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The Art of the 4 x 100m Relay

December, 2019

Context: Travel Group (11 athletes):

◇ 9 Females

100m

200m

400m

100m Hurdles

400m Hurdles

4x100, 4x200, 4x400 relay

◇ 2 Males

110m Hurdles

(ltd) 400m Hurdles

Bias / Intent:

- ◇ By design, we train every athlete in the group for the 4x100 relay and the 200m
- ◇ We intend to compete every athlete in the 4x100 and the 200m
- ◇ Of the 11 athletes we travelled in 2012,
10 competed in the 4x100 and all raced 200m
- ◇ This year, 12+2 on trav sq. All will do both

Fluency:

- ◆ 100m acceleration pattern is the base pattern, from which other acceleration patterns vary
- ◆ So we teach it first, to give us a reference from which to better teach more subtle patterns (200, 400, 100 hur, 1 10 hur)
- ◆ To run the 4x100, mastery of the 100m acceleration pattern is preferred, but an ever-improving stabilization is required!

Spirit of the Event: Banzai!

- ◆ Acceleration exercise, not exchange
- ◆ Urgent
- ◆ Risk a missed pass
- ◆ Willing to fail (short term)



Structure:

- ◇ 1 x (120,140,140,120) relay
- ◇ Due to the overlap of each leg, actual sprints are significantly longer than stated
- ◇ 4x200, 4x400, much closer to stated distances because the overlaps comprise a smaller percentage of the total race

Analytic First Step:

- ◆ Separate the Responsibilities – Each does their job, let others do theirs
 - Coach responsibility
 - Outgoing Athlete responsibility
 - Incoming Athlete responsibility

Coach Responsibility:

- Teach acceleration and speed development
- Create the environment, establish rules
- Identify athlete skills and manage personnel(chemistry!)
- Set marks
- Teach exchange mechanics. Enforce mechanics
- Coordinate, observe and analyze training reps
- Set marks – Competition mark derived from aggressive training mark
- Decide exchange style: Over-hand vs. Under-hand

Outgoing Responsibility (Leader / Quarterback):

- ◆ Apply 100m fundamentals wo blks / “READ!”
- ◆ Leave on Time – Read the mark consistently from stance. No assumptions!!
- ◆ Push into Darkness / Accelerate Aggressively – Try to leave incoming runner
- ◆ Limitation: Blind
- ◆ Stay in designated half of lane
- ◆ When called, show stationary target (heel of hand)
- ◆ Close hand when baton is felt. Do not grab
- ◆ After exchange – Continue aggressive acceleration



Incoming Responsibility (Herald / Follows lead of outgoing):

- ◇ Run in with aggression – Try to run past outgoing athlete
- ◇ Stay in designated half of lane
- ◇ Announce arrival with loud call (Hit, hot, hop, hut).
- ◇ Wait for target to appear. With eyes, find target hand
- ◇ Push pass – Look baton into target
- ◇ Run through and well past the exchange



Training Considerations

- 4 x 100 is an acceleration exercise
- Start teaching early
- Practice exchanges two times a week
- Consistent training approaches / 40m
- Intensity – 100% !!!
- Finish every pass – No quitting in zone, even on “failed” exchanges -This is where you get skilled and solve problems
- Give feedback, solicit feedback
- Variety: in zone, 4 x 60m, solo, competition style, with and without baton

4 x 60m Relay – find middle of back stretch



4 x 60m Relay Set-Up 2



Lead Off Athlete

(Curve start mechanics, Right hand index finger baton grasp in blocks)

◇ 100m acceleration principles apply





Outgoing Athlete – 2 or 4

(Look inside, right hand support, left hand trigger)

- ◇ 100m acceleration principles apply, no blocks
- ◇ Athlete occupies outside half of lane
- ◇ Left foot forward, left trigger hand extends back (looking inside, under shoulder)
- ◇ Right foot forward, left trigger hand extends forward (looking inside, under armpit)
- ◇ Read “upside down”
- ◇ Receive with left hand, pass with left hand



Outgoing Athlete – 3

(Look outside, left hand support, right hand trigger)

- ◇ 100m acceleration principles apply, no blocks
- ◇ Highest degree of difficulty – Most skilled
- ◇ Athlete occupies inside half of lane
- ◇ Left foot forward, right trigger hand extends forward (looking outside, under armpit)
- ◇ Right foot forward, right trigger hand extends back (looking outside, under shoulder)
- ◇ Read “upside down”
- ◇ Receive with right hand, pass with right hand



Personnel Placement

(Seek, establish and retain “chemistry”)

- ◇ May or MAY NOT run our four fastest athletes
- ◇ Competitors
- ◇ Skill / Patience / Consistent reading
- ◇ *Responsibility and accountability
- ◇ Degree of difficulty:
 - ◇ 3:140m, receive blind(fr best?), pass w sight, curve accel wo blk
 - ◇ 2: 140m, receive blind, pass sighted, straight accel wo blk
 - ◇ 4: 120m, receive blind, straight accel wo blk
 - ◇ 1: 120m, pass w sight, curve accel with blocks

Exchange Zone

- ◇ 30m exchange zone
- ◇ Ideal exchange = 25-28m deep in zone
- ◇ 25-28m free run into zone for outgoing athlete (will not feel incoming athlete for a long while).
- ◇ We call this '**running into the darkness**'.

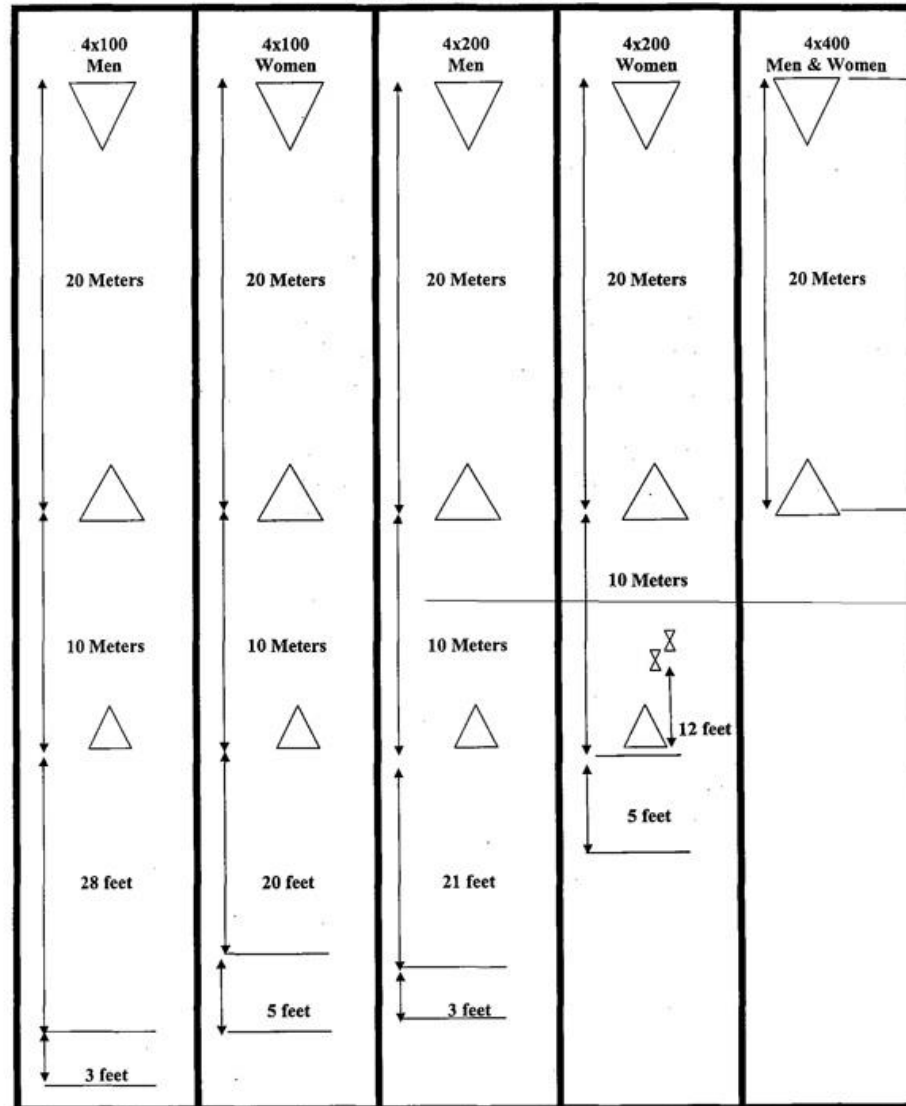
Troubleshooting

- ◇ First check: did outgoing athlete leave on time?
- ◇ Second check: did outgoing athlete leave aggressively?
- ◇ Third check: did incoming athlete accelerate aggressively?
(this affects quality of run in)
- ◇ Misc check:
 - ◇ Did incoming wait on target to pass? Look at target hand?
Give top of baton?
 - ◇ Did outgoing give proper target? Keep hand still? Grab?
- ◇ Train a fifth athlete, compete a fifth athlete on occasion

Some arithmetic:

- ◇ $11.56 + 11.12 + 11.49 + 11.13 = 45.30$ (42.36) / 2.94 diff
- ◇ 2.9 world class
- ◇ 2.5 reasonable to expect
- ◇ 2.3 average
- ◇ $4 \times 11.00 = 44.00$ (41.50) / 2.50 diff
- ◇ London: USA Women 40.82 / ^ 43.3 (^2.5)

RELAY MARKS









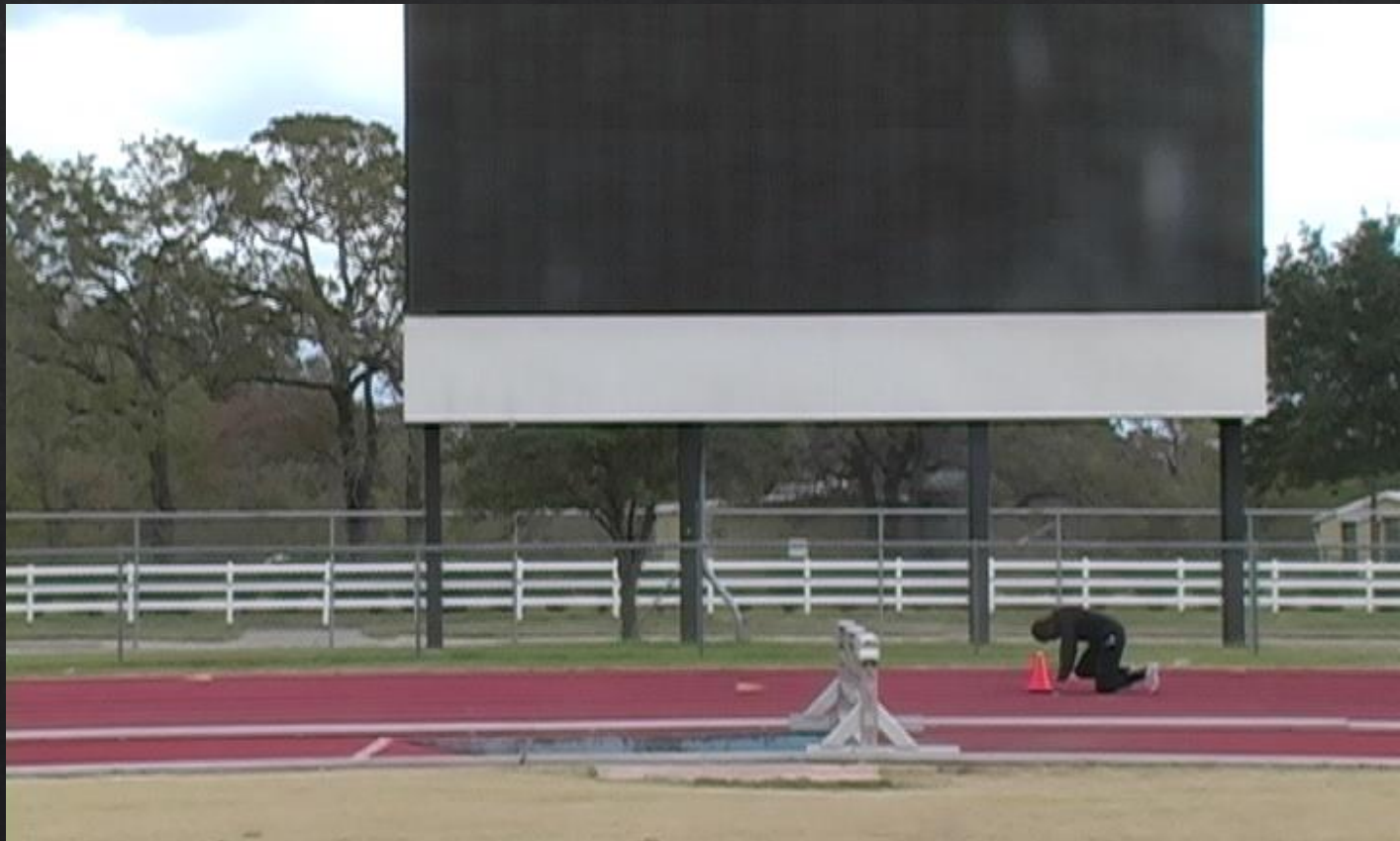
Incoming Acceleration through Zone



Outgoing Acceleration **through** Zone



Combined Acceleration **through** Zone – first effort



Combined Acceleration **through** Zone – second effort



Setting the Trigger Mark – start at 28 pigeon steps



Call Push Pass



Calibrate with eyes



Exchange with baton (lane split) – first attempt



Exchange with baton (lane split) – second attempt



Exchange with baton (share lane) – first attempt



Exchange



Exchange....Leaving On The Mark



Exchange...Barely



Exchange...Much Better!!!



Putting It All Together



Putting It All Together











Final Notions

- ◇ Run through the exchange. Not to the exchange.
- ◇ Can someone explain what, exactly, is a “safe pass”?
- ◇ Early convergence in zone = trouble
- ◇ Don’t miss the wisdom in “failure”

WORK TOGETHER

