



# Fundamentals of the Long Jump

## The Need for a Long-Term Unified Training Plan

Written by Matt Taylor and Patrick Beith

### The Perfect Jump

The weather is overcast, with periodic rain, at the 1968 Olympics in Mexico City. Seventeen athletes have made it here to the finals of the Olympic long jump. Three athletes have fouled their first jumps as the official calls out, “Beamon, United States.”

All eyes in the packed stands are focused on the favorite – Bob Beamon – who has won 22 of 23 meets he’s entered this season. Yesterday, the American almost missed making the finals, fouling on his first two attempts during the trials. A final attempt “safety jump” brings him to this point in time.

Long and lanky, Beamon strides over to his mark and begins his typical pre-jump ritual. Head down and motionless, he stands on the runway visualizing a perfect jump. Over to the side, mentor and coach Ralph Boston shouts out, “Come on, make it a good one.”

Motionless for twenty seconds, Beamon replays the approach and take-off, watching himself soar through the air. He is confident he will jump far and continually reminds himself, “Don’t foul. Don’t foul. Don’t foul.”

Left foot to his mark, the right foot drops back, pushes off, and his approach begins. What follows are four seconds of controlled acceleration to the board, nine strides of the left foot at world-class speed — little different from his opponents – until he hits the board. Beamon’s eyes focus to the sky, he is instantly over the heads of the officials sitting on both sides of the pit. Mid-flight, Beamon’s face takes on the expression of surprise — or is it shock? Landing, he bounds out of the pit half hopping, half galloping.

Beamon is sure that he has broken the world record.

Time crawls along at an unbearable pace as Beamon paces. The measuring device doesn’t reach far enough. Beamon waits as the officials produce a steel tape. Measuring once, then again, expressionless officials give no indication of distance.

Meanwhile, the crowd continues the cheer that started the instant Beamon hit the pit. Several excruciating minutes later, the distance is flashed on the scoreboard at 8.90 meters — 29 feet, 2.5 inches, a new long jump world record. Beamon leaps in the air, the

crowd rises to its feet and pandemonium ensues. The 22-year-old has shattered the record by 21 ¾ inches. Prior to Beamon's jump, no one had ever jumped 28 feet. Beamon drops to his knees and weeps uncontrollably.

It is a mark that stands for decades, 23 years to be exact. To this day it is known as "the miracle jump," one of the most amazing feats in the history of sport.

How did Beamon do it?

One thing's for certain: Raw talent alone did not carry Beamon to the long jump world record. Today, it's no different. Just like in Beamon's time, athletes today seeking to become successful long jumpers must develop their minds and bodies with a great deal of discipline and consistency, a process that can take years. But it can be tough as athletes train under several coaches during the development years, each coach bringing his or her own experiences, training styles, and techniques to the development process. A lack of continuity from coach to coach can cause confusion, injury, and attrition. With a long-term unified training plan, however, athletes can prepare themselves for these transitions while simultaneously progressing towards becoming the best long jumper possible.

All jumpers aspire to the perfect jump, one in which factors that control the unassisted human flight combine to defy gravity, ignore barriers and extend the limits beyond what was once thought impossible. Forty years ago, Bob Beamon proved it could be done. This booklet is designed for those who want to dedicate their minds and bodies – their careers – to chasing the perfect jump.

Dan Pfaff, president of Tiger Bar Sports, which trains elite long jumpers, estimates that the number of coaches under which a jumper competes during his or her career is five or six: two or three age group coaches, a junior high coach, a high school coach, a college coach or two, and any number of coaches after college.

"In a way, it is good for athletes to have multiple coaches and have an eclectic exposure to a lot of ideas and concepts, but it can be dangerous on the other hand," says Pfaff, who has coached 33 Olympic jumpers and 29 NCAA champions. "If some of those coaches were not up to snuff on certain concepts or teachings then the athlete can suffer. There can be overuse injuries or overtraining or psychological viruses that were perpetrated onto the athlete."

Pfaff points to football as a model for what an integrated long jump training program could be.

"A really good community football program: the pee-wees run into the junior high program, the junior high runs into the high school program, and there is great continuity to the program," he says.

This is not to say that every coach should be running the exact same program, as approaches to coaching the long jump can and should differ between the many great track and field coaches and volunteers. However, introducing a systematic program that spans the career of an athlete serves as a foundation with which coaches can come together to

discuss and share ideas, also easing the burden on higher-level coaches who often wonder whether athletes have learned fundamental skills at the previous levels of development.

Connecting the training received at the youth, high school and collegiate levels provides athletes desiring to compete at the elite level an exhaustive and integrated foundation. The goal of this booklet is to help athletes and coaches do just that. First, we will embark on a crash course through the history of the long jump. Next, we will describe the critical training components of the event. Third, we will provide advice on how to implement these training components properly at each level of development from youth through college. Finally, we will discuss additional topics of interest surrounding the long jump. Ultimately this booklet will help athletes and coaches design personalized long jump training programs that address short-term goals while maximizing long-term potential.

“It is important to connect the training between the youth, collegiate and elite levels of training. This gives an individual athlete a greater chance of success, because there is a long-range plan to one's career. This way, an athlete can be brought along at a gradual, safe and consistent training plan. That limits the chance of injury and burn out. But this is only possible if coaches at each level are all on the same page.”

– Kevin Murphy, Massachusetts High School Hall of Fame track and field coach

## **History of the 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

In Ancient Greece, athletes were permitted to carry weights in each hand known as halteres. While we do not have any training manuals from these early times, it is reasonable to assume that the athlete would swing the weights forward when jumping and thus add forward momentum. At the very end of the jump, the athlete might have swung down and back to change his center of gravity to stretch the legs and increase the overall distance.<sup>1</sup>

The longest recorded jump in Ancient Greek history was made by a man named Chionis who propelled himself 7 meters, 5 centimeters (23 feet, 1.5 inches) from the take-off board. The first Olympic victor in the long jump was Lampis of Sparta, who in 708 B.C. won the pentathlon — a contest consisting of five separate events, including the long jump.

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<sup>1</sup> [Ancient Origins](#). The Times/The Sunday Times. Retrieved on [2006-10-29, 2006](#). Retrieved on October 29, 2006.

Since 1896, the long jump has been a part of the Olympics. In 1914, Dr. Harry Eaton Stewart recommended the “running broad jump” as a standardized track and field event for women (it was not until 1928 that women were allowed to compete in the event at the Olympic level).<sup>2</sup>

### Modern Long Jump World Record Progression

#### Men

MARK	ATHLETE	DATE
<b>8.21 (26' 11¼")</b>	Ralph Boston (USA)	8/12/1960
<b>8.24 (27' 0½")</b>	Ralph Boston (USA)	5/27/1961
<b>8.28 (27' 2")</b>	Ralph Boston (USA)	7/16/1961
<b>8.31 (27' ¾")</b>	Igor Ter-Ovanesyan (URS)	6/10/1962
<b>8.31 (27' ¾")</b>	Ralph Boston (USA)	8/15/1964
<b>8.34 (27' 4½")</b>	Ralph Boston (USA)	9/12/1964
<b>8.35 (27' 4¾")</b>	Ralph Boston (USA)	5/29/1965
<b>8.35 (27' 4¾")</b>	Igor Ter-Ovanesyan (URS)	10/19/1967
<b>8.90 (29' 2½")</b>	Bob Beamon (USA)	10/18/1968
<b>8.95 (29' 4½")</b>	Mike Powell (USA)	8/30/1991

#### Women

MARK	ATHLETE	DATE
<b>6.92 (22' 8½")</b>	Angela Voigt (GDR)	5/9/1976
<b>6.99 (22' 11¼")</b>	Siegrun Siegl (GDR)	7/26/1976
<b>7.07 (23' 2½")</b>	Vilma Bardauskiené (URS)	8/18/1978
<b>7.09 (23' ¾")</b>	Vilma Bardauskiené (URS)	8/29/1978
<b>7.2 (23' 7½")</b>	Valy Ionescu (ROM)	8/1/1982
<b>7.21 (23' 8")</b>	Anișoara Cușmir (ROM)	5/15/1983
<b>7.43 (24' 4½")</b>	Anișoara Cușmir (ROM)	6/4/1983

<sup>2</sup> Tricard, Louise Mead (1996-07-01). *American Women's Track & Field: A History, 1895 Through 1980*. McFarland & Company, 60-61. ISBN 0-7864-0219-9.

<b>7.44 (24' 5")</b>	Heike Drechsler (GDR)	9/22/1985
<b>7.45 (24' 5½")</b>	Heike Drechsler (GDR)	6/21/1986
<b>7.45 (24' 5½")</b>	Heike Drechsler (GDR)	7/3/1986
<b>7.45 (24' 5½")</b>	Jackie Joyner-Kersey (USA)	8/13/1987
<b>7.52 (24' 8¼")</b>	Galina Chistyakova (URS)	6/11/1988

### **Top 3 Recorded Long Jumps of All Time**

#### **Men**

<b>Mark m (ft)</b>	<b>Athlete</b>	<b>Country</b>	<b>Date</b>
8.95 (29' 4 1/2)	Mike Powell	United States	30-Aug-91
8.90A (29' 2 1/2)	Bob Beamon	United States	18-Oct-68
8.87 (29' 1 1/4)	Carl Lewis	United States	30-Aug-91

#### **Women**

<b>Mark m (ft)</b>	<b>Athlete</b>	<b>Country</b>	<b>Date</b>
7.52 (24' 8 1/4)	Galina Chistyakova	USSR	11-Jun-88
7.49 (24' 7)	Jackie Joyner-Kersey	United States	22-May-94
7.48 (24' 6 1/2)	Heike Drechsler	Germany	8-Jul-92

### **Physical Requirements of the Long Jump**

As with any sport, the goal of the long jumper is to develop the most efficient technique possible while maximizing the performance of every muscle in the body. This can be accomplished by balancing speed, power, strength, jumping ability and coordination. The onus lies in sufficiently developing each attribute, and this focus must serve as the central theme in any effective training regimen.

The development of five distinct areas will create a more balanced and competitive athlete:

- **Coordination**
- **Endurance**
- **Flexibility**
- **Speed**
- **Strength**

## **Coordination**

Coordination is the ability to accurately and efficiently move the body and its parts in order to accomplish a task. Often overlooked in training for the long jump, coordination serves a critical function in the athlete's success. There are three basic subsets of coordination on which athletes and coaches should focus: agility, balance, and mobility.

Agility is the ability to move and change direction of the body quickly and effectively while remaining under control. To develop adequate levels of agility, an athlete must be able to accurately perform unpatterned and unrehearsed movements.

Balance is the ability to minimize and recover from postural sway. It is the body's awareness to know where it is in an environment while maintaining an optimal or desired position. Balance really refers to the ability of the body to remain stable and can improve in both static and dynamic atmospheres.

Mobility refers to the range of motion that a joint or series of joints are able to move. Long jumpers must develop mobility to a high level in order to move the joints through appropriate amplitudes of motion during competition.

Horizontal jumping techniques, when taught in a planned progression, will ultimately address most skills necessary to achieve satisfactory levels of coordination.

## **Endurance**

Endurance is important in just about any sport, but must be developed to the specific demands of jumps training and performance. Coaches must implement two types of endurance when forming a training regimen for long jumpers — anaerobic and aerobic.

Anaerobic literally means “without oxygen.” During periods of high exertion (90-100% intensity), oxygen is not the primary fuel source for your muscles. Anaerobic training allows the body to produce energy in the absence of oxygen.

Anaerobic endurance comprises the majority of the endurance training for long jumpers, contributing to the development of speed and power in the long jump. Anaerobic exercises can also help prepare the athlete for more demanding types of training further into the macro cycle. Circuit training utilizing general strength or medicine ball exercises are activities that increase anaerobic endurance and prepare the long jumper for more demanding training later in the program. Interval training, which will be discussed in detail later, is also used to develop the anaerobic system.

Aerobic training creates the conditions in which the body works and fuels itself in the presence of oxygen. Aerobic exercises such as jogging and distance running are usually performed at 55-65% intensity.

There is no pressing need for long jumpers to spend significant amounts time on aerobic training as the event simply does not require significant development of this energy system. Short but very demanding interval running will be sufficient when developing aerobic endurance.

## **Flexibility**

Flexibility is the ability to attain range of movement at specific joints and is vital for all athletes, especially long jumpers.

Two types of flexibility must be addressed in any training program: static and dynamic. Static flexibility refers to the ability to achieve large ranges of motion at the joints plus the ability to demonstrate pliability in the muscle tissue itself. Dynamic flexibility involves the ability to move joints through wide ranges of motion at high speeds.

Dynamic flexibility should be the main focus at the beginning of the workout while the body is getting warmed up. This prepares the body to endure specific ranges of motion during the rest of practice.

At the end of a practice is an ideal time to static stretch to work on and improve muscle length.

## **Speed**

Speed training is much more than simply coaching an athlete to run faster. In reality, it requires work on three separate components: acceleration, maximal velocity, and speed endurance.

Acceleration is the rate at which the speed of an object is increasing. The acceleration phase takes place the first 0-30 meters or approximately 3-4 seconds after the start of a sprint. During the earliest parts of acceleration, especially the first two steps, the athlete must overcome the weight of his or her body (inertia) by moving it forward as quickly as possible. To attain the greatest results, overcoming inertia requires significant degrees of strength and power. Some effective workouts/exercises to help develop acceleration include short sprints up to 30 meters, sled pulls, stadiums, and short uphill sprints.

After approximately 30-40 meters, acceleration transitions into maximum velocity. Maximum velocity is defined as the point at which ground contact times are reduced to a level where meaningful force application is no longer possible. Maximum velocity is another way of saying running at top speed. Exercises that train an athlete to optimize maximal speed include fly runs and sprint-float-sprint drills.

Long jumpers must be able to maintain coordination at high speeds to continue running at top or near top speed. Speed endurance indicates an athlete's ability to maintain top speed over a prescribed distance or period of time, but it is also the ability to slow the rate of deceleration while running at full intensity. After acceleration and maximum velocity have been developed, speed endurance will be utilized. Once an athlete has achieved their maximum velocity, he or she can only maintain that top speed for 1-2 seconds before deceleration begins and optimal speed endurance is needed. However, training this area does not require the same level of focus for long jumpers as it does for sprinters since long jumpers do not need to maintain maximal speed for long durations. Workouts that include long hill runs or sprints of 80-150 meters can help develop speed endurance.

## **Strength**

To achieve perfection in the long jump, the athlete must generate high levels of force. An athlete's overall strength will determine how much force he or she can summon during a jump. Four aspects of strength that must be addressed in any effective training regimen include general strength, maximal strength, power, and elastic strength.

General strength simply refers to the jumper's ability to handle his or her own body weight. General strength training often consists of bodyweight exercises that involve little or no external loading.

Maximal strength refers to the maximum amount of force that can be generated (static or dynamic). Training that develops maximal strength often includes more intense resistance exercises such as squatting and pressing (as well as their variations). Some Olympic lifts like cleans and snatches are also highly effective in the improvement of maximal strength.

Power should not be confused with maximal strength because it actually refers to the ability to generate force quickly—not the maximum force that can be generated. The importance of power development cannot be understated, as jumpers must overcome resistance while running at high speeds despite the fact that the time available to generate such force is short. The most effective exercises for generating power are those that emphasize high-speed movements and moderate resistance. Olympic lifts, throwing activities, and plyometrics will all help convert raw maximal strength into explosive power that will translate into longer jumps.

Elastic strength is the ability to produce force using the body's stretch reflex – overcoming a resistance with a fast contraction. A great way to develop elastic strength is to add jumping exercises and plyometrics into the training routine.

## **Technical Requirements of the Long Jump**

The long jump requires very specific techniques that must be perfected through consistent routine. The event can be broken down into five segments: starting position, approach, final two strides, flight, and landing. An athlete must continually hone each of the five segments to achieve his or her very best distances in the event.

### **Starting Position**

Long jumpers should begin with a staggered stance, placing the feet close together with their weight distributed equally between each foot. The knees should be flexed so that the shins are at acute angles to the ground. Just prior to pushing off to begin the approach, the athlete's hips should be slightly higher than his or her shoulders. Both hips should be flexed so that the knees and chest are as close as possible. Finally, the head should be relaxed and neutrally aligned with the spine.

*Starting Movements:* The athlete begins with an extension of the hip and front leg that is followed closely by flexion of the rear leg. It is important to get a good, strong push against the ground before the rear knee is ever lifted. This will apply maximum force towards the ground and properly initiate the approach run.

Next, the front leg should be completely extended. The athlete should have a rapid pendulum motion with the arms to take full advantage of his or her momentum. The goal here is an entire displacement of the body as a unit, while maintaining forward and upward trajectory of the body.

## **The Approach**

While accelerating to maximum speed in preparation for the takeoff may seem like a simple concept, it is the critical starting point for the jump. Even one flaw in the approach will reduce considerably the effectiveness of each of the jump's other elements. For this reason, focus and concentration on the technical aspects of the approach is crucial in order to develop a steady gait towards the foul line. The approach has three primary goals: to attain high horizontal velocity, maintain accuracy with a consistent stride pattern, and maintain proper body position.

The approach length is typically 14-20 steps, with 16-18 steps being most common. The exact number will vary according to age and ability. Athletes should not focus on the literal distance of the approach, but the number of steps; this will result in a consistent stride pattern and accuracy on the takeoff board. An athlete who begins the run with his or her jumping foot forward will always have an even number of steps, while those who start with the jumping foot in the back will use an odd number of steps. Better jumpers tend to have longer runs, resulting in greater velocity and a better chance of achieving a new personal best. While longer runs may result in bigger jumps for more experienced athletes, younger athletes should keep in mind that longer runs also increase the likelihood of error on the board.

The approach itself can be divided into three phases: the drive, the continuation, and the transition.

*Drive Phase:* This initial phase serves as approximately one-third of the entire approach with the primary goal aimed at developing momentum throughout acceleration. The frequency of the stride will start out low but should gradually and consistently increase during acceleration. Athletes should focus on using forceful strides that help achieve high displacement. The long jumper will initially begin the drive phase with a marked forward body lean, but gradually the athlete will use the force from each step to push the body into an upright position. If the athlete tries to force a particular body position and simply raises the head or stands up, momentum will decrease and maximum velocity will not be attained. With proper form and consistency of execution, the head and pelvis will be in neutral alignment with the spine. Finally, maintaining high amplitude of the arms and legs will maximize displacement of each step.

*Continuation Phase:* This is the middle of the approach with a focus of attaining maximum velocity, as well as properly positioning the body for the jump as the athlete nears the board. Just like in the drive phase, the runner should continue to maximize displacement while keeping the head and pelvis neutrally aligned with the spine. Ideally, the runner's feet should contact the ground directly beneath the hips.

*Transition Phase:* Encompassing the final four steps of the approach, the transition phase has the critical purpose of putting the body into the correct position for the takeoff. The characteristics of this phase are identical to those of the continuation phase.

### **Accuracy and Consistency in Approach**

An accurate and consistent approach gives a long jumper the greatest chance at a lifetime best. To help the athlete gain a consistent approach the concept of "steering" is introduced. Steering is the process of adjusting stride length so that takeoff occurs as close to the foul line as possible without going over it. The jumper needs to be taught how to use visual patterns to steer effectively so that the he or she hits board accurately every time.

Therefore, to develop the ability to "steer," the jumper should look at the board early on in the drive phase of the approach. As the run progresses into the continuation phase, the athlete should be able to see the board peripherally so that the head does not move out of proper alignment (neutral with the spine). The runner will not be able to see the board during the transition phase so it is important that the athlete track the board long enough to know where it is by the time they reach the end of the approach.

To help with steering and improve consistency, the jumper should place a mark exactly four strides from the board. Referred to as "the checkmark system," it can help detect any reaching or chopping so that any inconsistency in the approach can be readily detected. Typically, the checkmark will be placed 28-32 feet away for men and 25-29 feet away for women.

### **Approach Management**

Because success in the long jump ultimately can be traced back to the accuracy of the approach, one cannot underestimate the importance of this element of the jump as the focus of technical training. Here are a few approach management tips to keep in mind during training:

- 1.** Stride length and frequency should be inversely proportional when accelerating, meaning as one variable increases, the other decreases. When stride frequency increases too quickly, stride length will shorten, causing the runner to fall short of the board during approach. In addition, when frequency increases too slowly, the posture and amplitude will be thrown off and the jump will suffer.
- 2.** The jumper needs to monitor the drive phase. Too short or too long of a drive phase is one of the quickest and easiest ways to ruin the approach and jump.

3. The ability to maintain a consistent stride length during the transition phase serves as one of the greatest limiting factors for inexperienced long jumpers. In many cases, the jumper begins to anticipate the jump prematurely and starts to shorten his or her stride length. Remember, stride length ultimately determines the effectiveness of the takeoff, again demonstrating the importance and value of using the checkmark system to enhance consistency.

4. Takeoff problems are almost always associated with some error in the approach. A forward or backward lean will prevent maximal velocity and throw off alignment. Other common issues include failing to conserve amplitude of movement and not pushing off aggressively with each stride to attain full displacement.

Remember, horizontal velocity is the most critical factor in determining the overall distance jumped. Speed is critical to success — make sure to continually practice the approach trying to reach perfection in each stage.

“The approach is the No. 1 factor of success or failure of a jump ... start correctly to finish correctly,” Ron McEachran, Iowa State University jumps coach

### **Common Errors in the Approach**

Error - Chopping steps, reaching at the board or constantly faulting.

Corrections – Work on acceleration mechanics and practice the approach to gain confidence and accuracy. Do not look down at the board (“look at the board early; don’t look at the board late”). Use check markers – ensure that the athlete is hitting the markers.

Error – Not reaching top speed or accelerating too late in the approach, which can cause the athlete to feel rushed to jump).

Corrections – Lengthen the approach run or harden acceleration phase.

Error – Athletes laboring at the take off board and getting too little height.

Correction – Shorten the approach run.

Error – Loss of speed approaching the board and reaching at the board.

Corrections – Work on running off the board, and pop ups from 6-8 steps away. Check the approach distance. Make sure the athlete is not looking down at the board. Develop

proper running mechanics. Practice proper approach runs with the athlete until they have confidence they can handle the transfer of their speed into a jump.

### **Final Two Strides**

As we've said already, horizontal velocity is the single the biggest determinant of success in the long jump. The ability to transfer horizontal velocity into vertical velocity is determined during the final two steps of the approach leading into the takeoff. These two steps are going to determine not only the velocity but also the takeoff angle of the jump, ultimately translating into the distance of the jump. The ideal takeoff angle a jumper ought to look for is typically about 25 degrees. Elite jumpers normally display takeoff angles of 19-21 degrees.<sup>3</sup> The transfer of horizontal to vertical velocity must be minimized and this is accomplished through penultimate mechanics.

Penultimate mechanics create vertical velocity at takeoff but ultimately reduce horizontal velocity. Prior to the penultimate step, maximal velocity must be attained on the runway. If the final steps are loud and broken, the athlete is giving up too much velocity to the vertical component. The check mark (25-31 feet out) is used to help develop consistency and make certain that maximal velocity is attained prior to reaching the board.

There will naturally be a change in stride rhythm in the final two steps to increase the vertical component upon takeoff. The penultimate leg is critical because the takeoff foot must be far enough forward for a proper hinge movement. Additionally, the athlete must limit amortization (or ground contact) of the penultimate leg in order to maintain maximum horizontal velocity, lower the center of mass and follow it with a full extension of the leg upon takeoff. A large issue facing most novice long jumpers stems from the athlete trying to gain vertical height by slowing the run to prepare for the takeoff, ultimately reducing horizontal velocity and shortening the length of the jump. To avoid this, athletes must maintain forward velocity and limit vertical velocity as much as possible.

### **Common Errors During the Final 2 Steps**

Error — Loss of speed.

Corrections – The athlete could be preparing too much for the takeoff and setting it up instead of maintaining as much speed as possible. A strength deficit is also possible, resulting in the athlete not being able to convert his or her speed at take off. Make sure the athlete is not looking down at the board.

Error – Stepping side to side away from the midline of the body.

Corrections – The athlete could be focusing on jumping up and not out (i.e., vertical, not

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<sup>3</sup> USA Track & Field Coach Education for the Jumps Level II Curriculum.

horizontal). Lack of strength could also be an issue.

Error - Reaching / braking on the penultimate step. Creates loud 'slapping' sound.

Corrections – The athlete must be active on the penultimate step. Check approach run mechanics and make sure athlete is not looking down at the board. In many cases, a correction simply boils down to practice and discipline.

Error – Hips drop but lose oscillation, causing floating but not much height in jump.

Correction – Pulling the free leg through following the stretch reflex during the penultimate step.

## **Flight**

Takeoff from the board results in the creation of forward rotation. Thus it is vital for the athlete to avoid leaning and to keep the head in line with the body. However, some forward rotation is inevitable due to the thrust of the takeoff foot. The long jumper must counter the forward rotation while airborne, achieved by transferring momentum from the lead knee and opposite arm upon takeoff. Then, it is up to the jumper to counter forward rotation using the hang or hitch kick (although the sail is another option, most long jumpers use either the hang or hitch kick).

The hang will slow forward rotation by extending the hands and feet away from the body. The hitch kick will actually counter forward rotation due to the motion or cycling of the arms and legs. Although it is more difficult and requires more time, the hitch kick has become the dominant method for professional long jumpers. It requires 2 ½ full cycles, which is considerable airtime. The hang is far simpler and recommended for beginners.

## **Common Errors in Flight**

First, check approach run and penultimate (final two) steps to see if they are executed properly.

Error – Rotating too far forward in the air.

Corrections – Extend arms behind the head (in hang) or opposite arm from the take-off leg (in hitch) to force the athlete's body to stop or slow down forward rotation. Check the takeoff; the free leg should aid in pelvic alignment, which counters forward rotation. Forward lean at take-off also creates forward rotation from a late acceleration phase.

Error – Feet not getting in front of the body in the air prior to landing.

Correction – Again, check the takeoff mechanics first. Bring arms behind the head and bring the chest forward to bring the legs up and forward.

## **Landing**

At takeoff, the center of mass shifts according to the trajectory of the jump. To counter this and prepare for landing, the jumper should extend the legs forward while keeping the arms behind the hips upon contact with the sand. The head and chest should be dropped forward. Combined, these techniques will alter the center of mass and prevent the athlete from falling back into the pit after landing.

Ultimately, athletes want to be in the flight phase as long as possible. In preparation for landing, focus on “letting the ground come to you.” The arms should extend forward and the heels should make the first mark with that mark being the closest to the board / foul line. With the momentum created, as the legs collapse, the athlete’s rear end is pulled forward and should contact the sand in the same spot as the heels at the initial contact point.

### **Common Errors in the Landing**

Most problems and errors on landings are due to improper takeoffs and inconsistent approaches. Always look first to correct the movements that precede the errors that you see.

Error - Feet land under the center of mass, and not out in front, making athlete look like they are standing up in the pit.

Correction – Athlete could be jumping up and not out and up. There also could be a loss of speed before takeoff. Practice landing mechanics with heel landing first and toes pointed up. Fold the body and swing the arms forward to bring the legs forward and up.

## **Coaching the Long Jump**

For the long jump coach, identifying athletes with the traits and characteristics best suited for success in the event serves as the initial challenge to be addressed and overcome.

Though not the only factor to be considered, speed ultimately goes a long way in determining success in the event. Other abilities and characteristics to look for in a long jumper include, but are not limited to: strength, power, coordination, flexibility and commitment. A few of these come naturally, but all can be developed in an athlete to varying degrees.

Athletes from other sports who are jumpers and are fast, in a variety of settings, are all potential long jumpers. During the talent identification process, look for good all-around athletes and athletes from sports such as volleyball, soccer, and basketball where there are quick changes of direction, fast acceleration, and jumps off of the acceleration.

## **Testing**

Testing can identify an athlete's strengths and weaknesses. Testing used over the course of the season and an athlete's career provides data for both the coach and athlete, also allowing the coach to establish individual benchmarks for improvement.

While no test can predict with precision great performances in the long jump, certain results in some tests may serve as an indicator of success.

The table below provides a subjective rating for performances in some frequently used tests. Keep in mind that these values are rated with respect to elite level performances.

<b><u>Test</u></b>		<b><u>Male</u></b>	<b><u>Female</u></b>
30m FAT (in seconds)	Elite	3.8	4.15
	Good	3.86	4.21
	Average	3.92	4.27
Standing Long Jump (in meters)	Elite	3.5	2.8
	Good	3.4	2.7
	Average	3.3	2.65
Overhead Backwards Med Ball Toss (in meters) (Men 16 lb., Women 4K)	Elite	18	16.5
	Good	17.5	16
	Average	17	15.5
Between Leg Forward Med Ball Toss (in meters) (Men 16 lb., Women 4K)	Elite	16.5	15.5
	Good	16	15
	Average	15.5	14.5
10m Fly (in seconds) (with 30m Acceleration Zone)	Elite	0.94	1.05
	Good	0.97	1.08
	Average	0.99	1.12
150m (in seconds) (Hand Timed)	Elite	14.9	17.2
	Good	15.4	17.8
	Average	15.8	18.5
Deep Squat Single Rep Max (Per Pound Bodyweight)	Elite	2.2	2
	Good	2.1	1.9
	Average	2	1.8
Clean Single Rep Max (Per Pound Bodyweight)	Elite	1.7	1.6
	Good	1.6	1.5
	Average	1.5	1.4

Source: *Complete Track and Field Conditioning: The Jumps* by Boo Schexnayder

## Structuring the Timeline of a Long Jump Training Program

The success of your long jump team depends heavily on a carefully structured training program. The basic outline of a training program can be broken down into different phases focusing on certain training elements specific to the demands of each training unit. To maintain consistency from year to year, objectives for each phase should remain consistent. Neither the segment lengths nor the objectives are set in stone. Therefore they may be altered depending on training location, experience level of athletes, or whether training is for indoor or outdoor track and field or both.

Here is one example of a yearly training program:

	<b>Length</b>	<b>Objective</b>
<b>Phase 1</b>	12-15 weeks	Work on general strength, mobility, conditioning, and technique
<b>Phase 2</b>	8 weeks	Work on specific fitness goals and techniques
<b>Phase 3</b>	8 weeks	Compete during indoor season
<b>Phase 4</b>	8 weeks	Modify technique and prepare for upcoming season
<b>Phase 5</b>	8 weeks	Compete during outdoor season
<b>Phase 6</b>	4 weeks	Recovery/Planning for next year

Phases 4 and 5 are the most critical with Phase 4 occurring just prior to the start of the season and Phase 5 occurring during the season. These two phases can be combined to form a macro cycle that can be broken down as follows:

	<b>Length</b>	<b>Objective</b>
<b>Phases 4 &amp; 5</b>	16 weeks	First 5-6 weeks: Infrastructure work Second 5-6 weeks: Event specific work Third 5-6 weeks: Competition work

Michael Pullins, who coaches the successful jumps program at the University of Southern California, describes the three main phases of a typical yearly training program:

“My training program is designed around the collegiate season [macro cycle]. It generally starts shortly after the fall semester with a general conditioning phase. That phase will last approximately three months (33%), and the focus is on overall physical conditioning.

The second part of the macro cycle is referred to as the special preparation phase, which also lasts approximately three months (33%). During the special preparation period, the new athletes are introduced to new skills. The demand is usually greater on the athletes during this period of progressive loading. Athletes are required to perform a variety of running, jumping, and strength work specifically designed for jumpers.

The third part of the cycle is the specific preparation phase. This phase takes place during championship time of the season. It also lasts approximately three months and makes up roughly 33% of the macro cycle. During this period we focus on specific skills and techniques for that particular jumper. My chief concern here is our usage of the energy demands for that event. For example, the jumper’s workload is much lighter and an enormous emphasis is placed on details.”

William Freeman, in his *Coaching High School Track & Field: Long Jump* program, also breaks his training program into three main segments. Here is an example of his macro cycle training plan:

**12-15-Week High School Macro Cycle**

**First 4-5 Weeks – Work on general development — building the body to train — including strength, mobility, and conditioning.**

The emphasis of this phase is to establish a conditioning base, focusing on strength, speed, endurance, flexibility, and coordination. This should be accomplished in a relatively balanced manner since each component is important for translating training into meet success.

The warm-up circuit (discussed later in this chapter) is a critical component and should become a staple routine any jumper.

Speed training focuses on improving acceleration. It should occur every other day and should not last more than 15-20 minutes. Two options for speed training include sprint drills and 10-, 20-, and 30-meter intervals in sets of three, making sure the emphasis is on acceleration.

General strength training lays the foundation for later improvements in power that is so crucial for successful long jumping. The training shifts from general to specific as the season approaches, but a balanced general strength program is the critical first step. Some exercises to improve general strength will be discussed in detail later.

Endurance and flexibility exercises are great for daily use and for recovery, but their use should be relatively stable in load. Remember, the purpose of this first phase is to focus on training, not competition. This is also the phase to include weekly jump drills, but using only short approaches.

### **Second 4-5 Weeks – Event-specific work – the bleeding period between general work and a more competitive focus – where specific goals and techniques are emphasized.**

In this second mini-phase, the training focus shifts toward the demands of the long jump itself. This means increasing the volume of training while beginning to focus on meets. For example, speed training should expand to include resistance runs, which help develop both acceleration and power. Weekly jump drills should build in length to prepare athletes for competition. Injuries are more common during this high-load period, so be sure to schedule lighter loads for days that immediately precede and follow meets.

### **Third 4-5 Weeks - Competitive work and focus are key.**

Quality is the key for all training in this final phase, including quality drill work that focuses on the mechanics of the long jump. Competition is now the focus with training taking a secondary role during practice. To help prevent injuries during this phase, be sure to make recovery a prime component of training, especially after jump days.

## **Designing Specific Workouts for a Long Jump Training Program**

After the general outline of a long jump training program is structured, the details can be filled in with various training techniques. It is vital to plan the details of practice in order to fully develop the athlete's strength, endurance, mobility, coordination, and speed. The majority of time should focus on elements of the event occurring on the ground because most characteristics of flight cannot be altered after takeoff. The most successful long jump programs include many running and jumping activities to help teach proper technique and establish good habits. Every training activity should be conducted with some degree of technical teaching in mind.

In the end, each coach will want to create his or her own “training inventory” of workouts. Coaches use the individual elements in the inventory to train the long jumper on a day-to-day basis. As previously mentioned, the inventory elements fall into five basic categories: speed, strength, coordination, endurance, and flexibility.

A jumper’s training should touch upon each of these categories every day. However, the individual time and effort devoted to each category will depend upon the goals for that day and the overall abilities of the athlete. The next few sections describe training elements that accomplish the above goals and can be easily implemented in a coach’s training inventory.

### **Warm-Up Exercises**

To help avoid injury, warm up the muscles, and help improve overall fitness, each practice should begin with a period of warm-up exercises. If athletes expect to perform at a high level in their sport, proper warm-up is crucial. While literally hundreds of warm-up exercises exist for long jump coaches to implement, some recommended exercises include a short jog, backward runs, straight leg bound, skips, carioca, ankle skipping, side shuffling, and build-up accelerations.

### **Long Jump Drills**

Using a remedial learning environment, the coach needs to address skills that are specific to the long jump itself. Drills are used to teach whole skills or significant portions thereof in an environment closely resembling the event itself, including the complex techniques and body movements. This helps the athlete to contextualize the information and then master the skill.

Drills specific to the long jump develop the competition-length approach while teaching progressions for takeoff, flight, and landing. A primary emphasis on ground mechanics is important (90-95% of training time should be devoted to this area) because the body’s flight path is determined by the run and takeoff.<sup>4</sup> The following drills and exercises are specific movements useful for teaching ground mechanics:

Standing long jumps

Squat landing to squat kick out

Arm cycle drills

Short run box jumps

Run-run-jump

Pop-ups

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<sup>4</sup> “Teaching and Coaching the Long Jump,” Boo Schexnayder

Runway rehearsal

Approach drills

Flight mechanics

Power skipping

Continuous take offs

Hurdle jumps

### **Speed Training**

Although mentioned already, it can't be stressed enough that speed and power ultimately determine the length of the jump. As such, a balanced training program includes both acceleration practice and absolute speed practice. Acceleration is the ability to move the body from rest, and the majority of acceleration training will be conducted in 40 meters or less. Some exercises that help develop acceleration include block starts, crouch sprints, and resistance running. Using tire pulls or stadium runs, in which the athlete takes two steps at a time while pushing horizontally, may vary the resistance running exercises.

Absolute speed differs from acceleration in that it involves the ability to move the body and all of its parts rapidly with a high degree of body control. A good workout to develop absolute speed is stadium running in which the athlete takes only one step at a time and pushes vertically.

### **Power Training**

Power is the combination of speed and strength and involves the ability to produce force at a high speed. Resistance running is one way to help develop overall power but there are a number of other exercises to consider in a long jump training regimen. These include: Throwing a medicine ball either backwards over an athlete's head or forward between an athlete's legs; hip throws with a shot put or hammer; squat chest throws; and lunge chest throws, shoulder step throws, or overhead step throws in a staggered stance. All of these exercises and their variations will help develop the power necessary to complete an explosive long jump.

### **Circuit Training**

In addition to the focused strength and power exercises mentioned above, an effective long jump training regimen should begin with circuit training and then progress into weight training. One of the surest methods for enhancing mobility, strength, and stamina is through circuit training. This type of training involves a group of 5-10 exercises that are performed one right after the other. Each exercise is performed for a specific number of repetitions or time frame. Once the repetitions are complete or the time has elapsed, the athlete transitions immediately to the next exercise. Each completed circuit is separated by a rest period. Entire circuit training sessions

can involve anywhere from 2-6 circuits, but this number depends on the experience of the athlete and the goal of the training.

An intangible benefit to circuit training is that it prevents monotony in training by providing a variety of exercises that can be employed in different combinations. A circuit routine may include some of the following exercises:

**Upper Body:** shoulder press, bench dips, medicine ball chest pass, bench press

**Lower Body:** squat jumps, lunges, step ups, shuttle runs, one-leg squats

**Full Body:** burpees, push press, squat thrusts

## **Weight Training**

Successful long jumpers must spend a bulk of the training process in the weight room because strength training contributes to absolute strength, elastic strength, and ultimately power. Only by forcing the muscles to operate beyond their current capacity can an athlete add strength and power. Increasing weight resistance, repetitions at a particular weight, or the number of sets in an exercise can contribute significantly to the success of weight training for a long jumper.

Several exercises can help a long jumper add strength and power, but the Olympic Lifts are the foundation to any training program for this particular sport. Experts recommend the Olympic Lifts for long jumpers because of their track record for adding power and speed. The overall goal of these exercises is to better develop the large muscles in the body, translating them into explosive action. They are also great for jumpers because they utilize multiple muscle groups and joints, thus helping to develop coordination. Recommended Olympic Lifts for a long jump training program include snatch pull, clean pull, front snatch, and snatch squat.

In addition to the Olympic Lifts, weight lifting exercises that focus on specific areas of the body are recommended. Some examples include:

**Full Range of Motion:** full squat, lunge walk, step-ups

**Reduced Range of Motion:** half squat, split squats

**Upper Body:** bench press, incline press, pullovers, weighted pull-ups

Below are example training weeks from LSU jumps coach Todd Lane. It gives the coach and athlete an idea of how to design a specific training program during various stages of the season.

### Pre Season - General

#### **Monday**

- **Warm-up**  
Forward Run

Run and Scoop  
Backwards Run  
Backward Skip with Arm Swings  
Forward Skip with Arm Swings  
Carioca (R)  
Carioca (L)  
Crossover Jog

- **Dynamic Flexibility** (10 each)  
Eagles (F/B)  
Alternate Lateral Lunge  
Splits/Scissors  
Fire Hydrants/Leg Whip/Extender  
Hurdle Seat Exchange  
Inchworms  
Double Knee Tucks  
Lead Leg Lift/Trail Leg Lift  
Lunge Exchange (Straight/Side)
- **Hurdle Mobility** (2x/8 hurdles)  
Straight Leg Lateral (side)  
Dynamic Alternate Walk Over  
Skip-Overs (L-R Lead)  
Single Leg S.O.  
Single Leg Static
- **Sprint Drills** (2\*30 meters)  
A Skips  
Backwards Cycle  
SL Shuffle with Fast Leg (L)  
SL Shuffle with Fast Leg (R)  
A2's – skipping  
AC's – C-skip
- **Multi Jumps** (5x each)  
Standing Long Jump  
3 Double Leg Bounds  
Standing Triple Jump  
Double Double
- **Acceleration Development**  
5x20  
4x30  
3x40 – 3 point
- **Strength**

Cleans 4x4 (floor)  
Pulls 2x4 (knee)  
Squats 5x6  
Beach Press 5x5

- **Multi Throw** (4x)  
Lunge Chest (L-R)  
Shoulder Step (L-R)  
Overhead Step (L-R)
- **Cool down**
- **Static Flexibility**  
Chest Hang  
Deep Squat  
Lateral Squat (L-R)  
Spinal Roll Push  
Spinal Roll Pull  
Butterfly  
Seated Arm Pull (switch)  
Quadriceps Stretch  
Quadriceps Lift (L-R)  
Shoulder Lift

## **Tuesday**

- **Warm-up**  
Forward Run  
Backward Skip  
Backward Run  
Weave Run  
Side Shuffle (L)  
Side Shuffle (R)  
Arm Circle Lunge  
Skip Lunge
- **Dynamic Flexibility** (10 ea)  
Overhead Lunge  
Eagles (F/B)  
Double Knee Tucks  
Roll backs to Modified Hurdler  
Spiderman Walks  
Fence Series
  - Leg Swings (F/B/S)
  - Hip Flexors/Trail Legs/Buttkicks

- **Hurdle mobility** (2\*8 hurdles)
  - Alternate Walk Over
  - Alternate Backward Walk Over
  - Alternate Around the World
  - Lateral Bent Walk Over
  
- **Sprint Drills** (2\* 30 meters)
  - A Skips
  - A Run
  - B Skips
  - Backwards Cycle
  - Straight Leg Shuffle
  
- **Multi Jumps** (2x)
  - Skips for Height
  - Skips for Distance
  - Run-Run-Jump (L-R)
  - Hurdle Jumps (L-R)
  
- **General Strength** (30 sec w/ leg raise)
  - Elbow Stand
    - Prone, Supine, Side (L-R)
  - Hand Stand
    - Prone, Supine, Side (L-R)
  - Low Reach Crunch
  
- **Hip Series** (20 ea)
  - Side Lying Abduction
  - Side Lying Adduction
  - Clam Shell
  - Forward Leg Lift
  - Forward Leg Medial Rotate Abduction
  - Forward Leg Lift Lateral Rotate
  - Side Lying Bicycle
  - Fire Hydrant
  
- **Strength Circuit** (2\*10)
  - Leg Curl
  - Twist Lunges
  - Glute Ham Raise
  - Bent Over Row
  - Lat Pull
  - BW Dips
  - Behind Neck Press

Leg Extensions  
Twisting Sit-ups  
Hanging Knee Lifts  
Russian Twists  
Windmill

- **Cool down**
- **Static Flexibility**
  - Arm Across
  - Overhead Reach and Bend
  - Cross and Hang with Twist
  - Standing Quads (L-R)
  - Static Superman (L-R)
  - Lateral Lunge (Hold)
  - Gastroc/Soleus (STR/Bent)
  - Single Figure 4
  - Press up

### **Wednesday**

- **Warm-up**
  - Forward Run
  - Run and Scoop
  - Backwards Run
  - Backward Skip with Arm Swings
  - Forward Skip with Arm Swings
  - Carioca (R)
  - Carioca (L)
  - Crossover Jog
- **Dynamic Flexibility** (10 each)
  - Eagles (F/B)
  - Alternate Lateral Lunge
  - Splits/Scissors
  - Fire Hydrants/Leg Whip/Extender
  - Hurdle Seat Exchange
  - Inchworms
  - Double Knee Tucks
  - Lead Leg Lift/Trail Leg Lift
  - Lunge Exchange (Straight/Side)
- **Sprint Drills** (2\* 30 meters)
  - A Skips

Backwards Cycle  
SL Shuffle with Fast Leg (L)  
SL Shuffle with Fast Leg (R)  
A2's – skipping  
AC's – C-skip

- **Build Ups**  
4 x 50 meters
- **Speed Development**  
Stadium Runs x 8
- **Multi Jumps**  
LLL  
RRR  
LLRR  
Medial Hops (L-R)  
Lateral Hops (L-R)
- **Weight Training**  
Snatch 5x4  
Bulgarian Squat 4x6  
Incline Press 4x6
- **Multi Throw (4x)**  
Overhead Back  
Between the Legs Forward  
Squat Chest  
Hammer Hip (L-R)
- **Cool down**
- **Static Flexibility**  
Chest Hang  
Deep Squat  
Lateral Squat (L-R)  
Spinal Roll Push  
Spinal Roll Pull  
Butterfly  
Seated Arm Pull (switch)  
Quadriceps Stretch  
Quadriceps Lift (L-R)  
Shoulder Lift

**Thursday**

- **Warm-up**
  - Forward Run
  - Backward Skip
  - Backward Run
  - Weave Run
  - Side Shuffle (L)
  - Side Shuffle (R)
  - Arm Circle Lunge
  - Skip Lunge
  
- **Dynamic Flexibility** (10 ea)
  - Overhead Lunge
  - Eagles (F/B)
  - Double Knee Tucks
  - Roll-backs to Modified Hurdler
  - Spiderman Walks
  - Fence Series
    - Leg Swings (F/B/S)
    - Hip Flexors/Trail Legs/Butt-kicks
  
- **Hurdle mobility** (2\*8 hurdles)
  - Alternate Walk Over
  - Alternate Backward Walk Over
  - Alternate Around the World
  - Lateral Bent Walk Over
  
- **Technical Drills**
  
- **Multi Jumps** (2x)
  - Skips for Height
  - Skips for Distance
  - Run-Run-Jump (L-R)
  - Hurdle Jumps (L-R)
  
- **General Strength**
  - Pushups (\*30)
  - Prisoner Squats
  - Jack Knives
  - Back Hypers
  - Pushup w/ Clap
  - Rocket Jumps
  - Dips
  - Cossack Extensions

L-Overs  
Lying Opposites  
Swimming  
Burpees

Jack Knives (\*30")  
Hypers  
Side Ups (L-R)  
Leg Toss/Toe Touch/Hip Thrust  
Crunches  
Side Lifts  
Back Hypers with Twist  
Crunches with Twist  
L-Overs  
Russian Cossacks (L-R)  
Lying Opposites  
Pelvic Tilt Isometrics  
Pelvic Tilt Deadbug  
Pelvic Tilt Crunches

- **Strength Circuit (2\*10)**

Leg Curl  
Twist Lunges  
Glute Ham Raise  
Bent Over Row  
Lat Pull  
BW Dips  
Behind Neck Press  
Leg Extensions  
Twisting Sit-ups  
Hanging Knee Lifts  
Russian Twists  
Windmill

- **Cool Down**

- **Static Flexibility**

PNF (3x each L-R)  
Glute  
Hamstring  
Knee to Chest  
Leg Over  
Calf  
Prone Quad Stretch

Prone Quad Lift  
Butterfly (assisted)

## Friday

- **Warm-up**  
Forward Run  
Run and Scoop  
Backwards Run  
Backward Skip with Arm Swings  
Forward Skip with Arm Swings  
Carioca (R)  
Carioca (L)  
Crossover Jog
- **Dynamic Flexibility** (10 each)  
Eagles (F/B)  
Alternate Lateral Lunge  
Splits/Scissors  
Fire Hydrants/Leg Whip/Extender  
Hurdle Seat Exchange  
Inchworms  
Double Knee Tucks  
Lead Leg Lift/Trail Leg Lift  
Lunge Exchange (Straight/Side)
- **Hurdle Mobility** (1x/8 hurdles)  
Straight Leg Lateral (side)  
Dynamic Alternate Walk Over  
Skip-Overs (L-R Lead)  
Single Leg S.O.  
Single Leg Static
- **Sprint Drills** (2\*30 meters)  
A Skips  
Backwards Cycle  
SL Shuffle with Fast Leg (L)  
SL Shuffle with Fast Leg (R)  
A2's – skipping  
AC's – C-skip
- **Build Ups**  
4x50 meter

- **Acceleration Development**  
10x20 meters sticks
- **Multi Jumps** (4\* 8 hurdles)  
16" Hurdle Hops
- **Strength**  
Cleans 6x4 (knee)  
Squats 5x6  
Bench Press 4x5
- **Multi Throw** (4x)  
Lunge Chest (L-R)  
Shoulder Step (L-R)  
Overhead Step (L-R)
- **Cool down**
- **Static Flexibility**  
Chest Hang  
Deep Squat  
Lateral Squat (L-R)  
Spinal Roll Push  
Spinal Roll Pull  
Butterfly  
Seated Arm Pull (switch)  
Quadriceps Stretch  
Quadriceps Lift (L-R)  
Shoulder Lift

## **Saturday**

- **Warm-up**  
Forward Run  
Backward Skip  
Backward Run  
Weave Run  
Side Shuffle (L)  
Side Shuffle (R)  
Arm Circle Lunge  
Skip Lunge
- **Dynamic Flexibility** (10 ea)  
Prisoner Squats  
Hip Circles  
Trunk Twists

Single Knee Tucks  
Supine Leg Swings  
Spiderman Walks  
Fence Series  
- Leg Swings (F/B/S)  
- Hip Flexors/Trail Legs/Butt-kicks

- **Sprint Drills** (2\*30 meters)

A Skips  
Backwards Cycle  
SL Shuffle with Fast Leg (L)  
SL Shuffle with Fast Leg (R)  
A2's – skipping  
AC's – C-skip

- **Build Ups**

4x50 meters

- **Run**

6x200

- **General Strength**

Ball Leg Curls  
Medial/Lateral Hip Machine  
Reverse Hyper Weighted  
Pull Ups  
Bench Tricep Dips  
Supine Rows  
DB Pushup to Row  
Single Leg Extension  
Weighted Roman Chair Sit-ups  
Hanging Knee Lifts w/ Med Ball  
Weighted Side Bends  
Bench Pedestals

- **Static Flexibility**

PNF (3x each L-R)  
Glute  
Hamstring  
Knee to Chest  
Leg Over  
Calf  
Prone Quad Stretch  
Prone Quad Lift  
Butterfly (assisted)

## Pre Season – Early Specific

### **Monday**

- **Warm-up**  
Forward Run  
Backward Skip  
Backward Run  
Weave Run  
Side Shuffle (L)  
Side Shuffle (R)  
Arm Circle Lunge  
Skip Lunge
- **Dynamic Flexibility** (10 ea)  
Prisoner Squats  
Hip Circles  
Trunk Twists  
Single Knee Tucks  
Supine Leg Swings  
Spiderman Walks  
Fence Series
  - Leg Swings (F/B/S)
  - Hip Flexors/Trail Legs/Butt-kicks
- **Hurdle Mobility** (2x/8 hurdles)  
Straight Leg Lateral (side)  
Dynamic Alternate Walk Over  
Skip-Overs (L-R Lead)  
Single Leg S.O.  
Single Leg Static
- **Speed Drills** (2x 30 meters)  
A Skip  
B Skip  
Double Fast Leg (L-R)  
Straight Leg Shuffle  
Straight Leg Bound/Sprint
- **Multi Jump** (2x)  
LLL  
RRR

LLRR  
RLLL  
RLRL  
LRLR

- **Acceleration Development**  
3x10  
3x20  
3x30 = blocks
- **Weight Training**  
Cleans 6x3  
Squat Jumps 5x6  
Bench Press 4x5
- **Multi Throw (4x)**  
Overhead Back  
Between the Legs Forward  
Squat Chest  
Hammer Hip (L-R)
- **Cool down**
- **Static Flexibility**  
Chest Hang  
Deep Squat  
Lateral Squat (L-R)  
Spinal Roll Push  
Spinal Roll Pull  
Butterfly  
Seated Arm Pull (switch)  
Quadriceps Stretch  
Quadriceps Lift (L-R)  
Shoulder Lift

## **Tuesday**

- **Warm-up**  
Forward Run  
Run and Scoop  
Backwards Run  
Backward Skip with Arm Swings  
Forward Skip with Arm Swings  
Carioca (R)  
Carioca (L)  
Crossover Jog

- **Dynamic Flexibility** (10 ea)
  - Prisoner Squats
  - Hip Circles
  - Trunk Twists
  - Single Knee Tucks
  - Supine Leg Swings
  - Spiderman Walks
  - Fence Series
    - Leg Swings (F/B/S)
    - Hip Flexors/Trail Legs/Butt-kicks
  
- **Hurdle Mobility** (8 hurdles)
  - 2 Step Lead Leg (L-R)
  - 2 Step Alternate
  - 2 Step Static
  
- **Sprint Drills** (2\* 30 meters)
  - A Skips
  - A Run
  - B Skips
  - Backwards Cycle
  - Straight Leg Shuffle
  
- **Build Ups**
  - 4 x 50 Meters
  
- **Technique**
  
- **General Strength** (15x)
  - Single Leg Squat (L-R)
  - Stationary Lunges (L-R)
  - Lunge Jumps (L-R)
  - Incline Push-ups
  - Dips
  - Decline Push-ups
  - Lateral Squats
  - Prisoner Squats
  - Rocket Jumps
  - Kneeling Good Mornings
  - Jack Knives
  - L-Overs
  - Crunches
  - Deep Squat Walk
  
- **Strength Circuit**
  - Leg Curl (1x10)

Twist Lunges  
Glute Ham Raise  
Bent Over Row  
Lat Pull  
BW Dips  
Behind Neck Press  
Leg Extensions  
Twisting Sit-ups  
Hanging Knee Lifts  
Russian Twists  
Windmill

Ball Leg Curls (1x10)  
Medial/Lateral Hip Machine  
Reverse Hyper Weighted  
Pull Ups  
Bench Tricep Dips  
Supine Rows  
DB Pushup to Row  
Single Leg Extension  
Weighted Roman Chair Sit-ups  
Hanging Knee Lifts w/ Med Ball  
Weighted Side Bends  
Bench Pedestals

- **Cool Down**
- **Static Flexibility**
  - Arm Across
  - Overhead Reach and Bend
  - Cross and Hang with Twist
  - Standing Quads (L-R)
  - Static Superman (L-R)
  - Lateral Lunge (Hold)
  - Gastroc/Soleus (STR/Bent)
  - Single Figure 4
  - Press up

## **Wednesday**

- **Competition Warm-up**
- **Speed Development**
  - Runway 8-10

- **Multi Jump** (15x)
  - Tuck Jumps
  - Ski Jumps
  - Single Leg Lateral Turns
  - Straddle Jumps
  - Single Leg Medial Turns
  - Side Hops
  - Single Leg Squat Jumps
  - Lunge Jumps
- **Weight Training**
  - Snatch 5x4
  - Step Ups 4x5
  - DB Incline Press 4x6
- Multi Throw**
  - Overhead Back
  - Between the Legs Forward
  - Squat Chest
  - Hammer Hip (L-R)
- **Cool down**
- **Static Flexibility**
  - Chest Hang
  - Deep Squat
  - Lateral Squat (L-R)
  - Spinal Roll Push
  - Spinal Roll Pull
  - Butterfly
  - Seated Arm Pull (switch)
  - Quadriceps Stretch
  - Quadriceps Lift (L-R)
  - Shoulder Lift

## **Thursday**

- **Warm-up**
  - Forward Run
  - Run and Scoop
  - Backwards Run
  - Backward Skip with Arm Swings
  - Forward Skip with Arm Swings
  - Carioca (R)
  - Carioca (L)
  - Crossover Jog

- **Dynamic Flexibility** (10 ea)
  - Prisoner Squats
  - Hip Circles
  - Trunk Twists
  - Single Knee Tucks
  - Supine Leg Swings
  - Spiderman Walks
  - Fence Series
    - Leg Swings (F/B/S)
    - Hip Flexors/Trail Legs/Butt-kicks
  
- **Hurdle Mobility** (2x 8 hurdle w/ MB)
  - Alternate Walk Over
  - Walk Over (L-R Lead)
  - Over & Back (L-R Lead)
  - Over & Under (L-R Lead)
  - Alternate Static/Dynamic Walk Over
  
- **Sprint Drills** (2\* 30 meters)
  - A Skips
  - A Run
  - B Skips
  - Backwards Cycle
  - Straight Leg Shuffle
  
- **Build Ups**
  - 4 x 50 Meters
  
- **Technique**
  
- **Med Ball Circuit** (30 sec)
  - Alternate Lateral Lunge and Reach
  - Deep Squat and Press
  - Standing Good Morning
  - Bridge w/ Knee Squeeze
  - Partner Exchange Prone
  - Partner Exchange Supine
  - Standing Rocky Twist
  - Supine OH Toss
  - Kneeling Shoulder
  - Partner Sit Ups
  - Knee Toss (Medial/Lateral)
  - Hurdle Reach
  
- **Physioball Series** (12x)
  - Glute Bridge (Flex, Ext, Flex)

Double Leg Curl  
Single Leg Curl  
Supine Straight Leg Curl Alt.  
Hip Thrust

- **General Strength** (2x15m w/ MB)  
Half Squat Walk  
Half Squat Walk Extension  
Lunge Extension Walk  
Deep Squat Walk Extension
- **Cool Down**
- **Static Flexibility**  
Arm Across  
Overhead Reach and Bend  
Cross and Hang with Twist  
Standing Quads (L-R)  
Static Superman (L-R)  
Lateral Lunge (Hold)  
Gastroc/Soleus (STR/Bent)  
Single Figure 4  
Press up

## **Friday**

- **Warm-up**  
Forward Run  
Backward Skip  
Backward Run  
Weave Run  
Side Shuffle (L)  
Side Shuffle (R)  
Arm Circle Lunge  
Skip Lunge
- **Dynamic Flexibility** (10 ea)  
Overhead Lunge  
Eagles (F/B)  
Double Knee Tucks  
Roll-backs to modified hurdler  
Spiderman Walks  
Fence Series
  - Leg Swings (F/B/S)
  - Hip Flexors/Trail Legs/Butt-kicks

- **Hurdle Mobility** (2x8 Hurdles)
  - A Skips (L-R)
  - B Skips (L-R)
  - C Skips (L-R)
  - Skip Overs (L-R Lead)
- **Build Ups**
  - 4x50 Meters
- **Speed Development**
  - 8 x Mini Hurdle Run
- **Multi Jump**
  - 4 x 15meter Pogo forward
- **Weight Training**
  - Clean 5x3 (knee)
  - Split Jerk 3x3
  - Half Squat 4x6
  - DB – 1 Arm Bench Press 4x6
- **Multi Throw**
  - Hop-Hop-Overhead Back
  - Hop-Hop-Between Leg Forward
  - Box-Overhead Back
  - Box-Between Legs Forward
- **Cool down**
- **Static Flexibility**
  - Chest Hang
  - Deep Squat
  - Lateral Squat (L-R)
  - Spinal Roll Push
  - Spinal Roll Pull
  - Butterfly
  - Seated Arm Pull (switch)
  - Quadriceps Stretch
  - Quadriceps Lift (L-R)
  - Shoulder Lift

## **Saturday**

- **Warm-up**
  - Forward Run

Backward Skip  
Backward Run  
Weave Run  
Side Shuffle (L)  
Side Shuffle (R)  
Arm Circle Lunge  
Skip Lunge

- **Dynamic Flexibility** (10 ea)
  - Prisoner Squats
  - Hip Circles
  - Trunk Twists
  - Single Knee Tucks
  - Supine Leg Swings
  - Spiderman Walks
  - Fence Series
    - Leg Swings (F/B/S)
    - Hip Flexors/Trail Legs/Butt-kicks
- **Sprint Drills** (2\* 30 meters)
  - A Skips
  - A Run
  - B Skips
  - Backwards Cycle
  - Straight Leg Shuffle
- **Build Ups**
  - 4x50 Meters
- **Run** (3'' rest)
  - 3x200
  - 3x150
  - 2x100
- **Strength Circuit** (2x12)
  - Leg Curls
  - Bridge Slide Curls
  - Single Leg RDL'S
  - Back Hyper with Twist
  - Pull-ups
  - Supine Rows
  - Military Press
  - Single Leg Extension
  - Deadbugs
  - Hanging Leg Lifts
  - Russian Twists

Roman Chair Russian Twist

- **Cool Down**
- **Static Flexibility**
  - Single Knee to Chest (L-R)
  - Leg Over (L-R)
  - Lunge Hands Overhead (L-R)
  - Heel Sit
  - Seated Straddle (M-L-R)
  - Seated Butterfly
  - Figure 4
  - Gastric/Soleus (Straight/Bent)

### Specific/ Early Competition

#### **Monday**

- **Warm-up**
  - Forward Run
  - Run and Scoop
  - Backwards Run
  - Backward Skip with Arm Swings
  - Forward Skip with Arm Swings
  - Carioca (R)
  - Carioca (L)
  - Crossover Jog
- **Dynamic Flexibility** (10 each)
  - Eagles (F/B)
  - Alternate Lateral Lunge
  - Splits/Scissors
  - Fire Hydrants/Leg Whip/Extender
  - Hurdle Seat Exchange
  - Inchworms
  - Double Knee Tucks
  - Lead Leg Lift/Trail Leg Lift
  - Lunge Exchange (Straight/Side)
- **Hurdle Mobility** (2x 8 hurdle)
  - Alternate Walk Over
  - Walk Over (L-R Lead)
  - Over & Back (L-R Lead)
  - Over & Under (L-R Lead)

Alternate Static/Dynamic Walk Over

**Speed Drills (2x40m)**

A Skips  
Backwards Cycle  
SL Shuffle with Fast Leg (L)  
SL Shuffle with Fast Leg (R)  
A2's – skipping  
AC's – C-skip

- **Build Ups**  
4x50meter
- **Acceleration Development**  
3x(20,30,40) blocks
- **Multi Jump (3x)**  
Jog-RRR  
Jog-LLL  
Jog-RLR  
Jog-LRL
- **Weight Training**  
Clean & Split Jerk 7x2  
Squat 4x6  
Superset w/ Box Jump 4x6  
Bench Press 4x4
- **Cool down**
- **Static Flexibility**  
Chest Hang  
Deep Squat  
Lateral Squat (L-R)  
Spinal Roll Push  
Spinal Roll Pull  
Butterfly  
Seated Arm Pull (switch)  
Quadiceps Stretch  
Quadiceps Lift (L-R)  
Shoulder Lift

**Tuesday**

- **Warm-up**  
Forward Run

Backward Skip  
Backward Run  
Weave Run  
Side Shuffle (L)  
Side Shuffle (R)  
Arm Circle Lunge  
Skip Lunge

- **Hurdle Mobility** (2x 8 hurdle)  
Alternate Walk Over  
Walk Over (L-R Lead)  
Over & Back (L-R Lead)  
Over & Under (L-R Lead)  
Alternate Static/Dynamic Walk Over
- **Speed Drills** (2x40 w/ sprint off)  
A Skips  
A Run  
B Skips  
Backwards Cycle  
Straight Leg Shuffle
- **Technique**
- **General Strength**  
Push-ups (12x)  
Prisoner Squats  
Jack Knives  
Back Hypers  
Push-up with Clap  
Rocket Jumps  
Dips  
Cossack Extensions  
L-Overs  
Lying Opposites  
Swimming  
Burpees  
  
Jack Knives (20x)  
Hypers  
Side Ups (L-R)  
Leg Toss/Toe Touch/Hip Thrust  
Crunches  
Side Lifts  
Back Hypers with Twist

Crunches with Twist  
L-Overs  
Russian Cossacks (L-R)  
Lying Opposites  
Pelvic Tilt Isometrics  
Pelvic Tilt Deadbug  
Pelvic Tilt Crunches

- **Med Ball Circuits** (x20")  
Straight Arm Twist Lunge  
Single Leg RDL  
Med/Lat Kick  
V-Sit with Russian Twist  
Around the World  
Prone catch & toss  
Seated Hip Toss  
OH Lateral Bends  
Chest Pass  
Seated Full Rocky Twist  
Soccer Kicks  
Over/Unders

**Strength Circuit** (x15)  
Leg Curl  
Twist Lunges  
Glute Ham Raise  
Bent Over Row  
Lat Pull  
BW Dips  
Behind Neck Press  
Leg Extensions  
Twisting Sit-ups  
Hanging Knee Lifts  
Russian Twists  
Windmill

### **Wednesday**

- **Competition Warm-up**
- **Speed Development**  
Runway 8-10
- **Multi Jump** (2x10)  
Tuck Jumps  
Ski Jumps

Single Leg Lateral Turns  
Straddle Jumps  
Single Leg Medial Turns  
Side Hops  
Single Leg Squat Jumps  
Lunge Jumps

- **Weight Training**  
Split Snatch 10x2  
DB Lunge Jumps 6x6  
DB Pull-over 4x8
- **Cool Down**
- **Static Flexibility**  
Chest Hang  
Deep Squat  
Lateral Squat (L-R)  
Spinal Roll Push  
Spinal Roll Pull  
Butterfly  
Seated Arm Pull (switch)  
Quadriceps Stretch  
Quadriceps Lift (L-R)  
Shoulder Lift

## Thursday

- **Warm-up**  
Forward Run  
Backward Skip  
Backward Run  
Weave Run  
Side Shuffle (L)  
Side Shuffle (R)  
Arm Circle Lunge  
Skip Lunge
- **Dynamic Flexibility (10 ea)**  
Overhead Lunge  
Eagles (F/B)  
Double Knee Tucks  
Roll-backs to modified hurdler  
Spiderman Walks  
Fence Series  
- Leg Swings (F/B/S)

- Hip Flexors/Trail Legs/Butt-kicks
- **Hurdle Mobility** (2x 8 hurdle)
  - Alternate Walk Over
  - Walk Over (L-R Lead)
  - Over & Back (L-R Lead)
  - Over & Under (L-R Lead)
  - Alternate Static/Dynamic Walk Over
- **Speed Drills** (2x40)
  - A Skips
  - A Run
  - B Skips
  - Backwards Cycle
  - Straight Leg Shuffle
- **Build Ups**
  - 4x50 meters
- **Technique**
- **General Strength** (1x20" w/ leg raises)
  - Elbow Stand
    - Prone, Supine, Side (L-R)
  - Hand Stand
    - Prone, Supine, Side (L-R)
  - Low Reach Crunch

(1x12)

  - Forward Leg Lift (L-R)
  - Forward Leg Lift/Flex (L-R)
  - Forward Leg Lift/Circle (L-R)
  - Russian Cossacks (L-R)
  - Bridge/ Knee Extension (L-R)
  - Prone Leg Raise
  - Prone Leg Raise/Flex
  - Lying Opposites
  - Lunge Twist/Good Morning
  - Half Crunches
  - Crunches
  - Alternate Pelvic Tilt w/ heel slide

## **Friday**

- **Warm-up**
  - Forward Run

Run and Scoop  
Backwards Run  
Backward Skip with Arm Swings  
Forward Skip with Arm Swings  
Carioca (R)  
Carioca (L)  
Crossover Jog

- **Dynamic Flexibility** (10 each)  
Eagles (F/B)  
Alternate Lateral Lunge  
Splits/Scissors  
Fire Hydrants/Leg Whip/Extender  
Hurdle Seat Exchange  
Inchworms  
Double Knee Tucks  
Lead Leg Lift/Trail Leg Lift  
Lunge Exchange (Straight/Side)
- **Hurdle Mobility** (2x8 Hurdles)  
A Skips (L-R)  
B Skips (L-R)  
C Skips (L-R)  
Skip Overs (L-R Lead)
- **Build Ups**  
4x50 meters
- **Speed Development**  
6x30 meter flys
- **Multi Jumps**  
Hurdle Hops (16") 5x5
- **Weight Training**  
Cleans 6x2  
Half Squat 5x6  
Bench Press 4x6
- **Multi Throw** (x3)  
Overhead Back  
Between the Legs Forward  
Squat Chest  
Hammer Hip (L-R)

- **Cool Down**
- **Static Flexibility**
  - Chest Hang
  - Deep Squat
  - Lateral Squat (L-R)
  - Spinal Roll Push
  - Spinal Roll Pull
  - Butterfly
  - Seated Arm Pull (switch)
  - Quadriceps Stretch
  - Quadriceps Lift (L-R)
  - Shoulder Lift

## **Saturday**

- **Warm-up**
  - Forward Run
  - Backward Skip
  - Backward Run
  - Weave Run
  - Side Shuffle (L)
  - Side Shuffle (R)
  - Arm Circle Lunge
  - Skip Lunge
- **Dynamic Flexibility (10 ea)**
  - Overhead Lunge
  - Eagles (F/B)
  - Double Knee Tucks
  - Rollbacks to modified hurdler
  - Spiderman Walks
  - Fence Series
    - Leg Swings (F/B/S)
    - Hip Flexors/Trail Legs/Butt-kicks
- **Speed Drills (2x40)**
  - A Skips
  - A Run
  - B Skips
  - Backwards Cycle
  - Straight Leg Shuffle

- **Build Ups**  
4x50
- **Run**  
2x(180,150,120) (4')[5']
- **General Strength Circuits (x15)**  
Leg Curl  
Twist Lunges  
Glute Ham Raise  
Bent Over Row  
Lat Pull  
Body weight Dips  
Behind Neck Press  
Leg Extension  
Twisting Sit-ups  
Hanging Knee Lifts  
Russian Twist  
Windmill
- **Cool Down**
- **Static Flexibility**  
Single Knee to Chest (L-R)  
Leg Over (L-R)  
Lunge Hands Overhead (L-R)  
Heel Sit  
Seated Straddle (M-L-R)  
Seated Butterfly  
Figure 4  
Gastric/Soleus (Straight/Bent)

## Competition

### **Monday**

- **Warm-up**  
Forward Run  
Run and Scoop  
Backwards Run  
Backward Skip with Arm Swings  
Forward Skip with Arm Swings  
Carioca (R)  
Carioca (L)  
Crossover Jog

- **Dynamic Flexibility** (10 each)
  - Eagles (F/B)
  - Alternate Lateral Lunge
  - Splits/Scissors
  - Fire Hydrants/Leg Whip/Extender
  - Hurdle Seat Exchange
  - Inchworms
  - Double Knee Tucks
  - Lead Leg Lift/Trail Leg Lift
  - Lunge Exchange (Straight/Side)
  
- **Hurdle Mobility** (6 hurdles)
  - A-Skip (L-R)
  - B-Skip (L-R)
  - C-Skips (L-R)
  - Skip Overs (L-R lead)
  
- **Build Ups**
  - 4x50 meters
  
- **Speed Development**
  - Runway Rehearsals x 6
  
- **Multi Jumps** (w/ run 2x20m)
  - LLL
  - RRR
  - LLR
  - RRL
  - LLRR
  - LRLR
  
- **Weight Training**
  - Clean + Front Squat + Jerk 5x3
  - Half Squat Jump 4x5 with 1/3 BW
  - Pullovers 4x6
  
- **Hurdle Mobility (8 hurdles)**
  - Alternate walkover
  - Alternate backward walkover
  - Alternate around the world
  - Lateral bent walkover

**Tuesday**

- **Warm-up**
  - Forward Run
  - Backward Skip
  - Backward Run
  - Weave Run
  - Side Shuffle (L)
  - Side Shuffle (R)
  - Arm Circle Lunge
  - Skip Lunge
  
- **Dynamic Flexibility (10)**
  - Overhead Lunge
  - Eagles (F/B)
  - Double Knee Tucks
  - Roll back to modified hurdler
  - Spiderman walks
  - Fence series
    - Leg swings (F/B/S)
    - Hip flexors/trail leg/butt kicks
  
- **Hurdle Mobility (2x 8 hurdle)**
  - Alternate Walk Over
  - Walk Over (L-R Lead)
  - Over & Back (L-R Lead)
  - Over & Under (L-R Lead)
  - Alternate Static/Dynamic Walk Over
  
- **Speed Drills (2x40m)**
  - A-skip
  - A-run
  - B-skips
  - Backward cycle
  - Straight leg shuffle
  
- **Build Ups**
  - 4x50 meters
  
- **Technique**
  
- **Medicine Ball (25")**
  - Straight arm lunge twist
  - Single leg RDL
  - Med/Lat kick
  - V-sit with Russian twist
  - Around the world

Prone catch and toss  
Seated hip toss  
OH lateral bends  
Chest pass  
Seated full rocky twist  
Soccer kicks  
Over/Under

- **General Strength (15x)**

Push ups  
Prisoner Squats  
Jack knives  
Back hyper  
Push up w/ clap  
Rocket Jumps  
Dips  
Cossack extension  
L-overs  
Lying opposites  
Swimming  
Burpees

Jack knives (10x)  
Back  
Side ups (L-R)  
Leg toss/toe touches/hip lifts  
Crunches  
Side lifts  
Back hyper w/ twist  
Crunches w/ twist  
L-overs  
Russian cossacks (L-R)  
Lying opposites  
Pelvic tilt isometric  
Pelvic tilt deadbug  
Pelvic tilt crunches

- **Cool Down**

### **Wednesday**

- **Competition Warm-up**

- **Speed Development**

Runway 6-8

- **Speed Drills**  
Mini hurdles x3
- **Weight Training**  
Close grip snatch 5x5  
Dumbbell Step up jumps 3x5  
Dumbbell Bench 4x6
- **Strength Circuits (x12)**  
Ball leg curls  
Medial/Lateral hip machine  
Reverse hyper weighted  
Pull ups  
Bench tricep dips  
Supine rows  
DB push up to row  
Single leg extension  
Weighted roman chair sit ups  
Hanging knee lifts w/ med ball  
Weighted side bends  
Bench pedestals
- **Multi Throw (x3)**  
Hop, hop overhead back  
Hop, hop between the leg forward  
Box- overhead back  
Box-between legs forward
- **Cool Down**
- **Static Flexibility**  
Chest hang  
Deep squat  
Lateral squat (L-R)  
Spinal roll push  
Spinal roll pull  
Butterfly  
Seated arm pull  
Quadiceps  
Quadiceps lift  
Shoulder lift

## Thursday

- **Pre-meet**

- **General strength** (x12 w/ leg raise)
  - Elbow stand
    - Prone, Supine, Side (L-R)
  - Hand stand
    - Prone, Supine, Side (L-R)
  - Low reach crunch

## **Specific Phases of a Long-Term Unified Training Plan**

### *Introducing Young Athletes to the Long Jump*

Young athletes showing an interest in the long jump should be encouraged to participate without being overwhelmed by the physical and technical rigors of the event. The most important thing for young athletes to develop is a general fitness level that will lay a foundation for specific types of training in the future. The long jump is a complex event that takes many years to learn and perfect. Young athletes can start by improving their general athleticism. As they progress through a long-term training plan, the specificity and intensity of training will increase accordingly. But in the early stages the short-term goals should be to develop a wide range of athletic skills, stay motivated about the activity, and most of all — have fun.

For youth, general concepts of athleticism should be practiced with a broad spectrum of training. Here are a few simple tips to keep in mind that will help encourage participation while still developing a young athlete's skills and physical abilities:

**Avoid putting too much pressure on a young athlete.** Doing so may ultimately backfire and stamp out a young athlete's fire before reaching his or her true athletic potential.

“I think that track and other athletics are meant to be fun at a young age. And now it seems like there is a lot of pressure. I can understand pressure as a junior and senior in high school because there are goals of getting scholarships. But at a young age, athletics should be an outlet for kids — not a source of pressure to succeed.” – Grace Upshaw, three-time USA Outdoor Long Jump Champion, 2002 USA Indoor Champion and 2004 Olympian

**Use positive reinforcement.** Focusing too heavily on faults is likely to discourage a young athlete. It should be balanced with positive reinforcement on what they are doing right and giving them constructive advice on ways to improve.

**Make your feedback specific.** Do not assume that a young athlete knows what you mean. Explain what changes you are suggesting and describe why they are necessary so an athlete has a big picture understanding of what they are doing and why they are doing it.

**Emphasize basic rules.** Equipping young athletes with a solid understanding of the long jump event will help them throughout their athletic career. The more athletes know about the event, from technique to the rules, the more prepared they will be to compete at their highest level.

**Make sure training activities are age appropriate.** A young athlete's long-term success depends on slowly building their physical capabilities. Rushing the process is likely to hurt long-term prospects even if it appears to aid short-term success.

**Introduce new skills properly.** Optimally, young jumpers should focus and be educated on running form, jumping mechanics and techniques, and different exercises. Whenever expanding the physical, technical, or mental capabilities of a young athlete, take the time to do it right. Introduce new skills with a clear explanation of how it should be done and why it will help the athlete.

**Do not specialize in the long jump.** The focus on youth development should be creating a strong athletic foundation. Along with performing multiple events in track & field (sprints, hurdles and other jumping events), youth athletes should also participate in other sports. Being well rounded should be the goal of youth athletics.

“I would strongly argue against anyone focusing on track & field specifically at an early age. You will arrest the development of critical skills needed to advance the performance of that athlete. “ - Michael Pullins, jumps coach at USC

**Make it fun!** If you can get young athletes interested and excited about the long jump, they will concentrate more on learning the fundamentals. Success will come later — so long as they stick with the sport and don't quit because a coach put too much pressure on the athletes. If you can find a way to make the sport fun while slowly developing their skills and techniques, then the sky is the limit on how far they'll jump.

### **High School Development: Learn to Train**

“I have found that those high school athletes that participated in an array of different sports and activities tend to have the greatest upside when they get to the collegiate level. At this level athletes are required to learn new skills that require a great deal of body positioning and balance. This body awareness is critical and aids in their development as a jumper. Most of these skills can be acquired through the involvement in simple high school sports and activities such as soccer, basketball, football, gymnastics and even martial arts. These activities have proven to be great foundation builders. “ - Michael Pullins, USC jumps coach

High school is the typical starting point for a long jump athlete. A coach must determine ability and long-term potential. This job is complicated by the fact that athletes enter high school with a wide range of cognitive, physical, and emotional health. While some students enter a program with far greater abilities than most, the general rule of thumb is that freshman and sophomores will lack the broad athletic foundation necessary to really compete successfully in the long jump.

For this reason, a high school long jump training program should be divided into two very distinct phases:

**Phase I:** Freshman and sophomores learn the broad athletic foundation needed for future success in the long jump.

**Phase II:** Juniors and seniors focus on the specific skills and techniques needed to compete at the top levels.

Todd Lane, voted the top women's jumps coach by the US Track & Field and Cross Country Coaches Association in 2007, understands the need for gradual progression during high school. "High school training becomes more specific," he says, "but still allows the athlete to grow physically. Strength consideration should be general in the beginning before developing into more classic weight room activities later on."

### **Phase I: Laying the Foundation**

During this phase, be sure to keep in mind the coaching strategies mentioned earlier for those new to the sport of long jump. Keep the athlete focused on the basics rather than worrying about winning or losing. As the athlete progresses into Phase II, the coach should set higher goals without placing expectations on the athlete that cause unnecessary stress or discomfort.

Kevin Murphy knows first-hand many of the challenges high school coaches face.

"High school athletes are at an age where many of them question everything, and the high school coach better know what he or she is talking about in order to have any credibility," says Murphy, a coach and member of the Massachusetts High School Hall of Fame. "The high school coach should be able to explain in general terms the science behind the training."

Murphy adds that developing the proper base training for athletes in events beyond the long jump is also important.

In the first phase, the goal is simply to prepare the athlete by developing overall strength, endurance, mobility, coordination, and mental toughness. Here are some specific areas to focus on:

- Work on speed and skills that are specific to long jumping
- Emphasize flexibility training and teach 'how, why and when' to stretch
- Teach proper nutrition and hydration
- Explain how and when to taper for peak performance
- Introduce the mechanics of jumping exercises

- Teach proper weight lifting techniques

While it is important to teach skills specifically relating to the long jump, this initial phase should focus more on drills and training that helps establish the solid foundation necessary to be successful during phase II.

Olympian Grace Upshaw stresses the importance of developing core strength during this phase. “Jumping is a jarring activity, and if you don't establish your core strength, it may be a short career,” she says. “Strength should be steadily built throughout the season to help prevent any injuries and to sustain an athlete through a competitive season. Speed will be developed in all phases of training.”

Coach Pullins agrees that strength ought to be introduced to long jumpers in high school. “Given the fact that all movements either originate in, or are coupled through the core, a great deal of focus must be placed on strengthening the abdominals and low back in order to develop an athlete’s full strength and power potential.” Pullins suggests a “tiered approach,” with emphasis on core strength increasing steadily from season to season, coinciding with the development of the athlete.

## **Phase II: Building the Athlete’s Event-Specific Training**

Phase II is essentially focused on competition preparation with less emphasis on developing overall athletic ability. Half of training time should be dedicated to developing technical skills and maximal power while the other half should focus on teaching competition specific skills. Because the focus in this phase turns to competitions, training should assist athletes in adapting to competitive environments. In other words, training should be high in intensity and low in volume, with more actual jumping. As a rule of thumb, the training-to-competition ratio should be low. General fitness training should constitute about 25% of the phase while competition — and training that focuses on competition specific skills — should take up roughly 75% of the phase.<sup>5</sup>

As always, proper development is key. Dan Pfaff warns of the dangers when an athlete reaches Phase II without proper development during Phase I. “A lot of kids don’t understand running mechanics. They don’t know how to overcome inertia to get started, how to position their bodies into upright running, how to run correctly at top end speed, and how to prepare for takeoff,” he says. “Some kids do this naturally, but most have to be taught these skills. If they’re not taught these skills during Phase I, a lot of the time in Phase II is wasted teaching the athlete how to unlearn skills and movements that are wrong. It is very difficult to eradicate bad habits and stereotypes that were ingrained over time.”

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<sup>5</sup> Viru, A., Loko, J., Volver, A., Laanetos, L., Karelson, K., and Viru, M. Age Periods of Accelerated Improvements of Muscle Strength, Power, Speed and Endurance in the Age Interval 6-18 Years. In *Biology of Sport* (Warsaw) Vol. 15(4), 1998, pp. 211-227

Essentially, Phase I is concerned with developing the approach, coordination and flexibility for the takeoff and landing. In Phase II, training focuses on specific takeoff and landing techniques, power development, and competition strategy. More emphasis will be placed on the final two strides to minimize velocity loss. Penultimate mechanics (creating vertical velocity at takeoff) and maintaining horizontal velocity should also be stressed in this phase. Because training is becoming more specific to the event, coaches will need to spend more time analyzing their athletes for any errors in application.

Phase II is where a high school athlete develops the strength and speed necessary to produce power, resulting in longer jumps. While the technical abilities and power will not reach their peak in this phase, it is an important step toward creating an elite long jumper. If Phase I is either skipped or truncated, the athlete will not be prepared for the physical, emotional, and mental demands of competition and Phase II itself.

By properly completing both phases, a high school athlete will be prepared to face the next level of development at the college level, says Jake Jacoby, jumps coach at the University of Louisville. “The main objective during the second half of high school is to get a scholarship, so this is when the training for the event increases dramatically in volume and intensity,” Jacoby says. “It’s when the athlete should be introduced to the weight room and proper lifting mechanics. The entire training regimen changes to prepare the athlete for the college ranks.”

### **College Development: Learn to Compete**

“As a college jumper it’s time to really dial into the athlete’s training,” says Jacoby. “The focus turns to max strength gains and speed development. Improvement in technique will come as these two factors increase.”

The transition from high school to college is always a big step for athletes. Everything has changed – the coach, the surroundings, the schedule – and numerous distractions can unhinge someone who otherwise could have been an elite athlete. College athletes face psychological challenges as well. No longer a senior athlete with all experience and earned respect, perks and honors, the freshman in college now must start over near the bottom of the program — a small fish in a big pond.

College development is an extension of Phase II in high school — only far more intense. “A lot of athletes do not know how to train scientifically for their event,” warns Pfaff. “They over-train certain qualities and under-train others. They do superfluous work that doesn’t translate. “

The example Pfaff gives relates to balance training. “We see a lot of athletes doing stationary balance work, which makes you a great stationary balancer,” Pfaff says, “but a long jumper who is moving at 8-11 meters per second down the runway requires dynamic-type speed balance.”

Collegiate training is more competition-specific with technique and power being heavily emphasized. Exercise volume and intensity will be much greater, as will the pressure to compete and win. However, this is the phase in which most athletes learn whether they have what it takes to become an elite long jumper. During this discovery phase, athletes must remain disciplined and adhere to the long-term training plan. Depending on the goals of the athlete, this is probably the time to update the new long-term plan and begin training to become an elite jumper.

### **Elite Development: Learn to Win**

The goal of any athlete is to make it to the professional level. The long-term training plan should set the athlete up with all the tools necessary to reach this goal. Of course, not every athlete will reach this stage, but the reason for a properly designed training plan is to prepare each athlete to reach his or her full athletic potential.

After college, finances become a primary concern for most athletes. The first question is usually, “Who is going to pay me to train?” Grace Upshaw says that with financial uncertainty on the front burner for many new elite athletes, they often make potentially harmful sacrifices because of finances. “Sports massage is one thing I've noticed a lot of young athletes skip out on when they get out of college because they have to pay for it themselves,” Upshaw says. “I believe you have to invest in yourself first by spending the little bit of money you may have in the beginning on sports massage and proper nutrition. It sets the framework for you to succeed. It will pay off in the end.”

Dan Pfaff agrees that sports medicine is often the most neglected area as an athlete begins elite training, in part because of a lack of attention from coaches and trainers in high school and college. “In high school and college — those with athletic trainers — [trainers] mean well, but they have to service a large number of athletes so some athletes are just sent to an ice bath or [muscle stimulation],” Pfaff says.

Upshaw adds that the primary emphasis during the transition from college is to train to excel against elite competition. An athlete remaining in his or her college town to train can ease this transition, but producing results in the long jump is what propels an athlete forward quickest. “I really had no idea what the next level meant, except the Olympics,” she said. “I didn't know there was a European circuit and I didn't really follow World Championships. All this was new to me until I placed second at U.S. Nationals in 2001. Immediately after, I had an agent who was going to get me into meets in Europe. I was learning as I went.”

### **Conclusion**

Let's return for a moment to that overcast Mexico City day in 1968 with Bob Beamon staring down the runway at Olympic history. Beamon is not standing here in the Olympic finals, visualizing the textbook jump and landing, solely because of natural ability. He succeeded because he and his coaches successfully harnessed his ability and turned it into technical perfection in the long jump – from his high school days in Jamaica to competing collegiately at the University of Texas-El Paso, to elite training under Ralph Boston.

Beamon's long jump World Record, which stood unbroken for 23 years, ought to teach athletes of all levels and their coaches that success is not had overnight, it is developed. The ultimate goal of a long-term training plan is equip an athlete to reach his or her best in the long jump by continually training the areas of greatest weakness. Becoming a professional long jumper requires commitment and dedication alongside innate athletic ability. The long-term training plan helps to ensure training continuity between youth, high school, college, and potentially elite levels.

## Frequently Asked Questions & Answers

Q. Should women and men train differently for the long jump?

A. For the most part, no. Running & jumping workouts are pretty much the same. Women have higher elastic qualities than men and lesser absolute strength qualities. Women sometimes need shorter meso cycles than men due to biochemistry issues.

Q. Should youth athletes and/or high school athletes weight train?

A. Youth? No. Now, you can introduce them to simple body resistance drills such as push-ups, power skipping, and lunges, but this work is minimal and should never interfere with the main objective, which is for them to have fun. Coaches also should place their emphasis on drills that train speed, agility and quickness.

High School athletics have certainly used weights as part of their athletic programs for years. The issue is not whether to use weights, but how to use them effectively. A gradual progression with weights is advised. By the time an athlete is a senior, he or she should have the fundamentals in place and know basic weight workouts that aid the long jump.

Q. Are the needs and abilities of long jumpers different from that of triple jumpers?

A. Generally speaking, yes, the needs are different. Successful long jumpers by and large have the ability to run fast. That does not mean triple jumpers lack speed; it simply implies that less speed is needed to be successful. Jumpers in both events must learn to transfer the energy generated through sprinting in the right direction. Triple jumpers' force application needs are greater. The need for rhythm, body awareness and balance play a greater role here than for long jumpers.

## **Coach and Athlete Contributors to this Document**

**Michael Pullins** – Pullins has coached seven All-Americans in eight years as jumps coach at University of Southern California.

**Pat Licari** – Licari's athletes have combined for three NCAA titles, four Pac-10 titles, and nineteen All-America awards during his ten years as the jumps coach at the University of Washington.

**Rose Richmond** – Richmond's honors include 2006 USA Outdoor champion, 2005 USA Indoor champion, 2004 Olympian, 2003 USA Outdoor runner-up, and 2003 NCAA Indoor runner-up. Her long jump PR is 6.84m/22-5.25 (2006).

**Grace Upshaw** – Upshaw's honors include three-time USA Outdoor champion ('03, '05, '07), 3rd at 2006 USA Outdoor, 2004 Olympian, 2002 USA Indoor Champion, four-time USA Outdoor runner-up ('01, '02, '03 & '04), and 2004 USA Indoor runner-up. Her PR is 6.83m/22-5.25 (2004).

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**Todd Lane** – Lane, the jumps coach at the Louisiana State University, has coached three All-Americans, eight All-Atlantic Coast Conference athletes, four ACC champions, and one school record holder.

**Jake Jacoby** – Jacoby, the jumps coach at the University of Louisville, has coached two NCAA champions, ten NCAA All-Americans, fifteen NCAA event qualifiers, twenty-two NCAA regional qualifiers, thirteen individual Big East champions, twelve individual WAC champions, fourteen school record holders.

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