



Advanced Development in the Long Jump

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1. Introduction

a. Framework of the Talk

- i. Made some adjustments to the notes so if anyone wants it just DM or email me.
- ii. This is in no way, shape, or form an attempt at telling you exactly how to train long jumpers. Don't have any secrets or magic bullets.
- iii. This is more a **memoire of this season** specifically training our two top long jumpers:
 1. **Eric Burns** (25'2.75")
 2. **Mackenzie Arnold** (20'3")
 3. Didn't get to finish out their senior seasons.
- iv. So much more could be said here, you can't even come close to touching on all aspects of development in an hour long talk so I had to condense it. Skipped over lifting, general training, and many other power training methods.
 1. Approach and Speed Development Progressions
 2. Technical Development Modifications
 3. Conclusions and Other Thoughts
- v. Lastly, **not much on actual weekly/monthly programming here. More about the specifics of key training activities.**

2. Approach and Speed Development Progressions

a. 2020 Eric

- i. Started with a meeting....wanted to take more risks...
- ii. Gradual volume increase, starting with accel and short approach
- iii. Acceleration volume considerations
 1. Increase to close to 500m total meters most sessions
 - a. **To create greater adaptation gradual increases of volume in neural work helps**

i. But some high-level athletes can't handle it

1. James and Antwon

2. Consistent execution

a. Came to understand how sound technical execution allowed for higher volumes/less strain

i. Critical to understand, chew on that

b. He also really did take care of the other 21-22 hours of the day

iv. **Resisted sprint training philosophy (1080 Sprint)**

1. It's all about **transfer!**

2. Power development is critical-basic idea is move resistances faster over the course of a season: **HUGE IN JUMPS DEVELOPMENT**

3. Had simple zones that we worked within:

a. 1-5kg, 6-10kg, 11-15kg, 16-20kg, 21-25g, 26-30kg. Never used 26+

b. 1 day heavy tracking **peak power output**, (10m-15m)

c. 1 day lighter and longer tracking peak velocity (20m-35m)

i. Why 35m? We don't have a track, just a roll out straightaway

4. Early on it was about building speed-strength before strength-speed, power first model

5. In my mind, this was his main lift and treated it that way

6. After Meso 1 we would target peak power output increases, then once achieved **we would drop resistance and aim to keep sustaining high power outputs, but always stayed in zone for purity of stimulus**

a. This goes for the session, within mesocycle, and macrocycle

b. Work within the zone with an overall aim of **hitting big power outputs at lesser resistances within the zone**

c. Always aiming to bring physical gains closer to bodyweight, and back to the event.

i. **High power outputs at 1kg less was a big gain**

ii. It's always a delicate balance of achieving physical gains and getting it to **download** into the event itself

d. Ex: Took a while to hit 2200W up at 25kg but eventually hit it at **21kg** in early Feb. At that point we scaled heavy resisted off the rest of indoor.

e. Ex: Early in the year we aimed at 2000W up at 20kg, and then as the fall went on he could hit it at **16kg**

v. **Assisted/Overspeed training philosophy (1080 Sprint)**

1. Once again....**It's...All....About....Transfer!**

2. Don't have an indoor track so relied more on overspeed mid to late fall and every other week during indoor

a. Important to consider density

3. Generally, wanted Eric to get **consistent exposures to 11m/s**

4. The goal of each sesh was to **hit a good top speed at a higher assistance, ~4kg-6kg then work down and try to hit similar velocities at lesser assistances**
 5. **Breakthrough came when he hit 11.15m/s on just a 2kg pull**, that's basically a slight tailwind. Second to last week of fall training.
 6. Same general idea as resisted sprint training but didn't have zones: only really worked from 2kg-6kg and surfed between those assistances
 - a. 2-4kg early
 - b. 3-6kg middle
 - c. 2-3kg later
 7. Did certainly do an uptick of max velocity sprinting mid fall
 - a. Skipped fly 10m's
 - i. However my guess is that he could go .90-.91
 - b. Did more fly 20m's
 - i. Would've worked it more but weather and facility constraints
 - c. Worked 35m through brower gates every other week indoors, allowed him to **find the right rhythm/cadence in acceleration. Using data helped him figure it out and minimize a-symmetry**
- vi. **Approach work focus**
1. Drive phase work, can **be done almost endlessly**
 - a. Get that down it solves many problems, and gave him a tool to work with to make adjustments when needed
 - b. **Tactics** are underappreciated in jumps development
 - i. Develop strategies: Build that into approach sesh's
 1. Over the drive phase mark then...
 2. didn't get enough push out the back then....
 3. rushed the drive then.....
 4. not getting enough out of right leg then...
 2. **Mid-Mark**; executing the middle
 - a. Problem area his first two years-to me this was the area that could be most improved
 - b. Perfect became 29'9", but sometimes would crowd the board up around 28'6"
 - c. Became the **primary source of dialogue** at meets
 - i. GVSU example: Super series (adjustment on 4th attempt)
 1. Broke LaDerrick Ward's meet record
 - d. **Figured out that he needed to start faster and hit top speeds 2/3 into approach** then carry that into takeoff.
 - i. Not what he did early in career
 - e. As time went on he found that he would get more out of his takeoff leg down the runway so we worked on equalizing sprint force application through brower/1080

3. Extremely important overall idea in Eric's development over the course of his career was **wedding top end speed effort with his approach speed. BRIDGING THE MV AND MCV gap**
4. While also being able to coordinate a good takeoff at higher and higher speeds. **GENERATE VERTICAL VELOCITY IN LESS TIME!!!**
 - a. This was a 4 year process
 - b. Really started to figure it out last year, and fully embraced it this year
 - c. **Complexes**, and combining approach/overspeed/MV work **WITHIN A SESSION WAS KEY-intensity factors**
 - d. Just became about finding ways to handle that kind of speed and especially understanding spacing down the runway and timing of takeoff
 - e. **Approach work modalities**-had to leave speed work behind in favor of more approach
 - i. Worked on it endlessly in a multitude of ways (2-3 x's a week)
 1. Variability
 2. Checkmarks (DP, Mid, Pen)
 3. **Coached to the penultimate to understand spacing**
 4. **TAKEOFF-must be added/complexed to calibrate to higher speeds in there, goal cone**
 5. Complexes with sprints, or any of the above
5. We all loathe or are encouraged by big fouls but if you've worked with an athlete for several years I just don't think it should be happening much if at all. **I'm confident he didn't foul bigger than he legally marked this year.**
 - b. It's important to note that when we were stuck indoors at the end of fall training and all of indoor we completely abandoned short approach jumping and all drills and put total emphasis on approach work, speed, and bringing those two together and gaining more comfort at higher speed's while understanding spacing
 - i. **Preserve full approach rhythm**
 - ii. Partially because of facility constraints-no indoor track, no sandpit

3. Technical Development Modifications

a. 2020 Eric

- i. **Tightened takeoff step** = more time past the board/applying force back
 - a. **Very difficult skill to master, takes years, doesn't really come naturally**
 - b. **Ivan Pedroso, Yago Lamela, Mitchell Watt, Henry Frayne**
 - c. **Malaiko Mihambo is the best technician in the world**
2. Pen Cone at 2.00m but was often closer to 1.90m (Keep in mind he's only 5'8" on a tall day)

3. **Important to understand that as physical qualities increase technical understanding evolves too, always bring speed gains back to the event!**
- ii. **Hit highest speed by the mid-mark or 2/3 into approach so he can....**
- iii. **Let the jump come to him and not force it – light bulb moment*****
 1. **Carry through the board**
 2. **Displacement**
- iv. **Short Approach Jumping**
 1. **Increased volumes**
 - a. **Technical potentiation-takeoff isolation**
 - b. **Use of mats was common to develop rhythm, cones for penultimate as well as mid-mark, yes on SA too.**
 - i. **ALWAYS need to understand spacing down the runway**
 - c. **I don't really use boxes**
 - d. **Some days went for it and didn't worry about fouling**
 - e. **Most days held him accountable on being on the board**
 - f. **Some days purposely did speed jumps**
 - i. **Philosophically speaking you can avoid physical boredom in an athlete by altering the same activity/changing the focus, or adding pressure, or taking it away**
- v. **Power Development Advancement: 1 key exercise**
 1. **2020 Eric (12"), Kenz (8")**
 - a. **Single Leg Depth Jumps**
 - i. **Key training modality-Vaccinate takeoff leg to prepare for added speed at takeoff**
 - ii. **Progress from drops to jumps**
 - iii. **Once a week the entire fall and all of indoor**
 - iv. **6-10 each leg, often timed based on LJ takeoff time (approx. .14-.18)**
 - v. **Methodology/Philosophy – LJ takeoff options?**
 1. **More force in same time**
 - a. **Increase height, aim to maintain GC time**
 2. **Same force in less time**
 - a. **Keep height, aim to decrease GC time-speed of movement the more important factor for them**
 - i. **Coaches Eye**
 - b. **Elected this due to their increased speed values = had to apply force in less time**
 - c. **Had to achieve vertical velocity in less time**

- d. Also never had problems expressing force into the board-that's their background-both more jumper jumpers that got faster

4. Conclusion and Other Thoughts

- a. Mental Shifts
 - i. Keep that sense of building-would often give targets to hit in practice-main goal was replication
 - ii. Constructive mindset-all you can do is try to figure things out, that's it
 - I. Got out of thinking too far ahead, got out of being too hard on themselves, and just focused on taking care of today
 - iii. Total immersion into practice-always shifting them into that
 - iv. Emotional control
 - v. Always a solution-explore solutions-replicate deep learning experiences
- b. Take copious notes, great way to figure things out-ask yourself lots of questions
- c. Make mistakes, stop trying to be perfect, take the posture of a learner...always. Everything is a learning opportunity.
- d. Questions
- e. If we run out of time just message me and I'll respond as soon as I can

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