TECHNIQUE… THE HORIZONTAL JUMPS

TIOMBE HURD, 2004 OLYMPIC TEAM

Triple Jump- American Record Holder 47' 5"
» 4-Time U.S. Indoor Champion: '00, '01 & '04, '06
» 2-Time U.S. Outdoor Champion: '01 & '04
» Bronze Medalist: '01 World Indoor Championships
» Bronze Medalist: '98 Goodwill Games
» American Record Holder - Outdoor Triple Jump

"In 2003 I began training full-time for the first time in my life in an effort to make the [Olympic] team, and it worked. I knew if I wanted to get to the top of my game I needed to compete full-time and take care of my body, and I needed the extra hours in the day for training that I didn't have when I was working," states Tiombé. Obviously, it was the right decision.

Tiombé started training for the 2000 Olympic Games in 1998/99 and missed qualifying for theU.S. team by a mere four inches. However, the following season, in 2001 she took both the U.S.Indoor and Outdoor Championship titles and a bronze medal at the World Indoor Championships, becoming the first American woman ever to win a major championship medal in the triple jump. It was a breakout year for Tiombé as she jumped into a #1 U.S. ranking and #13 world ranking. To date, she has won six U.S. Championship titles.

As if being a world-class athlete were not impressive enough, Tiombé does it with a degenerative eye condition which makes her legally blind without corrective contact lenses. "It can really affect my ability to guide myself onto the take-off board, that's why I foul so much. But, I've had this condition since birth. Instead of letting it stop me, I just deal with it. I don't want anyone to treat me differently. There are Olympic runners who have asthma. I deal with my eyesight just like they have to deal with breathing problems." Tiombé splits her time between the U.S. and Europe while she continues on the competition trail.
For more information on Tiombé visit her web site at www.tiombehurd.net

COACH CARMEN JACKSON- Miami Northwestern High School

Coach Jackson coaches at Northwestern High School in Miami, Florida. Her coaching career began in 1980, when she became an assistant coach under her high school coach. In 1991-92 she became the head girl's track and field coach at Miami Northwestern Senior High School. She has won three State Titles (1999, 2001, and 2005), 8 Regional Titles, 14 District Titles, and 6 GMAC Conference Titles. She was named Florida Interscholastic Athletic Association Coach of the year (1999, 2001), Florida Dairy Farmers Coach of the year (1999-2001, 2005), Florida Athletic Coaches Association of the year (2001-2005), and Miami Herald Coach of the Year (2001), National High School Athletic Association Coach of the year Regional winner (2001).

The Long Jump

By Brian McKenzie - edited

The long jump is a speed event which comprises of four phases:

- approach run
- take off
- flight through the air
- landing.

To achieve maximum distance in the long jump the athlete will have to balance three components - speed, technique and strength.

The Approach Run

Rhythm in the approach run is important to ensure the ideal speed is achieved at take off and also accuracy in hitting the take off board. The length of the run will depend on the athlete's age and speed.

Age	**Strides**
Under 11	11
Under 13	13
Under 15	15
Under 17	17
Over 17	21

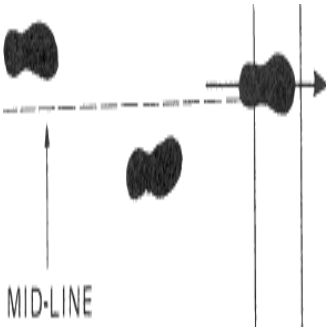
Accuracy of the approach run onto the take off board is established by:

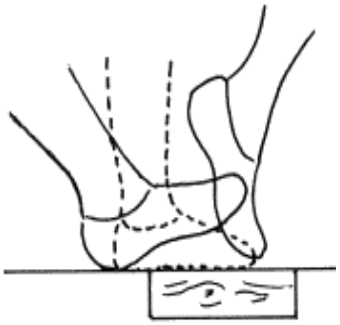
- Determine the take off foot
- Stand with your back to the jumping pit and the heel of your non take off foot on the take off board scratch line
- Run up the runway the required number of strides, say 19, and place a marker where the 19th stride falls.
- Place the non-take off foot on the marker and run back towards the board and take off. The coach should note where the 17th stride lands in relationship to the take off board.
- If the foot is behind the take off board, say 20cm, then move the start marker 20cm forward. If the foot is beyond the take off board then move the marker back.
- Repeat the run up and marker adjustment 4 or 5 times to establish a consistent approach run onto the take off board
- Once achieved measure the distance accurately and record it for future use
- It is important to bear in mind that a head or tail wind will effect the run up. A head wind may mean moving the marker slightly forward.

The Take Off

The preparation for the long jump take-off begins in the later phases of the approach run. The long jumper prepares for take off by sinking the hips and then raising the hips into the take off phase. This usually results in the next to last stride being longer than normal and the final stride being up to 25 centimeters shorter than a normal running stride. It must be emphasized that the hip sink and stride adjustment all happen in response to the athlete's postural adjustments in preparation for the take off. At take off ensure the hips are forward.

When the take off foot is placed on the board, it is well ahead of the body's centre of gravity and should strike the board on the mid line.

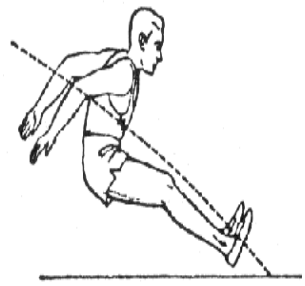




The heel of the take off foot will strike first allowing a rolling action onto to the ball and then the toes of the foot to give maximum vertical lift. This vertical impulse is further assisted by the upward acceleration of the "free" limbs, the arms and the non take off leg, against the braced take- off leg.

The Flight Through The Air

Speed and lift generated on the runway and through take off can result in a good distance. After a take off the athlete tends to have forward rotation which, if not corrected, will result in the feet hitting the sand early and a loss of distance in the jump. The cyclic forward movement of the legs and arms, as seen in the hitch-kick for example, will correct this forward rotation.



The Landing

During the landing the athlete is aiming to get the heels as far away from the take off board as is possible. The ideal landing position is shown in the diagram opposite where the dotted line represents the projected flight path of the body's centre of gravity. The heels will need to land just before the projected flight path to ensure the athlete does not fall back into the sand.

Triple Jump Training- Tiombé Hurd

General Training/General Strength (G.S.)
• G.S. is training that is not directly related to jumping.
• G.S. includes activities where the body's own resistance is overcome. Weights are not involved…use your own body's weight.
• G.S. is important because it teaches body control.
• G.S. deals with controlling power.
• G.S. strengthens your ligaments and tendons. You don't want to be stronger than your connective tissues can deal with or else you will get hurt.
• G.S. is a good recovery modality.
• G.S. training is a prerequisite and should come first in the two different training phases (Preparation Phase and Competition Phase). It should be done heavily in September and October, but also included in training all year long.
• G.S. serves as a support system for the speed and power development program.
• G.S. is not the primary concern but can take precedence at times when high speed and power training levels have already been achieved.
• As you get older and more experienced, you don't need to spend as much time in the general phase.

Speed and Power Needs
• A horizontal jumper's speed and power capabilities are the greatest determinants of success. Therefore, the speed and power development training program is the most crucial element for an emerging jumper wishing to achieve elite success.

Strength Training for Power
• The strength training program is a support system for the speed and power development program.
• Strength training, like speed and power training, is a neuromuscular type of training (sprints, jumps, throws & core lifts). So, errors in the planning and administration of the strength program will harm the achievement of speed and power improvement.
• Jumpers need to withstand impact…that's why they need to squat.
• When you train in deep positions you affect the abs, spine and hips. When you train in higher positions you affect the legs.
• Olympic lifting is a crucial component of the speed and power training program. These lifts improve power and coordination. They are like a blender and make all the other elements of your training come together. Relatively constant volumes of olympic lifting (power clean, jerk & snatch) should be included at all times.

Training Programs
• Most successful training programs show 50-60% of training time dedicated to neuromuscular work (high intensity training consisting of high speeds of movement, overcoming great resistance, or anything in between).
• If you train 6 days a week, you should devote 3-4 days to speed and power, neuromuscular work.
• Training the neuromuscular system requires long rest periods
• Generally speaking, neuromuscular training and G.S. should not be mixed in the same session.
• If you stress your body, it will learn to adapt to that in some way. Most training cycles last from 21-28 days because that's the time frame that your body shows high levels of adaptation. For that reason, shifts in training are needed periodically…every four weeks. Once you achieve the adaptation, you should move on.
• Adaptations are specific, so send clear messages. Do I want to be explosive today? Do I want to have endurance today?
• Adaptation is also a form of injury prevention – it changes things up so they are not so stressful on the body. You need new challenges.
• Contrast in training is important. Example: All-out bounding versus jumping rope…your body needs to notice differences.
• Variety and contrast must constantly be included in the training program to foster adaptation, increase motor learning, and prevent injury. This contrast is employed through a variety of training activities that vary in factors such as number of contacts, rhythms, movements, direction of force application, resistance, etc.

• The fourth week of each cycle should be used for rest and recovery. You should use that week for testing (ex. time trial, maxing out in the weight room, standing long jump, standing triple jump, etc.). You don't get strong in the weight room, you get strong during the rest period…your body is adapting.
• Radical changes in training should be started early in the year (something that is so radical that it will take a while to change; ex. switching from double arm to single arm technique).
• A certain volume of training is needed to attain elite status.
(Volume: The amount of training you do.)
• Volume tends to decrease and intensity tends to increase over the course of the year.
(Intensity: The difficulty of the training.)
• Intensity increases because triple jump is intense and you have to prepare yourself.
• Intensity should be increased over time. You have to increase demand throughout training or else you won't progress.

<u>Two Training Phases of the Year</u>

Preparation Phase
• General: training that is not directly related to the event
• Specific: training that resembles the event or its demands

Competition Phase
• Volume decreases. Intensity Increases.
• Competitions are intense so intensity should not drop.
• Cue systems have a lot to do with peaking. You should shift your cueing focuses four weeks prior to a big event.
• It is a lot easier to peak and then maintain it then trying to predict an exact time you will peak.
• Before competitions do not do heavy slow movements (ex. heavy squats). Instead you want to do a few heavy quick movements (ex. clean or snatch).
• When you have a break in competitions (ex. March), keep your intensity high but you can increase volume also because there are no upcoming meets.

<u>Running Training</u>

Acceleration Development – prepares the body to run fast
•10-40m (total no more than 300m)
• Should be run fast
• 2-3 minute recoveries
(Can also include resisted running, which is a valuable tool for specific power development)

Speed Development – teaching the body to run fast
• 40-80m (total no more than 500m)
• 4-6 minute recoveries

Speed Endurance – stabilizing
• 80-150m (total no more than 900m)
• High intensity
• Done throughout the competitive season
• Coordination work - it makes your approach feel comfortable
• 5-10 minute recoveries

Training Should be Done in this Order:

1. General Strength – training that uses the body's own weight – should always be in the program
Endurance Training
Circuits
Tempo Work
Mobility Work
Stabilization Work
Medicine Balls – a good way to stress small muscles – trains you to take impact
Pillar Work – abs, spine, core work

Connective Tissue/Fascial Work

2. *Power – a combination of speed and strength*
Cleans
Snatch
Shot Put Throws
Sled Pulls
Bounding with Sled
Bounding Uphill
Pulling Sled Uphill
Bounding with Weight Vest

3. *Maximal Strength – the maximal force the body is capable of producing. Maximal strength prepares you for impact. If you are stronger, you can get away with some mistakes in the jump.*
Static Lifts – Squats, Bench, Step Ups
Lifting Heavy

4. *Elastic Strength – Plyometrics – force generated through a stretched reflex of the muscle.*
Intensity level should increase
In-Place Jumps: Jumping Rope, Tuck Jumps (simplest)
Bounding (progressive)
Jumping (progressive)
Boxes/Depth Jumps (highest intensity; causes the most stress)
Ballistic Lifts: Jumps with weights, bounds with weights, jump squats, lunge jumps,

***Before you train any one of these four areas in an advanced fashion, make sure you take care of the previous one.**

Stability/Agility Work

				Exercises	**Volume**
Wk1	**Wk2**	**Wk3**	**Wk4**		
*		*		Dorsi flexion walk – walking on heels with toes up	3x20m
*			*	Hurdle walking with change of direction	3x6h
*		*		Walking: Rolling from heel to toe	3x20m
*			*	Hurdle walking – forwards	3x6h
*		*		Forward – straight legged toe bouncing	3x20m
*			*	Hurdle walking – sideways (fast)	3x6h
*		*		Straight leg swings over hurdles	3x6h
	*		*	Under and Over	3x6h
	*	*		Decline knee bends	3x10ea.
	*		*	Ankle Stability (Rocker board work)	3x30sec
	*	*		Toe Clawing	3x20
	*		*	Bent single leg hip raises – on a raised platform	3x15ea.

General Technical Work

Jumping Circuit

Organization:

- The activity should be done on a surface with some give to it (for example: grass).
- To be done over a distance of 20 meters for each exercise

(4 cones over 80 meters total).

- Each group of 4 exercises should be done in a continuous fashion, one after the other, followed by a walk-back recovery.
- All exercises comprise one complete set.
- A minimum of 5 minutes recovery should be taken between each full set.
- The intensity of the exercises should be between 60% and 70% of maximum effort.
- Above all things, good technique must be executed at all times.

Exercises:
20m Zig – Zag jumps (two-footed)
20m Hops (right leg)
20m Hops (left leg)
20m Alternate leg bounds
(Walk Back Recovery)
20m Power Skips
20m Side Skipping (to the right)
20m Side Skipping (to the left)
20m Backwards bounds
(Walk Back Recovery)
20m Bunny Hops+Tuck Jump
20m Reactive Rebounds (power skips w/low height & very reactive feet)
20m Bunny Hops
20m Double-Leg Straight-Legged Bounces (Like a pogo stick but maintain a stable core)
(5 Minutes Recovery)

Multiple Jumps

Organization:

- The activity should be done on a surface with some give to it
(for example: grass).
- To be done over distances of 20-40 meters each exercise.
- Each exercise should be done individually followed by a walk-back recovery.
- All exercises comprise one complete set.
- A minimum of 5 minutes recovery should be taken between each set.
- The intensity of the exercises should be between 60% and 70% of maximum effort.
- Above all things, good technique must be executed at all times. It is better to do multiple jumps over a shorter distance and maintain good technique than do jumps over a long distance and fall apart technically for halfway through.

Exercises:
Right Hops
Left Hops
Alternate Bounds
Hop-Step-Step Continuous
Hop-Step Continuous
Hop-Hop-Step Continuous
In Place: 4 x Jack Knife Toe Touches (Jump as high as you can)
(5 Minutes Recovery)

General Strength Work

Circuit Training:
General Conditioning Exercises
20-30 seconds per exercise. No rest in between each exercise.
3-minutes rest after each complete set. Do 3-5 sets.

1	Dips
2	Sit Ups

3	Squat Thrusts
4	Back Raises
5	Side Raise (A)
6	Split Jumps
7	Push Ups
8	Rocking Back Raises
9	Standing Squats
10	Side Raise (B)
11	V sits
12	Burpees

Medicine Ball Work:

1	Backward overhead throw
2	Forward overhead throw
3	Sit up throws
4	Twisting throws
5	Step forward chest pass throws
6	Single leg kneeling overhead throws
7	Jumping leg throws
8	Leg Pushes
9	Hamstring Flicks
10	Squat Press

Shot Put Throws:
Stimulates the body and has coordination and postural demands.
Good during peak times.

1	Between Legs Forward
2	Overhead Throw Forward with Step
3	Between Legs Backwards
4	Kneeling Overhead Forward
5	Hammer Hip Throw, R & L
6	Squat Chest
7	Over Shoulder with Step

Waterloo:

General Conditioning Exercises
20-30 seconds per exercise. No rest in between each exercise.
3-minutes rest after each complete set. Do 3-5 sets.

1	Prisoner Squats
2	V-Sits
3	Pushups
4	Back Hypers with Twist
5	Rocket Jumps
6	Leg Toss
7	Rockies
8	Crunch
9	Decline Pushups

Baatan:
General Conditioning Exercises
20-30 seconds per exercise. No rest in between each exercise.
3-minutes rest after each complete set. Do 3-5 sets.

1	Single Leg Squat
2	Toe Touches
3	Pushups
4	Back Hypers
5	Yogi Hamstring Development
6	Side Ups
7	Lunge Good Mornings
8	Lunge Walks
9	Pushup Toe-to-Hands Walkups

Verdun:
Exercises to Strengthen Hips and Legs
Done over 20 meters. Pick three exercises and do each three times.

1	Low Walks
2	Reverse Low Walks
3	Duck Lunge Walks
4	Lateral Duck Walks
5	Lunge Extension

Pedestal:
Core Strength Exercises
Do each exercise three times, 10 reps each time.

1	Prone: Elbow Stand, Single Leg Raise
2	Supine: Elbow Stand, Single Leg Raise
3	Prone: Hand Stand, Single Leg Raise

4	Supine: Hand Stand, Single Leg Raise
5	Lateral: Elbow Stand, Single Leg Raise (each side)
6	Lateral: Hand Stand, Single Leg Raise (each side)