2025 Chesapeake Racer Cruiser Association

CRCA Series Scoring Method

CRCA SERIES SCORING

The CRCA series scoring method is designed to reward boats for placing better in a race, especially races with more starters, and to encourage participation. Two scoring components are included in a boat's total series score, a performance component and a participation component. The total score for the series is based upon a combination of 50% performance, and 50% participation.

-Race Score Component, "R"

The score a boat receives for any individual race is equal to:

$R = S_f (\#s - P_r)/(s-1)$ where,

$S_f = 1-(1/(\#s^z))$,

#s = number of starters in a race

P_r = the finish place of the boat in that race, equal to #s if the boat is DNF,

z = a shape exponent, equal to 1.

-Participation Component, "P"

The participation component is equal to:

$P = A - (B/((\#r+C)^y))$ where,

A = B = 1

C = 0.4

y = 0.65

#r = number of total CRCA race starts a boat has for a season.

-Total Series Score, "T"

The total series score is equal to:

$T = 0.5(R_n) + 0.5(P)$ where,

R_n = the average of the largest "n" R scores for a boat over a season.

For BOTY Series, "n" = 5,

For NOTB, Annapolis, and Southern Maryland Fleet Series, "n" = 3

P = the participation component defined above.

Race Score Component Discussion

The race score component, as listed above, is formulated to reward boats for placing well in a race and beating more boats. The race score component, $R = S_f (\#s - P_r)/(\#s-1)$, is plotted in Figure 1.

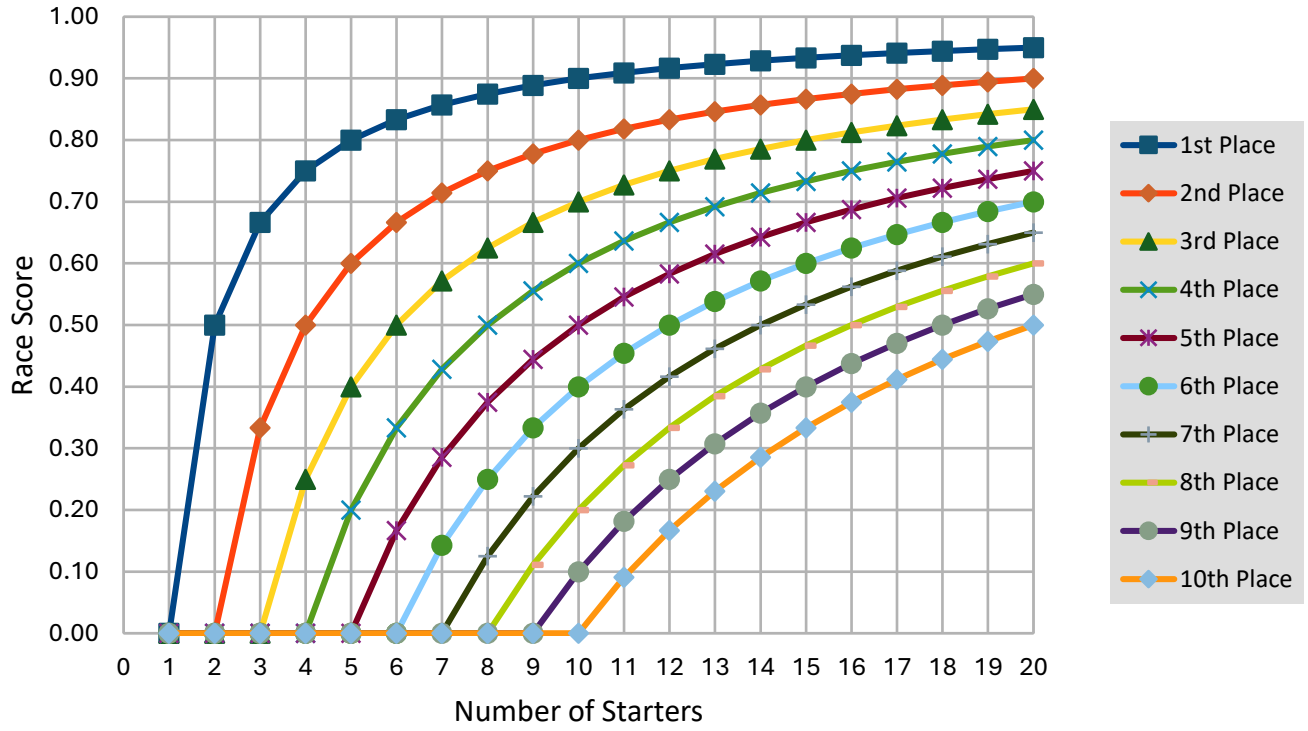

Figure 1: Individual Race Score, Race Score as a Function of Number of Starters and Place in a Race

As examples, if a boat scores a first place in a race with five starters, its score would be 0.8 on the blue curve. If a boat scores a second place in a race with seven starters, its score would be 0.714 on the red curve. This plot shows how the race score formula rewards boats for doing well, and especially doing well in races with more boats.

It is possible to score higher with a lower placing in a race with many starters than in a race with fewer starters. Example- if a boat gets a second place in a race with 10 starters their race score would be 0.8, while a boat that finishes first in a race with 4 starters would score a 0.75, showing that beating more boats in a race is rewarded. However, scoring well in a race is also rewarded, as illustrated by the first place curve (blue) being above and to the left of the other curves.

The motivation for developing the race score formulation is to discourage boats from cherry picking races with fewer boats and lesser competition in order to "game" their overall series score. This gaming has happened in high point series in the past, and should be discouraged.

Participation Component Discussion

The participation component is formulated to reward boats for participating in more races. As listed above, the participation component is $P = A - (B/((\#r+C)^y))$, and is plotted in Figure 2.

Figure 2: Participation Component, P, vs. Number of Races Started

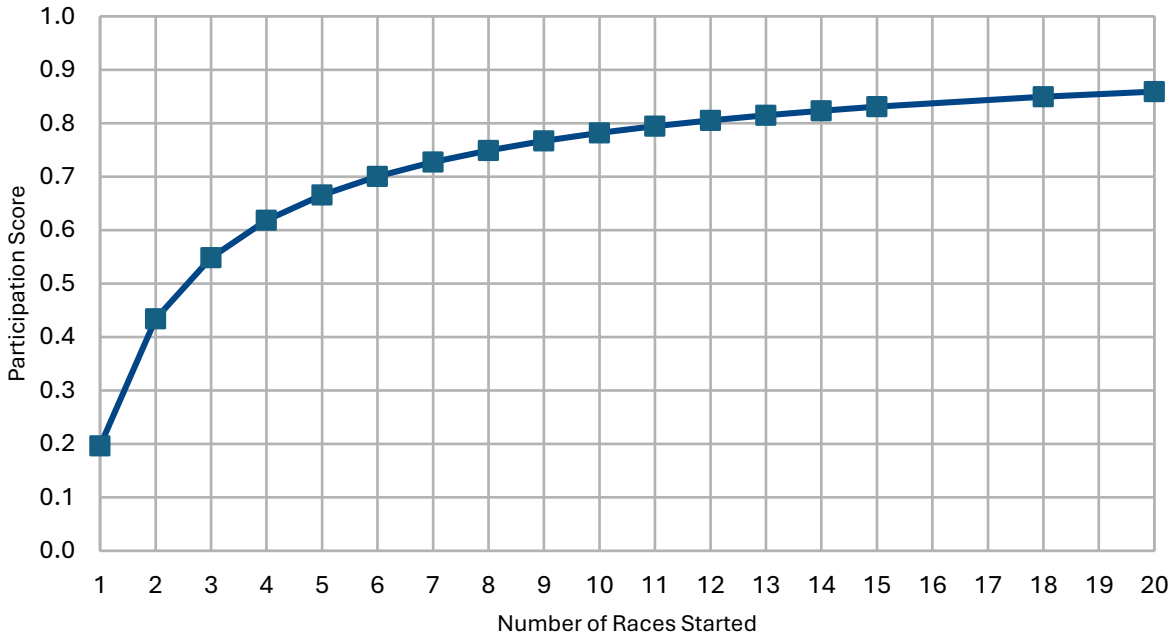

Figure 2 shows the increase in the participation score with an increase in the number of races started. The equation approaches 1 as the number of races started increases. Where the curve is most vertical is where there is the most benefit for starting an additional race. For example, the region between one race started and five races started shows a change from P=0.2 at one race started to P=about 0.67 at five races started. So if a boat starts five races they will get 67 percent credit towards their participation component of their season score. As the number of races increases past five starts, there is a diminishing benefit to the increase in P . For example, at 8 starts P=0.75, so the increase in P from 5 to 8 starts is 0.083. At 10 starts, P=0.78 while at 15 starts, P=0.83, or only a 0.05 increase. There still is an increase with each additional race started, but the increase goes down as a boat starts more races.

Weaknesses of typical low and high point scoring

The current low point and high point series scoring methods that are commonly used in sailboat racing series heavily favor just winning a race regardless of how many boats participate. In fact, the low point and high point scoring methods discourage boats from participating in competitive races with more boats as getting a good score in such races is difficult. Boats that do well in poorly attended races with lower levels of competition benefit. After sailing in the minimum number of races required to qualify for the series and scoring well, there is little motivation to do any more races as far as the series score is concerned.

Also, participation is not explicitly or well addressed. Often series participation requirements are implied by having all races in a series count, or by having a certain number of throwouts. These do not fit well with the current CRCA fleet where most boats do not compete in more than the minimum number of races to qualify for the series.

CRCA Series Scoring Strengths

Overall, this CRCA series scoring method achieves the three main objectives of rewarding competitors for:

1. Doing well in a race,
2. Beating more boats,
3. Participating in more races.