

## Long Slow Distance

In days gone by LSD used to stand for something rather more sinister, in relation to endurance training it seems to have gone off the radar in recent years – but to my mind it is still a valid cornerstone of any serious training programme.

### Aim

For endurance running (whether plodding or speed endurance) you need to develop two things – one is an efficient running style, the other is an efficient energy delivery. Getting in ‘Time on your feet’ at least once a week can develop these aspects:

### Running Efficiency

Let’s start by turning it around – running quickly as in sprinting uses a great deal of energy, try 100m flat out and you will know what I mean – try extending that to 400m and you will experience all sorts of things that effectively slow you down! This is all well and good because you do not want to be running at that speed any time in a long race.

In endurance running you do not need to ‘Drive with your arms’ or have a high knee lift to help cover the distance with the minimum number of strides. Watch experienced long distance road runners and you will notice an ‘economical running style’ – the stride length does not have to be very long, the cadence (or frequency) might be quite rapid – but the human body can repeat certain actions frequently over a long period of time once it has become used to doing so.

Running for an extended period of time is not about how many miles you cover as much as how long you kept repeating the action without struggling, and getting over it (recovery) without injury or mishap.

### Energy Efficiency

Running L.S.D. develops additional blood vessels from your lungs that carry the oxygenated blood to where it is needed, e.g. the legs. Initially when you start training it is usual to find your performance improves quite quickly – 3 miles without stopping begins as a challenge – then you take a time for it and find that within a few weeks you are knocking minutes off that time. This is because the body is responding to the training pressures and adapting itself. If you stop training the opposite happens so you have to go through it all again to revive your level of fitness.

Another thing needs to happen, energy in the form of glycogen is stored in muscles and the liver, if your stores are modest – you will run out of energy faster than if you can store more. This needs to be balanced with maintaining a low body weight – because the less weight you carry – the better your power to weight ratio.

At some point your body needs to convert fat into energy to supplement the depleting energy reserves – this conversion is not as efficient as using glycogen, it takes longer – so there can be a point where there is a gap between one system running out and the back up stepping in – you might have heard about Marathon Runners ‘Hitting the Wall’ at about 20 miles.

Doing L.S.D. helps prepare the body so that it knows what is coming and it switches over earlier, you will still get tired towards the end of a long run – but you should not experience the wobbly legged final miles that you may have seen on the TV!

There is another benefit – apart from being a good thing to do as a group (Social Running) – it boosts confidence when you finish a given time objective and calculate how far you have run without stopping!