

2017 OATCCC Ohio Collegiate Coaches Night

Commonalities of Elite Pole Vaulters: Prepare Them When They're Young
Clymer Presentation Notes (tentative)

Brief Introduction

Brian Clymer

- Kenyon College – 4 years (present)
- Wake Forest University – 8 years
- Kent State University – 2 years
 - Competed for Kent State as a PVer, was a mediocre Division I vaulter

This presentation

Commonalities of Elite Pole Vaulters: Prepare Them When They're Young

- Will be roughly based off of most of the info on my YouTube Channel, with a little extra detail here and there
- Not an autocrat of a certain technical system, like some might think
- Classical mechanical physics is my guide, which just happens to line up with the Petrov methods
- Allowances for “style” can and should be made in certain situations

Sprinting/Pole Runs

Commonalities:

- P-O-S-T-U-R-E
 - Optimum COG
 - Overall elasticity of the body
 - Important for sprinting, necessity for great TO-to-Swing connection
 - Petrov book dedicates entire 1st chapter to posture
 - Optimum pole vault (and all jump) TO mechanics
- Active foot strikes
- Avoid passive foot “landings”
 - Often occurs in young vaulter's gradual, building approach runs
 - A slower stride rhythm must still be “active”
 - Teach with correct Mach A-Skip, Mach A-Run drill
 - Learn how to run from the GLUTES, find and fire the glutes
 - Avoid the double-touch, always “switch-in-the-air” in “sprinting” drills
 - Seagrave calls it “thigh pop” + Seagrave video link
 - Based off of Frans Bosch's “Stumble-Trip” reflex (also called ‘stumble-extension’)
 - Loren Seagrave's “Cross-Extension” Reflex
 - [+ Jonas Doodo's link to his video practical session](#)
 - A lot of the technical pole vault errors through Plant-to-TO, are exasperated (or even created) by passive foot strikes, anterior pelvis rotations, and backside running mechanics
- Any or all pole drop styles are trying to push your stride into backside
- Elite sprinters apply 85+% of each stride's total force application into first 6-8” in early stance ... this is even more important for vaulters – Seagrave
 - Tim Mack anecdote about working with Vince Anderson, and when he came back to train after first semester at UT

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Pole Carry & Drop

Commonalities:

- Bottom hand (fulcrum) stays close to the vaulter's body (narrow or wide grips)
 - COG control of the combined vaulter + implement system
- Top hand has to move back and away from the hip during the pole drop
 - If top hand stays on the hip, the bottom hand has to move forward
 - Bottom hand forward during drop pushes COG too far forward
 - This creates postural and stride length and frequency errors into the plant and take-off
 - Leaning forward at hips
 - Leaning backward at hips
 - If upper body upright, then pelvis is likely dumped forward
 - Neutral pelvis posture is very important for a dynamic swing later in the vault
 - TO foot reflexively tries to find 6-8" in front of the systems COG
 - Don't move COG TOO far forward with plant mechanic
- Active Drop still produces added weight to the fulcrum (especially outside)
- Active Drop converts to plant at a pole tip height approximately 1 ft higher than the vaulter's own standing height
 - Too high creates a "slapping" plant that results in overly tense shoulders, pulling bottom arm and/or slow feet
 - A lot of vaulters have jumped very high letting the pole tip drop lower than head height (Don Hood actually used to teach a very low tip drop before plant).
 - Young Duplantis does this as well

Plant

Commonalities:

- 3-step plants to begin on contact
 - error to initiate in mid-air, or less stable late-stance position
 - creates turbulence
 - like trying to impart force to hammer or discus when not in double support
- Hand/Implement height during drop to plant transition effects overall height of system COG
 - Want to be more like a triple jumper than a high jumper
 - Stay high, fight the drop (plant's upward movement will take care of it)
 - Opposite-equal reaction to upward moving hands will create enough lowering of system's COG to create low-to-high for TO
 - Tall jumpers can afford low hands, but still not optimal
 - Renaud uses it as part of his technical methodology (not confirmed)
- Bottom hand with vertical "emphasis" from a close position to the chest/abdomen
 - Not emphasis forward with bottom hand
 - Tom Hayes, Vertical Jumps Coach Kansas – Championship Productions video
 - Nice progression for drop, plant, TO
 - [+ Video examples from CP 1](#)
 - [+ Video example from CP 2](#)
 - "Free Take-off" is nearly impossible to accomplish with forward plant emphasis
 - necessitates "OUT" take-off if plant moves forward

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- Vertical emphasis plant allows for “free” TO with “ON” step
- Fast Hands
 - Necessity for everybody (Renaud’s are the fastest)
 - Frequency of the feet will slow down to match the hand’s slower speed
 - Hands have to move as fast as you want your feet to move (all events)
 - Slow hands will create a floating, passive TO stride
 - Avoid the error trilogy or bottom hand moving forward during drop, pole tip too high at plant initiation, and slow hands
 - Will see coaches imploring kids to shorten their take-off stride while making 1-or-more of these technical errors in their vault, that naturally lengthen the last stride.
 - Kids can sometimes overcome these errors and shorten their TO stride on short poles and short runs, but errors will again occur with longer implements and more speed
- Finish with “Shoulder Block” cue to create space (shoulder cue from gymnastic tumbling)
 - Reference to David Butler’s paper – Rice University

Take-off

Commonalities

- Technical Preservation
 - “A thing can only be as good as the thing that occurred immediately before it”
 - “You’re only as strong as your weakest point”
- If things have been done correct to this point, the take-off will largely take-care of itself
 - More like a TJ take-off than a LJ take-off
- Keep the feet low for “jump” fundamental
 - BUT, Sprint off the ground
 - Shorten last step focus, not “jump”
 - Renaud’s hurdle attack TO example
 - Video close-up: Renaud PV TO vs. Hurdle TO
 - Video close-up: Renaud PV TO vs. Bubka/Gataullin PV TO
 - Only in over-cueing situations do you need to cue jump (opinion)
 - Jump cue will likely over lengthen the TO step (not optimal)
 - Can create heel contact and too much braking
 - Helwick example video

After the Toe Leaves the Ground

- Bottom Arm to COG vertical relationship
 - Keep the hips back
 - Easy(ier) if good posture is maintained during plant
- Do not look at the bottom hand, this is an error
 - Hands should disappear from a vaulter’s vision
 - Eyes on hand will give up hips
 - Eventual goal for youth boys and girls to lose vision of bottom hand
- Rhythm change in all jumps from runway to flight
 - Same in the vault
 - Body likes cyclical, repetitive patterns, need to break that rhythm pattern as toe leaves ground

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- Analogy - 2m sprint stride contact rhythms to 5m+ contact rhythm (TJ rhythm cue)
- “Finish” the TO
 - Sometimes cue aggression, sometimes cue patience
 - Aggression works best if “Row from zero” is not cued also
 - Main error I’ve witnessed over and over is “row from zero” on same rhythm as approach run, kids keep coming up short on more aggressive runs, and coach and vaulter can’t figure it out
 - Triggers pole to unbend early, before chord has switched over
 - When Row is cued patience is necessary
 - Strive for rhythm change no less
 - Enjoy the TO
 - Similar to “leaving back” in the javelin

TAP (gymnastics/Tim Werner)

- Strive for as long a lever as possible at the tap (or at the box)
 - Spend a “couple frames” of the video as long levered as possible
- Move the pole with your swing, not your lats
 - No kayaker’s ROW, length is your strength
 - “Row from zero” is the worst cue ever (opinion)
 - Swing “around” the top hand as long as possible
 - Do not volitionally transition swing to the shoulders until after the pole has “switched over”
 - Push pole away and hollow the chest thru Tap (gymnast shoulder block cue again)
 - This is the “I to L” conversion in my vids
 - “L” happens at the hips, not the shoulders
- Keeps the top arm out of the space you want to swing your hips up into
 - Early turn can be executed when you have space to execute it
 - Vaulter’s body can only invert to same angle as top arm
 - If top arm is driven past vertical, then body can’t get to vertical
 - “Flagging” or fly-away dumping occurs
- Swing-up to inversion should be an elastic uncoiling and reflexive movement, not a strength movement
 - Early ROW (row from zero) takes elasticity out of the swing and creates a feat of strength to occur
 - Serape effect – top arm humorous origin to TO leg femur origin
 - Don’t shorten rubber band in chest to top arm connection, USE it
- Take-off > Swing-to-Inversion Drill – video of the drill to end all drills

Bar Clearance

- Pike at the chest, not at the hips
 - Petrov Book example
- Always clear the chest and elbows before the hands
- Young vaulters get in a habit of clearing the hands first before the chest is over
 - When the hands are pulled up, the chest is dropped down