HIGH JUMP BASICS

GOALS OF THE HIGH JUMP AND GENERAL TECHNICAL MODEL

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What we will be covering today

- ”Fosbury Flop” style high jump technique
- Why run a curved approach & the curves Purpose
- 5 phases of the high jump approach
- How to begin developing an approach with athletes

Goals of the High Jump

- To generate as much speed and lean away from the crossbar around a "J" shaped approach.
- The resulting forces after takeoff create a twisting backwards somersault that allows the athlete to twist their back to the bar while simultaneously rotating the body over it.

WHY RUN A CURVE?

Running a Technically Correct Curve results in:

- Back rotating to the bar
- Fast somersaulting over the bar (fast bar clearance)
- Short time spent over the bar
- Efficient bar clearance

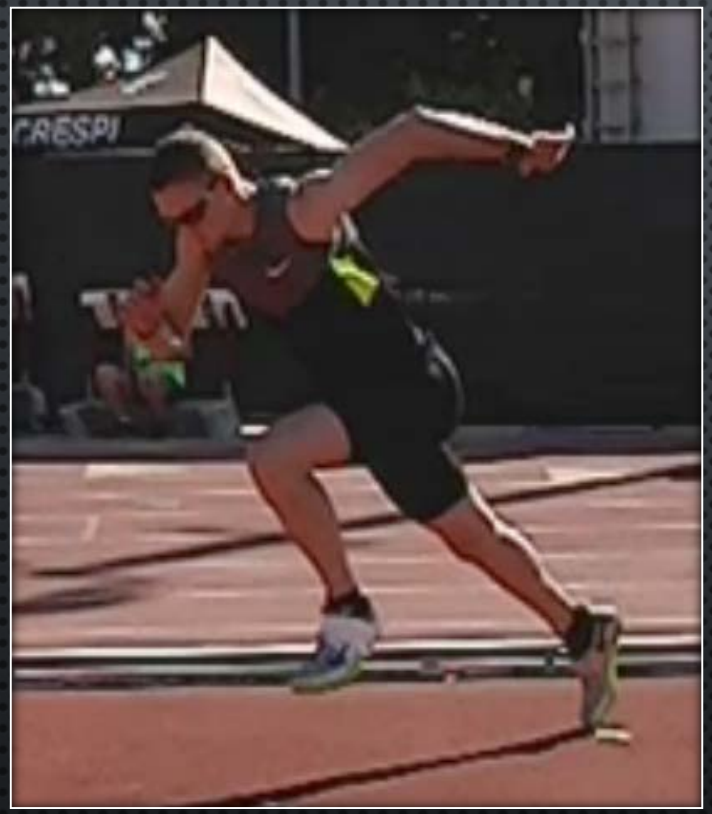
5 Phases of the High Jump Approach

- Acceleration Phase
- Transition to the curve
- Preparation for takeoff
- Takeoff
- Flight

Acceleration Phase (Phase 1)

- Overcoming inertia to develop horizontal velocity
- Goal of this phase is to develop 90%+ of the required horizontal velocity over the first 3-4 strides of a 10+ step approach – Can be adjusted for younger athletes
- Be upright in posture by the time the athlete hits their mid mark signaling the transition to their curve

ACCELERATION PHASE

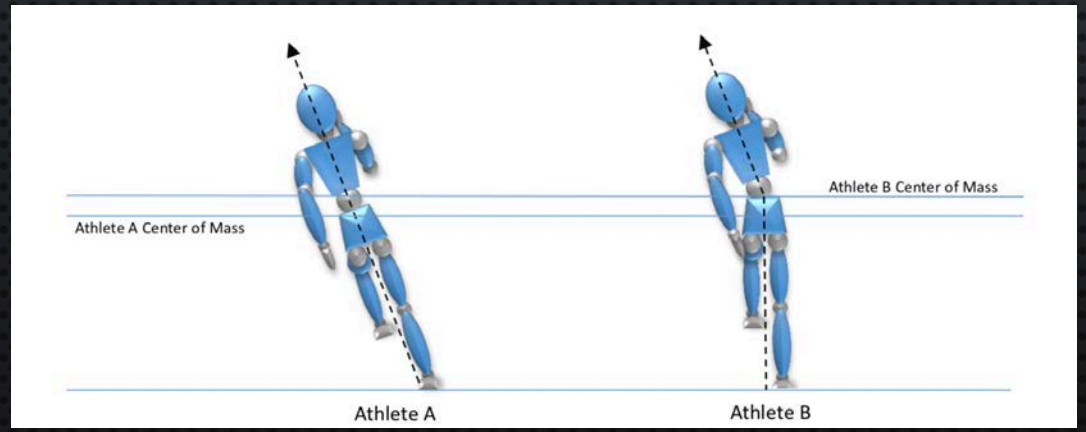


Transition to the curve

- When we go from the straight portion (acceleration) of the approach to the actual curve (steps 5 and 6 on a 10 step approach)
- This transition should occur smoothly without excessive deceleration, acceleration, cutting, or leaning forward
- In my opinion one of the most important aspects of the high jump approach which is under coached if it is coached at all
- These two steps dictate the entire trajectory of the athletes center of mass (COM) into the takeoff
- Will happen on the OUTSIDE leg

CURVE RUNNING MECHANICS

- When entering the curve the athlete should be in upright sprint mechanics
- Outward pressure through the foot – Hinging at the ankle
- Foot contacts should turn to progressively greater degrees through the curve
- There should NOT be a noticeable acceleration once the athlete enters the curve – acceleration mechanics would not put the athlete in a good takeoff position nor would they be able to apply the outward pressure necessary to facilitate lean

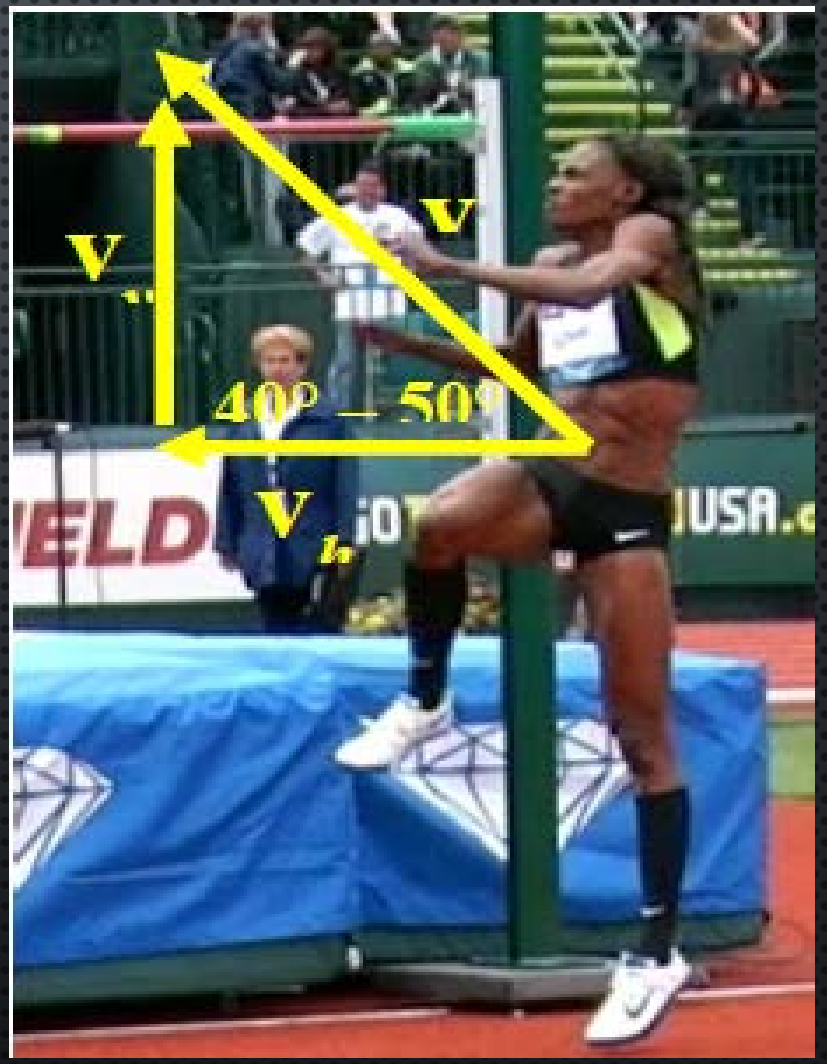


PREPARATION FOR TAKEOFF

- Characterized by a lowering of the COM into the 2nd to last step (Penultimate Stride)
- Minimize deceleration over the penultimate stride – This is done by continuing to run the curve correctly
- Most of the lowering can/will occur because of the lowering of the COM that happens naturally while running a curve

TAKEOFF

- Create vertical lift (Vv) – Applying a large force over a large range of motion as quickly as possible
- Should set up rotations that will occur in flight
- Takeoff foot should point just inside of the far standard
- Takeoff distances vary athlete to athlete but are typically anywhere from 3-5’ away from the bar – Takeoff distance is relative to the lean that the athlete has



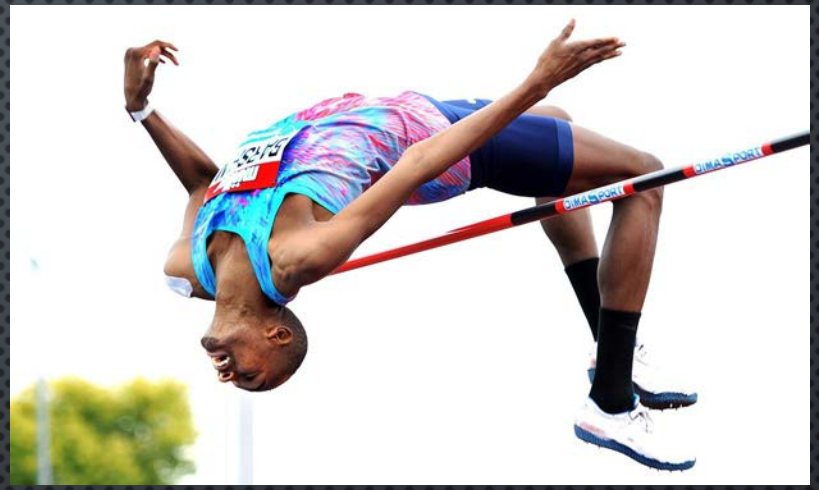
TAKEOFF MECHANICS

- The approach should result in bringing the jumper into a position of inward lean at takeoff
- Body position of the jumper from ground contact to toe off – inward lean to an upright vertical position
- Takeoff stride should land in front of the body's COM to create lift
- Takeoff is a collision and change of direction (deflection) that the athlete must be strong enough to accept
- Jumper needs to be able to keep the body rigid through the takeoff so force can be applied properly
- Free leg and arms should swing powerfully

TAKEOFF MECHANICS CONTINUED…

FLIGHT

- After takeoff the parabolic flight path has been predetermined
- The body should follow this flight path with as little deviation as possible
- The body should rotate around the bar while the shoulders drop and the hips rise creating the "arch" commonly referred to in the high jump
- To finish the clearance the athlete should roll the chin to the chest – this will drop the hips and clear the legs
- The athlete should land on the top of their shoulders



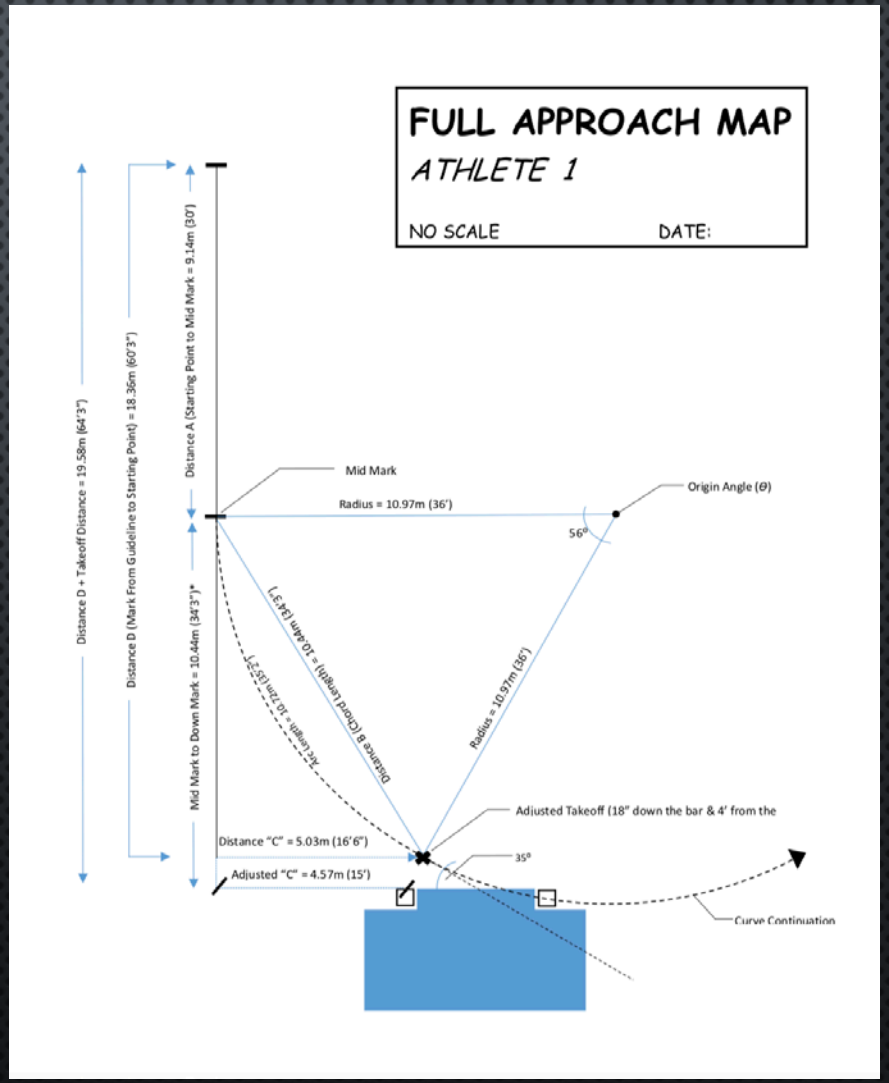
Beginning Approach Work

- The two most widely used approach development methods
  - "J" run back
  - Straight line approaches
- I don't use either of these methods – It is my belief that each of these involves too much guess work that lead to inconsistencies in the athletes development
- The method I use involves fitting a radius measurement to each athlete based on different variables such as age, gender, strength, and speed.
- Regardless of the approach development method you choose to use, it needs to follow certain biomechanical principles – which will be covered in part 2 of this presentation (Training Design)

EXAMPLE OF A FULL APPROACH MAP

- EXAMPLE OF A FULL APPROACH MAP FOR ONE OF MY FORMER MALE ATHLETES
- 3X BIG TEN CHAMPION
- 2.23M (7’ 3.75”) PB
- 5’ 11” HEIGHT – FAST

- ARTICLE ON HOW TO CREATE THIS AT: HTTP://WWW.PAGETURNPRO.COM/RENAISSANCE-PUBLISHING/78141-TECHNIQUES-MAY-2017/DEFAULT.HTML#PAGE/10



Questions?

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