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STUDY ON ROWERS' TRAINING LEVEL ASSESSMENT 18 MONTHS BEFORE THEIR PARTICIPATION IN THE OLYMPIC GAMES LONDON 2012. CASE STUDY, NATIONAL INDOOR ROWING CHAMPIONSHIPS, SENIORS, 18.02.2011

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Abstract
Background. During 2004-2008 the leap of the individually evaluated rowers or in teams has been quite low. The objective of obtaining medals for rowing at Beijing was not achieved. Male athletes still have not qualified for this great event but the female athletes obtained two olimpic medals including one gold(2-) and one bronze(8+).It is noted that among the nine girls with medals, six have been established („of old age")
meaning that they started training with 18 months before the Olimpic Games. The author presents the results of a contest at the start of the Olimpic cycle for male and female athletes.
Objectives. The scientific argument is the initial training level analysis of the two categories of female rowers: the established and the dedicated holders. At the same time we will determine the degree of training of athletes at the beginning of this cycle.
Organizing and conducting the study. The Senior National Championship on ergometer is the most important contest at the start of the cycle, 18 months before the Games London 2012 Olympics. Athletes are presented after a three-week stage of general physical training in the mountains, followed by three weeks of training on the ergometer.
Subjects. Study groups consist of six established female rowers,6 female rowers that are dedicated holders, and 6 male rowers that are also dedicated holders.They all are components of the Romanian national team and Olympic team.
Results. It reveals the level of training that the two groups are formed and the existing value-difference in sports, and also the assessment of statistical indicators and a possible prediction of the seasons results.
Conclusions. Ensuring a good relationships between the established female rowers and the dedicaded holders female rowers that could holdtogether the two values at a higher competitive benefits.
Keywords: ergometer, rowing, competition, cycle training.

Introduction

Nowadays the sports performance has reached unexpected levels that can not be maintained or exceeded without an adequate knowledge of effort methodology that represents the starting line in high performance. The algorithm for competitive training has an increasing dynamics, complexity and diversity, with a structure meant to expand the knowledge area by introducing new elements that bring a plus to the evolution in competition, by combining and adapting them to the requirements of performance achievement.

The continuous growth of the results in sports and the need to increase the training efforts (A. Nicu, 1999) involves a high standard of morphological potential, warranty of achieving higher performances.

The performances needed at present to win medals in the major international competitions can be achieved only after a well directed and planned selection, started since preschool age and regarded not as a momentary action but as an evolutionary process. The means and methods used in rowing activity should be structured so as to serve the detection of rowers' functional reserves (I. Dospinescu, 2006), enabling us to know and to have some possibilities of prognosis (D. Deliu, 2007) on their development at the final stages of sports training.

All sports show off a large range of performance requirements, some of them specific to the respective sport and others common for all sports. Rowing requires high levels of individual or team efforts, throughout the competition–5:20-7:10 minutes for covering a distance of 2,000 m.

The progress of knowledge regarding the physiology of exercise and the physiology specific to sport, as well as the new knowledge of training methodology (M. Epuran, 2005) are very important tools for sports training and for establishment of its objectives. At the present moment, the coaches are offered real information and values from practice, with which objective assessments can be made in all stages of training.

It must be said that perfect and universally valid testing systems do not exist (A. Gagea, 2000), because each athlete is an individuality, and these individualities, in exchange, form a team of unquestionable value. The coach must know in which way and how much to test each rower. Recent studies show that in fact the progress is increasingly indebted

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to accessories technology and to sport training process.

Performance does not arise from an agglomeration of facts and events, but is a product of the effects determined by the concentric action (A. Gagea, 2000) of some objective and subjective factors. In sport science, an important step forwards was made through the inventory and then the measurement of these indices, making use of various procedures of objectification and interpretation.

Therefore, performance sport represents a pedagogical process by methodology, an educational act, through its structural principles and the effects captured in behavioral plane, in athlete's attitude. The inventory of indices (C. Malis, 2008) that contribute constantly to sports performance achievement is an open operation whereas observations and profound insights into this problem may show an increase of those ones.

To further enhance the performances, the investigation of any aspect that could help coaches and methodologists in their work with the athletes should not be neglected.

These factors are very numerous and it is not possible to make a complete list of them virtually. In the same time, the majority of factors are closely related together, influencing each other.

Of course, we can talk about and we can analyze a lot of factors that have a high importance in the successful rowing, but according to the Romanian rowing technicians the priority issues in reaching performances of international value are represented by the achievement of training quantitative indices of high quality and by a selection of human material, all these confirming the requirements of performance rowing (S. Urichianu-Toma, 2010).

We believe that not only quantitative training indicators are important for performance rowing, but also the indicators of active recovery after exercise and the rate of progress derived from the native talent of the athlete. In connection with the talent, we notice the fact that the specialty literature is concerned not only about athlete's talent but also about coach's talent, as a „sine qua non" condition for performance.

Athletic performance represents a Fuzzy type function (A. Gagea, 2000) of a multitude of factors such as: value of biological material, sports training exercise, material investment to provide sports training stages in terms of using the latest scientific concepts of training and recovery, by means of an effective management.

Purpose and objectives. The aim of the study is to identify the shortest paths to high performance, with low costs and consumption, achieving an increased rate of promotion and high performances, avoiding the risk factors. The scientific argument is represented by the analysis of the initial training level of two groups of female athletes, consecrated and titular ones in individual and crew events. At the same time, we shall determine the athletes' training level at the beginning of this macro-cycle.

Subjects. The groups of study are formed of consecrated athletes ("old") and titular athletes ("young"). All the female athletes are members of the Romanian Olympic Rowing Team.

Place of the research. The research was conducted at National Sports Complex (CSN) Snagov, in the village of Silistea Snagovului

Methods. The following methods of research have been used for this study:

- Method of observation
- Method of documentation
- Statistical-mathematical method

Study organization and conduct. The National Indoor Rowing Championships for seniors is the most important competition at the beginning of a macro-cycle, 18 months before the Olympic Games of London 2012. The athletes compete after a three weeks stage of general physical training in the mountains, followed by three weeks of indoor rowing.

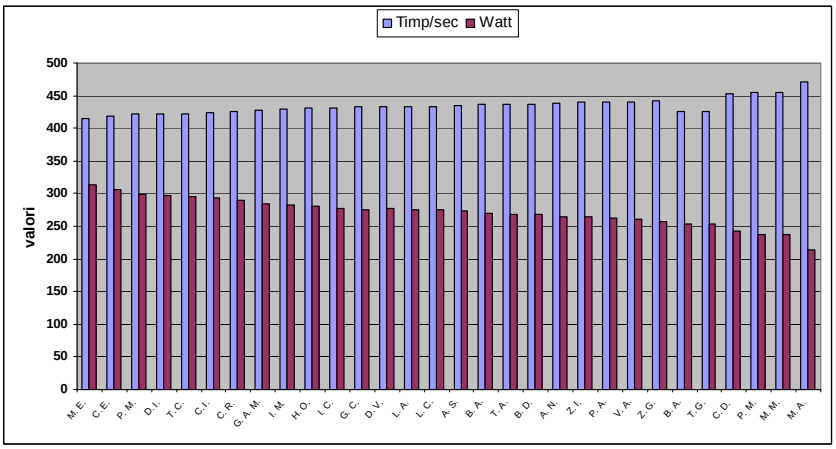
Interpretation of performances

Table no. 1. **Women seniors' individual results**

No.	Full name	Club	Time /min	Time/sec	Watt
1	M. E.	CSA Steaua	06:54.8	414.8	314
2	C. E.	CS Olimpia	06:58.4	418.4	306
3	P. M.	CSM Iasi	07:01.6	421.6	299
4	D. I.	CSM Iasi	07:02.1	422.1	298
5	T. C.	CS Dinamo	07:02.8	422.8	296
6	C. I.	CS Dinamo	07:04.4	424.4	293
7	C. R.	CSA Steaua	07:06.4	426.4	289
8	G. A. M.	CS Dinamo	07:08.2	428.2	285
9	I. M.	CSA Steaua	07:09.3	429.3	283
10	H. O.	CS Olimpia	07:11.1	431.1	280
11	I. C.	CS Dinamo	07:11.7	431.7	278
12	G. C.	CS Olimpia	07:12.7	432.7	276

13	D. V.	CSM Calarasi	07:12.7	432.7	277
14	L. A.	CS Olimpia	07:12.8	432.8	276
15	L. C.	CS Dinamo	07:13.7	433.7	275
16	A. S.	CSA Steaua	07:14.5	434.5	273
17	B. A.	CS Dinamo	07:16.0	436.0	270
18	T. A.	CS Dinamo	07:16.7	436.7	269
19	B. D.	CS Farul Constanta	07:17.1	437.1	268
20	A. N.	CS Dinamo	07:18.9	438.9	265
21	Z. I.	CSA Steaua	07:19.4	439.4	264
22	P. A.	CS Dinamo	07:20.2	440.2	263
23	V. A.	CS Dinamo	07:21.0	441.0	261
24	Z. G.	CSM Iasi	07:22.7	442.7	258
25	B. A.	CS Olimpia	07:25.0	425.0	254
26	T. G.	CS Dinamo	07:25.8	425.8	253
27	C. D.	CS Farul Constanta	07:32.2	452.2	242
28	P. M.	CSA Steaua	07:34.6	454.6	238
29	M. M.	CS Farul Constanta	07:34.9	454.9	238
30	M. A.	CS Dinamo	07:51.1	471.1	214
X- arithmetical mean				437.42	271.83
Em- average error				2.19	3.9
S- standard deviation				12.04	21.8
Cv- coeff. Variab.				2.77	8.05
r-coeff.correlation				0.90	
t Statistical				11.169	
P				P<0.001	

In table no. 1 are summarized the time values recorded in the National Indoor Rowing Championships for Seniors. We mention that the results are recorded in minutes, seconds and watts, finals. The standard deviation is 12.04 for time and 21.8 for the power expressed in watts. The coefficient of variability is 2.77 for time and 8.05 for power at a P<0.001.



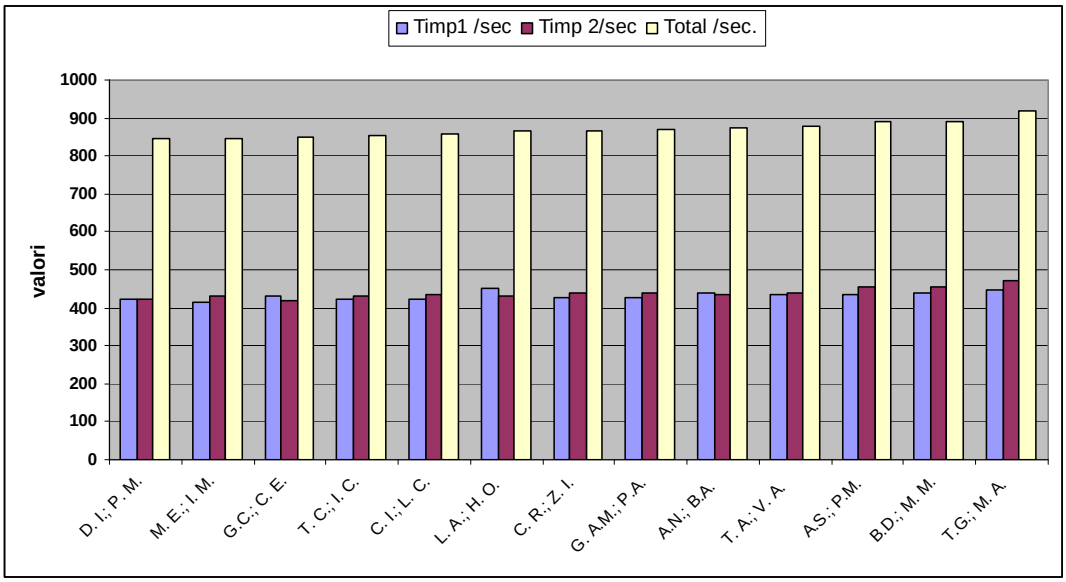
Graph no.1.

Graph no.1 highlights the homogeneity in the training of Senior team and the fact that the first half of athletes have very similar values. We notice that between the ranked athlete M.E., whose result is 6:54.8 min/414,8 sec. and the power is 314 watts and the last athlete in the ranking, M.A. whose result is 7:51.1min/471.1sec and the power is 214 watts.

Table no. 2. Women seniors' results per crews

No	Full name	Club	Time 1/ min.	Time1 /sec	Time 2 /min.	Time /sec	Total/ min	Total /sec.

1	D. I.; P. M.	CSM Iasi	07:02.1	422.1	07:01.6	421.6	14:03,7	843.7
2	M. E.; I. M.	CSA Steaua Buc	06:54.8	414.8	07:09.3	429.3	14:04.1	844.1
3	G.C.; C. E.	CS Olimpia Buc	07:12.7	432.7	06:58.4	418.4	14:11.1	851.1
4	T. C.; I. C.	CS Dinamo Buc	07:02.8	422,8	07:11.7	431.7	14:14.5	854.5
5	C. I.; L. C.	CS Dinamo Buc	07:04.4	424.4	07:13.7	433.7	14:18.1	858.1
6	L. A.; H. O.	CS Olimpia Buc	07:12.8	452.8	07:11.1	431.1	14:23.9	863.9
7	C. R.; Z. I.	CSA Steaua Buc	07:06.4	426.4	07:19.4	439.4	14:25.8	865.8
8	G. A.M.; P.A.	CS Dinamo Buc	07:08.2	428.2	07:20.2	440.2	14:28.4	868.4
9	A.N.; B.A.	CS Dinamo Buc	07:18.9	438.9	07:16.0	436.0	14:34.9	874.9
10	T. A.; V. A.	CS Dinamo Buc	07:16.7	436.7	07:21.0	441.0	14:37.7	877.7
11	A.S.; P.M.	CSA Steaua Buc	07:14.5	434.5	07:34.6	454.6	14:49.1	889.1
12	B.D.; M. M.	CS Farul C-ta	07:17.1	437.1	07:34.9	454.9	14:52.0	892.0
13	T.G.; M. A.	CS Dinamo Buc	07:25.8	445.8	07:51.1	471.1	15:16.9	916.9
X- arithmetical mean				432.09		438.69		869.24
Em- average error				2.89		4.01		5.81
S- standard deviation				10.4		14.4		20.9
Cv- coeff. Variab.				2.41		3.29		2.41



Graph no. 2. **Results of Women Crew - seniors**

In graph no.2 can be noticed the athletes' results in double crew. The close values of the crew results give homogeneity and a small difference between the first and last crew. The most valuable double crew, D.I. and P.M., recorded 14:03.7min/843.7sec while the last ranked time is 15:16.9min/916.9sec, achieved by the athletes T.G. and M.A.

Interpretation of results

The study reveals the training level of the two formed groups and the athletes' existing difference of value, the assessment of statistical indices and a possible prediction of the season results. There is a natural development with improvements in performance for most subjects.

The indoor rowing (ergometer machine trial) is one of the most important events in athletes' testing. The specialty literature motivates a high degree of correlation between ergometer machine trial and the tests on water, in boats.

As group indices, one must notice the fact that the athletes are in the period of performance growing, which could anticipate the interpretation of results in the competitions to come.

We are tempted to interpret some of the qualitative data of the initial stage training process without, however, ascribing a certain predictive power to them. Thus, during each of the two trials we observed significant oscillations, probably due to the small training stage of subjects in this time of the year. The objectivity of indoor rowing trial on a distance of 2000m seems to be questionable, however the specialty literature reveals that the ergometer machine trial has the highest correlation coefficient in relation to specific testing in shells in the case of consecrated athletes.

Conclusions. Ensuring a relationship between consecrated and titular athletes' training can hold together the two values at the level of a high competitive performance. The specifics of this sports branch practice requires specific and nonspecific ways and means which lead to high performance. The classic technologies combined with the new, modern ones, aided by teams of technicians (coaches, doctors, biochemists, therapists, masseurs, ship carpenters, etc.), bring to the forefront of theorists the necessity of qualitative and quantitative changes. All this complex mechanism applied so far can be modified and refined, with real possibilities for achieving high value performances in the major competitions.

We believe that the ability to prepare and compete is a complex factor in achieving performance in rowing. Work physical capacity is a major factor in rowing. Large testing actions are needed to form a group of athletes with potential for high performance rowing practice, because it is likely that only a small percentage among the tested persons meet the requirements.

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