

## TECHNICAL CONCEPTS OF THE HIGH JUMP

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## Transition into the Curve

- The quality of the high jumper is determined by how well the negotiator the straight to the curve.
- No major adjustments in sprint mechanics except for inward lean.
- Curve displacement – anticipate on 4<sup>th</sup> stride.
- Stay "on the curve".
- Body stays in natural alignment without a false sensation of an inward lean



## The Approach

- The most often used approach with the "flop" is the "J" approach.
- The Length of the approach is dependent upon the ability of the jumper.
- Approach speed is determined by the amount of speed the jumper can control & convert.



## Transition into takeoff Mechanics The Penultimate Stride

- Posture is key.
- Momentum is maintained all the way through takeoff.
- Arm placement & mechanics.



## The Drive Phase (approximately first 2-3 strides)

- What to look for:
  - A good rocking back motion.
  - A cocked ankle (no plantar flexion).
  - A bridging off the back foot at drive.
  - A solid push off of both feet.



## What to look for:

- On PENULTIMATE:
  - Low heel recovery
  - Exaggerated dorsiflexion
- On LANDING:
  - Fixed ankle at 90 degrees
  - A rolling contact, move past penultimate to bridge



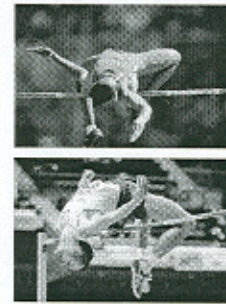
### Takeoff & Liftoff

- What to look for:
  - Recovery path of foot is low
  - As takeoff foot is descending everything is coming forward
  - Amortization – How much flexion in knee joint before it stops?
  - Ankle is dorsiflexed
  - Angle of foot with relation to the bar



### FLIGHT

- If the jumper has properly executed the approach & takeoff – this phase is relatively easy
- Shoulders are dropped & hips are raised
- Heels are together, knees apart & shoulders must be below hips
- Do things to promote layout
- Head stays in natural alignment
- Arm mechanics



### Takeoff & Liftoff

- Free leg & arm mechanics
  - The free leg & arms stop abruptly when thigh & arms are parallel to the ground
  - The momentum of these limbs is transferred to the entire body & increases its lift at takeoff
  - Good cues are "knee up" & "toe up"



### Takeoff & Liftoff

- "Toeing" off:
  - The takeoff foot comes across the C of M at takeoff
  - At "toe off" the athlete is vertical. The "outside" shoulder doesn't go into the bar until after liftoff
  - There is complete extension of the hip, knee & ankle





- Arm action – the outside arm moves down & out away from the curve. There is no erratic motion & it is commensurate with leg action.

### TRANSITION INTO TAKEOFF MECHANICS – THE PENULTIMATE STRIDE

- Posture is the key. The actions at the end of the approach will allow the jumper to “catch” his/her body’s C of M on the rise. No abrupt changes at any point. Acceleration or “pressing” cause an undesirable forward lean thereby put hips in an ineffective takeoff position
- Prepare for takeoff in strides #7 & #8. Momentum is maintained – continue **through** takeoff not **to** takeoff. *Athlete must prepare for takeoff in #7 & #8 – for L foot t.o. Focus on having a good push on #7 & equally string on #8 (L) to insure a good push onto penultimate (#9). Look at foot placement & alignment of hips (align hips, shoulder & foot with relation to curve). There needs to be a continuation of application of forces. Avoid being “premature” (square hips = no undulation).*
- Arm placement & mechanics – it is during the penultimate stride that the arms prepare to aid in the lift at takeoff

Double vs. Single Arm – biomechanically the double arm is the best & there are a lot of different styles. The single arm technique is OK if the arm stays close

DOUBLE – taller & stronger athlete – wide, “747” arms  
shorter & smaller athlete – quick hit

SINGLE - arms stay the same, keep it going

On Penultimate	What to look for:	1. low heel recovery 2. exaggerated dorsiflexion
On Landing	What to look for:	1. fixed ankle at 90 degrees 2. a rolling contact, move past penultimate until bridge

### TAKEOFF & LIFTOFF

What to look for:

1. recovery path of foot is low
2. as takeoff foot is descending everything is coming forward
3. amortization – how much flexion in knee joint before it stops
4. ankle is dorsiflexed
5. angle of foot in relation to bar – it’s angled or “near” parallel  
(toe pointed towards back corner of pit)



- Free leg & arm mechanics – the free leg & arm stop abruptly when thigh & arms are parallel to the ground. The momentum of these limbs is transferred to the entire body & increases its lift at takeoff. Good cues are “knee up & toe up”.
  - *ARMS: Double – block to see upper arm parallel to ground – elbows may be flared.*
  - *Single – L is parallel to the ground & R upper arm is in front of the face. Have athletes run of the ground & punch the R arm to get the R shoulder up*
- “Toeing” off – the takeoff foot comes across the C of M at takeoff. At toe off the athlete is vertical. There is complete extension of hip, knee, & ankle



### FLIGHT

- If the jumper has properly executed the approach & takeoff, this phase should be relatively easy
- Shoulders drop & hips are raised
- Heels together, knees apart; shoulders must be below hips
- Do things to promote layout (“lay neck on the bar”; “drop shoulders over the bar”)
- Head stays in natural alignment. If they throw the head back it will create a big arch & the jumper will tend to brush bar off with calves
- Arm mechanics – after arms are blocked they are dropped to the sides of the body during lay out. This is highly individual & varied

