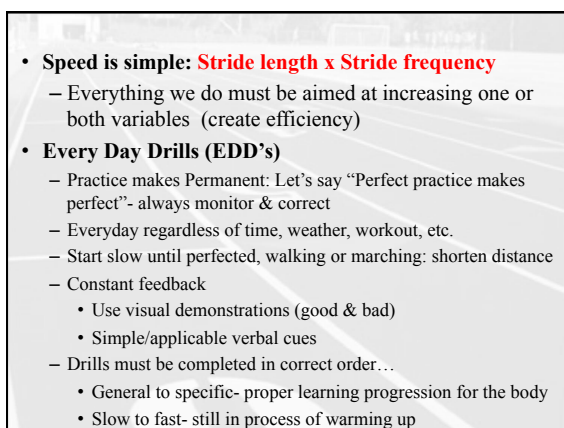




Beginning Sprints:

Presented by
Nick Buckvar

Ladue High School/ St. Louis Lightning Track Club



- **Speed is simple: Stride length x Stride frequency**
 - Everything we do must be aimed at increasing one or both variables (create efficiency)
- **Every Day Drills (EDD's)**
 - Practice makes Permanent: Let's say "Perfect practice makes perfect"- always monitor & correct
 - Everyday regardless of time, weather, workout, etc.
 - Start slow until perfected, walking or marching: shorten distance
 - Constant feedback
 - Use visual demonstrations (good & bad)
 - Simple/applicable verbal cues
 - Drills must be completed in correct order...
 - General to specific- proper learning progression for the body
 - Slow to fast- still in process of warming up



Teach Great Sprinting Technique



- Posture first!
 - Lean from feet, tight core
- Angle of Hips
- Cue knee, toe, heel up together
- Teach proper arm carriage
- Teach relaxation
- Monitor ALL Drills!

EDD's (in order)

1. Heel/Toe Walks
2. 3-Step & Reach
3. Low Lunges
4. Ankle step over
5. Butt tuck
6. A-Skip
7. B-Skip
8. A-Run



STRUCTURING PRACTICE & ROUTINES

- Abide by the energy system focus of the day
 - Speed Workout: (87-95%)
 - Strength Workout: (75-85%)
 - Recovery Day:
- General to specific *with everything in the routine*
- Slow to Fast *with everything in the routine*

Typical Practice Routine

1. General to Specific 2. Slow to fast

1. ROTATIONS
2. RUNNING WARMUP
3. DYNAMIC STRETCHES
4. EDD's, SUPPLEMENTAL DRILLS
5. HURDLE MOBILITY
6. BUILD UPS/ ACCELERATIONS
 - Flats followed by spikes
7. EVENT SPECIFIC WORK, block starts, relay exchanges
8. WORKOUT
9. COOL DOWN (static stretches)
10. SUPPLEMENTAL WORK, plyos, resistance work
11. WEIGHTS

Warm Up Variables

Warm Up: depends on the intensity and volume of the day. Prepare the body for what it is about to go through

- “**Speed Day**” (85% or higher)
acceleration, speed endurance, max velocity
- “**Strength Day**” (75-85%)
tempo, lactic threshold
- “**Recovery Day**” focus on flexibility and functional movements
- **Variable Aspects of the Warm Up**
 - Running warm up
 - Supplemental drills
 - Build ups & accelerations

Running Warm Up

- Always 1200m-1600m total volume

SPEED DAY (87-95%)	STRENGTH DAY (75-85%)	RECOVERY DAY
<ul style="list-style-type: none"> • Jog 1 lap • 2-3 laps Dynamic Run • 50m Lateral movement (Side Jack, Carioca) • 50m Plyo movement (mid knee skip, ankle pops) • 50m Build up • 50m walk 	<ul style="list-style-type: none"> • Jog 1 lap • 2-3 laps Ins & Outs: Build up Straight- Walk the turns • 2- 2 1/2 laps Gradual 50s 50m @ jog 50m @ 50% 50m @ 75% walk 50m 	<ul style="list-style-type: none"> • Jog 1 lap • 3 laps Grass Ins & Outs: shoes off... build up down sideline, walk the end zones

Supplemental Drills

- Always start with EDD's

SPEED DAY (87-95%)	STRENGTH DAY (75-85%)	RECOVERY DAY
<ul style="list-style-type: none"> • Add to EDDs (Foot Fire, Fast Leg) • Hurdle Mobility -lower reps, high intensity -high intensity exercises (skips) • Wickets • Acceleration ladder • 3 Step Wall Drill • Fast Claw (stationary) 	<ul style="list-style-type: none"> • EDD's (Increase distance of drills by 5m) • Hurdle Mobility -increase reps or # of hurdles -less intense exercises 	<ul style="list-style-type: none"> • EDD's-Flexibility Exercises (reverse lunges, lateral lunges, spider walk, knee hugs, etc.) • Hurdle Mobility -lower reps, low intensity -range of motion/flexibility • Lower leg work: barefoot • Glute/Hamstring Work • Hip Work (circuit or hurdle mobility) • Core work

Build Ups & Accelerations

- Always flats then spikes
- Grass/ turf when possible

SPEED DAY (87-95%)	STRENGTH DAY (75-85%)	RECOVERY DAY
Flats: 2x100m, 2x50m Spikes: 2x20m, 2 pt. 3x30m 3 pt. **Blocks or relay start, exchanges (4x2 & 4x4) are great	Flats: 3x100m build ups Spikes: 3x30m **exchanges (4x4s) are great	Barefoot: 4x50m build up w/ 50m slow down

BLOCK STARTS

Drive Phase: Shin Angle



- Shin angle determines drive & power output versus running bent over
 - Straighter shin = less drive we actually have
- Be in a position to push
 - Everything relating to positioning blocks, position in the blocks, and initial explosion out of blocks is aimed at getting in the best position to push.

Drive Phase: Shin Angle

- Hard as hell to master & replicate!
- ALL DRILLS CUE:
 - Posture: tight core, hips forward, straight line through body
 - Low feet, knee to chest, foot under hips
- DRILLS
 - Drive Step Wall drill
 - Clean the Track (1 step)
 - Sweeper Drill
 - Push drills: sled, hurdle, trash can, steps
 - Resistance Drills: sleds, cords

Wall Drill


LOOK FOR...

1. Good posture:
strait line
head to heel
2. Heel away from butt
3. Knee drive to original spot

Clean the Track (1 step)

LOOK FOR...

1. Foot low, kicks the item away



SWEEPER DRILL

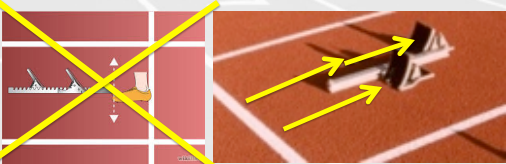
LOOK FOR...

1. Foot low, heel away from the butt
2. Foot lands under the hip
3. Separate the hands, snap



Setting the Blocks

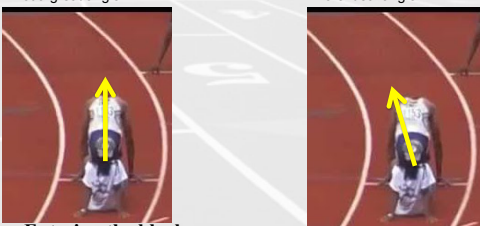
- **Establish a front leg**
 - Push Test, name in sand test, lay-up
- **Setting up the pedals**
 - Don't worry about the top of the set
 - 2 (shoes) to front pedal, 3 (shoes) to back pedal



- Use shoe marks to establish consistency
- Front knee an inch behind start line

- **Angle on the turn**
 - Not drastic, gradual line down to the inside of lane
 - Left hand is slightly off the line

Not a great angle More ideal angle



- **Entering the blocks**
 - “load the legs” back leg in first
 - Coil the legs like a spring, pressure on the pedals

“Mark” Position

- Thumbs under the shoulders
- Arches in hands
- Check for knee clearance
- Eyes down (start line)
- RELAXED!!! Repeat a single cue
 - “Separate the hands”
 - “Explode” “Violent”
- Lean or no lean?



Set Position

- Thumbs under the shoulders
- Arches in hands
- Check for knee clearance
- Eyes down (start line)
- RELAXED!!! Repeat a single cue
 - “Separate the hands”
 - “Explode” “Violent”
- Lean or no lean?



Set Position

- Front leg angle @ 90
 - Lowest pedal
- Back leg angle @ 120-130
 - Pedal up 1 notch

GUN!- Initial Explosion

- Heavyweight fight: Ali vs Tyson: apply a force

1. Throw big punches w/ knees & arms
2. "Sweep the feet"



"Separate the hands"



1. Don't care about exact 90 degree angles, but want bend for stretch reaction

2. "show the starter your arm pit"

- DRILL: arms only starts

• Full Extension



1. Ankle through hips
 - Always emphasize this: weight room (squats & snatch, plyos, EDDs)

2. "Sweep the feet"
 - Low to the ground
 - keep foot tucked, helps shin angle
 - Foot lands under center of mass

TRAINING

Energy Systems and Technique

- In order to get faster, the athlete must expand the energy systems used during each event
- The athlete must also make gains in running efficiency through the use of proper technique

Don't try to re-invent the wheel

Training program:

- Has produced used for athletes of every level and ability
- Takes a logistical approach to training
- Simple to follow and implement
- Has been tested, tweaked for years
- WORKS!

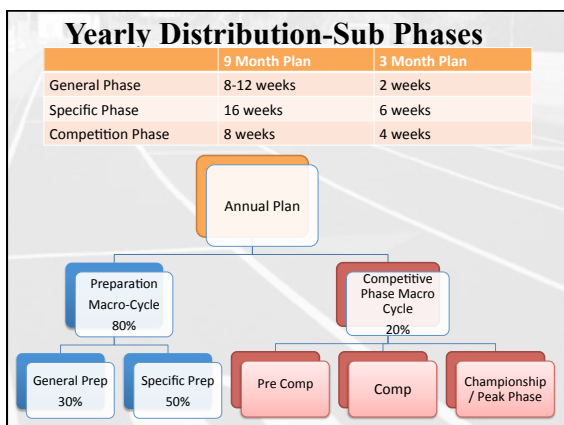
Planning for Success

Where do you want to be at the end of your season?

- Main idea of planning is to work big picture on down
- Plan backwards from where you want to peak

Create a Calendar for the Training Year

- 9 or 3 month Macrocycle (macrocycle is the entire season)
 - 9 month calendar is September-May
 - 3 month calendar is March- May
- Based on 3 phases: Allows for focus
 - **General Phase:** Build the foundation for later work by getting the body in general shape through a variety of exercises
 - **Specific Phase:** get in shape to train, event specific training, begin to focus on specific energy systems through interval training.
 - **Competition Phase:** focus is more on racing and evaluation, *Race modeling (what the race feel likes, relay work)*



Basic Sprint Training Lingo and Terms

- **Speed Development**- Acceleration is developed first, followed by Maximum Velocity
- **Speed Endurance**- ability maintain *near* max velocity
- **Lactate Tolerance**- AKA Lactate Threshold; the ability to buffer the acid build up in muscle tissue due to high level physical activity (time & intensity dependent)
- **Anaerobic Capacity**- How much energy you access from the anaerobic energy systems
- **Aerobic Capacity**- How much energy you access from the aerobic energy systems

Defining the Events:

What are the demands of the events you are preparing for?

- **100m** dash relies heavily on **Speed Development**- initial explosion & **acceleration**, **Max Velocity**, *somewhat speed endurance*
- **200m** dash requires ATP/CP systems: **Speed Development** of **Acceleration & Max Velocity**. Critical in **Speed Endurance**
- **400m** dash, best defined as a controlled sprint. Athlete will cycle through several energy systems. **ATP/CP**, **Speed Endurance**, **Lactate Tolerance & Aerobic Capacity**, **Extensive Tempo**

Sequence Workouts & Weekly Volume

Two Simple Categories for Organizing Workouts

ATP-CP Work	Daily Volume (meters)		Intensity (% of max effort)	
	In season	Preseason		
Speed Development (Max Velocity)	300-400m	400-500m	90-98%	
Speed Development (Acceleration)	500-700m	700-900m	90-98%	
Speed Endurance	600-1000m		93-97%	
Specific Energy System Work	Daily Volume (meters)		Intensity (% of max effort)	
	In season	Preseason	In season	Preseason
Special Endurance I	1300-2000m	2000-3000m	75-90%	70-85%
Special Endurance II (Lactate Threshold, Aerobic Capacity)	1000-1800m	1300-2000m	85-90%	80-90%
Extensive Tempo	1200-2000m	1400-2000m	77-85%	70-75%

Daily Training Session

- *Intensity of a workout*: calculated off the athlete's best performance in the event you are training for.
 - Target time= (PRx100) / percentage
 - Ex; if we are running 200m intervals, we want it @ 75% effort. Athlete 200m PR= 22.5 (22.5x100) / 75= 30 seconds Target time
- Warm up should match the workout
 - Ins/outs on lower intensity days
 - Dynamic and explosive on speed days
- Weights should match the theme of the day and week
 - Speed week, fast explosive movements @ lower reps, higher weight (85-95%)
 - Strength week, more reps and sets, lower to mid-range weight



The Art of Coaching the Sprints

- Be prepared to make adjustment to your sessions on the fly
- Understand and the teach the athletes what running the event feels like, as opposed to what it's supposed to look like
- Help your athletes to become students of their craft
- Give your athletes constant feed back during workouts
- Do everything with a purpose!
- Give motor response que's during intervals and races
- EXPECT MORE FROM YOUR ATHLETES!
- DON'T BE AFRAID TO TRAIN FAST!
- KNOW YOUR ATHLETES!

Closing Thoughts and Comments



- Don't be afraid to try something new
- Inspire your athletes to dream; think BIG!
- Show your athletes via simple math how they can achieve their goal times
- Challenge your athletes mentally and physically
- Have fun!!!

Got more questions?

- Contact me at:

npbuckva@gmail.com
