Tracking the Competition

It's impossible to start an IRC race knowing exactly how much time you will owe or be owed by other boats in your fleet or division. The only way to exactly compute these numbers is once your elapsed time for the course has been established. However, IRC's time-on-time scoring does allow sailors to easily determine where they stand relative to the competition during a race. And because IRC is based only on elapsed time, this calculation won't be compromised by, for example, a strong tide or a dying breeze.

Before we get into mid-race mathematics, let's spend a little time with the IRC Rule. Every boat that races under IRC has a fixed Time Correction Coefficient (TCC). Multiplying the TCC by a boat's elapsed time for a race produces the corrected time for that boat. The boat with the shortest corrected time wins the race.

To get an accurate idea of how your boat stands around the racecourse, or at the finish, under IRC, two things are needed: 1. a stop watch, preferably one that has a countdown for the start and switches to a timer once the race has started. 2. A time-difference table for all the boats in your class.

An approximate time-difference table can be easily put together, as each .001 difference between two boats' Time Correction Coefficients is equal to roughly 3.6 seconds per hour. The boat with the lower rating is owed the time. However, this formula works best for boats with a TCC close to 1.000. For a 75-foot speedster with a rating of 1.500, each thousandth is worth 2.4 seconds per hour.

A more accurate chart takes a bit of effort. First you'll want to determine the seconds per hour of racing—your elapsed time—you either owe to or receive from each of your competitors. To do this, divide the TCC for your boat by that of a competitor. Subtract 1 from the result and then, to convert from hours to seconds, multiply that by 3600. A positive number means you give time, a negative number means you are owed time. Consider two boats: *Average Joe* with a TCC of 1.000, and *Knot So Fast*, with a TCC of 0.934. For every hour of sailing, *Average Joe* owes *Knot So Fast* 4 minutes and 14 seconds.

Use this base number to create a table of deltas for a series of generic race lengths (5, 10, 20, 30, 45, 60, and 120 minutes). Ten minutes is one-sixth of an hour, so for a 10-minute race divide 254 by 6 to get the delta, in this case 42.3 seconds. For a 35-minute race, add the deltas for a 5-minute and 30-minute contest.

Ordering the boats by TCC is a good idea. Shading the boats to which time is owed is also helpful. The final move is to get it laminated before hitting the water so you can stick it in a sheet bag. Such a chart, made for *Average Joe*, which is racing in a fleet with *Knot So Fast* and the speedy *Road Runner* (TCC of 1.153) would look like the one shown above.

Sample Time-Difference Table

A time-difference table made for *Average Joe*, which is racing in a fleet with *Knot So Fast* and the speedy *Road Runner* (TCC of 1.153), would look like this.

		Elapsed time minutes						
Boat Name	**TCC**	5	10	20	30	45	60	120
		Seconds per hour						
Knot So Fast	0.934	21	42	5	127	191	254	509
Average Joe	1.000	0	0	0	0	0	0	0
Road Runner	1.153	-40	-80	-159	-239	-358	-478	-955

Formulas and numbers provided by Greg Stewart, of Nelson/Marek Yacht Design

Time on Time

Corrected Time = Elapsed Time * Time Correction Coefficient

CT = ET * TCC

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