

A CYCLIC BLOCKS SYSTEM FOR JUMPING EVENTS

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The following text presents a three-year long study into the effectiveness of a cyclic blocks system in a year's training plan of highly qualified athletes in jumping events. The article is based on a slightly abbreviated translation for Legkaya Atletika, Russia, No. 1 January 1994. Re-printed with permission from Modern Athlete and Coach.

In order to justify the use of a cyclic blocks system in jumping events it is first of all necessary to understand the theoretical and practical characteristics of this system. These involve:

1. Planning of a double periodized training year that involves winter and summer competitions.
2. Division of each half-year into systematic load and restoration blocks.
3. Division of cyclic blocks according to the training means that provide single direction training effects.
4. Standardization of training means to provide for:
 - a) Functional strength, speed strength and speed blocks in two-week long microcycles (repeated six times in a fortnight).
 - b) Pre-competition blocks (weekly microcycles), followed by a day or two-day recovery according to the importance of the competition.
5. The use of "measurable" training means whenever possible in the load blocks (weight training, jumping exercises, sprints, and event specific exercises) to provide continuous evaluation of adaptation processes.
6. An increased intensity of training procedures, not only from one block to the next, but also within a single block.
7. A significant reduction, or complete elimination, of the single direction strength, speed strength and speed loads in the limited load (restoration) blocks to be replaced by recovery activities and technique development means.

The training means employed in each half yearly training cycle in jumping events include weight training, other resistance exercises, jumping exercises, running

exercises, technique development and a series of assisting exercises to develop different functional capacities. The main aim of the functional training blocks is not only the development of many-sided physical capacities but also the creation of favorable conditions for the improvement of event specific capacities for the later cyclic blocks.

As a rule, all these training means are, in the recommended cyclic blocks system, employed according to their directional influence, taking into consideration the application of correct volumes and intensities. Training effect is basically increased by the introduction of more intensive means. Further step by step adjustments in resistance and jumping exercises are achieved by changes in the loading and the number of repetitions performed.

The adjustments in running exercises are based on the shortening of training distances and increasing the running speed. Increased intensity in running and jumping exercises are also achieved by changing the procedures of execution (uphill, downhill) or changing the surface on which the exercise is performed (sand, sawdust, grass, synthetics). More rigid surfaces are responsible for a faster and more elastic reaction and therefore set higher demands on an athlete's support and movement system.

The intensity of technical development is step by step increased from one load block to the next by:

- Lengthening of the run-up.
- Gradual changes from alleviated jumping performances to standard competition jumps.
- Gradually increasing the run-up speed to perform jumps from a competition run-up.

It has been established that the individual reaction to training within a load block depends largely on the specificity of the employed training means. The use of standardized training volumes and means with gradually increased intensities in the load blocks is responsible for an increased training effect. On the other hand, fluctuations in loads and intensities are often responsible for stagnation, or even reduced training effects.

These facts lead to the conclusion that rhythmically used standardized single direction loads, executed with gradually increased intensity will lead to most favorable adaptation processes of the organism. "Measurable" indicators of training means improve from one load block to the next and improve further after the end of the restoration block.

Two variations of adaptation dynamics emerged in a study of training influences in the two six-monthly cycles in a training year. In the first variation the training means for physical preparation blocks were kept strictly one directional and standardized in all load blocks. Athletes tolerated the comfortable loads and intensities without difficulties and recorded improved performance indicators at the end of each restoration block. Strength, speed strength and speed indicators stabilized during the following technical development block.

The second variation also kept training means in all blocks strictly one directional but much higher demands were created through larger training volumes and higher intensities. While the indicators after the restoration block showed some small improvement, the largest improvement occurred following the next load block. It was further interesting to note that the largest improvement in speed strength took place during the restoration block that followed the speed block, while the best training effect in the development of speed was recorded after the technical, event specific, block.

The above facts appear to indicate that a culminating training effect occurs three weeks after the training means are changed to a new direction (load block — restoration block — different load block). This applied in our study to all preparation blocks, including the pre-competition and competition blocks. Although the physical preparation indicators stabilized, or even dropped slightly, in the final stages, the competition specific indicators remained at a high level.

PERIOD	MONTH	WEEK	DIRECTION OF THE BLOCK
Autumn-Winter Preparation	October	1-2 3 4-5	Functional Restoration (limited load) Strength
	November	6 7-8 9 10-11	Restoration (limited load) Speed strength Restoration (limited load) Speed
	December	12 13-14	Restoration (limited load) Event specific activities
	January	15	Restoration (limited load)
Winter Preparation		16-17 18	Pre-competition preparation Winter competitions (indoor) Restoration (limited load)
	February	19-20 21 22-23	Event specific activities Restoration (limited load) Pre-competition preparation Winter competitions (indoors)
	March	24	Restoration (limited load)
Spring-Summer Preparation		25-26 27	Functional Restoration (limited load)
	April	28-29 30 31-32 33 34-35 36	Strength Restoration (limited load) Speed strength Restoration (limited load) Speed Restoration (limited load)
	June	37-38 39	Event specific activities Restoration (limited load)
Summer Competitions		40-41	Pre-competition preparation and competitions
	July	42 43-44 45	Restoration (limited load) Event specific activities Restoration (limited load)
	August	46-47 48 49-50	Pre-competition preparation and competitions Restoration (limited load) Pre-competition preparation and competitions

TABLE 1: Distribution of cyclic blocks for jumping events in a year's training plan over 50 weeks.