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PHRF-LE CODE OF REGULATIONS UPDATED 2020 CLASS RULES

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PREAMBLE

The concept of a Performance Handicap Racing Fleet found its origin Southern California in the late 1970's. The then current measurement rule, the International Offshore Rule, had created obsolescence of the existing racing fleet. A group of local sailors, assisted by designers and sail makers, adopted the concept of a system of ratings derived from boat performance observed during sailboat racing. Race results were collected and ratings developed. A number of other areas, facing the same problem of fleet obsolescence, adopted the performance handicapping concept. Each area, with its own handicapping committee, assigns ratings based on observations in the area events. Performance Handicapping is a local activity, driven by the local participants, responding to local conditions directed by local sailors. The Performance Handicap Racing Fleet of Lake Erie was founded in 1976. It issues ratings for racing by auxiliary sailboats throughout Lake Erie.

ARTICLE ONE - NAME

- 1.1 The name of the organization shall be the Performance Handicap Racing Fleet of Lake Erie, hereafter referred to as PHRF-LE.

ARTICLE TWO - PURPOSE

- 2.1 The purpose of the Performance Handicap Racing Fleet of Lake Erie is to develop ratings that permit auxiliary sailboats of different designs to compete fairly against one another in sailboat races.

ARTICLE THREE - MEMBERSHIP

- 3.1 Membership is open to any owner or charterer of a qualifying boat and shall be limited to persons belonging to yacht clubs or sailing organizations that are members of the Inter-Lake Yachting Association or U.S. Sailing. PHRF-LE does not discriminate on the basis of sex, race, ethnicity, religion or sexual orientation.
- 3.2 In applying for membership, applicants agree to abide by these bylaws and to accept determinations by the Handicapping Committee, after exhausting appeals as permitted under Articles 7.6, 7.7 and 18, as final.
- 3.3 Dues shall be as determined annually by the Handicapping Committee. Members shall pay separate dues for each boat which they activate or for which they apply for a rating certificate. Membership expires annually on the last day of the calendar year.

ARTICLE FOUR - ORGANIZATION

- 4.1 The PHRF-LE Board of Directors shall be the Handicapping Committee.
- 4.2 The Handicapping Committee shall consist of the Area Handicappers, Club Measurers, and **Technical Advisor/Historian.**

- 4.2.1 Area Handicappers are those persons, who during the preceding year: have attended no less than four regular meetings of the Handicapping Committee; have demonstrated an ability to fairly assign ratings; and have declared an interest in becoming an Area Handicapper. An Area Handicapper shall have experience as a Club Measurer prior to being selected as an Area Handicapper.
- 4.2.2 Area Handicappers shall avoid conflict of interest when assigning ratings. This will include rating a boat owned or chartered by the measurer; rating a boat on which the measurer regularly sails; rating a boat designed or built by a measurer;
- 4.2.2.1 When the possibility of a conflict of interest exists, the Area Handicapper involved will declare any conflict prior to the discussion and will not vote.
- 4.3 Club Measurers are selected from active racers of participating boat clubs. They measure boats, rigs and sails for use in assigning handicaps. Club measurers assist in reporting their club's race results to the PHRF-LE database.

ARTICLE FIVE - OFFICERS

- 5.1 The Officers of the organization will be : the Chairman and Chief Handicapper , the Vice-Chairman, and Secretary/Treasurer. With the exception of the Secretary/Treasurer, the officers shall be elected from the Area Handicappers and will comprise the Executive Board
- 5.2 The Chairman shall be the chief executive officer of the PHRF-LE and shall chair meetings of the Handicapping Committee and of the Executive Board, be the Chief Handicapper, represent the PHRF-LE to other boating organizations, and promote the best interests of the organization.
- 5.3 The Vice-Chairman shall be a member of the Executive Board, assist the Chairman in the discharge of the chair's duties and, in the Chairman's absence, serve in the Chairman's stead.
- 5.4 The Treasurer shall be responsible for the funds of the PHRF-LE, make such disbursements as are authorized by the Handicapping Committee, and be a member of the Executive Board.
- 5.5 The Secretary shall act as the recording member of the Executive Board and of the Handicapping Committee; shall maintain membership and fleet rosters; shall receive and deposit membership dues; shall maintain the PHRF-LE web site and shall carry out such other administrative duties as may be directed by the Handicapping Committee. The Secretary is a non-voting member of the Handicapping Committee and of the Executive Board.
- 5.6 The positions of Treasurer and Executive Secretary may be combined and held by the same individual. If the person is not a Handicapper, this position will be a non-voting member of the Handicapping Committee and of the Executive Board.
- 5.7 The Handicapping Committee shall elect its officers from its members on the first regular meeting of the calendar year.
 - 5.7.1 Terms of office shall be one year.
 - 5.7.2 There is no limit to the number of consecutive terms for officers
- 5.8 Officers and Directors Indemnities. PHRF-LE shall indemnify its officers, trustees, committee persons, measurers and such other persons and their heirs, executors and administrators of such persons to the full extent as permitted by Ohio law. Notwithstanding the foregoing, except as otherwise required by the law, a person who would be entitled to indemnity only as an agent (an officer, trustee, measurer or committee member not to be considered an "agent" for the purpose of

this sentence) shall not be entitled to indemnity unless designated as entitled to indemnity by the Executive Board.

- 5.9 Liability Insurance. The Corporation may purchase and maintain insurance on behalf of any person who is an officer, measurer, committee person, handicapper, or designated agent of the corporation or is or was serving in one or more of those offices in another corporation against any liability asserted against her/him and incurred in any such capacity. The corporation may purchase and maintain insurance on its own behalf against any liability asserted against it under the provisions of this Article.

ARTICLE SIX - MEETINGS

- 6.1 The business of the Handicapping Committee shall be conducted at regular and special meetings
- 6.2 Regular meetings shall be held monthly from October through May; meetings may be cancelled if there is insufficient material for discussion.
- 6.3 Regular meetings shall be held on no less than fourteen days' notice.
- 6.4 Special meetings may be held on seven days' notice at the request of the Chairman; at the written request of three (3) Area Handicappers; at the written request of ten (10) members of the PHRF-LE. Special meetings may be held by telephone conference call.
- 6.5 Emergency meetings may be held on short notice. The agenda shall be limited to the item giving rise to the emergency.
- 6.6 Voting by e-mail or other electronic means can be used for emergency meetings at the discretion of the Chief Handicapper where the Chief Handicapper needs assistance before the next scheduled meeting. Approval of the agenda item must be made by a minimum of 51% of the handicappers is required.
- 6.7 One half the number of Area Handicappers shall constitute a quorum. The Chairman will count towards the quorum and will only vote to break a tie.
- 6.8 Meetings shall be governed by the current Robert's Rules of Order.
- 6.9 Members of PHRF-LE may attend Handicapping Committee meetings (upon written notification to the committee) and have the privilege of the floor at the discretion of the committee. Voting is limited to the Area Handicappers of the Handicapping Committee. When interested parties are present at a meeting the chairman may declare an executive session consisting of Area Handicappers and Executive Board for that rating discussion.

ARTICLE SEVEN - HANDICAPS

- 7.1 PHRF-LE handicaps boats as if they were optimally equipped for racing. There is no credit for under-size sails, poor preparation including aged sails, dirty bottom, unfair appendages, and/or poor racing tactics.
- 7.2 Base ratings are expressed in seconds per mile in 3 sec / nautical mile increments. Time allowances between boats are determined by the difference in ratings multiplied by the nominal length of the course. The standard for handicapping is time on distance. If stated in the Sailing Instructions, time on time may be used at the option of the Race Committee.

- 7.3 Boats have different relative speeds with different apparent wind directions. PHRF-LE ratings assume a balanced representation of beating, reaching and running.
- 7.4 Ratings are reviewed and adjusted periodically. Ratings that are adjusted will be reviewed the following off-season.
- 7.5 Handicappers assign ratings, using their experience, dimensions taken from the boats, observations of boats on the water and regatta results.
- 7.6 Appeal of ratings is permitted under these rules and shall be in writing on the current Rating Appeal form. An appeal will not be accepted until results are available for at least eight (8) Invitational Races or ten (10) club races (the terms “Invitational Race” and “Club Race” are defined in Section 10.1.2). No more than one appeal will be accepted per racing season. Appeals may be filed by members to appeal the rating of their own boat or the boat of a competitor.
- 7.7 The bylaws of PHRF Committee of the United States Sailing Association (US Sailing) permit appeals of ratings issued by a local handicapping committee to the US Sailing PHRF Committee. Such appeals may only be filed with the permission of the local Handicapping Committee (PHRF-LE.)
- 7.8 Relative to US Sailing Rule 87, PHRF-LE Class Rules are modified as follows:
 - 7.8.1 Certificates are required for all Invitational Races where the PHRF-LE or PHRF rules and/or ratings are referenced for Spinnaker and/or JAM.
 - 7.8.1.1 Competitors with a valid PHRF certificate from their area (e.g. DYRA, Lake Ontario, etc.) and that meet PHRF-LE equipment requirements in Section 9 below can race in the PHRF-LE area with the appropriate PHRF-LE handicap for their boat with review by the Chief Handicapper or their designated representative.
 - 7.8.1.2 Boats without any certificate and that meet PHRF-LE equipment requirements in Section 9 below can participate one time in a year in a regatta or single race with an equivalent same boat PHRF-LE rating provided through the PHRF-LE Chief Handicapper or their designated representative(s) and a rating penalty of 7 seconds per nautical mile, or may be assigned to a class other than PHRF, e.g. a Cruising Class.
 - 7.8.2 A designated “Double or Single Handed” race may waive the PHRF-LE crew minimum requirement and allow the use of specified special equipment (e.g. autopilot).
- 7.9 A Race Organizer cannot take it upon itself to assign or change ratings without obtaining an exception from PHRF-LE to the PHRF-LE class rules (U.S. Sailing Rule 87).

ARTICLE EIGHT - CREW LIMITATIONS (Professional Sailors and Sailing Industry Professionals): The PHRF-LE handicapping system is directed by amateurs for amateur sailing. Therefore we prescribe limitations on professional sailors and sailing Industry professionals.

- 8.1 The ISAF Sailor’s Classification Code, ISAF Regulation 22 of RRS Appendix 1, applies for all PHRF-LE racing.
 - 8.1.1 Rulings on individual eligibility may be requested from the ISAF or the PHRF-LE Handicapping Committee.

- 8.1.2 Sailors in Group 3 may petition for exemption from this section if they desire to participate for their own enjoyment or for special circumstances.
- 8.2 Boats owned or chartered by a Group 1 competitor may have no more than two (2) Group 3 Competitors on board. The Group 3 competitors are not permitted to steer during closed course races, or during the first two hours and final 12 nautical miles of races longer than 50 nautical miles.
- 8.3 Group 3 Competitors may race their own boat or a chartered boat, and may steer in this instance. No more than two (2) Group 3 Competitors may be aboard, including the owner or master. The restrictions of section 8.4 apply to the second Group 3 Competitor.
- 8.4 Persons 18 years old or younger will be considered Group 1 Competitors regardless of employment in the sailing industry.

ARTICLE NINE - CLASS REQUIREMENTS

- 9.1 PHRF Class Requirements apply to the racing of "Cruising/Racing" auxiliary sailboats. Adequate equipment and crew for conditions to be encountered is ultimately the responsibility of the skipper or master on a boat. However, as a Cruising/Racing auxiliary, the boat must have an auxiliary propulsion system, and adequate accommodations for cruising.
- 9.1.1 Any boat that does not have any of: lifelines, lifelines that are not compliant with 9.3 below, bow pulpit, adequate auxiliary propulsion (ref 15.3 below) and/or either a self-bailing cockpit or internal flotation sufficient to prevent the boat from sinking if swamped, may be given a "Club" classification.
- 9.2 Boats shall be raced in at least "Stock Boat" trim as defined in Appendix A. Equipment such as bunks, drawers, doors, lifelines, bow pulpits, etc. may not be removed. Forward berth cushions and main cabin dining tables may be removed. Appropriate heavy weather management equipment will be on board. There shall be adequate provisions for events out of sight of land. The minimum safety equipment aboard shall be that required by the US Coast Guard. The host club for an event may invoke an ORC Special Regulations Category designation by including this requirement in the notice of race.
- 9.2.1 Stock Boat Trim is defined as the boat as delivered by manufacturer – Any changes to any boat after original measurement must be reported before racing. When in doubt, you should report any changes. The committee will review the changes to determine if a rating adjustment is required.
- 9.3 Bow pulpits and lifelines are required as standard PHRF Class Requirements for a PHRF-LE Certificate. PHRF-LE strongly recommends that bow pulpits and lifelines conform to the current World Sailing Special Offshore Regulations 3.14. 9.3.1 and 9.4 have been eliminated.

ARTICLE TEN - HANDICAP CLASSIFICATIONS

- 10.1 There are several classifications of ratings
 - 10.1.1 A Regular Rating. This class of handicap can be changed by the Handicapping Committee at any regular meeting.
 - 10.1.2 **Club Rating** -- A Rating may be issued at the PHRF-LE committee's discretion to boats that do not meet the minimum equipment standards specified under Article Nine. Boats with **Club** ratings will be issued a special handicap certificate that states that the handicap is not valid for any inter-club

Invitational Race. Race organizers are advised that is strictly against PHRF-LE class rules to allow a boat with a **Club** certificate to compete in a PHRF Class in inter-club Invitational Races.

An inter-club Invitational Race by definition is an event that is open to all PHRF-LE members with Regular certificates. The exception may be a weekly series or event(s) that enlist participants from single or multiple clubs within a close geographic area that participate together on a regular basis. Participants in the exception may race with a **Club** certificate. **An inter-club regatta/race hosted by your club is not considered a Club event.**

- 10.1.3 A Temporary Rating is a newly issued or adjusted rating which the Handicapping Committee determines has not been adequately tested. The Chief Handicapper may change these handicaps between meetings if, after consultation, it is his opinion that it is advisable to proceed before the next scheduled meeting. These decisions will be reviewed at the next scheduled meeting. A new or changed rating will be reviewed for three years from the issue date.

ARTICLE ELEVEN - SAIL AND RIG LIMITATIONS

- 11.1 **Basic Principle:** The basic rule for PHRF-LE sail design and construction is that the sail must be standard to the IRC/ORR rule. Certain exceptions to these measurement rules are specified in the following paragraphs. The limitations on special sails as well as restrictions concerning legal methods of trimming sails of the IMS and MORC rules also apply to PHRF-LE racing. Materials are limited to those permitted by the current IMS rule.
- 11.2 **Rig:**
Rig construction and adjustments must be in compliance with either the IMS, or the MORC specifications to be permitted in PHRF. Other non-handicapping rules of the IOR are in effect for PHRF. They include rules for placement and movement of ballast as well as such items as the positioning of crew members. No adjustment of the standing rig other than backstays is allowed while racing.
- 11.3 **Sails:**
In general, sailmakers are familiar with the IRC/ORR rule concerning the design of sails. As long as your sailmaker is aware that sails used in PHRF-LE races must meet the IMS requirements, and be non-penalty, there should not be any problems in this area. There is no restriction on the number of sails for PHRF-LE races.
- 11.4 **Mainsail**
- 11.4.1 **Battens** - may be any layout consistent with the IRC/ORR specification (battens of any desired length and angle).
- 11.4.2 **Oversized Mainsail Roach** – The standard sail area formula penalty does not apply to mains with oversized headboard and oversized roaches (i.e. square topped mains). These sails will be handicapped on an individual basis based on where the increase in sail area occurs and any non-standard batten configurations.

- 11.4.3 Mainsail penalties shall be calculated per the following: Where one or more of the following mainsail girth dimensions are exceeded (ref 2007 IMS rule):
HB > the greater of .5' (15.2 cm) or .04 * E
MGT > .22 * E
MGU > .38 * E
MGM > .65 * E
MGL > .9 * E
Mainsails shall be penalized by 3 seconds per mile, plus an additional 3 seconds per mile for each 5% increase of sail area calculation per the following:
MSA (Main Sail Area = $(P/4*(E+MGL)/2) + (P/4*(MGL+MGM)/2) + (P/4*(MGM+MGU)/2) + (P/8*(MGU+MGT)/2) + (P/8*(MGT+HB)/2)$
Note: these requirements are per 2007 IMS rules, ref:
<http://www.orc.org/rules/IMS%20Rule%202007.pdf>
- 11.5 Jib
A jib is defined as any sail, other than a spinnaker, which is to be set in the foretriangle. In any jib the mid-girth, measured between midpoints of luff and leach, shall not exceed 50% of the foot length nor shall the length of any intermediate girth exceed a value similarly proportionate to its distance from the head of the sail.
- 11.5.1 One-design class boats that have battened working jibs that exceed the mid-girth limitation are permitted if they meet the class standard.
- 11.5.2 Tack Points of Jibs
- 11.5.2.1 The LP line is defined as a line abaft of and parallel to the foremost head stay and separated from it by the LP dimension declared in the rating certificate. The foremost head stay is defined as the line joining the upper measurement point of "I" and the forward point of "J" (not "JC").
- 11.5.2.2 No jib may be set under a spinnaker nor inside another jib tacked in such a position that, if the sail were trimmed flat along a line parallel to the center line of the boat, its clew would fall abaft the LP line as defined in section 11.5.3.1 above.
- 11.5.2.3 No jib may be set under or abaft another headsail and so tacked that, if trimmed along a parallel to the centerline of the boat, more than 50% of its area would fall abaft the foreside of the mast.
- 11.5.2.4 No tack line greater than 30 inches may be set on a jib when set flying.
- 11.5.3 Sheeting the Jib
- 11.5.3.1 A jib may be sheeted from only one point, except in the process of reefing the sail
- 11.5.3.2 Jibs may be sheeted to any part of the deck or rail, but no higher than 0.05 x B above the deck, or to the main boom, within the measurement limits (black band delimiting E.)

- 11.5.3.3 Further limitation: no jib may be set in conjunction with any other headsail so as by any means to simulate a double clewed or double luffed jib. (For example, no two jibs may be carried simultaneously in a jib groove device, except briefly while changing sails.
- 11.5.3.4 Any pole end fitting must be attached to the mast at all times except during sail changes, douse, or gibe.
- 11.5.3.5 Bloopers are measured as jibs, and must be included in evaluating the LP of the largest jib for handicapping.

11.6 Spinnakers

11.6.1 Symmetrical Spinnakers:

For measurement as a standard spinnaker, a sail must have the following characteristics

- 11.6.1.1 The sail must be symmetrical about a line joining the head to the center of the foot.
- 11.6.1.2 The mid-girth shall not be less than 75% of the foot length.
- 11.6.1.3 Spinnakers shall be sheeted from only one point on the sail.
- 11.6.1.4 Battens shall not be used in spinnakers.
- 11.6.1.5 Luff or leech shall not, without penalty, exceed $0.95 \sqrt{I^2 + SPL^2}$.
- 11.6.1.6 Maximum width shall be limited to 1.8 times the SPL without penalty.
- 11.6.1.7 Adjustable leach lines are permitted in spinnakers, but may not adjusted while racing.

11.6.2 Asymmetrical Spinnakers:

Asymmetrical spinnakers shall have the following characteristics:

- 11.6.2.1 Area no greater than a symmetrical spinnaker;
- 11.6.2.2 Luff and leech of unequal lengths where $SLU/SLE \geq 1.1$
- 11.6.2.3 $(SLU+SLE) / 2 \leq 0.95 * \sqrt{(I^2 + (\text{the greater of J or SPL})^2)}$
- 11.6.2.4 The asymmetrical spinnaker tack may be tacked to a position forward of the headstay and must be attached to a point (or attached to a tack line that is led to a tack point) that is no more forward of the head stay than 12% of the length of the J up to a maximum of 20", whichever is less, with no penalty assessment. The tack point must be on the centerline of the hull and cannot articulate. There are no restrictions on the length of the tack line.

Sail sizes are still based on the “J” dimension and rig restrictions. Changes to sail size/dimension will incur penalties described elsewhere in the class rules. Flying an asymmetrical from a pole longer than the “J” is not allowed under this rule without penalty.

- 11.6.2.5 Adjustable leach lines are permitted in spinnakers but may not adjusted while racing.
- 11.6.2.6 ASMG is between 1.6 and 1.8 times the greater of J or SPL, and $\geq 75\%$ of the foot length of the sail where:
 - ASMG - Asymmetrical Spinnaker Mid Girth - the distance between the midpoints of luff and leech measured in the shortest path on the surface of the sail.
 - SF - foot length of spinnaker or asymmetrical spinnaker measured in a straight line from clew to clew or tack to clew
 - SLU - Spinnaker or asymmetrical luff length measured around the edges of the sail
 - SLE - Asymmetrical spinnaker leech length measured around the leech of the sail.
- 11.6.3. Code Zero (Code 0) Sails
Code Zero are asymmetrical sails with a mid-girth of $\geq 55\%$ and less than 75% of the foot length of the sail. **Code Zero with mid-girth $<55\%$ are not allowed.**
- 11.6.3.1. The minimum penalty for a Code 0 sail will be 3 seconds per mile, adjusted for sail area as per the asymmetrical rules.

ARTICLE TWELVE – NON-SPINNAKER FLEETS - JAM

- 12.1 Basic rule for foretriangle: Only sails and rig combinations which the boat is designed to carry upwind may be flown off the wind. Off-wind sails are not permitted.
- 12.1.1 Jibs must be attached to the headstay for their entire length of luff when hoisted.
- 12.1.2 Staysails may not be flown with a headsail UNLESS the boat is rated as a cutter. Double headsails are only permitted if they are the designed rig for the boat.
- 12.1.3 Bloopers do not qualify as legal JAM sails.
- 12.1.4 Whisker poles may be used to extend the jib clew when sailing downwind. However they must be no longer than the PHRF spinnaker pole (J) dimension and if extendible must have the PHRF measured length clearly marked. **A PHRF spinnaker pole may be used but must be no longer than the J dimension.** Any strut used must be physically attached to the mast in use in conformance with the US Sailing Association Racing Rules Provisions.

- 12.2 NON-SPINNAKER HANDICAPS (NSH) - Alternate handicaps adjusted for the ratio between foretriangle and mainsail areas will be available for use in non-spinnaker (JAM) races. These adjusted handicaps are not designed for mixed fleet racing between boats with and without spinnakers. Based on work reported from PHRF of Narragansett Bay the local adjustment procedure derived from the rig measurements is defined by:
Note: For the purpose of calculation for boats with a sprit, J in the non-spinnaker class is changed to effective J (Je), which includes additional sprit or pole length.

(non-sprit boats)

$R = (P * E) / (I * J)$ [ratio of main to jib sail areas]

IF $R < 2.23$ THEN $NSH = 29.4 - 9.8 * R$

IF $R \geq 2.23$ AND $R < 3.65$ THEN $NSH = 13.3 - 2.56 * R$

IF $R \geq 3.65$ AND $R < 7.4$ THEN $NSH = 8 - 1.08 * R$

IF $R > 7.4$ THEN $NSH = 0$

$JAM = PHRF + NSH - 12$

(sprit boats - with extendable - retractable pole)

$R = (P * E) / (I * J_e)$

IF $R < 2.23$ THEN $NSH = 29.4 - 9.8 * R$

IF $R \geq 2.23$ AND $R < 3.65$ THEN $NSH = 13.3 - 2.56 * R$

IF $R \geq 3.65$ AND $R < 7.4$ THEN $NSH = 8 - 1.08 * R$

IF $R > 7.4$ THEN $NSH = 0$

$JAM = PHRF + NSH - 12$

ARTICLE THIRTEEN - CREW WEIGHT LIMITATION

- 13.1 The PHRF-LE Crew Limitation Rule is designed to be quite liberal in its weight limit allowing for the addition of children, family and guests who are not necessarily regular crew members. The rule is intended to encourage family participation and yet discourage loading up certain crew weight sensitive boats with excess crew, thereby, dramatically increasing performance, especially in heavy air. It shall be the skipper's responsibility to be sure that the weight limits have not been exceeded on his boat. It is recommended that each boat maintain a current crew list with accurate crew weights (as weighed in street clothes). For the purpose of policing the Rule, the PHRF certificate crew weight divided by 200 is the approximate crew number permitted. It is recommended that if the crew number you are sailing with multiplied by 200 exceeds the allowable certificate weight that you be prepared to document from that crew list, that the weight of the excess number of crew did not exceed the total allowable crew weight. It shall be the skipper's responsibility to maintain and be prepared to produce a current crew/weight list in case of protest. Failure to do so at a hearing may be grounds for disqualification. The race authority may not waive the PHRF-LE Crew Limitation Rule for a PHRF-LE championship race or series.
- 13.2 A crew minimum of three people required aboard boat is applicable to Invitational Races only. The crew minimum also applies to JAM classes.
- 13.3 A total crew weight number limitation will be listed on PHRF-LE handicap certificates and distributed to race sponsors.

- 13.4 The formula for the crew weight limit is derived from work published in the American Sailor by the Lake Michigan PHRF. The allowed crew weight can be expressed by the formula.

$$CWT = 200 * \left[\frac{\sqrt{400 - HCP}}{4} + \frac{LOA^{1.25}}{17.6} + \frac{i * j + p * e}{1000} \right]$$

In those few instances where full measurements are not available a slightly less favorable formula based on a procedure from New England requiring only the overall length of the boat is utilized.

ARTICLE FOURTEEN - MODIFICATIONS

- 14.1 Notification of modifications must be made on the accompanying modification reporting form to be considered valid notification within the meaning of the PHRF-LE class rules that require notification of all modifications. **IF IN DOUBT - REPORT.**
- 14.2 Unreported changes in rig, sails, rudder, hull, keel, ballast, or spinnaker pole will result in immediate suspension of PHRF-LE certificate. Reinstatement of rating will be done only after inspection and/or re-measurement by a PHRF-LE authorized measurer or handicapper. Violations of this policy or unreported changes may result suspension of a certificate by the procedures of Article 18 of these rules or in action under Racing Rules of Sailing Rule 69. **YOUR CURRENT RATING CERTIFICATE BECOMES INVALID AT THE TIME OF THE MODIFICATION. PHRF-LE WILL ISSUE A NEW CERTIFICATE AFTER REVIEWING THE MODIFICATIONS.**
- 14.3 HULL: - PHRF-LE must be notified on the standard modification form of any and all modifications to a boat that modifies its weight, trim, or underwater shape in hull, keel or rudder. The only work which is exempt from the reporting requirement is the repair of grounding damage or filling and fairing of the magnitude associated with batten sanding.
- 14.3.1 It will be assumed that any changes made to boats, other than approximate replacement of broken or damaged components, are made with the intent to increase the speed of the boat. All modifications will initially receive a 3 second or greater penalty. The Handicapping Committee will not accept a request for reduction of a modification penalty until after at least of one season of significant racing by the modified boat.
- 14.4 Adjustments to base ratings.
- 14.4.1 RIGS - The following system is used for adjusting handicaps to account for modifications of standard rigs where no change has been made to hull shape or ballast. Standard rig is considered to be foretriangle and mainsail dimensions no greater than originally specified by the designer and LP no greater than 1.55 times the base of the foretriangle. Regardless of changes to spars (mast, boom, spinnaker pole):
- 14.4.1.1 PHRF-LE must be notified on the standard modification form of any modifications to the standing rigging or spars of a boat. Placement of deck hardware and other control or running rigging is unrestricted provided it is not in contravention of the IMS rules on such matters.

14.4.1.2 Table 1

Parameter	Modification	Penalty (seconds / mile)
Genoa	LP 156 to 170 %	- 3 sec / mi
	LP greater than 170 %	- 6 sec / mi
Mainsail	Mainsail foot	- 3 sec/mi for each 5% of E or fraction thereof
	Short foot	No credit
	Mainsail Area (Girth)	-3 sec/mi where one or more girth dimensions are exceeded, plus an additional -3 sec/mi for each 5% increase of sail area (Ref. 11.4.2.1)
Spinnaker Pole	Up to 100% of J	No change
	> 100 to 105 % of J	- 3 sec / mi
	> 105 to 110 % of J	- 6 sec / mi
	Each additional 5%	- 3 sec / mi
Spinnaker size	Must be within IMS or MORC limits	Any spinnaker which is no-penalty under IOR or MORC shall not incur penalty under PHRF. For oversize spinnakers the excess in girth beyond 1.8 x SPL will be used to calculate a spinnaker pole penalty. PHRF-LE One Design configurations excepted.
Mast Height	I=101% to 102.0% of design	- 3 sec / mi
	I >102.0% to 104.0% of design	- 6 sec / mi
	Each additional 2%	- 3 sec / mi
Fractional Rig (no change in spar)	I=101% to 102.5% of design	- 3 sec / mi
	I >102.5 to 105.0% of design	- 6 sec / mi
	Each additional 2.5%	- 3 sec / mi

14.4.1.3 The above penalties equate to approximately 1/2 of 1% speed increase (3 seconds/mile) for each 5% increase in sail area. This rate of penalty will be used as a guide in the evaluation sail area modifications not listed.

14.4.1.4 Special Modifications - Due to the sometimes variable effects of rig modifications, the handicapping committee reserves the right to declare any particular modification as special and handicap the boat outside of its class.

14.5 CRUISING CREDITS

In recognition of the fact that many boats fitted out for cruising have features that result on decreased boat speed, and with the desire to allow these boats to compete more fairly against boats fitted out for the purpose of racing, PHRF-LE applies the following cruising credits. The adoption of cruising credits is an attempt to draw more sailors into racing. It is NOT designed for any one person or boat to gain an advantage. If the Handicapping Committee finds that a member is attempting to gain an unintended advantage from a cruising credit, the Handicapping Committee may rescind that member's cruising credit.

14.5.1 Cruising Credits are available only with the initial rating application or renewal application. Removal/revision of cruising credits will only be permitted ONE time per season. Please allow 2 to 4 weeks for processing the removal.

14.5.2 Table 2 Cruising Credits

Item	Credit
Roller Furling Jib-Class 1 *	+ 3 sec / mi
Roller Furling Jib-Class 2 *	+6 sec / mi
Roller Furling Main in/at Mast	+ 6 sec / mi
Fixed Propeller 2 blades	+ 6 sec / mi
Fixed propeller 3 blades	+ 12 sec / mi

14.5.3 Specific regulations to qualify for cruising credits

14.5.3.1 Roller Furling Jib Credit:

RF Credit- Class 1 +3 sec/mi

Boat is limited to using 2 headsails*; the 2nd sail LP must be 110% or less.

RF Credit- Class 2 +6 sec/mi

Limited to one sail which must be constructed of woven Dacron or other polyester fibers with a minimum of 4 oz. fabric UV cover on the leech and foot of the sail.

*The sail limitation does not include storm jibs as defined in (ISAF Offshore Special Regulations 4.26).

14.5.3.1.1 All qualifying Roller Furling (“RF”) sails must have foot roaches that do not exceed 2% of the longest perpendicular (LP.), or be within the footprint as defined by a legal 155% sail. I.E. a 150% sail may have a foot roach that exceeds 2% of the LP if the sail fits within the footprint of a 155% sail with 2% foot roach. This measurement must be measured for compliance by a measurer or sail maker.

14.5.3.1.2 The drum of the roller furling must be above deck, with an upper swivel, and the sail must be attached to both. The drum must be able to furl all qualified headsails in a normal manner.

- 14.5.3.1.3 Qualified roller furling sails must be in the luff groove for the full luff of the sail, attached to a swivel at the head of the sail and to the drum swivel at the tack.
- 14.5.3.1.4 No battens of any kind are allowed in qualified roller furling headsails, except battens will be allowed in jibs of 100% of J dimension or less.
- 14.5.3.1.5 For Class 1, sail changes from one qualified RF sail to a second qualified RF sail are allowed during the race provided that the new sail is also attached in the manner stated in point 3.
- 14.5.3.1.6 Qualified RF sails must exhibit the appropriate PHRF-LE RF label in the area of the tack. The labels will be mailed from PHRF -LE upon completion of CRUISING CREDIT application and approval from PHRF-LE. A sail without a label is not a legal sail.
- 14.5.3.1.7 Roller furling credits for boats designed as cutters will be addressed by the committee on an individual basis.
- 14.5.3.1.8 Once you receive your credits, you must race with the qualified RF configuration. Notification and acknowledgement to the PHRF-LE committee is required for all changes. Switching back to a non-RF configuration is allowed only once during the season with no return to RF credits allowed for the rest of the season.
- 14.5.3.1.9 Violation of the RF cruising credit rules is a serious offense. Upon sustained protest, *violators will be disqualified from the race and/or series in which the violation occurs. Additionally, the PHRF-LE committee may revoke future cruising credits and review the protest for further disciplinary action by PHRF-LE.*
- 14.5.3.1.10 Boat classes that have a base rating that includes a roller furling jib, e.g. the J-80, the base rating will be adjusted to allow for the credit.
- 14.5.3.1.11 The roller furling mainsail credit applies only to roller furling in mast or aft of mast systems.
- 14.5.3.2 To receive fixed prop credit:
 - 14.5.3.2.1. the installation must have an exposed shaft and strut;
 - 14.5.3.2.2. Boats that have, at any time, held a certificate indicating a feathering or a folding propeller will receive a fixed propeller allowance only after application and approval by the Handicapping Committee.
 - 14.5.3.2.3. In aperture propellers are excluded for credit.
 - 14.5.3.2.4. boat classes for which all performance data have been accumulated with a fixed propeller will have their base rating adjusted to reflect the fixed propeller credit (note: there will be no net change in rating.)

- 14.5.3.2.5. Boats applying for a fixed propeller allowance must demonstrate the ability to achieve appropriate speed under power. Appropriate speed is defined as a speed, in knots, under power with sails down, with the wind (if any) forward of the beam, equal to the square root of the nominal water line in feet times 1.1.

$$V_{\min} = 1.1 * \text{SQRT}(\text{LWL})$$

example: a boat with a LWL of 25' must power at no less than $[1.1 * \text{SQRT}(25)] = 5.5$ knots.

ARTICLE FIFTEEN - OTHER RATING ADJUSTMENTS AND RATING PENALTIES

- 15.1 RIG AND SAIL MEASUREMENTS - The verification of rig and sail dimensions by physical measurement is considered by PHRF-LE to be necessary to assure the uniform application of handicaps to the boats in our racing fleet. Measurement is a requirement for obtaining a handicap as it is a practical necessity for anyone racing seriously.
- 15.2 SAIL NUMBERS - Effective monitoring and continual improvement of PHRF-LE handicaps requires extensive analysis of race result data. This can be more easily performed when all racing boats carry unique sail numbers. It is preferred that unique sail numbers are used in the PHRF-LE database. Sail numbers can be obtained from US Sailing Association or DRYA in the US or from CYA in Canada. Reference: http://offshore.ussailing.org/Sail_Numbers.htm
- 15.3 AUXILIARY PROPULSION- Any boat which is unable to motor either to the starting line or from the finish line of a race shall be subject to protest either by the race committee or another boat. On outboard rated boats, outboards must be carried on board and must be capable of being reinstalled in their normal motoring position while underway. The protested boat is subject to inspection by a Lake Erie PHRF measurer at the request of the protest committee. If the boat is found not to be in its rated racing trim with respect to motor, fuel, propeller, strut, and shaft it will be subject to time allowance penalty or disqualification from the race or series. Notification by the boat to the race committee is recommended and may avoid a protest and either a time allowance penalty or disqualification.

ARTICLE SIXTEEN - ONE DESIGN RIG CLASSES

- 16.1 PHRF-LE may issue a One Design designation for boats actively racing in a One Design class on Lake Erie. These classes are identified as J-80, J-105, J-24, J-22, Melges 32, Hobie 33, and Tartan 10. The One Design list will be reviewed annually.
- 16.2 The One Design Rating designation for classes not mentioned in 16.1 will be removed; the rating on the eliminated One Design designations will become the PHRF rating with PHRF-LE prescriptions. Class sails purchased on or before April 30, 2019 will be grandfathered until replaced. For boats previously designated ODR, new sails purchased after April 30, 2019 must meet PHRF-LE max measurements and if oversized will receive appropriate penalties and the rating adjusted accordingly.
- 16.3 Ratings with an ODR rating must conform to all hull, rig, and sail rules by its One-Design Class Rules. ODR limitations to crew number and weight shall not apply. Practices permitted by the class, but otherwise prohibited by PHRF-LE Class Rules, or the Racing Rules of Sailing, such as the use of trapezes or movable ballast, shall not be allowed.

Changes in One Design Class Rules shall be brought to the attention of PHRF-LE for review by the affected ODR rated class and a rating adjustment may occur. *Any other configuration shall be considered PHRF-LE optimized and rated accordingly.*

ARTICLE SEVENTEEN - ASSIGNING AND ADJUSTING HANDICAPS – APPEAL OF HANDICAP BY MEMBER

- 17.1 Completed handicap application forms for boats without a PHRF-LE standard handicap will be considered at the next Handicapping Committee meeting. If sufficient information is available a temporary handicap will be assigned at the meeting. There may be a review of the handicap at the next meeting following the initial assignment.
- 17.2 Handicapped boats must sail at least 10 Club Races or 8 Invitational Races to be eligible to submit an appeal requesting a rating change. An appeal for rating change will not be heard unless these conditions are met.
- 17.3 A request for a review of the handicap of a boat by a boat owner must be submitted on the Handicap Appeal form. Appeals will be accepted during the period October 1st through April 1st. The request for review will be put on the agenda for the next Handicapping Committee meeting. A request to make a short presentation must accompany the submission of the Handicap Appeal form at which time the appellant will be notified of the date and time of the meeting. If insufficient data is available for that meeting, or if during that meeting the committee feels more data is needed, a decision may be delayed and the hearing may be rescheduled for the next meeting. A third party that is a PHRF-LE Member such as a competitor can appeal a rating. In such cases, the appellant will be notified and given the opportunity to make a short presentation.
- 17.4 Handicap discussions involve an informational discussion stage and a deliberation stage. The owner may be present for the presentation. The deliberation is in executive session.
- 17.5 If an appellant wishes to make a request for re-consideration it must be accompanied by documentation of at least 10 Club Races or 8 Invitational Races sailed since the last request. At a maximum two appeals for a class will be heard in a single calendar year.
- 17.6 UNLESS DELAYED BY COMMITTEE ACTION, ANY CHANGES IN HANDICAP WILL BE EFFECTIVE IMMEDIATELY. REVISED CERTIFICATES WILL BE MAILED AS SOON AS PRACTICAL AFTER COMMITTEE ACTION.
- 17.7 There is no local higher body for a rating appeal than the Lake Erie Handicapping committee. The committee is composed of a diverse group of sailors, all of whom are available for discussion outside of the meeting. Handicap appeals can be made to US-PHRF if all local procedures fail to produce a satisfactory resolution of a handicap dispute. See your local handicapper or contact US Sailing Association in Portsmouth, RI for details.

ARTICLE EIGHTEEN - DISCIPLINARY PROCEDURE

- 18 PHRF-LE considers that we are engaged in a sporting activity governed by these rules. Sailors participating in violation of these handicapping rules are guilty of unsportsmanlike behavior. Sailing with a boat that does not conform to her certificate or to these rules will result in a suspension of the boat's certificate and her owner's membership in PHRF-LE. The PHRF-LE Committee shall not suspend a member's certificate for measurement or rules discrepancies without a hearing as prescribed in Article 18. Reinstatement will be subject to verification, by physical inspection if necessary, that the boat is in compliance with its certificate and class rules and on completion of any applicable suspension period. Systematic or flagrant violations of class rules are considered a violation of Rule 69 of the Racing Rules of Sailing and will be protested under this rule.

- 18.1 Disciplinary hearing
A disciplinary hearing may be called when the Handicapping Committee has reason to believe that a member is not in compliance with the PHRF-LE regulations or is sailing with an invalid rating certificate.
- 18.1.1 Hearing Committee -A Hearing Committee is appointed by the Chairman of the PHRF-LE Handicapping Committee. It will consist of no less than three and no more than five Area Handicappers who do not regularly race in the same class or at the same club with the defendant member.
- 18.1.2 Notice of Hearing - The chair of the Hearing Committee will arrange a date and time for the hearing with the defendant member no less than fourteen (14) days after contacting the member. The notice of hearing will enumerate the charges against the member.
- 18.1.3 The Hearing - The member may be assisted by counsel. The minutes of the hearing shall constitute the record thereof, provided that the member may, at his expense, have the proceedings recorded by a court reporter. If the member avails himself of a court reporter, a copy of the recorder's report will be provided PHRF-LE at no cost. Witnesses may be called by the member and by the Hearing Committee. The member and the Committee have the right to examine and cross-examine witnesses. The member may make a closing statement on completion of the hearing. The hearing committee, in its sole discretion, will determine which witnesses and what testimony is relevant.
- 18.1.4 Decision - The Hearing Committee will report its decision to the Chairman of the Handicapping Committee as soon as possible but within 14 days. If the committee finds the member is guilty of the alleged infractions, it may
(a) issue a warning, or
(b) suspend the member and / or his boat's certificate for a definite period of time, or
(c) apply a temporary rating penalty.
The member will be notified of the findings and decision by read receipt e-mail within fourteen (14) days of the completion of the Committee's report. Any sanction other than a warning or a suspension less than fifteen (15) days will be reported to the National Authority after the appeals process has been exhausted.
- 18.1.5 Procedure for Appeal of Sanction - The member may appeal the decision by the Hearing Committee to the PHRF-LE Board of Directors, in writing within fourteen (14) days of receipt of the report. Failure to appeal within the prescribed time voids the option to appeal. The Appeal Committee will be the PHRF-LE Board of Directors.
- 18.1.5.1 Notice to the Member - Upon receipt of the member's appeal, the Chairman will notify the member of the date and time of the Appeal hearing.
- 18.1.5.2 Hearing Procedure- The Chairman will appoint a hearing officer. The appellant may be represented by counsel. The minutes of the hearing will constitute the record thereof, provided that the member may, at his expense, have the proceedings recorded by a court reporter. If the member avails himself of a court reporter, a copy of the recorder's report will be provided PHRF-LE at no cost. As a rule, no

new testimony will be admitted. The member and the chair of the Hearing Committee may make opening and closing statements and address the panel.

- 18.1.5.3 Findings - The Appeals Committee may take one of the following actions:
- (a) uphold the findings and recommendations of the Hearing Committee;
 - (b) amend the findings and recommendations of the Hearing Committee;
 - (c) overturn the findings and recommendations of the Hearing Committee;
 - (d) remand the matter back to the Hearing Committee for further hearings.

18.1.6 The findings of the Appeals Committee are final.

ARTICLE NINETEEN - AMENDMENTS

- 19.1 These bylaws may be amended by a two thirds majority of the Area Handicappers voting at any meeting, provided that the proposed amendments shall be stated in full in the notice of the meeting and communicated no less than three (3) days before such meeting.

APPENDIX A

EXAMPLES OF CHANGES TO THAT DO NOT REQUIRE REPORTING:

- Removal of v-berth cushions (v-berth and bulkhead removal must be reported.) Custom boats rated without v-berths are exempt
- Tables may be removed for racing
- Deck hardware and/or positions of deck hardware may be changed
- Conversion from wheel to tiller or tiller to wheel
- Running and standing rigging can be modified and/or replaced, e.g. adding hydraulic backstay adjuster
- Fairing to original design specifications
- Fairing thru-hulls
- Longboarding the hull

EXAMPLES OF CHANGES THAT MUST BE REPORTED (POTENTIAL RATING CHANGE TO BE DETERMINED BY PHRF-LE COMMITTEE, CHANGES REVIEWED ON A CASE BY CASE BASIS) FOR YOUR CERTIFICATE TO BE VALID. RACING WITH UNREPORTED CHANGES IS A GROSS VIOLATION OF THE PHRF-LE CLASS RULES AND IS SUBJECT TO IMMEDIATE CERTIFICATE SUSPENSION. *THIS LIST IS NOT MEANT TO BE ALL INCLUSIVE:*

- Removal of interior berths, cushions, bulkheads, furniture, etc.
- Removal of holding tanks, plumbing, thru hulls, heads, stoves ovens etc. (i.e. replacing marine head, tanks and plumbing with a Porta-Pottie ®)
- Replacement or removal of factory stove (and/or oven) and associated plumbing with a model that is less in size and weight of the original
- Replacement of any interior component with a new component that is not equivalent in size or weight
- Removal of head and/or hull liners
- Removal of bulkheads
- Removal of interior furniture other than the table
- Removal of doors
- Any change from stock (or design) rudder
- Any change from stock (or design) keel; e.g. windowing the keel
- Modification to hull and/or deck beyond normal fairing
- Structural changes
- Removal of internal/external ballast
- Replacement or change of engine
- Replacement or changes to rig, e.g. mast and/or boom
- Complete removal of backstay
- Change from fixed blade to non-fixed blade prop
- Removal of toe rails, handrails, deck cleats, bow fittings
- Removal of any required equipment under section 9.
- Sail changes (must conform to sail measurements in IMS specs). Sail measurements must be made by PHRF measurer/handicapper or recognized sailmaker
- Report to PHRF-LE of any change to boat name or sail number

APPENDIX B

I. Rating Adjustments for various classes / configurations

I.1 Shock 35

I.1.1 The Schock 35 needs to meet these standard Schock 35 equipment levels as reflected in the checklist that follows. If your boat varies from the standard, please indicate what differences your boat possesses. Rating may be adjusted and/or weight added depending on the amount of variation from standard.

Schock 35 Checklist – Standard features

- I.1.1.1 Electrical system: Two 90 amp-hour batteries mounted beneath the navigation seat, panel, switches, harness, and lights (bow, stern, navigation station, quarter berths, vanity, forepeak, cabin, and galley).
- I.1.1.2 Galley: Furniture and sink, fresh water sink pump with fresh water bladder and plumbing, ice box cover, ice box with drain pump, locker with doors and shelves above sink, stove cover, CNG stove with full oven, CNG tank and regulator, tank holding brackets and hardware, with connecting plumbing and hardware. All items to be carried in their normal positions while racing.
- I.1.1.3 Navigation Station: Standard navigation station with top cover, and shelf above.
- I.1.1.4 Head: Enclosed head with marine water closet, head door, holding tank, cleanouts, through-hull fittings, and all plumbing.
- I.1.1.5 Ladder: Builder-provided companionway ladder.
- I.1.1.6 Berths and Cushions: Eight locker covers and wood trim holding mid-ship berth cushions in place. 4 inch cushions for quarter berths and two mid-ship berths, navigation seat and back, main-cabin seat backs; contoured cushions for main cabin seats. Filler and filler cushions aft of the engine box and quarter berth fillers and cushions are not required. Main-cabin cushions and seat backs may be relocated from the main-cabin to the mid-ship berth directly above it, or in the aft berthing area at the owner's option.
- I.1.1.7 Vanity: Port-side vanities with sink, pump, and drain plumbing, cabinet or locker over as supplied by Builder.
- I.1.1.8 Safety Equipment: Safety equipment specified by the U.S. Coast Guard and conforming to PHRF-LE Category IV guidelines is required.

I.2 Wavelength 24

- I.2.1 All Wavelength 24 are rated 159. The rating can be adjusted per the following pending an inspection:
- I.2.2 If as originally designed (hull number less than 100), with hinged v-berth boards, porta potty, wood stringers, wood bulkheads, wood panels alongside cabin bunks. Rating may be adjusted up to 162 or 165. Each Wavelength is to be evaluated for the items above and any rebuild that is different from the original specs such as but not limited to stringers, bulkheads, panels alongside cabin bunks, and any additional structural changes.