

TCRC Grand Prix - Performance Factor

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The Triple Cities Grand Prix was started, at the suggestion of Rick Woidt, in 1983 with four races at distances of 5 km, 10 km, 15 km, and 20 km. The results were based on the overall time. This format continued until 1988 when a fifth race was added but one only needed to run in four of them. It would not be fair to score on time anymore since everyone would not run the same distance.

At that time the points system was incorporated where a runner received points based on his or her time compared to the winner and the winner would receive 1000 points. If you took twice as long as the winner, you would receive 500 points.

After lengthy e-mail discussion among members of the Board of Directors, it was decided that this method was not fair since the result depended too much on which races one elected to run. Tom Gudas presented an example where runner A beats runner B handily in four races but runner B runs a fifth race which is not as competitive. Under the rules in place at the time, runner B could win the Grand Prix even though runner A beat runner B in every head-to-head competition.

A new method of scoring is being adopted for this year's Grand Prix. The points will now be computed from a formula derived from current world records. If a runner runs a world record for the distance, he or she will receive approximately 1000 points. If you take twice as long as the world record holder, you will receive 500 points. These points are called a "Performance Factor" and will show up on printed results under the column "PerF". The nice thing about this Performance Factor is that it should be the same across all races for all distances whereas your points under the old system depended on what fast runners showed up.

Briefly, some advantages of the performance factor method are:

1. Depends on your performance, not the quality of the field.
2. Based on world records across a wide range of distances
3. We could use races like Thater (with a world-class field) in the GP.

Some disadvantages that have been mentioned are:

1. It's harder to get a good performance factor on a tough course like Vestal. However, in looking over the results, runners' times in Vestal are not always lower than other times.
2. A bad weather day can also affect the times.
3. The scoring algorithm is not as easily understood.

The St. Patrick 4-Mile race has been added to this year's Grand Prix. The results for that race have been re-computed using the new formula and are now posted. You might ask how this works since there is no world record for 4 miles. Since it is a formula, it's no problem to plug in any distance. Also, there are two formulas -- one for males based on the male world records and one for females based on female world records. It is interesting to note that the women do not slow down as much as the men for the longer distances.

For those interested, here are the formulas:

$$PF_male = (141000/Time_in_seconds)D_in_km^{1.0631}$$
$$PF_female = (167000/Time_in_seconds)D_in_km^{1.0425}$$

where Time_in_seconds = time in seconds is your time for the distance; D_in_km is the race distance in kilometers, and "^" denotes exponentiation.

Submitted by Alan Jones, Founder of the TCRC.

Additional Notes

The formulas above are based on curve fits to world record performances on the road as of early 2003. A world record time will result in approximately (but not necessarily) 1000 points. The formulas may be updated from time to time to reflect improved performances. Here are some comparisons based on existing or pending world's records around 2003. For more current information, see [Wikipedia - World Records in Athletics](#)

Performance Factors Comparison

Distance	Men's World Record (2003)	Time for 1000 Points	Women's World Record (12/2002)	Time for 1000 Points
1 mile	3:43.13 (1999)	3:54	4:12.56 (1996)	4:34
2 mile	7:58.61 (1997)	8:09	9:19.56 (1998)	9:25
5 Km	13:00 (2000)	13:00	14:54 (2002)	14:54
4 mile	None	17:01	None	19:24
8 Km	22:03 (1996)	21:26	24:28 (2002)	24:19
10 Km	27:02 (2002)	27:10	30:29 (2002)	30:42
15 Km	41:29 (2001)	41:49	46:57 (1991)	46:51
20 Km	56:18 (1998)	56:47	1:03:54 (2001)	1:03:14

Half Marathon	59:17 (1998)	60:06	66:44 (1999)	66:51
Marathon	2:05:38 (2002)	2:05:34	2:17:18 (2002)	2:17:41
400 m	43.18 (1999)	53.2	47.60 (1985)	64.2
800 m	1:41.11 (1997)	1:51	1:53.28 (1983)	2:12

For more information on performance measures for runners, check out [Alan's](#) personal web site. He has recently done a lot of work on [age graded scoring](#), which is used in the Vestal 20.

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