

THE ORGANISATION OF TRAINING PROCESSES IN THE LONG JUMP

By V. Popov

The author outlines basic principles applicable to the organization of long jump training in a double periodized year and presents model training tasks for the different phases and periods. The article is a translated summary of a chapter on training in Popov's coaching booklet Kaugushupe, published by Eesti Raamat, Tallinn, Estonian SSR. Re-printed with permission from Modern Athlete and Coach.

Training processes are guided by the coach, who according to personal experience, knowledge of the biomechanical principles of the technique and understanding of the theory of training, has to solve the following essential tasks:

- The preparation of individual training plans, based on the competition and training targets according to the latest acceptable training methods.
- An understanding of the individual differences of athletes, such as the functional capacities of the organism, movement efficiency, will-power, technical preparation level etc.
- A precise establishment of the means and methods to be employed in the development of physical and technical capacities.
- A steady increase of the volume and intensity in the yearly training loads, in which the volume is responsible for quantity and precedes the quality (intensity) of work.
- A continuous development of the physical capacities together with the improvement of technical aspects.
- The organization of the volume and intensity components according to a wave-like dynamical pattern.
- Regular day to day and weekly evaluations of the effectiveness of the training with the necessary adjustments to the training plan.
- The development of the psychological state of athletes to correspond to the demands of tough competition situations.

ORGANIZATION OF TRAINING

These organizational tasks are normally solved by the development of the general physical and the event specific work capacities of an athlete together with the improvement of the long jump technique. The last is based on the improvement of the sprinting technique, the run-up rhythm, the accuracy of the run-up, the transition from the run-up to the take-off and the efficiency of the flight movements and landing procedures.

All the above mentioned factors are incorporated in the planned yearly training load by using different training means with changing volumes and intensities. The volumes are defined by the quantity of the work performed and expressed in kilometers, tonnes and the number of repetitions. The intensities, on the other hand, reflect mainly the quality of the specific work performed, such as sprinting speed, distances of the jumps and the level of employed resistances.

The correct planning of the changes in the yearly loads (volume and intensity) of the basic training means is a pre-requisite in the development of physical capacities and technique. Such changes can be classified as substantial ($\pm 40\%$), average ($\pm 30\%$) or small ($\pm 20\%$) in comparison with the previous year.

Let us assume, for example, that an athlete performed last year in training 250 repetitions of the run-up, 600 repetitions of long jumps from a short (4 to 8 strides), 200 repetitions from a medium (10 to 14 strides) and 100 repetitions from a full run-up. According to the long term plan the athlete will in this year attempt to increase considerably the number of run-ups (up to 375 repetitions) and jumps performed from medium (up to 300) and full (up to 150) run-ups. Jumps from the short run-up are, however, reduced by 30% (average change) to 420 repetitions.

Most long jumpers use the principle of double periodization in their training program, because of the established international and domestic competition calendars, as follows:

First or winter cycle (23 weeks)

1. Preparation period: October-January (17 weeks)
2. Competition period: February-March 15 (6 weeks).

Second or summer cycle (26 weeks)

1. Preparation period: March 16-June (14 weeks)
2. Competition period: July-September 15 (12 weeks)
3. Transition period: September-October 7 (3 weeks)

The yearly training cycles and their phases differ in the planned tasks, the volume and intensity levels and the psychological demands. However, the boundaries are not rigid and the transfers from one phase into the other occur fluently.

The largest training loads, responsible for an improved performance, are employed in the two preparation periods to create adaptation changes in the functional capacities of the organism. This requires using complex training means to assure the development of the most important physical capacities, as well as their relationship with a high level of movement efficiency.

In contrast to the preparation periods, the volumes and intensities fluctuate noticeably during the competition periods. There is a reduction of the training volume at the approach of important meetings but the changes in intensity are individual, although as a general rule the intensity is increased. The total volume of the competition period is smaller than that of the preparation period, however, the use of a wide variety of training means continues.

The continuous development of physical performance capacities, converted to technical improvements, is achieved by regular changes in training volumes and intensities in the following basic yearly structure:

- Restoration and the development of general physical performance capacities (transition period and the first part of the preparation period).
- Development of event specific physical performance capacities and improvement of the technique (second part of the preparation period).
- Further improvement of the technique and maintenance of physical performance capacities (first part of the competition period).
- The peak performance phase (main part of the competition period).

Each of these training phases is divided into weekly microcycles with changing volumes and intensities that are adjusted according to the main tasks of a particular phase. Although some adjustments to the initial plan are obviously unavoidable, such adjustments should not change the basic structure of the plan.

PREPARATION PERIODS

The preparation period begins always with a thorough conditioning phase to develop the general physical work capacity of an athlete. It is important that the training load is during this phase increased gradually step by step and premature sudden rises of the volume are avoided.

The first part of the conditioning period, starting in October, is made up of four weekly cycles of general conditioning. Each of the cycles consists of six training sessions, aiming to cover the following tasks:

- General conditioning exercises (8 to 9 tonnes).
- Sprints over 100 to 300m (3 to 4km).
- Long jumps from a 6 to 8 stride run-up (15 to 25).
- Bounding (500m).
- Half-squats (men 6 to 8 tonnes, women 3 to 4 tonnes).
- Jumps with weights (200 repetitions, men 60 to 120kg, women 40 to 80kg).

After the first four weeks the general conditioning work is reduced and event specific preparation means are gradually increased. More emphasis is placed on specific power development and the improvement of jumping technique. Each of the 12 weekly cycles in this phase is made up of six training sessions, aiming to cover the following tasks:

- General conditioning exercises (4 to 5 tonnes).
- Sprints over 100 to 300m (3 to 5km).
- Crouch starts over 20 to 40m (20 to 30).
- Run-ups (10 to 15).
- Long jumps from a 6 to 8 stride run-up (10 to 15), from a 10 to 14 stride run-up (12 to 15), from a full run-up (8 to 10).
- Bounding (1000m).
- Half-squats (men 3 to 4 tonnes, women 2 to 3 tonnes).
- Jumps with weights (200 repetitions, men 80 to 140kg, women 40 to 100kg).

The winter preparation period in a double periodized year is completed with a four-week technical preparation phase, based on the following tasks:

- General conditioning exercises (2 to 3 tonnes).
- Sprints over 100 to 300m (1km).

- Crouch starts over 20 to 40m (10 to 12).
- Run-ups (24 to 40).
- Long jumps from a 6 to 8 stride run-up (8 to 10), from a 10 to 14 stride run-up (12 to 20), from a full run-up (12 to 15).
- Bounding (300m).
- Half-squats (men 0.5 to 1.0 tonnes, women 0.5 to 0.8 tonnes).
- Jumps with weights (40 to 60 repetitions, men 60 to 160kg, women 40 to 100kg).

The second preparation period begins in March with a heavy training load and somewhat increased sprinting intensity. The first two or three weeks follow the general conditioning microcycle plans employed during the winter preparation period. The next seven weeks (until the middle of May) are based on the event specific preparation, followed by three weeks of technical preparation cycles.

COMPETITION PERIODS

The training load during the competition periods is dropped, mainly by the reduction of the training volume. At the same time intensity is increased and fluctuates between medium and high levels. Training follows the structure of technical preparation and pre-competition microcycles in which a typical pre-competition cycle is based on the following tasks:

- General conditioning exercises (2 tonnes).
- Sprints over 100 to 300m (0.5 km).
- Crouch starts over 20 to 40m (8 to 10).
- Run-ups (12 to 15).
- Long jumps from a 6 to 8 stride run-up (6 to 8), from a 10 to 14 stride run-up (8 to 10), from a full run-up (10 to 12).
- Bounding (100m).
- Jumps with weights (20 to 30 repetitions, men 60 to 150kg, women 40 to 100kg).

The pre-competition cycles are structured according to the importance of the impending competition. It is sufficient to employ for the less important

competitions an eight-day cycle in which the sixth day is set aside for rest and the seventh for a warm-up session.

The pattern is slightly changed for competitions of average importance. In this situation the last two days are still set aside for resting and warm-up, but another rest is included on the fourth day of the week and the volume of running training is reduced on the fifth day. Recovery and warm-up days are introduced twice to the pre-competition cycles prior to important competitions.

The warm-up on the day prior to a competition should take place at the same time of the day that the impending event is scheduled on the program. It is usually made up from 2 to 3 accelerations over 100m, followed by 3 to 5 repetition runs in the rhythm of the run-up or 5 to 8 crouch starts, 2 to 3 series of 5 to 8 repetitions of jumps with weights and 10 to 12 throws of the shot. Long jumps (3 to 5) from a medium length run-up can be included but full run-up jumps are avoided, unless special circumstances make it necessary.

In case of fatigue from jumping it is advisable to eliminate long jumps completely from the training program for the last seven days prior to a competition. The number of jumps performed with weights is also restricted in the last week. At any signs of fatigue these jumps are cut out of the program for 9 to 12 days prior to a competition and re-introduced again only in the last warm-up session.

SUMMARY

The above outlined organizational structure of long jump training is meant to be only a general guide that represent a model upon which concrete individual plans can be based. It should be kept in mind that the distribution of the volumes and intensities of different training methods and means change considerably as the performance level of an athlete improves. The higher the performance level and the training age of an athlete, the more individual becomes the training program.

It must be stressed that the planning of a double periodized training year requires from the coach a thorough knowledge and understanding of how to employ certain training methods and means and how to vary these during the different preparation and competition phases. Nevertheless, a wisely planned double periodized year is unavoidable for experienced athletes and allows increasing considerably the rate of development of young athletes.

The planning must therefore be precise in the choice of the basic training means and methods. Their distribution in the weekly cycles and the choice of microcycles should correspond to the tasks of a particular training phase or period. The organization of the training processes also depends largely on a correct choice in the variations of training volumes and intensities to achieve an optimal relationship between the functional capacities and the total training load in each of the yearly training phases.