THE TRIPLE JUMP

The Triple Jump is a hop, step and jump linked into one whole rhythmic sequence. Whatever happens in one sequence will influence the following sequences. It is vital, therefore that as the athlete completes each part of the total jump, he is in a good body position to execute the next part.

The TJ, like the LJ, is essentially a speed event. The TJ approach run is similar to that of the LJ in that the jumper aims to take off the board at maximum controllable speed and gain the optimal distance in each of the 3 phases. (As an approx guide let the athlete's age represent the number of run-up strides.)

One of the major problems confronting the jumper is to minimise the loss of horizontal momentum which becomes more pronounced with each ground contact. This makes it of paramount importance that every jumper fully understands the concept of the 'active' landing, which coupled with a vigorous arm action, is the only avenue that allows the athlete the possibility of minimising horizontal velocity losses.

'Active' landing drills, where the athlete attempts to 'claw' the ground backwards under the body, must form an important part of the triple jumper's training.

Teaching sequence

: Teach the beginner to TJ
- the athlete stands on his dominant leg on a track lane line
- he hops onto the next line and balances there
- he pushes off to land on the other foot on the next line and balances there
- he pushes off again to land with both feet on the next line
- repeat until each landing flows into the T-O for the next sequence
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: Move to sand pit where equidistant grid lines have been marked on the approach
- athletes TJ from line to line using a 3-5 stride run-up
- as technique improves move to grid lines spaced further apart
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: Move to grassed area for bounding drills with emphasis on 'active' landings
- using a 5-7 stride run-up, take 5 consecutive bounding steps
- emphasise driving thigh of 'free' leg to horizontal, while pushing powerfully 'out the back' with the landing leg
- hold wide split leg position in flight and maintain upright trunk
- using 5-7 stride run-up, take 5 consecutive hops
- stress active cycling action of hopping leg and counter-balancing action of 'free' leg
- stress flat take-off trajectory and quick rhythm
- stress flat foot landings
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: Return to pit and practice TJ using a 7-9 stride run-up
- aim to achieve balanced distribution of energy
- hear and feel the 'thump, thump, thump' on the ground

FOR SCHOOLS

This issue covers some interesting information from the Soviet Union. The first detailed article by Krejer looks at the development of young triple jumpers. The second article, well worth a close study, provides simple testing data for potential throwers.

TRIPLE JUMP TRAINING FOR YOUNG ATHLETES

By V. Krejer

Former Soviet national triple jump coach presents a three-stage development plan for young triple jumpers in the 10 to 16 years age range. The article is an edited version of translated extracts from the authors book The Triple Jump; published by Fiskultura i Sport, Moscow. Attention is drawn to the great variety of general and specific exercises employed in the training of young athletes.

ALL ROUND PHYSICAL DEVELOPMENT PHASE

Age: 10 to 12 yrs. Duration: 3 yrs. Height: 152 to 165cm. Weight: 35 to 45kg.

Tasks:
- The establishment of a base for future development in sport.
- The establishment of a base for all-round physical development.
- The improvement of agility and mobility.
- The development of willingness for work and discipline.

Means: A wide choice of all-round physical development exercises, the learning of other track and field events.

Methods: Circuits, games, repetitions, competitions, control tests.

Training load: Virtually unchanged all year round with an intensity of 50 to 75% of the maximum.

Organisation: Training under the guidance of the school or sports school coach 2 or 3 times a week. Daily independent work, using general exercises with ½ kg dumbbells and jumping drills, such as 10 repetitions of double-leg take-offs and 50 repetitions of single-leg take-offs on the spot. Once or twice a week skiing, skating, swimming and games.

Control tests: Two medical check-ups a year, observation of the pulse rate and the correlation between height and weight. Field tests, as shown in table 1, are conducted two or three times a year.

Games and relays are widely used in this age range for training. Monotony is avoided by using different types of relays and strength, speed and agility development exercises. Among the relays are:

- Jumping relays — hopping on one leg, stepping, double-leg take-offs, combination hops and steps.
- Running relays — pendulum and circular.

— Hindrance relays — jumping up, down and over obstacles, climbing etc.
— Medicine ball relays — carrying, passing, throwing, picking up etc.
— All types of combinations of the above.

Table 1: Control tests for progress

Test	Age 10 yrs.	12 yrs.
1. 30m sprint from a standing start (sec.)	6.3-6.5	5.8-6.0
2. Long jump from a 10-stride run up (m)	3.80-4.00	4.80-5.00
Triple jump on the take-off leg from a 6-stride run-up (m)	7.75-8.50	10.00-10.50
4. Standing triple jump from a 50cm high box (m)	6.50-7.00	7.70-8.00
5. Shot (4kg) double-arm forward throw (m)	9.00-9.50	10.50-11.00

Movement games include pushing contents on one leg or both legs, carrying partners on shoulders, tug of war, medicine ball passing, all types of jumping contests, tagging games etc. Sporting games in the program are soccer, rugby, variations of basketball (including hopping on one leg only), volleyball and handball. Simple strength development circuits (see fig. 1) are also included in some training sessions.

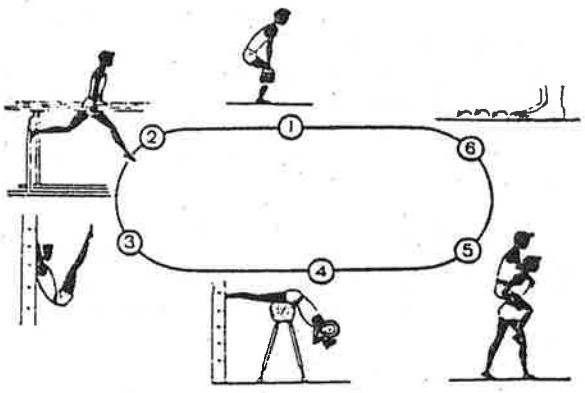


FIG. 1. ALL-ROUND DEVELOPMENT CIRCUIT
Recoveries: 45-60 sec. between exercises, 5-6 min. between rounds.

FIRST SPECIALISATION PHASE

Age: 13 to 15 yrs. Duration: 2 yrs. Height: 169 to 178cm. Weight: 50 to 57kg.

Tasks:
— Further all-round physical development.
— The establishment of a technical base for jumping, running and strength development exercises.
— The learning of the basic triple jump technique.

Means: Characteristic exercises for general all-round physical development and technique development.

Methods: Circuits, games, repetitions, competitions, control tests.

Training load: The load is doubled from the previous phase but the intensity remains 50 to 75% from the maximum.

Organisation: Training under the guidance of a sports school coach 4 to 5 times a week. Daily independent workouts, using general, as well as specific abdominal, back and ankle exercises. Skiing, skating, swimming, ice hockey and other games are also included in the training program.

Control tests: The tests shown in table 2 allow to identify sprinter-jumper types with reasonable accuracy after 1½ to 2 years of systematic training.

Table 2: Control tests to identify sprinter-jumper capacity.

Test	Age 14 yrs.
1. 40m sprint from a standing start (sec.)	5.1-5.0
2. Triple jump on the take-off leg from a 6-stride runup (m)	12.00-12.50
3. Long jump from a 10-stride runup (m)	6.00-6.25
4. Standing triple jump from a 50cm high box (m)	9.00-9.50
5. 5 fast squats with 20kg (sec.)	5.5-5.8
6. Shot (4kg) double-arm forward throw (m)	12.50-13.00
7. 300m run (sec.)	43.0-42.0

Many changes in growth take place during this phase. The youngsters grow taller (8 to 10cm a year) and their muscle mass increases considerably. Training must therefore have sufficient variety to counteract any negative influences that are related to growth. It should also be kept in mind that youngsters tire faster from repetitive work than adults. For this reason it is desirable to change frequently the

regimen and methods employed in training sessions.

Extremely valuable for the development of strength are games with heavy medicine balls and running and jumping in sand or snow. Walking upstairs with long strides and jumps over natural obstacles are helpful leg strengthening exercises. Wrestling, climbing, pull-ups and push-ups assist in the development of upper body strength. Circuits, shown in fig. 2 and 3, are also valuable.

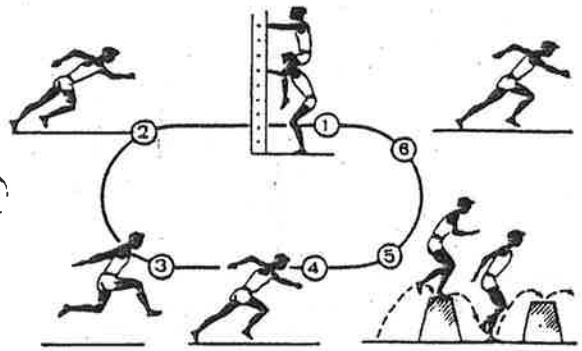


FIG. 2. STRENGTH DEVELOPMENT CIRCUIT
Recoveries: 60 sec. between exercises, 5-7 min. between rounds.

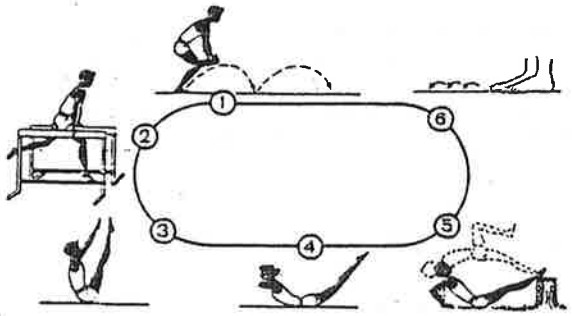


FIG. 3. COMPLEX CIRCUIT
Recoveries' 50 sec. between exercises, 5-7 min. between rounds.

All exercises performed at a maximum tempo develop speed. Sprinting is therefore not the only universal means to improve speed. Typical speed development exercises at maximal speed (over 10 seconds or 10 repetitions) are sprinting arm action, high knee lift running on the spot, sprinting leg action while hanging (feet don't touch the ground), high knee lift hops on one leg, high knee lift jumps from a double-leg take-off, scissors jumps etc.

Good flexibility increases the movement range and reduces injury risk. Flexibility exercises are included in the beginning, in the middle, and at the end of a training session. These exercises should be performed alternately with rotation, swings and relaxation exercises.

SECOND SPECIALIZATION PHASE

Age: 15 to 16 yrs. Duration: 2 yrs. Height: 178 to 181cm. Weight: 55 to 60kg.

Tasks:

- The development of jumping and supporting systems to meet the demands of triple jumping.
- The establishment of the triple jump technique.
- A gradual change from general to specific physical development.

Means: Characteristic exercises for general and specific physical development and technique improvement.

Methods: Repetitions, circuits, pyramids, competitions, control tests.

Training load: The load is increased step by step to a relatively high level with the intensity remaining in the 50 to 75% of the maximum load.

Organisation: Training under the guidance of a triple jump coach 4 to 5 times a week. Regular morning exercises. Training camps in summer.

Control tests: Two medical check-ups a year. Regular field tests at the end of each training period as shown in table 3.

Training intensity must be restricted during this phase of rapid growth (10 to 12cm a year) that is responsible for fatigue, nervousness and irritability. Poor posture, short maximum strains, long monotonous repetitions, intensive loads and emotional stresses are to be avoided. It should also be noted that tendons and joints develop slower than muscles at this stage of growth and it is important to strengthen these weak links.

The strengthening of the muscle mass, joints and tendons of the future triple jumpers is achieved by employing short duration exercises (preferably circuit training type), performed in series with liberal recovery phases. The recommended resistances at this age should not exceed 75% of the athlete's body weight. All exercises are executed dynamically, avoiding straining and paying attention to the development of localised muscle groups.

Particular attention must be directed to the ankle strength, using walking on the inside and on the outside of the ball of the foot, as well as on the toes and on the heels. Other recom-

Triple Jump

The triple jump, which probably puts more stress on an athlete's body than any other field event, comprises of 4 phases: approach phase, hop phase, step phase and the jump phase.

New athletes

Start with the basic movements by having your athletes Hop, Step and then Jump from a standing start. The take off foot should be the athlete's strongest leg as it will be used in the Hop and the Step phases.

Teach the hop phase by having the athlete do:

- a walking single leg hop
- then incorporate the circling action of the hop leg
- then multiple single leg hops with a circling leg, flat landing, and upright posture

Consecutive bounds duplicate the step and jump actions and the athlete should do these with a double-arm action and land full footed.

Combine the three phases of the jump by starting with Hop and Step combinations on grass and then add the Jump phase. Emphasize carrying the momentum from one phase to the next with an even rhythm for each phase. Once the jump phases have been put together, slowly add steps to the run up in accordance with the athlete's ability to control speed.

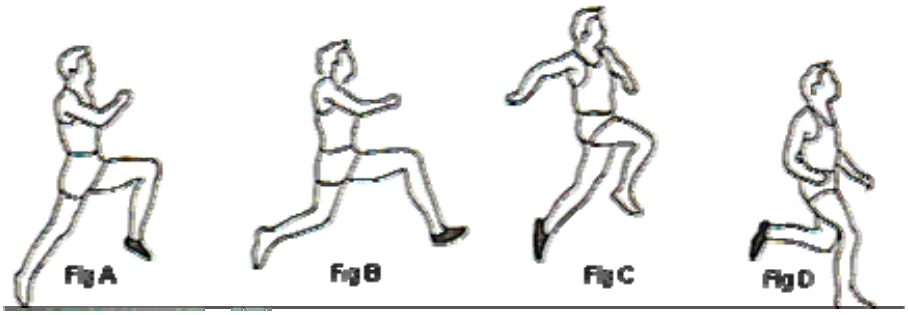
As in the long jump the athlete's eyes should be focused beyond the pit for the entire jump.

The desired distance of each bound should be - Hop 35%, Step 30%, and Jump 35% of the total jump.

Approach Phase

The approach run for the Triple Jump is similar to that of the Long Jump and the objective is to create the greatest amount of speed that can be controlled throughout the triple jump hop, step and jump phases. The athlete's strength and technique will determine the optimal run up distance and speed.

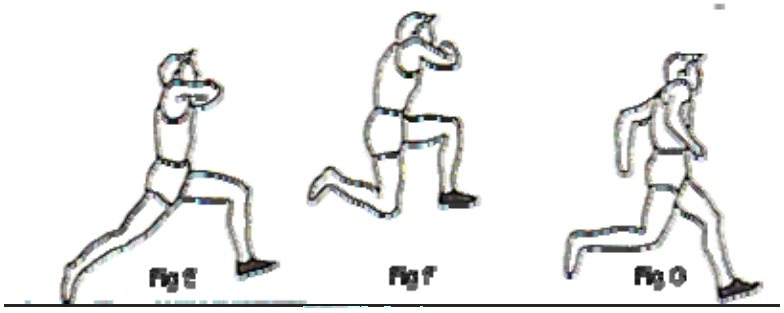
The Hop Phase



Coaching Points

- The take-off leg is fully extended (Fig A)
- Drive leg thigh should be nearly parallel to the ground at take-off and the foot relaxed (Fig A)
- The foot of the take-off leg is then pulled to the buttocks (Fig B)
- The drive leg rotates from in front of the body to behind it (Fig B-C)
- Take-off leg begins to pull forward (Fig C)
- As the thigh of the take-off leg reaches parallel, the lower portion of the leg extends past the knee, with the foot dorsi flexed (Fig C)
- Once the leg is extended, the athlete then forcefully drives the leg downwards, setting the athlete up for an active landing (Fig D)

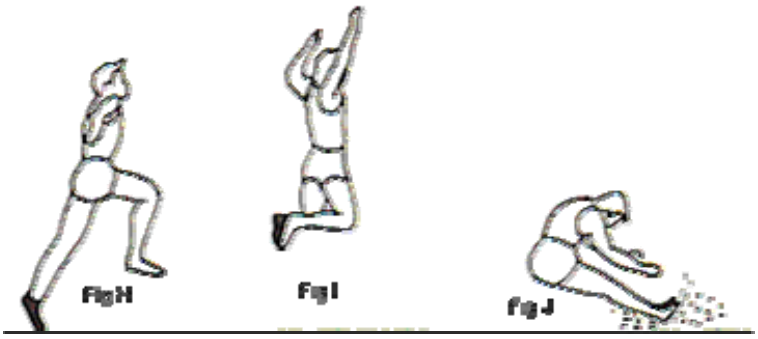
The Step Phase



Coaching Points

- The take-off leg is fully extended with the drive leg thigh just below parallel to the ground (Fig E)
- The take-off leg stays extended behind the body with the heel held high (Fig F)
- The drive leg thigh is held parallel with the ground, lower leg vertical and the toe dorsiflexed (Fig F)
- The drive leg extends with a flexed ankle (creating a long lever) and snaps downward for a quick transition into the jump phase (Fig G)

The Jump Phase



Coaching Points

- The take-off leg (the drive leg in the previous phases) is extended forcefully upon contact with the ground (Fig H)
- The free-leg thigh driving to waist level (Fig H)
- The arms drive forward and up - the torso should be held erect with the chin up and eyes looking beyond the pit - the legs move into a hang position with both thighs directly below the torso, legs bent at the knees - the arms are extended overhead to slow rotation with the hands reaching for the sky (Fig I)
- The arms then drive forward - the legs swing forward - position held until the heels hit the sand when the knees collapse, the hips rise and the athlete slides through the sand (Fig J)

Arm Action

The use of a single or a double arm action at take off depends on the athlete's preference - the double arm action provides more power.

Single arm action

- The arm opposite the free leg drives forward and up to shoulder level
- The angle at the elbow should be between 80 and 110 degrees

Double arm action

- The lead arm crosses slightly in front of the body on the penultimate step of the approach phase
- As the take-off step is initiated, the arm pauses next to the body rather than swinging behind as with a normal stride
- As the take-off foot contacts the ground, both arms drive forward and up to shoulder height
- The angle of the arms at the elbows will be greater than 90 degrees in order to create a more powerful impulse forward

Foot Strike

Coaching Points

- In an active landing the athlete's leg is extended, the ankle flexed and the leg pulled down forcefully striking the ground mid-foot
- Upon contact the body rolls forward over the foot onto the toes while pushing off the ground

Jump Distribution

Typical distribution for the three phases of the triple jump distance is as follows - Hop 35%, Step 30% and Jump 35%.

Triple Jump Drills

General Drills

- Standing hop-step-jumps - develops the appropriate neuromuscular system
- Use a four stride approach, easy pace, into hop-step-jump
- Uphill bounding drills - to develop height achieved in all phases

Approach Drills

- Rhythm runs - to ensure hitting check marks and board
- Vary the start point so that you miss the "check point" (about six strides out) and have to adjust while maintaining maximum speed

Hop Drills

- Single leg hop up stairs
- Single leg hops over cones
- Continuous single leg hops with a butt kick action
- Continuous single leg hops with concentration on bringing the knee as high as possible
- Continuous single leg hops, combining the butt kick with the knee high action

Step Drills

- Using only the hop and step, set the take off point so that the athlete lands in the sand pit
- Extend the take off point to force a longer step
- Set up a grid for a series of standing hop-steps where each succeeding hop-step is a little longer

Jump Drills

- Stand with both feet together and take one step and jump into the pit
- Using a six stride approach, just do the step and jump phases, concentrate on the drive of the jump foot trying for maximum height during the jump
- Using a six stride approach, just do the step and jump phases, concentrate on the arm action