Over-speed Training

by Marty Morse

The top-end gear. It's the skill of reaching and maintaining a high percentage of maximal speeds, speeds that are in excess of 20 mph on the flats (for the male T-54 class). It largely determines whether a racer finishes in the middle of the pack or breaks into the top three. For this reason, developing a top-end gear is essential.

Possessing a top-end gear is influenced by genetic makeup. Some racers simply have body types that are conducive to attaining higher top-end speeds. Beyond this factor, however, a top-end gear is developed through over-speed training.

Over-speed training can be achieved in many ways. One effective method is through tailwind point-to-point training. Using this method allows athletes to push consistently at speeds not normally achieved without wind assistance. At such speeds, racers begin to develop the mechanical, psychological, and technical components of a top-end gear.

Mechanical - Developing the feel for the hand ring is crucial at all speeds, but especially so when at top-end speeds. Feel of the hand ring can be defined as first finding the hand ring, and then being able to apply appropriate power and contact. As hand ring speed increases, achieving optimal feel of the hand ring grows more difficult. Racers must develop the hand speed and explosive power to achieve optimal feel of the hand ring, which comes from many hours of over-speed training.

Psychological - Many of the gains from over-speed training are the result of improvements in neuromuscular coordination. In other words, there must be synchronized messages between the brain and the arm for each stroke. Therefore, racers must not only maintain steady concentration of their bodies, but be aware of surrounding conditions as well, i.e., stroke mechanics, pain tolerance, and road conditions. This is a process called association.

Technical - Crucial to a top-end gear is chair control and being able to hold a straight line during propulsion. Racers must be able to direct all of their propulsion power forward in order to optimize each stroke. Given that the shortest distance between two points is a straight line, it's logical that side-to-side chair movement decreases efficiency. The ability to make subtle changes with the head, shoulders, and hips must be learned in order to maintain a straight line. Both road and wind conditions will naturally effect some side-to-side movement.

It's important that the volume and intensity of over-speed training be increased in incremental steps. This strategy allows the body to adapt to the increasing speeds while maintaining proper stroke mechanics. Once adaptation occurs, training is redesigned to take the racer to the next level.

Preparation for Tailwind Point-to-Point Training

Before beginning each point-to-point training session, racers should:

- Bring water to stay hydrated
- Carry a spare tire and CO2 cartridge in case of a tire puncture
- Have money for a phone call or a cell phone
- Carry some form of personal identification
- Arrange a pick-up point with a driver

Tailwind Point-to-Point Training Workouts

Tailwind point-to-point training workouts can be more diverse than just a steady-state pushing session. Some examples, each of which would follow a 15 to 20-minute warm-up, are:

Interval training - Rest periods of varying length following high-speed pushing attempts of varying length. Rest periods consist of easy pushing.

Cresting - Hills can be used to develop cresting skills. Racers climb steady until the crest of the hill, at which time they transition from slow hand speed to high hand speed and attack the downhill. This is a pain tolerance workout.

Pull-Aways – Pull-aways can be done in the draft of a bicycle. The bicyclist slowly increases the speed as the racer attempts to stay in the draft. Once the racer hits his/her maximal top-end speed, the bicyclist will slowly pull away. Upon creating a 10-meter gap, the bicyclist regroups with the racer and a five-minute rest period is taken. This drill is repeated until the racer can no longer achieve his/her best top-end speeds.