



# HFSC Sailing Instructions

## Part 2 – Race Management

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## 1 INTRODUCTION

This section of the HFSC Sailing Instructions is concerned with race organisation and will be of interest to those responsible for running races and race series.

The content of this section has not been included in part 1 of the HFSC Sailing Instructions because it will be of little interest to the majority of club members and its inclusion in part 1 of the Sailing Instructions would make them less readable. However it may affect the outcome of races and allocation of prizes and is therefore part of the HFSC Sailing Instructions.

## 2 DEFINITIONS

The definitions used in this document are those listed in part 1 of the HFSC Sailing Instructions.

Letters in square brackets [thus] are race conduct code abbreviations as follows:

Code	Meaning
COM	Completed the race normally
DNS	Did not start
DNF	Did not finish (includes retirement)
OCS	On course side at start and did not re-start correctly (disqualified)
RAF	Retired after finishing
DSQ	Disqualified by Protest Committee

## 3 DERIVATION OF HANDICAPS

### 3.1 Introduction

For most races, a boat's finish position depends upon its corrected time, which is calculated from its elapsed time using a handicap.

Because HFSC races monohulls and catamarans together from the same start, we have to use the Portsmouth Yardstick (PY) system to handicap the boats because this is the only system common to both types of boat. However the number of catamarans for which the RYA publishes a PY number has declined over the years (the 2007 list has only 10 catamarans, of which only 2 are 'primary' yardsticks). This situation is made worse by the variety of configurations under which our members race their boats (for example, one-up on a Dart 18 with 2 sails never had an 'official' PY number). In the past this has required the Sailing Secretary to estimate handicaps.

PY Numbers for monohulls are more easy to obtain, and are more up-to-date.

The Small Catamaran Handicap Rating System (SCHRS) is a measurement-based system that uses a mathematical rule to establish a boat's performance from key criteria (such as sail area, boat weight etc). This is in direct contrast to the PY system where the handicap is based on analysis of the results from racing, on a nationwide basis. Although the method of deriving the handicap differs, both systems apply the handicap in a similar way i.e. the handicap number is applied to the elapsed time for the boat, to give a corrected time.

SCHRS ratings are available for most small catamarans, and it is also straightforward to generate a rating for an 'oddball' boat configuration such as that

described above by using the (free) rating software and adjusting the input data to reflect the boat configuration.

SCHRS does not apply to monohulls; however it possible to equate the handicaps from the two systems. The SCHRS website carries the following statement: *If the cat doesn't have a published PY, we suggest scaling the SCHRS rating to obtain a "PY Look-alike". Simply multiply the SCHRS rating by 686 (assuming 1.0 = 686, Based on the PY values for Hurricane 5.9 and Hobie Tiger) to obtain a number in the PY scale.*

Calculating a 'Club' PY number for catamarans in this way does not necessarily give exactly the same PY number as published by the RYA. However published PY numbers are not 'cast in stone' and the RYA encourage clubs to adjust them according to local conditions, so HFSC is not doing anything untoward. SCHRS is arguably a fairer system anyway given the decline in the availability of published multihull PY numbers.

In summary, all catamaran PY numbers used for Club racing are now 'Club' PY numbers calculated from SCHRS and converted to a PY number using a conversion factor of 686. The Club PY number applies even if a boat has a published PY number of any category. Monohulls race under the relevant PY number published by the RYA.

### **3.2 Derivation of a New Multihull Club PY Number**

The Sailing Secretary is responsible for calculating and allocating Club PY Numbers.

To derive a new multihull Club PY Number, begin by obtaining an SCHRS rating for the boat configuration. If the boat is a 'standard' configuration then you can get the rating from the SCHRS website. If the configuration is not standard, begin by inputting the measurement parameters for the known configuration of the boat into the SCHRS software then run the software to generate the rating and confirm that it gives the expected (published) rating for that configuration (this approach decreases the chances of error). You can then alter the configuration (e.g. by changing the number of crew, removing the spinnaker etc) to get the rating that you are after.

Next, Multiply the SCHRS number by 686. The resulting PY number has the status of a 'Club Number'.

There is a spreadsheet on the Club computer that automates some of this.

## **4 CORRECTED TIME CALCULATIONS**

The calculations described in this section apply to all handicap races run on elapsed time (i.e. trophy races and series races) but they do not apply to pursuit races where boats have individual start times (see section 5).

There is a spreadsheet on the Club computer that automates corrected time calculations. There is also a special one for the Island Cup that accommodates 2 starts/finishes in one race.

### **4.1 Elapsed Time**

Elapsed time = finish time for boat – start time of race

Result in seconds.

### **4.2 Corrected Time (PY System)**

Corrected time = elapsed time x 1000 / PY number

Result in seconds.

### **4.3 Race Position**

If a boat starts and finishes the race correctly [COM] then its race position depends on its corrected time relative to the other boats in the race.

If a boat does not start correctly, does not finish (i.e. it retires) or is disqualified [DNF, OCS, RAF, DSQ] then it receives a race position equal to the number of boats that started the race (subject to any protest hearing).

A boat that does not start a race [DNS] does not receive a race position.

If two boats have exactly the same corrected time then they both receive the same race position (i.e. they are tied), and the next boat in the sequence gets a position as if the boats were not tied, e.g:

<b>Corrected Time (s)</b>	<b>Race Position</b>
4957	1
5486	2
5486	2
5692	4

## **5 CALCULATIONS FOR PURSUIT RACES**

In a handicap race all the boats start at the same time and finish at different times; you then apply the handicap to the elapsed time to arrive at the corrected time. In a perfect world with a perfect handicap system and all competitors having the same ability, the corrected times for the competitors would all be the same.

Pursuit races are the other way around; the finish time for the race is fixed, and the boats start at different times according to their handicap. At the race finish time, it is the order of the boats on the water that decides the race positions. In a perfect world with a perfect handicap system and all competitors having the same ability, all the boats would be side-by-side on the water at the race finish time.

There is a spreadsheet on the Club computer that automates calculations for pursuit races.

### **5.1 Start Times**

The OOD is responsible for setting the start times for individual boats (or more exactly, for each class). This should be done as follows:

- a) Decide on the race duration (RD). This example assumes 1.5 hours (5400 seconds or 90 minutes). This will be the amount of time that the slowest class sails for.

b) Decide on the start time and work out the finish time for the race based on the amount of time that the slowest class sails for, e.g. start time 13.00 so finish time 14.30.

c) Work out the ratio R of the PY number to the Race Duration for the slowest class (largest PY number), e.g. for a Contender (PY number 995):

$$R = PY/RD$$

$$R = 995/5400$$

$$= 0.184$$

R will be the same for all boats in the race.

d) Work out the race durations for each class, e.g. for a Spitfire (PY number 712):

$$RD = PY / R$$

$$RD = 712 / 0.184$$

$$= 3870 \text{ seconds}$$

$$= 64.50 \text{ minutes}$$

e) Work out the start times for each class, e.g. for the Spitfire:

$$\text{Start time} = 64.50 \text{ minutes before } 14.30$$

$$= 13.25 \text{ and } 30 \text{ seconds.}$$

### **5.2 Race Position**

If a boat starts correctly and does not retire or get disqualified, it receives a race position corresponding to its position on the water relative to the other boats at the time the race ends, as judged by the Safety Boat Crew and/or OOD.

If a boat does not start correctly, retires or is disqualified [DNF, OCS, RAF, DSQ] then it receives a race position equal to the number of boats that started the race (subject to any protest hearing).

A boat that does not start a race [DNS] does not receive a race position.

## **6 TEAM RELAY RACE**

The Team Relay Race also uses the concept of a handicap applied to an elapsed time to obtain a corrected time but the corrected times are aggregated for all boats in a team. Management of the race in 'real time' requires use of a computer and specially written spreadsheet and is beyond the scope of this document.

## **7 RACE SERIES**

The purpose of the system described here is to decide the outcome of a series of races. It is similar to the low-points system described in the Racing Rules of Sailing (RRS) appendix A4.1 but with one important difference; RRS A4.1 refers to the finishing position of boats but we are interested in the finishing position of individual helms.

Series trophies are generally awarded for Helm and Crew, but the results are calculated for the Helm only. The Crew's series trophy is awarded to the individual who crewed for that Helm most frequently in the series. In the event of a tie, the Sailing Secretary shall decide who receives the trophy in consultation with the Helm.

### **7.1 Helm Eligibility**

To be eligible for a series trophy, a Helm must have achieved a race position (see 4.3, 5.2) in at least half the races in the series e.g.

<b>Races in series</b>	<b>Min valid results to be eligible</b>
1	1
2	1
3	2
4	2
5	3
6	3 etc...

In the event that nobody fulfils the eligibility criteria, the HFSC Committee may award the series trophy at their discretion but are not obliged to do so.

### **7.2 Series Points**

The Helm of a boat that achieves a race position (see 4.3, 5.2) scores series points equal to the boat's position in the race as follows:

<b>Race Position</b>	<b>Series Points</b>
1	1
2	2
3	3
4	4 etc...

Helms of boats that have tied race positions (see 4.3) score series points according to the tied position.

### **7.3 Responsibility for Calculating Series Positions**

It is the responsibility of the Sailing Secretary to ensure that the results of each race series are calculated.

The Sailing Secretary is obliged to calculate the series finish positions of all eligible Helms only, but may also calculate the finish positions of all Helms in the series.

### **7.4 Calculating Series Positions – All Eligible Helms**

If the Sailing Secretary has elected to calculate the series finish positions of eligible helms only, the number of race results taken into account for each Helm shall equal the eligibility criteria for the race series (refer to section 7.1) and any remaining results shall be discarded. The results taken into account shall be the best results for each Helm.

**7.5 *Calculating Series Positions – All Helms in Series***

If the Sailing Secretary has elected to calculate the series results for all Helms that have taken part in the series then a means of accounting for non-participants is necessary (since not all helms take part in all races). Every helm that takes part in the series scores series points in every race whether they take part in the race or not.

Each Helm that does not achieve a race position (see 4.3, 5.2) scores series points equal to the number of boats that started the race + 1.

Note that in this system all race results are included and there are no discarded results.

**7.6 *Series Position***

The finish position of a Helm in a series depends firstly on whether the Helm has met the eligibility criteria (see 7.1), and secondly on the Helm's series points total relative to the other Helms in the series. The eligible helm with the lowest series points total wins the series.

**7.7 *Minimum Number of Races for a Valid Series***

The minimum number of races for a valid series is 1.

**8 NUMBER OF PRIZES AWARDED**

The following is a guide; however the Sailing Secretary may alter the number of prizes awarded at his/her discretion.

**8.1 *Trophy Races***

The number of prizes awarded for trophy races shall be as follows:

<b>Number of Boats in Race</b>	<b>Number of Boats Receiving Prizes</b>
3	2
4	2
5	3
6	3*

Generally prizes will not be awarded beyond 3<sup>rd</sup> place.

To be eligible for a prize, a boat must have completed the race normally [COM]

**8.2 *Race Series***

The number of trophies awarded for each race series shall be as follows:

<b>Number of Races or Boats in Series*</b>	<b>Number of Boats Receiving Prizes</b>
1	1
2	1
3	2

4	2
5	3
6	3
7	4
8	4**

\*Number of races in the series or boats in the series, whichever is the lowest number.

\*\*Generally prizes will not be awarded beyond 4<sup>th</sup> place.

### 9 CLUB CHAMPIONSHIP

The Club Championship is awarded to the Helm who has the best cumulative race results throughout the year. It is decided on a low points system similar to the way in which the results of a race series are calculated; however series points are not the same as championship points.

Helms score championship points in trophy races and race series, (the results of the series as a whole count towards the championship, not the results of the individual races in the series).

#### 9.1 Eligibility

Every Helm that takes part in HFSC racing will score championship points.

To be eligible for the championship a Helm must have achieved results in at least half the total number of trophy races and race series run in that season, e.g.

<b>Trophy Races + Race Series Run in Season</b>	<b>Min Trophy Races + Race Series to be Eligible</b>
5	3
6	3
7	4
8	4
9	5
10	5 etc.

For a trophy race result to count, the Helm must have achieved a race position in that race (refer 4.3 and 5.2).

For a series result to count, the Helm need not have completed enough races to fulfil the eligibility criteria for the series, (refer 7.1) but must have achieved a race position in at least one race of the series.

In the event that nobody fulfils the eligibility criteria, the HFSC Committee may award the Club Championship at their discretion but are not obliged to do so.



**9.2 Championship Points Scored in Trophy Races**

The Helm of a boat that achieves a race position (see 4.3, 5.2) scores championship points equal to the boat's position as follows:

<b>Race Position</b>	<b>Championship Points</b>
1	1
2	2
3	3
4	4 etc.

**9.3 Championship Points Scored in Race Series**

The Helm of a boat that competes in a race series scores championship points equal to the boat's finishing position in the series.

**9.4 Responsibility for Calculating Club Championship Position**

It is the responsibility of the Sailing Secretary to ensure that the final results of the Club Championship are calculated.

The Sailing Secretary is obliged to calculate the Club Championship finish positions of the first 3 eligible Helms only. The number of results (trophy races and race series) taken into account for each Helm shall equal the eligibility criteria for the Club Championship (refer to section 9.1) and any remaining results shall be discarded. The results taken into account shall be the best results for each Helm.

**9.5 Minimum Number of Races + Race Series for a Valid Championship**

The minimum number of trophy races + race series run in a year for a championship to be valid is 1.

**9.6 Championship Position**

The position of each Helm in the championship depends on the Helm's points total relative to the other Helms. After the last race of the season, the Helm with the lowest points total wins the series (providing that helm is eligible – see 9.1).

**9.7 Ties**

Only ties for the championship trophy (i.e. first place) shall be resolved – refer section 10.

### **10 RESOLUTION OF TIES**

This section applies to ties in a race series, the Club Championship or the Crew Cup. Generally only a first place tie shall be resolved but ties for other places may be resolved in the same manner (at the discretion of the Sailing Secretary).

For breaking ties in the Crew Cup, replace the term 'Helm' with 'Crew'.

#### **10.1 *Take Discarded Results into Account***

It is assumed that the tie has occurred when the number of results counted for each Helm equals the eligibility criteria (see 7.1, 9.1), and the results selected for each Helm are the best results for that Helm. The first step is to confirm that this is indeed the case.

To break the tie, discarded race results shall be taken into account starting with the best result (lowest number of points) for each Helm first, until the tie is broken on points total (in favour of the Helm with the lowest score), OR one Helm has more race results to count than the other (in which case the tie is broken in favour of the Helm with most race results).

The addition of discarded results is illustrated below (all races completed normally [COM] unless stated otherwise):

<b>Race</b>	<b>Helm 1 points</b>	<b>Helm 2 points</b>
1	2	3
2	4	2
3	5	1
4	2	8
5	4	[DNS]
6	1	3
7	[DNS]	4

7 races completed therefore 4 to count. Helm 1 counts 1,2,2,4 = 9. Helm 2 counts 1,2,3,3 = 9. Helms tied on 9 points.

Still tied on 13 points after taking 5 results into account.

Tie broken in favour of Helm 1 after taking 6 results into account.

#### **10.2 *Discard Additional Races***

If the tie cannot be broken by taking discarded results into account then results shall be discarded, starting with the worst result first, until the tie is broken.

Again it is assumed that the tie has occurred when the number of results counted for each Helm equals the eligibility criteria (see 7.1, 9.1), and the results selected for each Helm are the best results for that Helm.

The deletion of results is illustrated below (all races completed normally [COM] unless stated otherwise).

Race	Helm 1 points	Helm 2 points
1	2	3
2	4	2
3	5	1
4	2	5
5	4	[DNS]
6	1	3
7	[DNS]	4

7 races completed therefore 4 to count; Helms tied on 9 points and adding discarded results does not break tie.

Discard one result for each Helm; Helm 1 now counts 1,2,2 = 5. Helm 2 counts 1,2,3 = 6. Tie broken in favour of Helm 1.

### **10.3 Last Place Beats [DNF]**

In exceptional circumstances (normally when there are very few results) it may not be possible to break a tie by the means described in 10.1 and 10.2. In this instance a race position arising from a [COM] shall beat a race position arising from a [DNF].

For example, in the 2009 Autumn Series 2 races were sailed. Helm 1 came 3<sup>rd</sup> in the first race but won the second race. Helm 2 won the first race but did not finish the second race (in which there were 3 starters). Both helms were therefore tied on 4 points and the criteria in 10.1 and 10.2 would not resolve this tie. Using the 'Last Place Beats [DNF]' criteria allows this tie to be resolved in favour of Helm 1, which is a fair resolution.

## **11 CREW CUP**

The purpose of this award is to recognise the contribution made by a boat's crew to the competitive success of the sailing partnership. The Crew Cup will have similar standing to the Club Championship and must therefore be worth winning. It will generally not be awarded if the appropriate criteria are not met.

In the event that the appropriate criteria are not met, the HFSC Committee may award the Crew Cup at their discretion but are not obliged to do so.

The Crew Cup will work in exactly the same way as the Club Championship; the only difference will be that an individual will score points as a Crew rather than as a Helm (so points scored as Helm do not count).

In any race counted towards the Crew Cup, an individual may helm for brief periods (e.g. whilst the nominated Helm makes gear or rig adjustments or during unplanned emergencies) but the helming must not contribute significantly to the race result.

There is no requirement for points to be scored with any particular Helm or on any particular boat.

As with the Club Championship, results of a series as a whole count, not the results of individual races within the series. However since there is no requirement for

points to be scored with any particular Helm, a Crew's finish position in a series (for the purposes of awarding the Crew Cup) may not be the same as that of the Helm with which that Crew sailed for most of the series.

### **12 MEMBERSHIP OF HFSC AND ELIGIBILITY FOR PRIZES**

The following applies for Club events only; trophies and prizes for Open events should be specified in the Sailing Instructions and/or Notice of Race for the event.

Non-members may take part in club events on an occasional basis as a Helm or Crew and may receive 'non-returnable' Club prizes; however non-members shall not be presented with club perpetual trophies.