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The PHRF Handicap Applications are available on the [race week web site](#).

## I INTRODUCTION

It is imperative that the yacht owner read and complies with these PHRF Rules and Regulations for the 2012 regatta and completes the PHRF handicap application or renewal form accurately. Pay particular attention to the sections of the PHRF handicap application dealing with interior accommodations, boats that have several configurations, and modifications to boats. Boat modifications include modifications to underwater appendages, rig, ballasting and sails (examples: any changes in sail measurements; removing ballast; a new/smaller outboard engine; change in pole length; keel or rudder changes) .

**Boats that can be sailed in different configurations MUST report the configuration to be used in Key West and submit any previously issued certificates in this configuration with the application.**

## II BACKGROUND

As long as boats of different designs have raced against one another, skippers have sought an equitable method of handicapping. Various systems have been tried, based on boat performance or measurement, or a combination of these. In Southern California, where PHRF originated, one method or another of performance handicapping has been in use since 1906. Some of the systems were methods of handicapping boats, some handicapped skippers, and some combined both methods.

With the advent of measurement-based rating systems, and their associated rapid changes in boat design, many skippers have turned to the performance-based handicap system as the best assurance of their continued opportunity to compete fairly against all designs, new or old. As a direct result, the PHRF system has spread throughout the country.

### Performance Handicapping

For Key West 2012, the name of the organization shall be the Key West Performance Handicap Racing Fleet (Herein designated as KW-PHRF). It shall be an objective of this organization to establish and maintain an equitable system of performance-based handicaps for boats participating in this event. It shall further be an objective of this organization to support the mutual interests of United States Performance Handicap Fleet (US-PHRF), as well as other individual performance handicapping groups.

KW-PHRF handicaps are boat performance handicaps. They are based on the speed potential of the boat, based as far as possible on observations of previous racing experience. However, all information available including previously issued measurement certificates of the competing yacht or sisterships is carefully reviewed and considered in determination of the handicap. It is the intent of KW-PHRF handicapping that any well-equipped, well-maintained, and well-sailed boat has a reasonable chance to win; and that any boat that wins a Key West race is indeed well-equipped, well-maintained, and well-sailed. In subsequent years, handicaps may be adjusted as needed on the basis of the boat's performance during the previous Race Week and/or other regattas in their area, so that each well-sailed boat will have an equal opportunity to win.

KW-PHRF handicaps are not intended to reflect the skipper and crew capability, but rather that of the boat; hence KW-PHRF racing is primarily a test of skipper and crew skill. Doing well in a regatta, therefore, requires the exercise of skill and ability. Consistently poor performance, poor maintenance, or deliberately holding back will not result in a more favorable handicap. Conversely, if a skipper and crew sail the boat well and consistently place high, this will not, by itself, lead to a handicap that is less favorable than that of the actual performance potential of the boat.

### Boat Design

Under KW-PHRF, well designed and constructed boats are not expected to be made obsolete by newer designs. KW-PHRF does not use measurement formulas to determine handicaps. However, as noted above, information from measurement certificates, if available, is considered as part of the overall handicapping process. As faster designs appear, they are handicapped accordingly. As a result, one of the major attractions of the KW-PHRF system is that many older boats can race competitively with the latest designs.

KW-PHRF discourages 'rule beating'. If a skipper modifies his boat to go faster, the PHRF Consortium will compensate for the faster speed potential. The use of taller masts, longer spinnaker poles, extra ballast, gutted interiors, or other modifications intended to increase the speed is compensated for in the handicap in order to nullify any unfair advantage.

### Courses

KW-PHRF handicaps are intended to be applied to closed course, windward-leeward races with a mix of upwind and downwind finishes (some races with an equal number of downwind and upwind legs and some with an extra upwind leg) in a range of 12-16 knots (average wind velocity in Key West during the third week of January). Recent 9-10 race series have averaged 5-6 downwind finishes and 3-4 upwind finishes.

### Conclusion

We hope that you enjoy racing in Key West under PHRF. The PHRF handicapping and appeal procedures are routinely being reviewed and refined based on feedback from boat owners and PHRF Consortium members. The boat owner has the opportunity to play an important role in shaping the future of PHRF racing in Key West, not only by sailing competitively, but also by taking the time to provide Premiere Racing with feedback on current PHRF procedures.

### III HANDICAPPING PROCEDURES

A. Premiere Racing will appoint a Key West PHRF Consortium to assign PHRF rating handicaps for this event. The PHRF Consortium will be comprised of approximately eight members from different PHRF regions across the country. The Chief Handicapper and consortium shall communicate primarily through email concerning the handicapping process.

B. Premiere Racing shall administer the rating process and maintain the Key West performance handicapping records. The Chief Handicapper shall recommend to the Consortium handicaps for registered boats and conduct or oversee independent investigations of alleged measurement irregularities.

C. Any questions pertaining to PHRF issues shall be referred to Premiere Racing and not to the individual members of the PHRF Consortium.

D. **PHRF entrants must submit a completed PHRF handicap application or a renewal application** (available on the web site or by calling Premiere Racing), and **all PHRF handicap certificates issued for 2011, and 2010** racing events with the application fee to Premiere Racing prior to the entry deadline (see applicable Notice & Conditions of Race sections below for details). **Current local certificates are required for measurement verification only.** Assigned handicaps may differ from local handicaps due to Key West race course configuration, conditions and other pertinent factors. **Please note that only ONE configuration per boat will be rated. Multiple applications for different rig/sail combinations, etc. for the same boat will not be accepted.**

E. Boats not previously assigned a handicap will be awarded one using systematic procedures applied by the Chief Handicapper and the PHRF Consortium, including comparisons with similar boats with established handicaps, use of the measurements of the boat as submitted by the applicant and such other data obtained by observation of the performance of the boat, type of design, principal dimensions or any other relevant data. Those boats previously assigned a handicap will have their handicap reviewed and adjusted if it is deemed appropriate to do so by the PHRF Consortium.

F. Handicap adjustments of up to 3 seconds per mile may be assigned to boats after class splits are determined to ensure fair racing.

#### G. FROM THE 2012 OFFICIAL NOTICE & CONDITIONS OF RACE:

##### 5.7 AND 5.8 PHRF

5.7.1 *It is the intent of the event organizer to offer PHRF racing based on specific handicap ranges (below) if critical mass is achieved for these specific ranges.*

5.7.2 *The preliminary handicap ranges are listed below along with typical boat models that could race in these classes. The Event Organizer reserves the right to adjust these ranges and boat types based on entries. A minimum of 8 boats are necessary to establish a PHRF class. PHRF owners are asked to pre-register as early as possible to help others gauge the level of interest in PHRF racing.*

*PHRF 1: (-10 to 35) Farr 395 / J/125 / IMS 40's / 1D35 / Beneteau 47.7 / Tripp 40*

*PHRF 2: (35 to 75) Beneteau 40.7 / Andrews 38 / Sydney 36 / Aerodyne 38*

*PHRF 3 (75 to 120) Soverel 33 / Evelyn 32 / Olsen 30 / Cape Fear 38 / Hobie 33 / C&C 37/40 WK*

5.7.3 *Entrants who competed in Key West 2011 and/or 2010 and whose boats will be in the identical configuration do not need to submit the full handicap application. They must instead submit the renewal application and all current PHRF handicap certificates. All other PHRF entrants must submit a completed PHRF handicap application and all current PHRF handicap certificates prior to the December 20, 2011 entry deadline. After that date a late fee of US\$100 must accompany the PHRF application. Current local certificate(s) are required of all PHRF entries for measurement verification only. Assigned handicaps may differ from local handicaps and from previous Key West handicaps in the case of a renewal application. A Key West PHRF certificate will be sent to entrants after the Consortium has assigned a handicap and all certificates will be posted on the event web site. PHRF entrants should not wait for their Key West handicap certificate before submitting their entry.*

5.8 *There will be a High Performance handicap class offered for light displacement boats with LOA ranging from 38-45 feet and an approximate PHRF handicap range of -10 to -70. Additional details and rules for this class are found in the NOR, Amendment to the NOR, and web postings.*

H. One of the data sets upon which handicaps are based are race results. The PHRF Consortium uses systematic techniques to re-compute race results and collate summary statistics by boat class. IRC, IMS, MORC and PHRF race results are incorporated into this data set for purposes of handicapping.

I. When race results are made available after the Key West event and other major regattas, the results may be analyzed to adjust handicaps if necessary. Given that boat displacement and other factors will be considered when determining class breaks, each boat is handicapped against the performance of boats they will likely be racing against in Key West and not necessarily the fleet as a whole. However, winning races does not automatically lead to an adjustment of the assigned handicap.

J. The PHRF Consortium handicaps a boat as if it were equipped to race. For example, no credit is given for undersized sails unless this is the standard class configuration of a recognized class. A boat will be handicapped in the same manner as others that have applied for handicaps; however, if the basic hull or rig differs from others in its class, it will be uniquely handicapped according to guidelines adopted by the Consortium. KW-PHRF does not use measurers, but rather relies principally on the honesty and good sportsmanship of the participants. Premiere Racing and/or the PHRF Consortium reserves the right to request clarification on a boat's measurements and to inspect a boat to ensure that a proper handicap has been assigned. Discrepancies between information provided in the PHRF application and actual measurements of the boat may result in a revised handicap, re-scoring or disqualification from the regatta.

K. Each boat shall be handicapped individually, whether a member of a one-design class or not. Boats originally designed as a one-design class will be handicapped according to their original one-design sail, rig, and hull specifications, unless the boat has been modified from one design configuration.

L. Race Week PHRF certificate will be faxed and mailed to PHRF entrants by Premiere Racing after the PHRF Consortium has assigned a handicap. PHRF entrants should not wait for their Race Week PHRF rating certificate before submitting their entry.

M. The PHRF Consortium reserves the right to change a handicap that has been issued after class splits have been determined. Given the potential performance disparity between heavy displacement and light displacement boats, and where a boat falls within the rating band, there may be the need to adjust the handicap to ensure fair racing in that particular class.

#### **IV MEASUREMENT, APPEALS AND CLASSES**

##### **A. PHRF HANDICAPPING AND APPEALS**

Best efforts will be made to have the preliminary PHRF class breaks with the PHRF handicap for each entry posted on the event web site by December 30, 2011. Additionally, they will be posted on-site at Race Headquarters no later than 1800 on Saturday, January 14, 2012.

B. Premiere Racing will appoint a Special PHRF Handicapping Appeals Committee. Those owners who wish to appeal their handicap or the handicap of a competitor must pay an administrative fee of US\$150 for each handicap they are appealing and submit their appeal in writing to Premiere Racing no later than Tuesday, January 3, 2012. Checks should be payable to Premiere Racing, Inc. If the appeal is denied, this fee will be donated to race week's official charity - Shake-A-Leg Miami. If the appeal is upheld the fee will be returned to the appellant. Appeals should be filed only if there is new and relevant information that the Consortium was unaware of at the time the handicap was assigned. Any questions pertaining to PHRF handicaps should be referred to Premiere Racing and not to the individual members of the PHRF Consortium.

C. No appeals will be accepted on-site except those dealing with administrative or certificate errors. On-site appeals must be submitted at Quantum Race Headquarters between 0800-0900 Sunday, January 15, 2012. Both appellant and owner/representative of the boat(s) whose rating is being appealed (if applicable) must be at Race Headquarters at 09:00 for the appeal hearing. The appellant is responsible for notifying the owner of the boat whose rating is being appealed (if applicable). Appeal forms are available by calling Premiere Racing.

#### **V DEFINITIONS AND MEASUREMENTS (reported in English units – feet and pounds)**

##### **A. Definitions**

ASA Asymmetrical Area.  $(SLU+SLE) * .25*SF + (SMG-.5*SF) * (SLE+SLU)/3$   
(for classes that do not specify another formula)

BAL Ballast of vessel in pounds. Note any additions or deletions from standard and the locations

BEAM Maximum beam of the vessel

BS Distance perpendicular from the front of the mast to the point of sail attachment on the bowsprit

DISPL Displacement of vessel in pounds without crew, water, fuel, or stores aboard

DRAFT Draft of hull and keel. Also include draft with board down if center board boat

E Foot length of mainsail measured from mast to clew in its most outboard position

HBD The maximum fore and aft dimension from the luff of the mainsail, projected if necessary to the extreme aft edge of the leech measured across the widest part of the headboard. Any stiffening added to extend the leech beyond a reasonable roach is to be added to the HBD dimension.

I Height of foretriangle. Measured from deck sheer line abeam the mast to highest point of sail attachment

ISP Spinnaker Halyard Height

## V.A. Definitions (continued)

J	Distance perpendicular from the foreside of the mast line to the point of intersection of the forestay with deck
JSPRIT	Distance from spinnaker tack point to mast when sprit is fully extended
JC	Is the greatest of J or SPL
LOA	Length overall of the hull. Note bowsprit and/or boomkin separately
LP	Distance perpendicular from the luff to the clew of the largest jib
LWL	Length Waterline
MAT	Construction material of hull and keel e.g. fiberglass, lead, iron, etc.
MGM	Mainsail Middle Girth (shortest distance between the midpoint of the leech to the luff)
MGU	Mainsail Upper Girth (shortest distance between 25% of the leech from the head, to the luff)
MGT	Mainsail Top Girth (shortest distance between 12.5% of the leech from the head, to the luff)
P	Luff length of mainsail measured from boom to headboard in its highest position
SA	Symmetrical spinnaker area. $(JC*1.8)*(SLU)*0.87$
SF	Asymmetrical foot length
SL	Spinnaker Luff Lengths
SLE	Asymmetrical leech length
SLU	Asymmetrical luff length
SMG	Asymmetrical mid girth length. (Measurement from 50% of the luff to 50% of the leech)
SMW	Spinnaker maximum girth
SPL	Spinnaker pole length measured with the pole in its fitting and set in a horizontal position athwartship

## B. Headsail Measurements

For the largest headsail (not including spinnaker, but including blooper) compute 100 times LP divided by J.

## C. Symmetrical Spinnaker Measurements

1. For spinnaker maximum width compute 100 times SMW divided by J.
2. For spinnaker luff length compute .95 times the square root of ("ISP" squared + "JC" squared).

## D. Asymmetrical Spinnaker Measurement

1. An asymmetrical spinnaker is allowed on a boat, subject to appropriate handicap adjustments and regulations.
2. Boats using asymmetrical spinnakers must supply the following information with their PHRF handicap applications:
  - SLU A-Sail Luff Length
  - SLE A-Sail Leech Length
  - SF A-Sail Foot Length
  - SMG A-Sail Mid Girth Length (measurement from 50% of the luff to 50% of the leech)

## E. 'Code 0' Headsail Measurements

1. 'Code 0' headsails are allowed on boats subject to an appropriate handicap adjustment. Boats carrying a Code 0 headsail in their sail inventory during race week must declare the sail and supply the following information described in the next paragraph to Premiere Racing with their PHRF Application.

2. The PHRF Consortium will adjust the assigned PHRF handicap to account for the additional sail area that a Code 0 headsail would enable the boat to carry upwind. It is anticipated that the handicaps will be adjusted by between 9-15 seconds/mile depending on the size of Code 0 headsail relative to the size of the boat's jibs. Boats using a Code 0 headsail must supply the following information:

- SLU Sail Luff Length
  - SLE Sail Leech Length
  - SF Sail Foot Length
  - SMG Sail Mid Girth Length (measurement from 50% of the luff to 50% of the leech)
- Material and material weight used in the headsail

3. Definition of a 'Code 0' headsail for the purposes of the Key West PHRF Rules & Regulations:

A headsail that is 'free flying' (not attached to the headstay with a foil or with hanks in the conventional manner for a jib), tacks on the hull, spinnaker pole or sprit, and is used when sailing upwind. Any free flying headsail used upwind will be considered a Code 0 headsail and penalized as if a jib.

## VI RULES & REGULATIONS

1. Premiere Racing shall provide criteria for the eligibility of boats for handicaps in the regatta's Official Notice & Conditions of Race. In applying such criteria, the PHRF Consortium or event organizer may reject the application of any boat they consider not eligible, subject to appeal to the Special Appeal Committee.
2. PHRF entries must be at least 24 feet LOA between hull perpendiculars and have a PHRF handicap of 120 or less. Boats shall be self righting.
3. Only single hulled boats will be handicapped.
4. Base Crew Weight Limitations: For all PHRF entries, boats shall be rated within the following Base Crew Weight Limitations. Crew weigh-ins are not required for PHRF entries, but PHRF Crew Weight Limitations may be subject to protest. Boats shall sail with the same crew in all races unless the change is approved by the Race Chairman. Any request for changes in crew or crew numbers must be submitted to the Race Office in writing prior to the race in which the change is to take place. In addition, boats may carry up to two additional crewmembers above their designated crew weight limitation provided they accept a handicap *adjustment* as prescribed below. Entrants intending to carry additional crewmembers must so indicate on their PHRF handicap application. The PHRF handicap will be adjusted accordingly and the adjusted handicap will stand for the series.

### *Base Crew Weight Limitation:*

Up to LOA (ft)	Base Weight Limit (lbs)	Approximate Crew Number	Up to LOA (ft)	Base Weight Limit (lbs)	Approximate Crew Number
25.00	720	4	40.00	1,800	10
27.00	900	5	43.00	1,980	11
29.00	1,080	6	45.00	2,160	12
31.00	1,260	7	50.00	2,340	13
34.00	1,440	8	53+	Additional 180 pounds (approximately 1 crew) for each 3 feet of LOA over 50 feet.	
37.00	1,620	9			

A boat's LOA is to be rounded to the nearest foot. For example, a 25.49 foot boat is rounded to 25 feet LOA and is allowed a base crew weight of 720 pounds. A 25.5 foot boat is rounded to 26 feet LOA and is allowed a base crew weight of 900 pounds.

Rating adjustment for each additional 180 pounds or part thereof (based on rounded length as described above):

24.00-36.00'	3 sec/mile
37.00 -49.00'	2 sec/mile
50.00'+	1 sec/mile

(No more than 360 extra pounds of crew weight (approximately 2 additional crew) may be carried)

5. PHRF Classes will be scored using the handicaps provided by the Key West PHRF Consortium with actual course distances used. The handicap of an individual boat is a time allowance expressed in seconds per nautical mile. Selected classes may be scored using PHRF time-on-time with actual elapsed times used. The time correction factor (TCF) will be based on the assigned PHRF rating. It is the intention of the PHRF Consortium to handicap boats in an as-built configuration. The PHRF Consortium will adjust the handicaps of boats that have been altered from the as-built configuration to completely compensate for any expected speed advantage. Variations must be reported on the Race Week PHRF rating application form so that the PHRF Consortium can provide a fair handicap.
6. If your entry is a one design boat that will not comply with one design class rules while racing under PHRF at Key West, you shall note specifically how it will not be in compliance in your PHRF handicap application. Unless handicapped in their one design configuration, PHRF ratings are assigned on the assumption that:
  - a) The spinnaker pole length is equal to "J".
  - b) The spinnaker maximum width is 180% of "JC".
  - c) The spinnaker maximum luff length is .95 times the squared root of ("ISP" squared + "JC" squared).
  - d) The genoa LP maximum is 155% of "J",.
  - e) The boat is in racing condition.
  - f) The boat has a folding or feathering propeller, or a retractable outboard motor.
  - g) The asymmetrical spinnaker does not exceed class limits.
  - h) The mainsail girths do not exceed IMS limits for non one-design boats and class limits for one-design boats.
  - i) A code "0" sail is not used.
7. As a minimum, the following changes shall be reported:
  - a) Spinnaker pole length greater than J
  - b) Spinnaker width greater than 1.8 times J
  - c) Spinnaker luff greater than .95 times the square root of ISP squared plus JC squared.
  - d) Rig height (I or P) changes
  - e) Boom length (E) changes
  - f) Rig cross section/weight changes

## **VI RULES & REGULATIONS (continued 7. As a minimum, the following changes shall be reported)**

- g) Rig staying changes
- h) Sail measurement changes, including use of oversize headboards, oversize mainsail girths, and oversize LP's
- i) Keel/ballast weight changes
- j) Keel/rudder camber changes\*
- k) Keel/rudder chord changes\*
- l) Keel/rudder depth changes
- m) Propeller type/size/location changes
- n) Hull canoe body changes
- o) Interior modifications
- p) All asymmetrical spinnaker measurements different from class "standard" sails
- q) Any change in configuration weight or equipment carried (such as a different motor)
- r) Any changes since boat was last rated for Key West race week or since most recent PHRF certificate was issued

\* Minor fairing of the hull/keel/rudder is permitted to correct unfairness in production molds. Fairing of the trailing edges of the keel/rudder is permitted without charge, provided any chord (fore-aft length) of the keel/rudder is not changed by more than two percent and thickness of the keel/rudder is not changed by more than two percent. Fairing of through-hull fittings, rudder gudgeons, and propeller struts is also allowed.

8. If possible deviations to a boat become apparent, other contestants may protest the boat directly in accordance with Racing Rules of Sailing (RRS) –2009-2012 (note that the procedure for this type of protest is different than for the usual rule infractions), or to bring such deviations to the attention of Premiere Racing.

9. Production racer/cruiser boats are required to maintain all accessories and amenities associated with the model in its typical production configuration. Stoves, heads, cabinet and locker doors, drawers, steps, floorboards, headliners, tankage, engine enclosures, stowage covers, anchors, head and passageway doors, etc. shall remain in place as supplied as standard equipment for a boat not to be considered a custom boat. Cushions, carpet and removable tables are not required.

A boat which has altered or removed bulkheads, permanently attached furniture or structural interior components shall be considered a custom boat.

10. All sails shall be cut in accordance with the latest US SAILING or IMS rules; this includes the girths of mainsails, headsails, and spinnakers, leech length of spinnakers, and headboard restrictions except as provided below.

11. Asymmetrical spinnakers must be declared. There will be an adjustment for those boats declaring both symmetrical and asymmetrical spinnakers.

12. Code "0" sails must be declared. There will be an adjustment for those boats declaring Code "0" sails.

13. The mainsail upper girth, MGU, shall not exceed the greater of  $0.28^*E + 0.016^*P + 0.85\text{ft}$  or  $0.38^*E$  without penalty unless the boat is handicapped in the one design configuration. The mainsail middle girth, MGM, shall not exceed the greater of  $0.5^*E + 0.022^*P + 1.2\text{ft}$  or  $0.65^*E$  without penalty unless the boat is handicapped in the one design configuration. The maximum headboard shall not exceed 6 inches or 4% of "E", whichever is larger, without penalty unless the boat is handicapped in the one design configuration.

14. Textured surfaces on the hull and/or appendages that are, or could be, intended to reduce drag are not allowed.

15. No constraints shall be imposed on batten lengths or number.

16. Adherence to the 2012 Key West Safety Requirements is a requirement of rating (to be posted on the event web site).

17. Movable Ballast / Manual Power: The PHRF Consortium will rate those entries which have declared movable ballast and/or other than manual power on their PHRF application. The Consortium will not rate yachts where movable ballast and/or stored power are not an integral part of their basic design. RRS Rules 51 and 52 are amended per Rule 86.1 (c) for those PHRF entries that have declared this information on their PHRF application and then have it specified on their Race Week certificate by the PHRF Consortium. Only those PHRF entries who have declared this change and have been rated accordingly can sail in this configuration.

## **VII: ACCOMODATIONS**

In addition to the above requirements, PHRF rated entries must also meet the following minimum accommodation standards:

- 1. Toilet securely installed, or fitted bucket
- 2. Bunks or pilot berths securely installed, capable of sleeping 50% of the crew
- 3. Galley Facilities, including one burner stove and suitable cooler
- 4. Water containers securely installed or sufficient cooler space to ensure at least 48 oz. of fluid per crewmember.

(end)