Breaking the sprint speed barrier

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Very often, a well-trained sprinter has reached a speed plateau, in which his or her training no longer yields faster speeds. This stabilization of the athlete's speed qualities is the speed barrier.

In order to break the speed barrier, training conditions should constantly change, simulating situations which will demand the highest possible strain on both the physical and also the spiritual qualities of the athlete.

It is known that the neuromuscular system has the potential to perform movements at a higher pace than we might guess. This highest speed potential is reached in stress situations, such as chasing or escaping, fear or challenge. High speed potential is also seen in special training methods, as with lower resistance (downhill) or assistance (towing) running.

However, instructing a sprinter to act as he or she would in a stress situation will result in failure.

Jumpers and throwers increase their maximum efforts by developing a better sensation of the jumping or throwing distances (objective boundary). However, sprinters' efforts are much more subjective. Only a stopwatch provides information about sprinter efforts, spotting flashes of better speed. Unless sprinters are making use of automated timing systems, speed determination is a matter of judgment; actually we may guess improvements.

Improving our athletes' sense of better speed may occur through the special training of kinesiological awareness. This type of training is designed to build an experiential base of superspeeds and maximum efforts. The immediate application of the new sense of highest speed and maximum effort to running under regular or normal conditions may help a sprinter to go beyond his or her previous limitations and dramatically improve performance.

The object is to develop a training program which will break speed stabilization and help the sprinter to overcome the speed barrier. Certain types of stimuli may more effectively mobilize individual potential.

The first stimulus is a conscious aspiration to perform exercises with record speed. It demands a maximum concentration of willpower within a brief period of effort. Approaches to this stimulus include building acceleration by having the athlete launch at the highest possible speed, stride length—stride frequency drills, and running to pacemaking sounds.

The second stimulus is the simulation of the sense of chasing or escaping. Sprinting with a runner who was given a head start, chasing a rolling ball and a relay exchange are ways to implement this stimulus.

A contrast training method provides the third type of stimuli. This contrast is provided by instantly replacing super-resistance with the normal, or even easier, conditions. Harness runs with release, uphill and downhill runs, and sprints with and without weights are examples of contrast training methods.

The fourth stimulus is assistance training, in which exercise conditions are made less difficult. Exercising under less-difficult than normal conditions might include towing, downhill plus straightway running, running a 3–5 per cent declined slope or bicycling in the air.

A regulated range of movements is the fifth stimulus. Examples include running drills using shortened amplitude, jumps over low hurdles with standard distances between 5–6 feet, and speedball drills.

Throwing a light shot or medicine ball and multiple jumps and hops for time and distance are examples of arranged maximal efforts, the sixth type of stimuli.

The seventh type of stimuli is derived from training which is directed toward the improvement of muscle tension in terms of forces, speed and timing of motor unit recruitment. Approaches to this stimulus include depth jumps, isokinetic equipment, Olympic lifting and surgical tubing.

All seven of these stimuli may improve an individual's sense of the better pace and higher speed efforts. However, in order to ensure the adaptation of the neuromuscular system to the new expression of speed, the conditioning and sensation of the drills must be carried over to the regular sprint event. Reinforcing learning through thousands of repetitions of drills and short sprints will build better speed and better performance.o