


Direct Competition Preparation in Elite High Jumping

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ABSTRACT

A time to focus on peaking for the main competition of the year, for example the European Championship, World Championships or Olympic Games, is a key element of current training theory and is known as Direct Competition Preparation. Proper training in this period can have a positive impact on the results achieved. However, improper, e.g. excessive, training may lead to disappointing results. It is therefore very important for the coach to plan appropriate training loads and select appropriate drills and other training content in this period. Moreover, the programme should be individualised for the athlete and conditioned on the demands of the competition schedule and the extent to which the annual training plan has been implemented. The author, who is a national coach for the jumping events in Poland, outlines the principles for planning the Direct Competition Preparation and provides typical workouts for elite high jumpers based on relevant literature and his personal experience.

AUTHOR

Piotr Bora, PhD, is a lecturer at the University of Physical Education in Cracow (Poland) and a National Coach for jumps. He has worked with many international athletes, most notably the 2.36m high jumper Alesander Walerianczyk and 8.21m long jumper Marcin Starzak, and he has lectured on many national and international conferences.

Introduction

A primary responsibility for an athletics coach is the planning of the athlete's training programme. Without a plan, all work the athlete will do will not make proper sense or effectively prepare him/her to compete.

One of the most fundamental principles for planning the training process is that of periodisation and the variability of training work between and within the periods (PAC – PO-MARNACKI, 2006). In the competition period the most important aim is to create the conditions that allow the athlete to achieve the best possible competitive results. The training in this period should be very specialised and the length of the breaks between competitions will depend on the athlete's physical and mental preparation and on the calendar of events.

Of particular importance is the need to make final preparations prior to the season's major event, for example European Championship, World Championships or Olympic Games. A time for focus on this work, known as peaking or Direct Competition Preparation (DCP), is a key element of current training theory (BOMPA, 1999; BORA, 2010; KIELAK, 2004). The main task of the DCP is to produce a state of the highest readiness to compete in the specific conditions in which the main event of the season will take place (BORA, 2010; KIELAK, 2004).

Proper training in the DCP can have a positive impact on the results achieved in the main event of the year. However, improper, e.g. excessive, training in this period may lead to disappointing results (KIELAK, 2004; LASOCKI, 1998, PLATONOW & SOZAŃSKI, 1991).

In the following sections I outline the key points for planning the DCP and typical workouts for elite high jumpers based on relevant literature and my personal experience as a national coach.

Structure of the Competition Period

The competition period of an elite athlete can be divided into three mesocycles of varying duration, each with a different set of tasks and objectives, including the DCP (see Table1).

Many proposals for planning the DCP mesocycle can be encountered in the training literature. In these, the volume of the load differs depending on the discipline, the extent to which the annual training plan has been implemented, the competition requirements (one-day competitions or longer), and the conditions of the competition (climate zone, altitude, temperature, etc.).

The date of the last important competition (often a qualification event or national championships) and the date of the main competition of the season condition the duration and structure of the DCP mesocycle. The design of the training contents in this period depends on the size and nature of loads in the earlier training periods (LASOCKI, 1998, SOZAŃSKI, 1999). The training in DCP mesocycle is a summary of the whole year of the athlete's preparation for the main event.

For the elite high jumper, the DCP mesocycle normally lasts five to seven weeks and is divided into three phases: accumulation, intensification and transformation. Based on his/her knowledge, experience and creativity, the coach will elaborate the training contents for each phase.

Accumulation Phase

The first part of the DCP is called the Accumulation Phase. It involves the regeneration of the athlete's physical strength and mental relaxation after the first competitions of the season and the transition to the new conditions of training. The aim here is to increase the body's adaptation to large loads. The first and second microcycles of this phase are very challenging.

In this phase, the number of training sessions is increased and an elite high jumper will train twice a day. However, this period also includes two free days (rest), biological recovery and swimming. The work is concentrated on flexibility, strength, speed and elements of technique. The basic structure of the phase is shown in Table 2.

Table 1: Mesocycle structure for an elite high jumper in the competition period (DCP = Direct Competition Preparation)

Mesocycles	Competition Period		
	Competitions I	DCP	Competitions II
N° of weeks	5-6	6	5-6

Table 2: The structure of the accumulation phase of Direct Competition Preparation in elite high jump

Microcycle	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
I Accumulation	Elements of high jump technique	Flexibility + speed	Warm up	Shot throwing (medicine ball)	Elements of high jump technique	Flexibility + speed	-----
	Strength I	Swimming / biological recovery	Jumping	Biological recovery	Strength II	Swimming / biological recovery	-----
II Accumulation	High jump technique	Flexibility + speed	Warm-up	Shot throwing (medicine ball)	High jump technique	Flexibility + speed	-----
	Strength I	Biological recovery	Jumping	Biological recovery	Strength II	Biological recovery	-----

Typical workouts for an elite high jumper in this phase consist of the following:

STRENGTH I

- Half-squat
- Quarter-squat
- Calf-rise
- Step-up
- Half-squat jumps
- Abdominal muscles
- Back muscles

Series: 4-6, repetitions: 5-10

JUMPING DRILLS

- Multi-bounds > RL(right leg)-LL(left leg), RL, LL, RLRL-LLLL

Series: 3-5, repetitions: 5-8

TECHNIQUE

- Rhythms of take-off every 1,3,5 strides - series: 3-6, 4-8 repetitions
- Scissor technique > approach 4-6 strides - 4-6 repetitions
- Special acrobatic drills 10-15 min
- Flop technique > approach 2-6 strides - 8-12 repetitions

STRENGTH II

Quarter squat

- Bench press
- Snatch
- Ankle hops
- Jumps
- Abdominal muscles
- Back muscles
- Adductor muscles of thigh
- Hamstring muscles

Series: 4-6, repetitions: 5-10

SPEED

- Acceleration > 20-30m - 2-3 repetitions, recovery 5-6 min
- Flying sprints through curve > 30m - 2-3 repetitions, recovery 5-6 min

FLEXIBILITY

- Hurdle Drills > 6x6 hurdles (walking)

SWIMMING

- Different strokes (about 30-40 min)

BIOLOGICAL RECOVERY

- Massage
- Hydro massage
- etc.

Intensification Phase

In the second phase of the DCP the number of training sessions and the training load are decreased, but the intensity of the loads is very high. As a result, this sets up the athlete for the phenomenon of supercompensation to occur in the following phase.

In the microcycles of the intensification phase, the high jumper trains once a day only. Special drills dominate the general training loads and the work is concentrated on strength, speed and technique. There are four free days (rest) and biological recovery in this period. In the last microcycle at the end of the phase the jumper should take part in a control competition (Table 3).

Typical workouts for an elite high jumper in this phase consist of the following:

STRENGTH I

- Half-squat
- Quarter-squat
- Quarter-squat jumps

Series: 1-3, repetitions: 1-6

- Abdominal muscles
- Back muscles

Series: 6, repetitions: 10

JUMPING DRILLS

- Standing long jump – 4 repetitions
- Standing triple jump – 4 repetitions
- Hurdle Hops – 4x6 repetitions

TECHNIQUE

- Rhythms of take off every 1,3 steps - series: 1-3, 3-6 repetitions
- Flop technique > approach 4-6 steps - 3-4 repetitions
- Flop technique > full approach - 5-8 repetitions

STRENGTH II

- Quarter-squat
- Ankle hops

Series: 1-3, repetitions: 1-6

- Abdominal muscles
- Back muscles

Series: 4, repetitions: 10

SPEED

- Flying sprints > 30m - 2-3 repetitions, recovery 6-8 min
- Flying sprints through curve > 30m - 2-3 repetitions, recovery 6-8 min

BIOLOGICAL RECOVERY

- Massage
- Hydro massage
- etc.

Table 3: The structure of the intensification phase of Direct Competition Preparation in elite high jump

Microcycle	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Intensification I	Strength I	High jump technique	Flexibility + speed + jumping	Strength II	Biological recovery	High jump technique	Biological recovery
Intensification II	Strength I	High jump technique	Speed + Jumping	Strength II	-----	Competition High Jump	Biological recovery

Transformation Phase

In the transformation phase, the athlete should achieve the highest readiness to compete in the main competition of the year. Training in this phase is conditioned by the length of the preparation and competition periods that preceded the DCP and the time needed for travel to the venue of the main competition, adaptation to the time zone and acclimatization.

For the elite high jumper, the training sessions of these microcycles are of shortened duration and medium intensity. The focus of the training is on elimination of minor technical errors. The basic structure of the microcycles of this phase is shown in Table 4 but training in this phase is subject to modification and adaptations.

Typical workouts for an elite high jumper in this phase consist of the following:

STRENGTH I

- Half-squat
- Quarter-squat
- Quarter-squat jumps

Series: 1-3, repetitions: 1-6

- Abdominal muscles
- Back muscles

Series: 4, repetitions: 10

JUMPING DRILLS

- Standing long jump – 3 repetitions
- Standing triple jump – 3 repetitions

TECHNIQUE

- Rhythms of take off every 3 steps - series: 1-3, 4 repetitions
- Flop technique > 6 steps approach - 2-3 repetitions
- Flop technique > full approach - 5-6 repetitions

STRENGTH II

- Ankle hops - series: 3, 6 repetitions
- Jumps on the box - series: 3, 6 repetitions
- Abdominal muscles
- Back muscles

Series: 4, repetitions: 10

SPEED

- Flying sprints > 30m - repetitions: 2, recovery 6-8 min
- Flying sprints through curve > 30m - repetitions: 2, recovery 6-8 min

Table 4: The structure of the transformation phase of Direct Competition Preparation in elite high jump

Microcycle	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Transformation I	Strength I	High jump technique	Speed + Jumping	Strength II	-----	<u>Competition High Jump</u>	-----
Transformation II	Strength I	Speed + elements of high jump technique	Strength II	-----	<u>Competition High Jump</u> QUALIFICATION	-----	<u>Competition High Jump</u> FINAL

Conclusion

The DCP can significantly improve an athlete's disposition and readiness for competition (even by a few %) and thereby have a positive impact on the results achieved in the main event of the year. However, improper, e.g. excessive, training in this period may lead to disappointing results. It is therefore very important for the coach to plan appropriate training loads and select appropriate drills and other training content. It is certainly the case in the high jump that the process of training in the DCP should be individualised for each athlete.

In this article I have provided the basic principles for planning the DCP and typical training sessions for elite high jumpers from which the coach can develop as specific programme for his/her athlete.

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