

A Beginner's Guide To Around Andersonville Island Alone (or not)

Handicaps and Ratings

(This is background stuff)

When sailboats of the same design race, there is little difficulty in determining which boat has competed the best: the boat that crosses the finish line first is the winner. The next boat that crosses the finish line places second, and so on for the remainder of the competitors. However, when sailboats of different designs race, some method of determining a handicap for each design is necessary, as one boat design might be capable of better performance than another. The purpose of the race, after all, is to determine which skipper and crew performed the best, not which design is fastest. To that end, the sailing community has developed several rating (handicap) systems for determining a boat design's performance potential. The system most often used is called PHRF (Performance Handicap Racing Fleet).

PHRF assigns each boat design a handicap number. Designs with greater speed potential have a lower (smaller number) PHRF rating. Designs with less speed potential have a higher (larger number) PHRF rating. The design's rating (handicap) is expressed in seconds-per-mile raced. In a nut shell, the faster-rated boat 'owes' the slower-rated boat some amount of time. The amount of time owed is determined by the difference in ratings between the boats and the length of the race course. The time that is owed is added to the *elapsed time* of the faster-rated boat. A formula that expresses this relationship is: ***Corrected time = [elapsed time] + [PHRF difference between the boats X race course distance (in miles)]***. *Elapsed time* is defined as the amount of time that each boat required to sail the race course. The *elapsed time* is adjusted by the boat's rating (handicap) to yield her *corrected time*. A boat's *corrected time* is what is used to determine her finish place for the race.

Consider a boat that has a PHRF rating of 150 racing against a boat having a PHRF rating of 180. The 'faster' boat (rated 150) 'owes' the 'slower' boat (rated 180) 30 seconds for every mile of race course. After one mile of racing, the boat with a rating of 150 is expected to be 'ahead' (by 30 seconds) of a boat with a rating of 180. Stated another way, if these two boats raced a one-mile course and the boat rated 150 finished 30 seconds ahead of the boat rated 180, the two boats would be scored as being tied for the race. If the race course was two miles in length, the boat rated 150 could finish 60 seconds ahead of the boat rated 180 and the race would still be a tie. The scoring program, whether done by hand or by computer spreadsheet, will add 30 seconds to the elapsed time of the faster-rated boat (rated 150) for each mile of race course.

Since there are usually more than two boats racing, a method is needed to account for the rating difference between all the boats. This can be done by comparing the rating difference between the slowest-rated boat (largest PHRF number) and **each** of the other boats.



Consider the following fleet:

Boat	(PHRF) rating
A	260
B	180
C	80
D	200

In a 3 mile race, Boat B would owe Boat A (the boat with the slowest rating) 240 seconds $[(260-180) \times (3)]$. Boat C would owe Boat A 540 seconds $[(260-80) \times (3)]$. Boat D would owe Boat A 180 seconds $[(260-200) \times (3)]$. Boat A, being the slowest-rated boat in the race, is the 'base' boat, and her elapsed time is not adjusted. Below is the example race displayed in a table.

Boat	(PHRF) rating	Rating difference	Course length	<i>Time adjustment</i>	<i>Elapsed time</i>	<i>Corrected time</i>	Place
A	260	-	3 mi	-	47 min	47 min	3
B	180	80	3 mi	240 sec (4 min)	40 min	44 min	1
C	80	180	3 mi	540 sec (9 min)	36 min	45min	2
D	200	60	3 mi	180 sec (3 min)	47 min	50 min	4

PHRF is the basis of the **pursuit start** we will use for the Around Andersonville Island Alone (or not) race.

Pursuit Start Races (or“...to start or not to start...”)

(more background stuff)

In almost all sailboat racing, the boats start at the same time, technically when the Class Flag is lowered at the end of the 5-minute starting sequence. If boats of different designs are racing, each boat's *elapsed time* is recorded as it crosses the finish line, and that time is adjusted by a scoring program, after the race is completed, to yield her *corrected time*. In a **pursuit start** race, a boat's *time adjustment* (based on handicap and racecourse length) is calculated **before** the race begins, and a boat will start before or after other boats based on the relative handicaps between the boats racing. Then, a boat's finish position is ranked in the order she crosses the finish line. In other words, differences in handicap are dealt with by having the slower-rated boats start before the faster-rated boats. We like this type of start for three reasons: 1-There are fewer boats on the start line at any given moment. This reduces anxiety for novice racers. 2-As boats approach the finish line, there is no doubt about you 'correcting out' with faster or slower boats. If you cross the line ahead of a boat, you beat her. If you cross the finish line behind another boat, she beat you. The finishes can be exciting if you are approaching the finish line in close proximity to another boat. 3-The entire fleet of boats is more likely to finish the race near the same time. This allows the fleet to return to the Club at about the same time for the post-race **party**.

Generating Pursuit Start “Delay Times”

(the last of the background stuff)

Now, let's look at how this information can be used to create a *pursuit start*. First, understand that a pursuit start is **not** simply having a **group** of slower-rated boats starting before a **group** of faster-rated boats. A *pursuit start* will take into account **each** boat's PHRF rating, along with the race course distance, and generate a *time adjustment* (a number of minutes and/or seconds) for **each** boat. We call this *time adjustment* the starting “**delay time**”. Very loosely, delay time is the amount of time that a faster-rated boat must wait before starting after a slower-rated boat has started. However, the *delay times* for the boats in a race fleet are more structured than this. Slower-rated boats will start **proportionately** sooner than faster-rated boats. (If two boats have the same rating, those two boats will have the same *time adjustment* (and the same *delay time*), and will be allowed to start at the same time.) The slowest-rated boat in the fleet is arbitrarily chosen to be the basis for comparison, and has a *time adjustment* (and a *delay time*) of 00:00. We will call this boat the “**base boat**”. Thus, the base boat (slowest-rated boat) will be allowed to start first. In the race example above, the slowest-rated boat is Boat A (highest PHRF number). The *time adjustment* for Boat B is 240 seconds (4 minutes). Boat B is allowed to start 240 seconds after boat A (the slowest-rated boat) is allowed to start. The *time adjustment* for Boat C is 540 seconds (9 minutes). Boat C is allowed to start (no sooner than) 540 seconds (9 minutes) after Boat A is allowed to start. And as you guessed, the *time adjustment* for Boat D is 180 seconds, and is allowed to start (no sooner than) 3 minutes after Boat A is allowed to start. You may have noticed that Boat C has the largest *time adjustment* and has to wait the longest before starting. This only makes sense as Boat C is the fastest-rated boat and logically should give the other boats more ‘head start’. You may also have noticed that even though “*delay time*” is stated in relation to the slowest-rated boat, the *delay time* between any two boats remains proportional to their PHRF rating. For example, the rating difference between Boat B and Boat D is 20 seconds per mile. With a 3 mile race course, you would expect the boats to be allowed to start 60 seconds apart. The difference in their *delay times* is 240-180 seconds, or as stated, 60 seconds.

At this point in the explanation of the *pursuit start*, the only detail missing is the actual moment that the base boat is allowed to start. This brings us to the “*Delay Time Clock*”. This is a timepiece used to count up (like a stopwatch). It starts at 00:00 and counts up in seconds and minutes. Race Committee will have such a timepiece, and **so should each race boat**. For a pursuit start to be functional, all the clocks (RC and competitors) must start counting up at the same instant. This results in every clock showing the same time. The procedure for starting the *delay time clock* is described in the a later section of this guide and in the Sailing Instructions.

Usually it is not the slowest-rated boat in the fleet that is chosen to be the base boat. RC often chooses a ‘phantom’ boat and arbitrarily assigns a PHRF rating of a number **higher** than any of the boats present for the race. This does not change the fairness of the start. This will, however, result in **no** boat being allowed to start at the moment the *delay time clock* starts. However, of the boats present for the race, the slowest-rated boat will still start first, with the remaining boats starting after her (proportionately to their rating).

(finally...)The Race

(you really need to know this stuff)

Around Andersonville Island Alone (or not) for 2016 will employ a *pursuit start*. Again, we feel this will reduce the novice racer's anxiety of a crowded start line, and will boost the excitement of passing boats (that means you are beating them) on the race course, especially near the finish. To calculate *delay times* for the race boats, we will need to know each boat's PHRF rating. At present we plan to use the Club's **base** rating for each participating boat. A spinnaker adjustment of +15 sec/mile will be given only if the boat doesn't 'own' a spinnaker. For boats to which US Sailing does not assign a PHRF rating, their Portsmouth rating is converted to PHRF. A table of the *delay times* for each of the participating boats (*Delay Time Table*) will be provided at the skippers' meeting. We also need to know the length of the race course. To that end, a point to point circumnavigation (via GPS chart plotter), beginning and ending at buoy S 19, totals 7.5 miles.

How do I know what my *delay time* is?

To know what your delay time is, simply find your boat on the table and follow the line to the far right column. Your delay time is listed in minutes and seconds. The example below shows that Spencer Mathews must wait 8 minutes and 45 seconds (after the start of the *delay time clock*) before he can start.

Around Andersonville Island Race						
Skipper	Boat Name	Sail #	Design * indicates US Sailing Mean Rating	PHRF WCSC base rating (or US Sailing Mean Rating)	PHRF difference	Course starts and finishes at S 19
				300		7.5 miles delay
Harrison, Mike	Old Yeller	9646	Catalina 22 SK	270	30	3:45
Gibson, Ben	Full Tilt	1764	San Juan 21 *	252	48	6:00
Hampton, Brian	Blue Bayou	47	Force 5	242	58	7:12
Schrec, Keith	Orange	4	Force 5	242	58	7:12
Mathews, Spencer	Happy Camper	584	Precision 23	230	70	8:45
Hicks, Byron	ROSEBUD	47	Chrysler 26 *	225	75	9:22
Engle, Marcus	Great Escape	-	US 25 *	222	78	9:45
Curry, Richard	Great Escape	-	O Day 27 *	212	88	11:00

Participating in Around Andersonville Island Alone (or not)

The approximate time of the start of the *delay time clock* will be announced at the skippers' meeting. All boats should be in the vicinity of the start area before the stated time, as each boat will need to start their *delay time clock* in unison with RC. RC will sound several short blasts of the horn approximately 5-10 seconds before the numeral 1 pennant is raised. The numeral 1 pennant  will then be raised with one long blast of the horn. This marks one minute **before** the starting of the *delay time clock*.

The **start** of the delay time clock will be signaled by **lowering** the numeral "1" pennant and sounding one blast of the horn. At that instant, **each** boat should start their **clock**. The clock will start at 00:00, and will count up. **When your clock has counted up to your boat's delay time you are allowed to cross the starting line.** If your boat is on or past the starting line (on the course side of the line) before your delay time comes up, you have started too early. RC will announce by radio (VHF ch 71) if you have started too early. To correct the mistake of starting too early, you are required to sail back such that your boat is completely on the start side of the line. Then you may restart.

Sailing the course

You should get to the starting area soon as possible after the skipper's meeting. The race will start and finish at buoy S 19, a short distance south of Flag Island (consult the Lake Map you downloaded from the Club web site). When starting, the staff of the orange flag on the RC signal boat will be the starboard end of the start line and buoy S 19 will be the port end. Boats should loiter close enough to the RC boat to be able to see and hear signals that announce the start of the delay time clock. Once the clock has started, you should remain close enough to be able to start (at the start line) at your appointed time, but not remain so close to the start line as to interfere with other boats that start before you.

Once your start time has arrived and you have started, you may navigate around Andersonville Island in either direction, that is to say you may leave the island to port or to starboard. Between buoy S 19 and Andersonville Island are two small islands. They have no relevance to the race course. You may pass them any way you want. Also, at the southern tip of (and very close to) Andersonville Island there is a small island. This island is not part of Andersonville Island, and thus has no relevance to the race course. If you sail between it and Andersonville Island, your course will be shorter, but the wind there is often very light and confused. If you sail to the south of this little island, your course will be longer, but you may have better wind. Which is the better route? Welcome to sailboat racing.

Oh, snap! the wind is dying...

The sailing instructions mandate that any boat that hasn't finished by 15:30 will be scored DNF (did not finish). So, in the event that there is insufficient wind for your boat to finish by the required time, you might as well crank your engine and return to the Club under power to attend the post-race social (cocktails, finger food, and awards).

Oh, your dinghy doesn't have a motor?

Before you leave the dock, it might be wise to partner with a boat that does have an engine to ensure you can get a tow back to the Club.

Glossary

Corrected time A boat's elapsed time after being adjusted for rating by a scoring program

Delay time Delay time is the amount of time (in minutes and/or seconds) that a boat must wait after the start of the delay time clock before she can cross the starting line to begin a pursuit start race.

Delay time clock This is a time piece that counts up from 00:00, starting when the numeral pennant 1  is lowered at the beginning of a pursuit start race.

Delay Time table A table (only used in a pursuit start) that provides each sailboat a delay time for the course to be raced.

Elapsed Time The amount of time that transpires between the start of a race and when a boat crosses the finish line.

Mark of the course The RC boat when it is part of the starting/finish line and any of the government buoys that are part of the course being raced. Government buoys that are not part of the race course have no significance in the race.

Pursuit start A method of starting a sailboat race in which slower boats start proportionately sooner than faster boats so that boats are scored in the order of their finish.

Time Adjustment The amount of time added to or subtracted from a boat's elapsed time for the purpose obtaining a corrected time to compensate for boats having unequal ratings

Flags you need to be aware of

(of which you need to be aware...?)



Starting Line flag The staff of this flag is the starboard end of the starting line and the port end of the finishing.



Numeral 1 pennant When this flag is raised, you have 1 minute until the delay time clock starts. When it is lowered, each boat's delay time clock should be started.