

This is a high level sample report to illustrate the type of information that will be provided in each report. Actual data and charts will vary. The data in this report came from a variety of athlete data files and is for sample purposes only. Review disclaimer and copyright below.

# Cycling with a Power Meter Data Analysis Report

Report Date: January 1, 2010  
Athlete Name: Jane Johnson  
Data Files Used: Cyclops Power Tap (.csv)  
Data Date Range: March 3, 2009 to December 15, 2009

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## Report Summary & Recommendations

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Summary of data findings will be provided on actual report. Recommendations for overall improvements in cycling based on athlete's goals will appear here.

## Athlete Goals

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Athlete's goals will be included in actual report.

Sample goals:

- Peak for optimal performance at Nationals in June.
- Build on strengths (LT & VO2) and address weaknesses (neuromuscular & anaerobic)
- Work to increase FTP.

Current assumptions:

- FTP = 180
- 12 hrs week/training (key weeks = 15-18 hrs)
- Macro schedule of 3 weeks build, 1 week recovery
- Workouts assume optimal cadence of 90-95 unless otherwise noted.

## Functional Threshold

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**Definition:** Functional Threshold definition and usage will be provided on actual report.

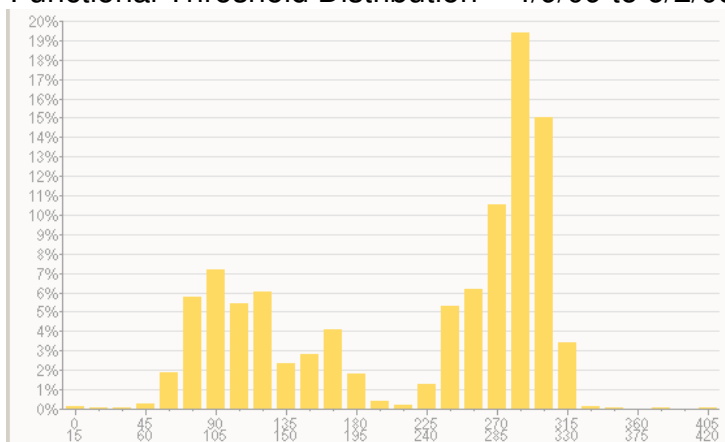
**Data Results:** Athlete's functional threshold power range will appear here.

FTP for Year: 180 watts

When FTP changed (date range): 4/9/09 – 6/2/09

Changed FTP: 200 watts

Functional Threshold Distribution – 4/9/09 to 6/2/09



**Recommendations:** Recommendations for athlete to change FTP will be provided here.

## Custom Power Training Levels

**Definition:** Definition of Coggins Power Training Levels will be provided on actual report. Develop a custom power training levels table to correlate watt meter ranges to key training levels such as endurance, tempo, VO2 max, and anaerobic capacity.

**Data Results:** See table below.

**Recommendations:** See table below.

Sample FTP: 265 watts

Level	Name/ purpose	Average Power (% of threshold power)	Typical length of cont. ride	Typical length of interval	Jane - Sample Workout	Watt Range
1	Active recovery	≤55%	30-90 min	n/a	90 minute ride with wattage not to exceed 145 throughout ride and cadence of 90-95. After 45 min, add 5x1 min at cadence of 100, with 1 min recovery. Pick a flat or slightly rolling course.	146
2	Endurance	56-75%	60-300 min	n/a	120 minute ride as: 20 min warmup with watts not to exceed 145. Then steady state effort with watt range 175-200 for 90 minutes. 10 min cooldown with watt range not to exceed 145. Maintain 90+ cadence throughout ride. Pick a flat or slightly rolling course.	148- 199
3	Tempo/ Fartlek	76-90%	60-180	n/a	120 minute ride as: 20 min warmup with watt range 145-155. Then 3x30 sec sprints at 230 watts with 30 sec recovery. Then 5x10 min at 230-240 watts with 5 min recovery at 150 watts. Remaining ride at 150 watts. Maintain 90+ cadence throughout ride. Pick a flat or slightly rolling course.	201- 239

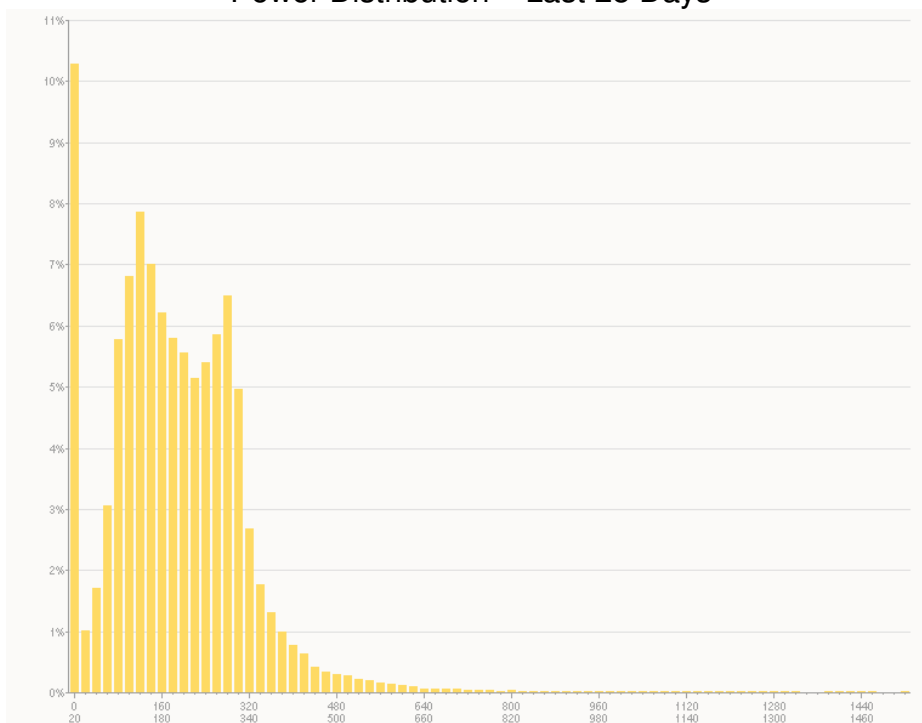
Level	Name/ purpose	Average Power (% of threshold power)	Typical length of cont. ride	Typical length of interval	Jane - Sample Workout	Watt Range
4	LT	91-105%	n/a	8-30 min	120 minute ride as: 20 min warmup with watt range 145-155. Then 3x30 sec sprints at 270 watts with 30 sec recovery. Then 5x10 min at 265-280 with 5 min recovery at 150. Remaining ride at 150 watts. Maintain 90+ cadence throughout ride. Pick a flat or slightly rolling course.	241- 278
5	VO2max	106-120%	n/a	3-8 min	75 minute ride as: 15 min warmup with watts not to exceed 145. Then 6x5 min at 310-320 watts with 3 min recovery at 150. Remaining ride at 150 watts. Maintain 90+ cadence throughout ride. Route can be flat or hilly. Make sure to maintain wattage on downhills during intervals.	281- 318
6	Anaerobic Capacity	≥121%	n/a	30s – 3 min	60 minute ride as: 15 min warmup with watts not to exceed 145. Then 10x1 min power bursts at 320 watts with 1 min easy spin recovery between bursts. Remaining ride at 150 watts. Maintain 90+ cadence throughout ride. Route can be rolling or can do via 1 minute hill repeats (use downhill as "recovery" time between repeats).	321
7	Neuromusc ular power	n/a	n/a	<30 sec	45 min trainer ride as: 20 min warmup with watts not to exceed 150. Add 3x20 sec sprint efforts (after 15 min of warmup) not to exceed 280 watts at fast cadence-100+. Finish remaining warmup. Then 6x20 sec all out with 10 sec stop pedaling (yes, stop pedaling). Goal is to pick "all out" wattage that you can maintain for all 6 intervals. Cooldown remaining time.	321+

## Pedal vs Non-Pedal: Power Distribution

**Definition:** Assess pedaling vs non-pedaling time as a function of energy use and conservation. Explanation of benefits will be provided on actual report.

**Data Results:** Data results and charts will be provided on actual report. See sample chart below.

### Power Distribution – Last 28 Days



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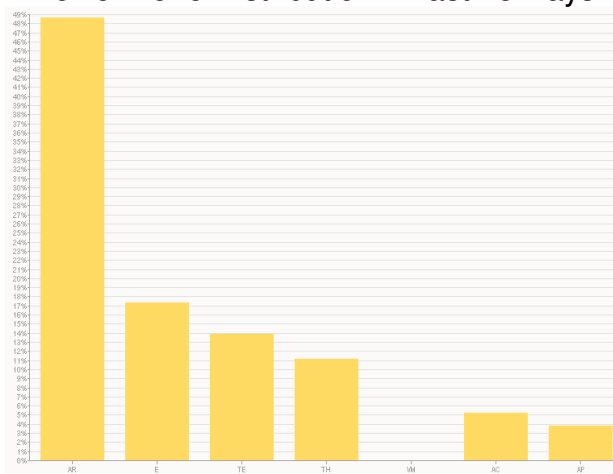
**Recommendations:** Recommendations will be provided on actual report.

### Power Zone Distribution

**Definition:** Power zone definitions will be provided on actual report.

**Data Results:** Data results and charts will be provided on actual report. See sample chart below.

### Power Zone Distribution – Last 28 Days



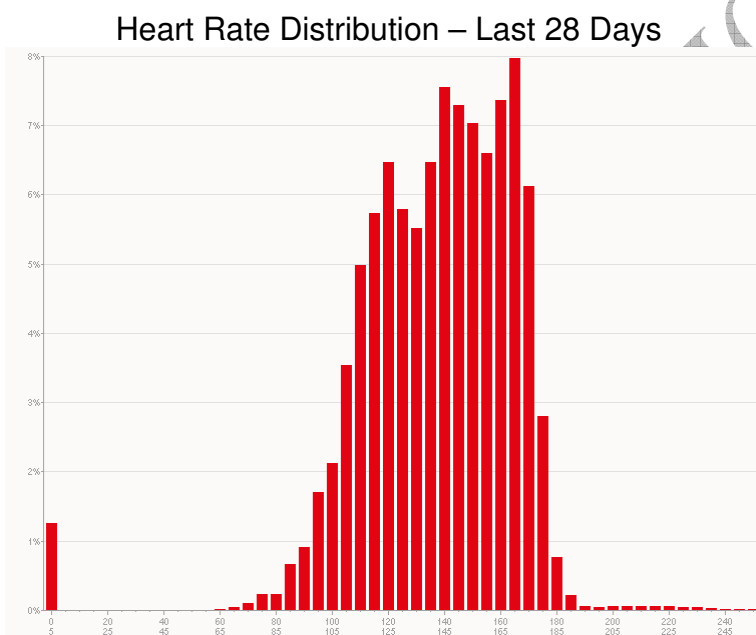
**Recommendations:** Recommendations will be provided on actual report.

## Heart Rate Distribution

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**Definition:** Heart rate zone definitions will be provided on actual report.

**Data Results:** Data results and charts will be provided on actual report. See sample chart below.



**Recommendations:** Recommendations will be provided on actual report.

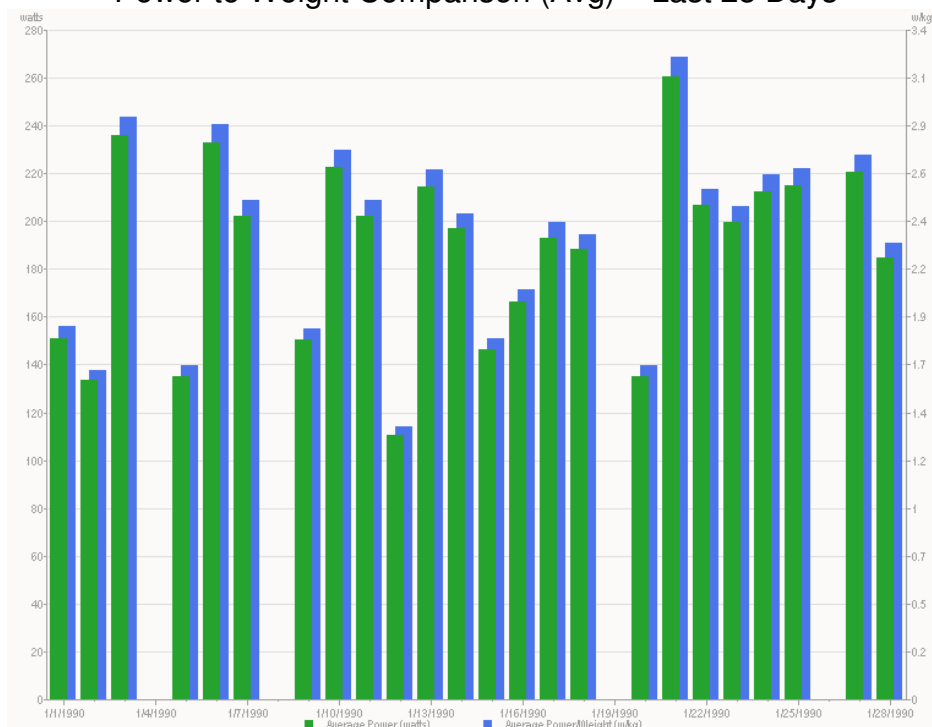
## Power to Weight Comparison

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**Definition:** Power to weight definitions will be provided on actual report.

**Data Results:** Data results and charts will be provided on actual report. See sample chart below.

Power to Weight Comparison (Avg) – Last 28 Days



**Recommendations:** Recommendations will be provided on actual report.

## Power Profile

**Definition:** What is a Power Profile and how to use to compare your data to World Class and Cat racing data, and identify your strengths and areas for improvement against your goals. Explanation of benefits will be provided on actual report.

**Data Results:** Sample result data

5 second power	16.1 W/kg
1 minute power	7.3 W/kg
5 minute power	4.7 W/kg
FTP	4.2 W/kg

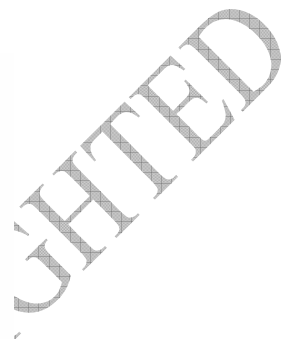
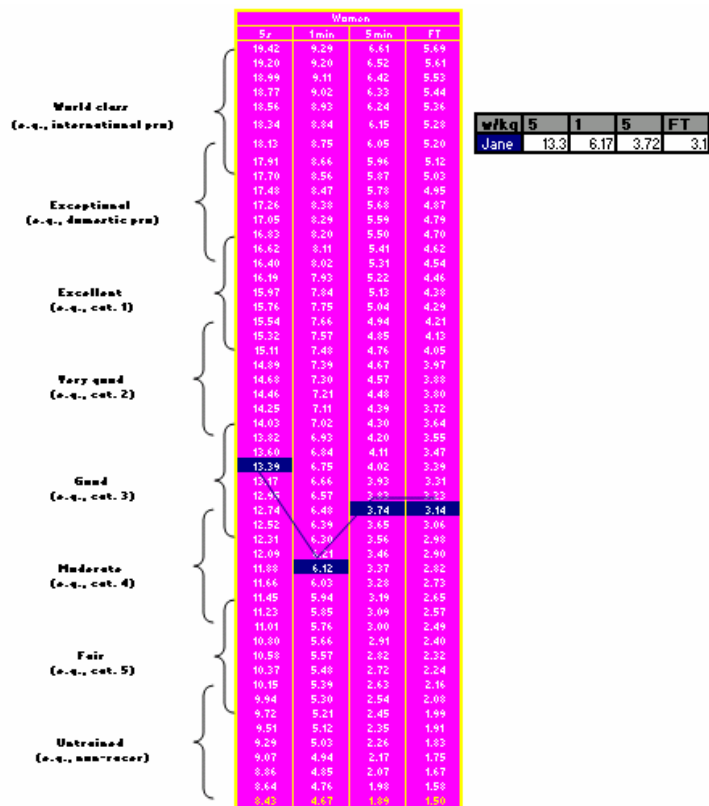
**Strengths:**

- Overall power profile type = “all rounder” which means she is likely competitive across a broad range of events.
- Has the potential to successfully compete at the Cat 2 level.

**Weaknesses:**

- 1 min and 5 min efforts are considerably lower in ability, relative to 5 sec and 20 min efforts.
- Because she is an “all rounder”, she has no specific skill set or specialty and will not do well against cyclists who are specialized.

Power Profile Chart and Data



**Recommendations:**

Recommendations for overall improvements in cycling, and example workouts based on current level of fitness and goals will be provided on actual report. Sample is below.

**Workouts-Crits (training recommendations):**

- Work on increasing power bursts for attacks and sprint finishes/preems.
- Work on anaerobic and VO2 Max skills to improve 1 min and 5 min efforts.

**Workouts-Points (training recommendations):**

- Work on sprints within longer training intervals.
- Work on higher sustained efforts (goal: gain points for lapping main field)

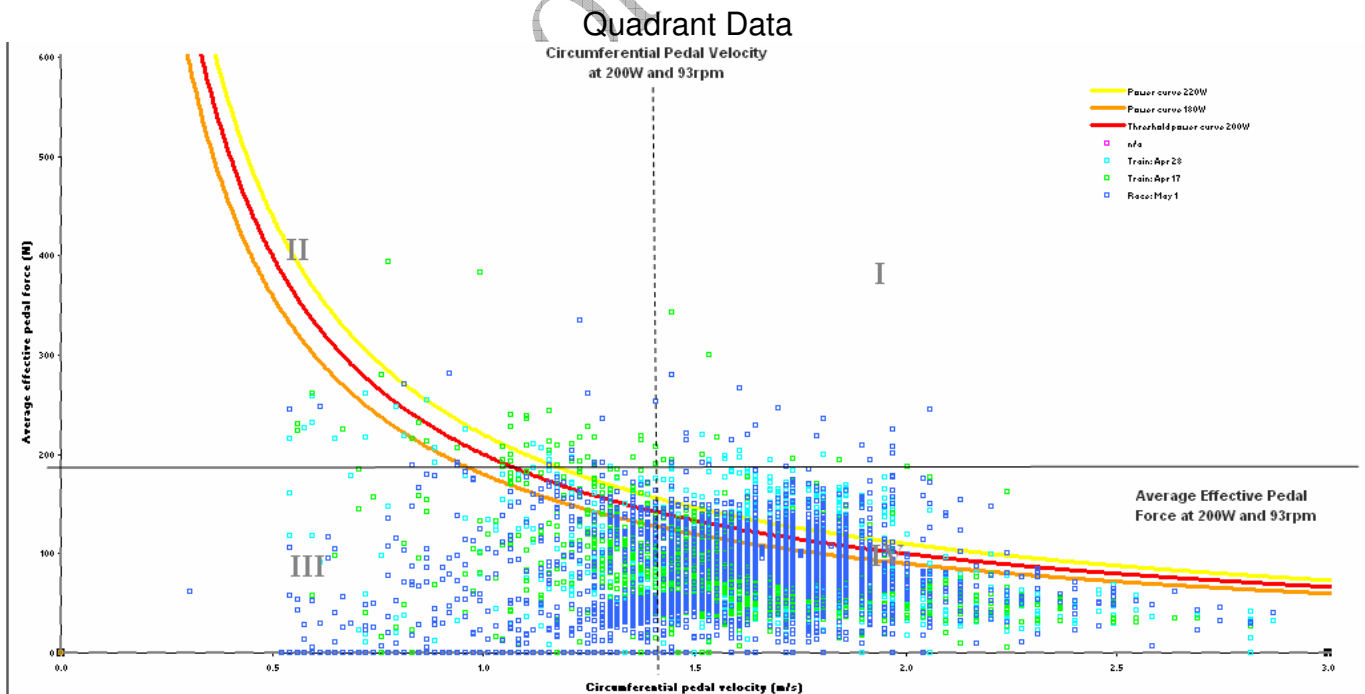
## Quadrant Analysis

**Definition:** Create Quadrant Analysis to show physiological abilities of leg muscle to generate power based on force and velocity. Explanation of quadrant analysis will be provided on actual report.

**Data Results:** The differences between the two training day files are very small. The majority of her training efforts show up in quadrant four (low force, high velocity) with some effort in quadrant three (low velocity/low force).

Based on how the data are grouped, it indicates predominantly a constant power output which matches her description of the course - relatively flat paved surface and hard packed dirt (compared to a hilly, off road course which would show dips and spikes in power and cadence output and in which case her training data would have looked much different than her race data). Her race data also reflects her acceleration and deceleration - also indicative of quadrant four type data - during her accelerations in the race and then soft pedaling while waiting for her teammate. Her average effective pedal force (200w) seems to be in line with her cadence (93) which maximizes her rate of return for her effort.

**Recommendations:** When reviewing her race notes, I am not sure how much of her effort was truly “hers” – she talks quite a bit about soft pedaling to wait up for a teammate and her last lap wasn’t everything she could have given. I would want to talk to her more about this as this would impact the overall integrity of the data based on her true abilities.



## Appendix

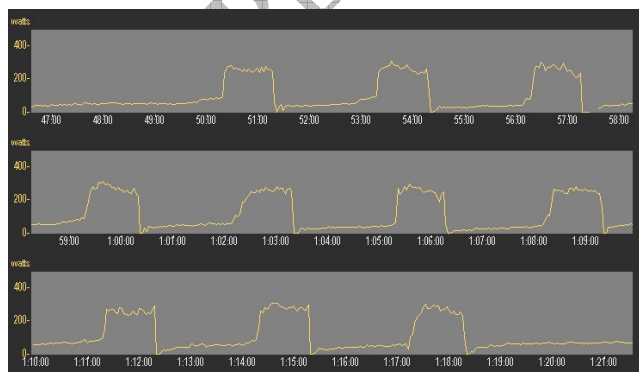
### Athlete Data Files

Name	Size	Type	Date
_4_3_2005.wko	26 KB	TrainingPeaks WKO...	12/4/2
_4_4_2005.wko	43 KB	TrainingPeaks WKO...	12/4/2
_4_5_2005.wko	42 KB	TrainingPeaks WKO...	12/4/2
_4_8_2005.wko	80 KB	TrainingPeaks WKO...	12/4/2
_4_9_2005.wko	47 KB	TrainingPeaks WKO...	12/4/2
_5_25_2005.wko	34 KB	TrainingPeaks WKO...	12/4/2
4_6_2005.wko	45 KB	TrainingPeaks WKO...	12/4/2
4_7_2005.wko	45 KB	TrainingPeaks WKO...	12/4/2
7_17_2005.wko	42 KB	TrainingPeaks WKO...	12/4/2
52600_ergomo_1_2_2005_1.wko	10 KB	TrainingPeaks WKO...	12/4/2
52600_ergomo_1_4_2005_1.wko	11 KB	TrainingPeaks WKO...	12/4/2
52600_ergomo_1_7_2005_1.wko	22 KB	TrainingPeaks WKO...	12/4/2
52600_ergomo_1_9_2005_1.wko	25 KB	TrainingPeaks WKO...	12/4/2
52600_ergomo_1_12_2005_1.wko	18 KB	TrainingPeaks WKO...	12/4/2
52600_ergomo_1_13_2005_1.wko	17 KB	TrainingPeaks WKO...	12/4/2
52600_ergomo_1_14_2005_1.wko	17 KB	TrainingPeaks WKO...	12/4/2
52600_ergomo_1_15_2005_1.wko	10 KB	TrainingPeaks WKO...	12/4/2
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52600_ergomo_1_23_2005_1.wko	21 KB	TrainingPeaks WKO...	12/4/2
52600_ergomo_1_23_2005_2.wko	11 KB	TrainingPeaks WKO...	12/4/2
52600_ergomo_1_25_2005_1.wko	22 KB	TrainingPeaks WKO...	12/4/2
52600_ergomo_1_26_2005_1.wko	11 KB	TrainingPeaks WKO...	12/4/2

### Results from Key Workouts

#### Watts Line Shape

12/1/09–Data - Part of workout: 10x1min intervals

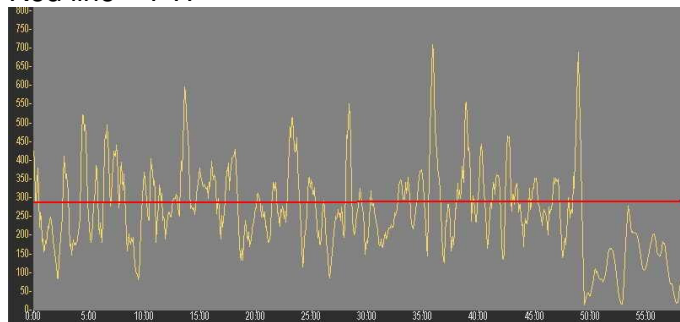


#### Meaning and relation to athlete’s performance

1 min effort shapes are predominantly flat indicating her ability to be consistent in sustaining power for 1 min at 250-260watt range (versus shapes being jagged indicating non-sustaining efforts and likelihood of fatigue). She paced these correctly.

Power profile indicates her 1 min efforts are the weakest of her ability relative to 30 sec, 5 min, and FT. Based on approximated FTP (we only have 1 data point for this), these 1 min efforts are working her anaerobic capacity which will help her overall sprinting ability and the “weakest” area of her power skill set.

4/25/09 – Race Data  
Red line = FTP



Analysis based on her FTP 1 month prior to the race = 240 watts and his Power Profile (indicating he is an “all rounder” but is weakest in anaerobic capacity and FT power efforts).

Red line indicates 20% above FTP. She burned too many “matches” in the race which is compounded by the fact that her 1 min max power output in his power profile is her weakest area in her overall profile. If she could have gotten away in the breakaway, she likely could have held on. Better strategy would have been to get into the early break away and then attempt to stay at FTP.

NOTE: WKO would not allow the graph ranges. So I am showing her overall data rather than highlighting the segments indicating 21%+ over FTP for 1 min = 290+ watts.

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