

LONG JUMP

ILLINOIS COACHES CLINIC 2012



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TODAY'S TALK

- Technical overview of the LONG JUMP
- Training the long jumper

INITIAL CONCEPTS

- The approach is critical to performance
 - Consistency in the approach important
 - Appropriate rhythmic harmonic
- Goals of approach:
 - Maximal velocity attainment
 - Attain proper takeoff position over last two steps
 - To consistently hit the board
- Takeoff mechanics are a function of the approach and solid penultimate mechanics
- Flight mechanics are set up on the ground before takeoff

THE HORIZONTAL JUMPER:

- Must have speed
- Must be powerful, elastic and able to handle high impact forces
- Must have good body control
- Is usually a good all-around athlete
- Often is also a top sprinter
- 80% of distance jumped is due to horizontal vel. At takeoff...thus speed is critical. Train speed!!

TRAINING SPEED

ACCELERATION → SPEED
(don't get ahead of yourself)

ACCELERATION

- ACCELERATION:
 - Repetitive starts over distances short of 40m
 - Get it right short, before going out farther
 - Crouch start, block start, rocker start
 - Focus on extension, posture, decreasing ground contact time, arms long to short
 - Stadiums 2 steps at a time (works on full extension and pushing)

ACCELERATION PROGRESSION

1. 10 - 15 x sprint ladder
Emphasis on increasing velocity and increasing stride length, changing body angles and changing arm action (excellent tool for learning increasing stride length and decreasing ground contact times)
2 min recovery
2. 2-5 X (5 X 20m, crouch start)
3 min recovery reps / 6 min. recovery sets
Total volume: 300m build to 500m
3. 2-4 x (5 x 30m, blocks or rocker start)
3 min. recovery reps / 7 min. recovery sets
Total volume: 600m
4. 3 x (4 x 40m, blocks or rocker start)
3 min. recovery reps / 9 min. recovery sets
Total volume: 800m
5. 2-3 x (3 x 50m, blocks)
4 min recovery reps / 7m recovery set
Total volume: 300m Very high quality...very demanding.

SPEED

- SPEED:
 - High velocity mechanics
 - Relaxed, but full amplitudes to maximize elastic energy gain
 - High heel recovery, hip oscillation, "pop" ground
 - Train with Stadiums 1 step at a time (works on quick contacts, high knees)
 - Train with variations of speed work:
 - Ins/Outs (don't relax too much in the outs)
 - Accel → Speed > Relax → Speed
 - Speed mechanics dependent on good acceleration mechanics

SPEED PROGRESSION *(very high quality)*

- 1 3-4 x (5 x 20m) with 15m acceleration. Time the 20m segments only
3 min recovery rep / 6 min recovery set
Total volume: 300m-400m
- 2 2-5 x (5 x 30m) with 15m acceleration
4 min recovery reps / 8m recovery set
Total volume: 300m-750m
- 3 4-8 x (25m accel / 20m max / 15m float / 20m max)
4 min recovery reps
Total volume: 320m – 640m
- 4 5 x (25 accel / 20m max / 15m float / 20m max / 15m float/ 20m max)
5 min recovery
Total volume: 575m
- 5 3 x (3 x 40m accel / 20m relax / 30m max)
8 min recovery rep / 12 min recovery set
Total volume: 810m

THE APPROACH

- Length 12-18 strides. Dependent on phase of training, age and ability
- Phases of the approach
 - a. Drive phase (first 6 steps)
 - b. Acceleration development (everything between a. and c.)
 - c. Transition into takeoff (last 2 steps)
- Drive Vs Jog at the beginning of approach?

MORE ON THE APPROACH

- The need to do penultimate mechanic (to create vertical velocity at takeoff) creates tradeoff for velocity.
- Maintenance of velocity is critical through penultimate step
- Make sure maximal velocity is attained prior to board
 - Forward lean at takeoff from late acceleration is fatal
- Variance at takeoff and using checkmarks
 - 4 step
 - Coach mark (4 steps from board: 25-31' out)

PENULTIMATE MECHANICS FOR THE LONG JUMP

- Cyclic to acyclic change in rhythm over last two strides increases vertical component at takeoff
- Active penultimate leg is critical to getting takeoff foot far enough forward for proper hinge moment
- Lower heel recovery on penultimate step for LJ
- Knee over ankle
- Bridging mechanics and active glut
- Limit amortization of penultimate leg...BRACE, but be ACTIVE
- Cue: "ball,ball,ball,flat,pop for LJ.

TAKEOFF MECHANICS

- Flat, BUT ACTIVE, landing of TO foot, in front of body
- Stabilized and braced for impact to limit amortization
- An active penultimate step results in a high free leg knee drive on takeoff and in shoulders being slightly behind hips at TO foot touchdown
- Head in line with body, posture tall
- Arms continue cycling as normal
- Maintain hip oscillation onto board and off
- Stepping out on takeoff leg: strength deficit or too much preparing to jump. Maintain rhythm!

LEAVING THE GROUND

- Transfer of momentum from lead knee and opposite arm
- Parabolic flight curve
- Goal: minimize or slow forward rotation (extension of lead leg and opposite arm)
- Flight styles: Hang Vs hitchkick
 - Hitchkick: forward rotation of arms helps to slow forward rotation. This demands air time, is an extension of running mechanics.
 - Hang: good for beginners. Slows rotation fwd.

LANDING

- Folding forward and arms continuing on through to raise legs and maximize distance
- Arms are behind the hips upon contact with sand...then arms drive forward
- Legs accordion upon striking sand

FAULT-CORRECTION FOR LONG JUMP

Braking on penultimate (you can hear this)	Be active on penultimate. Should be quiet on penultimate and loud on board. <u>Maintain harmonic!</u>
No vertical component at takeoff/over rotation in air	Be more active with penultimate glut. Active!
Accelerating too late in the approach	Harder drive phase or lengthen approach
Fouling consistently	Do not look at board, improve acceleration mechanics for consistency
Not finishing the takeoff action (i.e. arching back)	Continuous firing off board, drill on running off board

LONG JUMP DRILL PROGRESSION

- SLJ to work on landings 4-5 x (6-8" box)
- SLJ X 3 into sand
- RRJ repeated
- Skips with arm and lead knee block
- Arm cycle jumps off low box (opposing arm to takeoff leg must complete full cycle)
- Approach phases (drive; drive + accel dvmt.; drive + accel. dvmt + transition into takeoff)
- Low Box/Ramp Jumps (provides air time for teaching hitchkick, good for landing work)
- Hurdle Hops
- Box Jumps (be careful!)
 - Hop down into SLJ
 - Hop down. Hurdle Hop

TRAINING THE LONG JUMPER

- Determine what you are beginning with
 - Carry over from other sports (good and bad)
 - Testing to determine deficits and starting point (30m stand, SLJ, STJ, OHB, UHF, 600m)
- Determine challenging, but attainable goals
- Now you have Point A and Point B...You can now plan a progression of training.
- Strength → Speed
- Progressing with training
 - SPEED: Acceleration → Speed
 - STRENGTH: General/Absolute → Specific
 - TECHNICAL: Focus on rhythms. Focus on whole.

USING MEETS FOR QUALITY JUMP SESSIONS

- Think of meets as high quality jump sessions
- For multi-event jumpers, a two meet-per-week model offers the coach and athletes a chance to do multiple events
 - One meet focusing on LJ and/or TJ
 - The other meet focus on sprints/relays
 - Use shorter approaches for early meets

The Training Inventory “What to do”

- Developing a training inventory
 - Inventory elements are what you will use each day to train the long jumper
 - Inventory elements fall into the categories of speed, strength, endurance, flexibility/mobility and skill
 - Your athletes will train all of these categories each day, some more than others (depending on the goals of the day and the week)

THE TRAINING INVENTORY

- Warm-up
- Acceleration
- Speed
- Lifting Core
- General Strength Routines
- Pillar Routines
- Hurdle Strength Routine
- Medicine Ball Routines
- Multi-Jump Exercises
- Long Jump Drills

THE DAILY WARMUP

- Purposes
 - Warm-up systems
 - General bio-motor training (balancing the system)
 - Restorative tool (great off-day routine)
 - See inventory for warm-up exercise progression
 - A mechanism to “clear the screen” and focus down on the task at hand that is upcoming in the session

The Warm-Up

- Jog 30m down and back (2-3x)
- 30m backward run, forward run back to start
- 30m ankling walk
- 30m ankling skip
- 30m ankling skip with windmill arms forward, 30m arms backward
- Jog-jog-jog-quickstep (right only 30m, then 30m left only)
- Jog-jog-jog-quickstep-quickstep, repeat each side for 30m
- Walk 30m with arm circles forward, 30m arm circles backward
- Jog 30m
- 30m A-skip
- Jog 30m
- Carioca right 30m, carioca 30m left (ball of foot, light on feet)
- 30m high-knee skip
- 30m straight-leg bounds
- 30m walk
- 30m easy acceleration
- 30m accel. from 3 point stance
- 30m accel from start position

Note: skipping can be factored in as recoveries of each exercise

LIFT CORE PROGRESSION

Lifting done on Mon/Thur/ and possibly Sat

Weeks 1-3	Weeks 4-6	Weeks 7-9	Weeks 10-12
Clean 3x10 @ 60%	Clean 4 x 8 @ 70%	Clean 3 x 5 @ 80%	Clean 3 x 5 @ 85%
Squat 3x10 @ 60%	Squat 4 x 8 @ 70%	Squat 3 x 5 @ 80%	Squat 3 x 5 @ 85%
Bench Press 3x10 @ 60%	Bench Press 4 x 8 @ 70%	Bench Press 3 x 5 @ 80%	Bench Press 3 x 5 @ 85%

ANCILLARY LIFTS

- Add Snatches to core.
- Pullovers with DB
- Step Ups onto box with DB
- Cybex (glut and hip flexors)

General Strength Routines

*Begin with 1 set, increase with fitness.
Good for off-day strength work, and recovery day work*

Routine 1

- Lateral Hops (x10)
- Squat Jumps (x10)
- Clap Push Ups (x10)
- Crunches (x30)
- Russian Leg Lifts (x10)
- Jump Burpees (x10)
- Walk on heels (30 sec)
- Split Squat (x10)

Routine 2

- Speed Skaters (x10)
- Fire Hydrants (x10)
- Crab Walk (30 sec)
- Eagles (x10)
- L-Overs (x10)
- Rope Skip (1 min)
- Crunch (x30)

Pillar Routines

(start with reps of 20 or 20 sec., then increase with fitness)

Routine 1

- V-Ups
- Side-Ups
- Back Hypers
- Crunches
- Russian Leg Lifts
- Low-Level Bikes
- Scissors
- Hip Ups
- Knee to chest, press knee up

Routine 2

- V-Balancer
- Toe Touches on back
- Single-Double Leg Slides
- Crunches
- 3-way roll-ups
- Static Pushup (hold)
- Finger walk-outs
- L-Overs
- Climb rope

HURDLE STRENGTH ROUTINE

Excellent for core stabilization

- Walkovers (1 leg leads, then switch)
- Walkovers (alternate legs)
- Walkovers (over 3, back one)
- Walkovers (backward one leg, then switch)
- In-Place Skip-Overs
- Skip Down the row
- Over-Unders
- Hurdle Hops (jump and stick, dynamic)

MEDICINE BALL ROUTINES

Routine 1

- St. Overhead Throws
- Hip Catch-n-Toss
- Partner Exchange
- Sit Up Catch-n-Toss
- Squat Chest Throws
- UH toss for height
- Front Loader
- Trunk Rotations

Routine 2

- Seated Partner Toss
- Hop-Hop-2-hand shot
- Over-Shoulder toss
- Overhead back toss
- Overhead step/toss
- Hammer releases
- Push Up holding ball
- UH forward toss

MULTI-JUMP PROGRESSION

MJ routines must reflect the strength and age of the athlete. Make sure the surface used is of grass or softer track surface. The load will be specific to the athlete. Do not over do this.

Easier Exercises

(Early season or recovery week. Begin with loads shown, increase over time)

- SLJ (1-5 repeated)
- Tuck Jumps (x 10)
- Bunny Hops (x20)
- Split Squat (x 10)
- Easy Bounds (8-10)
- Star Jumps (3-8)

Harder Exercises

(Middle of season forward)

- STJ (1-5 repeated)
- Repeat SLJ (up to 5)
- Box Jumps (12"-24" max) 3 x 8 max.
- Bounding for distance 25m build to 40m
- Hurdle Hops (1-3 x (8-10 H))
- RR-LL-RR-LL (1-4)

THE 12-15 WEEK MACROCYCLE

- Primary themes drive the training in each 4 -5 week segment of the season
 - 4-5 weeks of infrastructure work (building the body to train)
 - 4-5 weeks of event-specific work (bleeding period between base work and competitive focus)
 - 4-5 weeks of competitive focus

First 4-5 weeks

- The focus is on developing speed, strength, endurance, flexibility and coordination in a relatively balanced way (conditioning base)
- Speed Work
 - Acceleration → Speed
- Strength Work General → Specific
- Endurance, flexibility, Generally stable in load (good for daily use and for recovery day work)
- Jump training: drills every week, short approaches
- Focus is on training and not competition

2nd 4-5 weeks

- Training now begins to focus more on the demands of the long jump.
- Training is now of a higher volume.
- Meets are beginning to be a focus.
- Approach practice now building in length
- This is a high load period..beware of potential for injury and make sure you provide for recoveries needed (schedule lighter loads for days before and after meets)

Last 4-5 weeks

- Quality is the focus now for all training. Jumping is of the highest priority. Quality drill work.
- Recovery becomes a critical part of the training formula (perhaps the most crucial part). Make sure there is adequate recovery, especially after jump days
- Focus is now on competitions first, training second.