

PHRF News



Special edition – PHRF-LO and Time on Time Q

Changing our time on time formula Q factor and how it affects you....

Time on Time Q Factor

This issue is dedicated to helping you understand our Time on Time numbers.

As you may or may not know, the Q.Factor has been adjusted for 2009 and this changes your Time on Time number.

Regards,
 Diana Riley
 PHRF-LO Executive Assistant

NOW AVAILABLE!!

- Time on Time Study (white papers)
- Time on Time multipliers
- Time on Time Q & A
- Understanding TOT

You can find these on the web

Contacting us

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Time on Time Nationally

Time-on-Time scoring is not new. It has been widely used nationally and internationally as a valid method to score handicap yacht racing.

The most well known recent use of Time-on-Time was the PORTSMOUTH Handicap numbers, a predecessor to our own PHRF system, which for many years provided an easily implemented handicap system for local racing.

US Sailing Time on Time Scoring for PHRF.

The following is a TOT conversion formula that is commonly used to convert the standard PHRF TOD handicap into a TOT Time Correction Factor (TCF).

$$TCF = \frac{A}{B + PHRF}$$

The denominator, B + PHRF, is the number of seconds it takes to sail a nautical mile in the expected conditions. Another way to look at it is that the denominator divided into 3600 is the average rhumb line boat speed in knots. Here are some commonly used B factors:

B Factor	When used
480	Heavy air or all off the wind
550	"Average" conditions
650	Very light air or all windward work

There are no hard and fast rules for selecting the B coefficient. Basically, the lower you select it, the more favorable it will be to the slower boats.

Historically

At the inception of PHRF-Lake Ontario, Time-on-Time scoring was proposed and included in the PHRF-LO Charter.

Although Time-on-Time scoring is not new, Lake Ontario was, to the best of our knowledge, the first to implement it through PHRF handicapping.

Subsequent to the initial inclusion, Charles Kramer of Sodus Bay Yacht Club, a PHRF-LO Handicapper, completed an analysis and derived the following formula based in part on his interpretation of the published results of the original H. Irving Pratt Ocean Race Handicapping project at M.I.T.

This formula was adopted by PHRF-LO in 1985 and represents an improvement over the conversion method that was initially used.

$$Q = .045$$

$$S = \text{Scratch Boat} = \text{ASP} 171$$

$$R = (8.36 \times 10^6) \div ((\text{ASP} + 384.3)^2)$$

$$RS = (8.36 \times 10^6) \div ((171 + 384.3)^2)$$

$$TOT = ((1 \div \sqrt{RS} + Q) \div ((1 \div \sqrt{R}) + Q))$$

$$\text{or } TOT = (685.411 \div (\text{ASP} + 514.411))$$

March 2006

In March of 2006, PHRF-LO voted in favour of adjusting all our handicaps by +6 sec/nm.

As a result, our scratch boat was changed from 171 to 177 and thus the formula was adjusted slightly to accommodate that change. Below is the modified version of the original formula used until 2008.

$$Q = .045$$
$$S = \text{Scratch Boat} = \text{ASP } 177$$
$$R = (8.36 \times 10^6) \div ((\text{ASP} + 378.3)^2)$$
$$RS = (8.36 \times 10^6) \div ((177 + 378.3)^2)$$
$$\text{TOT} = ((1 \div \sqrt{RS} + Q) \div ((1 \div \sqrt{R}) + Q))$$
$$\text{or TOT} = (685.411 \div (\text{ASP} + 508.411))$$

There was no change to an individual boats Time on Time multiplier.

November 2008

In November of 2008, the Central Council of Handicappers for PHRF-LO voted in favour of adjusting the Q.Factor in our Time on Time formula to .008 from .045.

This was as a result of an in depth analysis of over 3500 races for the last 5 years by our Technical Advisory Committee.

As a result, our formula was adjusted slightly to accommodate that change. Below is the modified version of the original formula.

$$Q = .008$$
$$S = \text{Scratch Boat} = \text{ASP } 177$$
$$R = (8.36 \times 10^6) \div ((\text{ASP} + 378.3)^2)$$
$$RS = (8.36 \times 10^6) \div ((177 + 378.3)^2)$$
$$\text{TOT} = ((1 \div \sqrt{RS} + Q) \div ((1 \div \sqrt{R}) + Q))$$
$$\text{or TOT} = (578.431 \div (\text{ASP} + 401.431))$$

This change **does** affect the Time on Time multiplier for boats on Lake Ontario.

The Study

As you may or may not be aware, PHRF-LO has adjusted the Time on Time numbers used for calculating your race results.

This change was made after the Technical Advisory Committee did an in-depth analysis of our data over the past 5

years. This data included over 3,500 races.

On November 15, 2008, the analysis of the data (and results) was presented to the Central Council of Handicappers. The analysis showed that a Q of -.018 was optimum for all boats and a Q of -.0335 was optimum for boats with a handicap greater than 100.

The Technical Advisory Committee however suggested that PHRF-LO would be best to adopt a modest approach and institute a new Q.Factor of .008 as a starting point. This would allow for further review and analysis being conducted over the next few years.

Central Council voted in favour of the change starting in the 2009 season.

On January 10, 2009 we held our Annual General Meeting at which time all Member club handicappers and representatives were also presented with this analysis and it was recommended that they also implement this at their respective clubs.

That presentation is available in an Adobe (on our web site) format for your review.

Important Notice!

PHRF-LO, the PHRF Handicap racing class for Lake Ontario and many surrounding jurisdictions, recommends the use of the new Q factor and ToT multipliers for racing at the club and regatta levels in 2009. However, by this letter, we grant permission for club and other organizing authorities to use the 2008 multiplier for club racing if they do not yet wish to change. The 2009 Racing Rules of Sailing indicate that it is incumbent on any club or regatta organizer that chooses to use a Q factor other than the 2008 or 2009 value, to inform PHRF-LO, and to receive written approval/acknowledgement, to remain in compliance with those rules.

Respectfully
Brian Thomson
Chief Handicapper PHRF-LO

FAQ's on New Q

Many questions have been raised regarding the change in our Q.factor. Many of these came from members at our Annual General Meeting while others came through handicappers and owners at clubs.

We have compiled a list of these questions and hope that this will aid in furthering your understanding of the changes for 2009.

Q. What difference will this make for me on the water?

A: If you are racing against someone who owes you 30 sec/mi TOD, and you sail 1 mile at hull speed (5-6 knots), you will gain about 1 boat length in time or about 6 seconds more than with the old 'Q'. Over an hour you would go 5 plus miles and gain 5-6 boat lengths in time or about 30 seconds.

Previously, over an hour your TOT allowance was about 150 seconds (about 15 seconds for each 3 sec of difference). With the new 'Q' you get your 150 sec/h plus another 30 sec/h or 180 sec over an hour. So over an hour previously you needed to finish inside about 25 boat lengths to win; now you have to finish inside 30 boat lengths. The additional time given with the new 'Q' makes it fairer for the smaller/slower boats in any division.

Q: What actually is "Q"?

A: "Q" is a scaling factor that has always been in the TOD/TOT conversion formula. It changes the TOT multipliers accordion fashion, stretching or compressing them. The relative position of a boat's handicap never changes but the amount of handicap between boats adjusts with new "Q" values.

Q: Is "Q" constant?

A: Actually no, the optimum "Q" value varies from race to race due to

many factors but for scoring purposes we have to use one Q value selected to provide the best results on average. In analyzing Lake Ontario Race data over a 5 year period, it was found that 0.008 was optimum for boats rated less than 100 seconds per mile whereas -.0335 was found to be best for ratings over 100 seconds per mile. A Q of .008 has been selected as the value for 2009. This value is optimum for ASP less than 100 seconds per mile and will be a significant improvement for boats rating over 100 seconds per mile.

Q: Why has a Q of 0.008 been selected for 2009?

A: It is a conservative step which may be fine tuned and updated in the future as new data becomes available

Q: Why should the Q be changed?

A: In analyzing over 3500 races, it was found that the faster boats had an advantage over the slower rated boats. Adjusting Q is a step to reduce or eliminate that advantage.

Q: So you are penalizing bigger boats?

A: Not really! The faster boats in any division will be given slightly less handicapping advantage regardless of their actual handicap. The slowest boat in a division could have an actual rating of 70 and the fastest boat in another division could have a rating of 270.

Q: How will it affect the final scoring?

A: The magnitude of the effect will be directly proportional to the rating spread within a division. Since the rating bias has been reduced, boats with slower ratings may change scoring position with boats with faster ratings. The change will rarely be more than one or two scored positions. Many races will see no change

at all in the final scored positions but the corrected time between boats will likely be reduced. It's important to note that individual performance will dominate any slight handicap difference this Q change will produce.

Q: Our club is satisfied with the handicaps can we keep things the same?

A: Every club has the right to run their handicap system as they wish. However all PHRF-LO analysis will be done using Time on Time scoring with the improved Q value. Race organizers should consider the implication of using a non-recommended Q value for races that include boats from other clubs (invitational races).

Q: We still use Time on Distance Scoring. How will our ratings be affected?

A: There is no effect on the handicap using Time on Distance scoring since we haven't change the Time on Distance Handicaps. The Q factor is applied in the conversion from Time on Distance values to Time on Time multipliers. Since most racing on Lake Ontario is done using Time on Time scoring, PHRF-LO has made no attempt to adjust any bias that might be present using Time on Distance scoring.

Q: How much does the Q change the relative handicap between boats?

A: If your favorite competitor has a rating 6 seconds per mile different than you, your effective handicap difference will change the equivalent of about 1.1 seconds per mile (for a 5 mile at 5 knot race this might be 2 boat lengths). Where the real improvement will take place is in divisions forced to have large rating spreads. The difference scales with the rating spread so boats separated by 60 seconds per mile would see an 11 second per mile effective rating change. While

this effective rating change may seem large, the actual effect on the scored positions is actually surprisingly small.

Q: It appears that the faster boats are slowing down?

A: Correct, and the slower boats will appear slightly faster.

Q: Is this change intended to stop the big boats from winning?

A: No. The change to a Q of .008 will not make "instant winners" of smaller boats nor will it make large boats universal losers. It will however remove some of the handicap bias that existed with the prior Q value.

Q: Changes to the Q Factor will change the TOT Multiplier?

A: Correct, all clubs will be notified of the new multiplier. Also, clubs can use any Q Factor they wish as well as any rating. But this is the number that will be used to analyze the race results.

Q: If someone is improving in their performance will their position change?

A: Yes it could. This would be a positive affect on racing on Lake Ontario.

Q: Can we go back and change all the previous analysis?

A: That is what we have done in the analysis demonstration and will do for all the analysis reports for the next AGM.

Q: Is the .008 Q essentially adjusting the larger boats?

A: No. It potentially changes the corrected time for all boats. It is addressing the actual handicap provided between the higher and lower handicaps.



Time on Time Multipliers

TIME ON TIME MULTIPLIERS WITH SECONDS PER HOUR HANDICAP
Normalized to SP of 177 (sec/mile)

TOT = (578.431/(ASP+401.431)) J.Schneider's Simplification

SP	TOT	SEC/HR	SP	TOT	SEC/HR	SP	TOT	SEC/HR
-30	1.5573	2006	114	1.1222	440	258	0.8772	-442
-27	1.5448	1961	117	1.1157	417	261	0.8732	-457
-24	1.5325	1917	120	1.1093	394	264	0.8693	-471
-21	1.5205	1874	123	1.1030	371	267	0.8654	-485
-18	1.5086	1831	126	1.0967	348	270	0.8615	-499
-15	1.4969	1789	129	1.0905	326	273	0.8577	-512
-12	1.4853	1747	132	1.0844	304	276	0.8539	-526
-9	1.4740	1706	135	1.0783	282	279	0.8501	-540
-6	1.4628	1666	138	1.0723	260	282	0.8464	-553
-3	1.4518	1626	141	1.0664	239	285	0.8427	-566
0	1.4409	1587	144	1.0605	218	288	0.8390	-580
3	1.4302	1549	147	1.0547	197	291	0.8354	-593
6	1.4197	1511	150	1.0490	176	294	0.8318	-606
9	1.4093	1474	153	1.0433	156	297	0.8282	-619
12	1.3991	1437	156	1.0377	136	300	0.8246	-631
15	1.3890	1400	159	1.0321	116	303	0.8211	-644
18	1.3791	1365	162	1.0266	96	306	0.8177	-656
21	1.3693	1329	165	1.0212	76	309	0.8142	-669
24	1.3596	1295	168	1.0158	57	312	0.8108	-681
27	1.3501	1260	171	1.0105	38	315	0.8074	-693
30	1.3407	1227	174	1.0052	19	318	0.8040	-706
33	1.3315	1193	177	1.0000	0	321	0.8007	-718
36	1.3223	1160	180	0.9948	-19	324	0.7974	-729
39	1.3133	1128	183	0.9897	-37	327	0.7941	-741
42	1.3044	1096	186	0.9847	-55	330	0.7908	-753
45	1.2957	1064	189	0.9797	-73	333	0.7876	-765
48	1.2870	1033	192	0.9747	-91	336	0.7844	-776
51	1.2785	1003	195	0.9698	-109	339	0.7812	-788
54	1.2701	972	198	0.9650	-126	342	0.7781	-799
57	1.2618	942	201	0.9602	-143	345	0.7749	-810
60	1.2536	913	204	0.9554	-161	348	0.7718	-821
63	1.2455	884	207	0.9507	-178	351	0.7687	-833
66	1.2375	855	210	0.9460	-194	354	0.7657	-843
69	1.2296	826	213	0.9414	-211	357	0.7627	-854
72	1.2218	798	216	0.9368	-227	360	0.7597	-865
75	1.2141	771	219	0.9323	-244	363	0.7567	-876
78	1.2065	743	222	0.9278	-260	366	0.7537	-887
81	1.1990	716	225	0.9234	-276	369	0.7508	-897
84	1.1916	690	228	0.9190	-292	372	0.7479	-908
87	1.1843	663	231	0.9146	-307	375	0.7450	-918
90	1.1770	637	234	0.9103	-323	378	0.7421	-928
93	1.1699	612	237	0.9060	-338	381	0.7393	-939
96	1.1628	586	240	0.9018	-354	384	0.7365	-949
99	1.1559	561	243	0.8976	-369	387	0.7336	-959
102	1.1490	536	246	0.8934	-384	390	0.7309	-969
105	1.1422	512	249	0.8893	-399	393	0.7281	-979
108	1.1354	488	252	0.8852	-413	396	0.7254	-989
111	1.1288	464	255	0.8812	-428	399	0.7226	-998

TIME-ON-TIME SCORING

Time-on-Time scoring is not new. It has been widely used nationally and internationally as a valid method to score handicap yacht racing. The most well known recent use of Time-on-Time was the PORTSMOUTH Handicap numbers, a predecessor to our own PHRF system, which for many years provided an easily implemented handicap system for local racing.

The Basics

Before getting into the technical aspects of scoring systems, it's important to understand the difference between a handicap system and a scoring system and how both are implemented in PHRF. A handicap system is the method by which numbers are generated representing the speed potential of individual boats or Boat Classes. In general there are measurement rules and performance rules. Measurement rules try to predict boat performance by complicated physical measurements of boat dimensions. On the other hand performance rules observe the difference in the Speed Potential of boats and use this difference to obtain a handicap number. PHRF is, by definition, **a performance rule!**

A scoring system is the mathematical method used to correct races using the numbers generated by a handicapping system. There are basically two types of scoring systems: Time-on-Time, and Time-on-Distance, both of which will be further clarified.

A PHRF handicap is published as a handicap number, given in seconds or minutes per nautical mile of rhumb line racecourse distance. A handicap of 180 seconds/nautical mile means that for every rhumb line mile of racecourse, the contestant is given 180 seconds of credit to his finish time. If a boat with a handicap of 180 seconds/nautical mile is racing against a boat with a handicap of 174 seconds/nautical mile, the net advantage is 180 minus 174 or 6 seconds/nautical mile. In a race of one-mile rhumb line distance, the presumably slower boat at 180 seconds/nautical mile is given 6 seconds of time credit over the boat at 174 seconds/nautical mile. This correction method is known as Time-on-Distance scoring.

Time-on-Time scoring is somewhat different in concept. A handicap number is given which is the ratio of the potential average speed of the yacht to an arbitrary standard yacht, and is generally expressed as a multiplier. As an example, if the reference boat has a handicap of 1.00, a boat with a handicap of 0.90 will have a corrected time equal to .90 times its elapsed time. A boat with a handicap of 1.10 would have a corrected time equal to 1.10 times its elapsed time.

As an additional example, we can set up a couple of hypothetical test races, each with only two contestants. Two boats will compete in this race, boat A with a handicap of 1.00 and boat B with a handicap of 0.90. For purposes of this example we will assume that the handicaps are correct and the boats are equally well sailed.

The Test Race

The boats race on a one-mile course and boat A averages five knots. Boat A completes the course in $\frac{1}{5}$ hour or 12 minutes. Boat B by definition is 10% slower and therefore sails at 4.5 knots completing the course in $\frac{1}{4.5}$ hours, or 13 minutes and 20 seconds (13.3333 minutes). Since we

already know that the boats were correctly handicapped and equally well sailed, the corrected race should end in a tie.

As predicted, the boats have equal corrected times and the race is a tie. See Fig. 1.

$\text{FINISH TIME} \times \text{HANDICAP} = \text{CORRECTED TIME}$ $\text{Boat A } 12.0000 \text{ min} \times 1.00 = 12.00 \text{ minutes}$ $\text{Boat B } 13.3333 \text{ min} \times .90 = 12.00 \text{ minutes}$
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Fig.1.

We can now correct the same race with Time-on-Distance scoring. However, we must first determine the Time-on-Distance handicap for boat A and boat B. Since both boats were equally well sailed, we will assume the difference in their finish time was due only to the difference in speed potential between the boats. In Time-on-Distance scoring this difference is the handicap and must be subtracted from the results by the handicap system. Boat B finished 1 minute and 20 seconds (80 seconds) behind boat A. Therefore, if boat A has a handicap of 0 seconds/mile, boat B must have a handicap of 80 seconds/nautical mile greater to compete on an equal basis. Correcting the race using Time-on-Distance scoring produces the following results: See Fig.2

$\text{FINISH TIME} - (\text{HANDICAP} \times \text{DISTANCE}) = \text{CORRECTED TIME}$ $\text{Boat A } 12.00 \text{ min} - (0 \text{ second/nautical mile} \times 1 \text{ mile}) = 12.00 \text{ min.}$ $\text{Boat B } 13.33 \text{ min} - (80 \text{ second/nautical mile} \times 1 \text{ mile}) = 12.00$ $(80 \text{ seconds/nautical mile} = 1.33 \text{ minutes/nautical mile})$

Fig.2.

The race corrected by Time-on-Distance scoring also produces a tie. Each scoring method produced equal corrected times and therefore provided equitable racing under the initial conditions tested.

What If The Initial Conditions Change?

Let’s assume that for this next hypothetical race, the same boats race, this time in light wind conditions. Boat A travels at 3 knots and completes the course in 20 minutes. Boat B is still 10% slower and sails at 2.7 knots, completing the course in 22.2222 minutes. Correcting the race using Time-on-Time scoring yields the following: See Fig.3

$\text{FINISH TIME} \times \text{HANDICAP} = \text{CORRECTED TIME}$ $\text{Boat A- } 20.0000 \text{ min} \times 1.00 = 20.00 \text{ min.}$ $\text{Boat B- } 22.2222 \text{ min} \times .90 = 20.00 \text{ min.}$
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Fig.3.

Again, the race ends in a tie.

If we use Time-on-Distance scoring however, the results are quite different. (Remember the handicap number always remains the same.) See Fig. 4.

$\text{FINISH TIME} - (\text{HANDICAP} \times \text{DISTANCE}) = \text{CORRECTED TIME}$ <p>Boat A - 20.00 min - (0 seconds/nautical mile x 1 mile) = 20.00 min. Boat B - 22.22 min - (80 seconds/nautical mile x 1 mile) = 20.89 min. (80 seconds/nautical mile = 1.33 sec/min)</p>

Fig.4.

Boat A has the lowest corrected time and therefore is the race winner even though both boats were equally well sailed and should have tied.

Although these are very simplistic examples and admittedly make some assumptions about boat performance, they point out a basic shortcoming of Time-on-Distance scoring, the actual handicap given to a boat remains constant regardless of the average speed of the race.

Physical Parameters That Affect A Race

There are many physical parameters that influence the speed relationship between smaller and larger boats. They include wind velocity and gradient, sea conditions, racecourse layout and a host of other uncontrollable occurrences, all of which can have a dramatic impact on a boat's finish time on the course.

How Does Time-on-Time Scoring Help?

It's no secret that larger boats have an advantage upwind, especially in heavy seas (going a mile to weather usually takes longer than sailing a mile off the wind). Time-on-Time scoring gives more time to the slower boats in such conditions. Offwind races however, usually provide an advantage to small boats. These races are generally faster and Time-on-Time scoring correctly allows the slower rated boats less handicap.

In light wind conditions, tall masted boats seem to catch more of the "higher air" due to vertical wind gradient and are less affected by leftover sea conditions. Again, because the average boat velocities are slower, the races take longer to complete and the smaller boats get proportionally more handicap time.

In summary, Time-on-Time scoring provides a first order correction for the speed of the race. The correction provided by Time-on-Time scoring tends to compensate for major racecourse phenomena that make individual races unequal. This is of particular importance for port-to-port/long distance races where a balanced mix of upwind and offwind work cannot be guaranteed.

The only instance when Time-on-Time scoring theoretically fails is when the boats completely stop moving. In this case, handicap builds up without a change in relative distance between boats. In practice however, this rarely results in significant errors since boats seldom completely stop during a race, and when they do, the race is frequently abandoned due to time limitations.

A counter argument can be made that Time-on-Distance scoring, on the average (over a number of races), can be just as equitable. This is probably correct, but most would rather sail a season of races where each race was as equitable as possible instead of trading the advantage from boat to boat. Time-on-Time scoring is a positive step in that direction.

Easier To Score

Time-on-Distance scoring requires an accurate measurement of the course distance. While this may not seem like a major problem, unless highly accurate electronic navigation gear is available or the course is set on geographically known marks, there can be considerable error in estimating the actual rhumb line distance. The handicap error is directly proportional to the error associated with measurement of time. With quartz timepieces, the error is negligible from a scoring standpoint. Also shortening the course requires no additional attention from a scoring standpoint. The same multiplier is always used regardless of the course length

A Conversion Method

At the inception of PHRF-Lake Ontario, Time-on-Time scoring was proposed and included in the PHRF-LO Charter. Although Time-on-Time scoring is not new, Lake Ontario was, to the best of our knowledge, the first to implement it through PHRF handicapping. Subsequent to the initial inclusion, Charles Kramer of Sodus Bay Yacht Club, a PHRF-LO Handicapper, completed an analysis and derived the following formula based in part on his interpretation of the published results of the original H. Irving Pratt Ocean Race Handicapping project at M.I.T. This formula was adopted by PHRF-LO in 1985 and represents an improvement over the conversion method that was initially used. See Fig. 5

<p>MULTIPLIER= $\frac{\sqrt{R + (Q \times \sqrt{R \times R_s})}}{\sqrt{R_s + (Q \times \sqrt{R \times R_s})}}$ *</p> <p>Q= $\frac{.008}{.045}$ (correlation constant) **</p> <p>R= $\frac{8360000}{(T/D\# + 378.3)^2}$</p> <p>R_s= $\frac{8360000}{(\text{SCRATCH } T/D\# + 378.3)^2}$</p>	<p>* This formula normalizes the results to the scratch boat rating (R_s). A mid-fleet rating is best (approx 177)</p> <p>** The Q correlation constant controls the relative spread between the low and high ratings and was determined empirically from race data.</p> <p>T/D# is the standard Time-on-Distance handicap number</p> <p>SQR = "Square Root"</p>
<pre> 10 Q=.045 Q = .008 'Q factor 20 TD=177 'scratch boat handicap 30 C1=8360000 'constant #1 40 C2=378.3 'constant #2 50 FOR X = 0 TO 300 STEP 3 60 R=C1/(X+C2)² 70 RS=C1/(TD+C2)² 80 M=(SQR(R)+(Q*SQR(R*RS)))/(SQR(RS)+(Q*SQR(R*RS))) 90 PRINT X,M 100 NEXT X 110 END </pre>	
<p>The above is a simple computer program written in Basic to calculate the multipliers from 0 to 300 seconds per mile</p>	

Fig.5.

What To Expect In Typical Races

When compared to the same results scored by Time-on-Distance methods, Time-on-Time scoring has minimal effect on the results or finish places of races within division splits of 10 to 20 seconds/nautical mile. If a change in position takes place at all, it is generally only one corrected finishing position. However, if results are compared over large ranges in boat handicaps such as overall winners in large invitational races, the results can be more dramatic and boats may change several positions.

Acceptance On Lake Ontario

PHRF of Lake Ontario has left the selection of scoring methods up to the individual clubs and has provided both a Time-on-Distance number and a Time-on-Time multiplier on each certificate. Reaction to Time-on-Time scoring on the lake has been mixed; there is a certain amount of reluctance by some clubs to accept a Time-on-Time scoring method partly because some participants have difficulty in accepting a non-constant handicap. These individuals apparently feel more comfortable entering a race knowing exactly how much time is given to each yacht in the race. This problem has been partially solved by publishing a seconds/hour number along with the multiplier, but again it requires some mental calculation and is still not totally acceptable to some individuals.

Owners of larger boats also tend to object to the Time-on-Time scoring method primarily because they find themselves correcting behind smaller boats more often than with the Time-on-Distance method. (It's harder to accept correcting behind a smaller boat than a larger one.) Also, Time-on-Time represents a change in custom and changes in yacht handicapping are generally regarded with skepticism.

Despite this resistance to change, many Clubs on Lake Ontario have accepted Time-on-Time scoring as the preferred method and are using it at Club and invitational events with great success.

Conclusions

It is evident that the present PHRF handicaps, although adequate over narrow handicap ranges, do not seem to work over large ranges of boat sizes. This is of particular significance to small clubs where large and small boats must compete head to head.

One potential solution is to re-handicap all boats. This apparently is the action being taken at PHRF of the Northwest, according to Frank Cole in the May/June 1985 issue of The PHRF Journal. A second method is to provide a correlation factor adjusting the handicap spread between large and small boats. This correlation factor is implemented in the Time-on-Time conversion formula with the "Q" constant, which can be adjusted from area to area or race to race if necessary.