

## ORGANISATIONAL AND METHODOLOGICAL ASPECTS OF EXPERIMENTAL TRAINING PROGRAMS FOR ATHLETES LIGHTWEIGHTS IN ACADEMIC ROWING

Omelchenko E.S.

Dnepropetrovsk State Institute of Physical Culture and Sport

**Annotation.** *Purpose:* develop an experimental training program for lightweight rowers in academic rowing. *Material:* the study involved 27 qualified athletes who are engaged in academic rowing over 6 years, age 19-22 years, with sports qualifications KMS and MS. To better design the training program was conducted to study this physical condition of athletes also took into account the opinion of the leading coaches in academic rowing that are engaged with lightweight rowers. *Results:* as a result of an experimental study was designed training program in academic rowing. *Conclusions:* Experimental training program rowing provided its use for a year and was designed in the form of blocks and aims to developing and improving endurance (speed and power), strength and maximum strength. The experimental technique that was used in the training process, was designed with the preparation phase and plan on mesocycles and microcycle. **Keywords:** rowing, rowers, preparedness, program, training.

### Introduction

Modern level increase athletic performance in Ukrainian and international arenas requires constant search for ways to improve and rationalization training process, as well as search means and techniques, filling it [3, 6, 8, 9, 14]. Changes in the program of the Olympic Games found the need to build the training process lightweight rowers.

So, considering the fact that many authors [2, 5, 7, 17, 18] view the training process as complex and multifaceted system that includes technical, physical, tactical, psychological, and theoretical training, experts constantly searches for ways to rationalizing the training process [1, 4, 10, 11]. Physical training is the base on which are based all the other types of training. Some authors are convinced of the need to develop special endurance athletes [13, 16], and others [12] emphasize the necessity and importance of power preparedness as one of the factors that determine the effectiveness of highly skilled athletes in competitions. But at the same time, experts express their an opinion on the need for taking into account the individual characteristics of athletes [15] as an important factor of building the training process.

In connection with changes in the program of the Olympic Games introduced a new category for athletes with a light weight body in academic rowing. However modern sport training process lightweight rowers carried by conventional method for heavy weight rowers, where the dominant direction is the increase in training loads.

Special analysis of the literature shows that the management of the training process lightweight rowers did not find adequately covering. Due to the lack of data on rational organization of management training process is determined by the need of scientific and methodological rationale, practical development and implementation of training skilled athletes lightweight according to current theory and methodology of sports training.

Work is carried out under the consolidated plan scientific research work Ukrainian Ministry of Education, Youth and Sports in 2010-2015 was the topic 2.6. "Theoretical and methodological foundations of the training process improvement and competitive activities within the many years training of athletes."

### Purpose, tasks of the work, material and methods

*Purpose of work* - a scientific foundation and develop a program of construction of the training process lightweight rowers in preparation for the highest achievements.

*Research Methods.* The study used the following methods: based on the analysis and synthesis of scientific and methodological literature and experience of leading trainers created by a pilot program in rowing.

Research were carried out in Children's Specialized Olympic Reserve School in rowing Dnipropetrovsk regional organization sports society "Ukraine" and on the basis of scientific laboratory Dnipropetrovsk State Institute of Physical Culture and Sports, which involved 27 trained athletes who are involved in academic rowing for over 6 years, age 19-22 years with a sports qualification CMS and MS.

### Results of the research

In result of the experiment, we developed a pilot program of the training process for lightweight rowers with the current physical condition, and opinions of leading coaches in rowing directly involved with the lightweight rowers.

Development of pilot program training process for lightweight rowers in academic rowing performed on the basic provisions of the programme for the Children's and Youth Sports School, Children and Youth School of Olympic Reserve, school of higher sportsmanship and specialized schools sports profile. The main areas of improvement of the athletic training were: a gradual increase in volume, strict adherence to the rational value system of training athletes, the maximum focus on individual makings and abilities of each athlete continued expansion of competitive practices desire for of strict balance of training and competitive pressures, recreation, meals, orientation of the entire system of sports training to achieve the optimal structure of competitive activities and improvement of the training management process.

The main provisions of the pilot program of the training process for lightweight rowers were:

- comprehensive harmonious development of athletes;

- creating a sustainable framework on general, special, technical training, which would ensure the growth and stability of athletic performance;
- improvements of physical qualities based on personal characteristics athlete and improving special performance;
- improvement of personal rowing technique, mastery of tempo, rhythm, depending on the tactical tasks of passing the distance;
- achieve maximum level of specific adaptation and preparedness for competition.

The main didactic and specific principles that were used in the planning of the training process lightweight rowers were the principles of visual, systematic, availability, undulating, dynamics loads, unity of competitive activity and structure of training, cycling training process.

The main features of the experimental program were the following:

1. Development of blocks of exercise in physical training, development of special abilities sportsmen light weight carried on the basis of the principles of sports training, logistics equipment and targets aimed at achieving the best result.
2. Exercises in physical training planned by considering intensity and heart rate with specific intervals of rest.
3. Solving the assigned tasks of higher achievements preparing, namely general and individualized physical training aimed at improving physical qualities, which a strong point in training athletes and possible to overcome weaknesses, achieving limit values training with individual regulation intensity load, achieving a relatively high level of fitness and athletic performance, creating conditions for further improving athletic performance and as a consequence achieving world-class results in the national teams.
4. The program contributed to improving the training process light weight athletes.
5. During the planning of the training process have been completely excluded burdening of 80-85% of the maximum weight, as such burdening facilitate recruitment of muscle mass, which is undesirable for lightweight rowers.
6. During the pilot program was offered athletes a fractional load (change the dosage of exercise).
7. During the training exercise for light weight athletes needed to perform a greater number of repetitions without increasing the basic load.
8. The main emphasis in developing the pilot program was on the development of speed endurance, strength endurance and strength.
9. During the pilot program lightweight rowers of experimental group used the facilitated equipment (boats, oars).

The structure of the experimental program is presenting in figure 1. The peculiarity of the experimental program was to develop and implement a program of training sessions in 5 basic blocks with different variations of exercises that solve the main task - to improve endurance (speed and power), strength and maximum strength.

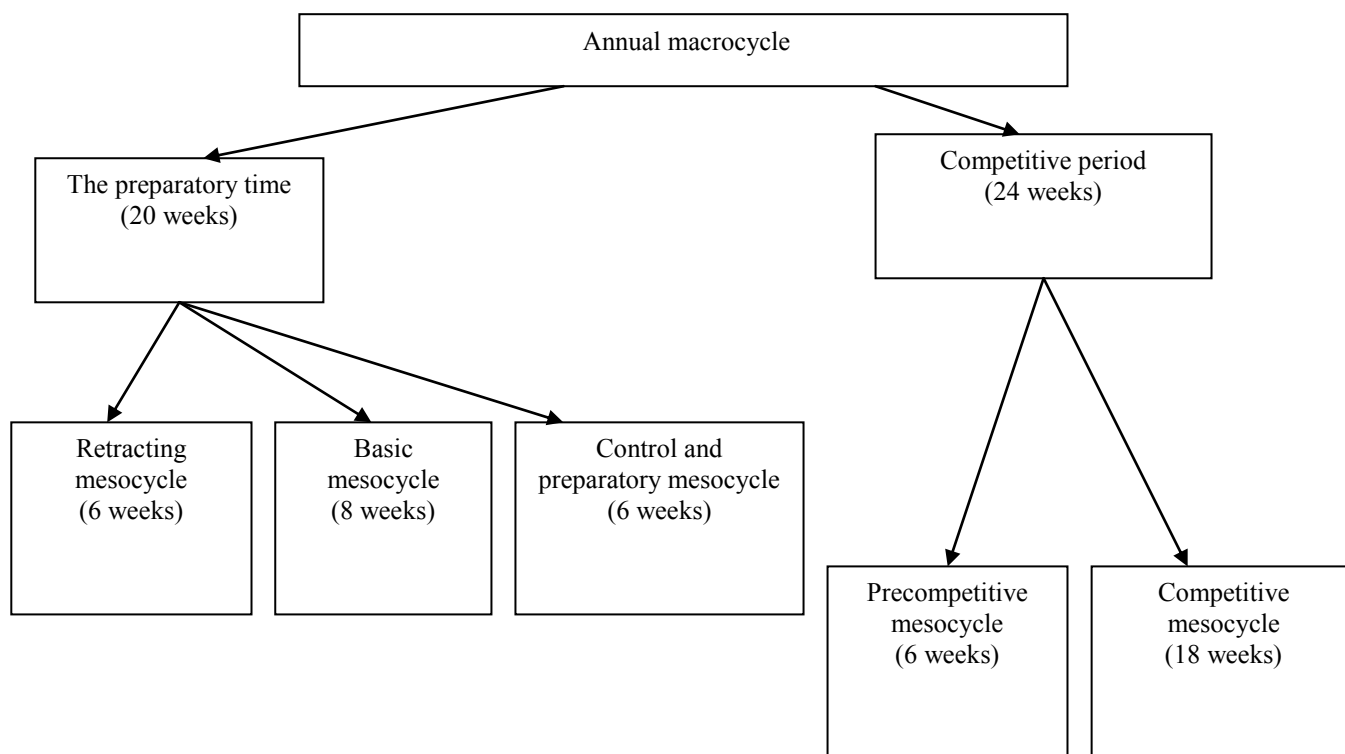


Figure 1. The annual structure of the lightweight rowers training process

These blocks were distributed and used depending from the tasks of the individual components of the training process (mesocycle and microcycle).

In the preparatory period of annual cycle, which lasted 20 weeks, was scheduled 3 mesocycle: retracting, basic, control and preparatory.

Retracting mesocycle was the beginning of the preparatory period had a duration of 6 weeks, continued from the second half of October and all of November. During this period, his objectives were gradually summarizing athletes to effectively implement specific training load. Due to weather conditions the athletes were able to train on the water. At this time the planned classes of the development of general of physical qualities and the development of strength endurance. At the beginning of the block training sessions 1 time per day, then gradually increased to 2 times a day. Classes are held lasting 90 minutes, increasing to 120 minutes. The content of training constituted evenly rowing, rowing ergometer and work with a barbell.

In retracting mesocycle planned 3 types microcycles: retracting, impact, recovery. Retractor microcycle continued one week, had the task of retracting the body to work, the development of common physical qualities and the development of endurance. Duration of studies in this microcycle was 90-120 minutes. Contents were different types of rowing - uniform, with "climbing", the quiet pace and racing pace. The main techniques that were used in this microcycle - verbal (analysis and discussion) and a continuous and interval. Resources of this microcycle are general preparation and the preparation of special exercises. Power, which performed exercise does not exceed 60% of the maximum, the heart rate is within 130-150 beats / min. Tentative plan retracting microcycle given in table 1.

Table 1

*Orientation of training sessions retracting microcycle*

Days of the week	The orientation of the training process
Monday	Retraction organism to work, the development of general physical qualities
Tuesday	Development of common physical qualities, the development of endurance
Wednesday	Development of common physical qualities, the development of endurance
Thursday	Development of common physical qualities, the development of endurance
Friday	Retraction of the organism to work, the development of general physical qualities

This period was scheduled 2 impact microcycle. Tasks that solved in this time period - the stimulation of adaptive processes in an organism of an athlete, solving the basic tasks of all kinds of training, development of general physical qualities, the development of endurance and force quality as an athlete. Duration of studies was 90-120

minutes of training content were different types of rowing - uniform, with "climbing" in a calm and racing pace, as well as exercises with a barbell rowing ergometer and «Concept-2." The methods of this microcycle are continuous and interval. The resources of microcycle were preparation of general and special exercises. The power which were carried out training exercises in the first microcycle ranged from 50 to 90% of the maximum, and in the second impact microcycle had been less scope and comprised 50-60% of the maximum. The heart rate was 130-150 beats/min. - 170-180 beats/min. Tentative plan impact microcycle is shown in table 2.

Table 2

*Orientation of training sessions that were used in impact microcycle retracting mesocycle*

Days of the week	The training process directionality
Monday	The development of power qualities
Tuesday	The development of endurance and force as an athlete
Wednesday	The development of endurance and force as an athlete
Thursday	The development of power qualities
Friday	The development of power qualities
Saturday	Perfection of rowing technique

Reparative microcycle continued one week and had to ensure optimal conditions for the renewal of an athlete. Load this microcycle was small, almost fell twice and had a view of the general development basically physical qualities and strength endurance. Duration of studies in this microcycle not exceed 120 minutes. Contents were exercises with a barbell, which were performed with a maximum capacity of 50% and heart rate of 120-130 beats/min. and rowing ergometer «Concept-2» with the same data (table 3). The methods of microcycle are continuous and interval. The resources of microcycle are general preparation and preparation of special exercises.

Table 3

*Training sessions orientation that contributed to the restoration of rowers-academics organism*

Days of the week	The orientation of the training process
Monday	Development of power endurance
Tuesday	Development of general physical abilities, development of power endurance
Wednesday	Development of power endurance
Thursday	Development of general physical abilities, development of power endurance
Friday	Development of power endurance
Saturday	Development of general physical abilities and endurance

The basic mesocycle was the middle of the preparatory period, had a duration of 8 weeks and continued for two months - December and January. In this period, the main work was done to improve the functional capabilities of an athlete, improving physical qualities. Training loads were large by volume and intensity. Their length was 120 minutes, the contents were endurance exercise (including running), rowing ergometer, work with barbells, rowing in rowing pool and exercises to develop speed.

The basic mesocycle consisted of 3 microcycles: retracting, impacting, and revitalizing.

Retracting microcycle had orientation training of athletes to greater physical activities, it was duration one week. During this period developed general and special physical ability, strength and endurance. Contents of training were running exercise rowing ergometer «Concept-2" and exercises with a barbell. Duration of studies did not exceed 120 minutes. Methods of microcycle - interval and continuous. The resources used in this microcycle - general training, special preparation and auxiliary exercises. The power which were carried out training exercises ranged from 50 to 85% of maximum heart rate of 120-130 beats/min.

The main content of the preparatory period was 3 impact microcycle length of one week each, which focusing problem of physical and integrated training. At this time the main directions of development were general and special physical qualities, strength and endurance. Duration of studies was 90-120 minutes, the contents were running exercise, rowing ergometer «Concept-2" and exercises with a barbell. Methods of training - verbal (analysis, discussion, conversation), continuous and interval. The resources are general training, special preparation and auxiliary. The power which were carried out training exercises is up to 90% of the maximum. Maximum heart rate was 170-180 beats/min.

Reparative microcycle finished a series of impact microcycles, continued for one week and had the task to ensure optimal conditions for the renewal of an athlete. During this microcycle load was low. Duration of trainings was less than 90 minutes, and the contents were running exercise, rowing in the rowing pool in a quiet pace and remedial measures (massage and sauna). The method that was used during this microcycle is continuous. The resources are general preparation and the preparation of special exercises. Power with which the exercise was carried out 50-60% of the maximum, heart rate - 120-130 beats/min.

There was planned 2 impact microcycles, lasting one week each. Solved the main tasks of physical and integrated training, developed general and special physical abilities and endurance. Duration of trainings was 120-140 min, the contents were rowing exercises and running. Methods impact microcycles are verbal, continuous and interval. The resources that solved tasks are general preparation and special preparation. The power of exercises reaches 90%; the heart rate was 170-180 beats / min.

Base mesocycle ended with renewable microcycle, duration was one week. The purpose of this microcycle is the renewal of athletes after heavy loads. During this period developed general physical abilities of athletes. Duration of trainings was 90 minutes, the contents were running exercise, exercise rowing and recovery measures (sauna and massage). The method of training - continuous, resources - general preparatory exercises, power exercises that were performed did not exceed 60% of the maximum, heart rate was 120-130 beats / min.

Control and preparatory mesocycle was the end of the preparatory period and lasted 6 weeks - February and the first half of March. This mesocycle was conducted integral preparation athlete. During this period were widely used specifically for the preparation exercises, as close to competitive. Training took place mainly on the water. Duration of trainings in this period was 90-120 minutes, the contents were rowing exercise, a set of exercises to develop speed and sport games.

Control and training period consisted of the following microcycles: retracting, impact, restoring and preparing.

Reconstructive microcycle was beginning the preparatory control microcycle and continued for one week (table 4).

Table 4

*Training sessions directions of retract microcycle in control and preparatory mesocycle*

Days of the week	The orientation of the training process
Monday	Development of general and special physical abilities, integrated training of athlete
Tuesday	Development of general and special physical abilities, integrated training of athlete
Wednesday	Development of general and special physical abilities, integrated training of athlete
Thursday	Development of general and special physical abilities, integrated training of athlete
Friday	Development of general and special physical abilities, integrated training of athlete
Saturday	Development of general and special physical abilities, integrated training of athlete

The objectives of this microcycle are summarizing an athlete to greater training loads, the development of general and specific skills and integrated training athletes. Duration of trainings was 90-120 minutes with the maintenance of exercise on the development of speed and strength as well as sports games. The methods used during this microcycle are gaming, interval, competitive. The means by which the tasks of training - general preparatory and specifically the preparation. Power was up to 75% of the maximum, the heart rate is within 170-180 beats / min.

Table 5

*The training sessions directions of impact microcycle in control and preparatory mesocycle*

Days of the week	The direction of the training process
Monday	Development of general and special physical abilities, integrated training of athlete
Tuesday	Development of general and special physical abilities, integrated training of athlete
Wednesday	Development of general and special physical abilities, integrated training of athlete
Thursday	Development of general and special physical abilities, integrated training of athlete
Friday	Development of general and special physical abilities, integrated training of athlete
Saturday	Development of endurance

There was scheduled 3 impact microcycles in control and preparatory mesocycle, each lasting one week. The objectives of this microcycle was stimulation of adaptive processes in athletes and the solution of basic problems of physical and integrated training. Duration of trainings reached 180 minutes. The content of training constituted of rowing, running exercise and sports games (table 5). The methods of training are continuous, interval and a gaming. The resources are general preparatory and special preparatory. Exercise capacity was 80-90% of the maximum, heart rate - 170-180 beats / min.

Recovery microcycle completed a series of impact microcycles and was planned for one week. The objectives were recovery from heavy loads and ensure the flow of athlete's adaptation processes. Direction of the training process was focused on the development and improvement of rowing technique endurance. Duration of trainings was 90-120 minutes, contents were different types of rowing with a capacity up to 75% of maximum, heart rate - 140-160 beats / min. The methods microcycle are continuous and interval. The resources are general preparation and the preparation of special exercises.

Duration of preparative microcycle was one week and aimed directly prepare the athlete for competition. The endurance developed during this period and improved rowing technique. Duration of trainings is up to 120 minutes, the content is mostly constituted rowing.

Methods of this cycle - a continuous and interval. The resources used - general preparatory and special preparatory. Power exercises are performed - 70-80% of the maximum, heart rate - 140-160 beats/min.

#### **Conclusions.**

1. This light weight rowers pilot program allows to solve problems of training process by improving some physical properties.
2. The planning of training process occurs with physical and functional preparedness of light weight rowers.

*The perspectives for future research* are to develop a more detailed individual recommendations for each rower considering his personal performance.

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**Information about the author:**

**Omelchenko E.S.:** ORCID: 0000-0002-8862-8075; ollenka-77@mail.ru; Dnepropetrovsk State Institute of Physical Culture and Sport; Victory Quay str. 10, Dnepropetrovsk, 49094, Ukraine.

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