allow for one to discover causal dependence of sport performance with different factors of training and other circumstances.

THE ECONOMICAL RACING-MOVEMENT OF SPORTSWOMEN AT VARIOUS LEVELS OF PERFORMANCE

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The investigation was carried out on a training-stand "Tredban". During the running parameters such as: breathing, stride length and stride frequency, time of support time of flight, vertical oscillations and impact (shocking) accelerations were recorded.

The economical level of running was calculated as the cost of oxygen charge for one metre of running at a speed 4 m/sec.

During the experiment it was revealed that the sportswomen at the "elite level" had the most economical level of running. Qualified runners had a level 8-12% below, and the beginners 20-30% below the level of the elite performers.

The analysis of biomechanical parameters characterises the non-optimal running-pattern of the beginners. More qualified runners use a step 5% longer, and the beginners 7-12% longer than those of the most qualified (elite) runners.

The beginners were identified by the high values of vertical oscillation and by the quantities of acceleration. The data of the investigation indicates that the most economical level of running was performed by the sportswomen of the "elite" group as compared to that of the runners of the lower qualification group.

TRAINING OF SPORTING MOVEMENTS OF CHILDREN ON THE BASE OF BIOMECHANICAL ANALYSIS

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The aim of the work is to carry out biomechanical analysis of the motor habits formation in 2-9 years-old children, such as: running, walking, jumping and throwing. All together about 1,000 children of both sex took part in the experiment during 10 years. The methods of investigation included pedagogical test, anthropometry, synchronous filming, tachodinamography, building of training devices for tests and instructions. The results which turned out witness that movement of 3-4 years old children can be defined as the period of the beginning of differentiative distinction between walking and running phases. Walking is already formed well, a phase of flight is appearing when running is being formed.

The formation of jumping and throwing movements is being formed at this age; in a short period of time the results are being increased 2-2.5 times in boys and girls support reactions change. Anthropometric measures allow to receive parameters of children's bodies from the beginning of the test and during the investigation. It is found that more than 80% of children have a strict genetic order of morphology, but child's morphology influences greatly the results of sports skills, in which given signs are significant.

So, the formation and perfection of children's skills in different locomotions depends on a child's sex, support reaction indices, length and frequency of steps, which make different contribution in the perfection of children's motor habits.

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