Perfomance handicapping in QLYC

It is based on the standard practice derived from YV which is as follows. (You don't need to read this) but see our version below. ("QLYC system of scoring and handicapping in racing"). The first part of this was derived from a now obsolete website of Australian Sailing. Also one may quote the following from "A Guide to Performance Handicapping."

*"Why is my handicap so bad?" a sailor laments. "I can never win on the handicap given to my boat. I can't sail my boat any faster therefore my handicap should be lower. The handicapper is an idiot!!"... These and other like comments are heard frequently at **all** yacht clubs and regattas. Everybody is convinced that they should have won. So let's look at what a Performance Handicap is and how the system works. …......."*

YV Performance Handicap Rules

KEELBOAT PERFORMANCE HANDICAP RULES 2017/18

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 9.	
LDH	Long Distance Handicaps. - for explanation see paragraph 10.	

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 particular race.

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

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

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:-

Calculated Handicap = 2/3 Allocated handicap +1/3 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.

QLYC system of scoring and handicapping in racing

Handicapping

QLYC uses a "performance handicap" system which is very similar to that recommended by YV for regattas. There are minor differences, because:-
- We are not scoring a "Regatta" but a whole series of many races across the summer with many boats missing many races.
- We have a very diverse fleet (small / big Couta boats, small cruising boats, large racing boats)
- Very variable conditions (e.g. tides) that can give some boats very good days and some very hard days

For these reasons, we want a system that is fairly conservative i.e. the race by race adjustments are less dramatic than might be used for a regatta including "new" vessels that have not raced against each other before. In essence:

For every boat in a race, the corrected time is the elapsed time multiplied by the handicap. And that decides its placing in that race.

After every race, each boat is compared to the one in the middle of the fleet on corrected time, that is the median corrected time. (For our small fleet this is essentially the same as the 45th percentile specified by YV). Each boat then gets a BCH (back-calculated handicap) which is the handicap that would have rendered every boat equal in that race. The new handicap going forward is one fifth of the way from the old handicap to that back calculated handicap (i.e. add four fifths of the old handicap to one fifth of the BCH. So in a fleet of 7 the first three boats get increases in handicaps and the last three get reductions, in proportion to their performance. This is the same as specified by YV except that it moves one fifth of the way rather than one third of the way.

However - In adjusting handicaps, any boat which is really late to the start-line does not reap the benefit of a corresponding reduction in handicap which would have arisen from the late start.

Similarly when the skipper spends 5 minutes retrieving his hat from the water, that is removed from the calculation of a new handicap.

Also, derived from historical practice, the system flagged any vessels with handicap changing by more than 3% - for examination as to whether circumstances made the race unrepresentative for that vessel. In this case the change in handicap was limited to 3%. However, this is another area under review as "standard practice" sets a "clamp" of typically 4% on the BCH which is more rigorous than 3% on resulting change in allocated handicap.

In the past, QLYC handicaps were based on the performance in the last 6 races only. There were 2 main disadvantages:
a) It was VERY time-consuming and hence error-prone
b) the change in handicap was affected as much by the race "6 races ago" (departing the equation) as by the last race (entering it) – so you could come last in a race and still get an increase rather than a decrease in handicap if your old race (dropping out) was even worse than the latest one. This issue is avoided in the system we now use and any complexities are computed as objectively as possible.

Points scoring of races in a series or in the aggregate

For working out the results in a series such as the Ray Maki series, or for the season's aggregate trophy, we have for many years used the "low points system", approximately as recommended in the Racing Rules of Sailing ("Blue Book") A4.1 and A9, as follows.

In each race, for each vessel: Placing first scores 1 point, placing second 2 points, placing third 3 points etc - with non-starters, non-finishers and dsq vessels scored one more than the number of finishers. These are added up for each vessel, BUT dropping the worst (highest) score for each vessel. The vessel with the lowest overall point score wins. For this purpose some "unrepresentative" races are excluded: for example the Lady Skippers / Crew on Helm race and races like any "special trophy" run on days when several vessels are unavailable.

This points scoring system is under review, with options including the RRS "Bonus Points System" which is also a "lowest score wins") and a "high points" system which arguably could be fairer. For example in the "Low" and "Bonus" points systems, two boats could be tied (on aggregate) part way through the season, but if one does not compete in a fleet of 3 and the other does not compete in a fleet of 9, the former is penalised 4 points but the latter by 10 points. The Sailing Committee is considering options as to the fairest system for our circumstances. For this year (2018-19) we are trialling a high points system such that the winner gets 10 points, second 9 points and so on downwards with zero points to non-participants.