

The 2000m Steeplechase for women

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The 2000m steeplechase is an addition to the programme of women's track and field events.

In the following text the author outlines her views on steeplechase training in general, takes a look at developmental methodology and introduces specific physical and technical preparation aspects.

The author describes training load volumes in the annual training, specific physical and technical preparation complexes and examples of loading within different microcycles.

ABSTRACT

WHO IS LIKELY TO SUCCEED?

The 2000m steeplechase is not a pure middle distance race because of the different fatigue mechanisms that are evident between steeplechasing and flat running. A female steeplechaser must not only have a solid distance running preparation but also possess the speed of a 1500m runner, leg strength, jumping power and a good level of hurdle clearance technique. All this must be stabilised so that the athlete can maintain her performance level over the whole distance whilst in a state of fatigue. In addition, the female steeplechaser requires good coordination and spatial judgement. (See table 1).

Due to the rather short history of this event, the following model of physical preparation characteristics is mainly based on the performances of athletes over 1500m, 3000m and 5000m and also 400m hurdles. Hopefully this will help to clarify some contemporary misunderstandings about the steeplechase event for women.

TRAINING LOAD VOLUMES IN A YEARLY CYCLE

An analysis of our studies into the physical and technical preparation of women steeplechasers suggests that 3% of the total running volume should be allocated for specific steeplechase preparation for average athletes. The corresponding figures for better performers are 2%, while elite athletes need only 0.8 to 1.0%. It should be noted here that elite 400m hurdlers allocate 30 to 40% of their yearly preparation volume to hurdle specific training.

Table 1: Model characteristics of specific physical preparation for women 2000 m steeplechasers

CONTROL EXERCISES	CLASSIFICATION		
	AVERAGE PERFORMERS (AP)	BETTER PERFORMERS (BP)	ELITE PERFORMERS (EP)
100m (sec)	13.7 - 13.2	13.5 - 13.1	13.3 - 12.9
400m (sec)	60.5 - 59.3	60.3 - 57.5	58.7 - 57.2
1000m (min)	2:58 - 2:52	2:55 - 2:51	2:47 - 2:40
3000m (min)	10:09 - 9:53	9:58 - 9:41	9:40 - 8:25
15km road run (hr)	1:04 - 1:01	1:03 - 59:30	1:01 - 51:40
Oxygen uptake (ml/kg/min)	60 - 62	64 - 65	68 - 72
10-step multiple jump (m)	22.40 - 23.90	22.80 - 24.60	26.90 - 27.10
Pull ups (reps)	10 - 15	15 - 20	18 - 25
Push-ups (reps)	20 - 30	30 - 40	40 - 60
400m hurdles (sec)	72.0 - 67.0	67.0 - 65.0	65.0 - 62.0
1500m steeplechase (min)	5:05 - 4:55	5:00 - 4:50	4:43 - 4:38
2000m steeplechase (min)	-	6:40 - 6:37	6:28 - 6:25

World-wide literature, covering the 3000m steeplechase and 400m hurdles, was studied in order to establish an optimal volume of training in the macrocycle that concentrates on specific steeplechase training over barriers. Additional information was obtained from training diaries and foreign sources. The results indicated that hurdles and waterjump training in a macrocycle should on average correspond to 10% of the total volume. A retrospective analysis of some leading 2000m female steeplechasers gave us the ability to recommend the following volumes of training loads to three different performance levels:

- General yearly running volume:
- Average performers (AP)
3500 to 3800km
- Better performers (BP)
4500 to 4800km
- Elite performers (EP)
5300 to 5700km

- Hurdles training volume according to intensity zones:
- Aerobic (heart rate 140 to 150/min).
AP - 175 to 190km
BP - 225 to 240km
EP - 265 to 285km.
- Aerobic-anaerobic (heart rate 160 to 170/min).
AP- 140 to 150km
BP - 180 to 190km
EP - 210 to 225km.
- Anaerobic (heart rate 170/min).
AP- 35 to 38km,
BP - 45 to 48km,
EP - 53 to 57km.
- Total hurdles yearly training volume:
- AP - 350 to 380km
- BP - 450 to 480km
- EP - 530 to 570km

- Distribution of the hurdles volume in various training phases (applicable to all performance levels):
 - Introductory period - 0.5%;
 - First preparation period - 2%
 - Winter competition period - 1.5%
 - Second preparation period - 2%
 - Pre-competition period - 1 %
 - Summer competition period - 2.5%
 - Transition period - 0.5%.
- Total yearly clearance of barriers (hurdles, waterjumps):
 - Average performers
3000 to 5000
 - Better performers
4000 to 6000
 - Elite performers
7000 to 8000

SPECIFIC PHYSICAL AND TECHNICAL PREPARATION COMPLEXES

The effectiveness of the training of specialist women steeplechasers can be based on the principle of improved technical development combined with the development of the basic functional systems. Experimental studies have assisted in establishing a circuit complex that is made up of five specific exercises and a separate circuit routine that can be used in cross-country training. These exercise complexes are helpful in the development of:

- hurdles technique, while specific physical preparation is improved,
- stabilisation of the hurdle clearance technique under pressurised conditions.

The use of the circuit complex can be an advantage in allowing an increase in the volume of hurdles and waterjump technique training throughout the year by using indoor facilities in winter. With a little imagination

and the use of gymnastics apparatus, both hurdles and imitation water jumps can be constructed. Landing in the "waterjump" should take place on gymnastics mats to soften the impact. Outdoors, when steeplechase facilities are not available, it pays to make use of the long jump pit with a firm obstacle placed in front of it to simulate the clearance action. The same is possible on cross-country trails, making use of natural facilities, such as logs in the forest or sloping sandy areas. All these exercise complexes can be employed under pressurised conditions to improve technical development.

The development of the specific endurance of female 2000m steeplechasers usually takes place by using runs over different distances at different speeds. Some authorities believe that the employment of exercises that create compensatory responses in the organism, similar to what happens in the racing situation, are more effective. On the other hand, working over short distances, such as 110m hurdles or 400m hurdles, allows for the development of movement speed in barrier clearances without the fatigue complications of race simulation.

In addition to these theoretical possibilities, it is advisable in the development of specific steeplechase endurance to use mainly long repetitions (3-4 x 1000 -1500m) with obstacles under cross-country running conditions, supplemented by 1500m steeplechasing control tests on the track. The repetition runs should be performed at close to racing speed (not below 95%) to create conditions that correspond to the heart rate and blood lactate concentration in the actual 2000m steeplechase competitions.

DEVELOPMENT METHODOLOGY

Specific Circuits

The use of exercise routines can start in the introductory period. During this four-

week phase the general volume of running over hurdles should cover 25 to 28km for elite performers and up to 20km for athletes of other levels. It is recommended that specific circuits are included to the programme according to performance levels 3 to 5 times a week.

In the first preparation period that follows, stretching from November to January, it is advisable to use outdoor exercise routines by improvising facilities according to the available terrain or making use of indoor circuits with gymnastics apparatus to simulate the steeplechase movement skills. These exercises should be undertaken 3 to 5 times a week, depending on performance level.

We can recommend the following in general for elite 2000m steeplechasers during the first preparation period:

1. Varied speed 8 to 12km runs (heart rate 160/min) with 200 to 500m acceleration over hurdles according to the principles of the exercise circuit.

2. Uphill interval runs - 5 to 7 repetitions over 400 to 500m (heart rate 170 to 180/min) with up to four hurdles. This workout is usually executed only once a month.

3. Repetition runs - 3 to 4 repetitions over 1000 to 1500m (heart rate 170 to 190/min) with obstacles on a cross-country course. The waterjump is improvised. This workout is usually only carried out once a month.

At the end of the first preparation period it is advisable to conduct a control test over 1500m steeplechase. The waterjump can once again be improvised if no proper facilities are available.

YEARLY TRAINING CYCLES

First Preparation Period

The following outline summarises typical microcycles for elite 2000m steeplechasers in the first preparation period:

Microcycle I:

Monday

15km run (heart rate 140 to 150/min), specific hurdles exercises, general physical conditioning exercises.

Tuesday

Varied pace 8 to 12km run (heart rate 160/min.), accelerations using the specific exercise circuit (500 to 600m), specific running exercises, general physical conditioning exercises.

Wednesday

A 16 to 18km aerobic cross-country run (heart rate 130 to 140/min), 6 x 60m sprints, 10 min. of general physical conditioning exercises.

Thursday

A 6km cross-country run (heart rate 140/min), hurdling, 3km run over obstacles using a specific exercise circuit.

Friday

A 8km tempo run (heart rate 170/min), 8 x 100m rhythmical sprints, 15min. general physical conditioning exercises.

Saturday

A 20 to 25km steady aerobic run (heart rate 150/min), 10 min. general physical conditioning exercises.

Sunday

Rest.

Microcycle II:**Monday**

A 14km undulating cross-country run (heart rate 140 -150/min), 15 min. general physical conditioning exercises.

Tuesday

6 to 7 repetitions of 400 to 500m uphill interval runs (heart rate 170 to 180/min), relaxation exercises. The interval runs should include up to four hurdles.

Wednesday

A steady 5 to 6km cross-country run (heart rate 140/min), hurdling, 15 min. general physical conditioning exercises, 4km run (heart rate 140/min).

Thursday

A steady 12 to 15km run (heart rate 140/min), specific hurdles exercises.

Friday

A faster 8 to 12km run (heart rate 160/min) with 200 to 600m acceleration runs using a specific exercise circuit, specific hurdles exercises and 10 min. general physical conditioning exercises.

Saturday

A 20 to 25km undulating cross-country run (heart rate 150/min), light loading of general physical conditioning exercises.

Sunday

Rest.

Both microcycles include morning training sessions made up from a 6 to 8km steady cross-country run, 10 x 50m over barriers, 20 min. general physical conditioning exercises and 15 min. specific hurdling or running exercises. The 10 x 50m over barriers should be alternated on uphill, downhill and sandy surfaces.

Winter Competition Period

The winter competition period covers six to eight weeks, during which athletes take part in indoor competitions. While preparing for indoor races the steeplechasers continue to train mainly indoors, making use of specific exercise circuits with improvised facilities. The main aim during the winter competition phase is focussed on the development of hurdle clearance techniques. Two to four training sessions a week should be devoted to this task.

Elite classification steeplechasers should aim for up to 85km running training volume over hurdles, with less able athletes aiming to cover 70 to 75km.

Second Preparation Period

The second preparation period lasts around two months. During this period we recommend that elite steeplechasers continue following hurdling development training outlets under pressurised conditions, including training at altitude. Less able athletes should use the same approach with somewhat reduced volumes. In most cases it is recommended to replicate the training of the first preparation period but with an increased intensity. On average elite performers should cover 110km running over hurdles, with athletes of lower levels aiming for around 75 to 80km.

To give an example, we will summarise below a microcycle in the second preparation training period of the Russian 2000m steeplechase champion Mozarov:

Monday

AM: A steady 7 to 8km cross-country run (heart rate 140/min), mobility exercises, relaxation exercises.

PM: Uphill interval running - 3 x 2000m with up to 4 hurdles (heart rate 170 to 180/min), 5 x 100m uphill sprints.

Tuesday

AM: A 12 to 14km cross-country run in undulating terrain (heart rate 140 to 150/min), 5 x 100m uphill bounding.

PM: A steady 7 to 8km run (heart rate 140 to 150/min), 10 min. general physical conditioning exercises, 10 min. specific hurdles exercises, 3 x 500m technical hurdling (70 to 80 clearances, hurdles 20 to 30m apart).

Wednesday

A 17 to 20km undulating cross-country run (heart rate 150/min), general physical conditioning exercises.

Thursday

AM: A steady 7 to 8km run (heart rate 140 to 150/min), 20 min. specific hurdling exer-

cises, 20 x 30 hurdle clearances in a block.

PM: A steady 7 to 8km run (heart rate 140/150/min), 5 x 100m acceleration over 3 hurdles, specific indoor circuit.

Friday

AM: A 8 to 10km steady cross-country run (heart rate 140 to 150/min), 20 min. mobility and relaxation exercises.

PM: 10 x 200m + 5 x 200m interval uphill running with one hurdle and 60 to 90 sec. recoveries (heart rate 170/min), 10 x 50m uphill accelerations over one hurdle.

Saturday

A 18 to 20km undulating cross-country run (heart rate 150/min), 10 min. - general physical conditioning exercises. ■

