1500m Training

HOUSTON FRANKS
MISSISSIPPI STATE UNIVERSITY
1500m Training Influence

SLOW AND STEADY WINS THE RACE.

FALSE: FAST ALWAYS WINS
Profiling a 1500m Runner

- Matching individual athlete skill sets with the physiological demands of the event
- Good combination of speed and endurance
- High VO2 Max (aerobic power)
- Good buffering capacity (anaerobic)
# Energy System Contributions

<table>
<thead>
<tr>
<th>Event</th>
<th>Duration</th>
<th>Aerobic</th>
<th>KCAL used</th>
<th>Anaerobic Glycolytic</th>
<th>KCAL used</th>
<th>Anaerobic Alactic</th>
<th>KCAL used</th>
<th>Total KCAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>800 Meters</td>
<td>2 min</td>
<td>50%</td>
<td>45</td>
<td>44%</td>
<td>40</td>
<td>6%</td>
<td>5</td>
<td>90</td>
</tr>
<tr>
<td>1600 Meters</td>
<td>4 min</td>
<td>70%</td>
<td>100</td>
<td>28%</td>
<td>42</td>
<td>2%</td>
<td>3</td>
<td>145</td>
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<tr>
<td>3200 Meters</td>
<td>10 min</td>
<td>87%</td>
<td>249</td>
<td>13%</td>
<td>36</td>
<td>&lt;1%</td>
<td>1</td>
<td>286</td>
</tr>
<tr>
<td>5000 Meters</td>
<td>15 min</td>
<td>92%</td>
<td>372</td>
<td>8%</td>
<td>32</td>
<td>&lt;1%</td>
<td>1</td>
<td>405</td>
</tr>
<tr>
<td>10,000 Meters</td>
<td>30 min</td>
<td>95%</td>
<td>700</td>
<td>5%</td>
<td>30</td>
<td>&lt;1%</td>
<td>1</td>
<td>730</td>
</tr>
</tbody>
</table>
# Percentage of VO2 Max

<table>
<thead>
<tr>
<th>Event</th>
<th>% VO2 Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>800 Meters</td>
<td>120-136%</td>
</tr>
<tr>
<td>1500 Meters</td>
<td>110-112%</td>
</tr>
<tr>
<td>3000 Meters</td>
<td>100-102%</td>
</tr>
<tr>
<td>5000 Meters</td>
<td>97-100%</td>
</tr>
<tr>
<td>10,000 Meters</td>
<td>92%</td>
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</tbody>
</table>
### Cross Country

<table>
<thead>
<tr>
<th>Phases of Training</th>
<th>Duration</th>
<th>Emphasis</th>
<th>Applications</th>
</tr>
</thead>
</table>
| **Transition**     | 2 Weeks  | 1. Recovery  
                      2. Aerobic Threshold | Easy to moderate continuous runs |
| **General Prep**   | 4-6 Weeks | 1. Aerobic Threshold  
                      2. Lactate Threshold  
                      3. Strength/Flexibility | Begin to increase length of distance runs  
Introduce the "long run" back to weekly routine  
Introduce strides after runs to improve leg turnover  
Progressive Runs  
Weights/Circuits/Core |
| **Specific Prep**  | 6-8 Weeks | 1. Lactate Threshold  
                      2. vVO2  
                      3. Strength/Flexibility | Introduce Fartlek, Tempo Runs, Hill Sessions  
Interval Sessions (w/medium intensity, very short rest)  
Can begin racing during this phase |
| **Pre-Competition**| 5-6 Weeks | 1. vVO2  
                      2. Lactate Threshold  
                      3. Lactate Tolerance | Intervals primarily 2-6 minutes in length w/short rest  
Maintain Aerobic Base  
Usually during the middle of racing season  
Reduce, but maintain LT Work (EX: Tempo Runs)  
Continue Hill Session of varying lengths |
| **Competition**    | 2-4 Weeks | 1. vVO2  
                      2. Lactate Tolerance  
                      3. Lactate Threshold | Length of Intervals 2-4 Minutes in length with longer rest  
Intensity stays high, volume decreases  
Reduce aerobic running and length of "long runs"  
End of Racing Season |
## Indoor Track

<table>
<thead>
<tr>
<th>Phases of Training</th>
<th>Duration</th>
<th>Emphasis</th>
<th>Applications</th>
</tr>
</thead>
</table>
| **Transition**     | 1 Week   | 1. Recovery  
2. Aerobic Threshold | Easy to moderate continuous runs |
| **General Preparation** | 3 Weeks | 1. Aerobic Threshold  
2. Lactate Threshold  
3. Lactate Tolerance | Begin to increase length of distance runs  
Introduce the "long run" back or lengthen to weekly routine  
Introduce strides after runs to improve leg turnover  
Progressive Runs  
Hill Sessions |
| **Specific Preparation** | 4 Weeks | 1. vVO2 Max  
2. Lactate Threshold  
3. Lactate Tolerance | Use Fartlek, Tempo Runs, Hill Sessions  
Interval Sessions (w/medium intensity, short rest)  
Can begin racing during this phase  
Use some races as workouts, often racing shorter race distances |
| **Pre-Competition** | 4 Weeks | 1. vVO2 Max  
2. Lactate Tolerance  
3. Lactate Threshold | Intervals primarily 2-6 minutes in length  
Maintain Aerobic Base  
Usually during the middle of racing season  
Reduce, but maintain LT Work (EX: Tempo Runs)  
Intensity of workouts increases, weekly volume decreases |
| **Competition**    | 2-4 Weeks | 1. Lactate Tolerance  
2. vVO2 Max  
3. Recovery | Length of Intervals 2-4 Minutes in length with longer rest  
Intensity stays high, volume decreases slightly  
Reduce aerobic running and length of "long runs"  
End of Racing Season |
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<td>1. Aerobic Threshold</td>
<td>Begin to increase length of distance runs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Lactate Threshold</td>
<td>Introduce the &quot;long run&quot; back to weekly routine</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. vVO2</td>
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<td></td>
<td></td>
<td>Progressive Runs</td>
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<td></td>
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<tr>
<td>Pre-Competition</td>
<td>4-6 Weeks</td>
<td>1. vVO2</td>
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<td></td>
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<td></td>
<td>End of Racing Season</td>
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Aerobic Training Methods

- **Recovery Runs** – typically 30-45 minutes in duration (target pace – 65-75% vVO2)
- **Aerobic Development Runs** – typically 45-70 minutes in duration (target pace – 70-80% vVo2)
- **Long Runs** – typically 70-100 minutes (some individuals may be as long as 120 min.) (target pace same as Aerobic Development Runs)
Lactate Threshold Runs (usually run progressive in nature):
- Long Tempo – 8-10 Miles – (target pace 80-85% vVO2)
- Medium Length Tempo – 5-7 Miles – (target pace 85-88% vVO2)
- Short Tempo – 3-4 Miles – (target pace 88-92% vVO2)
- Lactate Threshold Intervals – Usually 5-15 minutes in duration, with very short recovery time b/reps (usually 1-2 min.). (Target time depends on total volume of session).
Aerobic Training Methods cont.

- **VO2 Max Intervals** – 2-6 minutes long in duration (600m – up to 2k) – COMBINE ZONE (training has aerobic and anaerobic contributions and adaptations)
  - 95% vVO2 – (approx. 8k race pace) – $\frac{1}{4}$ to $\frac{1}{2}$ time recovery b/reps – up to 10k+ in total volume
  - 97% vV02 – (approx. 5k race pace) – $\frac{1}{2}$ time recovery b/reps – up to 8k in total volume
  - 100% vVO2 – (approx. 3k race pace) – equal rest b/reps – up to 6k in total volume
Anaerobic Training Methods

- **1500m Pace work (110% vVO2 Max)** – typically 200m-1000m in length. Typically equal to double rest of duration run.

- **800m pace work (120% vVO2 Max)** – typically 150m-600m in length. Rest is enough to maintain desired velocity.

- **Lactate Tolerance** – Short/fast intervals run in sets with very short recovery b/reps, but longer rest b/sets.
  - Example: 4 x 3 x 200m, at 29-31, 30 sec. b/reps, 8 min. b/sets
Training Paces

- Fractionalization of vVO2
- Test for vVO2 – Ex: 2 Mile Time Trial or 10 minute test
- Important to get “Date vVO2”
- I often use some workouts that we have done for years: Example: 1000m repeats or mile repeats.
Example of Training Paces

- Marta Freitas – Summer 2017 –
  - 65% vVO2 – 7:26.12
  - 70% vVO2 – 6:54.26
  - 75% vVO2 – 6:26.64
  - 80% vVO2 – 6:02.47
  - 85% vVO2 – 5:41.15
  - 88% vVO2 – 5:29.52
  - 90% vVO2 – 5:22.20
  - 92% vVO2 – 5:15.20
  - 95% vVO2 – 5:05.24
  - 97% vVO2 – 4:58.95
  - 100-102% vVO2 – 4:44.29 – 4:49.98 (2:55-3:01 / 1000m)
  - 110% vVO2 – 4:23.62 (65-66/400)
  - 120% vVO2 – 4:01.65 (29-30/200 or 60/400)
Race Predictions based on vVO₂
(Marta Freitas – Summer 2017)

- 800m – 2:00.12
- 1500m – 4:05.71
- 3000m – 8:49 – 9:00
- 5000m – 15:28
- 10,000m – 32:38

*Does not necessarily mean they can run all of these, just means they need to do workouts like they can run these*
Multi-Pace Training Cycle

- Typically 14 day cycle
- Within the 14 day cycle we will hit different training paces. What those paces are differ depending on the time of year.
- Helps reduce monotony
- Allows for adequate recovery between “hard” sessions
Example Cross Country (Fall) 14 Day Cycle

- M-50-60 min. run, followed by weights/circuits
- T-4-5x Mile, 3 min. b/reps
- W-2 Recovery runs
- Th-50-60 min. run, followed by weights/circuits
- F- Long Tempo Run
- S -2 Recovery Run
- S – OFF or light run

- M-50-60 min. run, followed by weights/circuits
- T-6x1000m, 3 min. b/reps
- W-2 recovery runs, followed by weights/circuits
- Th-Pre-Race
- F – CC Race
- S- Recovery Run
- S- Long Run
Example of Primary Session in 14 day Cycle

- **Track Prep/Early Track Season**
  - **Alactic Work** – Ex: 4 x 30m flys, 2 x 60m flys, aerobic run after the fly work
  - 110% vVO2 Max, approx. 1500m pace. Ex: 10 x 400m with 2min. b/reps. (start with 2 min. b/reps and work our way down to 60 sec. as buffering capacity improve)
  - **Lactate Threshold**:
    - Ex: 4 Mile Tempo Run at 88-90% vVO2.
    - followed by a few “strides” 150’s or 200’s
  - **Long Run** – Approx. 90 minutes (individualized for the athlete)
  - **97% VO2** – Ex: 5 x 1200m at approx. 5k pace, 2 min. b/reps
  - **s**
  - **120% VO2 Max**:
    - 16-20 x 200m at 800m pace, 200m jog b/reps (may be done in sets if needed initially)
  - **Long Run with Lact. Thr. in the middle**:
    - Ex: 3 miles easy, 5-6 miles at LT (approx: 85% vVO2), 3 miles easy
Example of Primary Session in 14 day Cycle

- **Track Prep/Middle Track Season**
  - **Alactic Work** – Ex: 4 x 30m flys, 2 x 60m flys, aerobic run after the fly work
  - 110% vVO2 Max, approx. 1500m pace. Ex: 10 x 400m with 1 min. b/reps. (insert a couple of 500’s in the middle later) OR
  - **Lactate Threshold**: Ex: 4 Mile Tempo Run at 88-90% vVO2. followed by a few “stride” 150’s or 200’s
  - **Long Run** – Approx. 90 minutes (individualized for the athlete)
  - **100% VO2** – Ex: 5-6 x 1000m at approx. 3k pace, 3 min. b/reps)
  - **120% VO2 Max**: 3 x 500m, 5 min. b/reps, rest 6-8 min. then do 5 x 300m, 3 min. b/reps
  - **Long Run with Lact. Thr. in the middle**: Ex: 4 miles easy 4 miles at LT (approx: 85% vVO2), 4 easy
Example of 14 day Cycle

**Track Prep/Late Track Season**

- **Alactic Work** – Ex: 3 x 30m flys, 2 x 60m flys, 1 x 150m
- **110% vVO2 Max**, approx. 1500m pace. Ex: 2 x 800/400/300, 3 min. / 90 sec. b/reps, 8 min. b/sets OR 2 x 1000m, 8 min. b/reps
- **Lactate Tolerance**: 3 x 400/200, 60 sec. b/reps, 6-8 min. b/sets OR 2 x 4 x 200m, 30 sec. b/reps
- **Lactate Threshold**: Ex: 4 Mile Tempo Run at 88-90% vVO2, followed by a few “stride” 150’s or 200’s
- **100% VO2** – Ex: 4-5 x 1000m at approx. slightly faster than 3k pace, 3 min. b/reps,
- **120% VO2 Max**: 2 x 400/200/200/200, 3 min. / 90 sec. b/reps, 6-8 min. b/sets
- **Long Run** – Approx. 80-90 minutes (individualized for the athlete)
Advantages of 14 day cycle

- Allows for a bit more flexibility with the cycle if and extra day of recovery is needed between “hard” sessions
- Works well with our racing schedule most of the time (race every other week a lot)
- Can hit the all of the major training parameters with in the cycle fairly easily.
- Helps avoid monotony of training
- Some people do a “speed” week and a “endurance” week, I try to mix
Training Specificity

- Match the training to the athlete’s skill set as well as tactically how they race
- I break the race down to 4 parts
  - **800/400/200/100**
    - First 800 is about establishing/realizing what type of race it is going to be (fast time vs. tactical) and getting in a good position
    - Next 400 is about being at or very close to the position you want to be in going into the “critical zone” (last 300m). Maintain good position OR get there if first 800 has not gone as well as planned
    - The next 200 is a significant pace increase “push for home” but trying to keep one last gear if possible
    - The last 100m is the “sprint” finish
Training Specificity

- Set workouts up to prepare for what you want the first 800 to be, what the next 400 needs to be, and then what the critical zone (last 300) needs to be.
- Don’t worry too much about the last 300 until you have the first 1200 done.
Training Specificity cont.

- Has to be work done handle the fast pace in the middle of the race aerobically. That is where the long interval work come in. The goal is to get to 1200m as aerobically as possible and staying “clean” as possible.

- It takes us a minimal of 8-12 weeks to get buffering capacity to where we want it. So some anaerobic glycolytic work is introduced early in the track preparation.
Training to Train vs. Training to Race

- **T2T** – higher volumes, typically shorter recovery, more general in nature.
- **T2R** – Longer (more significant duration) intervals within the session, with longer recovery b/reps

- Example: 10 x 400m, 60 sec. b/reps at goal 1500m pace
- 2 x 1000m, 8 min. b/reps at goal 1500m pace

- Example: 20 x 200m at 30-32, 200m jog b/reps
- 2 x 400/200/200/200 at 60 / 29-30 / 29-30 / 29-30, 3 min., and 90 sec. b/reps, 8-10 min. b/sets
Individualizing Training

- Always focus on athletes strength, while still working on their weaknesses.
- Example:
  - Rhian Price vs. Marta Freitas
    - Very similar athletes, but very different backgrounds
    - Rhian’s background was a lot of basic aerobic runs. Good aerobic efficiency, under developed aerobic power, very little background in structured/progressive track sessions, no weight room work
    - Marta’s background much like a 400m runner. Very ballistic, anaerobically developed, aerobically very underdeveloped. Very high developed weight room program
    - Training now is similar, but still has some major differences
      - Rhian runs slightly more Lactate Threshold work, a bit less “sprinting”, ran more mileage until recently (now pretty similar)
      - Marta has more advanced weight room program, sprints more often and with more volume
Individual Training cont.

- **Psychological Difference**
  - Gear training to build confidence
  - Set athletes up to succeed
  - Example: Ffion Price vs. Rhian Price (identical twins)
    - Concentration levels were different in the beginning
    - Same training concepts, but when Ffion came to MSU she was not as developed aerobically (proven in the lab) and we had to use “bridging workouts”, but more developed anaerobically initially
  - Breakdown workouts to ensure success and then progress the workouts
    - Ex: Long Tempo vs. LT Intervals or Fartlek
    - Starting intervals at a length that the athlete can maintain the desired intensity and/or velocity Ex: progressing vVO2 work from 600’s to 800’s to 1000’s, etc.
Critical Zone Training

- In the 1500m I identify the last 300 (200/100) as the critical Zone of the 1500m. That is where medals and “places” are decided.
- First goal is to get to 1200 as “clean” as possible.
  - Clean does NOT mean slow
- Second goal is to have the “speed reserve” to run the last 300 like it “needs” to be run.
- For men in the NCAA that is 39 sec (27-12)
- For women in the NCAA that is 46 (31-14)
- Elite/Pro level is faster (around 37 and 43)
The End

COACH BE WRITING WORKOUTS LIKE...

IF HE DIES, HE DIES...