

Inline Speedskating Ramp Test[®]

created 17-11-99

by Sutton Atkins and Steven A. Madsen

With many thanks to Annette Dam and Anders Holm for their support, help and encouragement in the development of the ISR Test[®].

Attention

It is strongly recommended that the subject and the test manager read all the instructions twice before attempting the test.

Introduction

The Inline Speedskating Ramp Test[®] is designed to give a sport specific approximation of AT (Anaerobic Threshold) Heart Rate. Also to give the threshold skating speed specific to the venue where the test is taken. The test should last between 8 and 12 minutes if correct test procedure is adhered to. The target speed is a stepped acceleration. Each Level lasts one minute and the target speed increases one Km/h. This gives an inversely parabolic acceleration curve. The start of each Level has a different sounding tone to alert the subject to the next Level beginning and thus an increase in pace.

The test is not designed to be purely a physiological test. The results are dependant upon a technical or skill element, especially when the test is conducted indoor. However, technical skill aspects are innate in Inline Speed Skating so should not be separated from testing. There are many tests available if you wish to test solely your physiological profile. Racing has a large skill element – so does this testing procedure. This testing procedure takes away the third party element in racing and focuses on individual skating skill combined with individual skating fitness.

Instructions for testing

Proper warm up and stretching should be done. Prepare as if preparing for a race. If the subjects maximum speed is not known then a 'flying lap' or 'flying 100m' should be recorded to attain the subjects maximum lap time or velocity. On the table below you should be able to find the level corresponding to the subjects maximum speed. The test should begin 12 levels lower than their maximum 'one time' effort level. On an indoor track of 100m per lap, the 'beep marker pylons' should be placed on the start/finish line and the half way line opposite the start/finish line. (i.e. 50m apart). If outdoor, then the track or road should be at least 200m per lap, preferably 300m, 350m or 400m per lap. But any multiple of 50m will do. 'Beep marker pylons' should be placed around the track/road every 50m.

The subject must keep up with the 'beeps' and be passing the appropriate 'beep marker pylon' at the sound of the 'beep'. The test manager should not let the subject get more than 10m ahead of the appropriate pylon at the sound of the 'beep'. When the subject gets more than 15m behind the appropriate pylon then the test is finished immediately and the Level achieved is noted. For example: Level 10 plus 17 seconds, gives a test result of 10:17. Therefore the subject completed Level 9 successfully and failed to complete Level 10. This means their AT velocity, specific to the venue, is 32Km/h or 8.8m/s (or 11.25 s/lap if on a 100m indoor rink). See table of Test/Ramp stats below.

AT Heart Rate and Maximum Heart Rate Calculation

Heart rate should be recorded all the way through the warm up, the test and for at least 5 minutes after the end of the test. The subjects sport specific maximum heart rate is the highest Heart Rate seen during the test. AT Heart Rate is approximately 85% of the maximum Heart Rate seen during the test. N.B. The max. Heart Rate is also

probably specific to whether an indoor test is taken or an outdoor test. The two disciplines place differing physiological strains upon the body. Indoor has a larger Anaerobic component than outdoor.

Recovery Calculation

The MMR (Maximum Minute Recovery) can be calculated if the Heart Rate recording procedure is followed. The subject should be encouraged to keep exercising at a very low level to maintain heart function and blood flow to increase the MMR. Take a Heart Rate reading exactly one minute after test completion. Subtract this from the Heart Rate at the completion of the test. (not necessarily the max Heart Rate). This value is the Heart Rate reduction over one minute after exhaustive exercise.

Test/Ramp Statistics[©]

<u>Test Level</u>	<u>Ground Speed</u>		<u>100m time</u>	<u>'beep' spacing</u>
	(Km/h)	(m/s)	(secs)	(secs)
1	24	6.60	15.00	7.50
2	25	6.94	14.40	7.20
3	26	7.22	13.85	6.92
4	27	7.50	13.33	6.66
5	28	7.77	12.85	6.42
6	29	8.05	12.42	6.20
7	30	8.33	12.00	6.00
8	31	8.61	11.61	5.80
9	32	8.88	11.25	5.62
10	33	9.16	10.91	5.45
11	34	9.44	10.58	5.29
12	35	9.72	10.28	5.14
13	36	10.00	10.00	5.00
14	37	10.27	9.73	4.86
15	38	10.55	9.48	4.73
16	39	10.83	9.23	4.61
17	40	11.11	9.00	4.50
18	41	11.38	8.78	4.39
19	42	11.66	8.57	4.29
20	43	11.94	8.37	4.18
21	44	12.22	8.18	4.08