

**The Approach, Preparation for  
Takeoff, and Takeoff in the  
Horizontal Jumps**

Rock Light  
Texas Tech University  
USATF SuperClinic 2008  
Eugene, Oregon

**Introduction**

- Commonality Identification
- Individual Technique and Style
- Sport Science Contributions
- Technical Landmarks
- Motor Learning

**General Biomechanics of the Start**

- The Set Position
  - Stance
  - Leg positions
  - Hip - shoulder - head alignment
- Mechanics of the Start
  - Rear leg / front leg / arms
  - Displacement
  - Push into / push off angles

**The Acceleration Process**

- Initial Acceleration
- Changes During the Acceleration Process
  - Foot contact times
  - Center of mass / base of support
  - Body angle changes
  - Extension mechanics
  - Push into / off angle changes
  - Upper body contributions
- Unique Distributions / Frequencies

**General Biomechanics of Running**

- Postural Integrity
- Stabilization
- Alignment
- Movement Consistency
- Force Application

**The Approach**

- Length of Approach
- Phases
  - Drive Phase
  - Continuation Phase
  - Transition Phase
- Checkmarks
- Visual Tracking

### Long/Triple Jump Differences

- Similar Mechanics
- Different Lengths
- Different Distributions
- Right-Left Takeoff Considerations

### General Mechanical Considerations for Preparation and Takeoff

- Postural Integrity
- Elastic Energy
- Displacement throughout preparation and takeoff

### Preparation for Takeoff

- **The Penultimate Step**  
Recovery height  
Grounded under center of mass  
Ground preparation (prerecruitment)  
Heel leads; full foot contact; rolling action  
Ankle bridge  
Lowering of center of mass  
Continued horizontal movement (displacement)  
Triple Jump Penultimate Characteristics

### The Takeoff

- Recovery height
- Ground preparation (prerecruitment)
- Heel leads; full foot contact; rolling action
- Ankle bridge
- Free leg movements
- Arm movements
- Continued horizontal movement (displacement)

### Triple Jump Considerations

- **Postural Integrity**  
Stability and Alignment
- **Contact Patterns**  
Locations and similarities
- **Swinging Segment Movements**  
Amplitude of movement

### Closing

- **Summary**
- **Thank You**