The Role of Specialized Training in Multiyear and Yearly Training Programs

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In the last issue of the NSCA Journal, "The Role of All-Round, General Physical Preparation in the Multiyear and Yearly Training Programs" was presented. It was brought out in this article that, in the stage of general preparation, the athlete develops all the physical qualities needed in sports. This included the development of muscular strength and endurance, flexibility, agility, cardio-respiratory endurance and so on. In addition, basic skills such as running, throwing, jumping and hitting are continually improved, especially those needed in the sport.

This level of all-round development is the foundation for achievement of specialized physical preparation. "Specialized" means that the workouts are selective and have a high correlation to the specific sport. In other words, the exercises used are the same as the sports skills, either the entire skill or a portion of it. The necessary physical qualities, such as strength or power, are developed as they are needed or used in the sport. Everything that is done is executed in a specific manner dictated by the sport.

Multiyear Training

In multiyear periodization, the first stage (the first few years of training) is devoted to all-round general preparation of the athlete. There is some specialized work in the early years, but very little. In the first year about 90 percent of the workouts are devoted to general preparation and 10 percent to specialized. In each successive year, however, the percent of specialized work increases. It increases in proportion to the development of all-round preparation! In other words, the success of specialized physical and mental preparation depends on the level of general preparation.

The amount of increase in specialized preparation depends on the athlete's progress in the development of the physical and technical qualities and how many years it takes to become a high level athlete in a particular sport. On the average, it takes about 7-8 years to reach the national or world class level, where specialized training occupies up to 75 percent of the training work. It never completely eliminates general preparatory work! In general, specialized training increases by about 5-15 percent each year up to 6-75 percent of the total time spent in training.

In the first few years, specialized work is done on the basics which find application in most sports. For example, the throwing or hitting pattern may be mastered which, with some modification, can be adjusted to fit a specific sport such as the javelin throw or handball throw. Or, it could be some physical quality such as strength or power. The young athlete develops basic skills with the related physical qualities such as throwing strength and power, jump strength and power, running strength, power and endurance. Once the athlete begins to specialize (begins serious training) in a particular sport or sports, the percent of specialized work increases.

The Yearly Program

According to Ozolin (2), specialized training is the basis for achieving success in one's sport. It is only through specialized exercises that an athlete can achieve the specific changes in his organs and systems that are needed in his sport. Specialized training is used for mastering technique, tactics, the needed physical and psychological qualities and so on. According to Verkhoshansky (3), "...there is an optimal period of time during which the athlete can experience a developmental training load." That is, the body has the ability to go on to new, higher levels of specialized work capacity under the influence of a training effect. In essence, the body possesses a definite adaptive reserve, but at any one moment or period of time it is limited. Verkhoshansky also believes that "...there is a limit to the amount of the training effect necessary for full realization of the current adaptational reserve of the body (CAR)." This means that a certain amount of time and load volume are necessary to get the maximum effect from specialized training. If the loads handled by the athlete are given for too short a time or with insufficient volume, CAR will not be realized. If the optimal limits of CAR are surpassed, then it leads to overtraining.

The capacity of CAR, however, decreases as the level of sports mastery increases! Because of this, a greater training effect is needed to get adaptive changes. This is why the training loads must be very definite and specific and carried out in very specific ways. Development of the current adaptational reserve, therefore, may be the most important measure of the training effectiveness.

Specialized training follows general training and lasts anywhere from 1 to 3 or 4 months. This depends upon the athlete, his level of physical preparation, his mastery of the sport and so on. Most important in this regard, however, is the schedule of competition. If there are two major periods of competition such as the indoor and outdoor seasons in track and field, the amount of specialized training will be less in each specialized period. These periods are often known as the pre-competitive periods of training.

However, there is never elimination of this or any other period. In other words, there is always a general preparatory, specialized preparatory, competitive and post-competitive (transition) period in the year-round (annual), semi-annual, etc., training programs. At times, a particular period may only last a few weeks, but it is still in effect.

There is never a sharp break or division between the general and specialized preparatory periods. The transition is always gradual. This is accomplished by introducing specialized work in the later stages of the general preparatory period. For example, if the all-round period of preparation is 3 months in duration, specialized exercises are introduced in increasing numbers in the 3rd month. In the first month of the specialized period, there is still general preparation, but it is mostly phased out at this time. It is interesting to note that the East Germans distinguish this transition phase as a separate period of training.

Training in the specialized prepara-
tory period is directed to preparing the athlete for competition or, as the Soviets say, to establish sporting form. According to Matveev (1), "all aspects of the training content are concentrated so as to ensure . . . high development of special training . . . along with a thorough mastering and perfectioning of the selected technical and tactical habits and skills in the form in which they will be used in the forthcoming main competitions." Because of this, the number of competitions and competitive exercises also increases. However, the competitions are still considered preparatory in nature. In other words, they are used to prepare the athlete for the major meets. Some of these meets are formally scheduled, but most occur in training and are used for control or check-up purposes.

In the specialized period of training, work loads continue to increase but not in the same manner as previously. First and foremost is an increase in intensity of the specialized and competitive exercises. This is seen by an increase in speed, rate of work, power and other speed-strength factors. And, as intensity increases, general load volume decreases after a period of stabilization.

The critical factor in specialized training is increased intensity in order to get the needed training effect. The greater intensity makes possible long-term restructuring of the body according to the "lagging transformation" phenomenon. This means that the results of the previous work which was done in the general preparatory period with great volume can be transformed into rapid increases in the specific sport by reducing the load volume and increasing the intensity, but only for a specified time period.

The amount of reduction in load volume depends on a level near the end of the preparatory period. The load volume is at first reduced by cutting out general preparatory exercises. The number of specialized exercises, however, increases and continues to do so throughout the entire specialized period of training. Later, general load volume levels off and is only partially reduced.

The relationships between general preparation and specialized preparation should now be clear. In the general preparatory period, the fundamental prerequisites are established and improved. In the specialized preparatory period, they are developed and united into a complete whole. In other words, all the general components such as strength, power, agility and the technical and tactical components are unified into the ultimate sporting performance (for the level of development at that time).

It is at this time in the yearly training program that the principle of specificity training applies. This principle means that the training undertaken is as identical as possible to the actual competitive action without actually being competitive. (However, competition is included, in addition to specificity training, as previously mentioned).

Specialized training can take different forms, depending upon the desired result. In general, the specificity involves development of or working on a physical quality together with a particular skill or sports technique. For example, if working on strength in the shot put, the athlete would work against a resistance while duplicating the put (throw) technique. It may be on one part of the throw, such as the glide phase or a selected movement in the total summation of forces as in pelvic girdle rotation or knee extension in the final effort.

If working for competitive power (speed-strength), he would use a weight equal to the competitive weight in the prescribed throw. If working on the speed of power, he would use a lighter weight and, if on the strength aspect, slightly heavier. The difference in the weights is small enough so that there is no interference with skill execution. Such training is usually called "coupled development."

For many years now, the Soviets have been constructing special devices for use in different sports for the specialized development. The devices are used most often for strength and power development or movements in areas that cannot be duplicated with the use of free weights. For example, see Figures 1A and B. Although the picture shows the external view, the leg press device is very complex. It contains so many springs, levers, sliding adjustments, etc., that only a skilled mechanical engineer could understand the schematic. For other examples, see the article by Yessis (4).

In addition to specifically related exercises, much work is done on modifying (or learning) technique after there

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