

# GENERAL AND SPECIFIC EXERCISES FOR JAVELIN THROWERS

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*The author looks at some common technical faults that can be observed among javelin throwers and presents a series of general and specific exercises aimed to improve technical efficiency. The article is a slightly edited translation from Legkaya Atletika, Russia, No. 1, January 1993. Re-printed with permission from Modern Athlete and Coach.*

It isn't so long ago when the new javelin was introduced, yet distances reached by some top level performers are already approaching the 100m barrier. These obvious improvements indicate a better biomechanical approach to the development of the javelin technique and also a better understanding of the training means to develop general and specific physical performance capacities.

Nevertheless, many athletes, including some elite athletes, allow themselves to be restricted by basic technical shortcomings. Some of these include:

- A final delivery action that is directed slightly across the axis of the javelin.
- An over-bending of the knee joint of the left leg in the final delivery phase that leads to an increased release angle and an increased angle of attack.
- A lack of an active transfer from the run-up to the final throwing stride. From the contemporary technical viewpoint there should be an uninterrupted forward movement of the athlete's centre of gravity from the start of the run-up to the final positioning of the left leg for the delivery.

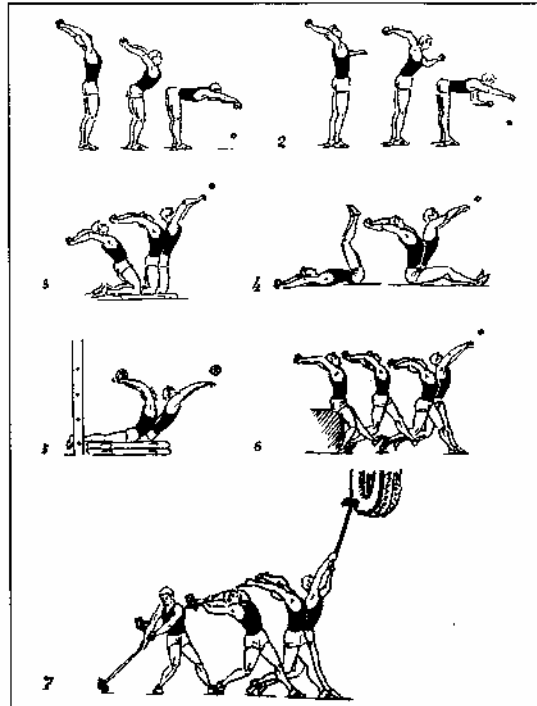
## RECOMMENDED EXERCISES

*Group 1* - These exercises aim to prepare and develop the muscle groups involved in the forward action of the trunk and shoulder girdle.

Advisory remarks:

1. The inside of the shoulder blade should be compressed, the chin lifted and the trunk slightly bent in the initial position of all group I exercises;
2. The movement of the trunk in the horizontal plane should be abruptly broken in exercises 1 and 2;

3. The movement of the trunk in the vertical plane should be abruptly broken in exercises 3 to 7. The exercises are performed in 3 to 5 series of 20 to 50 repetitions.

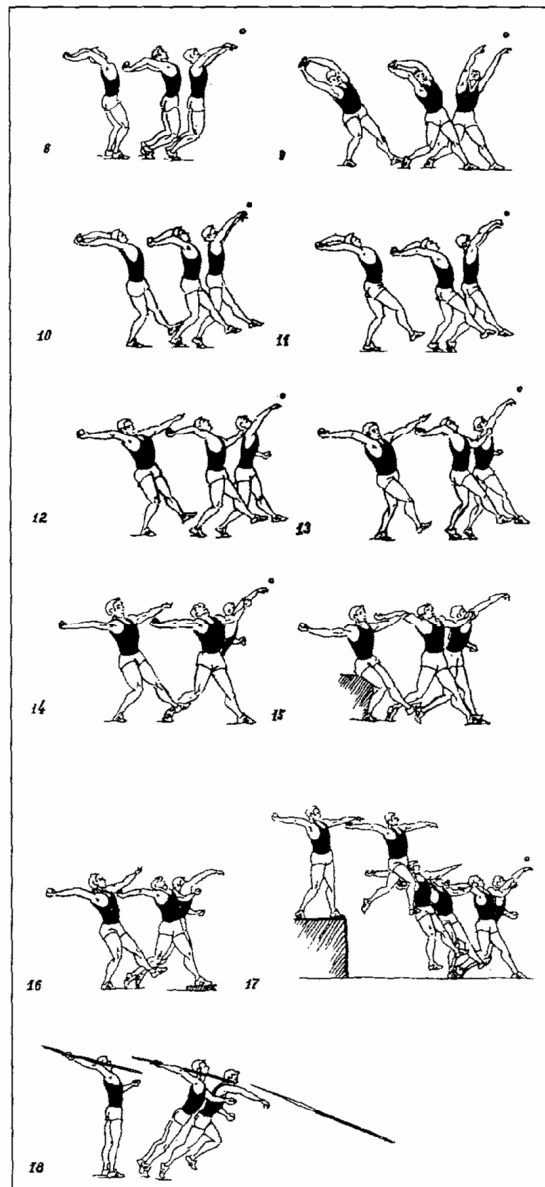


GROUP I  
Exercises 1 to 7

*Group II* - These exercises aim to develop the forward movement of the hips, the fixation of the knee joint angle of the right leg and the creation of tension in the left leg. The exercises, using single or double handed throws, are performed with loads ranging from 3.0 to 7.25kg.

Advisory remarks:

1. Exercises 10 to 13 are performed in a single support position;
2. In exercise 8 the forward bend of the trunk should take place without an extension of the legs;
3. The shoulders should not be turned to the left in exercise 9;
4. In all the exercises the lower leg and ankle flexors are actively working, while the angle between the hip and the lower leg is maintained.



GROUP II  
Exercises 8 to 18

*Group III* (ed: these exercises are shown with group IV & V) - These exercises aim to develop the athlete's ability to apply exertion in the direction of the axis of the implement.

Advisory remarks:

1. Exercise 18 is performed with the feet placed parallel, throwing into the ground (10 to 15m);

2. Exercise 19 is performed from a wide throwing stance, exercise 20 from a closer stance with a 25 to 30° release angle;
3. It is important that exercises 19 and 20 are performed from a correct starting position with the left elbow moving backward-downward and the right elbow below the implement. The exercises are performed in 2 to 3 series of 10 repetitions.

*Group IV* - The exercises aim to develop an effective throwing stride for the final delivery action. Most important is here an active and smooth transfer from the transition stride into the throwing stride.

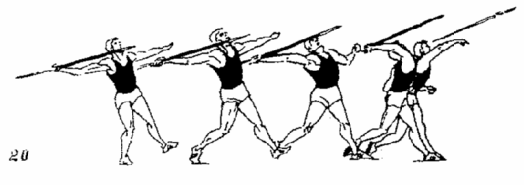
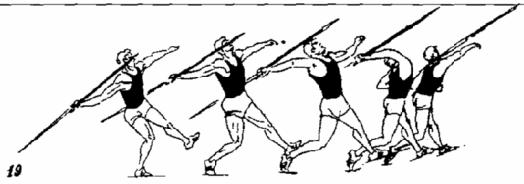
Advisory remarks:

1. Exercise 21 is performed slowly with static (3 to 5 sec.) starting and final positions;
2. Exercise 22 is executed from a three-stride approach in which the first stride represents a left leg swing from the hip and the left shoulder continues to move forward during all three strides;
3. Exercise 23 is executed from a four stride walk, exercise 24 from 4 to 6 running strides.

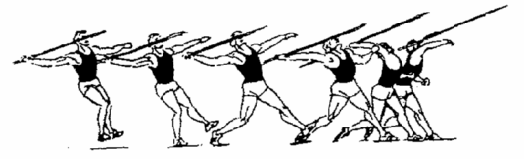
*GROUP V* - The exercises aim to develop the javelin run-up, stressing the coordination of the forces applied in the work of the left and right legs.

Advisory remarks:

1. The axis of the shoulder and the javelin must in all exercises remain parallel;
2. A vertical fluctuation of the body's centre of gravity should be kept to a minimum;
3. Running with the javelin in exercise 25 must take place without turning the trunk to the right;
4. Emphasis in exercise 27 is placed on the left leg action, in exercise 28 on the right leg action;
5. Emphasis in exercise 29 is placed on a smooth combination of the left leg swing and the right leg drive. The exercises are performed in 2 to 3 series of 50 to 100m.



*GROUP III  
Exercises 19 to 21*



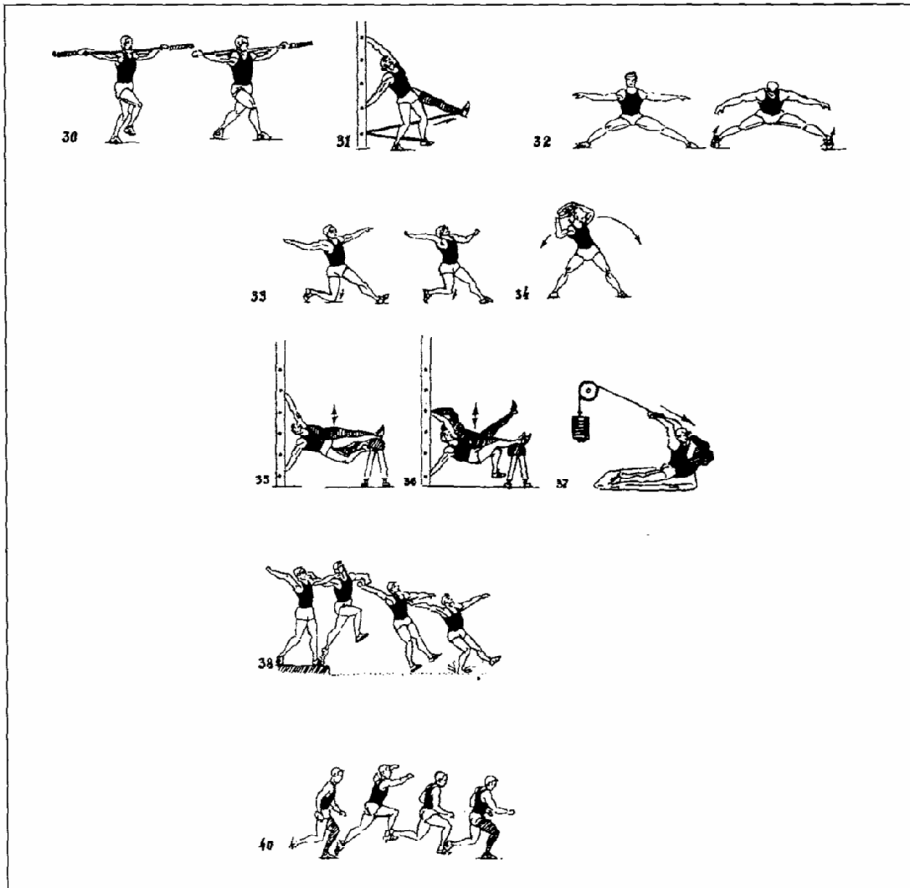
*GROUP IV AND V  
Exercises 22 to 29*

*Group VI - General preparation exercises.*

Advisory remarks:

1. Exercise 30 — walking with a bar on the shoulders.
2. Exercise 31 — forward and backward leg movements against a rubber band resistance while holding on a wall ladder.
3. Exercise 32 — development of groin flexibility and strength.
4. Exercise 33 — knee bends in the delivery position.
5. Exercise 34 — sideways bends with a weight disc.
6. Exercise 35 — development of lower leg strength on a gymnastic horse, holding on a wall ladder.
7. Exercise 36 — same as exercise 35 in a different direction.
8. Exercise 37 — above the head pulls in a prone position to develop trunk flexors (resistance 50 to 100kg).
9. Exercise 38 — performance of the transition stride (cross stride) from a standing position on to a lower surface without changing the pre-delivery position.
10. Exercise 39 — same as exercise 38 from a three-stride approach.
11. Exercise 40 — bounding with the emphasis to maintain static tension in each landing (3 to 4 series of 20 to 25 takeoffs).

All exercises in this group, except exercise 40, can be performed in 3 to 5 series with 10 up to 20 repetitions.



GROUP VI  
 General exercises 30 to 40