

ABOUT THE DEVELOPMENT OF FORM

By Anatoli Bondarchuk

The development of form is a complex procedure involving an efficient planning of the different training cycles that lead to short and long term adaptation processes of the biological systems of the organism. In the following text one of the leading Soviet sport scientists, Anatoli Bondarchuk, discusses the subject in a format of questions and answers. The article is a slightly condensed and edited translation from Legkaya Atletika, USSR, No. 1, January 1991.

INTRODUCTION

The performance level in sport is influenced by two major processes — pedagogical and biological. The first is dependent on the influences of certain training systems (training means and methods, training volumes and intensities employed during the different micro, meso, or macrocycles). The second is characterized by short and long term adaptation processes of the different systems of the organism.

The training systems allow the organism to adapt itself to certain training loads in order to improve the performance. Adaptation is therefore not a negative process, as some specialists appear to claim, but a positive adjustment of the organism to training loads. Unfortunately there are some coaches and sport scientists who understand under adaptation there is a counter-reaction of the organism that leads to stabilized or even reduced performances.

Obviously the rate of improvement begins to slow down as the performance level increases, particularly when similar training systems have been employed over several years. It is therefore very important to encourage different types of adaptation processes in training to reduce the influence of the counter-reactions of the organism as the performance level improves. This is achieved by planned changes to the training means and methods in each developmental cycle.

QUESTIONS AND ANSWERS

The following theoretical and practical material on the subject of the development of form and its maintenance is presented in the format of questions and answers. This allows us to look deeper into the problem and gives everyone who is interested practical advice.

What do we understand under the term “form” in the theory of sport?

Top form is the optimal stage of the physical, technical, psychological and tactical preparations. This optimal preparation stage can be correctly applied only to

each major developmental cycle. The form indicators are the results shown in competitions, as well as in training conditions. The first indicates its fundamental stage, the second its operative stage (Matveyev, 1987).

What constitutes the process of the development of form?

It is characterized by phases that in one or another sequence represent adaptation, maintenance and reduction. For several decades there existed an opinion that the development of form is similar after the transition period, as well as after the first competition period, beginning with the adaptation phase, followed by maintenance and reduction phases. This opinion has up to date remained virtually unchanged in track and field events. However, questioning the different performance level of athletes and multiple experimental studies have allowed us to come to the conclusion that the process of the development of top form (alternative phases, their duration, etc.) depends on the individual characteristics of an athlete and the construction of the yearly training cycles.

How does the form develop after the transition or active rest period when general and specific preparations are employed simultaneously?

The development process of one group of athletes begins with the adaptation phase, followed by maintenance and reduction phases (Fig. 1). Another group has the reduction phase prior to the adaptation phase (Fig. 2). The representatives of the third group have the following sequence: maintenance, reduction, adaptation, maintenance and reduction (Fig. 3). The duration of the form development cycle is individual. Most athletes reach form within 2 to 5 months.

How does the form develop after the transition or active rest period when the preparation period is divided into general and specific preparation cycles?

The structure of the form development follows a similar pattern to the above described preparation period (three different types of phase distributions). The difference is only in attempting to reach form first in the general preparation exercises before specific preparation begins. The duration of the cycle remains unchanged.

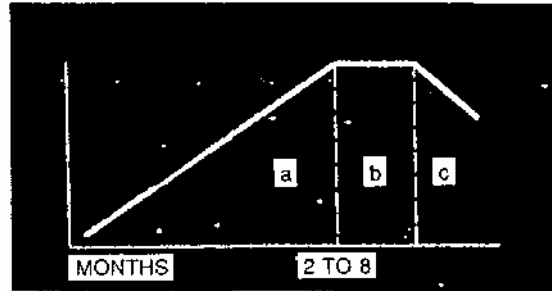


FIG. 1: Form development phases after the transition or active rest period when general and specific preparations are employed simultaneously. (a — adaption phase, b — maintenance phase, c — reduction phase)

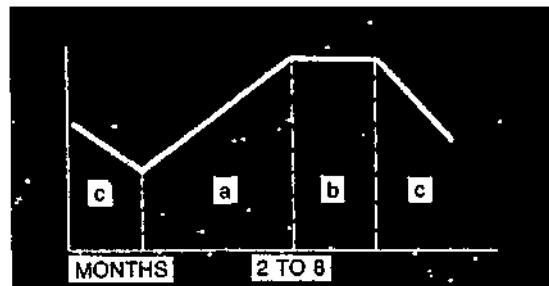


FIG. 2: Form development phases after the transition or active rest period when general and specific preparations are employed simultaneously (Variation 2, a — adaption phase, b — maintenance phase, c — reduction phase)

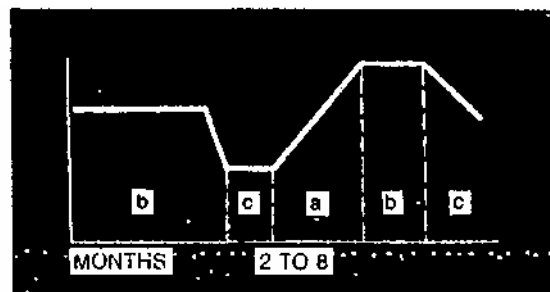


FIG. 3: Form development phases after the transition or active rest period when general and specific preparations are employed simultaneously (Variation 3, a — adaption phase, b — maintenance phase, c — reduction phase)

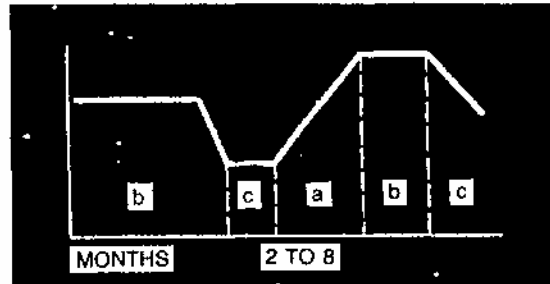


FIG. 4: Form development phases after the transition or active rest period when alternate influence training complexes are employed (a — adaption phase, b — maintenance phase, c — reduction phase).

How does form develop when alternate influence training complexes are used?

We believe that alternate influence training complexes can be used until the athlete fails to reach the desired form within the planned time. Under these conditions the development of form within the yearly cycle is changed slightly for the first and second groups (Figs 1 and 2). The sequence of the phase is now — maintenance, reduction, adaptation, maintenance and reduction (Fig. 4). This, of course applies to a double periodized year.

How much time is required to reach top form?

The duration of the cycle is individual and varies between two to eight months. It depends, besides the individual characteristics of an athlete, mainly on the design of the macro, meso and microcycles in the training program. However, the majority of the athletes reach form within two to three months. In the case of double periodization each of the two cycles takes on an average two months.

Is it possible to shorten or lengthen the time required to reach top form?

Our studies indicated that changes in the training volumes or intensities had no impact on the time required to reach form. However, it should be noted that the development of top form lengthens after the age of 25 to 30 yrs. Changes in the direction of training means every three to four weeks would at this age double the length of the cycle.

How long is it possible to maintain form?

In order to maintain form it is necessary to change training means at least every fortnight (1 to 2, 3 to 4 weeks). Our studies indicated that it is possible to maintain form for up to seven months.

How long are the form reduction phases?

A form reduction phase prior to an adaptation is individual and varies from 1 to 2 up to 3 to 4 weeks. Reduction phases that follow adaptation and maintenance phases last until the selected recovery exercises are employed, or until the transfer to preparation, competition or transition periods takes place.

What can be used as a guide to define form?

Some believe that only results close to the personal best performance are reliable form indicators. We believe this to be wrong, as there are many reasons why athletes are not capable of repeating their best performances. Further, it should be noted that top form is normally reached at the start of the maintenance phase that follows an adaptation phase. The duration of it is the same for all athletes (7 to 10 days).

Is it possible to reach form without using competition exercises in training?

Yes, it can be done, provided that:

- Lighter and heavier implements that differ little in size from the competition implements are used in throwing events.
- Parts of the exercises are similar to the competition actions in jumping events (jumps from a short run-up, sprints over 30 to 60m).
- Distances close to the racing distance are used in sprints.
- Distances close to the racing distance, or training loads that differ little from the energy production needs of the competition distance, are used in distance running events.

Is it possible that form is not reached within a year's training cycle?

Although it doesn't happen often, it occurs sometimes to athletes who employ simultaneously general and specific training means immediately after the transition period (Fig. 3). Changing general and specific training means at this stage every week or two only maintains the previously achieved performance level. The same applies to athletes who use competition type exercises only once in a fortnight.

By how much is form reduced during the transition period?

The drop in the performance level depends on the activities used during the transition period and the individual developmental characteristics of an athlete. All athletes had after a passive transition period a 3 to 5% larger drop in performances than after an active recovery period. The performance of the athletes in group I were reduced by 8 to 12% (Fig. 1), in group II by 8 to 10% and in groups III by 5 to 8%.

How to control the performance level?

Only the dynamics of the best competition and training results reflect a true picture of the development, maintenance and reduction processes. Best training results should therefore be recorded after every training session, or at least several times within a weekly cycle. If competition exercises are for some reason not used during some training phases, the performance dynamics are based on the results in other training exercises.