CAN WE PERFORM THE 60 METRE JUMP?

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During the Moomba Festival of 1990 in Melbourne, Australia each of the internationally ranked water ski jump competitors was video taped for a Kinematic analysis. The system used for data recording was a S-VHS camera and power supply from Panasonic. For the analysis of the video taped trials a PEAK 2D MOTION MEASUREMENT SYSTEM was used. A framing rate of 50 fps; at an exposure time of 1/1000 second; was used to obtain the trial record.

Kinematic parameters employed in the analysis of the Jumps were height of take-off, take-off velocities (horizontal and vertical), maximum velocity and the angle of take-off. All subjects represented jumps in excess of 59.0 meters. Yet no one was capable of obtaining the 60 metre distance. The analysis illustrated significant differences and technique considerations which could yield the 60 metre jump.

USING MUSCLE ELECTRICAL STIMULATION FOR PERFORMANCE IMPROVEMENT OF AN ATHLETE IN PROPULSION PHASE

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The main trait of an athletes' qualification during the leg propulsion phase is the angular velocity of the leg flexion in the knee joint. It was discovered in cross country skiing for classic style (Komi et.al. 1982), skating skiing (Rostovstev and Krjazev,1988), and speed skating (Schenay et.al.,1995).

One of the ways for performance improvement is to have direct influence on to the mentioned parameter. Major muscle-flexion by electrical stimulation during the propulsion phase was first suggested by I. P. Ra (1967) and was used in this study.

Experimental results from m.quadriceps femoris, under electrical stimulation (EMS),during the propulsion phase on skier performance are presented in this study. It was determined that during 6 degrees of ascending EMS for the skating stride the angular velocity of knee joint increased to 17 deg/sec (9,4%); mechanical work in the propulsion phase increased to 7 J, and mechanical work in total cycle is decreasing. The standard velocity pulse was 2,4 str/min lower than in ordinary case than when EMS was used.

ENERGY EXPENDITURE STRATEGIES DURING MAXIMAL ERGOMETER ROWING

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Rowing regattas are usually conducted over a 2000 m course and, depending on the nature of the event and the environmental conditions, take from five and a half minutes to eight minutes to complete. During this time the rower must expend energy to overcome the drag of the water and the air and to maintain the oscillatory motion of the rower’s body and the boat. Major factors in a crew’s success will be the total amount of energy which they have available and the overall efficiency with which that energy is delivered.

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