Commonalities of the Throws
Ultimate Goal of the Throws

• To apply as much force as possible through as long of a range of motion as efficiently possible.
Overview

• Common General Concepts Across Athletics
• Technical Commonalities of the Throws
• Creating a Common Model
• Implementation of Coaching Strategy
• Questions
Common General Concepts

General Concepts-
There are several key concepts that are common to all athletic endeavors
General Concepts Across Athletics

• Balance and Positioning
• Temporal Considerations (Rhythm)
• Order of execution
Balance and Positioning

• Postural integrity
  – Head Alignment
  – Pelvic neutrality
    • Turning
  – Core Strength
  – Proprioception
Balance Continued

• Center of Mass
  – Changes according to body position
  – Can be outside body

• Conservation Strategies
  – Base of Support
  – Lowering
  – Opposing limbs

• Efficiency of movement
  – Postural integrity and conservation of balance are key factors
Temporal Considerations

• Overcoming inertia
  – Slow to fast with good positioning

• Uniform Acceleration
  – Shift through the gears
Order of execution

• Order in which human movement occurs
  – Sequential firing

• Large and proximal joints initiate

• Small and distal follow

• i.e. Vertical leap
Technical Commonalities
Phases of Throwing

• Preparation

• Power Position

• Delivery/Recovery
Preparation

• Glide/Rotation/Approach run

• Designed to provide momentum and velocity to thrower and to the implement
  – Newton’s Second Law
  – Elite throwers do not let the implement stop

• Moves the thrower to correct delivery position
  – Foul line, toe board, etc

• Path of the implement is never straight line
  – Path of athlete, i.e. 100m
Power Position

• Foot Position
  – Stagger-Toe to instep
  – Ball of the foot or flat foot?

• Weight Distribution
  – Majority of weight over back foot
  – Rear leg under COM

• Shoulder/hip separation
  – Keeps implement “back”
Delivery

• Ultimate position that the implement leaves the thrower/implement system

• Positioning dictates:
  – Height of release
  – Angle of release
  – Implement positioning
    • Aerodynamics

• Follow through/Projection
  – Where do limbs stop
Recovery

• Strategies used to prevent a foul
  – i.e. switching feet in the ring, follow-through on runway
Additional Technical Commonalities

• Weight Transfer
  – Strategy used to elongate duration of force application on the implement
  – Weight moves from the back leg to front leg
Additional Technical Commonalities

• Blocking
  – Stopping of the non-throwing side in order to increase velocity of the implement
  – Can help to preserve balance and positioning
Additional Technical Commonalities

• Turning
  – Oscillations occur in the hips, torso, arms and legs
  – Takes place proximally to distally
  – Provides force application to the implement
  – Squares thrower to sector for proper delivery position
Additional Technical Commonalities

• Extension
• Limbs extend proximally to distally
• Lower body:
  – Vertical force application
  – Turn initiates movement, extension follows
• Upper body:
  – Horizontal force application
Additional Technical Commonalities

• Separation
  – All throwers should be closed in some way
  – Refers to shoulder girdle angle vs hip angle
  – Elongates path of force application
  – Promotes torque in the mid section
Additional Technical Commonalities

• Free Arm Action

  – Extends and traces a path for the implement

  – Speeds up the implement

  – Sets up the upper body for block
Additional Technical Commonalities

• Stretch Reflex
  – A stretched muscle provides a harder contraction
  – Example: Pectorals can act as a rubber band
Creating a Throwing Model
Creating a Throwing Model

• Shot Put/Discus/Javelin delivery systems have their roots in the Double Pivot drill.

• Utilize the drill to teach the skill or rehearse the skill
  – Use throughout the year
Step 1 – Set up and Posture

- Assume the stance
- Line up feet
- Step out
- Saddle up
Step 2—Weight Shift

- Tap/Tap
Step 3—The Turn

- Start with upper body 90 degrees from sector
- Pivot body from torso with weight shift
  - Feet turn in synchronicity
- Front turns and foot grounds
  - Quad is flexed
  - Establishes lower body block
- Back knee closes to midline of body
- Tap of rear leg still exists
Step 4—Full Drill

• Begin with shoulders at 180 Degrees

• As proficiency increases, minimize pause
Upper Body Considerations

• Upper body timing can be taught with full drill
  – Cone/Bowling Pin—relationship to COM
  – Block THEN Deliver

• As pivot takes place, non-throwing arm opens

• Upper body block then occurs with the lower body
Variations of the Double Pivot

• Does not need to be event specific
  – Teaching a skill
  – Bilateral
• Varying implement
  – Cone/Bowling pin-far from COM
  – Shot Put/Med Ball- close to COM
• Dynamic additions
  – Hop/mini glide/crossover
• Weight Room adaptations
  – Specific strength—Barbell
  – Small plyo box/toe board
Implementation of a Coaching Strategy
Throws

• Each event 2-3x per week
• 15-30 repetitions
• Early season: 2 or more technical sessions with cones/pins/med balls
• As season progresses, utilize varied implements less
  – Skill acquisition
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Sample: Shot/Disc Training Week
Weight Room

• Utilize the weight room for more than conditioning

• TEACH movements and apply them to each event
Specific Weight Room Exercises

• Explosive Triple extension
  – 1-2x per week w/ 48-72 hrs between
  – Olympic lifts/Jumps

• Strength Triple extension
  – 1-2x per week w/ 48-72 hrs between
  – Powerlifting Movements

• Body Building/Ancillary
  – Either GS day or spread out

• Core/Rotary/Forearms(grip)/Calves
  – Address each day
Identify Strategy for Multiple Throws Athletes

- Identify Training Age
- Most HS Athletes are younger than you think!
- Part ➔ Whole ➔ Part
  - Introduce Skills
  - Incorporate into full throw
  - Take a needs assessment
Strengths vs Weakness

• Primary vs secondary events
  – Work toward equality

• Needs assessment
  – Odds are that similar technical faults occur across all of the events

• Make your weaknesses into your strengths!
Final Note: Focus of Practice

• Work the commonalities during each practice

• Some of your best shot put practices you never pick up a shot put!
Questions?

Thank You &
Happy Holidays

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