

Many types of coordinations are required and many mechanical principles are involved in whole action of pole vault. In the First world Olympic held at Athens in Greece in April, 1896. Game pole vault was included and player had won the gold medal with the height of  $10' 9\frac{3}{4}"$  in pole vault.

Now we will discuss various skills of pole vault. They are : (1) Grip (2) Carry (3) Approach run (4) The plant (5) Takeoff (6) Crossing the bar (7) Landing.

Now we will discuss the skills in detail.

### (1) Grip

Keep the pole in straight position in front of you first; so that grip of pole vault become natural. Now hold the pole with left hand down and right hand upward. During this grip hold of the pole, fingers of left hand shall be over the pole from right side and fingers of right hand shall be over the pole from the left side. From this position of the grip, bring the pole downward on the back side from the right side. Keep the right hand on back side and the left hand on the front. The distance between the hands shall be the distance of the shoulders. The palm of the left hand shall be below the pole and that of the right hand shall be above the pole. Before starting the approach run, an athlete shall keep this left leg in front and right leg on the back side, behind the starting line of approach run.

### (2) Carry

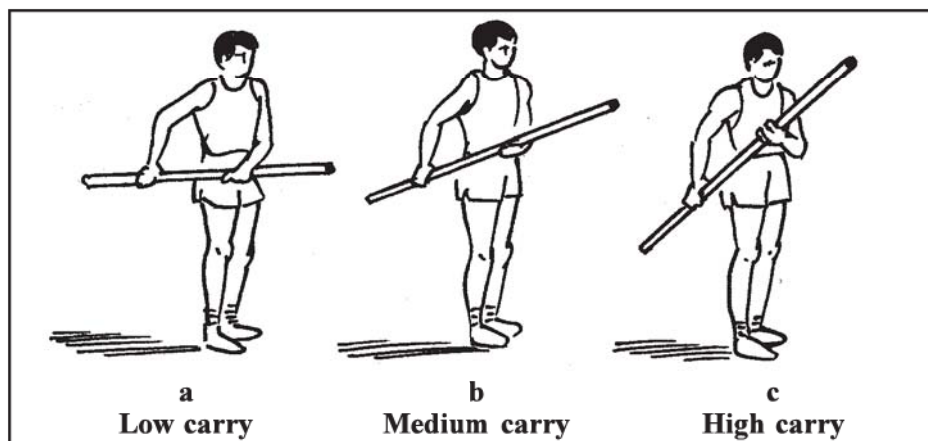
Player may use any one of the following methods, of pole carry before the approach run starts.

(a) Low carry (b) Medium carry (c) High carry.

#### (a) Low carry

In this method pole should be parallel to the ground, Right arm may be almost straight at back. Thumb of this arm is backward and palm is towards the ground. Left arm is forward in bending position. Thumb of this arm is towards the body and palm is towards the ground. The sight must be ahead in approach run. For better speed the grip of arms may be loose.

Low carry action can be understood better from the following figure. Actions of medium and high carry are also mentioned in same figure.



### (b) Medium carry

Grip of medium carry will be as per low carry. In this carry front end of pole will be little high and end towards strong arm will be little low. Strong arm will be little bent behind. Sight must be ahead in approach run.

### (c) High carry

Grip of high carry will be also as per low carry. In this carry front end of pole will be higher than medium carry and end towards strong arm will be lower than medium carry. Back side strong arm will be bent from the elbow and elbow of front arm is in bending action and above the waist. Sight must be ahead in approach run.

As per experience and opinions of the players and coaches, medium carry is more suitable. In medium type of carry pole carry is easy for players.

### (3) Approach run

Increase of speed in approach run depends upon suitably selected step plan. Generally players select any one of the following three step plans (Stride plan)

(1)  $2 + 6 + 8 = 16$  Step plan (Stride plan)

(2)  $4 + 6 + 8 = 18$  Step plan (Stride plan)

(3)  $2 + 8 + 10 = 20$  Step plan (Stride plan)

If player takes off on left leg then he will stand keeping feet together behind starting line. While starting of run he will approach put first take right leg in front. If stride plan is 16 strides, then first check mark will be placed on second stride. From this check mark to six strides other check mark will be made and from second check mark to eighth stride third check mark will be made.

Distance between starting line to first check mark will be approximately between 6' to 8'. Running speed of player upto first two strides or upto first check mark will be  $1/2$ . Distance between first check mark and second will be 29' to 34'. Running speed of player will be  $3/4$ . Distance between second check mark to take off will be 56' to 63' and running speed of runner will be  $9/10$ .

Compiled information of steps, distance and speed of 16 strides plan is given in the following table to understand easily.

**16 Strides Plan Table**

Starting Line to First Check Mark			First Check Mark to Second Check Mark			Second Check Mark to Take off		
Step	Distance	Speed	Step	Distance	Speed	Step	Distance	Speed
2	6' to 8'	$1/2$	6	29' to 34'	$3/4$	8	56' to 63'	$9/10$

18 and 20 strides plan is given in the following table as per above table :

Stride Plan	Starting Line to First Check Mark			First Check Mark to Second Check Mark			Second Check Mark to Take off		
	Step	Distance	Speed	Step	Distance	Speed	Step	Distance	Speed
18 strides	4	12' to 16'	$1/2$	6	30' to 36'	$3/4$	8	56' to 64'	$9/10$
20 strides	2	6' to 8'	$1/2$	8	38' to 45'	$3/4$	10	68' to 77'	$9/10$

**Note :** Keeping in mind the distance, his height and leg length there may be chances of plus minus in Stride plan.

It is proved by experience that 16 strides plan is suitable for top speed players. Where as 18 strides plan and 20 strides plan are suitable to medium speed runners and slow speed runners respectively. Principles of velocity, force and momentum are applicable in approach run.

#### **(4) The Pole Plant**

The pole plant is done in last two similar strides in approach run. For planting the pole player keeps front end of pole at front end of plant box. This way slide of front end of pole should stop at middle part of toe board.

Pole plant can be done in two ways : (i) Underhand plant, (ii) Overhand plant.

In underhand plant pole should be brought downward towards the vault box, then slide and stop in the vault box, where as in overhand plant keep hands high and immediately pole should slide and stop in the vault box. While planting the pole one can use any one method of plant, but middle point of vault box, end of plant and last end of the pole should be in one straight line or at the right angle of cross bar.

Do not push the pole which slide in the box but perform it very easy way.

As soon as pole plant is over the action of hand slide will begin. In this action bring your left arm sliding upward upto right arm (strong arm). Keep it in mind that strong arm should not slide but must be at original place. Distance between two arms will be approximately 6".

#### **(5) Take off**

In between take off and clearing the cross bar one has to perform following action.

(a) Take off (b) Swing (c) High pull (d) Glide of body and scissor (e) High push.

##### **(a) Take off**

Take off is performed from 9' to 10' away from the toe board of plant box. Leg will be placed flat during action of take off. Take off leg should be bent from the knee. To gain better jump after take off, heel of take off leg and toe should be in one straight line with box or at right angle with cross bar. Grip of strong hand and heel of take off leg should be in one straight line. During take off hand should be bent at 90° over the head and body should be pulled in arch position. During take off action principle of work and energy is applicable and centre of gravity of the body should be lower than both hands.

##### **(b) Swing**

As soon as take off action is completed, the swing of free leg will be performed front upward. With this swing take off leg is also pulled up. This way whole body will be pulled up. While swing hands should be bent from elbow and body will pass near to pole height. Player whose right arm is strong or who is right handed, he will take swing from right side of pole and whose left hand is strong or left handed player will take swing from left side of pole. While swinging effect of law of pendulum under the body is performed. At this time centre point of pendulum is not at hands but it will be at shoulders.

Here principles of pull-up and push-up are effective.

##### **(c) High pull**

As soon as swing is completed the pole will make right angle with the body and player will bend his both hands from the elbow and pull his body upward. Do not perform pulling action till back does not come at shoulder level. Player will pull his body in such a way that both legs will



be in upward position and head shall be near the grip of both hands. Then motion of legs will be near the cross bar at upward side.

**(d) Glide of body and scissor**

If player is right handed, then as soon as pull action is over, he will bend the left leg from the knee and perform the scissor kick from left leg under the right leg and rotate the body in anticlockwise position. This time body will be over the cross bar and chest will be towards the cross bar and legs would cross the cross bar. Pole will be approximately at right angle to ground.

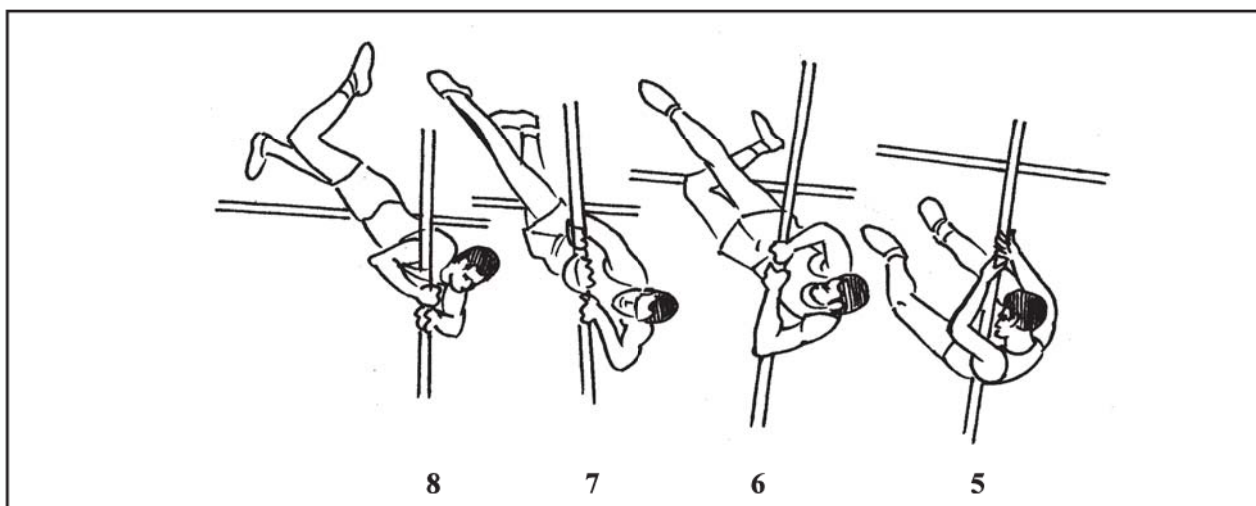
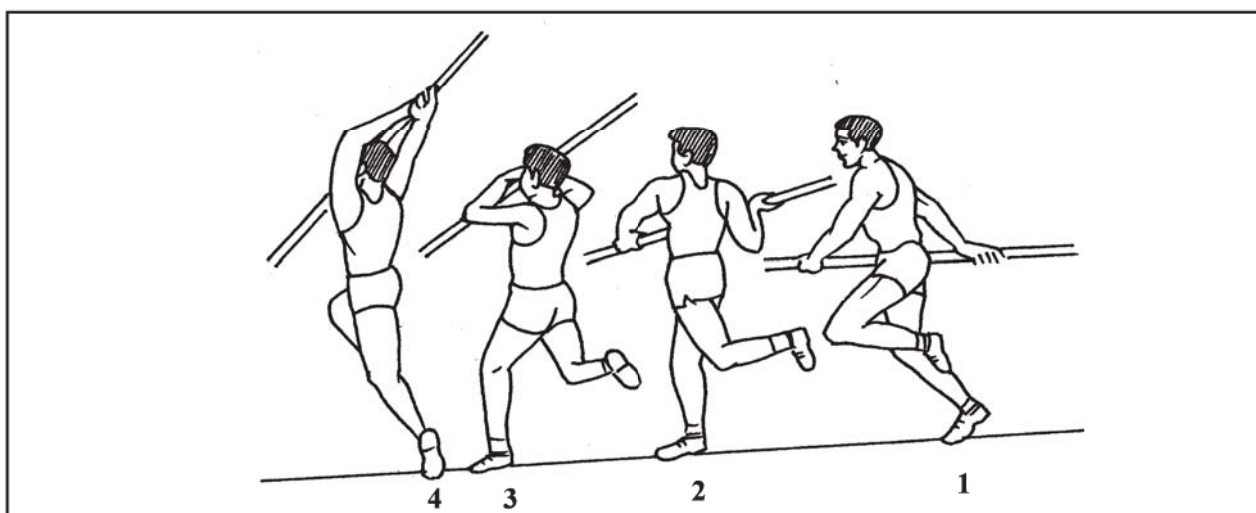
**(e) High push**

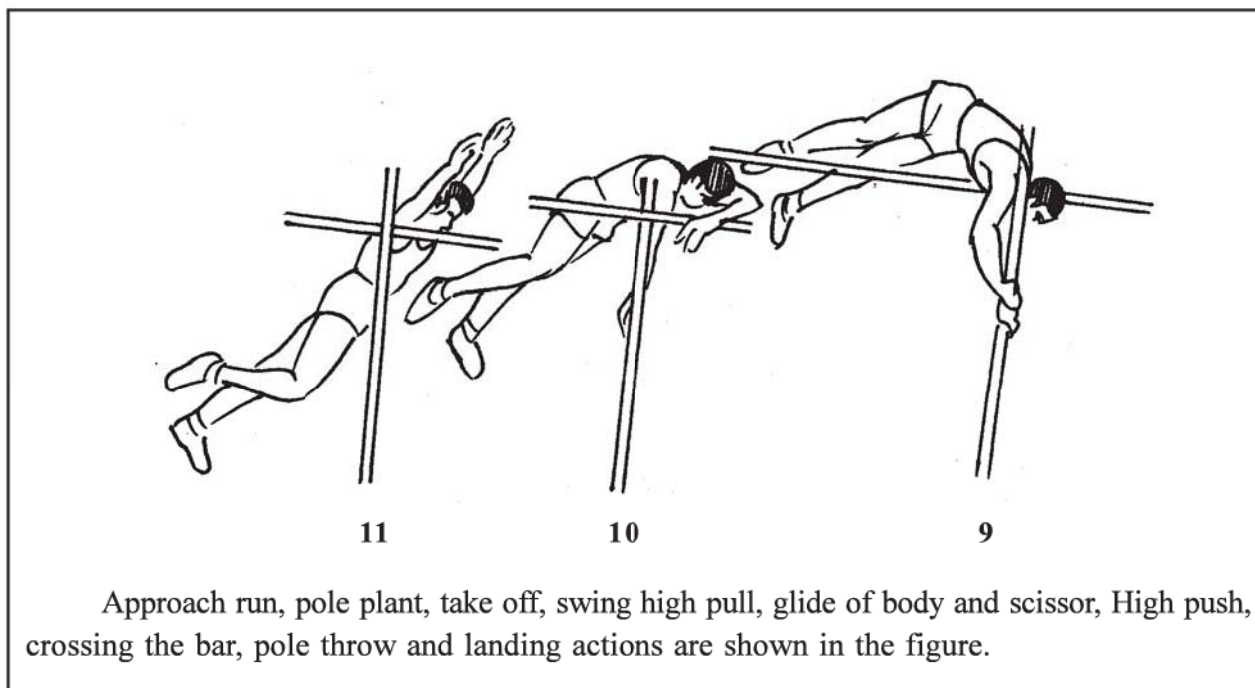
This action should be performed skillfully. When legs and back are over the bar and hands are bent then this action is performed. This time pole will be at right angle to ground and near to right shoulder. For effective push grip of the hands should be nearer.

At the time of push both hands will be straight together and legs and trunk will bend towards the pit.

**(6) Crossing the bar**

As the push action is completed action of crossing the bar will begin. This time player will try to cross the bar successfully without touching the bar and keeps his left hand free. After this throwing action of pole will be done. For throwing action release the grip of both the hands or first release left hand then release grip of right hand and then with the lightly push the pole with both hands. Pole should be thrown away towards approach run and away from the pit. Please keep in mind that pole should not touch the cross bar and even uprights in pole vault.





### (7) Landing

As soon as pole throw action is over, player should concentrate on landing action. While landing player should not keep his body rigid but it should be in relaxed position. Try to land on the centre of pit. While landing both legs should touch pit first. As legs touch the pit-bend the legs from knees and take body near to pit and try to land easily, so that injuries do not occur.

### Exercise

#### 1. Answer the following questions in detail :

- (1) Explain the method of grip in pole vault.
- (2) Write the types of pole carry and explain any one.
- (3) Write the stride plans of approach run and explain any one of them.
- (4) Write the types of pole plant and explain any one of them.
- (5) Discuss the different actions after the take off and before crossing the bar.
- (6) Explain the action of crossing the bar.

#### 2. Answer the following questions in short :

- (1) List the steps in pole vault.
- (2) Where is the pole plant done ?
- (3) Explain 20 stride plan in approach run.
- (4) Explain swinging action in pole vault.
- (5) What do you mean by high pull in pole vault ?
- (6) What do you mean by high push in pole vault ?

**3. Write the answers of the following questions by selecting correct option from the options given below :**

- (1) In which year Olympic games, was the pole vault competition started ?  
(A) 1896                      (B) 1900                      (C) 1904                      (D) 1908
- (2) How many methods are there for pole carry ?  
(A) Two                      (B) Three                      (C) Four                      (D) Five
- (3) How many stride plans are there in approach run in pole vault ?  
(A) Two                      (B) Three                      (C) Four                      (D) Five
- (4) What is the speed of stride in first stage of approach run plans in pole vault ?  
(A)  $1/4$                       (B)  $1/2$                       (C)  $3/4$                       (D)  $9/10$
- (5) How many strides plan are more suitable for fast runner in approach run in pole vault ?  
(A) 16 stride plan                      (B) 18 stride plan                      (C) 20 stride plan                      (D) 22 stride plan
- (6) How is the last step before the take off in pole vault ?  
(A) Short                      (B) Long                      (C) Medium                      (D) High

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