100 / 110m HURDLE TRAINING
with respect to the Contemporary Technical Model

RALPH LINDEMAN, Head Track Coach
US Air Force Academy
Ralph Mann’s research has identified that successful hurdlers must:

1) Minimize time from start to take-off to 1st Hurdle
   • Manage Steps
     o Reach proper take-off distance to the 1st hurdle
     o Generate highest horizontal velocity possible to that distance
     o Minimize time from start to take-off to 1st Hurdle

2) Minimize Hurdle Clearance time
   • Begin from proper take-off distance to the 1st hurdle
   • Minimize ground time into and off of the hurdle
   • Minimize air time over the hurdle
   • Lose as little horizontal velocity as possible over the hurdle

3) Minimize time for the 3 steps between hurdles
   • Manage Steps
     o Reach proper take-off distance to the next hurdle
     o Regain highest amount of horizontal velocity as possible over those 3 steps

4) Utilize mechanics to get the most out of the Hurdle Clearance
   • Maximize front-side mechanics
   • Minimize back-side mechanics
From Ralph Mann’s conclusions from his video study, he’s identified the following “coaching issues”:

1) The importance of the Start is too often ignored.

2) Training has been dominated by sprint activity over Hurdle activity.

3) The traditional core concepts of Hurdle technique are flawed.

4) The mechanics of the steps between the Hurdles has been ignored and any specific training virtually ignored.
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IMPLICATIONS for TRAINING
100 / 110m HURDLE TRAINING
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IMPLICATIONS for TRAINING

1) Practice the Start at least 2 times a week
   • In preparation for Hurdling, every time you Hurdle
   • Individually, with the focus on mechanics (vs. competition)
   • As a group, in a competitive environment

2) Teach the most effective (FASTEST!) start for that specific athlete
   • 1st 3 steps
   • Measure touchdown preceding 1st hurdle

3) Provide constant feedback to the athlete
   • TEACH: Verbal feedback
   • TEACH: Video feedback
   • TIME: 3m, or, 3rd step touchdown; touchdown preceding hurdle clearance
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7- vs. 8-step Approach Models
100 / 110m HURDLE TRAINING
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7- vs. 8-step Approach Models
100 / 110m HURDLE TRAINING 
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“The Hurdles are NOT a Sprint” ~Ralph Mann
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<table>
<thead>
<tr>
<th>Description</th>
<th>Hurdle Clearance Stride</th>
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“The Hurdles are NOT a Sprint” ~Ralph Mann
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Stride Lengths in a 110m Hurdle Race (m)
“The Hurdles are NOT a Sprint” \textit{~Ralph Mann}

Stride Lengths in a \textbf{110m Hurdle} Race (m)
“The Hurdles are NOT a Sprint” ~Ralph Mann

Stride Lengths in a 110m Hurdle Race (m)

Ten (10) Decelerations ... Eleven (11) Accelerations
“The Hurdles are NOT a Sprint” ~Ralph Mann

Stride Lengths in a 100m Sprint Race (m)
100 / 110m HURDLE TRAINING
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Slide from 2010 Presentation
100 / 110m HURDLE TRAINING
with respect to the Contemporary Technical Model

Slide from 2010 Presentation

PRIMARY CONCERNS

- Teach hurdler to *sprint* through the barriers!
- Analyze for the *causes* of *effects*.
- Coach for *balance*—eliminate causes of excessive rotation.
- Stress *concentration*—on every one of the ten hurdles.
100 / 110m HURDLE TRAINING
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IMPLICATIONS for TRAINING
100 / 110m HURDLE TRAINING
with respect to the Contemporary Technical Model

IMPLICATIONS for TRAINING
SOLUTION to the “SPRINT vs HURDLE ISSUE”

1) Most “speed work” should be done within the hurdle stride length
   (or stride pattern \(\sim RL\)) constraints
   • Stride rate (“speed”) training– at race rates
   • Stride length training– at standard distance, but lower heights

2) Teach the most effective model for each particular athlete
   • Hurdle technique
   • Step pattern

3) Provide constant feedback to the athlete
   • TEACH: Verbal feedback
   • TEACH: Video feedback
   • TIME: 3m or 3rd step touchdown; touchdown preceding hurdle clearance
100 / 110m HURDLE TRAINING
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IMPLICATIONS for TRAINING

Lots & lots of *Rhythmic*
Hip Mobility Drills
100 / 110m HURDLE TRAINING
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IMPLICATIONS for TRAINING

Emphasis should be on
F-A-S-T Hurdling
100 / 110m HURDLE TRAINING
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IMPLICATIONS for TRAINING
For increased Stride Frequency between hurdles, try reps over hurdles with reduced spacing:

College Men: 13m to 1st hurdle, 8.5 - 8.8m between
HS Boys: 12.5m to 1st hurdle, 8.3 - 8.5m between
College Women: 12.5m to 1st hurdle, 8.0 - 8.3m between
HS Girls: 12m to 1st hurdle, 7.8 - 8.0m between
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IMPLICATIONS for TRAINING

For increased Velocity between hurdles, try 10 strides to the 1st hurdle and 5 between hurdles:

College Men: 17m to 1st hurdle, 13m between
HS Boys: 16m to 1st hurdle, 12.5m between
College Women: 16m to 1st hurdle, 11.5m between
HS Girls: 15.5m to 1st hurdle, 11m between
IMPLICATIONS for TRAINING

For both increased Stride Frequency and increased Velocity

Lower the hurdles keeping the hurdles the standard distance apart:

12” *Banana* Hurdles ➔
24” *Scissor* Hurdles ➔
30”, 33”, 36”, 39” Standard Hurdles
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IMPLICATIONS for TRAINING

Don’t ignore “Bounding”
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IMPLICATIONS for TRAINING

Don’t ignore “Bounding”

1) A-bounds teach Hurdle Technique, most importantly, fast lead knee and full extension of drive leg.

2) Bounding is invaluable for building explosive strength needed for optimal stride length in Hurdling.
OTHER VIEWS on TRAINING
QUESTIONS?

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US Air Force Academy

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