



# The incorporation of a series of acrobatic movements into the training regimen of gymnasts

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## Abstract

**Objective of the study** was to theoretical foundation for acrobatic training in rhythmic gymnastics, creating a comprehensive set of acrobatic exercises through the integration of non-objective training methods.

**Methods and structure of the study.** Examination of literary materials and pedagogical observation of gymnasts' training sessions. The study focused on gymnasts in the sports improvement and advanced sports categories, who were training under the CMS and MS programs.

**Results and conclusions.** The article provides a scientific rationale for the significance of acrobatic training in rhythmic gymnastics. The article outlines the methods and presents a collection of acrobatic exercises that are based on the integration of non-objective training techniques.

**Keywords:** *acrobatic training, rhythmic gymnastics, acrobatic elements, non-objective training.*

**Introduction.** Non-objective training is the process of developing and improving the technique of «Body Difficulty», which includes balance-rotational, jumping, acrobatic training, as well as various specific movements. Non-objective training is the foundation for the development of a gymnast [4]. Successful mastering of technical groups of difficulty (jumps, rotations, balances), at various stages of sports training, determines the value of the competitive composition, respectively, the competitiveness of the gymnast herself [3].

One of the components of non-objective training of gymnasts is acrobatic training, which includes a number of effective means of improving motor actions. Acrobatic exercises contribute to the development of resistance to unplanned accelerations, speed of motor reaction and body movement in space. Pre-acrobatic elements add contrast and amplitude to the composition due to transitions from a standing position, to a lying or sitting position, emphasizing the nature of the musical accompaniment.

It has been determined that there is a relationship between vestibular stability and the performance of complex coordination exercises related to balance and rotation [1]. The ability to differentiate the body in space and the quality of the formation of motor skills depend on vestibular stability [2].

**Objective of the study** was to theoretical foundation for acrobatic training in rhythmic gymnastics, creating a comprehensive set of acrobatic exercises through the integration of non-objective training methods.

**Methods and structure of the study.** Analysis of literary sources, pedagogical observation of the training process of gymnasts. The study involved gymnasts included in the group of sports improvement and higher sports mastery, performing according to the CMS and MS program. The means of the developed complex of combined focus were acrobatic, jumping, balance-rotational exercises.



**Results of the study and discussion.** Rhythmic gymnastics is a complex coordination sport. Its distinctive feature is the performance of various motor actions in one competitive composition: balances, jumps, rotations, acrobatic movements and manipulations with an object.

Modern competition programs include a significant number of pre-acrobatic elements, which are used not only to enhance the spectacularity of the competitive composition, but also to increase the technical value of both individual and group exercises. However, the value of acrobatic training lies not only in teaching specific pre-acrobatic elements, which are basic for

mastering motor actions of increased complexity, but also in improving the vestibular stability of gymnasts, determining the position of the body in space, speed and reaction speed.

At the stage of sports improvement and higher sports skills, acrobatic training can be combined with balance-rotational and jumping training, which provides additional opportunities to improve the level of sports skills of gymnasts.

In the course of the conducted research, a set of exercises of acrobatic orientation was developed, based on the combination of means of non-objective training.

*The main means of the acrobatic complex based on the combination of types of non-objective training*

№	Types of non-objective training	The means of the developed set of exercises
1.	Acrobatic training	1. Somersaults (forward, backward): - from a standing position; - from a kneeling position. 2. Rolls: - over the shoulder; - over the chest. 3. Somersaults (forward, backward, to the side): - from two legs (straight legs, through extension); - from one leg (with a change of legs); - a somersault «barrel» from a kneeling position to the starting position; - a somersault «barrel» from a kneeling position with a transition to a handstand; - a somersault in a forearms stand (forward, backward); - a somersault in a forearms stand into a split. 4. «Changes». 5. «Dive»: - «step into a somersault»; - a push of both legs. 6. «Getting up from the rises»
2.	Equilibrium-rotational training	1. Static balances of various variations standing on one leg, the other at an angle of 90 degrees: - «arabesque», «attitude», balance with a leg forward without using hands, «passe» (forward, to the side). 2. Static balances of various variations standing on one leg, the other at an angle of 180 degrees: - using hands (forward, to the side, «in a tightening», «in a ring», «lateral»); - without using hands «planche», «lateral», «back». 3. Dynamic balances of various variations on one leg, the other at an angle of 90 degrees: - «turlyany». «Arabesque», «attitude», balance with a leg forward without using hands, «passe» (forward, to the side). 4. Dynamic balances of various variations on one leg, the other at an angle of 180 degrees: - «turlyany». With the help of hands (forward, to the side, «in a tightening», «in a ring» «side». Without the help of hands «planche», «side», «back». 5. Dynamic balances with elements of rotation: - «helicopter»; - «reverse helicopter»; - rotations of no more than 360 degrees. «Chene», «spiral turn»
3.	Jump training	1. «Simple» jumps: - «split legs». 2. Jumps with a push of two legs: - «ring with two», «touching the ring»



The objectives of the developed set of exercises:

- increasing the level of athletic skill of gymnasts;
- increasing the level of technical training;
- developing and improving physical abilities.

The means of the developed set of exercises are presented in the table.

The structure of the developed acrobatic complex with the use of non-objective training means includes both general pedagogical principles applied for a pedagogically organized process and principles of sports training, which determined the necessary connections between the training impact and their effect.

This set of exercises is aimed at increasing the motor potential of gymnasts. All movements have a clear sequence of execution. The complex consists of several «acrobatic tracks», including exercises of a combined nature. The distance of one «acrobatic track» is equal to the distance of the competition area, in accordance with the FIG rules for the sport of «rhythmic gymnastics» (13x13 m). All exercises were performed in a «flow» movement, in pairs or threes, with the «working» and «non-working» leg. The duration of the complex is 40 minutes.

The complex includes «acrobatic tracks» of various directions:

- high-speed «acrobatic tracks». The combination of exercises is performed in the fastest possible sequence. Includes acrobatic training means. 3-4 different «tracks» for the whole complex;

- power «acrobatic tracks». Include acrobatic training tools. The tempo of execution is slow. 2-3 different «tracks»;

- «acrobatic tracks» with elements of balance-rotational training. Include balance-rotational training tools with the addition of acrobatic exercises. In these «tracks», acrobatic exercises are used for a logical transition from one position to another, for example: starting position balance «arabesque», on «relev» (8 counts hold the position), transition to «planche» (8 counts), forward somersault, exit to «back» (8 counts), transition to balance with the leg forward using the hands, on «relev» (8 counts), lowering onto the whole foot «turlyan». The «track» is performed with the other leg. Mandatory condition: perform the exercises without losing balance and moving from the place (stepping over). 2-3 different «tracks»;

- «acrobatic tracks» with elements of jumping training. The combination of exercises is performed in the fastest possible sequence. Includes means of acrobatic and jumping training, 3 different «tracks»;

- «acrobatic tracks» of combined orientation. As a rule, it begins with elements of balance-rotational training, continuing with means of acrobatic training and finishing with a jumping exercise. 3-4 different «tracks».

As a result of using a complex of acrobatic orientation based on a combination of means of non-objective training, in the training process, a reliable increase in the physical fitness indicators of gymnasts was revealed. The assessment was carried out by a group of qualified experts. The reliability of differences was determined at the significance level ( $p < 0,05$ ) before and after using the developed set of exercises. When assessing the coordination abilities in the exercise «forward somersault with fixation of balance in various positions»  $3,5 \pm 0,47$ , versus  $4,5 \pm 0,24$ , ( $p < 0,05$ ). The exercise was assessed on a 5-point scale. Improvement in indicators was observed when assessing the speed-strength abilities of gymnasts in the exercise «split legs», the number of times performed in 15 seconds was determined  $12,3 \pm 0,67$  and  $16,8 \pm 0,77$ , ( $p < 0,05$ ), respectively. In a comparative analysis of the speed abilities of gymnasts, in the exercise «jumping rope with acceleration from foot to foot»  $23,5 \pm 0,47$  and  $26,5 \pm 0,47$ , ( $p < 0,05$ ), the number of jumps performed in 20 seconds was counted. The success of including this set of exercises is confirmed by the increase in the result of the competitive activity of gymnasts, as well as the assimilation of elements of increased complexity. Thus, these facts confirm the effectiveness of using the developed set of exercises of combined focus, which achieves sustainable development of sports skills, an increase in the level of physical and technical preparedness of gymnasts.

**Conclusions.** As a result of the conducted research, the importance of acrobatic training in rhythmic gymnastics for the improvement of the quality of performance of technical groups «Difficulties (jumps, rotations, balances)» was scientifically substantiated. The means were determined and a set of acrobatic exercises was developed based on the combination of means of non-objective training, which can be recommended for use in the training process of gymnasts at different stages of preparation.

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