

Comprehensive special acrobatic training in pylon sports

UDC 796.416.32, 796.417.2



PhD, Associate Professor **N.A. Kasatkina**¹
Dr. Hab., Associate Professor **L.I. Kostyunina**¹
PhD, Associate Professor **A.F. Charykova**¹
A.S. Egorova¹

¹Ulyanovsk State University of Education, Ulyanovsk

Corresponding author: natasha-kassatkina@yandex.ru

Abstract

Objective of the study was to improve the quality of performing acrobatic elements of various structures in pylon sports in girls aged 12-14 years.

Methods and structure of the study. Analysis and generalization of scientific and methodological literature, pedagogical experiment, testing, method of expert assessments, statistical data processing. The pedagogical experiment was organized on the basis of the school of aerial gymnastics and sports on the pylon "Noon" (Ulyanovsk), girls aged 12-14 years old took part in it (experience in pole sports - three to four years).

Results and conclusions. Effective means and methods of acrobatic training in pylon sports at the stage of sports specialization have been determined, a methodology for complex special acrobatic training has been developed to improve the quality of performance of stunt and near-ylon acrobatic exercises in competitive compositions of pylon sports by female athletes aged 12-14, taking into account the specifics of the content of competitive activity. At the end of the work, the selection of acrobatic training means was performed based on the structural correspondence of basic acrobatic exercises to the obligatory trick elements of competitive compositions on the pylon (on the floor), taking into account the specifics of the main loads, the nature of their impact on the articular-ligamentous apparatus of the upper and lower extremities, which causes an increase in quality aspects of competitive programs, their attractiveness.

Keywords: *pylon sport, special technical acrobatic training, compulsory elements, acrobatic exercises, complexity acrobatics and artistry acrobatics.*

Introduction. Pylon sport - PoleSport - is a sportized direction of the PoleDance discipline, combines dance and gymnastics, is distinguished by acrobatic stunts performed that require strength, flexibility and balance. Since the 2000s, pole sport, being one of the varieties of aerial gymnastics, has been steadily developing and attracting an increasing number of people involved in connection with the specific aesthetic, original content of competitive activity [4, 5]. By order of the Ministry of Sports No. 448 dated June 21, 2021, aerial acrobatics on the pylon is included in the register of sports of the Russian Federation under the name "pylon sport" and is positioned exclusively as a complex coordination sport of artistic, aesthetic and gymnastic orientation.

When designing the content of a competitive dance and sports composition to music in pylon

sports, it is necessary to harmoniously combine choreographic means of expression; multi-structural static and dynamic acrobatic elements on special equipment (steel pylons, which are mandatory elements of difficulty in pylon sports); exercises performed on the floor (near-ylon choreography, including acrobatics of artistry). The dynamism and complexity of the competitive dance composition, its choreographic pattern make high demands on the ability of athletes to master the technique of complex acrobatic elements on the pylon and on the floor (in the near-ylon space), which determine the originality of the new sport [1, 2, 3].

Objective of the study was to improve the quality of performing acrobatic elements of various structures in pylon sports in girls aged 12-14 years.



Methods and structure of the study. The pedagogical experiment was organized at the school of aerial gymnastics and sports on the pylon "Noon" (Ulyanovsk), from October 2021 to April 2022. Girls of 12-14 years old took part in it (experience in pylon sports - three to four years). Were formed control and experimental groups (CG, EG) of eight people each. The EG was trained according to the developed method of complex special acrobatic training.

Results of the study and their discussion. The developed experimental method of complex special acrobatic training of female athletes aged 12-14 includes special acrobatic exercises selected taking into account the specifics and the possibility of their adaptation to the requirements of the competitive activity of pylon sports [3]. First of all, the experimental methodology included a variety of individual acrobatic exercises, the selection of which took into account: the form of the main movement in the mandatory elements on the pylon (twine or deflection); the plane of their execution (vertical, inclined,

horizontal); the shape of the grips and points of engagement with the pole. The requirements of the competition rules for the complexity and originality of the near-ylon choreography based on basic acrobatic elements were also taken into account; to the presence of creative elements in them, containing some risk and a moment of surprise, that is, elements of modality (complication and new modifications of known elements) [2, 3].

The emphasis in the experimental methodology was on strength and balance exercises; on the use of exercises with inverted and horizontal positions, with split and arched positions, involving work with the weight of one's own body from different angles; the inclusion of multifunctional acrobatic modified elements (based on modality) and the systematization of special means, taking into account the structural correspondence of basic acrobatic exercises to the obligatory trick elements on the pylon of competitive compositions of pylon sports. This is due to the allocation of a subgroup of exercises of a static (balance,

F

AllegraHalfSplit - Аллегра с согнутой «задней» ногой (0,5), *ClosedRainbow* - Закрытая радуга (0,5), *Cocoon* - Кокон, *FrontSplit* - Передний шпагат (0,5), *PegasusSplitFacingFloor* - Шпагат Пегас, лицом в пол (0,5), *HipHoldSplit* - Шпагат хват в бедро (0,5), *SplitGripLegThroughFrontalSplit* - Передний Шпагат раздельным хватом (0,5)

S

ButterflyReverseExtension - Крыло бабочки, хват чашечкой (0,5), *FlagGripSidePasse* - китайский флаг (0,5), *ForearmGripInvertedPencil* - Перевернутый карандаш, захват предплечьем (0,5), *ForearmGripInvertedStraddle* - Хват предплечьем, в перевернутом положении (0,5), *HipholdHalfSplit* - Шпагат в бедро, с одной согнутой ногой (0,5)

ST

CradleSpinStraddle - Вращение колыбельная (0,4), *SplitGripStraddle* - Вращение раздельным хватом (0,4), *ReverseGrabPencil* - Карандаш обратным хватом (0,4), *ReverseGrabStraddleintoPencil* - Вращение Карандаш обратным хватом с поднятыми ногами (0,5), *Spinninginto a ShoulderMountStraddle* - Вращение ШоулдерМаунт (0,5)

SP

StraddleSpin 2 HandsUp - Вращение на согнутых руках(0,4), *BrokenDoll* - Сломанная кукла (0,5), *CradleSpinPikeNoHands* - Вращение колыбельная без рук (0,5), *GargoyleSpin* - Вращение Игуана (0,5)

DL

Deadliftfromtwistgrip - Становая тяга выворотным хватом (или хватом *twistgrip*), *Deadliftfromforearmhandspring* - Становая тяга хватом в предплечье, *Deadliftfromiguanaagrip* - Становая тяга хватом Игуана, *AerialBasicInvert* - Базовый заход (заход через распашку)

Mandatory elements of pylon sport for competitive compositions of female athletes aged 12–14 (Amateur level). Note: F - flexibility elements, S - strength elements, ST - rotations on a static pylon, SP - rotations on a dynamic pylon, DL - power exits.



Table 1. A set of exercises to improve the functionality of the articular-ligamentous apparatus of the upper and lower extremities

Orientation	Exercises
Strengthening the hands and wrists	Bending and circular movements with the hands, the same with effort, while trying to reach the wrist; «Squeezing and unclenching the fingers», the same with various carpal expanders; «Eight»; «Quadrangular» and «Planck»; «Push ups»
Strengthening the feet and ankles	Various types of walking: on toes, «soft» step, «sharp» step, rolling step, on the heels, etc., circular movements of the feet in various positions, rolls and «Relevés» at various tempos with fixation of positions on the floor and on the cube, «Heron» on the floor and on the cube, «Swallow», etc.
Strengthening the muscles and ligaments of the arms and legs in the hangs	Holding the body with two straight arms on the pole, facing the pole and pulling up; the same with bent arms; from the starting position «Plank» facing the pylon, climbing the pylon alternately intercepting hands, then descending also alternately intercepting; hanging on a pylon, bending over with a grip with both hands; «Stool» on a static pylon from the floor; hanging on a pylon / ring with small weights with legs; in the hang, lifting bent and straight legs until the toes touch the pylon / ring (grip); hangs on arms and legs: rotation «Frog» (on static / dynamic), «Spider», «Scorpion», etc.

bridges, splits, racks, stops) and dynamic (rolls, somersaults, half-turns and flips) character.

In classical acrobatic exercises, taking into account the specifics and requirements of the pylon sport, the starting and ending positions varied; separate phases of different acrobatic exercises were combined in one exercise; transitions were added based on one or two hands; the exercises were complicated by the inclu-

sion of additional turns, longitudinal and horizontal rotational movements (twisting), swings and extensions in the structure of the basic acrobatic movement, and combination with other acrobatic elements. Such work with acrobatic elements makes it possible in the future to perform them not only in the form of sports exercises, but also in the form of dance and choreographic "tricks", which makes it possible to decorate,

Table 2. Indicators of the level of acrobatic and technical readiness of girls aged 12-14 after the pedagogical experiment

Control exercise (tests)	Group	M±m	Reliability differences, p	Increase, %
Handstand at the support (pylon), with	KG	24,2±0,28	>0,05	21,6
	EG	27,7±0,44		37,8
Forward roll, points	KG	0,29±0,05	<0,05	25,6
	EG	0,16±0,02		60,9
Flip forward / backward, points	KG	0,32±0,03	<0,05	15,8
	EG	0,21±0,04		43,2
Group F. Split Grip Front Split, points	KG	3,5±0,23	<0,05	34,6
	EG	4,2±0,19		68,0
Group F. «Thigh grip split», points	KG	3,4±0,26	<0,05	25,9
	EG	4,3±0,22		53,6
Group S: «Butterfly wing, cup grip», points	KG	2,9±0,24	>0,05	38,1
	EG	3,4±0,16		54,5
Group S: «Chinese flag», points	KG	3,6±0,17	<0,05	24,1
	EG	4,4±0,29		62,9
Group ST: «Reverse Grip Pencil rotation with raised legs», points	KG	3,1±0,27	<0,05	29,1
	EG	3,9±0,14		56,0
Group SP: «Iguana Spin», points	KG	2,5±0,32	<0,05	31,6
	EG	3,0±0,26		50,0
Group DL: base entry, points	KG	3,8±0,28	<0,05	8,6
	EG	4,5±0,11		28,6

Note. Number of subjects: EG - 8, CG - 8.



increase the expressiveness and entertainment of the competitive composition. To master the compulsory elements on the pylon, female athletes aged 12-14 years old (see the figure) in our methodology used the basic elements of the entry level using the pylon and lead-up exercises, grouped taking into account the structural characteristics of the different structural mandatory elements, similarities with the form of the main movement of the compulsory elements on the pylon, the plane of their execution, the shape of the grips and points of engagement with the pole.

So, for example, for the elements of the structural groups of the elements of flexibility F and strength S, taking into account the shape of the grips and points of adhesion with the pylon - the hold under the knee - the following lead-up exercises were selected: basic elements of the entry level on the pylon: "Scorpion", "Spider", "Butterfly Wing", "Brassman", "Plank", "Martinka", "Candle", "Tulip"; "Unbuttoned" - lying on the floor, standing, in the air, exits through a push / swing / force, both legs are bent, one is bent, both straight, "Unbuttoned" through the "fan"; hanging on the far/near leg from the floor, from the "Undertaking", change of hangs, entry to the pylon through the hangs; lifting the legs with the "Unfold" grip: two / one legs are bent, legs together, straight legs to the shoulders; pull-ups from a gray-haired pylon: on straight arms with a narrow grip, on bent arms; performance of elements from different approaches, for example: "Fireman" manhole, side manhole, "Chinese manhole", entry through pull-ups on the hands; "Circle of Infinity" - entry through the "Unbuttoned", hanging on the far leg, entering the pylon, switching sides, etc.

The considered mandatory elements on the pylon of a static and static-dynamic nature in the position of various hangs and stops are accompanied by a sufficient load on the shoulder girdle, muscles and ligaments of the hands (especially the hands and wrists), which can be accompanied by overloads of the working link and repeated damaging effects. Therefore, in the process of training, it is necessary to pay more attention to improving the functionality of the articular-ligamentous apparatus of the upper and lower extremities, which are directly involved in grips for a sports equipment in hangs and rotations/twists. To do this, we proposed the following set of exercises (Table 1).

In order to determine the effectiveness of the methodology developed by us, a number of control exercises were used on the basis of different structural groups of mandatory elements of pylon sports (Table 2).

After the pedagogical experiment in the EG, statistically significant differences were revealed in all studied indicators of the performance of trick and near-ylon elements that make up the content of the competitive composition; in the CG, respectively, in nine out of ten tests. In the EG, the greatest increase

was found in the exercises "Front split with a separate grip", 68.0%, "Chinese flag", 62.9% ($p < 0.01$).

Conclusions. The effectiveness of the process of teaching the technique of performing the multi-structural mandatory elements of pylon sports in accordance with the specific requirements of competitive compositions is ensured by special complex acrobatic training. The selection of acrobatic means of training based on the structural correspondence of basic acrobatic exercises to the obligatory stunt elements of competitive compositions on the pylon (on the floor), taking into account the specifics of the main loads, the nature of their impact on the articular-ligamentous apparatus of the upper and lower extremities causes an increase in the quality aspects of performing stunt and near-ylon elements, attractiveness of competitive programs.

References

1. Varfolomeeva A.M. Roledance kak samostoyatel'naya sportivno-tantseval'naya distsiplina [Roledance as an independent sports and dance discipline]. *Sovremennyye problemy i perspektivnyye napravleniya innovatsionnogo razvitiya nauki* [Modern problems and promising areas of innovative development of science]. Proceedings International scientific-practical conference in 8 parts, Yekaterinburg, December 15, 2016. Ekaterinburg: Aeterna publ., 2016. pp. 41-45.
2. Nazarenko L.D., Kasatkina N.A. Kontseptsiya formirovaniya virtuoznosti dvizheniy v podgotovke vysokokvalifitsirovannykh sportsmenov [The concept of the formation of virtuosity of movements in the training of highly qualified athletes]. *Teoriya i praktika fizicheskoy kultury*. 2016. No. 6 (16). pp. 72-75.
3. Pravila sorevnovaniy po pilonomu sportu. Kod ballov 2021-2024 [Rules for competitions in pylon sports. Point code 2021-2024]. IPSF, 2021. 171 p.
4. Somkin A.A., Yakimova L.A. «Vozdushnyy» fitness kak otdelnoye napravleniye v fitness-industrii ["Air" fitness as a separate direction in the fitness industry]. *Nauchnyye trudy Severo-Zapadnogo instituta upravleniya RANKhiGS*. 2022. Vol. 13. No. 4 (56). pp. 280-300.
5. Tishaeva I.V. Razvitiye sportivnoy distsipliny «sport na pilone» v sovremennom mire [Development of the sports discipline "pole sport" in the modern world]. *Nauchno-metodicheskiye aspekty podgotovki sportsmenov* [Scientific and methodological aspects of training athletes]. Proceedings national scientific-practical conference. Omsk: FGBOU VO «Sibirskiy gosudarstvennyy universitet fizicheskoy kultury i sporta» publ., 2021. pp. 274-279.