How are Race Scores Calculated?

Our ranking system uses pacesetters to determine a par time for each race. Every race has a unique par time, depending on who has competed. It is important to understand the basic concept behind the ranking scores: scores are calculated as a comparison between an athlete's race time and the projected time of the best age group athlete in the country (par time). For example, if the par time of a sprint race is 60 minutes, someone who completed the race in 72 minutes would be 20% slower than the best age group athlete, calculated as 1.2 times the par time. However, we do not know who the best age group athlete in the country is – so we estimate his/her performance by creating a Par Time.

It would have been possible to give out ranking scores based on these numbers, where the lowest score is best; a score of 1.0 being the best score and all other scores going up from there. This way, it would be easy to see how each athlete's times compare to the times of others. However, in most sports the higher scores reflect a better performance. It was decided to take the inverse of this number (1/1.2 for this example giving .833333) to achieve this goal. Fractions of "1" are not sufficient, so this number is multiplied by 100 (giving our example athlete a score of 83.3333).

There are six steps used to determine race scores:

1. Find all possible pacesetters: Determine which participants received an overall score in the previous year. These participants are considered "pacesetters" in this event. (Note: pacesetters are not athletes who competed in the race the previous year as well as this year. Pacesetters are any athlete who received an overall score based on any three (3) on-road triathlons (2 or more races of any other sport – duathlon, aquathlon, aquabike, off-road triathlon) from the previous year. An overall score tells us what type of performances the athlete generally puts in.
2. Convert minutes into decimal format: We change participants' times into minutes so they can work in the mathematical formula (example: a time of 00:49:30.0 would change to 49.5) (example: a time of 02:11:08.0 would change to 131.133 – 2x60(hours into minutes) + 11 minutes + 8/60(seconds into minutes)
3. Find each pacesetter's calculated time: This is done by multiplying each participant's time in minutes by their pacesetter score (final score from previous year) then dividing that by 100 (this removes a certain percentage of their time). This tells us how quickly an athlete that is ranked at a 100 could have completed the course.
4. Remove top and bottom 20% of calculated times: Drop the top 20% & bottom 20% of calculated times. This removes any extraordinarily great performances (a pacesetter significantly outperforms their previous year pacesetter ranking) and extraordinarily poor performances (causes could be a flat tire or dehydration for example).
5. Determine Par Time: Average the remaining 60% of calculated times to come up with the "par time." We are interested in the "par time" as this is what all of the participants' times will be compared to when calculating their individual rankings. Competitors are actually racing against the "par time" as far as scoring is concerned.
6. Determine each participant's race score: Divide each participant's finish time by the par time, invert and multiply by 100. (For example: assume a participant had a finish time of 49.5 and Par Time was set at 45 minutes
   a. Original Score: 49.5/45 = 1.1
   b. Inverted Score: 1/1.1 = .909090
   c. Race Score: .909090*100 = 90.9090

Athlete Name	Finish Time	Par Time	Finish/Par	Invert	Score
X	49.0167	44.2449	1.1078	.9062	90.265
X	49.0667	44.2449	1.109	.9017	90.173
X	49.2833	44.2449	1.1139	.8978	89.7767
X	49.3167	44.2449	1.1146	.8972	89.7159
X	49.5833	44.2449	1.1207	.8923	89.2335
X	51.3667	44.2449	1.161	.8614	86.1354
X	52.5	44.2449	1.1866	.8428	84.276
X	53.4833	44.2449	1.2088	.8273	82.7266
X	53.7167	44.2449	1.2141	.8237	82.3671
X	55.4333	44.2449	1.2529	.7982	79.8165
X	56.7	44.2449	1.2815	.7803	78.0333
X	56.7667	44.2449	1.283	.7794	77.9416
X	57.8667	44.2449	1.3079	.7646	76.46
X	59.55	44.2449	1.3459	.743	74.2987
X	64.8167	44.2449	1.465	.6826	68.2616