



## Endurance Track Clinic

with Stefan Rothe  
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## Endurance Track Clinic

- Basic Etiquette
  - Wear your helmet
  - Pass riders always on their right
  - don't "swing low" unless you're doing fast laps on the black line
  - Look for other riders (left & right) before you go "up" rail or down to the apron
  - Do not yell for no reason, unless it's a "up"/"down" or "on your left/right" for safety reasons

## Endurance Track Clinic

- Equipment
  - The right Gear Choice for your event (see gear chart)
  - Track specific components (crank length, NO quick releases, freewheels or road bike )
  - Tubular Tires, Air Pressure (~130-150psi)
  - Chain Whip, extra Cogs & rings, depending on your events

## Endurance Track Clinic

- Lines
  - Apron (stay to your left to avoid collision w/ a rider on the black line going fast)
  - Blue Band or "Cote D'Azur" (don't try to pass someone on there > DQ!)
  - Black = "Pole Line", shortest way around the track
  - Red = Sprinter's Line, have to go around this to pass a rider (on the right!); from 200m out, you have to hold your line at/below the red
  - Blue = Stayer's Line, used for Stayer races (derry's) and Madison as "rest"-zone marker

## Endurance Track Clinic

- Warm-Up
  - Often done in smaller gear than racing
  - For most endurance events ride 25-35min “tempo” on the blue line; can be done in pace-line w/ rider pulling off each lap
  - Include 5-10min at black line, “Threshold” Intensity; great to do w/ other riders, too
  - “Openers” can include 250 or 500m flying efforts
  - DO NOT do standing starts as warm-up while other riders warm-up on the track
  - Rollers are a great alternative if track is occupied

## Endurance Track Clinic

- Miss’N Out
  - Mass Start Event
  - After a neutral lap, the last rider crossing the finish line gets eliminated every lap
  - Once 3 riders are left in the race, a “free” lap is raced and then they sprint for the win
  - Find your place in the first 3<sup>rd</sup> of the field to avoid “trouble” at the back

## Endurance Track Clinic

- Points Race
  - Sprints every ? Laps
  - 5,3,2,1 points to win in each sprint (1<sup>st</sup>,2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup>); last sprint 10,6,4,2 points
  - You lap the field > you get 20points
  - You lose a lap > you lose 20points
  - Most Points > You Win
  - Current World Champions:  
Vasili Kiryienka (Belarus) & Marianne Vos (Netherlands)

## Endurance Track Clinic

- Scratch Race
  - Similar to criterium on the road
  - First rider across the line wins
  - If you lap the field, you’re on lap ahead of everyone and win the race
  - often ends up in field sprints
  - Current World Champion:  
Aliaksandr Lisouski (Belarus) & Eleonora Van Dijk (Netherlands)

## Endurance Track Clinic

- Win 'N Out *or* Danish
  - Similar to Miss'N Out
  - Predetermined distance
  - After officials ring the bell, first rider in sprint wins the race
  - Every lap, the first rider then gets 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup> etc
  - Tactical Race, you can sprint many times and still finish last if you never be first over the line

## Endurance Track Clinic

- Point-A-Lap
  - Mass-start event
  - Predetermined distance
  - Every lap, the first rider crossing the line/leader gets 1 point; no other rider gets points
  - Only in the final lap, the leader earns 3 points, 2 for 2<sup>nd</sup>, and 1 for 3<sup>rd</sup>
  - Winner is the rider with the most points

## Endurance Track Clinic

- Snowball
  - Similar to Point-A-Lap
  - Predetermined distance
  - Points for leader crossing the line each lap go up with lap count
  - 1<sup>st</sup> lap – 1 point, 2<sup>nd</sup> lap – 2 points, etc.
  - Does not place three deep in final lap
  - Be patient and score towards the end instead of going hard early!

## Endurance Track Clinic

- Unknown Distance
  - Mass Start Event
  - Very tricky and tactical due to the fact that the officials decide when to end the race (bell rings w/ one lap to go)
  - First rider crossing the line wins
  - Getting into a break-away is usually a smart idea

## Endurance Track Clinic

- Individual Pursuit
  - Timed event over 4000m (men) or 3000m (women)
  - Important Factors
    - Pacing (have a timer for your event)
    - Gear choice
    - Aerodynamics
    - Equipment (helmet, disc, aerobars etc.)
    - Riding in a “clean” straight lane on the black line
  - Current World Champion:
    - Bradley Wiggins (Great Britain, 4:18:52min)
    - Rebecca Romero (Great Britain, 3:29:59min)

## Endurance Track Clinic

- Team Pursuit
  - Timed team-event over 4000m (men) or 3000m (women)
  - Important Factors
    - Bike Skills (Doing Exchanges)
    - Riding very close to rider in front of you
    - Positioning of riders (who rides behind who?)
    - Time is taken from 3<sup>rd</sup> rider across the line; you can “lose” on team member
  - Current World Champion:
    - Men's: Great Britain (3:56:32min)
    - Women's: Great Britain (3:22:42min)

## Endurance Track Clinic

- Madison
  - Two-Man Team Event
  - Crowd-Favorite, named after Madison Square Garden
  - Sprints every 10 or 20 laps
  - Similar to points race except the riders can “share the work” by doing exchanges on the track by doing hand-slings
  - Riders “take a break” on the rail or ride slow above the blue line
  - Very tactical and requires good skills
  - Current World Champions:  
Bradley Wiggins/Mark Cavendish (Great Britain)

## Endurance Track Clinic

- Training
  - All mass start endurance events require high tempo & threshold ability AND sprint
  - Training should focus mainly on developing your threshold, maintaining it and THEN work on maximal efforts and/or sprints
  - Interval work (tempo, LT, VO2max) can be done both on road and track

## Endurance Track Clinic

- Physiology
  - The Slow-Twitch muscle fibers
    - *Type I* or *Slow-twitch* muscle fibers have the slowest-contraction speed, the smallest cross-sectional area, the highest oxidative (aerobic) capacity, and a medium glycolytic (anaerobic) capacity. They contract slowly and are able to hold a steady paced twitch for long durations without fatigue.
    - Type I muscle fibers are predominately used in endurance activities (Other sports: Long distance runners, swimmers, & cross-country skiing)

## Endurance Track Clinic

- Physiology contd.
  - The Fast-Twitch muscle fibers
    - Type II-b muscle fibers have the fastest-contraction speed, the largest cross-sectional area, the lowest oxidative capacity, and a high glycolytic capacity.
    - ideally suited for short fast bursts of power. These muscle fibers are used in such activities as sprinting, power lifting, and bodybuilding. Type II-a muscle fibers are intermediate and their properties lay between types I and type II-b.

## Endurance Track Clinic

- Physiology
  - Pursuits (2-4K) & short mass start events rely heavily on the use of Anaerobic Glycolysis as the pathway for energy
  - Anaerobic Glycolysis is the primary energy source in activities lasting between 30 seconds and 3 minutes. This process can continue beyond this point to supply energy during exercise lasting up to ten minutes. *Muscle* and *liver glycogen* stores are broken down without the use of *oxygen*. The byproduct of this system is *lactic acid*.
  - Aerobic Glycolysis is the primary "supplier" of energy for events lasting longer than 10minutes (Scratch, Points, Madison). No *lactic acid* build-up and *oxygen*-use make it a long-lasting producer of energy

## Endurance Track Clinic

- Physiology contd.

