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Lecture Title

Long Jump

Academic Script

Hello viewers. Welcome to the bachelor course of physical education. Today we'll discuss about the topic of Long Jump. This lecture describes about the history, origin and components of long jump.

History of Long Jump

Humans have been competing in the long jump or something similar for thousands of years. In fact, the event dates back to the original Olympics held by the Ancient Greeks. While the long jump has evolved significantly since ancient times, the basic concept has remained the same: athletes must utilize speed, strength, and agility to propel themselves as far as possible from the take-off point. The athletes carried a weight in each hand, which were called halteres. These weights would be swung forward as the athlete jumped, in order to increase momentum. It is commonly believed that the jumper would throw the weights behind him in mid-air to increase his forward momentum, however, halteres were held throughout the duration of the jump. Swinging them down and back at the end of the jump would change the athlete's center of gravity and allow the athlete to stretch his legs outward, increasing his distance. Most notable in

the ancient sport was a man called Chionis, who in the 656BC Olympics staged a jump which was equal to 7 meters and 5 centimeters (23 feet and 1.5 inches).

The long jump has been part of modern Olympic competition since the inception of the Games in 1896 In 1914, Dr. Harry Eaton Stewart recommended the “running broad jump” as a standardized track and field event for women. However, it was not until 1928 that women were allowed to compete in the event at the Olympic level.

Origin and Development

According to Olympic organization, the long jump was part of the pentathlon event in the Olympics in ancient Greece, circa 708 B.C. The other events in the pentathlon were wrestling, discus and javelin throwing, and running. Competitors used jump weights called halteres that were made from stone or lead and shaped like telephone receivers. During the late 1800s in Europe and the United States, pentathlon-like sporting events also included long jumps, as did the first modern Olympics in 1896, although haltere weights were eliminated. The long jump has been included in all of the games since then, although women did not compete until the 1928 games in Amsterdam, Holland. In 1912, the International Association of Athletics Federations was created to govern the long jump and other track and field sports, and the men’s long jump and other track and field events were standardized in 1932.

Introduction to Long Jump

The long jump is a track and field event in which athletes combine speed, strength, and agility in an attempt to leap as far as possible from a takeoff point. Along with the triple jump, the two events that measure jumping for distance as a group are referred to as the "horizontal jumps". This event has a history in the Ancient Olympic Games and has been a modern Olympic event for men since the first Olympics in 1896 and for women since 1948. Although the long jump has changed substantially over the past few thousand years, it still is included in track and field events on the local, regional, national and international levels.

When participating in the long jump, competitors sprint down a runway often made with the same surface found on tracks called crumb rubber or vulcanized rubber. The competitors then

jump the farthest distance possible off of a wooden board into a pit filled with finely ground gravel or sand. The distance traveled by a jumper is referred to as the "mark," because it is the distance to which the first mark is made in the sand. More specifically, a mark is the minimum distance from the edge of the takeoff board, nearest the landing pit, to the first indentation made by the competitor {generally the back of the heel, but if the competitor stumbles and leans back with the hand, the distance is taken from that mark). If the competitor starts the leap with any part of the foot in front of the board, the jump is declared illegal (a foul) and is recognized as a fault. At the elite level, a layer of plasticine is placed immediately after the board to detect this occurrence. Otherwise, an official (similar to a referee) will observe the jump and make the determination. The competitor can initiate the jump from any point behind the foul line; however, the distance measured will always be from the foul line. Therefore, it is in the best interest of the competitor to get as close to the foul line as possible without fouling.

The format of the long jump competition varies, but generally consist each competitor will get a set number of attempts to make his or her longest jump, with only the longest legal jump counting towards the results. In most competitions jumpers are given three trial jumps with which to make their best effort. Higher level competitions are split into two rounds: trials and finals. In competitions containing a final round, only a select number of competitors are invited to return for further competition. The number of competitors chosen to return to the final round is determined prior to the start of the meet by a committee comprised generally of coaches and officials. It is standard practice to allow one more competitor than the number of scoring positions to return to the final round. For example, if a given meet allows the top eight competitors to score points, then the top nine competitors will be selected to compete in the final round. Taking an extra competitor to the final round helps to allow that athlete to move into a scoring position if the competitor can improve on his or her best mark of the competition. Final rounds are viewed as an additional three jumps, as they do not have any priority to those scored in the trial round. The competitor with the longest legal jump (from either the trial or final rounds) at the end of competition is declared the winner.

The long jump can just as easily be named the "run and jump" or "sprint and jump," because the actual jump is only part of the process. Yes, there are techniques for pushing off the board, for flying over the pit, and for landing. But these techniques, while important, can only maximize

your distance, based on your takeoff speed. Once you're in the air, there's only a certain distance you can travel, based on the momentum you gained during the approach run, no matter how good your flight or landing techniques.

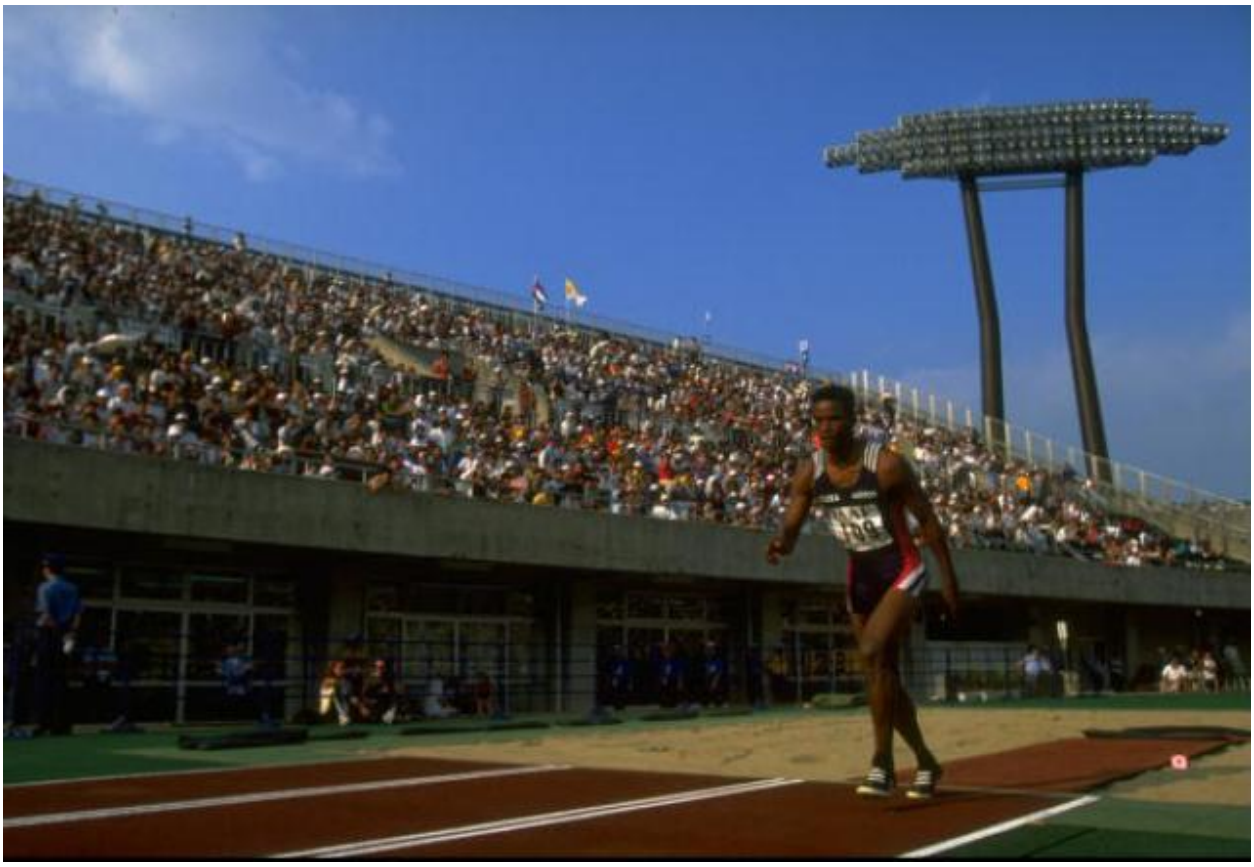
Main Components of Long Jump

There are four main components of the long jump: the approach run, the last two strides, takeoff and action in the air and landing. Speed in the approach, and a high leap off the board are the fundamentals of success, because speed is such an important factor of the approach, it is not surprising that many long jumpers also compete successfully in sprints.

The approach

The objective is to progressively accelerate to a maximum speed for takeoff. The chief factor for maximising the distance traveled by an object is its velocity and flight angle at takeoff. Top level jumpers usually leave the ground at an angle of twenty degrees or less; therefore, it is more beneficial for a jumper to focus on the speed component of the jump. The greater the speed at takeoff, the longer the trajectory will be.

Approaches can vary between 12 and 19 strides on the novice and intermediate levels, while at the elite level they are closer to between 20 and 22 strides. The exact distance and number of strides in an approach depends on the jumper's experience, sprinting technique, and conditioning level. Control and coordination in the approach is crucial as the athlete needs to get as close to the front of the takeoff board as possible without crossing the line with any part of the foot.



There are different ways to determine the start of the approach run. One method is to stand with your back to the pit with the heel of your non-takeoff foot on the front edge of the board. Run forward the same number of strides you'll use for the approach and mark the provisional starting point. Make several approaches from that provisional spot, then adjust your starting point as needed to make sure your final step hits the takeoff board.

Alternatively, set a designated starting point on the track and run forward.

If your approach will be 20 strides long, mark the location of your 20th stride. Repeat the drill several times to determine your average 20-stride distance. If the average distance is 60 feet, place a marker 60 feet from the front of the takeoff board to begin the approach.

Remember that a strong head or tail wind can affect the approach. For example, if you're running with the wind, back up your starting spot a bit.

The length of the approach will vary for each competitor. The goal is to hit the takeoff board at maximum velocity, while still under control. If you hit maximum velocity at 10 strides, it won't

help to take two more strides, because you'll be slowing down, and won't jump as far. Therefore, young long jumpers will have shorter approach runs. As they gain strength and stamina, they can lengthen their approaches to build more momentum. A typical high school jumper will take around 16 strides.

Different coaches have differing thoughts regarding the first stride. Some favor using the takeoff leg, some the opposite leg.

Young long jumpers may wish to try both approaches to see which feels best.

The last two strides

These prepare the body for takeoff while conserving as much speed as possible. The penultimate stride is longer than the last stride. The competitor begins to lower his or her center of gravity to prepare the body for the vertical impulse. The final stride is shorter because the body is beginning to raise the center of gravity in preparation for takeoff. The last two strides are extremely important because they determine the velocity with which the competitor will enter the jump.

Takeoff

The takeoff's objective is to create a vertical impulse through the athlete's center of gravity while maintaining balance and control. This phase is one of the most technical parts of the long jump. Jumpers must be conscious to place the foot flat on the ground, because jumping off either the heels or the toes negatively affects the jump. Taking off from the board heel-first has a braking effect, which decreases velocity and strains the joints. Jumping off the toes decreases stability, putting the leg at risk of buckling or collapsing from underneath the jumper. While concentrating on foot placement, the athlete must also work to maintain proper body position, keeping the torso upright and moving the hips forward and up to achieve the maximum distance from board contact to foot release.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Darren Ritchie takes off at the 2006 Commonwealth Games. Notice how his eyes are focusing up as he ascends, rather than down at the landing pit. Always maintain your focus in the direction you want to go. Generally, a right-handed long jumper takes off with the left foot. New jumpers may wish to try both to which style works best. When you hit the takeoff board, your body will actually be leaning slightly backwards, with your foot in front, your hips slightly behind and your shoulders a bit behind your hips. As you plant the takeoff foot, throw your opposite arm back and lift your chin and hips as you push off the board. Your arms and free leg move upward. Your center of gravity, which was behind your lead foot on the penultimate step, moves ahead of your lead foot on takeoff. The takeoff angle should be between 18 and 25 degrees. Keep focusing directly ahead; don't look down at the pit.

There are four main styles of takeoff:

- Kick style,
- Double-arm style,
- Sprint takeoff, and
- Power sprint or bounding takeoff.

Let us discuss them briefly-

- Kick Style

The kick style takeoff is a style of takeoff where the athlete actively cycles the leg before a full impulse has been directed into the board then landing into the pit.

- Double-arm Style

The double-arm style of takeoff works by moving both arms in a vertical direction as the competitor takes off. This produces a high hip height and a large vertical impulse.

- Sprint Takeoff

The sprint takeoff is the style most widely instructed by coaching staff. This is a classic single-arm action that resembles a jumper in full stride. It is an efficient takeoff style for maintaining velocity through takeoff.

- Power sprint or bounding Takeoff

The power sprint or bounding takeoff is very similar to the sprint style, but there is one major difference. The arm that pushes back on takeoff (the arm on the side of the takeoff leg) fully

extends backward, rather than remaining at a bent position. This additional extension increases the impulse at takeoff

Action in the air and landing-

There are three chief flight techniques for the long jump-

- Hang
- Sail
- Hitch-kick

Each technique set to counterbalance the forward rotation experienced from take-off. Once the body is airborne, there is nothing that the athlete can do to change his-her direction and consequently where he-she will land in the pit. However, it can be argued that certain techniques influence an athlete's landing, which can have an impact on distance measured. For example, if athletes land feet first but fall back because they are not correctly balanced, a lower distance will be measured. Now, let us discuss briefly the techniques for the long jump-

- Hang

The hang technique works by lengthening the body to make it as efficiently long as possible. Here both the arms and legs are extended to reach a maximum distance from the hips at the leaping point. This position is held until after the jumper reaches the apex of the jump, at which point the athlete will snap the legs forward into a landing position.

- Sail

The sail technique is one of the most basic long jump techniques. After the takeoff phase is complete, the jumper immediately lifts the legs into a toe-touching position. This allows the body to sail in the air, effectively accompanying the momentum achieved by the leap.

- Hitch-kick

The hitch-kick is also known as "climbing" or "running in the air". This technique counteracts the athletes rotational velocity by cycling the arms and legs during the flight, and is also the most complex technique.

Landing

When landing, the competitor’s main objective is not to fall back in the landing pit. The jump is measured from the location in which the body contacts the sand closest to the takeoff point. For this reason many jumpers will work on keeping their feet in front of the body at a maximum distance from the hips. Upon landing, competitors will often use their arms in a sweeping motion

to help keep the legs up and the body forward, and/or push their legs hard into the sand and rotate the body sideways: this slows the vertical (downward) momentum of the bottom and also rotates it to the side of the athlete, trying to ensure that the heels are the furthest back body part.

Carl Lewis hits the landing pit feet-first; he'll then push forward with his legs to avoid touching the sand behind his heel marks.

Distance is measured by the part of your body that contacts the pit closest to the takeoff line – not the first part of your body that hits the sand. In other words, if your feet hit first, in front of you, then your hand touches the pit behind you, your distance will be marked at the point your hand hits. No matter which flight style you use, be sure to land feet first – with your feet stretched as far in front of you as possible – without any other part of your body touching the pit behind the original mark.

When your heels touch the pit, press your feet down and pull your hips up.

This action, combined with the momentum from your takeoff, must carry your body past the mark where your heels touched down.

Conclusion

At the end, it can be concluded that the long jump has evolved significantly since ancient times, the basic concept has remained the same: athletes must utilize speed, strength, and agility to propel themselves as far as possible from the take-off point

That’s all with today’s lecture. I hope this must have raised your concerns about this important concept. Have a nice time. Good Bye.