

DISCUS THROW

NMTCCCA CLINIC January 24, 2020



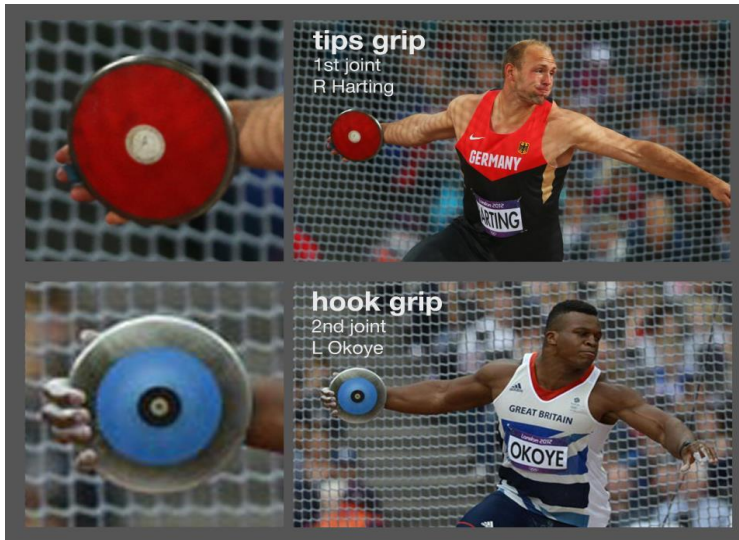
GOALS

- **HAVE FUN** - educate – teach - learn – listen!
- Practice like you compete – example Mac Wilkins and others @1984 Olympic Trials (D-END!)
- Mac's comment years later – what he was focusing on compared to John Powell
- Drill between throws – focus on one or two key technical concepts, like pivoting in center of ring.
- Throwers do not need ring to execute drills/technical exercises (D-END, ROAD, GRASS, DIRT).
Olympic swim coach who lost training facility – **“Swim in the mud and still succeed!”**
- Meets – even at state throwers standing around. Hot day is one thing – but still drill!
- One ring at practice. Do your throwers stand around – wait in line - between their throws?
- TIME – Could not have presented this material five years ago. Did not understand or appreciate the TIME restrictions that each one of you as coaches face. Goal - to give you some substance.
- DRILL – technical exercising between throws. Seek ‘PRECISE’ not perfect technique.
- Avoid overcoaching – paralysis by analysis – overloading thrower with technical points - thrower thinking about too many concepts or too many coaches trying to give advice. KISS principle!
- What is the major point that needs correcting? Common errors and problem solving.
- Logical progressions – what to teach first.



GET A GRIP

- Holding the discus – two fingers together stronger than one. Which one is better below?
- Catching the discus – solo
- Bowling the discus – into a net or to a partner
- Discus roll individually or relay – getting throwers to run for fun (Nia in 8th grader)
- Swing discus side to side – up and down. Feel implement staying in hand.
- Not enough implements – plastic bottles filled with sand or dirt, cones, 5lbs dumbbell weight plates, or bowling pins.



STANDING THROW

- Establish good **heel-toe position** – jump up then step straight out (women compared to men – wider hips). The valgus effect. Do not block out the hip. Cannot overstate the importance of angular velocity from the hip. Strong correlation between angular velocity of hip and release velocity of the discus.
- **SLING ARM** – audience participation. Relax arm and swing back and forth. On back swing rotate the hip. Notice how the arm naturally goes out. Stretch reflex – lift index finger and pull back.
- As the thrower is learning, try to place emphasis on the hip first and not on the throwing arm – establish **forces working from the ground up concept**.
- **Quick pivots** – left heel down – right heel off the ground - right knee around.
- **Left arm isolated action** – blocking dummy – remember the angles ~ 45 and ~ 90 .



COMMON ERRORS

- Common errors – looking into throw early (out of the back of the ring, through the center, into the throw). Most first time throwers want to look in direction they are going. How to correct! Repetition on focal points out and back. Even best in world struggle with focal points.
- Look at the difference in tension of the throwing arm in first two images below.
- Like sprinter looking up too soon out of the blocks. Cervical spine goes first – lumbar spine follows. Do not burst a gasket in blocks when sprinting (relax). Do not burst a gasket out of the back of the ring (relax). Wilkins eventually drops his throwing arm in pre-sprint position below center) and then it goes back up with right hip. Relaxation-explosion. Sprinter's legs do the work on the track – head/chin relaxed. **Sprint drills with sprinters helps.**
- Head in line with chest as long as possible. See implement out of corner of eye at release.



MIRROR – POWELL – etc

- **HALF MIRROR**– Hold focal point, left foot straight, bring left knee to right knee (repeat)
- **FULL MIRROR** – Proper set up – at meets often see throwers setting up turned too far. Why is this wrong? Lose proper focal point! Cannot X-body! Cannot establish proper arm position. Essential to set right heel off ground, COM over the right foot, straight line through head to the ground, do not shift weight back and forth, repeats (when proficient enough, time them – see how many in 5sec – 10sec). Should become second nature. Next – left heel down and right knee around. Left arm out and at angle of throw to block.
- **POWELLS** (South Africans) – to center hold focus OUT, then add getting left leg through. Angular peg through angular hole – right knee to left knee. Get left down quickly (longer it takes to get down more the hip speed slows – longer it stops *NLM*).
- **FLOAT-FLOAT-STING** – <https://www.youtube.com/watch?v=5P0CP2yAk5k> Ray Burton (Oregon) – fastest acceleration, but under control. Linear vs Rotational.



CROSS-STEP THROWS - etc

- Cross-steps to throw – use road into a field (one at a time or spread out – safety first). One thrower throws - others drill. Focal points key, relax arms and shoulders level.
- Cariokas to throw – concept as above. Let throwing arm hang limp!
- More advanced – same concept as above lower with legs and work right leg harder – rotational thrower. Linear thrower – attack straighter on!
- Incorporate critical technical points – stop at left foot touchdown – left arm out and focus back – right foot pivot center of the ring.



ETUDE – THROWING IS AN ART

- **ETUDE** – “a short musical composition, typically for one instrument, designed as an exercise to improve the technique (scales) or demonstrate the skill of the player.”
- Like an etude make drills-technical exercises FUN. Work legs – calm upper body!
- Is it really so different than other fine arts - movements in ballet for instance? Think of the explosive power of Mikhail Baryshnikov of the Russian Bolshoi Ballet
- Think learning a new dance – **BALANCE** – BARRE ROUTINES.
- THINK MOVEMENT – BEAUTY OF SPORT! Throwing is an art!



SET UP OUT OF THE BACK

- **OERTERS** – Knees apart, push off right foot, weight on left foot, heel off the ground. 90-180-270-360 degrees.
- **KISS** – Keep simple – 90-OERTER to Powell. Down on left leg! Sprint!
- Pirouettes – work the right leg inner thigh!
- Where are hips when at full extension out of the blocks for sprinting?
- Proper sprint position? Advanced – cantilevered. Arm angle! High point!
- Wilkins (6'4" 265lbs – 232'10") vs Powell (6'2" 235lbs – 233'9")! Big circle – little circle vs Two piston concept drive (sprint) left and pivot right. Or **Rotational vs Linear**.
- **HIP CATCH DRILL** – Left knee to concrete (left leg @angle of throw), slight bend waist, project right leg out depending on linear or rotational. Wall drill or holding on to rope/partners hand. Right leg action - adduction. **TIGHT ROPE** – RT – LT – Alternating!



CENTER – BLOCK - REVERSE

- RT FOOT @TOUCHDOWN IN CENTER ON RING – POSITION (heel off ground) WHY?
- LEFT LEG AND FOOT THROUGH THE RING – PUSH - PULL (left leg – RT HIP slows)
- RT HIP – REAR POSITION @TOUCHDOWN (Bing Yu studies)
- ARM POSITION THROUGH THE RING – ANGLE STAYS THE SAME (KISS)
- FOCAL POINTS THROUGH RING – HEAD STAYS WITH CHEST
- LEFT FOOT TOUCHDOWN FRONT OF THE RING
- LEFT ARM OUT AND IN – STRETCH REFLEX CHEST – MAST OF SHIP
- LEFT HAND – TURNING A DOORKNOB AND MAKE A FIST!
- LEFT ARM 45 degree angle at block – see implement @release. THINK REBAR!



LIFT and SEPARATION

- DOUBLE SUPPORT PHASE
- LEFT HEEL DOWN – RIGHT KNEE AROUND
- SLIGHT COMPRESSION – LIKE GOING IN FOR REBOUND IN BASKETBALL
- **DRIVE UP STRAIGHT ON DRILL** –
Set up pigeon-toed and maintain throughout the drill 1) Coordinate legs +2) Add right hip +3) Add chin back +4) Add chest up +5) Add reverse +6) Non-reverse + 7) Delayed reverse – switch feet (relax throwing arm – feel it pulled around – stretch reflexed). Too advanced? Think again. This is the ‘one’ drill Art Venegas (former UCLA coach – John Godina’s college coach) at NCAA Indoor Clinic said that he got the most out of during my discus presentation. It may look odd – BUT it works. Helps develop kinesthetic awareness – feel.



TO REVERSE or NOT TO REVERSE THAT IS THE QUESTION

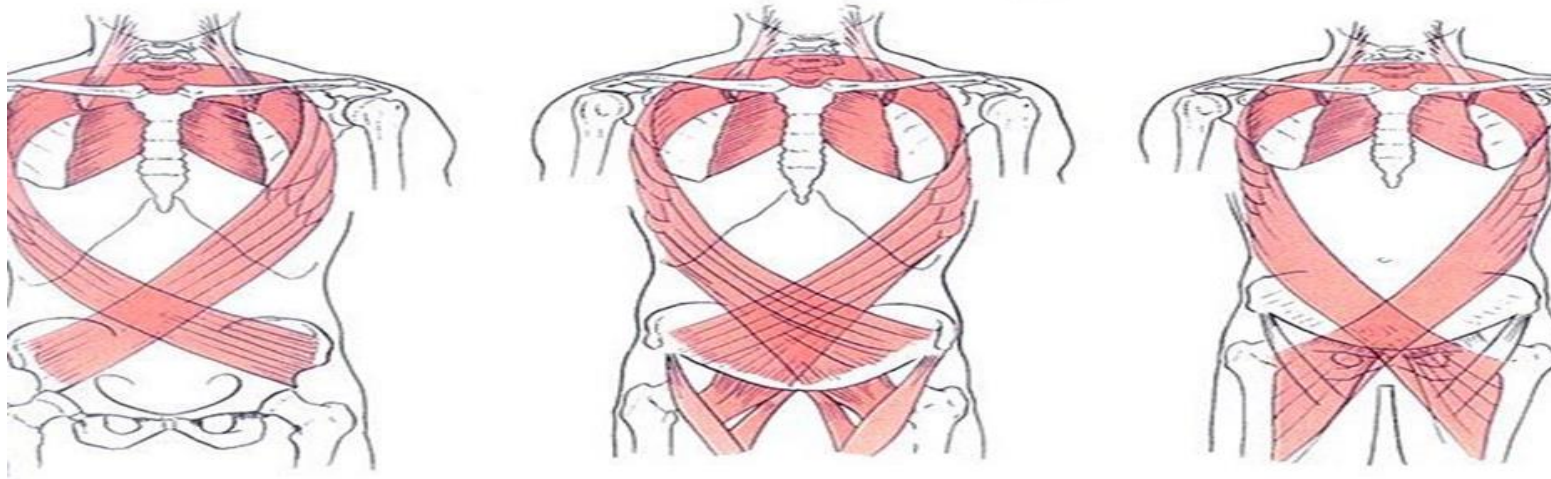
- Create longest possible pull?
- How did Al Oerter get his discus arm so far back? Difficult to coach! Audience participation.
- Left (non-throwing arm) OUT then in – touch coach's hand then solid block! Repetition!
- Why do more women than men non-reverse?
- **MULTIPLE REVERSES** - use traffic cones.
Non-reverse (add shuffle) – Delayed reverse (lock hip switch feet heel down) – Reverse (lock hip, switch foot position, relax throwing arm – sling, right feel heel down front of ring)



SERAPE EFFECT

- **SERAPE EFFECT** – muscular structure that can be worked, strengthened, coordinated to increase speed and explosive power.
- Coordinate the movement – Tommy Viskari medicine ball exercise. Isolate the hip.
- Comparison – spinning a coin on a table. Angular velocity about vertical axis. Stretch reflex – across chest and core as a result of the hip. No stretch reflex with coin. SLING!

**Your Neck is Connected
to Your Legs**



The Serape Effect



NEW MEXICO THROWING OLYMPIANS

- Carla Garrett ('92 DISC) – Chase Ealey ('20 SP)* – Carol Cady ('84 SP, '88 DISC)
- Interesting – all their first names start with the letter 'C'. Anymore C's out there?
- High schools attended? Colleges attended? Where are they now?
- Best marks? Garrett 60.54m – Ealey 19.68m/64'6 ¾" - Cady 17.23m-66.10m/216'10"-58.52m
- Missing anyone (SBurrell – two throws in HEP '00 and '04)? More Olympians are out there!



PRACTICE WHAT YOU PREACH

- Special thanks to Frank Morris – Mac Wilkins' coach for his mentorship & Ray Burton. They may have thought I was not listening. Truth is - spent hours over many years drilling and throwing in order to seriously feel the events (discus & shot in particular).
- Hope you will practice some of the drills-technical exercises to be able to adequately demo on your own. Seek precision not perfection.
- <https://coachesinsider.com/track-x-country/articles-track-x-country/discobolus-a-new-and-an-old-twist-in-discus-technique-article/>



SPRINT UND SPRUNG TESTING

- Sprinting – jumping – bounding
- Sprint drills – all throws hit a sprint position – drive across ring in discus
- Relaxed accelerations 20m-30m-40m-60m. Decrease hamstring injuries.
- Jumps – one day vertical – one day horizontal. Decrease knee in injuries. Vertical - easy stairs – running, single legged hops and double legged hops. More advanced – timed! KEEP IT SAFE and HAVE FUN!!! Box hops – single legged – 6”-12” height. EASY! KEEP IT SAFE and HAVE FUN!!! Horizontal – Standing LJ – Standing TJ alternating – Five jumps into pit or turf (measured).
- Bounding – Teach bounding concepts. Regular bounding, single legged and double legged hops – **level grass surface – or soft astroturf**. Slowly build up, because throwers – females in particular, have higher BF%’s and lesser LBM%. Jog to regular bounding – to single leg right – to single leg left – to double leg. Build up slowly – 10m each concept and build to 20m each concept. MAKE IT FUN!!!
- Medicine ball throws with bounding, e.g., sideways bounding finish with powell. Discus throw action against a wall. Think of these as throwing reps. Light MB – 1kg or 2kg. THINK HIP!!!
- **MJQT** (Max Jones Quad Test) – 30m Sprint -STANDING LJ - STANDING 3x DOUBLE LEGGED-OHBS <https://www.brianmac.co.uk/quad.htm>
- Softball throw (javelin) – 180’+ - 280’+ (suggest 100’+ - 200’ HS) Just throwing those marks out - no pun intended.



WEIGHTS

- What's more important? Weights, technique, conditioning? Top of the pyramid?
- Emphasis on technique – throw correctly - keep them injury free & prepare next level.
- Great thrower once said, “Can never be strong enough?” Strength specific.
- Medicine ball – throwing arm (sling), chin up, chest up, hip working, left arm action. How much TIME do you have? Save time! Recommend - high intensity multiple reps? **What's wrong with pictures below?** Make it event specific! DISCUS? TIME!
- WEIGHT – Core and legs. squats, cleans, snatch, leg press. CIRCUIT for women – 2-6 sets of reps for 30sec ON then 1min to switch with partner, i.e., bench and squat decrease BF%. Men more traditional – build up from 3x10 to 5x5 @~85%. Why? Purely physiological. Different levels of testosterone. **TIME!**



PRESENTATION DEDICATED TO LOVING MEMORY OF CAPTAIN DAVID LYON



<https://www.fca.org/magazine-story/2016/01/13/blessing-in-brokenness>

https://gazette.com/premium/christmas-sharpens-the-anguish-of-loss-the-joy-of-friendship/article_c200d824-2273-11ea-941d-53e89cd548e5.html (December 21, 2019)

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QUESTIONS

<https://www.youtube.com/watch?v=FitWbbEM9So> (Martina Hellman video* IOC block)

<https://www.youtube.com/watch?v=G6JL-KwxV1Y> (Wolfgang Schmidt video 2:56)

<https://www.youtube.com/watch?v=7qaDUbOvfZM> (John Powell video)

<https://www.youtube.com/watch?v=NgR7ZUDMS7M> (John Powell Four Step video)

