

## Training Inventory & Structure for Jump Athletes

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## Goals

- Design and provide training inventory
- Coach training inventory
- Implement training inventory

## Training Inventory

- Training Inventory
  - Activities and exercises for training
  - Ingredients

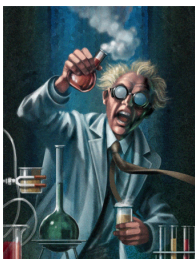
## Structure

- Structure
  - Why you do what you do?
- Implementation
  - Coach it, don't gimmick it.



## Structure

Be the  
**Scientist**



And the  
**Artist**



## Developing the Inventory

- Biomotor Abilities
- Event Demands

## Biomotor Abilities Overview

- Strength
  - Absolute, Power, Elastic, General Strength
- Stamina
  - Tempo/Speed Endurance, General Strength
- Suppleness
  - Static, Dynamic
- Speed
  - Acceleration, Absolute, Optimal
- Skill
  - Technique, Coordination

## Biomotor Abilities

- Crossover of biomotor abilities
  - Hurdle mobility
    - Skill and suppleness
  - Sprint-float-sprint runs
    - Speed and stamina

## Event Evaluation

- Duration
  - 4-6 seconds
    - Energy system
  - 3-15 efforts
  - Long recoveries
- Ground contact times at take off
  - .12-.18 s
- Velocity requirements
  - 6.5 m/s- 11.0 m/s
- High Neuromuscular Demand

## Training Evaluation

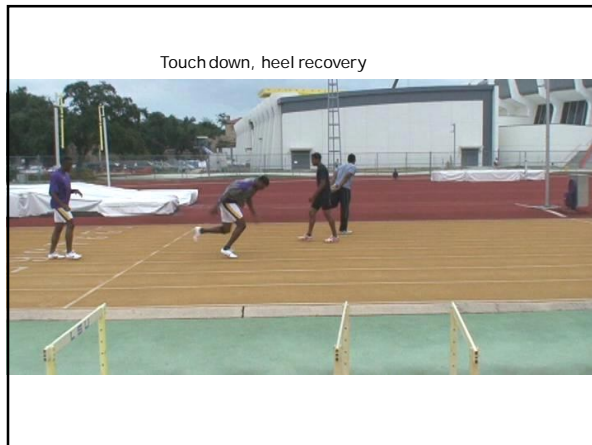
- THE BIG HITTERS
  - Speed
  - Strength
  - Skill
- THE HITTERS
  - Mobility
  - Stamina

## Speed

- Acceleration
  - Why?
    - Start right to finish right
    - Momentum development
  - Parameters
    - 20-40 meters
    - 90-100% intensity

## Speed

- Mechanics
  - Flexion to create extension
  - Heel recovery
  - Posture
    - Pelvis
  - Displacement
    - Hips- Your coaching point
  - Toe off
  - PUSH!



### Speed

- Training Inventory
  - Hill accelerations
  - Resisted runs
  - Acceleration Runs
    - Toe Touch
    - 3 pt
    - 4 pt
    - Rollover
    - Block starts
    - Pole accelerations

General Prep
General/Specific Prep
General
General/Comp
Specific
Specific/Comp
Specific/Comp
General

### Speed

- Acceleration Schemes
  - 8 \* 40 m resisted runs
  - 5 \* 20m, 4 \* 30m, 3 \* 40m from rollover
  - 3 \* (20m, 30m , 40m) from 3 point
  - 6 \* 30m block starts
  - 10 \* 20m pole accelerations

## Speed

- When?
  - Throughout the whole training year

## Speed

- Speed Development
  - Why?
    - Prerequisite to jump far/high
    - Sets up elastic responses
  - Parameters
    - 40-80 meters
    - 95-100% intensity

## Speed

- Mechanics
  - Posture
    - Pelvis
  - Vertical Pushing Component
  - Foot strike
  - Isometric Prep
  - Front side

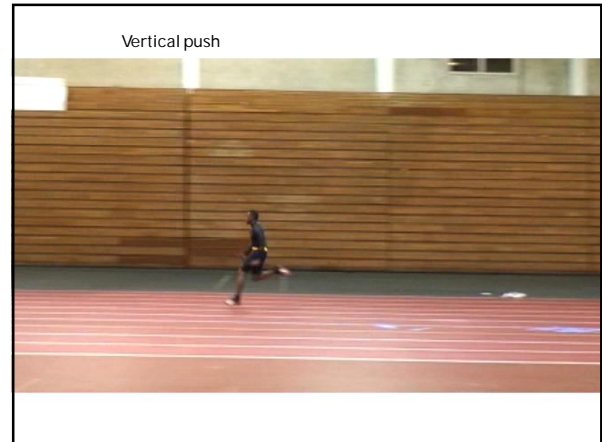


Isometric Prep, Front side



Knees at touchdown





### Speed

- Training Inventory
 

<ul style="list-style-type: none"> <li>– Stadium Runs</li> <li>– Fly in runs</li> <li>– Ins/Outs</li> <li>– Sprint-Float-Sprint</li> <li>– Runways</li> <li>– Pole runs</li> </ul>	<ul style="list-style-type: none"> <li>General Prep</li> <li>Specific Prep/Late Comp</li> <li>Specific/Comp</li> <li>Specific/Comp</li> <li>Specific/Comp</li> <li>Specific/Comp</li> </ul>
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### Speed

- Speed Development Schemes
  - 12 \* 20-25 step stadium runs
  - 5 \* 20-30 meter “fly” in runs
  - 3 \* Ins/Out (20-10) 2 peaks
  - 8 \* Full approach runs
  - 4 \* Full approach runs + 2 \* Ins/Outs

### Strength

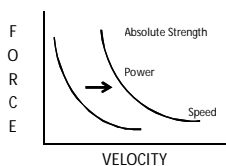
- Types
  - Absolute
    - Static lifts, olympic lifts
  - Power
    - Olympic lifts, ballistic lifts, plyometric routines
  - Elastic
    - Olympic lifts, ballistic lifts, plyometric routines
  - General strength
    - Body weight circuits, medicine ball circuits, weight room circuits

### Strength

- Goals
  - More force
  - More force in shorter time
  - Shift force velocity curve to the right

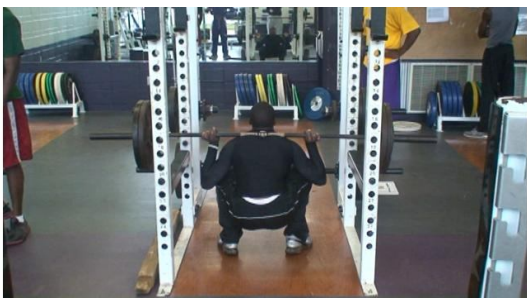
## Strength

- Force--Velocity



## Strength

- Static Lifts
  - Why?
    - Fiber recruitment
    - Hormonal response
  - Squat Mechanics
    - Hips move posterior through descent of lift
    - Knees stay out
    - Rear to ground



## Strength

- Training Inventory
  - Squats and variations
    - Back, front, overhead, deep, single leg, step ups, lunges
  - Presses and variations
    - Bench, incline

## Strength

- Squat schemes
  - 4-6 sets
  - 4-8 reps
  - 65-90% of predicted one repetition max

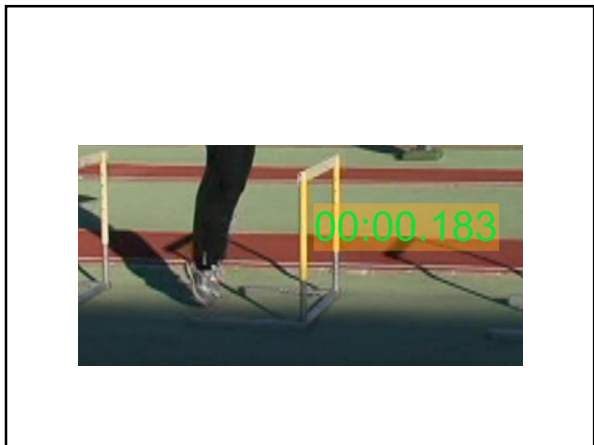
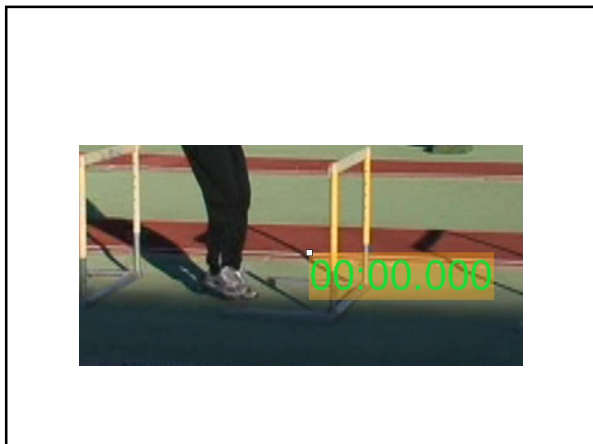
## Strength

- Squat progression through year
  - Deep squat                      General Prep
  - Half squat                        Specific Prep
  - Step ups/lunges                Specific/Comp
  - Squat jumps/                    Specific/Comp
  - lunge jumps (Ballistic)



## Strength

- Multiple Jumps
  - Why?
    - Strength- Eccentric
    - Elastic...Free Energy
    - Force production through:
      - Stretch reflex
      - Stretch Shortening
        - » Amortization



## Strength

- GOAL
 

not
- Opportunity to teach and cue into jumping events

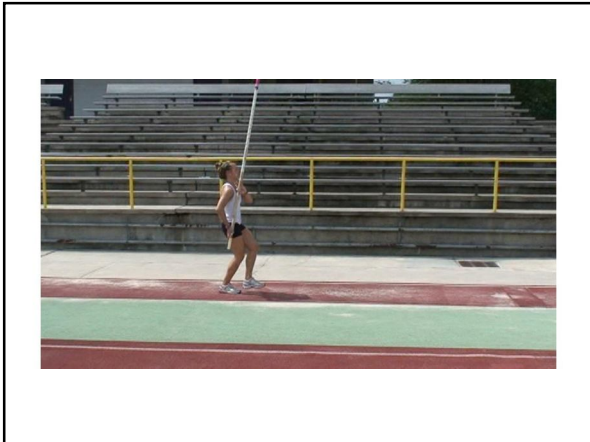
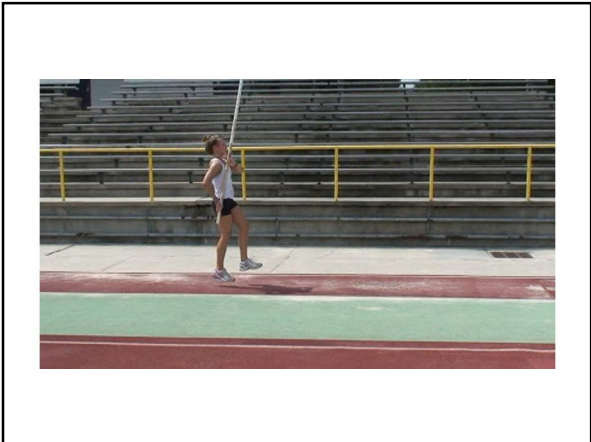
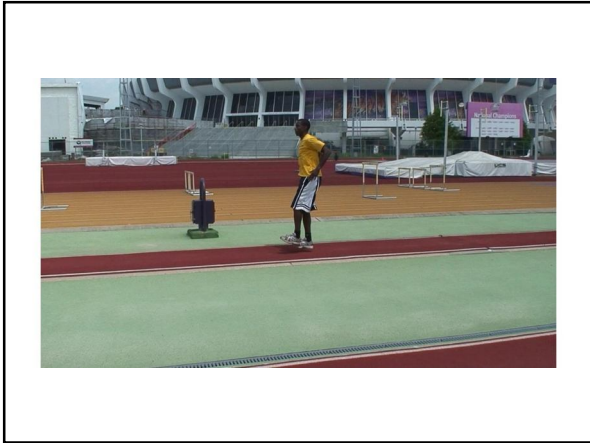
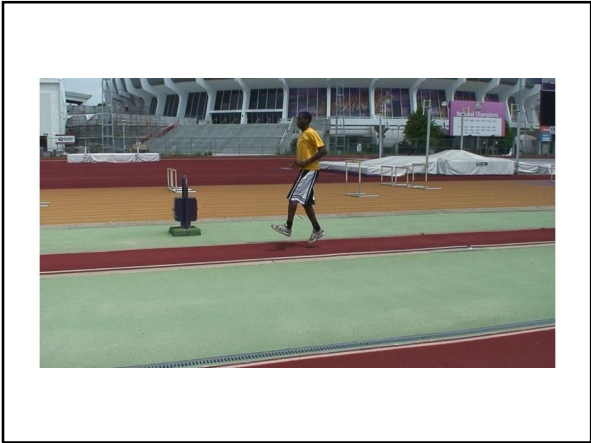
## Strength

- Mechanics
  - Posture
    - Pelvis
  - Segment relationship
  - Foot contacts
  - Force application

## Strength

- Training Inventory
 

– In place	General Prep/Comp
– Short jumps	Gen/Spec/Late Comp
– Bounds	Spec/Comp
– Hurdle Hops	Spec/Comp
– Depth	Sparingly



### Strength

- Multiple Jump Schemes
  - In Place Circuit
    - 2 \* 8 exercises \* 15" (30")
  - Short Jumps
    - 4 \* SLJ, STJ, 3 DBL Hops, DBL-DBL
  - Bounds
    - 2 \* 20 meters RRR..., LLL..., RRL..., LLR..., RRLL...
  - Hurdle Hops
    - 6 \* 6 hurdles

### Strength

- Multiple Throws

### Strength

- General Strength
  - Use of body weight or light weight in weight room
  - Why?
    - Stamina, hormonal responses, enhancement of strength qualities, work capacity, mobility

### Strength

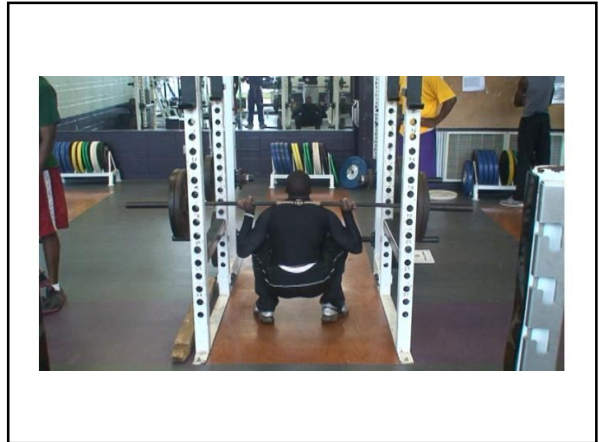
– Body weight circuits	Year round
– Weight room circuits	Year round
– Medicine ball circuits	Year round

### Skill

- Exercises
  - An opportunity to TEACH and CUE
- Training Inventory
  - Previously discussed training
  - Short approach jumping
  - Full approach runs

### Suppleness

- Mobility
  - Active range of motion
  - Types
    - Pre-Workout routines
    - Hurdle mobility routines
  - Not commonly thought of:
    - Weight room
      - Squats- Deep, Overhead
      - RDL
      - General Strength activities (low walks)



### Suppleness

- Static Flex
  - More is not better

### Stamina

- Tempo/Speed Endurance
  - Training to train
  - Restorative
  - Speed endurance = coordinated speed
- Training Inventory
 

<ul style="list-style-type: none"> <li>– 80-150 meter runs</li> <li>– 60-80 meter runs</li> <li>– Varied rest intervals</li> <li>– Varied intensities</li> </ul>	General/Spec Spec/Comp
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### Stamina

- Stamina Schemes
  - Week 1- 8 \* 150 m (2')
  - Week 2-10 \* 120 m (1:30)
  - Week 3-12 \* 100 m (1')
  - Week 4- Rest
- Subsequent cycles
  - Same scheme
    - Intensity increases
    - Rest increases

## Stamina

- General Strength
  - 15-20 minutes of circuit work
- Stamina Scheme
  - 24 exercises \* 30" + 2 \* 10 weight room circuit

## Rest

- Rest, recovery, regeneration
  - The forgotten and underutilized training quality



## Training Inventory

- VIDEO