Abstract

Title:

Physiological response of competitors Fireball dinghy class in the model sailing race.

Objectives:

The main intention of the thesis is to detect the physical demands (difficulties) of sailing boat race categorized as Fireball double crew. The variables of physiological response to the load of competitors recorded are being measured using simulated race under laboratory conditions. At that point, this opportunity enabled us to carry out further comparisons and examine the physical demands of individual post at various directions of wind.

Methods:

The entire investigation of detecting physiological functions of competitors will be carried out noninvasively throughout the simulation of sailing using metabolic analyser tool and sport tester. From the feedback, we will obtained figures and originate the physiological response of human body to the load. Due to the investigation is being implemented on the double crew boat Fireball; both competitors (crew/helmsman) performing different tasks will be simulated and examined individually. Simulated race will last 24 minutes and competitors will have to face different wind courses, precisely cruising upwind, crosswind and tailwind.

Results:

From the measured results, we can state that most of the time during simulated race, the performance of racers was done in aerobic zone load, the average heart rate was about 111,0 beats per minute, oxygen consumption was measured of around 1,2 l/min, respiratory frequency of 28,5 breaths per minute, expiratory ventilation per minute is estimated to 32,4 l/min, 1,2 litres tidal volumes suggesting a low intensity load.

We noted that crews were reaching higher values in the measurement of anthropometric and physiological characteristics during the entire simulation. The highest value of the heart rate of crews was reached during the raum (i.e. crosswind riding) approximately 135,5 beats per minute. On the other side, the helmsman reached the heart rate of average 120,0 beats per minute while cruising against the wind.

Key words:

Yachting, double-crew boat, model sailing race, physiological characteristics (oxygen uptake, expiratory minute ventilation, heart rate, respiratory frequency and tidal volume).