. Fat intake restricted to 50 grams a day will see a weight loss as of course will an increase in running mileage. It has been estimated that running a marathon in energy terms consumes a days total food intake. This deficit will be made up very quickly. Dr George Sheehan has suggested another measure of an ideal weight for an endurance runner. This is to allocate 2lbs for every inch in height. Thus a man 5ft6ins should weigh 126lbs (9 stone). Formulas such as these should always be seen as guides and not as absolutes. Everyone is different by gender, age, and by experience. The one positive thing is that you do not want to carry any more weight than is necessary when running for 26miles plus.

As mentioned previously heart rate supplies essential information of effort and energy expenditure. Improvement in physical performance is associated with an enhancement of what has been labelled by physiologists as VO2 max. This is the standard measure of what is called aerobic fitness and indicates the maximum amount of oxygen that can be taken from circulating blood and used by active tissues for a specific period. It is measured in millilitres of oxygen consumed per minute adjusted for body size. A sedentary male would show a reading of 35 to 50 ml/kg/min. An elite runner would be something in excess of 70ml/kg/min.

Physiologists estimate that the greatest fitness gains come from work at between 80/100% of VO2 max. To calculate VO2 max it is necessary to know the maximum possible heart rate. Laboratory testing uses a treadmill for this assessment. A formula can be used which it is claimed has a 0.8 correlation with a laboratory test.

For a 25yr old female assume a maximum heart rate of 209 beats per minute (bpm) minus 0.7 for each year of age e.g. 209 minus 25 X 0.7 = (17.5) therefore 209 minus 17.5 =191.5 bpm. Assuming 80% of the heart rate for what is called the lactate threshold run would require a consistent effort of 153 bpm. It is claimed that this would be the minimum for a modest increase in VO2 max

For a 25yr old male athlete take a maximum heart rate of 214 bpm and a minus of 0.8 for each year of age and the example would be 214 minus 25 X 0.8 = (20) therefore 214-20 = 194bpm. 80% of this would require a consistent effort of 155bpm. There is some controversy on maximum heart rate with some physiologists claiming that using this formula a maximum heart rate of 200bpm is more realistic.
The number and duration of lactate threshold runs undertaken should be a subject of discussion between the athlete and the coach and would obviously relate to an athletes level of fitness and experience.