ASA COACHING MANUAL
FOR JUMPS

Compiled by Hugo Badenhorst and edited by Martin Marx

ASA MANUAL FOR COACHING JUMPS

CONTENTS

GUIDELINES FOR COACHING JUMPS

GENERAL

1. **INTRODUCTION**
   To be able to understand and apply the basic principals of the different jumps, it is necessary to be aware of some general aspects such as the influence of nature and the abilities of athletes on jumping.

2. **LAWS OF GRAVITY**
   All track and field techniques are based on simple mechanics, that deal with the inter relations of force, matter and motion. Mechanics can help coaches decide what is an efficient and what is an inefficient movement. It also helps to evaluate and analyze skills and technique and how to correct faults.

   Always remember that style or technique or mechanics is just one facet of coaching. In order to coach the jumps it is necessary to basically understand the three laws of motion (gravity) which is as follows:

   a. Every material body continues in its state of rest, or uniform motion in a straight line, except when forces are applied to change that state.

   b. The rate of change of momentum is proportional to the applied force and takes place in the direction in which force is applied.

   c. For every action there is an equal and opposite reaction. (In the air this turns around).

   The following definitions will help to understand the practical application in the different events.

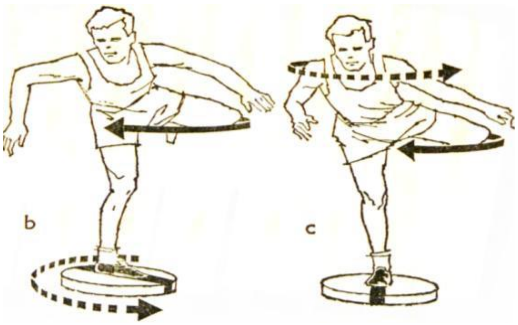
   Gravity: Is the force which causes all bodies to move vertically downwards.

   Velocity: The time it takes to cover a certain distance in a certain direction. In athletics also called speed (no direction) - measured in meter/second

   Acceleration: The rate at what velocity increases e.g. the time it takes to get to top speed.

   Linear motion: The whole body moves in the same forward direction which per definition should be straight forward.

   Angular motion: Whereas linear motion is forward, angular motion is rotational by nature and is more common in athletics as pure linear motion.



3. TALENT IDENTIFICATION

Jumpers are generally long thin persons with narrow hips and shoulders (ectomorph). However, there are a number of aspects that should be considered when identifying jumpers, such as the following:

High bellybutton (centre of mass)	Co - ordination
Leanness	Rhythm
Speed	Strength
Explosiveness	Elasticity (suppleness)

A number of easy tests can be done to assist with talent identification:

Standing long jump - stand with feet together on edge of sand pit and jump as far as possible – measure distance.

Sargeant jumps - stand next to wall and make a mark with middle finger, then jump from a standing position and make a mark where wall is touched – measure difference

Standing one leg bounds - 5 bounds with each leg – measure distance covered with each leg.

4 stride jump - measure height

8 stride jump -- measure height

Standing long jump - measure distance

event	MBC	4 stride	8 stride	Sargeant	Bounds L	Bounds R	LJ

.

These tests will give an indication of who should be your best jumpers

4. BIOMECHANICS OF THE JUMPS

1 Speed

at take – off it should be realised that -

a. speed influences the height / distance of a jump;
b. horisontal speed provides momentum for the jump;
c. the run – up should be at maximum controllable speed. If too fast the athlete cannot take-off effectively and will lose height;
d. short foot contacts in run-up is important – long foot contacts have a breaking effect;
e. correct running technique assist witha good take – off (high knees in front of body);
f. foot contact under the hips drive the body forward effectively;
g. over striding should be prevented. Has a breaking effect and affects position of centre of mass;
h. measure speed at hips (centre of mass).

at transfer -

a. prevent loss of speed by quickening the last 2 paces;
b. obtain maximal upwards thrust through swing leg;
c. the swing leg must be quick;
d foot contact must be short but powerful.

2 Height of hips

a. run high and upright;

b. shoulders open – pulled backwards;
c. keep inside shoulder high (high jump);
d. lock hips at take – off - supplies velocity at upwards thrust;
e. hips higher than bar (high jump).

3 Angle of thrust -
a. is the angle of change of direction as measured through the hips;
b. determines the flight path;
c. cannot be altered after take - off;
d. the athlete will travel in a pre - fixed parabola;
e. the faster the take - off the lower the angle

5. **ENERGY SOURCES**

Fitness can be defined as: T**he body's ability to cope with a specific task under specific conditions.**

All sports can essentially be distinguished on the basis of two factors:

Intensity and **D**uration
Intensity and duration is inversely related – low intensity activity can continue for prolonged periods while high intensity activity cannot be sustained for shorter periods before exhaustion interrupts it. Whatever the specific physical demand of the sport, an athlete's ability to perform is based on his/her ability to gain the energy needed for movement execution.

Energy can be defined as: **the ability or capacity to perform work and is a necessary prerequisite for the performance of movement.**

The human body caters for the energy demands of the different types of "fitness" by utilizing three different, but overlapping energy systems: A coach should know which is the predominant energy source for his events so that training programs can address the right energy group.

- ANAEROBIC
  - Exhausts external sources.
  - Obtains energy internally

- ALACTIC (0 – 6 SECONDS) – primary source for all the jumps
  - First movement of high intensity
  - Activity up to 6 seconds (about 50 m)
  - Draws reserves from muscles
  - Recovers after 2 – 3 minutes
  - Recovery capacity can be developed

- LACTIC (7 – 38 SECONDS)
  - Prevents removal of toxins due to shortage of o2
  - Toxins build up
  - Main cause of muscle fatigue
  - Decreases speed
  - Recovers after 60 minutes
  - Recovery capacity developed – training (7 - 38 sec)
  - Higher intensity = higher lactic acid
  - Light movement afterwards enhances recovery

PERIODISATION

1.TERMINOLOGY

- Short term (3 – 12 months)
  - Micro 1 week
  - Meso 3 – 9 weeks
  - Macro season
- Medium term (1 – 2 years)
- Long term (3 – 5 years)

2. **CYCLES**

- **PREPARATION 1**

  - GENERAL CONDITIONING
    - Non specific and aimed at general conditioning of the whole body.
    - Volume very high
    - Intensity very low
    - Rest short

  - SPECIFIC PREPARATION
    - Specific conditioning directly related to an event
    - Exercises more specific to event
    - Volume still high
    - Intensity low
    - Rest short
    - Technique training introduced – always do first

- **PREPARATION 2 (Pre – season)**
  - Training for competition
  - Volume decreases
  - Intensity increases
  - Rest still short
  - Technique emphasised
  - Evaluation of
    - Strength
    - Endurance
    - Speed / Rhythm
    - Technique

- **COMPETITION**

PHASE 1	PHASE 2
▪ Technique – high quality	Concentrate on competitions
▪ Volume very low	Volume very low
▪ Intensity very high	Intensity very high
▪ Rest long	Rest very long
▪ Stabilize performance	Psychological preparation

- **TRANSITION**
  - After a prolonged period of training it is important to tone down volumes and intensity.
  - Active rest which entails general types of movement should be done for recovery.
  - Planning for next phase

HIGH JUMP

1. BASIC PREMISE

Learning high jump is fairly easy for young athletes provided the under - mentioned is in place. However, it is important to understand that it is about jumping high and not jumping over the bar. Because the athlete runs in the direction of the crossbar he/she will go over the bar. Evenly, because the last part of the run up is on a curve, the earth`s centrifugal force will let the athlete rotate so that he/she will cross the bar with the back facing to the bar.

2. SAFETY AND EQUIPMENT

What will be needed is:

f. A consistent and firm take – off surface.
g. An approach area that will allow an unrestricted angle and length (between 20m and 30m) of run up with a landing area in the middle.
h. A proper landing area of foam rubber covered by an all- weather sheath – minimum size 5m x 3m x 80cm (preferably 90cm). See figure 1.

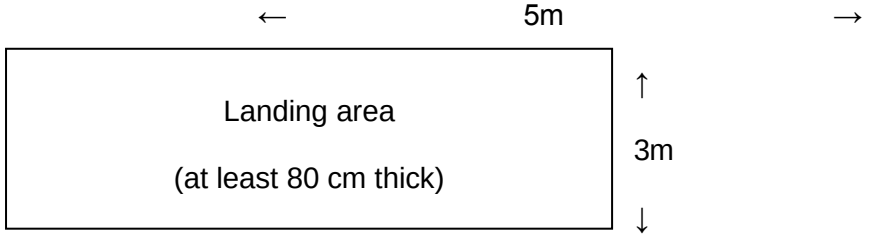


Fig 1

i. Two proper uprights of at least 2.20 m.
j. A round fibre glass cross bar of between 3.98 and 4.02 m in length.
k. At least 2 supports (4cm wide and 6cm long) for the cross bar to rest on. They must be of such a nature that they can be affixed firmly to the uprights

3. FOSBURY TECHNIQUE

RUN UP

a) Curved approach – 6 – 10 steps. See figure 2.

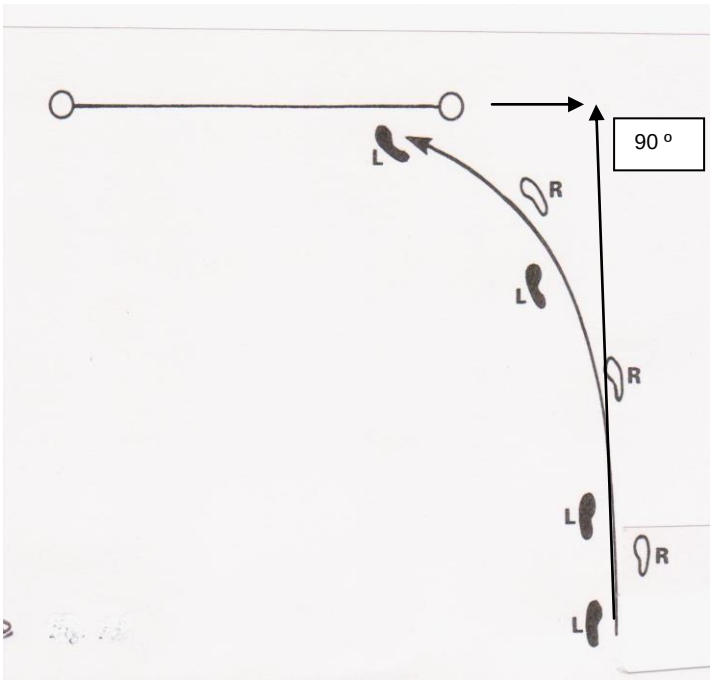


Fig 2 Stand with left foot in front

b) Start with take - off foot on the ground. Swing leg moves first to generate speed since it is the faster leg and the athlete only has 10 – 12 steps to generate speed.
c) The point of take of must be such that the athlete crosses the bar at the lowest point, i.e in the centre. Thus, the take off should be closer to the upright than the middle of the bar. Approximately 30 - 40cm from the upright and an arms length away from the bar.
d) Take of must be with the foot furthest away from the bar. Left foot if approach is from the right and right foot if the approach is from the left.
e) Due to the centrifugal force of earth, the athlete will rotate in the flight, and thus NOTHING must be done on the ground at take- off to turn (Inside shoulder and hip should stay back for as long as possible).
f) First 2 / 3 strides must be strong in order to generate momentum.
g) Next 3/4 steps must be rhythmic but fast.
h) Last 2 / 3 steps must drive strongly forward and must be short and quick.
i) Hips must be held high throughout the approach and take off, shoulders must be open and chin parallel with ground.
j) The body must lean away from the bar in the last part of the run – up. See figure 3.
k) The run – up rhythm remains the same irrespective of the height jumped.

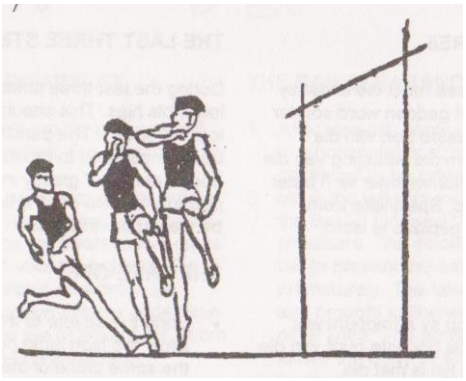


Fig 3

TAKE – OFF

a. Take of foot must be planted heel first and straight in line with the run – up, toes pointing towards inside of the opposite corner of the landing area and the athlete must not try to turn on the ground.
b. The foot action at take - off must be vigorous (heel –to – toe) – followed by a fast upward acceleration of the free leg.
c. The toes of the swing leg must be lifted up towards the chin.
d. The inside shoulder must be held back for as long as possible in take- off so that it does not drop towards the bar.
e. Leg nearest to the bar must be bent and driven up vigorously to approximately 5cm higher than bar.
f. Body must stay in an upright position throughout the whole take off and – generates centrifugal force that rotates the body.
g. Head must be neutral – chin parallel to the ground. Head must not turn during the flight.
h. Inner arm must swing up fast, be bent and move close to the body. It must point upwards and not over the bar.
i. Rotation begins immediately after the take – off foot has left the ground. See figure 3.

FLIGHT

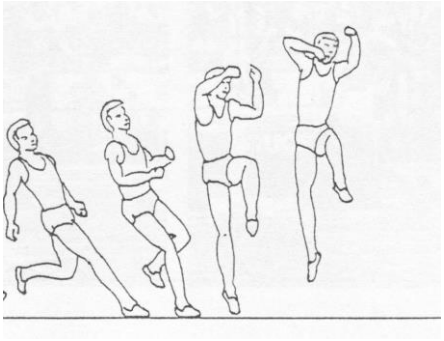


Fig 4

a Body must stay in upright position throughout flight until the hips are on the height of the cross bar.
b. Inner arm and leg must keep swinging up fast, be bent and move close to the body. The arm must point upwards and not over the bar.
c. Swing leg must be kept bent as long as possible. Toes up (dorsi flexed).
d. When the hips are opposite the bar the inside arm can start being extended over the bar.
e. Start tilting the head backwards. This will assist to push the hips away from the bar.
f. Legs slightly parted – checks rotation.
g. As soon as the hips have cleared the bar. The chin must be drawn to the chest – will lift legs over the bar.
h. Throughout the flight the head must stay neutral – should not turn in any direction.

LANDING
a. Keep the chin on the chest.
b. Spread the arms to stop rotation and prepare for landing.
c. The athletes head must stay neutral – head must not turn to see landing area.
d. The knees must be kept apart at shoulder width.
e. After a good jump the athlete will roll over backwards.

4. LEARNING SKILLS

a. DETERMINING TAKE – OFF - FOOT
Let the athlete stand about 2 m away from landing mat. The athlete must run and jump onto mat landing on one foot. Repeat 3 times. The foot that remains on the ground is the take – off foot.

b. LANDING ON THE BACK
Place a High Jump landing mat in its length. The athlete must stand one step away from the head of the mat. Place take of foot forward at an angle (40 degrees) to the mat and land on back in the length of the mat. Repeat until properly mastered by the athlete. (Do not use the term “turn).

c. TAKE – OFF (To quicken last to steps)
Place 5 cones on a curve close to a landing mat. Last 2 must be 2 or 2.5 foot lengths apart and the other 2 must be placed 4 or 5 foot lengths apart. Athlete must stand with take – off foot at first cone and step next to the cones quickening the steps at the last 2 cones and a high knee lift at last cone. Repeat until athlete has mastered well. In the high knee position the athlete must be able to balance.

d. RUN – UP RHYTHM
Use 9 cones of which the 4 closest to the landing mats should be on a curve and the remaining 5 in a straight line to simulate the shape of a hockey stick. The space between cones 1, 2 and 3 must be as indicated in 4.c above and the other cones double that. Athlete must start with take – off foot at first cone and run rhythmic stepping next to each cone. Once the athlete has mastered the run – up rhythm he/she can do a scissors jump onto the mat from the last cone. When this is mastered it can be followed up by a Fosbury flop over a very low cross bar.

e. FLIGHT
Use 4 step run – up at a height that the athlete can attain easily. First part must be straight up in the air and then over. When the athlete is halfway across the bar (hips just past the bar) the chin must be brought to the chest in a quick movement.

f. BACK FLIPS
Back flips should always be done from approximately the same height as the landing mats. The feet of the athlete should not be much lower than the top of the landing mats. Head should be pulled back quickly.

5. FAULT ANALYSIS

a. Athlete knocks the bar of while still going up
The take of is too close to the bar – adjust the run up.

b. Athlete falls of the side of the landing mats
The take of too close to the middle of the cross bar or the take – off foot is planted parallel to the cross bar. Change the angle of approach since the curve may be too wide or the straight part of the run – up is to wide.

c. Athlete lands with body parallel to the cross bar
The athlete does not bend the swing leg and therefor does not go up straight but falls backward. Do high knee drills and pop - ups.

d. Athlete knocks the bar off when starting to come down over the bar.
The- take off too far – adjust the starting point of the run up or check for inconsistent rhythm.

e. The athlete triples when getting close to the bar
The starting mark of the run – up is to close – adjust run up or ensure consistent rhythm in the run- up.

f. The athlete travels along the bar for too long.
The take - off foot is planted parallel to the bar, the angle of approach is too small (curve too wide), or the athlete turns on the ground at take – off. Change the angle of approach or the width of the curve and ensure that the start is not to wide. Also ensure that the athlete does not turn on the ground or bring the inside hip forward to soon.

g. The athlete`s run up is right but he/she does not get enough height.
The run-up is too fast to manage a proper take -off. too fast. Reduce speed.

h. Athlete knocks the bar off with his/her heels
The take - off is too far or the swing leg to slow. The athlete may also bring the chin to the chest too late in the flight. Do pop ups for knee speed and height. If that does not solve the problem, teach the athlete to get the chin on the chest when his buttocks are just over the bar.

LONG JUMP

1. INTRODUCTION

Learning long jump is fairly easy for young athletes provided the aspects discussed below are in place. However, it is important to understand what it is about to jump far. Because the athlete runs in the direction of the sand pit he/she will travel through the air. However, run up speed that is to fast can be detrimental to the distance jumped.

2. SAFETY AND EQUIPMENT

What will be needed is:

a. A consistent and firm take – off surface.

b. An approach area that will allow an unrestricted length (between 35m and 45m) of run up with a landing area in the end.

c. A proper landing area of sand that does not bind and become hard. It must be between 2.75m and 3.00m wide and at least 10m long from the take - off line). See figure 1.

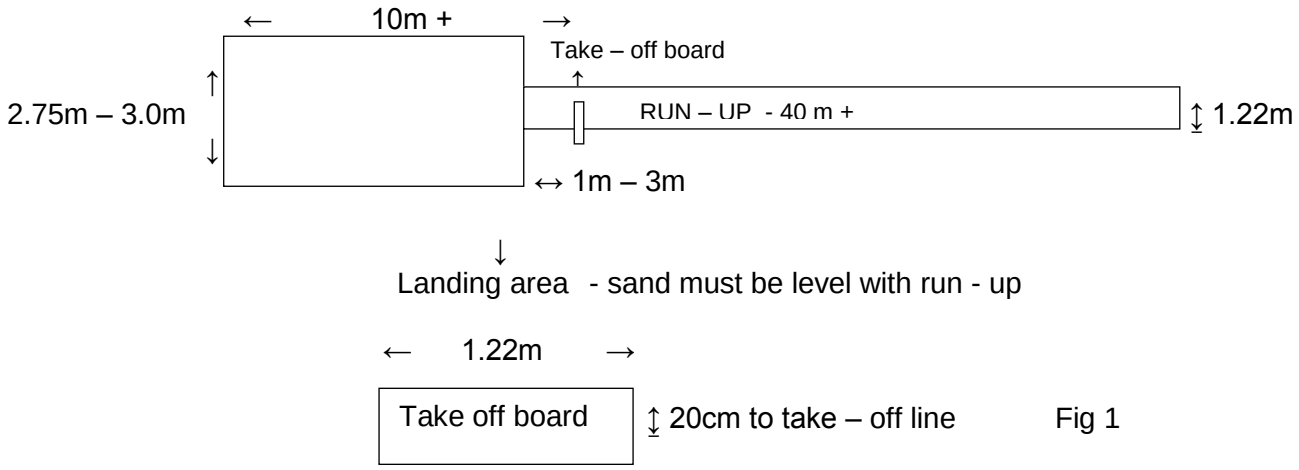


Fig 1

d. A proper take – off board that provides for plasticine or window putty to mark the take – off, or a board with a clearly indicated take – off line painted on it.
e. The sand in the pit should be loosened and dampened before each event.
f. The level of the sand in the pit must be level with the surface of the take - off board.

3. **TECHNIQUE**

The following three basic long jump techniques are generally accepted:

a. Hang
b. Sail
c. Hitch kick

For all three these techniques the run up is the same, and is off the utmost importance, since most success depends on a good run up.

RUN UP

The approach is normally between 12 and 22 steps

a. Start with take - off foot on the ground. Swing leg moves first to generate speed.
b. A run – up, with gradual increase in speed to maximum controllable speed at take - off is crucial.
c. Maximum controllable speed must be attained for distance in jump.
d. First 6 / 8 strides must be strong to generate momentum.
e. Lean forward in the first few steps and - get upright at 10 – 12 steps.

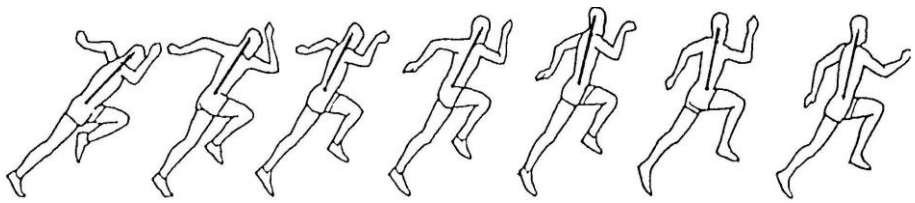


Fig 2

f. Next steps must be rhythmic but fast.
h. Last two steps must be shortened and quick with a slight bend at the knee of the take – off leg.
i.. Hips must be held high throughout the approach and take off, shoulders must be open and chin must be parallel with ground.

j.

LENGTH OF RUN - UP		
	NUMBER OF STRIDES	
AGE GROUP	MEN	WOMEN
Senior and Junior	18 - 22	16 - 20
Under 18	16 - 18	16 - 18
Under 15	14 - 18	14 - 18
Under 13	12 - 14	12 - 14
The faster the athlete - the longer the run - up		

TAKE – OFF

a. Take of foot must be planted flat (not heel first) in line with the run – up.
b. Take – off foot must be under the hips at take – off.
c. Free leg must be swung through close to buttocks to about 90 degrees in front of body.

d. The foot action at take - off must be vigorous in a pawing movement (heel – to- toe) – followed by a fast - upwards acceleration of the free leg, with the knee bent.
e. Convert maximum controllable speed into horizontal power.
f. The take – off leg must be extended maximally at take - off.
g. The athlete should initially remain in an extended position during the first phase of the jump. irrespective of the technique.
h. Body must stay in an upright position throughout the whole take off.
i. Head must be neutral – chin parallel to the ground and shoulders open.
j. The take – off is the same for all three techniques.

FLIGHT

Hang technique

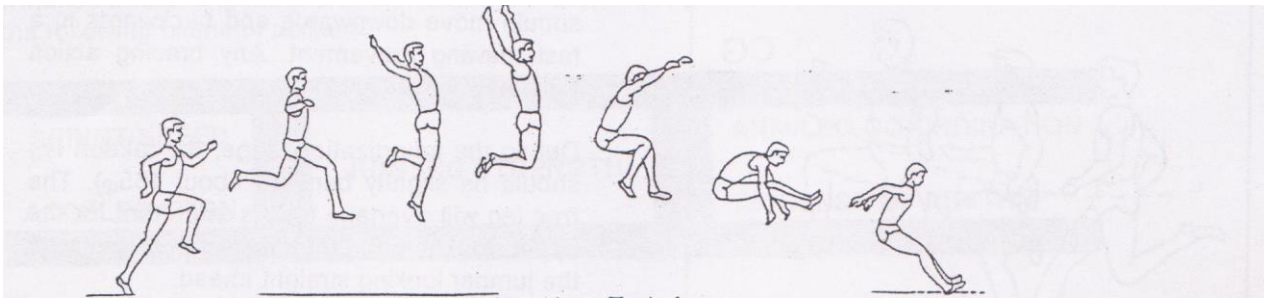


Fig 3

a. Knee of the free leg should be dropped just after take – off to directly under hips.
b. Knee is flexed to angle of about 90 degrees.
c. Take – off leg brought through to next to free leg – knee also flexed.
d. Both arms raised above head.
e. Back must be straight.
f. Both legs are brought forward when the athlete reaches highest point in flight.

Sail technique

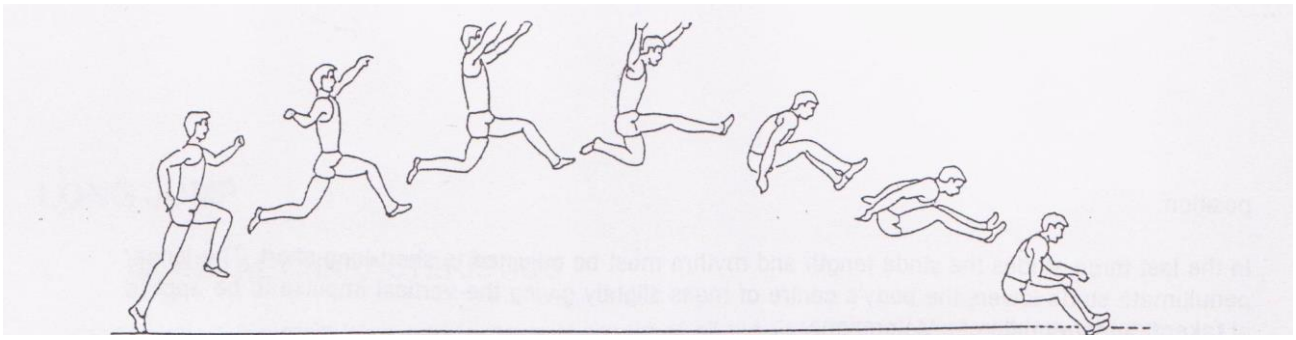


Fig 4

a. The easiest technique to learn.
b. Free leg swings forward to about 90 degrees.
c. Free leg swings forward to about 90 degrees.
d. Trunk must be kept in upright position.
e. Bring take – off leg through in striding mode to next to free leg.
f. Body must be in sitting position.
g. Arms will move in semicircle from above head to front and down.
h. Both legs are brought forward when the athlete reaches highest point in flight.

Hitch kick

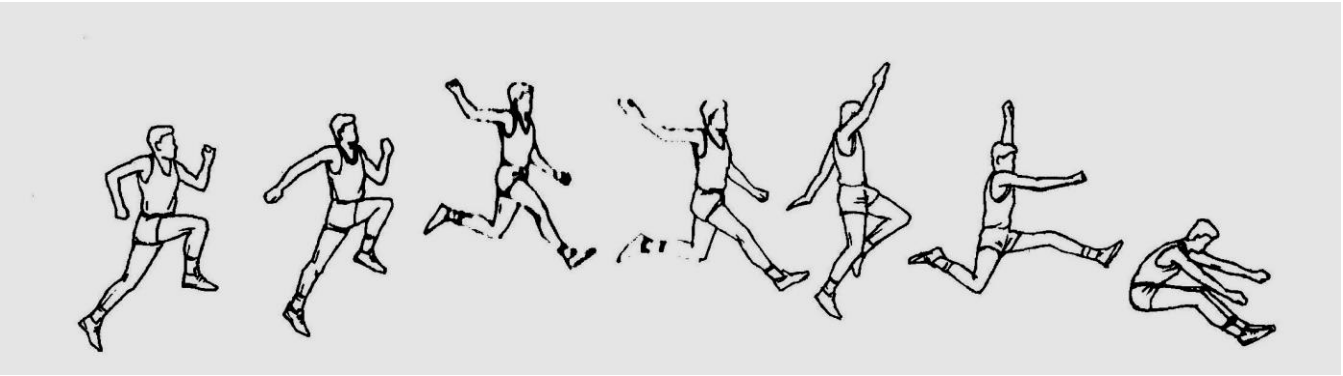


Fig 5

a. Also described as continual running position.
b. Main thrust of this technique is to counter forward rotation.
c. Free leg brought forward and up vigorously.
d. Free leg must be lifted as high as possible and extended forward fast.
e. Take – off leg remains bent behind body and brought through in running mode.
f. Two and a half to three running steps are taken in the air.
g. Strides must be supported by opposite arm swings – as in running.
h. Body must have a slight lean to the back and only be brought forward when the landing action starts.
i. Both legs are brought forward when the athlete reaches highest point in flight.

LANDING

a. Main objective is to keep athlete in landing curve for as long as possible.
b. Preparation for landing is characterised by a jack – knife posture in the air.
c. Feet must be in horizontal position extended in front of body for as long as possible.
d. Hips must be allowed to sink as deep as possible on landing.

4. LEARNING SKILLS

a. DETERMINING TAKE – OFF FOOT

Let athlete stand about 4 steps away from landing area. Athlete must run and jump into landing area on one foot. Or let the athlete stand about 2m away from a high jump landing mat and then run over the mat. Repeat 3 times Foot that remains on the ground is the take – off foot.

b. FLIGHT

Place a High Jump landing mat in its length. Athlete must run 4 – 6 steps, jump and land on the mat in a sitting position

c. TAKE – OFF

Place 5 cones close to the take – off point. Second last 2 cones must be 2 - 3 foot lengths apart, and the rest 4 - 5 foot lengths apart. Athlete must stand with the take – off foot at first cone and step next to the cones with a high knee lift at last cone. Repeat until athlete has mastered well.

e. RUN – UP RHYTHM

Use 13 cones The space between the last two must be as indicated in c above and the other cones double the distance of the last cone. Athlete must start with take – off foot at first cone and run rhythmic stepping next to each cone. Must be repeated until the athlete has mastered the run – up rhythm.

f. LANDING

Let athlete stand on edge of sandpit and do a two - legged jump into the pit. Place a piece of sponge at the point 10 – 15cm further than where the athlete landed. The athlete must try to hold the legs up and land beyond the sponge. As soon as the athlete has mastered this drill he / she can do the same of a 4 - stride run – up

5. FAULT ANALYSIS

a. Last stride to long
This results in loss of speed / distance. Rectify with rhythm / speed training

b. Last stride to short
The athlete will tend to fall forward. Do rhythm and bounding. Run ups away from pit.

c. Low trajectory
Can be the result of being too fast and will result in loss off loose distance. Manage the run – up speed by determining the maximum controllable speed for the athlete through trial and error.

d. Last step to long.
This will result in a poor take off and the athlete will tend to fall backwards. Adjust the length off the run – up.

e. Too fast for take – off
The athlete will not be able to execute the take - off properly and will not get height and distance

f. Overstepping.
It is mostly the result of running to fast or a lack of rhythm and results in loss of distance. Do rhythm and speed drills.

g. Lack off rhythm.
The athlete tries to run to fast or is not strong enough to maintain rhythm. Do functional strength training.

g. Over striding
Over striding is mainly caused by poor running technique and will result in overstepping or under stepping. Do running technique drills at a controllable speed.

l Landing prematurely
The body leans forward at take -off and does not allow the athlete to attain enough height or the arms are brought through to soon.

TRIPLE JUMP

1. INTRODUCTION

Triple jump consists of three phases, that in fact constitute three different jumps which must be combined into a rhythmic flow of actions. In order to execute the jumps properly an athlete has to operate at maximum controllable speed and limit mistakes in each of the phases of the lump. The arms play a very important role in especially the first two phases of the jump since they have to generate impulse. As in Long Jump the hips must be as high as possible in all the phase of Triple Jump.

2. SAFETY AND EQUIPMENT

The same as for Long jump. However, for Triple jump the take - of board is further away from the landing area since the distances attained in the three phases exceed the distances attained in Long Jump. The distances of the take - off from the landing area for Triple Jump is as follows:

Senior and Junior men	13 m
Senior and junior women	11 m
Youth men	11 m
Youth women	9 m

3. **TECHNIQUE**

Triple Jump consist of –

- Hop – The athletes takes – off and lands on the same foot that was used for take – off.

- Free leg must be swung through as in a normal running action but must not touch the ground since the athlete must land on the take – off foot;
- The trajectory should be fairly flat and forward – take off foot must be planted flat;
- Can be seen as part of the approach run.

- Step – with a normal one step running action – in this phase the athlete should freeze in the air;

  - Arm action must generate momentum for next phase;
  - As for the hop the trajectory should be flat and forward.

- Jump – on landing the athlete must immediately proceed as described in the take – off for the Long Jump.

4. RUN – UP

The run – up for Triple jump is the same as for Long Jump except that due to constraints in the length of the run – up area the number of paces for Triple Jump will be about 4 steps less than for the Long Jump. All the other aspects will apply.

5. TAKE - OFF

a) Take - off foot must be planted flat (not heel first) in line with the run – up
b) Take – off foot must be under the hips at take – off.
c) The foot action at take - off must be vigorous in a pawing movement (heel – to- toe) – followed by a fast upwards acceleration of the free leg, with the knee bent.
d) Convert maximum controllable speed into horizontal power.
e) The take – off leg must be extended maximally at take - off.
f. Body must stay in an upright position throughout the whole take off.
g. Head must be neutral – chin parallel to the ground and shoulders open.
h. The arms should be lifted to assist with balance during the first two phases.
i. In all the phases foot contact must be limited in order to lose as little forward momentum as possible.

6. LANDING

As for Long Jump.

7. **FAULT ANALYSES**

a. See fault analyses at long jump
b. Hop to high
   The athlete takes – off from the toes. Do drills to take - off from a flat foot.
c. Step
   If the landing foot is too far ahead it has ab raking effect which results in a loss of distance. Do drills over a low hurdle and ensure that the front leg is bent while travelling through the air.
d. Body not upright
   The body must be kept upright throughout the whole jump to prevent forward rotation that will bring the athlete down prematurely.
e. Landing prematurely
   Body leans forward at take – off or in the flight phase
   Arms through are brought through too soon

POLE VAULT

1. **INTRODUCTION**

   Pole Vault is the most technical of all events of all the track and Field events. It requires gymnastic abilities and high levels of upper body strength. Safety of the athlete is a big factor because of the heights from which they fall. The jumping poles used are of different lengths and for different weights in order that the bending factor is correct for each individual athlete.

2. **RUN - UP**
   a. The Pole Vault run – up is normally 10 – 18 steps
   b. Acceleration in the run – up is crucial since maximum controllable speed must be attained.
   c. First 4-6 steps are the drive phase where speed must be actively generated.
   d. The athletes body faces forward
   e. The Pole held steady at 80 degrees with the elbows close to body and the body upright.
   f. Pole lowered last 3 steps and stride frequency increases
   g. The upper arm is raised and the lower arm pushes forward.t
   h. In the penultimate step the upper hand raised to head height.

3. **TAKE – OFF**

   Touch down
   a. Take off foot is planted flat.
   b. Free leg swings up.
   c. Upper arm is kept straight above head.
   d. Body should have a slight backward lean

   Take - off
   e. The athletes plant pole in the plant box.
   f. Take - off foot must be close to perpendicular.
   g. Take off leg straightens.
   h. Lower hand pushes upward.
   i. Upper arm is kept straight above the head.
   j. Body must be upright.

   P**enetration**
   a. Chest pushes forward
   b. Take off leg trails – kept straight
   c. Free leg bent 90 degrees
   d. Upper arm straight above head
   e. Lower arm pushes forward above head

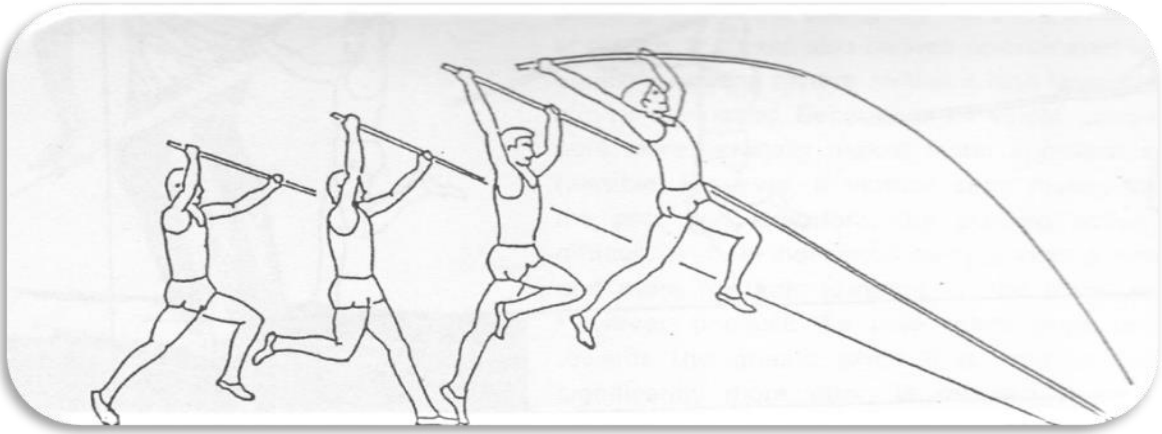


Fig 1

4. BACKWARD ROLL / ROCK BACK

Backward / upward roll

a. Bend take off leg.
b. Free leg bent and blocked.
c. Lower arm turns outwards.
d. Knees close to hands on pole.
e. Body L shaped.

Rock back.

a. Pole straightens.
b. Legs and pelvis move back and upwards.
c. Lower arm bends.
d. 90 degree turn of body.
e. Eyes look towards feet.

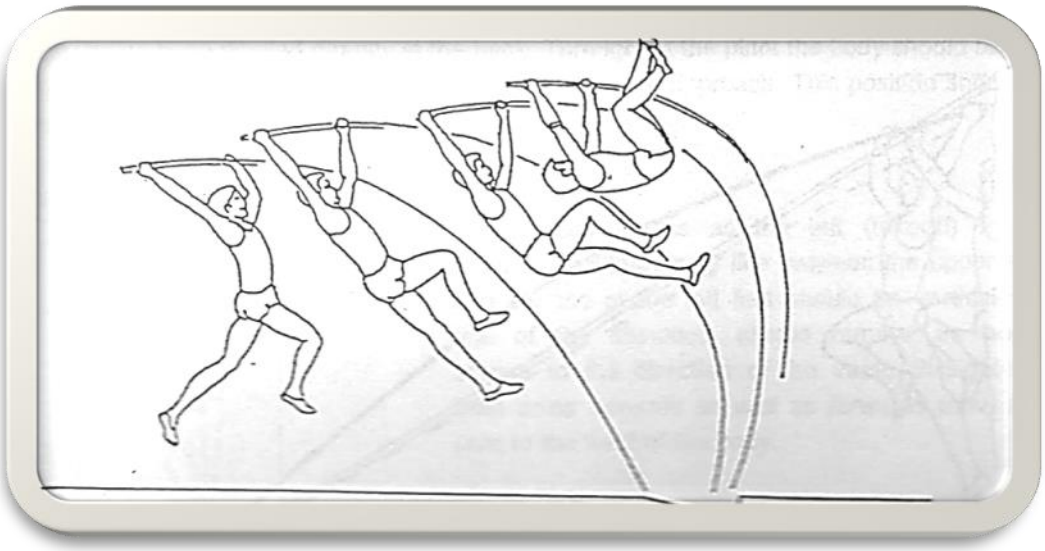


Fig 2

5. STRETCH AND TURN

a. Final straightening of pole.
b. Athlete must pull with one arm push with other.
c. Body rotates.
d. Trunk and legs stretch.
e. Lower hand releases the pole.
f. Athlete gives a final push with the upper arm.
g. Push pole away.

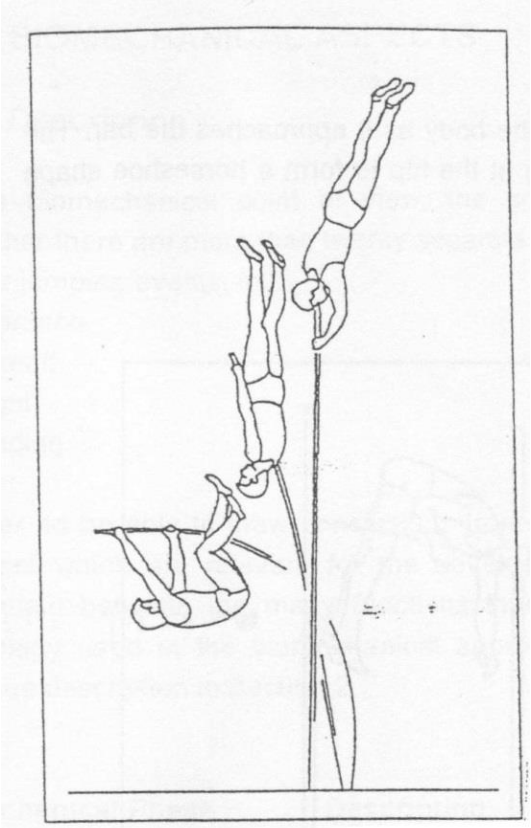


Fig 3

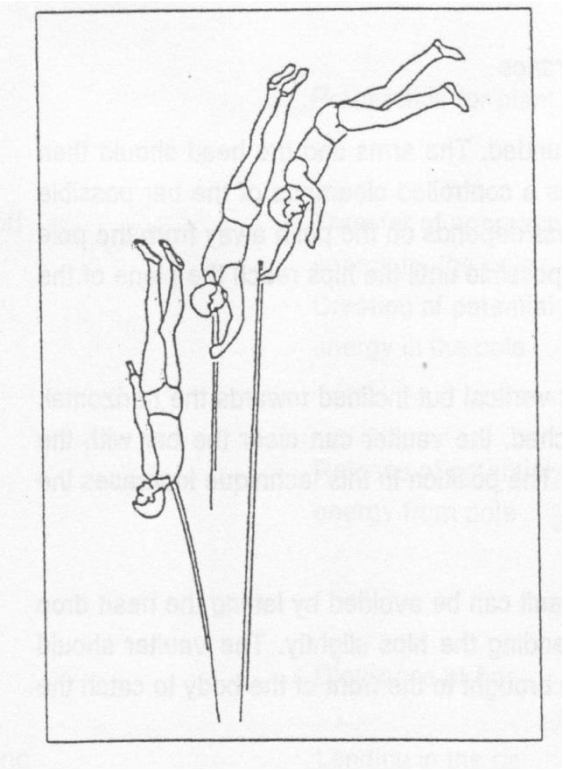


Fig 4

6. BAR CLEARANCE

Clearing the bar

a. Legs must be straightened.
b. Body should be slightly bent at the hips.
c. Eyes must look forward towards the ground.
d. Arms move upwards.

7. LANDING

a. The athlete falls backwards.
b. Spread arms to break fall
c. Land on largest part of body possible

TRAINING PRINCIPLES AND GUIDE LINES

1. WARMING UP

It is of the utmost importance for an athlete to have a proper warming up and cooling down regime that is followed before every training session of competition. This regime should not last longer than about 20 – 25 minutes and all the movements should simulate movements that will occur in the training session or competition. It should also target muscle groups that will be used for the relevant event. The main purpose of warming up is to activate muscle fibres**,** ligaments, tendons and energy sources in order to enhance performance and prevent injuries. The regime should normally start with low intensity activities and progress to higher intensity.

A typical warm up session for the jumps would look something like the following:

BEFORE EVERY TRAINING SESSION AND COMPETITION

Jog 400m slowly.
Light stretching – only to the normal length of the muscle that is activated

Drills
3 X Strides - 50 m
3 X 30m Speed walking
3 x 30m Heidi hops
3 x 30m Goose walk
3 x 30m Knee lift – knee driven up hard every third step - toe up
3 x 30m Knee down – knee driven down hard every third step - toe up.
3 x 30m Butt kicks
3 x 10 steps lunge walk.
3 x 30m Sideway change overs
3 x 20 m sprints
Before a big competition only 2 sets need to be done.

NB – move backwards after every rep

DURING COMPETITION
Do not do unnecessary jumps
Do simulation of jumping technique
Do two short fast stride 3 – 4 minutes before next attempt
Keep yourself warm - especially your legs.

2. COOLING DOWN

Similarly to warming up it is important to cool down after a training session / competition to Restore The homeostasis in the body. After high intensity movement the athlete should do between 400m and 800m at a slow pace and do some stretching of muscle groups that are stiff and sore.

3. PLANNING TRAINING SESSIONS

Great care should be taken when devising a training session and selecting exercises since the wrong options can cause serious injuries. The following should be carefully considered:

- Body type – is the athlete strongly built, thin, stocky, tall or short.
- Age – physiological age - real age in years of the athlete since birth.
- - event age – how many years the athlete have been doing the event.

- Talent
- Standard of training
- Background – socio -economic circumstances such as nourishment, transport
- and Exposure to sport
- Personality
- Event
- Goals
- Facilities
- Competitions

4. TYPICAL TRAINING PROGRAM FOR SCHOOL ATHLETES

M0NDAY
Warming up

Run 5 – 8 full run – ups and for high jump and pole vault over mat to get rhythm right
Technique – 8 – 12 Jumps of full run - up
12 x 10 - 20 paces (100% of max speed) - walk 10m and back between each run(for high jump 10 – 14
paces around a bend)

Warming down

TUESDAY
Warming up

Stairs - 3 x 5 left leg (5 stairs), 5 right leg (5 stairs), 5 double leg (5 stairs)
run x 15 – 20 stairs – (20 small stairs) (The sequence will be left leg, right leg, double leg and run)

Rest 3-4 minutes after each set

WEDNESDAY
Warming up

Run 5 – 8 full run – ups and for high jump and pole vault over mat to get rhythm right
Technique – 8 – 12 Jumps of full run - up
12 x 10 - 20 paces (100% of max speed) - walk 10m and back between each run(for high jump 10 – 14
paces around a bend)

Warming down

THURSDAY
Warming up

Run 4 x 4 small stairs – 15 – 20 stairs
Rest 3-4 minutes after each set

Warming down
Note : (4 x 4 means 4 sets of 4 reps etc)

5. IMPORTANT TERMINOLOGY
It is important for the coach to understand the following terms in order to be able to draft an efficient training programmes:

- Strength :Ability to lift a heavy object.
- Power :Speed at which heavy object can be displaced
- Functional strength :Development of strength through normal athletics movements / body weight / sled pulling, hills, etc
- Speed :Velocity – short distances – max 60 m – high intensity

– long rest

- Speed endurance :Speed over longer distances – high intensity 100 -150m

long rest

- Muscle endurance :Lower intensity – longer distances – short rest – 150m upwards – shorter rest

LAWS OF COACHING

a) **LAW OF INDIVIDUALITY**
Each athlete has an own personality and physical attributes that needs to be evaluated and taken in account. Every individual reacts in a unique manner to exercises and loads and intensity.

b) **LAW OF INVOLVEMENT**
It is important for the success of a training program that the athletes buys inti it and participates full in the execution thereof.

c) **LAW OF PROGRESSIVE OVERLOAD**
Volume and intensity as well as loads should regularly be adapted in order for development to take place. If the volume, intensity and rest periods always remain the same no development will take place and performance will stay the same or weaken.

d) **LAW OF VARIETY**
An exercise should from time to time be replaced by different exercises with the same effect in order to maintain the interest of the athlete. Otherwise it becomes boring.

e) **LAW OF ADAPTATION/REST**
The rest or recovery after an **overload** allows the body time to adapt to new levels and the adaptation that takes place allows the athlete to perform better.

f) **LAW OF REVERSIBILITY**
The training with a high load followed by recovery has a direct bearing on the increase or decrease of the performance level of the athlete.

g) **LAW OF SPECIFICITY**
The exercise and loads should be specific to the attributes of the athlete and the event for which he / she trains.

RULES

- WIND – For Long- and triple jump a wind of up to and including 2 m per second or less from
  behind is allowable for records to be ratified. However, If the wind is stronger the performance
  will stand.

- TIES
  - Athletes cannot tie for first place
  - For Long and Triple jump you go to second best, third best etc to resolve the tie
  - High Jump / Pole Vault
    - Count number of failures – least gets best placing (irrespective of heights Where failures occurred)

- If still tied – one more jump at last height where both failed
- Down / up 2 cm until one clears and other not – 1 jump / height

- SITTING OUT
- Athletes choice
- Fail first trial – can go to next height – only 2 trials left **etc**

For all jumps the take – off must be from one foot only

Failure;

High jump / Pole vault

a) If the athletes touches the bar and it is dislodged.
b) If the athlete touches the ground or mats beyond the plane of the nearer edge of the uprights between or outside the uprights before crossing the bar. Orr in pole vault the pole touches the ground or mats beyond the line through the stop box edge.
c) The athlete may touch the landing mats with his / her feet while jumping if no advantage is gained

Long – Triple jump

a) If the athlete touches the ground beyond the take – off line with any part of the body while running or traveling through the air.
b) The athlete takes - off outside the take – off board.
c) Touching the ground outside of the landing area when landing.
d) If the athlete walks back through the landing area.
e) The athlete may not summersault while jumping.
f) If the athlete takes – off before the board it is not a failure.

Delays

a) Unreasonable delay is deemed to be a failure – warning.
b) On a second delay the athlete may be disqualified.
c) In all events 60 seconds is allowed for an athlete to commence his trial
d) In final stages of competition:

	high jump	pole vault	other events
2 – 3 competitors	90 sec	120 sec	90 sec
1 competitor	3 min	5 min	

CONCLUSION

This is not meant to be a theoretical dissemination of fact, but rather a practical guide for the coach that has some knowledge and experience of coaching jumps. My aim is to make it easier for the person who really wants to coach but does not have the luxury of rubbing shoulders with experienced coaches on a regular basis or do not have opportunities to attend regular discussion sessions, seminars and the like. Therefore, this should rather be deemed to be coaching guidelines for the coach on intermediate level.

Bibliography.

1. The Mechanics of Athletics. Geoffrey Dyson.1977
2. How to teach the jumps. David Johnson.
3. The Complete Book of Jumps. Ed Jacoby . 1995
4. RUN ! JUMP ! THROW ! : The Official IAAF Guide to Teaching Athletics.
5. Periodisation Training for Sports. Tudor Bompa; Michael C Carrera.2005
6. Talent identification and testing. Owen van Niekerk.
7. High Jump – Frank W Dick British Athletics Federation Board. 1980
8. Intermediate Guide for Jumps – Hugo Badenhorst; Fast Feet Development