

TIME ON DISTANCE AND TIME ON TIME FORMULAE AND "TOT" EXAMPLES

FORMULAE

$$\text{"TOD" CORRECTED TIME} = \text{ELAPSED TIME} - \frac{(\text{PHRF}-2\text{PE}) \times \text{COURSE LENGTH}}{60}$$

$$\text{"TOT" CORRECTED TIME} = \text{ELAPSED TIME} \times \frac{600}{480 + (\text{PHRF} - 2\text{PE})}$$

Note: 2PE = twice penalty

TIME ON TIME EXAMPLES

Your boat has a PHRF of 90 and your competitor's a PHRF of 93. Neither has a penalty.

- Calculation at the finish:

Your TIME CORRECTION FACTOR	=	$\frac{600}{480 + (90 - 0)}$	=	1.053**
Competitor's TIME CORRECTION FACTOR	=	$\frac{600}{480 + (93 - 0)}$	=	1.047**

** These are the numbers you will see for each boat in the race booklet.

	<u>You</u>	<u>Your Competitor</u>
Finish time (minutes & hundreds)	243.42	245.89
x's Time Correction Factor	1.053	1.047
= Corrected time	256.32	257.45

you win !!

- How to calculate your position on the course:

Take the difference in your time correction factor (TCF) and your competitor's from the race booklet ($1.0563 - 1.047 = .006$). Multiply this number by 3600 to obtain the handicap difference in seconds per hour between you and your competitor ($.006 \times 3600 = 21.6$ secs per hr). You are the boat with the PHRF of 90 and have been sailing for 2 1/2 hours. You need to be more than 54 seconds ahead of your competitor to be leading ($21.6 \text{ secs} \times 2 \frac{1}{2} \text{ hrs} = 54 \text{ secs}$).

**OFF SOUNDINGS CLUB
TIME ON TIME SCORING**

Feb 1, 1994

One item that has occupied the Board this year has been the subject of scoring systems for use in our races. Our goal is to make our handicapping/ scoring system as fair as possible to the competitors within the constraint that we must be able to administer it.

We currently use PHRF as a rating system and time on distance ("TOD") as our scoring system. In our evaluation, time on time ("TOT") produced a more reasonable result when PHRF rating spreads were over 30 and as wind and course conditions significantly deviated from the assumptions used for "TOD". These "TOD" assumptions are that wind will be approximately 10 knots and that an Olympic course is used or a course with at least 30% beating.

Usually, we sail in conditions that are not too far from these "TOD" assumptions and our classes have a reasonable PHRF spread. Thus, our analysis showed only a few days when there was much change in relative placement. When there were changes, large boats moved up on fast days and days with little beating and small boats moved up on slow days.

We have decided to use the "TOT" system of scoring for at least one season, beginning in 1994. You will see only one handicap allowance for both days in our Final Notice Booklet. This number is multiplied by your time on the course to obtain your corrected time regardless of course length.

You can estimate your position relative to your competitors by taking the difference between your and your competitor's boat's handicap allowance (time correction factor shown on the next page) and multiplying it by 3600 to get the seconds per hour rating difference. This is the seconds per hour that you need to lead or follow your competitor in order to be ahead.

The second page shows several examples of the "TOT" scoring system. We believe it to be an improvement and look forward to its introduction for the 1994 season.

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