Technical and Training strategies of the Triple Jump: An open discussion

ADRIAN GHIOROAIE
Thursday, December 19, 2019
CONTENT

- **Components of the Triple Jump**
  - The Run
  - The Take-off
  - First Phase
  - Second phase
  - Third phase and landing

- **Technical aspects and differences**

- **Training Cues**

- **Training strategy and examples**
Components of the Triple Jump

- The run
- Take off
- First phase
- Second phase
- Third phase
- Landing
Components of the Triple Jump

The run

- Approach body posture - upright
- Tall “Up on your feet”
- Higher center of mass (Hips, Pelvis)
- Higher knees/low heel recovery
- Usually larger strides
- Controlled speed. More rhythm
- Should differ from the LJ approach when giving cues to athletes
Components of the Triple Jump

The take-off:

- Its different, not many similarities to HJ, LJ, or PV
- Has to be controlled (As tall as possible on the board, while still functional and optimal)
- Consistent with prior stride length (No reaching)
- Readiness, but not overly tight
- Center of mass (hips) moving (thrown) over take off board.
- *Do not jump ahead of the board. It's not the same as the long jump
- Ideal timing of the body. Sync sequence - ankle, hip, upper body, arms.
Components of the Triple Jump

First phase

- One of the toughest and unique skill in track and field: “ground reaction forces that triple jumpers experience when landing into the step and jump (15 to 20 × body weight [BW])”
- Ankle readiness
- Landing from the Hop (first phase) NO HEEL first at ground touch. Mid foot toward top foot. Heel is for stability
- Recovery after the Hop Impact-Taking off again -Most difficult part of the triple jump
- Lead thru the jump with the opposite take off leg at 90-degree angle until take off leg completes the cycle.
- Keep pushing with the hips, center of mass forward/ But have the body going in the same direction in sync
- Tall extended body in the air. Low heel recovery
- Redirect the impact forward. Find ways to minimize impact.
- Ankle in the air, Ready but neutral, no extreme dorsiflex or plantarflex
- Minimize losing speed
- Fast and confident ground contact. Timing ankle contact with rest of the body is of the essence.
- Ideal leg front-body timing:
Components of the Triple Jump

First phase

“Contrary to popular belief, the leg is planted in front of the body at touchdown. Television (TV) presenters commented that Jonathan Edwards’ leg landed directly under his body, but this was an inaccurate observation due to TV footage being reviewed at 25 frames per second (fps). Our analyses from high speed cine film at 100 fps clearly showed that his ankle was in front of his body at touchdown.”

WHAT WOULD IT TAKE TO BREAK THE WORLD RECORD IN THE MEN’S TRIPLE JUMP?

Written by Philip Graham-Smith, Qatar and Paul Brice, United Kingdom
Components of the Triple Jump

- **Second phase**
  - Physics and strategy similar with the 1\textsuperscript{st} phase.
  - Angle and height are very important. Finding the ideal for each jumper style.
  - Other leg swings from the back and takes the lead until touch down.
  - Size and distance of the 2\textsuperscript{nd} phase. Find what is optimal for the jumper.
  - Maintain speed, balance and direction.
  - Crucial in preparation for last phase.
  - Should not be exaggerated for the sake of reaching a certain distance.
Components of the Triple Jump

Third phase and Landing

- Timing. Flow. Rhythm
- Leading with the take off leg until the last moment before touching the sand.
- 2nd phase leg coming together with the lead leg right before the sand.
- Last moments before hitting the sand; chair position, both legs reunited and reaching forward with the heels. 90 degrees
- Parachute position vs. always leading with leg up front
- Distance can be made or lost at landing
Technical aspects and differences

Distribution

- Hop step and jump distance differences among jumpers.
- Common mistake forcing the 2nd phase.
- Comparing IAAF recent studies with the WR jump, males.
- In Edwards’ world record jump, the 18.29 meters was divided into 6.05, 5.22 and 7.02 meters, thus the distribution is about 33%, 29%, and 38%, respectively.
Technical aspects and differences

<table>
<thead>
<tr>
<th></th>
<th>Hop</th>
<th>Step</th>
<th>Jump</th>
</tr>
</thead>
<tbody>
<tr>
<td>Savigne Y. 5th</td>
<td>5.50</td>
<td>4.04</td>
<td>5.49</td>
</tr>
<tr>
<td>Gay M. 4th</td>
<td>5.35</td>
<td>4.43</td>
<td>5.00</td>
</tr>
<tr>
<td>Pyatykh A. 6th</td>
<td>5.46</td>
<td>4.31</td>
<td>4.95</td>
</tr>
<tr>
<td>Topic B. 4th</td>
<td>5.30</td>
<td>4.13</td>
<td>5.20</td>
</tr>
<tr>
<td>Smith.T. 5th</td>
<td>5.57</td>
<td>4.38</td>
<td>4.53</td>
</tr>
<tr>
<td>Lebedeva T. 2nd</td>
<td>5.33</td>
<td>4.30</td>
<td>5.00</td>
</tr>
<tr>
<td>Bujin C. 2nd</td>
<td>5.25</td>
<td>4.05</td>
<td>5.11</td>
</tr>
<tr>
<td>Veldakova D. 1st</td>
<td>5.24</td>
<td>3.96</td>
<td>5.06</td>
</tr>
</tbody>
</table>
Technical aspects and differences

![Graph showing jump distances in percentages and meters for different athletes in the triple jump final at the 12th IAAF World Championships in Athletics - Berlin 18 August 2009. The graph compares the hop, step, and jump distances for athletes with different positions.](image)
Technical aspects and differences

- **Jump momentum.**
  - Flow. Goal is center mass lowering at a minimum during the jump

- **Eastern European 80` vs. New**
  - https://www.youtube.com/watch?v=owRm92TdOmo

- **Simplicity in esthetics. JE 18.43 jump video:**

- **Yargelis Savigne:**
  - https://www.youtube.com/watch?v=sINMPccoaaw
Technical aspects and differences
Technical aspects and differences
Technical aspects and differences
Technical aspects and differences
Technical aspects and differences

Biomechanical Analysis of the Triple Jump Women Final
12th IAAF World Championships in Athletics - Berlin 17. August 2009

Gay M. 4th 14,61m

Pyatykh A. 6th 14,53m
Technical aspects and differences
Technical aspects and differences
Technical aspects and differences

- Arms single vs double: advocating for double, but without preparing ahead of the board. In between works for many. Throwing arms forward styles
- Dorsiflexion, plantar flex, neutral-ready.
- Energy level of a triple jumper. Adrenaline
- Injuries and career life of a triple jumper.
- Gender differences: Bone, muscle, testosterone, hormones, etc
- Inconsistency/ Different jumping style/parameters even within the same at the same meet.
Training cues

- Adaptation to event requirements. Readiness to be hit by the ground.
- Bounding, bounding and more bounding. BUT....
- Uniqueness/differences of the athlete.
- Athlete Strength/Weight ratio
- Triple jump specific strength (explosive strength vs. endurance)
- Overtraining/undertraining. “It’s better to be 10% undertrained than 1% over-trained”
- Optimal peaking. “Freshness”
- Time effectiveness during training. Tiredness
- Short Approaches vs full approaches in training
- Quality vs. Quantity
- Every day is different. Especially in competition season. Do not stress.
- Work to perfection is continuous.
- Flight Optimum trajectory.
- Core strength. Hip mobility
- Ankle drills. Depth Jumps?
Training cues

• Training strategy example:

• **Weekly:**
  • Monday: Olympic and jumps adapted weightlifting.
  • Tuesday: Jumps based
  • Wednesday: Sprints based
  • Thursday: Olympic and sprint adapted weightlifting
  • Friday: Jumps based
  • Saturday: Sprints day (longer)
Jumps training example when in volume period:

- Warm Up and Drills
- Ankle hops/straight knees 5 sets x 10
- Regular Boundings 7 sets x 10
- Single leg Bounding 5 sets x 10 each leg
- 3 triple jumps connected x 3-5 sets
- Take off every 3 steps x 3 sets
- Med ball/Core strength
- Cool down
Make it your own

• Personal Experience from being around the sport and observing many styles and body types. Noticing what works. Gut feeling. Holistic view of the event
• For the date savvy, IAAF studies are useful:
• https://www.worldathletics.org/about-iaaf/documents/research-centre
• file:///C:/Users/X1/Downloads/Men's%20triple%20jump%20-%202017%20IAAF%20World%20Championships%20pdf
• file:///C:/Users/X1/Downloads/Men's%20triple%20jump%20-%202018%20IAAF%20World%20Indoor%20Championships%20pdf