



## A study of Basic equipment required & their Measurement for Jumping Events

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### Abstract

With the social progress and development, sports have already become the indispensable part in human civilized life. Athletics as the most widespread sport is well-received by people. Olympic Games-led several kinds of sports competitions have sprung up to improve people's athletic level. Olympic Games is a sporting event that attracts worldwide attention, from which athletics is the more widespread and well-received sport. Performance in every Olympic Games would be set. To do fully seize of athletics sport performance total changing trend, make prediction accordingly so as to give athletes a general training objects and improve our country's competitive sports quality. Jumping is integral to many Summer Olympic sports. There are no Winter Olympic sporting events that require an athlete to jump since all the sports are performed on either skis or skates, or on sliding equipment such as a bobsled. Ski jumping is technically a jumping event, but the athlete is propelled into the air by momentum and not by his own physical actions. Other events, such as freestyle skiing and snowboarding, also involve jumping but, as with ski jumping, the athletes rely on momentum and gravity to become elevated.



**Keywords:** Olympic Sports, Jumping Event, Equipment, Athletics, Performance etc.

### Introduction

Athletics competitions in throwing events and horizontal jumps, the athletes perform several trials. The best performance is then used as a competition result. Amongst the trials performed by the same athlete, the performance can vary substantially. Also, in some trials, the athletes fail (they break the rules) and the performance is discarded. We will call the percentage of successful trials the athlete's dependability.

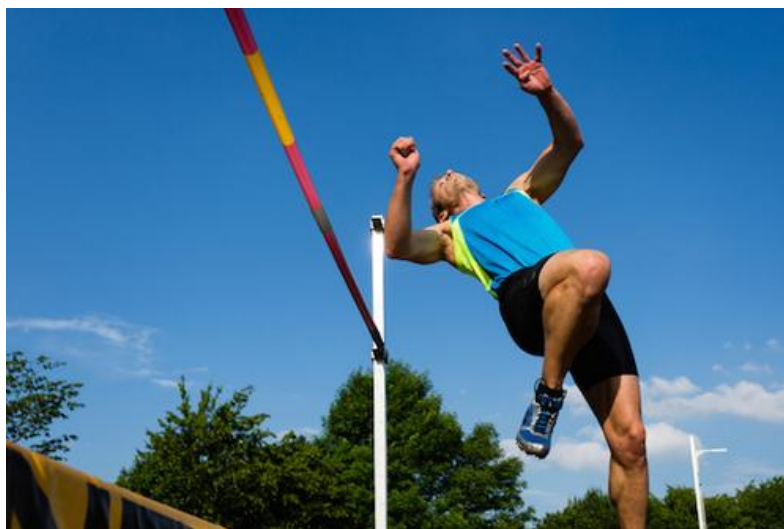


Like running races, jumping competitions seems to be part of our DNA from the time we are kids. We like to see how high and far we can jump and who can do it best. There are four main track and field jumping events. Here is a description of each:

## 1. High Jump

In the high jump event, the athlete gets a running start and must jump over a bar without knocking it over. They land on a big soft cushion. Like many track and field events, there is a key element to doing well in this sport, which in this case is being able to jump high, but technique is very important as well. Timing and leaving your feet at the right point as well as how you bend your body as you go over the bar are all important.

There have been many techniques used for high jumping over the years, but the current, and most successful, is called the Fosbury Flop. The Fosbury Flop technique involves leading with your head over the bar (vs. leading with your feet) and twisting such that your back is to the ground and closest the bar as you go over it. Jumpers then land on their back.



## 2. Pole Vault



While all of the field events take require technique to excel, the pole vault may be the toughest to master. In this track and field event, the athlete runs down the track holding a pole at one end. At the end of the run the plant the far in of the pole into a metal box in ground and then propel themselves up and over a high bar using both a jump and the spring of the pole to gain height. They must get over the bar without knocking it off. They then land on a large soft mattress for safety. The world record for the pole vault is over 6m (over 20 feet!) and is held by Sergey Bubka, probably the greatest pole vault athlete ever.



### 3. Long Jump

Like many field events, the long jump involves more skill and technique than just being able to jump. First the athlete must have good speed as they sprint down the runway to prepare for the jump; next they must have very good footwork at the end of their run so they can launch as close to the line as possible without going over the line and faulting; third they must make a good jump; and lastly they must have proper form through the air

and into the landing. All of these techniques and skills must be executed to perfection to pull of a good long jump.



#### **4. Triple Jump**

The triple jump is similar to the long jump, but there are three combined jumps that go into the total length. These are called the hop, the step, and the jump. The athlete will first run down the track gaining speed; at the start of the jump or take off point they will jump from one foot and land on that same foot (hop); they then jump again, this time landing on the opposite foot (step); next they jump as far as they can and land on both feet (jump).



#### **Measurement for Jumping Events:**

##### **High Jump**

The semicircular runway, with a radius of at least 20m, will permit approaches from every direction. If it is necessary to remove the kerb temporarily in order to be able to use



the oval track as a runway, care must be taken to ensure that the heights of the surfaces of the oval track and the segment are the same along the track border.

The runway and take-off areas are usually covered with the same surface as the track.

### **High Jump Equipment**

- Pair of High Jump Stands
- A Jumping Lath
- A High Jump Landing Area

Other options are available to suit the level of athlete using the equipment. A high jump fan (equivalent to a runway) is also required as an installation.

### **Pole vault**

The runway is a minimum of 40m long and is measured from beginning of the runway to the 0-line. The runway is 1.22m  $\pm$  0.01m wide.

It is marked by white lines 0.05m wide or broken lines 0.05m wide with a length of 0.1m and a distance of 0.5m. At the end of the runway, the box is mounted flush with the runway and installed such that the top inside edge of its end board lies on the 0-line and at the same height. The 0-line is marked by a white line, 0.01m wide which extends beyond the outside edges of the uprights.

### **Pole Vault Equipment**

- A pair of Pole Vault Uprights
- A Jumping Lath
- A Pole Vault Landing Area

Again, options are available to suit the level of athlete using the equipment. A pole vault runway and pole vault trough (and lid) are required as a fixed installation. For both landing areas, if the mats are left outdoors, a rain proof cover will be required.

### **Long Jump & Triple Jump Equipment**



Although the take-off board can be described as portable, in reality all components of long and triple jump equipment are fixed installations. These include a runway, take off board/s and a sandpit landing area.

For all four events the relevant measuring equipment is required to officiate the competition. Several options are available again pending the level of competition being held.

### **Long jump**

The runway is 40m minimum long,  $1.22\text{m} \pm 0.01\text{m}$  wide and is measured from the beginning of the runway to the take-off line. It is marked by white lines 0.05m wide or broken lines 0.05m wide, 0.10m long and 0.50m apart. The runway is usually covered with the same surface as the track.

### **Tripal jump**

With the exception of the placement of the take-off board, the same facilities are used for triple jump as for long jump. For international competition, it is recommended that the take-off board is not less than 13m for men and 11m for women from the nearer end of the landing area. For other competitions, this distance is appropriate for the level of competition.

### **Conclusion**

Track and field is a sport which includes athletic contests established on the skills of running, jumping, and throwing. The name is derived from where the sport takes place, a running track and a grass field for the throwing and some of the jumping events. Track and field is categorized under the umbrella sport of athletics, which also includes road running, cross country running, and race walking. The foot racing events, which include sprints, middle- and long-distance events, race walking and hurdling, are won by the athlete who completes it in the least time. The jumping and throwing events are won by those who achieve the greatest distance or height. Regular jumping events include long jump, triple jump, high jump and pole vault, while the most common throwing events are



shot put, javelin, discus and hammer. There are also "combined events" or "multi events", such as the pentathlon consisting of five events, heptathlon consisting of seven events, and decathlon consisting of ten events.

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