



## CLASSIC YACHT OWNERS ASSOCIATION

- EST 2015 -

Dear Classic Yacht Owner & Regatta Participant,

As you may know, the Classic Yacht Owners Association (CYOA) was formed in 2015 to advance the common interests of classic yacht owners, to improve communication between them, and to foster increased participation in classic yachting events throughout New England and beyond.

To further these ends, one of the first decisions made by the CYOA Board of Directors was to form a Technical Committee that was tasked with examining various handicapping alternatives, including PHRF, Europe's CIM, a VPP-based system, and the Classic Rating Formula (CRF) that has been used to score classic events here in New England for several decades. The group quickly agreed to focus on CRF as the most suitable starting point, and members were equally quick to recognize that Chris Wick and others (including at least Joel White, Maynard Bray, Steve White, and Bill Doyle) deserve huge credit for creating CRF in the first place, and for developing, maintaining, and administering it since. Clearly, without CRF there would be no Classic Yacht racing as we enjoy it today, and the efforts of all concerned are sincerely appreciated. In its rating rule review, the Technical Committee recognized that while some current CRF ratings do reflect the real world performance potential of yachts within classes of similar sizes and types adequately, it also concluded that there are notable exceptions. The Committee identified fundamental flaws in the current CRF formulae, and also noted that there have been complaints from owners about the lack of transparency in CRF's unpublished formulae, and in the derivation and application of its 'Adjustments to Base Rating' (ABR) and 'Cruising Adjustments'.

Specifically, the Technical Committee agreed that the following are serious shortcomings in the current form of CRF, that these do affect race results, and they do raise frustration levels among participants:

- Current CRF favors bigger boats, since the square root of length is taken once in calculating rating, and again in using the Herreshoff Time Allowance tables routinely used for scoring.
- Current CRF favors short overhangs since LOA and LWL are weighted equally in calculating effective sailing length, even though length at deck level is seldom immersed.

- Current CRF formulae do not directly assess the effect of draft and displacement. These are primary performance parameters, but under CRF they have been addressed only by assigning Cruising Adjustments and ABR's that can amount to 30% of base rating.
- Current CRF's BRF (Beam Ratio Factor) has a powerful effect on rating, but it is a step function based on LOA, that again favors short overhangs over long overhangs.
- Current CRF assumes a 150% genoa overlap in its 'with spinnaker' ratings, but does not give credit to boats with smaller genoa LP.
- Current CRF ratings include substantial and undocumented ABR's and Cruiser Adjustments.
- Current CRF ratings are generated via formulae in an unpublished 'black box'.

As a means of addressing the shortcomings in current CRF as listed above, the Committee has developed a comprehensive reformulation that has been informally dubbed 'CRF MkII'. This MkII version of CRF is based on the essentials of the International Offshore Rule (IOR), which in its heyday rated a variety of boat sizes and types quite well until it was overwhelmed by loophole exploitation in later years. This optimization pressure should not be a risk in classic racing, since historically significant yachts are not likely to be significantly modified to suit a rule. Further, in new Spirit of Tradition (SOT) builds, owners and designers would be put on notice that ratings would be adjusted to remove any competitive advantage resulting from any perceived rule exploitation.

The formulae underlying CRF MkII are based on the current CRF data requirements. The existing owner declared approach to input data is retained, with no official measurers required. Three additional declarations would be critical beyond current CRF'16 requirements:

- Centerboard extension beyond fixed keel draft. (CRF'16 does not account for 'board down' draft)
- Distance from the mast to the tack point of an asymmetrical spinnaker, if one is carried while racing
- A 'closest match to sample sketches' declaration for the keel and rudder configuration.

A critical tool used in the development of CRF MkII has been a 'test fleet' of boats assembled by the Committee to represent the full range of boat size and type currently participating in classic racing. The ratings generated by the new formulae for boats in the test fleet have been continually vetted by comparing them with those generated by current CRF, as well as with PHRF and IMS 'general purpose' handicaps when these are available and applicable. When PHRF handicaps and CRF'16 ratings for the same boat were found to differ substantially, the

MkII rating for that boat typically falls between the PHRF and CRF numbers, which implies a useful 'reality check'. More importantly, a number of classic, vintage, and SOT boats in our test fleet have been fully measured for VPP based ratings, and MkII ratings correspond well with those as well, providing some especially reliable rating benchmarks. The effects of the new formulae on relative ratings within the test fleet shows that MkII does address the perceived shortcomings in current CRF, and that any rating shifts are reasonably consistent within a given group of yacht sizes and types. Rescoring past classic events has shown that the new MkII ratings would not change many finish places, nor disrupt the competitive balance of the current fleet unduly. Given all this careful refinement and review, the Committee is confident that CRF MkII ratings will reflect the performance potential of boats over the full range of the classic fleet fairly and well, and that owners will appreciate the fact that the 'guts' of the new approach will be fully transparent and free of subjective rating adjustments.

A general overview of the effects of CRF MkII ratings as compared with current CRF follows:

- Classic and Vintage yachts in the Test Fleet rate slower (gain) under MkII relative to SOT yachts due in large part to a 'Keel Factor' based on underbody type (e.g. fin keel vs. full keel).
- Smaller yachts rate slower (gain) relative to larger yachts since MkII assesses length assessed at its full linear value, rather than once on its square root in rating, and again in Time Allowance.
- Long overhang boats gain relative to short overhang boats since the MkII calculation of effective length 'L' weights LWL more heavily than a length on deck that is seldom immersed.
- Shallow draft and heavy displacement boats gain relative to deep and light boats through direct assessment of draft and displacement effects via published formulae, without CRF'16's dependence on the application of unpublished ABR's.
- Narrow boats with long overhangs gain relative to beamy boats with short overhangs. MkII retains a length/beam correction, but it is based on effective length 'L' rather than on LOA alone.
- When racing with spinnakers, boats racing with small jib overlap gain relative to boats racing with genoas, as MkII assesses the benefit of bigger overlap upwind, where it is 'free' under CRF '16.

While the implementation and administration of CRF MkII remains a work in progress, much will remain the same. Chris Wick will continue the management and issuing of certificates through the CRF website: [classicratingformula.com](http://classicratingformula.com), owners will still be responsible for obtaining their rating certificate, and for making sure that the data they declare accurately

represents the configuration of their boat as she is raced. MkII ratings will still be expressed on an updated certificate in linear feet to be consistent with those created by current CRF. Likewise, MkII will still produce single number ratings (both with and without spinnaker) that can be used in scoring software in the same way as current CRF ratings. There will be some significant changes, however:

- Ratings will also be expressed in terms of seconds per mile on the new certificate, for transparency.
- Going forward, MkII certificates will have to revalidate each year, to assure that declared input data is current for each boat as raced, and to allow for fleet wide updates with inevitable improvements to the new formulae.
- MkII certificates will be free of charge in 2017, but thereafter will cost \$50 annually.
- Beyond this new approach to producing certificates and ratings, plans are also underway to offer the option of a standardized approach to race scoring, but choosing to do so will be left up to individual event organizers.

In addition to the MkII rating update, the Technical Committee also plans to review the various rules and regulations that have governed Classic racing in the past, and to suggest a uniform framework that would help organizers draft their race documents, and would help owners by making requirements more consistent from one event to the next. Overall, event organizers will of course remain free to manage their own unique events. Communication regarding implementation and administration progress and details will be a priority over the next few weeks, as will updating the CRF website with more information on the MkII rule, its administration, and its certificate data.

We hope that this note is informative and helpful regarding both the changes that the CYOA plans for Classic racing in 2017, and the work that remains in order to implement them as smoothly as possible. Please feel free to direct questions and comments to Clark Poston, President CYOA. [clarkposton@uscsoa.com](mailto:clarkposton@uscsoa.com).

Best Regards,

A handwritten signature in black ink, appearing to be 'SD', written over a horizontal line.

Simon Davidson, Treasurer  
Chairman CYOA Technical Committee