

Development of Special Stability, Increases Physical Performance to Boxers

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Abstract

Introduction: This study analyzes the training activity during the first training macro cycle, from September to February 2021, in the general preparation stage, the special preparation stage and the first stage of the competitions in April of this year. **The purpose of the study is:** The main purpose of modeling the training load for the preparation of special consistency, in the framework of specific models, units and methodological rules, in the physical and functional point of view. With quality amateur boxers. **Methodology:** Forty boxers were studied and underwent a 6-month training program to develop special endurance in order to increase the physical performance of boxers. Various training models have been developed, which are recommended to be diverse and dynamic **Tested:** *Complex physical-functional testing is organized through a specific test "with 10 exercises". Functional condition testing* was performed via the VO2 Max measurement test (in ml / kg / min), via the ergometric bicycle. **Discussion:** The average amount of repetitions of exercises was improved, from 228 to 249 times. Change 21 times, or 9.1%; b. Improved average pulsation after load, from 190 to 186 beats / minute. Change 4 beats, or 2.15%; c. The renewal of the average pulsation within a minute; from 145 to 139 beats / minute. Change 6 beats, or 3.23%. **Conclusions:** The process of preparing special sustainability has given great help to increase the physical-functional capacity of boxer as well as adaptive skills, safe confrontation with difficult match situations.

Keywords: Sustainability, boxing, physical performance, training program, VO2max.**Copyright © 2021 The Author(s):** This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CC BY-NC 4.0) which permits unrestricted use, distribution, and reproduction in any medium for non-commercial use provided the original author and source are credited.

INTRODUCTION

The study reflects an aspect of the training process with Boxier Watches of Albania for 2020-2021. Research studies part of the experimental process for the preparation of special sustainability ", one of the basic physical-functional skills for boxer training. In this study analyzes training activity during the first training macrocyk, from September to February, 2021, at the stage of general preparation, the stage of special preparation as well as the first stage of competition in April this year.

The process of preparing special sustainability has been developed in accordance with the specific requirements of boxing discipline, as a tedious, complex and highly variable activity in spatial and time limits, where fractionated actions are highlighted. This activity is very sensitive to energy factors in the conditions of the sports match, especially those of lactic anaerobic character, taking advantage of aerobic processes, where the anaerobic processes occupy 10%, anaerobic lactic, 60% and 30% aerobic processes.

(Steven J. Kateyan, Henri Ford etc., 1998, Jorgoni, A., 2007).

For the country and the role that occupies special sustainability in the complex preparation of boxer, it is estimated as one of the most important physical skills of boxer craft, which is always given to the maximum importance.(Kiselov V.A, Cerenicov V.N., 2013)

The purpose of the study is

The main purpose of modeling the exercise load on the preparation of special sustainability, in the framework of specific methods, units and methodological methodological rules, in the physical and functional perspective. with quality amateur boxers.

METHODOLOGY

This study was conducted with 40 high-level boscies in Albania. Introducingly focused on the development of special sustainability in these boxers with a view to increasing physical performance. Different training models have been developed,

recommended to be diverse and dynamic character. Tested: *Complex physical-functional testing* '

The complex physical-functional testing is organized through a specific test "with 10 exercises", which assesses the condition of the boxer in terms of the activity of the anaerobic lactic energy mechanism. The test is one of the elements of experimentation.

Functional condition testing

Was implemented through the VO₂ Max measurement test (in ml / kg / min), via the ergometric bicycle. One of the Astrand tests has been implemented: Astrand Ryening - Monark Test Report. The tests were performed at the beginning and end of the study. The test data have been subjected to statistical processing, to highlight the achievements in boxer training indicators. Special stability has been developed mainly through the interval method. This method has been evaluated as a training mode, where the actions are performed with relatively high intensity, with rest intervals with defined duration and incomplete for renewal.

Although a difficult way, the interval method, compared to other methods creates higher standards of physical-functional processes for the development of special stability, but to the point where the principles and ways of its implementation are not violated. Otherwise, it turns into a factor that approaches the boxer's injuries and overwork, which can commonly happen to young, under-trained boxers. This is why this method is applied with trained boxers and then with new subjects, where lactic acid removal processes are less developed.

2. Types of special durability in the amateur boskin

With regard to the structural element of the load, that of the duration of the exercise, the special stability has been prepared mainly through two main forms of its manifestation, which are:

- Medium special durability and;
- Short special durability.

Medium special durability; functions mainly on the basis of the anaerobic lactic mechanism and very little on the aerobic one. The intensity of the actions is relatively high and the internal load (via pulse / minute), large, from 180-200 rr / min The duration of the actions in the training model ranges from 80-170 sec.

During the preparation of the special medium consistency, the process takes place with high intensity, stimulating mainly the anaerobic lactic processes and to a lesser extent the aerobic ones. The physical-functional process is accompanied by great fatigue because, after

the first 45 seconds (where the maximum concentration of lactic acid increases), the muscle works with high tension for 2 minutes or more. The effects of the load are significant, but also the risk of injury, great, which must be avoided in it of a strict control and evaluation of the training load.

The training unit for the development of medium endurance in amateur boxing is distinguished in comparison with other sports, in terms of high intensity and very diverse and complex content, with a series of models and physical-motor and coordination exercises, which coincide in terms of special and specific to the requirements of the sports match.

Regarding the above, the training unit has had in its content many technical-tactical actions and exercises that develop schemes and elements of technique as well as the main physical and coordination skills. This unit is organized in special sets (series), mainly by means of the "intermediate intermediate method", implemented through the stationary circular mode.

Each series is repeated 3-5 times. It contains from 3-10 different exercises, which are traversed without intermediate stop. Each one of them is applied in 10-20 seconds, while the whole series for 1.5-3 minutes. The ratios in the "load-rest" indicator range between 3: 1.5 (test with 12 exercises) and 1: 1 (in the shortest tests).

To expand the moving space, the training unit often changes the type and manner of performing the moving actions, but keeping unchanged its developmental goals in the complex functional physical aspects. Thus, one element or technical scheme is replaced by another, one exercise is made more difficult or replaced by another, thus creating new training units, which again aim at preparing special endurance, which includes exercises of different physical abilities and coordinator.

RESULTS AND DISCUSSIONS

Circuit model with 10 exercises

In this model, each exercise is traversed at high intensity within 12 seconds. The intervals between exercises are very active; they last 5 sec and serve to change stations. The test is traversed through the interval method, in a circular shape with stations. The whole model lasts 3 min and 50 sec, where the actual intensive work is 3 min, a time indicator that corresponds to the duration of one round (Tab. 1).

Table-1: Model-type training with 10 exercises for the development of endurance special medium

Nr	Content-type model	Time extension	Replacement the exercise	Overall amount
1	consecutive straight blows with giraffes in the hands, weighing 5 kg .. (At times)	10 sec	Every 5 sec	15 sec
2	Jump straight with both feet on an object (pod) 50 cm high. (At times)	10 sec	Every 5 sec	15 sec
3	. " Pumps "Iron pull (In times)	10 sec	Every 5 sec	15 sec
4	Abdominal musculature: chest-leg fold, from the supine position. (At times)	10 sec	Every 5 sec	15 sec
5	Pushing and approaching near the chest of the shaft back and front, weighing 15 kg. (At times)	10 sec	Every 5 sec	15 sec
6	Turns left and right with the axle over the shoulder weighing 20 kg, from the upright position. (At times)	10 sec	Every 5 sec	15 sec
7	Stretched barbell, weighing 45 kg (At times)	10 sec	Every 5 sec	15 sec
8	Obstacle crossing 60 cm (In times)	10 sec	Every 5 sec	15 sec
9	"aperkut" blow with giraffe in the hands, weighing 5kg .. (At times)	10 sec	Every 5 sec	15 sec
10	Continuous swallowing, with 360 degree return. (At times)	10 sec	Every 5 sec	15 sec
The total amount		100 sec	50 sec	150 sec

Model- with sets

The model with sets is implemented with three sets. In each set they are developed by a technical kick

exercise, combined with active rest. The intensity of the actions is high, while the reports "rest load", at 1: 1. (Tab. 2)

Table-2: Model- with kits for sustainable development special secondary

Set	Action	Time	Amount
First Set	Combinations with all the type of punches.	20 sec	20+30=
	Rest	30 sec	50 sec
Second Set	Combinations with all the type of punches	20 sec	20+20=
	Rest	20 sec	40 sec
Third Set	Combinations with all the type of punches	20 sec	20+10=
	Rest	10 sec	30 sec
Amount 3-sets	Load-break sets	120 sec (3min)	60+60= 120 sec

Short special durability

Is worked mainly with actions from 15-45 sec., with high intensity. During its preparation, the glycolysis process is gradually intensified, reaching its peak in the 45th second. Physiological fatigue is great, but it is more easily coped with, compared to the process of preparation of medium stability, because the boxer acts for a shorter time in conditions of high concentration of lactic acid. Pulsation / min. at load goes to 200 beats / minute and more.

The training model for the development of short endurance contains various exercises of technical

and physical character, permeated with high intensity, where the relations of work with rest.

Model- with sets (in 60 sec)

The training model lasts 60 seconds and contains 30 seconds of work and 30 seconds of active rest. The "load-rest" ratio goes to 1: 1). The exercise is performed with a special stroke, which varies from one set to another. The intensity of the exercises is very high and is accompanied by a barrage of blows, which has as its main purpose the perversion of the opponent (Tab.3).

Tab-3: Model- with kits for sustainability development short (in 60 sec)

Set	Action	Koha	Shuma
First Set	Combinations with all the type of punches.	15 sec	15+15=
	Rest	15sec	30sec
Second Set	Combinations with all the type of punches	10sec	10+10=
	Rest	10 sec	20sec
Third Set	Combinations with all the type of punches	5sec	5+5=
	Rest	5sec	10sec
Amount 3-sets	Load-break sets	60 sek	30+30= 60sec

Content and distribution of training units

Determining the content and distribution of training units during microcycles of different stages of the annual cycle has been a primary methodological requirement for the preparation of special consistency. Analyzing the positive experiences in Europe and in our country, we reached some positive conclusions, where we mention: the distribution of training units during training microcycles in different stages of the macro cycle and the content of training units for the development of special endurance, as follows:

The stage of general preparation

During this period, two training sessions per week were implemented, with intervals of not less than 48 hours from each other:

In the first session, the training have two models:

Circuit type models with 10 exercises for special medium endurance: $100 + 50 = 150$ sec. (See tab. 1). The pattern is repeated 2 times, with 1 minute of intermediate rest.

In the second session: the training have two models.

a-Model with three sets for special medium durability: $60 + 60 = 120$ sec. (See Tab. 2)., The pattern is repeated 2 times with an intermediate break of 1 minute. Rest 6-8 minutes to perform the next exercise on the other model.

b-Model with three sets for special short durability: $30 + 30$ sec .. (See tab. 3). The training model was performed 2 times, with 2-3 minutes of intermediate rest

Special preparation stage

In the special preparation stage, three training sessions per week were implemented for the development of special endurance, with intervals between them in about 48 hours:

In the first session, the training have three models:

a- Model-type with 10 exercises for special medium endurance: $180 + 50 = 230$ sec. (See tab. 1). The model is crossed 1 time. Pause 1 minute to start the next exercise on the next model.

B-Model with sets for special short durability ($30 + 30$ sec). (See tab.3.). The pattern is repeated 1-2 times with 1-2 minutes of intermediate rest.

In the second session: the training have three models

a-Model with three sets for special medium durability: $60 + 60 = 120$ sec .. The model is performed once. 1 minute break to start the next exercise ;. (See tab.2).

B-Model with three sets for special short durability: $30 + 30$ sec. The model is performed 2 times with 1-2 minutes of intermediate rest. (See tab.3).

In the third session; the training unit contains three models

a-Model with 10 exercises. Rest 1 minute to move on to the next exercise

b-Model with three sets (See in tab. 3)

Test and VO2 max

VO2 max. is one of the main indicators, which reflects and evaluates the functional preparation of the boxer, which relies on the activity of the main vital organs, especially the heart and lungs as well as the relevant cardiovascular and respiratory systems. The preparation of this indicator is closely related to the intention of the boxer to consume as much oxygen through the respiratory tract, as part of it is not used, especially in less trained athletes. In order to increase the capacity to utilize as much oxygen as possible in the tissues, we have focused on solving these respective tasks:

- Increase in absolute values of VO2 max; through the amount of oxygen through the airways, in "liters / min", which is estimated by measuring with a spirometer, where boxers have high indicators, at 4500-5000 cm. cubic and more;
- Increase of relative values of VO2 max, which is reflected through the indicator that comes out of the ratio of absolute values for over body weight: A boxer who has absolute V02 4200 liters / min and body weight 70 kg, relative values of V02 max. will be at 60 ml / kg / min:

$$VO2 \text{ max} = 4200 : 70 = 60 \text{ ml/kg/min.}$$

The higher the absolute V02 and the smaller the body weight, the higher the V02 max.

The measurement of VO2 max was realized through

Laboratory testing, where "ergometric bicycles" are used and;

Practical testing; via the Cooper test (1968), where the main element is running for 12 min on the 400 m track:

$$VO2 \text{ max.} = 22,351 X - 11,288; \text{ where:}$$

(x) indicates the distance traveled in 12 min (in km); (22.351) and (11.288) are certain coefficients.

Thus, the athlete who has covered the distance of 3000 m (3 km) in 12 minutes, will have the indicator of V02 max at 55.8 ml / kg / min:

$$VO2 \text{ max} = 22.351 \times 3 - 11.288 = 55.82 \text{ ml/kg/min}$$

According to Cooper, the greater the running distance traversed in 12 min, the higher the subject V02 max (Tab. 4)

Table-4: Values of V02 max at 12 min run, in ml / kg / min (Cooper, 1968)

Vrapimi nw 12 minuta		Vrapimi nw 12 minuta	
Kilometra	V02 max	Kilometra	V02 max
1.6 km	24.5	2.8	51.3
1.7	26.7	2.9	53.15
1.8	28.9	3.0	55.8
1.9	31.2	3.1	58.0
2.0	33.4	3.2	60.2
2.1	35.6	3.3	62.5
2.2	37.9	3.4	64.7
2.3	40.1	3.5	66.9
2.4	42.3	3.6	69.2
2.5	44.6	3.7	71.4
2.6	46.8	3.8	73.8
2.7	49.1	3.9	75.5

For the high demands in terms of functionality, the indicators of V02 max are high in boxers, in the figures 65-70 ml / kg / min. They are mainly improved by developing with priority the physiological and metabolic processes in the tissues and muscles... in conditions of a relatively long activity, rather in the aerobic aspect, such as running (Bomba, 1999).

CONCLUSION

The process of preparation of special endurance has provided great assistance for the increase of the physical-functional capacity of the boxer as well as the adaptive skills, in a safe confrontation with difficult match situations. These changes are evident in the results of the "model with 10 exercises", as a complex of organized actions, which has served as a genuine original test to identify and evaluate the physical and functional performance of the boxer, especially the parameters of special endurance. (See tab. 1.).

During the implementation of the test with 10 exercises we relied on the following key indicators:

- Total amount of repetitions for each test exercise (in times);
- Pulse indicator after the end of the test (in beats / minute);
- Pulse indicator after one minute from the end of the test, which reflects the rehabilitation skills of the boxer for the next round (in beats / minute).

The assessment of the physical-functional condition through the "10 exercises" test of the team boxers was performed on the basis of comparisons between the current individual results and previous individual results, at the beginning of the training year. In this comparison, the increase in the total amount of repetitions, the decrease in the pulse rate after the test as well as the pulse after one minute of its performance, show good physical-functional condition. And the more these indicators are emphasized, the better the physical-

functional condition of the boxer.

The comparison of the average test data "with 10 exercises" for each boxer of the team for the period September-February 2020 -2021, revealed significant positive changes, in three main directions:

- a. The average amount of repetitions of exercises was improved, from 228 to 249 times. Change 21 times, or 9.1%;
- b. The average pulse after load improved, from 190 to 186 beats / minute. Change 4 beats, or 2.15%;
- c. Improved average pulse recovery within one minute; from 145 to 139 beats / minute. Change 6 beats, or 3.23%.

Based on all the values of the above indicators, the performance of boxers of the champion team SK "Tirana" increased relatively in the average figures to about 14.48%, as an outstanding indicator for increasing the physical-functional capacity of boxers and achieving objectives desired to increase the level of special endurance and sporting achievements.

REFERENCES

1. Dick, F. (1984). Training Theory
2. Dibra, F. (2007). Athletics: Training Grounds Sports (English)
3. Ibrahim E. 2010 Box (English);
4. Kiseliyov, V.A., Cerenicynov, V.N. (2013). The Bases of Physique Preparation (Russian)
5. Jorgoni, A. (2005). Theory and Methodology of Sports Training. (English)
6. Matvejev, L. (1981). Fundamentals of Sports Training
7. Reka R. 2006: Box (English)
8. Salti, B., Fundamentals in 1973. Metabolic Exercise
9. Skender, D.H. (2012). Physical Preparation in Sports. (English)
10. Tschene, P. (1977). Aspects Quelque nouveau de la periodation de l'entrenement Haut de le niveau

-
- (translated into French from German, RFA, 379-382).
11. Zaciorsky V. 1995: Science and Practice of Training, HK.
 12. Verkhoshanski, Y. (1977). Les Bases de l'ENTRAÎNEMENT. (Translated into French from Russian).
 13. Ea, Volkov. (1972). Processus de recouperation en sport. (Translated into French by Russian, FIS).
 14. Weineck, J. (1982). from optimal Training
 15. Cooper, K.H. (1968). A means of assessing maximal oxygen intake. Correlation between field and treadmill testing. *JAMA*, 203(3):201-4. PMID: 5694044.
 16. El-Ashker, S., Chaabene, H., Negra, Y., Prieske, O., & Granacher, U. (2018). Cardio-Respiratory Endurance Responses Following a Simulated 3 × 3 Minutes Amateur Boxing Contest in Elite Level Boxers. *Sports*, 6(4), 119. MDPI AG. Retrieved from <http://dx.doi.org/10.3390/sports6040119>.