Training Systems - A Quick Guide

Training System	Subset Names	% Effort	Work Duration	Rest Duration	Workout Guidelines	Examples	Indications
Steady State or Aerobic	(Utilization 1&2)	50-75%	**20'- 90'**, up to 6 days a week	Work 1:Rest 0 (No rest needed)			Light sweat/glow, able to speak 5[+] words
	Utilization 1	50-65%			20'[+]con't row @ 16-22spm	3(30')SS (4'+3"+2"+1') @ 16,18,20&22spm	
	Utilization 2	65-75%			20'[+]con't row @18 – 24 spm	3(30')Firm SS (4'+3"+2"+1') @18, 20, 22 & 24spm)	
Anaerobic Threshold	**Anaerobic Threshold**	80-85%	**2'- 20'**, up to 3 days a week	Work 2:Rest 1 (rest ½ of work)	3-15' work, 1½ -7' rest @22-30spm	4(2'+2'+2'+2'+2') @80%pressure 22, 24, 26, 28 &30spm	Sweat, hvy. glow, able to speak 3-5 words
Volume Oxygen Maximum (VO2Max)	**Transportation**	90-95%	**Up to 8'(race)**, no more than 1 day/wk, 1½ months prior to "the race"	Work 1:Rest 2 (rest twice work)	2'-8' work, 1½ -7' rest @28-34spm	3(2'+2'+2'+2') @90%pressure 28, 30, 32, & 24spm	"Horse sweat", unable to speak more than 1-2 words
	Lactate Tolerance	100%	**Under 2'**, no more than 1day/wk, 1 mo. prior to "the race".	Work1:Rest 3-4 (rest 3-4 times work)	30"-2' work, 2'-8 rest @ race pace spm	3x3(2' on/2'off) race pace (2000m race broken into 4 pieces), 10' rowing rest between	"Horse sweat", may be able to speak a word, if at all.

We spend a majority of our training time in Steady State and Anaerobic Threshold systems.

Steady State workouts focus on the aerobic system (a system working in the presence of oxygen). SS workouts teach the body (oxygen carrying blood system and the muscular system) to efficiently provide oxygen to you muscles while working, and remove from your muscles the byproduct of carbon dioxide. Because your work is light enough, with little taxation on your system, you are able to breath enough oxygen during your work to avoid going into oxygen debt. As you train, three things happened:
- Your muscles become stronger, enabling you to "do more work" per the same amount of effort
- Your capacity for taking in/using oxygen increases
- Your capacity for removing/exhaling carbon dioxide increases

This is the base system for all other work. If you do not have a good aerobic system, you cannot build and effective anaerobic system.

Anaerobic Threshold workouts focus on the anaerobic system (a system working in the presence of little oxygen). AT workouts teach the body (oxygen carrying blood system and the muscular working system) to work more efficiently with less oxygen, teaches a tolerance for working in this system, and again improves the efficiency to remove carbon dioxide and lactic acid from your system. Because the workout is a heavier taxation on your system, your system cannot provide enough oxygen to your working muscles need and your muscles are broken down so to speak. So your body shifts to the Anaerobic (without oxygen) system. After the piece, your body must remove the bi-product of this heavier work. Take ample rest between pieces, allowing time to remove the lactic acid and carbon dioxide from your muscles prior to starting the next piece. As you train, 3 things happened:
- Your muscles are broken down, thus the need for rest, and time to "rebuild" muscle fiber (thus do an AT work out every *other* day, as steady state helps flush out the system and allow time to repair muscle)
- Your muscular capacity for work increases, as does your tolerance for working in oxygen debt
- Your non-oxygen capacity for work increases – as long as appropriate aerobic base and rest between work sessions is incorporated into your training schedule!!

VO2 Max workouts focus on your body's ability to become lactate tolerant. Lactate is a muscular product of a very stressful workout. The more difficult the workout, then more lactate is produced. The greater your lactate tolerance (muscular stress), the more muscles can work in this state, the greater your muscular capacity for 'the race'.

Use this portion of the worksheet to calculate your Aerobic & Anaerobic Training Ranges

Estimated Maximum Heart Rate (MHR):   Estimated Resting Heart Rate* (RHR)

(RHR) Your heart rate when you first wake, or just prior to sleep

220 - _____ = _____   _____
  Your age   MHR (Max Heart Rate)   RHR (Resting Heart Rate)

Estimated Heart Rate Reserve (HRR):

_____ - _____ = _____
MHR   RHR   HRR (Heart Rate Reserve)

AEROBIC RANGE:

_____ x .50 = _____ + _____ = _____
HRR   (50%)   RHR   **Low end of Aerobic THRR**
                                              (Training Heart Rate Reserve)

_____ x .75 = _____ + _____ = _____
HRR   (75%)   RHR   **High end of Aerobic THRR**

To maintain **Aerobic Heart Rate**, work between these two heart rates (above Low & High THRR)

ANAEROBIC RANGE:

_____ x .80 = _____ + _____ = _____
HRR   (80%)   RHR   **Low end Anaerobic THRR**

_____ x .90 = _____ + _____ = _____
HRR   (90%)   RHR   **High end Anaerobic THRR**

To maintain **Anaerobic Heart Rate,** work between these two heart rates (above Low & High THRR)
          Volume Oxygen Maximum work within a set time limit at 95%

_____ x .95 = _____ + _____ = _____
HRR   (95%)   RHR   **VO2 Max THRR**

**A note about Rest Heart Rates: Take your pulse first thing in the morning, or just before you fall asleep at night. Your most relaxed, calm heart rate is your 'Resting Heart Rate'. Once your become familiar with your normal RHR, you will notice when your heart rate is elevated 10 beats or more, means your 'bio-system' is under stress, such as an illness, or fatigue. When this is your case; rest more, go to bed earlier, eat a proper diet and reduce your workout for the day to return to full health.

Training System	Subset & System Description	(% Effort) Multiplier	Your Training Heart Rate
Steady State or Aerobic	**(Training Ranges)**	(50-75%)	--------
Low end of aerobic training heart rate reserve	Utilization Training 1 (**UT1**) :	.50	
High end of aerobic training heart rate reserve	Utilization Training 2: (**UT2**)	.75	
Anaerobic Threshold		(80-85%)	--------
Low end of anaerobic threshold training:	Anaerobic Threshold (**AT**)	.80 - .85	
High end of anaerobic threshold training:	(Oxygen) Transportation Rate (**TR**)	.90 - .95	
Volume Oxygen Maximum	Anaerobic (**AN**)	(95%++)	