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STUDY ON THE PECULIARITIES OF TRAINING IN THE 2000 M OBSTACLE FOR A GOAL COMPETITION IN THE JUNIOR LEVEL II

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Rezumat. *Dinamismul, armonia și fluiditatea mișcărilor de alergare și lupta continuă pentru a depăși obstacolele fac din cursele cu obstacole cele mai spectaculoase evenimente ale atletismului. Aceste caracteristici fac ca la competiții probele cu obstacole să fie așteptate cu mare interes atât de cunosătorii de atletism, cât și de spectatorii mai puțin experimentați.*

Sportivul de performanță reprezintă o combinație de numeroase calități motorii și mentale. El trebuie să posede calitățile unui alergător de semifond de performanță, fiind adăugați indicii măriți de forță în regimul de duranță necesari depășirii obstacolelor de pe traseu, și mai ales obstacolul din groapa de apă. Așa că nu este de mirare că săritorii de obstacole valoroși sunt puțini, iar performanțe de top sunt așteptate de mult.

Cuvinte-cheie: *alergare, atletism, performanță, competiție, probe.*

Actuality. The introduction of women's events for equal opportunities makes it a challenge from a theoretical and practical point of view in the specialized field of semi-long distance - obstacle events.

A characteristic that accompanies the obstacle tests is the placement of the obstacles at relatively small intervals (on average 80 m), their passage being done in variable conditions, depending on the running tempo and the situation in the running platoon.

Learning the technique must reveal the problem of quickly crossing the two categories of obstacles, namely the fixed obstacles and the pit with water [1, 2, 3].

Currently, two methods of crossing obstacles are used: the "stepping" method and the "treading" method. The "stepping" method is mainly used by performance athletes, and the "treading" method is used by beginners and advanced players. The fixed obstacle, from the water pit, is mostly passed by the "stepping" method. The "treading" method is used very rarely to pass the water pit and only by very strong athletes with exceptional performances.

The accumulation of qualities, skills and abilities involved in obstacle courses make the selection of athletes for this event a primary factor. The athlete must have an accumulation of high-value aerobic qualities, strength endurance and a very good technique for passing obstacles for a low energy consumption.

In Iasi we have a specific training base for obstacle trials, the results obtained over the years show a specific selection base for middle distance - long distance runners in obstacle trials having specialists in the field who have practiced obstacle trials and who have prepared over the years sportsmen who have achieved very good results nationally and internationally.

The competition calendar is designed by the Romanian Athletics Federation according to the age of the athletes and the competitions with an international objective (the Balkans, European championships, world championships and the Olympic Games). Obstacle events are specific to the outdoor season, which starts with the junior III category. At this age, the athletes involved in the sports performance will run in the 1500m race, the juniors II have passed the 2000m race in the competition calendar and from juniors I to the Seniors category, the distance to be covered in this race is 3000m. In the calendar displayed by the Romanian Athletics Federation, we find the IInd National Junior Championships, but there are also other training competitions (cups - Romanian Cup, national school championships and stages of National Championships, etc.) all of which represent selection criteria for international competitions.

The international competition calendar includes European Championships and Balkan Junior Championships II.

It is important for a hurdler to run at least 2 - 3 races before the target event and this will be planned according to the competitive calendar and the target events, whether there are events where the athlete can qualify to participate in an important international championship.

The main **objectives** of the research were:

- to study as many sources as possible from the specialized literature with reference to the concepts of restoration, the means by which they are achieved;
- to determine the weight of the different means used in the preparatory period by the athletes.

We started from the hypothesis according to which: "a greater volume of the means and methods used in the preparatory period can lead to the achievement of the proposed results in the objective competition?"

Taking this hypothesis into account, we consider it of great importance to analyze the evolution of the specific means of training obstacle runners.

The subjects of the research were the athletes P.S. and B.A. who were practicing the obstacle course (Table 1). They were registered, at the time of application of our study, at the High School with Sports Program in Iasi. The research was carried out in the months of October/November 2020 – April/May 2021, being helped in its development by Prof. P.V., and the trainings were carried out in the high school, having its own sports base with an athletics track and with all the necessary materials training in obstacle courses.

Table 1. Presentation of subjects

Surname, Name	Year of birth	Base sample	Personal records
P.S.	2005	2000 m obstacle	6,28
B.A.	2005	2000 m obstacle	6,35

The actual conduct of the research was initiated by establishing the research plan, tasks, stages, hypothesis, subjects and time points when the data were to be collected and analyzed. In parallel with this, we pursued the permanent realization of a rigorous scientific documentation, which would provide us with the theoretical basis necessary to argue the specific aspects.

Results and discussions.

Tables 2 and 3 show the control tests performed during the preparatory periods (October and May) by the athletes, subjects of this work. These control samples give us important benchmarks regarding the establishment of the individual training plan for each individual athlete.

Table 2. Initial control sample values at the beginning of the preparatory period (October)

No. crt.	Surname, Name	50m	100m	1000m	5000m
1	P.S	6.8	13.6	3.27.0	19.20
2	B.A	7.0	13.8	3.22.3	19,10

Table 3. Final control sample values at the end of the preparatory period (May)

No. crt.	Surname, Name	50m	100m	1000m	5000m
1	P.S	6.6	13.4	3.00.0	18.02
2	B.A	6.8	13.6	3.03.3	18.23

At the beginning of training, an increase in the volume of work with low intensity is observed. Basic training methods consisted of cross-country running and interval training,

specific obstacle running, repetition and fartlek training. The materials used to analyze and control the workouts was the timer. Following the calculations, it follows that the subject P.S. ran a 15% higher volume than subject B.A. during preparation periods.

Endurance running is the main means for the P.S. athlete during the training period in October/November 2020. The volume of effort in October/November 2020 is increased compared to the rest of the training. The run is carried out over distances between 10 km and 16 km with a tempo between 4:00 min and 4:10 min/km.

The running volume is high, noting here that the athlete puts a lot of emphasis on long runs and a high volume of aerobic effort, which will help him a lot in the following stages (pre-competitive and competitive). The volume of endurance running in October/November 2020 (611 km) is higher than in April/May 2021 (540 km).

Table 4. Analysis of the means used - long run subject P.S.

Long run	2020 Km	
	October 266 km	October 43,53 %
	November 345 km	November 56,46 %
	2021 Km	
	April 340 km	April 54,54 %
	May 200 km	May 45,45 %

Table 5. Analysis of the means used - long run subject B.A.

Long run	2020 Km	
	October 245 km	October 39,53 %
	November 315 km	November 71,46 %
	2021 Km	
	April 300 km	April 60,54 %
	May 216 km	May 40,45 %

Endurance running is the main means for the B.A. athlete during the training period in October/November 2020. The volume of effort in October/November 2020 is increased compared to the rest of the training. The run is carried out over distances between 10 km and 16 km with a tempo between 4:10 min and 4:20 min/km.

The running volume is high, noting here that the athlete puts a lot of emphasis on long runs and a high volume of aerobic effort, which will help him a lot in the following stages

(pre-competitive and competitive). The volume of endurance running in October/November 2020 (560 km) is higher than in April/May 2021 (516 km).

Table 6. Analysis of the means used - fartlek type running subject P.S.

Fartlek running	2020 Km	
	October 16 km	October 48,53 %
	November 18 km	November 52,46 %
	2021 Km	
	April 22 km	April 46,54 %
	May 26 km	May 54,45 %

Fartlek running is part of the training plan of the athlete P.S. during the training period in effort, respectively the months of October/November 2020. The volume of fartlek type effort contributes to the increase of speed in the endurance regime in the months of October/November 2020 is lower in the first part of the preparatory period compared to the second preparatory period. The run is carried out over distances between 3 km - 6 km with a tempo between 3:45 min and 3:52 min/km.

The running volume is low, noting here that the athlete puts a lot of emphasis on sustained running with breaks between and a lower volume of anaerobic effort which will help him a lot in the following stages (pre-competitive and competitive). The volume of fartlek running in October/November 2020 (24 km) is higher than in April/May 2021 (48 km).

Table 7. Analysis of the means used - fartlek type running subject B.A.

Fartlek running	2020 Km	
	October 15 km	October 48,53 %
	November 17 km	November 52,46 %
	2021 Km	
	April 24 km	April 46,54 %
	May 26 km	May 54,45 %

Fartlek running is part of the B.A. athlete's training plan during the training period in October/November 2020. The volume of fartlek effort contributes to increasing endurance speed in October/November 2020 is lower in the first part of the preparatory period. The run is carried out over distances between 3 km and 6 km with a tempo between 3:48 min and 3:50 min/km.

The running volume is low but with a higher intensity compared to the other means. The volume of fartlek running in October/November 2020 (32 km) is lower than in April/May 2021 (50 km).

Table 8. Analysis of the means used - ramp run subject P.S.

Ramp run	2020 Km	
	October 8 km	October 48,53 %
	November 11 km	November 52,46 %
	2021 Km	
	April 11 km	April 46,54 %
	May 9 km	May 54,45 %

Ramp running is part of the training plan of the athlete P.S. during the exercise training period, respectively the months of October/November 2020. The volume of hill running effort contributes to the increase of resistance in the strength regime in the months of October/November 2020 is almost equal to that of the months of April/May. Running is carried out over distances between 500m - 1000m.

The running volume is almost equal noting that there is an increased interest in strength endurance development (pre-competitive and competitive). The volume of ramp running in October/November 2020 (19 km) is close to that of April/May 2021 (20 km).

Table 9. Analysis of the means used - slope running subject B.A.

Slope running	2020 Km	
	October 7 km	October 48,53 %
	November 9 km	November 52,46 %
	2021 Km	
	April 9 km	April 46,54 %
	May 7 km	May 54,45 %

Slope running is part of the B.A. athlete's training plan during the exercise training period in October/November 2020. The volume of the ramp running effort contributes to the increase of resistance in strength mode in October/November 2020 is equal to that of April/May period. Running is carried out over distances between 500m - 1000m.

The running volume is low compared to the other means used in the preparation of athletes to achieve the objectives of the competitive period.

Table 10. Analysis of the means used - running with subject intervals P.S.

Long run	2020 Km	
	October 19 km	October 43,53 %
	November 21 km	November 56,46 %
	2021 Km	
	April 23 km	April 54,54 %
	May 23 km	May 45,45 %

Interval running is the main means for the athlete P.S. during the training period in October/November 2020. The amount of effort in October/November 2020 is lower compared to the rest of the training. The run is carried out over distances between 10 km and 16 km with a tempo between 3:45 min and 4:00 min/km.

The running volume is high, noting here that the athlete puts a lot of emphasis on long runs and a high volume of aerobic effort, which will help him a lot in the following stages (pre-competitive and competitive). The volume of endurance running in October/November 2020 (40 km) is lower than in April/May 2021 (46 km).

Table 11. Analysis of the means used - running with intervals subject B.A.

Interval running	2020 Km	
	October 17 km	October 39,53 %
	November 20 km	November 71,46 %
	2021 Km	
	April 23 km	April 60,54 %
	May 25 km	May 40,45 %

Interval running is the main means for athlete B.A. during the training period in October/November 2020. The volume of effort in October/November 2020 is lower compared to the rest of the training. The run is carried out over distances between 10 km and 16 km with a tempo between 3:45 min and 4: min/km.

The running volume is high, noting here that the athlete puts a lot of emphasis on interval runs and a high volume of aerobic effort, which will greatly help him achieve his goals in the (pre-competitive and competitive) periods. The volume of endurance running in October/November 2020 (37 km) is lower than in April/May 2021 (48 km).

The **specific obstacle** course is the main means for the P.S. athlete during the training period in October/November 2020. The volume of effort in October/November 2020 is

increased compared to the rest of the training. The run is performed over distances between 6 km and 10 km with a tempo between 4:15 min and 4:20 min/km.

This means is also very important for learning the running technique. The volume of endurance running in October/November 2020 (46 km) is lower than in April/May 2021 (58 km).

Table 12. Analysis of the means used - subject-specific obstacle course P.S.

Specific obstacle course	2020 Km	
	October 24 km	October 39,53 %
	November 22 km	November 71,46 %
	2021 Km	
	April 28 km	April 60,54 %
	May 30 km	May 40,45 %

The **specific obstacle course** is the main means for the P.S. athlete during the training period in October/November 2020. The volume of effort in October/November 2020 is increased compared to the rest of the training. The run is carried out over distances between 6 km and 10 km with a tempo between 4:25 min and 4:35 min/km.

This means is also very important for learning the running technique. The volume of endurance running in October/November 2020 (40 km) is lower than in April/May 2021 (49 km).

Table 13. Analysis of the means used - subject-specific obstacle course B.A.

Specific obstacle course	2020 Km	
	October 19 km	October 39,53 %
	November 21 km	November 71,46 %
	2021 Km	
	April 23 km	April 60,54 %
	May 26 km	May 40,45 %

The **specific obstacle course** is the main means for the athlete B.A. during the training period in October/November 2020. The volume of effort in October/November 2020 is increased compared to the rest of the training. The run is carried out over distances between 10 km - 16 km with a tempo between 4:25 min and 4:35 min/km.. The volume of long-term running in the months of October/November 2020 (560 km) is increased compared to from April/May 2021 (516km).

Table 14. Analysis of running volume in the two preparatory periods - subject P.S.

	Long run	Fartlek running	Running uphill (ramp)	Running with intervals	Specific obstacle course
October	266km	16km	8km	19km	24km
November	345km	18km	11km	21km	22km
April	340km	22km	11km	23km	28km
May	200km	26km	9km	23km	30km
Total km	1151 km	110km	39km	86km	104km
Total km thetwo periods	1408 km				

Table 14 shows the means used by subject P.S. during the preparatory periods. Thus we have:

- for the long run, a total volume of 1151 km;
- for fartlek running, a total volume of 110 km;
- when running uphill (ramp), a total volume of 39 km;
- when running with intervals, a total volume of 86 km;
- for the specific obstacle course, a total volume of 104 km.

Table 15. Analysis of running volume in the two preparatory periods - subject B.A.

	Long run	Fartlek running	Running uphill (ramp)	Running with intervals	Specific obstacle course
October	245km	15km	7km	17km	19km
November	315km	17km	9km	20km	21km
April	300km	24km	9km	23km	23km
May	216km	26km	7km	25km	36km
Total km	1076 km	82km	32km	85km	99km
Total km thetwo periods	1374 km				

Table 15 shows the means used by subject B.A. during the preparatory periods. Thus we have:

- for the long run, a total volume of 1076 km;
- for fartlek running, a total volume of 82 km;
- when running uphill (ramp), a total volume of 32 km;
- when running with intervals, a total volume of 85 km;
- for the specific obstacle course, a total volume of 99 km.

The analysis of the data and results obtained by the two subjects of the present study entitle us to formulate a series of conclusions of a general nature for the half-distance events, but also concretely (particularly) for the obstacle events - juniors.

Thus we can state that the hypothesis according to which "a greater volume of the means and methods used in the preparatory period can lead to the achievement of the proposed results in the objective competition" has been confirmed.

In **conclusion**, we mention that:

1. The increase in the capacity for effort, mixed and anaerobic, the first-order requirement in increasing performances in half-distance trials, is possible only to the extent that the physical effort is directed correctly, systematically and continuously, the ratio between the 3 types of effort gaining different proportions depending on the level of athletes being worked with (more precisely, depending on the level of sportsmanship).

2. An essential condition in achieving performance in half-distance tests is the unity of the training product, avoiding interruptions and shocks, using the main training indicators. Gradual adaptation will be considered in order to obtain the maximum yield.

3. Gradual increase in effort by increasing training volume and demand complexity.

4. Increasing the volume of training in the formative stage is justified by the fact that an effort based on quantity must precede an effort based on quality, which fixes and consolidates the improvements achieved, allowing the further development of more intense efforts, which will lead to the increase of sports results and to the creation of premises for raising the level of sports mastery in the future.

5. Regarding increasing the intensity, special attention will be paid to increasing the intensity of the training effort, by judiciously altering the aerobic, mixed and anaerobic effort and it will be done, mainly on account of those means that require the athlete similar to the effort of competition.

6. A decrease in the aerobic volume and a significant increase in the qualitative volume - maximal aerobic capacity - is found, with an almost perfect balance between the two parameters in all the analyzed stages.

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