

# **LONG JUMP**

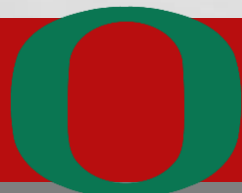
**BROOKE RASNICK – UNIVERSITY OF LOUISVILLE**



# TRACK AND FIELD BACKGROUND



- **POLE VAULTED AT WICHITA STATE UNIVERSITY**
- **VOLUNTEER ASSISTANT COACH AT THE UNIVERSITY OF OREGON**
- **ASSISTANT COACH AT KENT STATE UNIVERSITY**
- **CURRENT HEPT/DEC & POLE VAULT COACH AT THE UNIVERSITY OF LOUISVILLE**



# LONG JUMP APPROACH

**HAVE TO BE FAST TO JUMP FAR!**

- **PROPER SPRINT MECHANICS / POSTURE**
- **SMOOTH INCREASING RHYTHM**
- **ACHIEVE OPTIMAL VELOCITY**
- **PRECISION TO TAKE-OFF BOARD**

# PROPER SPRINT MECHANICS / POSTURE

- **WHAT TO LOOK FOR?**
  - **SOLID BODY CONTACT WITH GROUND**
  - **TALL / IN LINE – HIPS/BACK/HEAD**
  - **FOOT CONTACT BELOW HIP**
  - **KNEES CLOSED AT GROUND CONTACT**
  - **FRONT SIDE MECHANICS**
  - **ANKLE DORSIFLEXION**
  - **TRIPLE EXTENSION**

# DIFFERENCES THROUGH APPROACH

| <b>Acceleration Mechanics</b>                 | <b>Optimal/Max Velocity Mechanics</b>           |
|---|---|
| <b>Posture line angle – increasing</b>        | <b>Almost vertical posture line</b>             |
| <b>Short stride length / less time in air</b> | <b>Longer stride length / more time in air</b>  |
| <b>Lower heel recovery</b>                    | <b>Higher heel recovery</b>                     |
| <b>Larger arm action</b>                      | <b>Arm action – ice cream cone / hip pocket</b> |

# **RHYTHM OF APPROACH**

- **CADENCE INCREASE**
- **PUSH OUT, TRANSITION TO TALL, SET UP JUMP**
- **DO NOT FLOAT OUT OF THE BACK - STAY ACTIVE**



# OPTIMAL VELOCITY

- **FASTEST VELOCITY WITH COORDINATION TO SET UP TAKE-OFF**
- **SPEED IS CRUCIAL TO JUMP FAR**
  - **ATHLETES HAVE A COMMON MISCONCEPTION OF NEEDING TO FEEL A HUGE VERTICAL DISPLACEMENT**
  - **EASIER TO CREATE HEIGHT OFF BOARD AT SLOWER SPEEDS – HORIZONTAL EVENT, NOT VERTICAL**
  - **DELGADO EXAMPLE -> 22'8 TO 23'7**

**DELGADO LJ SINKING HIPS VIDEO**

# PRECISION TO THE BOARD

## • ESTABLISHING AN APPROACH

- TYPICALLY 12-18 TOTAL STEPS
- FASTER ATHLETES WILL USE MORE STEPS
- TAPE MEASURE ON TRACK - NO VISUAL BOARD
  - START APPROACH AT ZERO ON TAPE
  - WATCH WHERE TAKE-OFF FOOT HITS
  - TAKE AVERAGE OF GOOD RUN ATTEMPTS
  - USE THAT AS STARTING MARK ON THE RUNWAY

## HELPING CONSISTENCY

- SIMPLE ROCK BACK AT START OF RUN
- COUNT STEPS - PREFER COUNTING DOWN
- PUSH OUT OF BACK OF RUN
- ACTIVE FOOT CONTACTS / LIMIT FLOATING
- BE FULLY WARMED UP WHEN GETTING ON RUNWAY



# **ESTABLISH COACH'S MID-MARK**

- **HELPS COACH DETERMINE WHERE BREAKDOWN IN APPROACH HAPPENED**
- **6<sup>TH</sup> STEP OUT FROM TAKE-OFF BOARD**
  - **THIS DISTANCE ALLOWS COACH TO WATCH BOTH THE MID-MARK AND JUMP**
  - **TYPICAL PLACEMENT: 23'-30'**
- **NOT TYPICALLY FOR THE ATHLETE, FOR THE COACH**

# FINDING THE MID-MARK

- **INDIVIDUAL TO EACH ATHLETE**
- **TRIAL AND ERROR**
- **PUT TAPE ON RUNWAY DURING PRACTICES**
- **SEE WHERE FOOT HITS WHEN YOU LIKE THE APPROACH AND WHEN ATHLETE IS ON THE BOARD**
- **OVER A FEW SESSIONS YOU SHOULD BE ABLE TO NARROW DOWN MID-MARK FOR EACH ATHLETE**
- **MID-MARKS CAN SHIFT THROUGH THE SEASON AND WITH CONDITIONS**
- **THIS IS JUST A TOOL, TRUST YOUR INSTINCTS**

# MID-MARK TROUBLE SHOOTING

| <b>Mid-Mark</b> | <b>Take-Off</b>    | <b>Typical Error</b>                     | <b>Typical Correction</b>   |
|-----------------|--------------------|--|---|
| <b>Out</b>      | <b>Over / On</b>   | <b>Reaching, slowing down into board</b> | <b>Push out of back of run<br/>Move step up</b>                                       |
| <b>Out</b>      | <b>Out</b>         | <b>Bad acceleration</b>                  | <b>Push out of back of run<br/>Move step up</b>                                       |
| <b>On</b>       | <b>Over</b>        | <b>Reaching, slowing down into board</b> | <b>Be quicker coming into take-off<br/>Improve posture<br/>Need earlier pole drop</b> |
| <b>On</b>       | <b>Out</b>         | <b>Choppy into board</b>                 | <b>Keep speed into take-off</b>   |
| <b>Over</b>     | <b>Over</b>        | <b>Good run, needs space</b>             | <b>Move run back</b>  |
| <b>Over</b>     | <b>On / Behind</b> | <b>Choppy into board</b>                 | <b>Move run back<br/>Keep speed into take-off</b>                                     |

# STEERING IN APPROACH

- **INCONSISTENCIES ARE INEVITABLE**
  - **SOME ATHLETES NATURALLY STEER WELL AND OTHERS STRUGGLE**
  - **IMPROVE STEERING ABILITY**
    - **SHORT APPROACH JUMPS FROM BOARD AT PRACTICE**
    - **ASK ATHLETES WHERE THEY THOUGHT THEY WERE ON THE BOARD - CONFIRM OR CORRECT**
    - **RANDOM START MARK GAME**
    - **DICE – APPROACH GAME**
    - **WARMUP – TO FROM EVERY LINE/MARK ON TRACK**

# PENTULTIMATE STEP

- **STEP BEFORE TAKE-OFF**
  - **PURPOSE IS TO LOWER CENTER OF MASS**
  - **FULL FOOTED CONTACT**
  - **FOOT SHOULD LAND UNDER HIP**
  - **LOWER BY PUSHING KNEE FORWARD / NOT REACHING OUT IN FRONT OF COM**
  - **MUST KEEP TALL POSTURE WITH CHEST**
  - **WANT TO ROLL OVER FAST**

# TAKE-OFF STEP

- **BODY SHOULD BE IN A STRAIGHT LINE, SLIGHTLY ANGLED BACK FROM THE BOARD**
- **FLAT FOOTED CONTACT**
- **LIMIT BREAKING AT JOINTS – SOLID BODY**
- **TRIPLE EXTENSION THROUGH THE BOARD**
- **KNEES SHOULD BE ALIGNED**



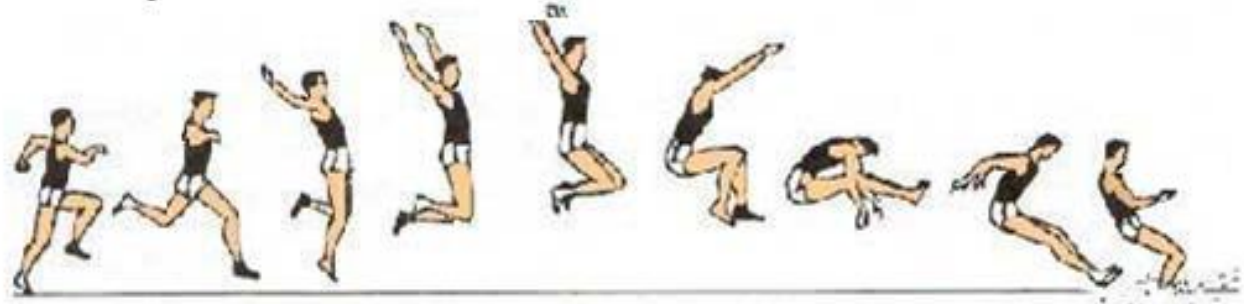
# TAKE-OFF

- **MOVE OVER TAKE-OFF LEG – HORIZONTAL, NOT VERTICAL EVENT**
- **DRIVE FREE LEG (PENULTIMATE STEP) FOOT INTO HAMSTRING**
- **BLOCK OPPOSITE ARM**
- **MUST KEEP POSTURE WITH UPPER BODY**

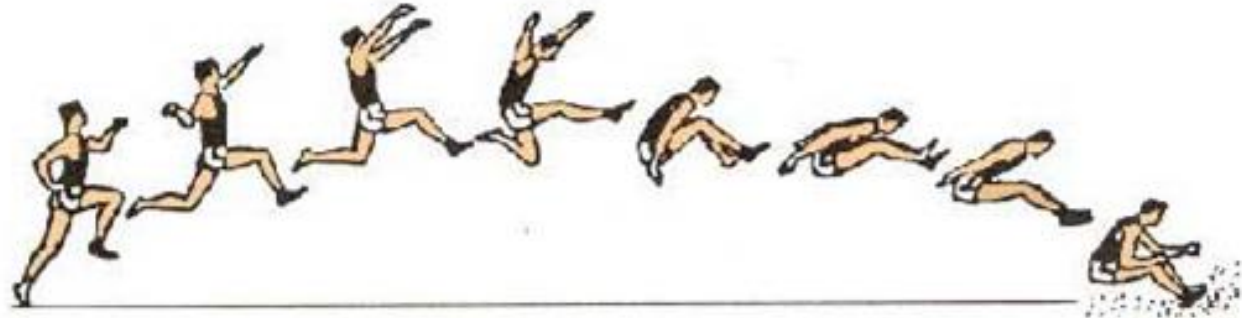
# FLIGHT

- **FLIGHT PATTERN IS PREDETERMINED AT TAKE-OFF**
- **FLIGHT OBJECTIVE IS TO PREVENT FORWARD ROTATION**
- **SAIL TECHNIQUE – PREFERRED FOR BEGINNERS AND ATHLETES WITH LIMITED TIME**
- **HITCH-KICK IS CHALLENGING TO COMPLETE UNLESS JUMPING 22' PLUS**

The hang



The sail



The hitch-kick



Bridgett, L. A., & Linthorne, N. P. (2006). Changes in long jump take-off technique with increasing run-up speed. *Journal of sports sciences*, 24(8), 889-897.

# TRAINING FOCUS

- **MAJORITY OF YEAR IS SPENT ON APPROACH AND TAKE-OFF MECHANICS**
- **90% OF DISTANCE IS DETERMINED BY THOSE TWO ASPECTS**

## MAJORITY OF LONG JUMP SPECIFIC TRAINING

- **FULL APPROACHES**
- **SKIP FOR HEIGHT**
- **SKIP FOR DISTANCE**
- **CONTINUOUS PENULTIMATE**
- **RUN-RUN-JUMP**
- **SHORT APPROACH JUMPS OFF BOX ONTO LJ PIT**
- **WALKER – PENULTIMATE BOX DRILL**
- **SHORT APPROACH JUMPS W/ AND W/O BOX INTO SAND**