

## **KEELBOAT PERFORMANCE HANDICAPS RULES 2021/2022**

### **THE USE OF PERFORMANCE BASED HANDICAPS**

Performance based handicaps may be used to allow crews of different abilities and boats of different designs and ages to compete together on an equitable basis. This handicap system will function properly if the configuration of the boats and most of the crew remain unchanged between races. Under Performance Handicap Rules such systems as canting keels, water ballast, and powered drives may be used providing the Notice of Race allows them.

### **PERFORMANCE BASED HANDICAPS - PHS**

PHS handicaps are based on analysis of performance in accordance with an agreed set of rules. The main characteristics of the PHS system are -

- a. It's free and requires no measurement.
- b. It requires constant administrative support by analysis of race results and adjustment of the individual boat's handicap.
- c. It only remains valid on an interclub basis if club fleets mix on a regular racing basis, otherwise the handicap relativity from club to club may vary and results in open competition become inconsistent.
- d. A change of skipper, crew or equipment can cause significant fluctuation in results.
- e. The validity of the handicap system relies on the honesty of skippers to inform Handicappers of equipment and crew changes.
- f. Most handicaps are generated from circuit races (same start and finish) with significant windward components, thus predominantly off wind courses may give significantly different results.

### **PHS Handicapping Rules - by relative performance.**

#### **1. Divisions**

- 1.1 For interclub series and races, entries may be divided into divisions depending on their performance handicaps. The allocation of boats into handicap divisions will be the responsibility of the Organising Authority.
- 1.2 If no request is made by the boat to sail in a different division, then the boat will be placed in the division based on the start of season handicap, at the discretion of the Organising Authority.
- 1.3 Five or more boats of a recognised class (e.g., S80's, Diamonds, Adams 10's) may race as a class in a selected division. The selection of which division the class will race in will be a decision of the Organising Authority and it will usually be in the lower division alternative.

#### **2. Conditions for the Issue and Maintenance of a PHS Handicap**

- 2.1 The PHS Handicap is the measure of performance achieved by a boat/crew combination. To qualify for a PHS Handicap, the boat concerned must have finished in three interclub races with a fair result, and with her hull, rig and crew substantially unchanged.
- 2.2 Any substantial change in hull, rig or crew combination, which is likely to change performance, must be notified to the Club Handicapper at least 24 hours prior to the race.
- 2.3 Such substantial changes will include:
  - change of helmsman
  - more than half of crew who have not competed in past 3 races
  - hull or rig changes
  - new or different sails
  - changes to ballast
  - changes to powered systems
- 2.4 Failure to notify of such changes may be "unfair practice" and may result in protest and subsequent disqualification.
- 2.5 The host club may require owners/skippers to declare that these requirements have been met.

### 3. Abbreviations

AHC	Allocated Handicap	(Handicap allocated for a race)
BCT	Base Corrected Time	
BCH	Back Calculated Handicap	
LBCH	Limited Back Calculated Handicap	
LBCHU	Limited Back Calculated Handicap Upper	(104% of the Allocated handicap)
LBCHL	Limited Back Calculated Handicap Lower	(96% of the Allocated Handicap)
LBCHD	Limited Back Calculated Handicap Discard	(Discard results less than 92% AHC)
CHC	Calculated Handicap	
IPH	Initial Provisional Handicap	
L	Local Handicaps - for explanation see paragraph 8.	
LDH	Long Distance Handicaps. - for explanation see paragraph 9.	

### 4. PHS Handicap

4.1 PHS Handicaps will be issued and updated by the PHS Handicapper of Organising Authority for each race.

### 5. Method of Calculation of PHS Handicap

5.1 Select the Corrected Time of the boat positioned 45% of the way down the fleet from the winning boat on Corrected Time. This then becomes the "Base Corrected Time" for that race.

5.2 Back Calculate the handicaps for each boat by dividing the Base Corrected Time by the boat's Elapsed Time: viz: -

$$\text{BCH} = \text{BCT} / \text{Elapsed Time (for each boat)}$$

5.3 Discard BCH values that are less than LBCHD (i.e., 92% of the Allocated Handicap).

5.4 Apply Limited Back-Calculated Handicaps

- If the BCH is between 92% and 96% of the Allocated Handicap, then the recorded LBCH shall be LBCHL (i.e., 96% of the Allocated Handicap).
- If the BCH is above 104% of the Allotted Handicap, then the recorded LBCH shall be LBCHU (i.e., 104% of the Allocated Handicap).

5.5 All other BCH values to be recorded as calculated without applications of limits (i.e., between 96% and 104%), in these cases BCH=LBCH.

5.6 Maintain a record of the BCH's and LBCH's achieved by each boat on the Club Register.

5.7 From the Allocated Handicap and the BCH (or LBCH) for the last race, the new Calculated Handicap shall be: -

$$\text{Calculated Handicap} = 2/3 \text{ Allocated handicap} + 1/3 \text{ BCH (or LBCH)}$$

5.8 This new handicap is the Calculated Handicap.

5.9 At the discretion of the Handicapper, the Calculated Handicap becomes the new Allocated Handicap.

### 6. Alterations to a PHS Handicap

6.1 A boat may cease to qualify for a PHS Handicap and revert to an initial handicap at the Handicapper's discretion if the boat has less than three PHS Handicap analysed results in the preceding 12 months.

### 7. Class Marks

7.1 Class Marks are benchmark handicaps for each design of boat.

7.2 For boats such as S80's the Class Mark will be the "average" for the fleet, whereas for a "one off" design it will be the actual handicap for that design.

7.3 A list of Class Marks shall be kept and may to be updated prior to the beginning of each season.

**8. Local Handicaps**

- 8.1 Handicaps that may not be calculated according to the complete application of the foregoing rules and band limitations shall be designated "Local" handicaps. (These would chiefly be used for social type races within a single club).
- 8.2 Local handicaps shall not be used for inter-club racing.

**9. Long Distance Handicaps**

Long Distance Handicaps are a separate set handicaps that may be used for circuit races greater than 20nm or passage races. Handicaps to be calculated as per Para 5.

**10. Recalculation of Performance Handicaps at Regattas**

The Race Committee Handicapper may establish initial handicaps for the Regatta based on available Established Handicaps for boats with valid PHS Handicaps, and any other data available to the handicapper.

For boats with no Established Handicap the Classmark should be used.

This handicap is then the Allocated Handicap for the first race.

It is noted that performance handicap data for some boats may not exist, especially for interstate boats.

Thus it is recommended that a more aggressive handicap recalculation be used.

It should also be noted that the handicap recalculation method should be defined in the NOR

- 1. The Allocated Handicaps shall then be used for calculating the results of the first race.
- 2. Back Calculated Handicaps may then be calculated from the first race (without Limits).
- 3. The Allocated Handicap for the second race may be the average of the AHC for the first race and the BCH for the first race.
- 4. It is important to review the handicaps for boats whose BCH is above LBCHU or below LBCHD to ascertain the whether the initial AHC was set correctly, and adjust the CHC accordingly
- 5. Subsequent handicaps may be recalculated according to Para 5 above (or as defined in the NOR)

**11. Query on PHS Handicap**

- 11.1 If a handicap is queried then it is to be resolved by the Club Handicapper and if necessary, referred to the Race Committee of that club.
- 11.2 In the event of one Club having reason to question the validity of a PHS Handicap of a boat from another Club, resolution should be between the Handicappers of the Clubs concerned.
- 11.3 Should agreement not be reached in 11.1 and 11.2, a ruling will be made by the Chairman of the Handicap Committee; this ruling shall be final and not subject to appeal.

**12. Recommended Allocation of Classes into Divisions**

When the NOR specifies that boats may sail as a Class, the recommended division allocation is as follows. Boats that have handicaps close to the divisional break points may choose which division to sail in (see Para 1.3) or may sail with their class in the class's allocated division.

Sydney 38	Division 1
Adams 10	Division 2
Diamond	Division 3
S80	Division 3
Bluebird	Division 3