

## First Ventilatory Threshold Test Using a “Count Test”

### Description:

This simple test provides users of either the CompuTrainer or VeloTron cycle ergometer a method to establish with practically useful accuracy the power output at which the first ventilatory threshold occurs in a highly reproducible manner. For use with this test protocol there are 2.erg files, one for use by riders with a Functional Threshold Power below 200 W and one for riders with a Functional Threshold Power above 200 W, these files are freely available.

The basis of the test is very simple, the selected .erg file will increase the wattage at which the rider is riding in a controlled and incremental manner appropriate to his or her FTP. At predetermined points in the test the rider will perform a reproducible verbal count and the ease with which the count is performed is recorded on a chart.

It is quite well known that with a minute or two of practice an individual can time 10 seconds accurately simply by counting aloud in the following manner: *“One Thousand, Two Thousand, Three Thousand, Four Thousand, Five Thousand, Six Thousand, Seven Thousand, Eight Thousand, Nine Thousand, Ten Thousand”*. You will find that if you speak this count out loud and measure it with a stopwatch with very little practice you will be able to ensure that the speech lasts for almost exactly 10 seconds and that you can reproduce this easily.

To complete the test, simply load the .erg file according to your FTP (either above or below 200W as appropriate) into your CompuTrainer or VeloTron Coaching Software (after proper calibration) and begin riding. The beauty of this test is that it stops when your breathing rate starts to rise significantly and the test is not therefore in the slightest bit stressful!

You will see on the data recording chart in the column on the left hand side a number of time points are indicated in minutes and seconds. At these time points during the ride, which coincide with 15 seconds before each small load increase, you should commence your 10 second count. Either yourself or a helper/observer should record the point in the count where you first breathed (ie. had to pause continuous speech) and record for each count whether you were comfortable (C), moderate (M), or uncomfortable (U) in the right hand column. If for example you had to breathe at the *“Eight Thousand”* point in the count you would put a tick in the 8000 column and if you felt comfortable you would put a C in the right hand column. Therefore at the beginning of the test you should be able to complete the countdown without undue difficulty and probably without a pause for breath and as the load increases over time your ability to do this will be reduced and you will breathe earlier in the count.

It is reasonable to take your VT1 (first ventilatory threshold) to be the point where the ease of continuous counting is being ranked as moderate and the rider will probably be taking a breath at around the 3000-4000 count point, as long as the count is being performed at the correct one count per second speed as described previously. A sample of a completed form is attached as appendix 1.

Once the data has been collected and downloaded into suitable software it is a simple matter to establish the time point where the effort was ranked as moderate and the rider was needing to breathe at around the 3000-4000 count point. This can then be related to either power output or heart rate and used to manage and control future training, this being the power output/heart rate at VT1.

This is a simple test to repeat and can be used to monitor any changes in VT1 in response to training.

Wattage Protocols:

<b>Time Increments</b>	<b>FTP &lt;200W 5W Increments</b>	<b>FTP &gt;200W 10W Increments</b>
0-5	50W	50W
5-7	55W	60W
7-9	60W	70W
9-11	65W	80W
11-13	70W	90W
13-15	75W	100W
15-17	80W	110W
17-19	85W	120W
19-21	90W	130W
21-23	95W	140W
23-25	100W	150W
25-27	105W	160W
27-29	110W	170W
29-31	115W	180W
31-33	120W	190W
33-35	125W	200W
35-37	130W	210W
37-39	135W	220W
39-41	140W	230W
41-43	145W	240W
43-45	150W	250W



Appendix 1:

Sample completed data recording chart. Tick indicates the point in the count at which the first breath was taken.

	1000	2000	3000	4000	5000	6000	7000	8000	9000	1000	C/M/U
04:45											C
06:45											C
08:45											C
10:45											C
12:45							✓				C
14:45							✓				C
16:45						✓					C
18:45						✓					C
20:45							✓				C
22:45							✓				C
24:45						✓					C
26:45						✓					C
28:45					✓						C
30:45					✓						C
32:45				✓							C
34:45				✓							C
36:45			✓								M
38:45		✓									M
40:45											M
42:45											M
44:45											M

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