

TECHNIQUE AND RHYTHM DEVELOPMENT FOR WOMEN'S 400M HURDLERS

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The author presents suggestions on suitable learning methods to develop hurdling technique and progressive drills to improve running rhythm in the women's 400m hurdles event. The article is translated in a slightly condensed format from Die Lehre der Leichtathletik, published by Bartels & Wernitz, West Germany. Re-printed with permission from Modern Athlete and Coach.

We believe that we can make two statements about the problems of training involved in the 400m hurdles event for women:

1. The 400m hurdles for women and the training for it does not differ basically from the 400m hurdles for men.
2. The 400m hurdles for women and the training for it can be basically based on the principles of 400m flat running.

The following text will concentrate on two major training aspects — the development of technique and the development of rhythm — taking into consideration the above mentioned statements.

TECHNIQUE DEVELOPMENT

There is no doubt that the ability to clear the hurdles with the left, as well as the right leg leading is important. However, the technique development of the "other" leg is far too often treated as a side problem and frequently dismissed by the athletes as being too complicated and ineffective. Coaches of young athletes and sport teachers are therefore requested to make the beginner use both lead legs in hurdling right from the start. It will not only help to improve general movement aptitude and fast learning of skills, but could be of great value later in case the athlete specializes in the 400m hurdles.

Technique development, from the view of periodization, is best conducted after the end of the outdoor season, during the transfer phase into the winter preparation period. Whenever the technique development takes place, the necessary mobility, particularly in the hip region, should not be forgotten. A simultaneous employment of mobility and technique exercises is meaningful and should during the above mentioned training periods be in the program at least twice week. Mobility exercises should take place even more frequently. Most

effective for the development of mobility is to exercise 10 to 15 min., twice a day. After the desired mobility level is achieved, twice a week exercising in the normal training program is sufficient to maintain the level.

All the known elements of sprint hurdling are employed in the learning of the hurdle clearance technique. It is advisable in the initial learning phase with the "other" leg to perform all exercises with the "new" lead leg and eliminate temporarily the "old" lead leg. Both sides can be combined after 6 to 8 weeks of training, gradually reducing the part of the "new" leg until both sides become more or less equal. As an example, the following technique exercises can be used:

- Drills for the trail leg (sideways past the hurdle) in one, three and five strides rhythm, walking, jogging and running.
- The same drills for the lead leg.
- Complex drills: clearing the centre of the hurdle in one, three and five strides rhythm, walking, jogging and running.

The number of hurdles used is five and the height is gradually increased to reach 84cm. The distance between the hurdles should be adjusted to the number of strides and the movement speed to avoid jumping action over the hurdles. The drills are conducted first on the straight, later also on the curve with a gradual reduction of the curve radius.

In the beginning the drills are performed with the same lead leg over all the hurdles. The alternate lead leg action is introduced later by including an even number of strides (two, four or six), suitable for all three previously mentioned drills.

RHYTHM DEVELOPMENT

We distinguish in practical training in the year's program the development of preparatory and specific rhythms. The preparatory rhythm development takes place under normal conditions from January to March, followed as from April by the development of the specific rhythm.

Preparatory Rhythm

The training forms employed for preparatory rhythm development have the task to develop the ability to estimate correctly the distance to the hurdles, using the corresponding number of strides to reach the correct take-off spot. The drills used are over hurdles placed at equal or varying distances apart. The athlete has to follow a pre-planned rhythm or find herself a correct number of strides for varied distances between the hurdles. For example:

- A distance of 80 to 100m with 4 to 6 hurdles (76cm) placed irregular distances apart. The task: A fluent run in changing speeds.
- A distance of 80 to 100m with 4 to 6 hurdles (76cm) placed regular distances apart for an even or uneven stride pattern. Example: Hurdles 14m apart covered in 6 or 7 strides, hurdles 18.24m apart covered in 8, 9 or 10 strides. The task: A fluent run in a preplanned rhythm.
- A distance of 80 to 100m with 4 to 6 hurdles placed so that the number of strides between the hurdles increases. The task: A fluent run in a pre-planned rhythm. The first hurdle is cleared first with the right leg leading, in the next run the left leg leading.

All these drills begin with a standing start from a 13.50m or 20m approach run.

Specific Rhythm

The training forms employed here are concerned with the competitive rhythm and can only be performed in the German climate outdoors as from April. Very few athletes have the opportunity to use hurdles placed the competitive distance apart indoors. Our sample drills for the development of specific rhythm are based on practicing for a 17-stride pattern that can be reached by using the plan shown in table 1. The plan, using three or four hurdles for each drills, can be adjusted to any stride pattern.

Table 1

Drill	Strides	Hurdles apart (m)	Approach (m)
1.	5	12.25	15
2.	7	16.00	15
3.	9	19.80	30
4.	11	23.50	30
5.	13	27.40	30
6.	15	31.15	45
6.	17	35.00	45

The development of specific rhythm for the approach to the first hurdle (on the curve from a crouch start) can be based on the following:

- Attempting to reach a clearly visible marker, placed 40m from the start, in 23 or 24 strides (according to individual stride length) with the take-off foot.
- Shifting the marker to 43.40m and maintaining the rhythm.
- Placing a hurdle 45m from the starting line to clear it from a 23 or 24 stride approach. During the learning phase it is helpful to place a check mark 6 to 8 strides from the first hurdle.

The competition rhythm and distances between the hurdles should be always used in the complex specific rhythm development (approach and run over several hurdles). However, it is permissible at the start of specific rhythm training early in the spring or in an extremely fatigued condition, to shorten the distances between the hurdles in order to maintain the rhythm. The following training forms can be employed:

- Running of sections over 1, 3 or 5 hurdles, using intensive interval method.
- Example: 2 x 1 hurdle, 2 x 5 hurdles, 2 x 3 hurdles. Recoveries 3 to 5min.
- Running of sections over 3 to 5 hurdles, using the intensive interval method. Example: 3 to 5 hurdles with jog back recoveries. Starts from the blocks.
- Running of sections over 6 to 8 hurdles, using the repetition method with full recoveries.
 - Example: 3 x 300m hurdles with 20 to 30min. recoveries.

A training run over the full 400m hurdles distance does not make sense. It is nearly impossible to hold competitive speed over the full distance under training conditions and only competitive speed guarantees that the planned rhythm can be maintained. The importance of the correct rhythm and speed has to be stressed.

Finally, it should be pointed out that the above described technique and rhythm development methods are not only meant for improving 400m hurdlers but can be successfully incorporated in the training plans of all hurdlers.