



SOUTH DAKOTA

COYOTES

Speed Hurdling



Info on USD T&F

- Former DII School
- Current DI
 - 15 All-Americans in 5 years
 - 1st DI National Champion
 - Women's team tied for 18th at NCAA outdoor/10th at NCAA indoor
 - Developmental Program
 - Gender equity issues





New Track Facility







Why I am here

- Attend this clinic at beginning of my coaching career (1989)
- Product of Coaching Education Program
- Tribute to all of the coaches that have answered every question I have ever asked





References

You are only as smart as the people you steal ideas from:

- Boo (will be in Ankeny in Jan)
- Dan Pfaff
- Gary Winkler
- Vince Anderson
- Todd Lane
- Dennis Shaver
- USTFCCCA Coaching Academy
- My coaching staff
- And so many more...





Training of the Biomotor Abilities

- **Speed**

**Accel->Absolute->Speed
Endurance**

- **Strength**

**General strength and
strength endurance->
power development->
absolute strength ->
reactive strength**

(but all are used throughout macrocycle)

- **Work Capacity**

**Progressively increase in
specificity & acidity to
race modeling**

- Mild glycolytic to more
intense glycolytic activities
(mild thru entire year)**
- Capacity before power**

- **Flexibility-**

**Consistently throughout
macrocycle**

- **Skill-**

General to specific



Develop a Hurdle Warm-up

- **To be used at most hurdle sessions**
- **Variation of Warm-up to be done at meet**
- **Walk-overs**
 - **Walking, single leg, other leg, skipping, lateral, B-skip on end of hurdles**
- **Wall drill/trail leg**
- **Sprint Drills**
- **Lead/Trail/Over The Top**
 - **1 skipping step (4 feet apart)**
 - **3 short quick steps (5m apart, with run in of 5m for men, 8 for women) Lead Trail & over the Top**
 - **3 running steps (7-8m apart, run in with 13m)**
 - **Alternate drill**
 - **5 steps (11-12m apart, run in with 13m)**

Use drills as an opportunity to teach & correct movements!



Trail Leg

- Major difference between male and female hurdlers
- Timing is connected to lead leg and take-off action
- Arms and legs are very connected in timing and balance issues
- Trail foot should be pulled off of the ground by the hip and continue moving into a folded position with toe dorsiflexed.



Lead Leg

- **Movement starts at Hip**
- **Once foot leaves ground looking for flexion at knee, hip and ankle**
- **Lower leg opens as thigh reaches parallel**
- **Arms must move in concert with legs**



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Acceleration drills

- **Use similar teaching progression that you would use for sprinters (Falling Start, 2pt, 3pt, other 3 pt, hops, etc...)**
- **Block starts-**
- **Resisted starts**
- **Starts from a box**
- **Hurdler will look up quicker than a sprinter (4-6th step depending on skill level)**



Average stride pattern to H#1

- **Stride pattern to Hurdle #1 (most use 8 steps)**
- **Measure from starting line in meters**
- **These are only an estimate**
- **Trail leg should be in front block (unless doing 7 steps)**

100 Meter Hurdles

Start Line | .60 | 1.65 | 2.95 | 4.40 | 5.95 | 7.60 | 9.35 | 11.05 | T.O. | H1

110 Meter Hurdles

Start Line | .60 | 1.70 | 3.05 | 4.55 | 6.20 | 8.00 | 9.90 | 11.70 | T.O. | H1

110 Meter Hurdles (7 steps)

Start Line | .75 | 2.15 | 3.85 | 5.60 | 7.50 | 9.60 | 11.58 | T.O. | H1

[DEMO](#)



7 step hurdling

- **Not a question if someone can 7 step hurdle, but should they?**
- **Usually reserved for taller, more powerful and advanced hurdlers**
- **Must adjust starting blocks/trail leg in back pedal**
- **May affect max. velocity in middle of hurdle race**



Hurdle Strides (100H/110H)

- **Number of stride to 1st Hurdle** **8 (7)**
 - **Number of hurdle clearances** **10**
 - **Number of strides between hurdles** **27**
 - **Number of strides from last hurdle to finish** **6**
- TOTAL NUMBER OF STRIDES** **51 (50)**



Touchdown distances

	Leaving hurdle	1 st stride	2 nd stride	3 rd stride	Distance to hurdle
Early race 100h	95cm	150cm	205cm	195cm	205cm
Later race 100h	105cm	150cm	200cm	190cm	205cm
110H	140cm	155cm	210cm	200cm	209cm

Note that 3rd stride is shorter than 2nd stride



Hurdle Take-off

- **Think in terms of a “Cut Step”**
- **Very active landing with heel leading back and towards runner**
- **Shorter stride length**
- **Allow hip velocity to move athlete through the hurdle**
- **Improvement in this skill will lead to better trail leg.**



Speed Hurdling:

- **Developing a motor program that involves moving faster than race pace**
- **Hurdles are placed closer and lower than competition distances**
- **Places an emphasis on stride frequency and hurdle technique**



Speed hurdling involves training at or faster than Race Pace

Hurdle Goal time = 14.00 sec
Time to H1 = 2.7 sec
Run off to finish = 1.15 sec
Time H1 – H10 = 10.15
Avg. Rhythm Unit for 9 Hurdles =
1.13 sec (10.15 / 9)

Avg. Velocity for Rhythm Unit =
7.54 m/s

Velocity = **distance** divided by **time**

Set drill w/ hurdles @ 7.54m

Goal is to run 1.00 seconds per
segment

Increase each hurdle by
5-10 cm/week

Hurdle Goal time = 15.00 sec
Time to H1 = 2.7 sec
Time off H10 = 1.4 sec
Time H1 – H10 = 10.90
Avg. Rhythm Unit for 9 Hurdles =
1.21 sec (10.90 / 9)

Avg. Velocity for Rhythm Unit =
7.03 m/s

Velocity = **distance** divided by **time**

76.6m / 10.90 = 7.03 m/s

Set up Hurdle Drill at 7.03m



Training Variations for Sprint Hurdles

<u>Drill</u>	<u>Men</u>	<u>Women</u>
reduced distance & height to H1	13.42/36-39"	12.70/27-30"
10 strides to H1	17.22/36-39"	16.20/27-30"
12 strides to H1	21.02/36-39"	19.7/27-30"
3 strides between Hurdles	7-8.4 meters/height lower	7-8.2 meters/height lower
5 strides between Hurdles	12.84/36-39"	12.20/27-30"
Combine 5 and 3 step patterns	<u>8/5/5/5/3</u>	
3 stride between Hurdles	Reduce each hurdle by 10 cm	
Incline Hurdling	<u>1-3% uphill or downhill</u>	



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Speed is key!

Female 100 to 100H comparison

- **Developing** 100m +2.0
- **Accomplished** 100m +1.5
- **Elite** 100m +1.0

Male 100 to 110H comparison

- **Developing** 100m +4.5
- **Accomplished** 100m +3.5
- **Elite** 100m +2.5
-3.0

Develop speed in a similar way as you would
with a sprinter,
But be careful about different rhythms!



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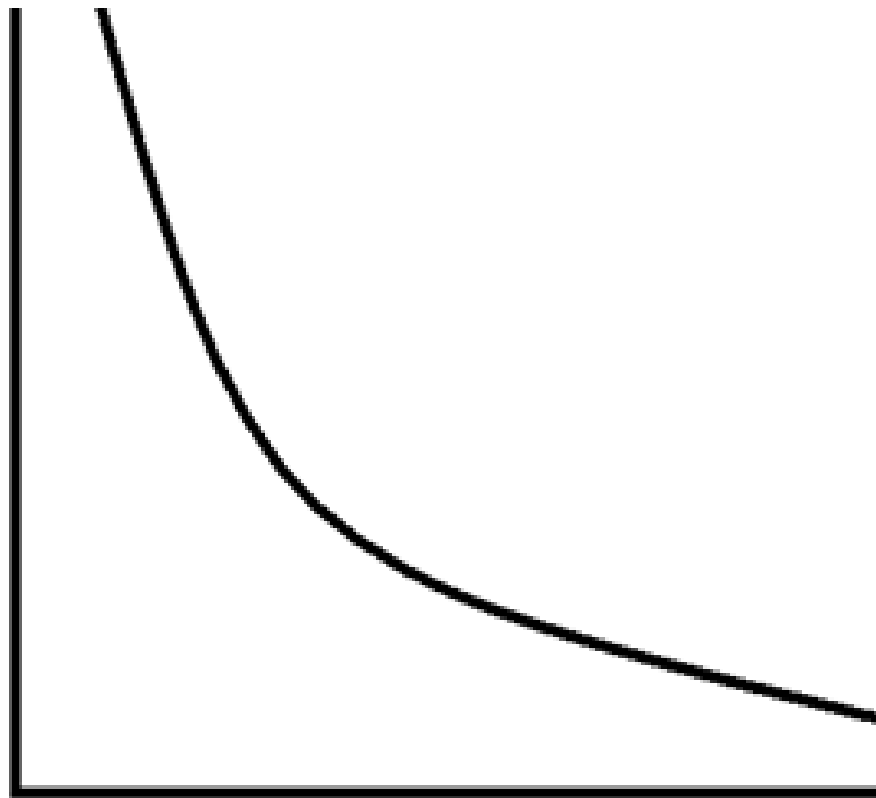


Strength Training

- Power
- General Strength/pillar
- Hormonal gains
- Regeneration
- Event Specific



Velocity



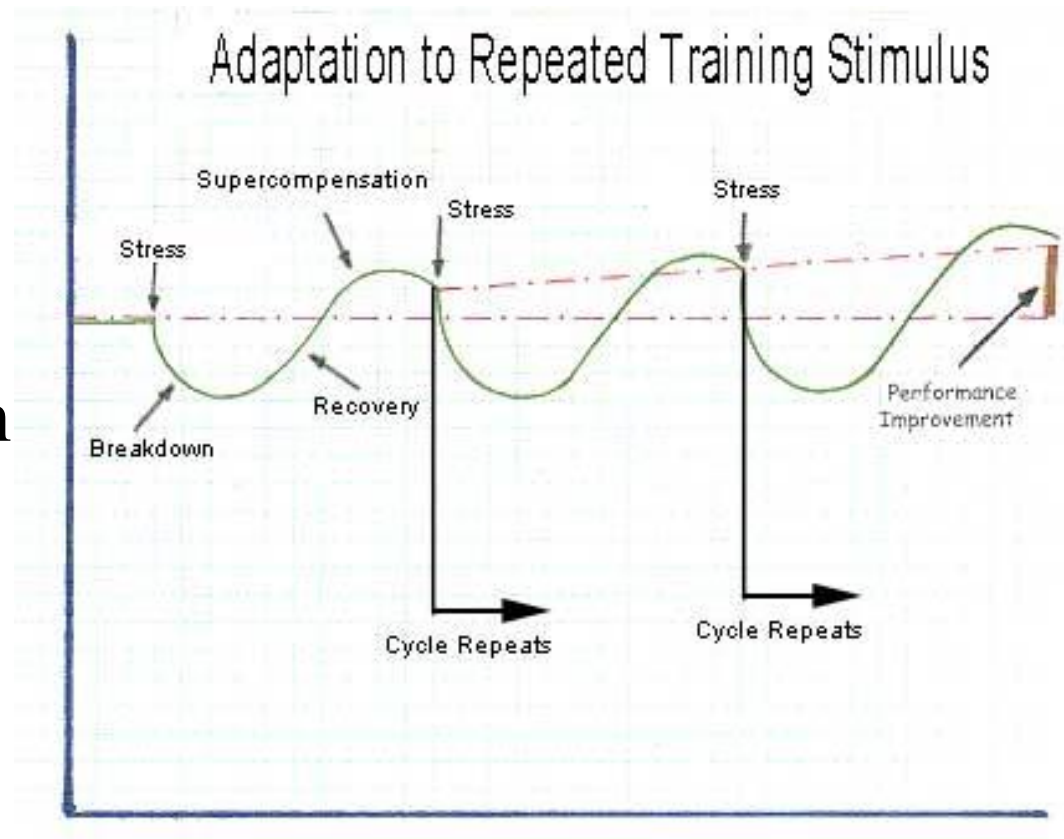
Force

The Force - Velocity Curve

The Force Velocity Curve. Force and velocity of contraction are inversely proportional to each other. As one increases, the other must decrease. This is because at high speeds, crossbridge cycling becomes less efficient, thus reducing the force produced. We can train power by altering the rate of force or velocity loss, but we cannot change the nature of this inverse relationship. (USTFCCCA Coaching Academy)

Recovery

- Rest
- Sleep
- Regeneration Activity
(hormonal/lactate acid/muscular)
- Nutrition & Hydration





Questions?

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