

Building a year cycle of training athletes radio direction finders at the stage of improving sports skills

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Abstract

Objective of the study was to optimize the structure of the annual training cycle for qualified athletes aged 16-17 in sports direction finding.

Methods and structure of the study. As a result of a longitudinal study (in the period from 2001 to 2021 with the participation of 39 athletes at the stage of improving sportsmanship), it was found that in sports radio direction finding, the single-cycle option for building a one-year training is optimal, when the preparatory period lasts from September to March, the competitive period from April to July, transitional - in August.

Results and conclusions. It was revealed that with such periodization due to the purposeful use of various training tools and exercises that contribute to the improvement of the technique and tactics of operational radio direction finding, near radio search and orientation on the ground, the competitive period can be multi-peak, that is, athletes are able to repeatedly reach the peak of their sports form to the responsible and main (culminating) competitions.

Keywords: sports radio direction finding, stage of sportsmanship improvement, training load dynamics, annual training cycle.

Introduction. An important aspect of improving sports training in sports radio direction finding (SRDF) is the scientific substantiation of the organization of the training process of athletes at various stages of long-term training.

At the stage of improving sportsmanship, one of the key structural elements of the sports training system is a one-year training cycle, the optimization of which construction determines the success of the training process as a whole [1]. That is why the study of the construction of a one-year training cycle for the training of athletes aged 16-17 in sports radio direction finding is relevant.

Objective of the study was to optimize the structure of the annual training cycle for qualified athletes aged 16-17 in sports direction finding.

Methods and structure of the study. In order to establish periodization and the optimal structure of training during the year for qualified athletes aged 16-17 in sports radio direction finding, a longitudinal

study was conducted in two stages in the period from 2001 to 2021, the first stage - from 2001 to 2007, the second - from 2008 to 2021

During the first stage of the study, the scientific literature devoted to the problem of periodization of sports training was studied, the features of building training at the stage of improving sportsmanship were revealed, and options for planning the annual training of qualified athletes 16-17 years old in sports radio direction finding were analyzed.

During the second stage of the study, we experimentally tested the effectiveness of building a one-year training for athletes aged 16-17 in the SRDF. A total of 39 athletes took part in the experiment. Subsequently, the analysis of the dynamics of the training loads of athletes who became winners and prize-winners of the championships of Russia and all-Russian competitions (n=24) was carried out. In the course of a long-term study, the data of training loads of various directions were recorded, shown by each athlete:



the total volume of running load (TVRL), km; volume of running load performed in aerobic mode (VRLAM), km; the volume of the running load performed in the aerobic-anaerobic mode (VRLAAM), km; volume of running load performed in anaerobic mode (VRLANM), km; the volume of loads during the development and improvement of short-range radio search and operational radio direction finding (TSR), km; the volume of loads during the development of tactical actions and radio search techniques (VLTA), km, the volume of loads during the improvement of technical and tactical skills and radio search techniques - integral training (TT-IT), km; the volume of loads during the development of skills and techniques of equipment and tactics of orientation on the ground (OG), km.

Results of the study and their discussion. At the first stage of a long-term study, it was established that at the stage of improving sportsmanship in sports radio direction finding, the improvement of sports and technical skills continues, increasing their reliability in extreme conditions of competitive activity.

The analysis of competitive activity in sports radio direction finding showed that the periodization of sports training in the annual cycle of training, based on the characteristics of performing a competitive exercise in this sport, is influenced by the calendar of competitions, which is built taking into account seasonal and climatic factors. Thus, the first major competitions may already be held at the end of March in the southern regions of the country, and the last in October (also in the southern regions of Russia). At the same time, the first qualifying competitions are planned in early May, the main championship (championship) of Russia - at the end of July. It is the seasonality and duration of the competitive and, as a result, the preparatory and transitional periods that make the single-cycle variant of building year-round training in the SRDF the most preferable [2].

It has been established that during the competitive period, the acquisition of a sports uniform occurs several times, followed by its temporary loss. The process of getting into a sports form is of a phase nature, in which the phases of the development of a sports form alternate in a certain way, which depends on the individual characteristics of the athletes and the training technical and tactical means used, which are characteristic of sports radio direction finding.

Based on the data obtained, a structure of annual training cycles was developed, in which the process of sports form development for athletes ends by the end of the preparatory period, and then, during the com-

petitive period, by changing the training means used and exercises of a technical and tactical orientation, over several periods, the number of which depends on the duration of the competitive season, there is a preservation of sports form.

During the second stage of a long-term study, the effectiveness of the developed structure for building an annual macrocycle for athletes aged 16-17 was tested. As a result, the indicators of 24 athletes were identified and processed, who became winners and prize-winners of the championships of Russia and all-Russian competitions. For selected athletes, the annual training cycle began in September and ended in August.

The analysis showed that the maximum amount of running training work performed in the aerobic energy supply mode (VRLAM) falls on November-January, where the maximum indicators fall on December (221 ± 33 km). Running loads of aerobic-anaerobic orientation (VRLAAM) reach their maximum in February (34 ± 6.5 km). During the competitive period, starting from April, the indicators of aerobic running work are significantly reduced and fluctuate within 22-39% of the maximum in a year, and aerobic-anaerobic - within 40-74%.

The anaerobic running load (VRLANM) reaches its maximum at the end of the preparatory (March - 9.8 ± 2.0 km) - the beginning of the competitive (April - 9.5 ± 1.9 km) periods. In the future, it gradually decreases and by the end of the competitive period does not exceed 30% of the maximum volume in the year.

It has been established that by changing the applied training means aimed at improving the technique and tactics of operational radio direction finding, both in nature and in volume, the acquisition of a sports uniform occurs [3]. In our case, the first peak is reached by the beginning of May, when the first qualifying competitions are planned, and the second by the end of July, which is the main start of the season. This happens, first of all, due to the purposeful and large-scale use of technical and tactical exercises: improving the technique of short-range radio search and operational radio direction finding (TSR), with a maximum volume in March (16.1 ± 5.0 km) - April (11.0 ± 3.5 km) and June (12.3 ± 4.0 km); development of tactical actions and radio search techniques (VLTA), with a maximum volume in April (10.1 ± 3.0 km) and June (10.0 ± 3.8 km); development of skills and techniques of orienteering techniques and tactics (OG), with a maximum volume in April (15.0 ± 7.0 km); improvement of technical and tactical skills and radio search techniques



The structure of the annual macro cycle of the training cycle for qualified athletes aged 16-17 in the SRDF

Options training load	Preparation period						Competitive period						TP	Total for a year
	RS	I BS				II BS	I CS			II CS				
	IX	X	XI	XII	I	II	III	IV	V	VI	VII	VIII		
VRLAM, km	140	100	170	232	200	99	92	54	74	40	57	78	1336	
VRLAAM, km	6	22	30	38	28	38	30	32	24	22	16		286	
VRLANM, km		2	5	7	6	9	10	10	8	6	3		66	
TT-IP, km		24	10	6	10	44	84	88	68	88	68		490	
TSR, km	8	14	8	4	12	18	18	10	10	10	8		120	
VLTA, km				5	5	5	6	10	4	10			45	
OG, km	8	26	14	8	14	16	16	20	14	14	8	12	170	
Total volume TTP, km	16	64	32	23	41	83	124	128	96	122	84	12	825	
Total volume of running load, km	162	188	237	300	275	229	256	224	202	190	160	90	2513	

Note: RS - retracting stage, I BS - 1st basic stage, II BS - 2nd basic stage, I CS - 1st competitive stage, II CS - 2nd competitive stage, TP - transitional period.

- integral training (TT-IT), with a maximum volume in March (70.0 ± 16.0 km) - April (75.0 ± 19.0 km) and June (75 ± 12.9 km). In the second half of May, there is a decrease in the volume of use of training means of this direction, which in turn leads to a slight decrease in the level of sports form, which in turn reaches the next rise by mid-July.

Based on the data obtained as a result of a long-term study, we developed the structure of the annual training cycle and determined the dynamics of training loads of various directions for athletes 16-17 years old in sports radio direction finding (SRDF) at the stage of improving sportsmanship (see table).

The annual cycle of training for athletes aged 16-17 at the stage of improving sportsmanship should have the following structure:

The preparatory period lasts from September to March. It includes the following stages of preparation.

Retracting stage (September). Switching to a hard training regimen. Preparing the body for significant running and functional loads. Elements of operational radio direction finding, short-range radio search and orientation on the ground are being worked out.

1st basic stage (October - January). Access to large and maximum volumes of running loads. Development of aerobic and aerobic-anaerobic capabilities. From the second half of the stage, an increase in the volume of anaerobic loads. Development of elements and improvement of TSR and orientation on the ground (OG).

2nd basic stage (February - March). Significant volume and maximum intensity of running loads. The development of anaerobic capacity reaches maxi-

imum values. Special trainings in the improvement of TSR reach maximum volumes. In the second half of the stage, integrated training means (TT-IT) are used in large volume.

The competitive period starts in April and ends in late July - early August.

1st competitive stage (April - May). The total amount of running load gradually decreases and by the end of the stage reaches 70-80% of the maximum monthly volume in a year. At the same time, the intensity of training loads and exercises is maximal. The technique of near radio search (TSR), OG is being improved, and integrated training facilities (TT-IT) are used to the maximum extent. The athlete participates in a series of control (control-training) competitions and a qualifying competition.

2nd competitive stage (June - July). The main task of this stage is preparation and participation in the main competition of the season. The total amount of running load is low and amounts to 60-70% of the maximum monthly volume in a year. As well as at the 1st competitive stage, a large amount of means are used aimed at practicing tactical actions and methods of radio search (VLTA), TSR and integral training (TT-IT).

Transitional period (August) - recovery of strength after the sports season. Prevention and treatment of injuries. Leisure. Preparing for the new sports season.

Conclusions. The developed structure of building a yearly training for athletes aged 16-17 in the SRDF will make it possible to optimally plan sports training at the stage of improving sportsmanship, which in the



future will allow showing high results in the age zone of optimal opportunities.

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