

# PHRF BC – Rules

## Updated January 1, 2008

### 1. How to obtain a PHRF of BC Rating

- 1.1 Obtain an application form from the BC Sailing office (604-737-3126) or the BC Sailing website ([www.bcsailing.bc.ca/Content/Competition/PHRF BC](http://www.bcsailing.bc.ca/Content/Competition/PHRF%20BC)).
- 1.2 Complete the application form and return it to BC Sailing with payment as outlined on the form.
- 1.3 If you change yachts or the equipment on your yacht, you must complete a new application form.
- 1.4 Annual certificate renewal or new certificates as well as one certificate change will be covered by the annual fee. Each further certificate change in one calendar year will be assessed an amount equal to the annual fee. Certificates issued after October 15<sup>th</sup> will be considered paid for the current year and following year.
- 1.5 Certificate fees will be reviewed annually. Current fees are indicated on the application and renewal forms.

### 2. PHRF of BC Rating Certificates

- 2.1 All paid up yachts with completed applications will be issued a rating certificate which must be carried aboard when racing. The certificate will indicate the rating and how the yacht is equipped.
- 2.2 Any alteration in a yacht or its equipment will invalidate the yacht's current certificate. Owners who make changes to their yachts are obligated to report the change to PHRF BC and obtain a new rating certificate.
- 2.3 Ratings become effective on the date that the Rating Certificate is issued.

### 3. Eligible boats

- 3.1 Monohull sailboats 18 feet or longer.
- 3.2 Eligible yachts must have either a fixed external keel or internal ballast assuring positive righting moment when the mast is depressed to 90 degrees.

### 4. Ratings

- 4.1 The rating assigned is intended to represent the yacht as it is sailed and to rate that yacht fairly in comparison to other PHRF rated yachts in BC and the US NW. Ratings are also generated based on rating information provided by other PHRF jurisdictions with similar wind conditions.
- 4.2 A yacht's rating is based upon the yacht being fully prepared to race and it being sailed by a highly skilled and competitive crew.
- 4.3 Owners may measure their own yacht and sails or use a third party. Regardless, the owner is responsible for the correctness of all measurements submitted to PHRF BC.
- 4.4 Owners disputing the measurements of any yacht may do so by filing a measurement protest with the race organiser. Protestors should note ISAF Rules 64.3, 65.3 and 78.3.
- 4.5 Ratings are issued in seconds per mile.
- 4.6 Race organizers may wish to score races using a time on time system. A suitable formula is Time Correction Factor (TCF) = 650/520 + rating. The TCF is calculated to four places after the decimal with the fourth place rounded up if the fifth place is .00005 or higher. A yacht's TCF is multiplied by the elapsed time to determine the corrected time.

### 5. PHRF of BC Listings

- 5.1 BC Sailing will maintain files of all available data on all current yachts which have been issued a Rating Certificate.
- 5.2 BC Sailing will provide a listing of currently rated yachts on the BC Sailing website.
- 5.3 Race Organizers and yacht clubs may request a current PHRF of BC listing at any time.
- 5.4 Race Organizers should request that yacht owners provide them with a current valid rating certificate issued by PHRF BC.

## **6 Assignment of PHRF BC Base Yacht Ratings and One Design Rig (ODR) Ratings**

- 6.1 The Base Yacht Rating for a particular yacht is applied to that yacht when equipped as a standard yacht as defined in section 9.0. Base Yacht Ratings of standard yachts may be reviewed by the Handicappers Committee at any time. All affected yacht owners will be notified if a change in their Base Yacht Rating is being considered.
- 6.2 A Tentative Base Yacht Rating may be assigned to a yacht without an existing Base Yacht Rating under PHRF BC. The Tentative rating will be used until the Base Yacht Rating is confirmed by the Handicappers Committee at the next regular Handicappers Committee meeting.
- 6.3 One Design Rig (ODR) class yachts will be defined as classes marketed with standard rigs and/or standard sails that may not conform to the base handicap assumptions used to calculate "As Sailed" ratings for standard yachts ie. Oversize spinnaker poles or oversize mainsails. ODR yachts will be assigned an ODR Base Yacht Rating that reflects their racing in their one-design class rule configuration. ODR rated yachts which have been altered or that will race with sails that do not conform with that yacht's class rules will be subject to the same rating adjustments as are applied to standard yachts unless the alterations result in a higher "As Sailed" rating than the original ODR rating. If the original ODR Base Yacht Rating is lower than the "As Sailed" rating resulting from rig/sail/yacht alterations the ODR Base Yacht Rating will continue to apply.
- 6.4 PHRF BC Certificate Holders, Race Organizers and Handicappers have the right to submit information to be used in determining a Standard Rating.

## **7. Regional Ratings**

- 7.1 Any region within the Province may elect to modify PHRF BC Ratings. Modifications may consist of regional Tentative Standard Ratings or rating adjustments applied to yachts with certain types of equipment or characteristics.

## **8. Rating Appeals**

- 8.1 The Handicappers Committee shall resolve rating appeals of PHRF certificate holders regarding their own or other yachts. All PHRF BC member yacht clubs may nominate a representative to the Handicappers Committee.
- 8.2 Any yacht's rating may be appealed by any PHRF BC certificate holder, any handicapper recognized by PHRF BC or the Handicapper's Committee.
- 8.3 Owners wishing to appeal a Base Yacht Rating shall submit a completed Rating Appeal Form to the BC Sailing office. Appeal forms are available on the BC Sailing website or from the BC Sailing office. The Appeal Form must be completed in full and accompanied by relevant supporting documentation including all available race results for the past year. The Appeal information will be forwarded to all Handicapper Committee members and any PHRF BC Certificate Holders whose yachts ratings may be directly affected by the requested change.
- 8.4 A rating appeal presented at two consecutive appeals hearings that pertains to substantially the same issue as previously decided will be subject to a filing fee equal to the annual certificate fee. This fee may be waived at the discretion of the committee.
- 8.5 Appeals shall be heard twice a year in the spring and fall. A Notice of Appeals Hearing will be sent to all PHRF BC Yacht Owners informing them of the time and place of the Hearing. Owners who have applied to the Committee for a Base Yacht Rating change will be required to present their appeal request to the Committee in person or by nominee. Any PHRF BC Certificate Holders affected by another's appeal will also be given an opportunity to present. Decisions of the Handicappers Committee will be mailed to all affected parties within two weeks of the Appeals Hearing.

## **9. Standard Yacht**

- 9.1 A Base Yacht is one that is eligible for PHRF BC (Section 3) and is manufactured on a production basis that assures a uniform product. A yacht judged to be modified from its base configuration in any manner may be considered a custom yacht and will be assessed by the Handicappers on a one of a kind basis.
- 9.2 A Standard Base Yacht is assumed to be configured in the following manner:
  - (a) Standard sails as defined by the section Standard Sail Areas.

- (b) Standard spars from the builder.
  - (c) Auxiliary power as standard from the builder.
  - (d) Interior fixtures and accommodation as supplied standard by the builder.
- 9.3 An ODR Base Yacht is assumed to be configured in the following manner:
- (a) Standard sails as defined by the yacht's class rules.
  - (b) Standard spars as defined by the yacht's class rules.
  - (c) Auxiliary power as defined by the yacht's class rules or as fitted to participate in a PHRF racing fleet.
  - (d) Interior fixtures and accommodation as defined by the yacht's class rules.

## 10.0 Sail and Rig Measurement Definitions

### BASIC DIMENSIONS

- I: Fore triangle height, measured from the "main deck datum" to the top of the genoa or spinnaker halyard shive, whichever is higher. Main deck datum is 4% of the beam above the shear line. (ex. a boat with a 9.5' beam would have main deck datum .38' above the shear. (.04 x 9.5' = .38') This boat would subtract .38' from the distance between the shear and the top of halyards when determining "I".
- J: Base of fore triangle, measured horizontally from the fore side of the mast to a point from the forestay attaches to the deck.
- P: Luff length mainsail, measured from tack to head when stretched to the maximum sailing tension. The "P" must be marked with black bands when different from standard "P".
- E: Foot length mainsail, measured from aft side of the mast to the clew when stretched to maximum sailing tension. The "E" must be marked with "black bands 1" wide if actual "E" is smaller than standard "E"
- SPL: Spinnaker Pole length, measured from centre of mast to extreme end of pole when the pole is mounted horizontally and 90 degrees from fore and aft.
- WPL: Whisker Pole length, measured from centre of mast to extreme end of pole when the pole is mounted horizontally and 90 degrees from fore and aft.

**GENOA** - A genoa has a mid girth of less than 50% of Foot Length.

- LP: Measured from clew to closest point on luff.
- LLJ: Luff Length Largest headsail, measured from tack to head when stretched to the maximum tension used when sailing. If in doubt project luff and foot (tack) or luff and leach (head) to the point of intersection.

**SPINNAKER** - A spinnaker has a mid girth of more than 50% of foot length.

- LLS: Luff Length Spinnaker, measured from head to clew when stretched taut.
- G: Girth of spinnaker, measured by folding the spinnaker in half, measuring maximum half width and doubling. G will be at least 1.8 \* J of the standard boat and at least 1.8 \* SPL of the actual boat.

### MAINSAIL

- HB: Headboard, measured from the luff of the mainsail to the leach at the widest part of the headboard.

To find MGU and MGM measurement points:

- \* Find the mid point of the leach by folding the head to the clew. Mark mid point.
- \* Find the 3/4 point of the leach by folding the head to the mid point leach. Mark 3/4 point.

MGU: Mainsail Girth Upper, measure from 3/4 leach to closest point on luff

MGM: Mainsail Girth Middle, measure from mid point leach to closest point on luff

### ASYMMETRIC SPINNAKER

- DH: Girth between points .5' from head on luff and leach
- D1: Girth between points 1/4 leach and 1/4 luff from head
- D2: Girth between points 1/2 leach and 1/2 luff from head
- D3: Girth between points 3/4 leach and 3/4 luff from head
- DF Foot

## 11. Standard Sail Areas - dimensions from Standard Yacht

- 11.1 Jib  $0.765 * I * J$
- 11.2 Spinnaker  $1.566 * I * J$

11.2 Mainsail  $0.59 * P * E$

**12. Actual Sail Areas** - dimensions from Actual Yacht

- 12.1 Jib  $0.5 * LLJ * LP$   
12.2 Spinnaker  $0.87 * LLS * G$   
12.3 Mainsail  $(3 * E + 4 * MGM + 4 * MGU + HB) * P / 12$   
12.4 Asymmetric Spinnaker  
 $(DH + DF + 4 * (D1 + D3) + 2 * D2) * (LUFF + LEECH) / 24$   
12.5 Two Jib Offwind  $(0.5 * LLJ * LP) * .9$  larger +  $(0.5 * LLJ * LP) * .8$  smaller

**13. Sail Measurement**

Sail measurement shall be done in accordance with the current ISAF measurement instructions.

**14. Adjustment for Non Standard Jibs** - First Code

- 14.1 A yacht will be rated on its largest jib or upwind sail.  
14.2 Jibs shall have a system keeping them in close proximity to their stay such as hanks or luff foil system. The distance from the mid point of the leach of a jib to the nearest point of the luff shall not exceed  $.5 * LP$ . The distance from the mid point of the foot of a jib to the nearest point of the luff shall not exceed  $.6 * LP$ .  
14.3 Sail Area Factor Jib (SAFJ)  
 $SAFJ = \frac{\text{Actual Jib} + \text{Standard Main}}{\text{Standard Jib} + \text{Standard Main}}$   
14.4 A yacht's rating will be adjusted for a Non Standard Jib as per the following table.

SAFJ	Adjustment	Code
1.17+	-15	L
1.13+ - 1.17	-12	9
1.09+ - 1.13	-9	8
1.05+ - 1.09	-6	7
1.01+ - 1.05	-3	6
0.97+ - 1.01	0	5
0.94+ - 0.97	3	4
less than 0.94	6	3

**15. Rating Adjustment for Non Standard Spinnakers** - Second Code

- 15.1 A yacht will be rated on its largest spinnaker whether symmetric or asymmetric.  
15.2 Asymmetric spinnakers which are tacked to a fixed point on the centre line are given a 6 second credit.  
15.3 If a spinnaker is flown from a point above I the actual spinnaker area will be calculated using a SL equal to or greater than the height of the spinnaker halyard.  
15.4 Sail Area Factor Spinnaker (SAFS)  
 $SAFS = \frac{\text{Actual Spinnaker} + \text{Standard Main}}{\text{Standard Spinnaker} + \text{Standard Main}}$   
15.5 A yacht's rating will be adjusted for a Non Standard Spinnaker as per the following table.

SAFS	Adjustment	Code
1.705+	-69	P
1.675+ - 1.705	-66	O
1.645+ - 1.675	-63	N
1.615+ - 1.645	-60	M
1.585+ - 1.615	-57	L
1.555+ - 1.585	-54	K
1.525+ - 1.555	-51	J
1.495+ - 1.525	-48	I
1.465+ - 1.495	-45	H
1.435+ - 1.465	-42	G

1.405+ - 1.435	-39	F
1.375+ - 1.405	-36	E
1.345+ - 1.375	-33	D
1.315+ - 1.345	-30	Z
1.285+ - 1.315	-27	Y
1.255+ - 1.285	-24	X
1.225+ - 1.255	-21	W
1.195+ - 1.225	-18	V
1.165+ - 1.195	-15	U
1.135+ - 1.165	-12	9
1.105+ - 1.135	-9	8
1.075+ - 1.105	-6	7
1.015+ - 1.075	-3	6
0.955+ - 1.015	0	5
0.895+ - 0.955	3	4
0.835+ - 0.895	6	3
0.775+ - 0.835	9	2
0.715+ - 0.775	12	1
0.000+ - 0.715	15	S

15.6 When a yacht intends to use two headsails with LPs over 100% when sailing off the wind the Actual Area Two Jib Off wind shall be calculated and used when calculating SAFS if it is larger than the Actual Area Spinnaker.

15.7 To be classified as N.F.S. a yacht may not fly more than one jib nor fly any sail forward of the mainmast which does not qualify as a jib (Section 14.2).

15.8 Yachts classified as N.F.S. shall receive the following credits.

Size	Adjustment	Code
Jib coded 7, 8, 9	15	A
Jib coded 4, 5, 6	18	B
Jib coded 1, 2, 3	21	C

## 16. Spinnaker Pole and Whisker Poles

16.1 If SPL is longer than "J" it shall result in Actual Spinnaker Area being calculated with  $G = 1.8 * SPL$  or the sails measured girth whichever is greater.

16.2 Yachts with asymmetric spinnakers and fixed sprits shall receive a 6 second credit.

16.3 A whisker pole with a length up to  $0.8 * LP$  or J, whichever is larger, may be used with no penalty.

16.4 Whisker poles longer than  $.8 * LP$  shall be assigned ratings up to 9 seconds faster as determined by the Handicappers.

## 17. Rating Adjustment for Non Standard Mainsails - Third Code

17.1 Sail Area Factor Main (SAFM)

$$SAFM = \frac{(0.33 \text{ Std Spin}) + (0.67 \text{ Std Jib}) + \text{Actual Main}}{(0.33 \text{ Std Spin}) + (0.67 \text{ Std Jib}) + \text{Std Main}}$$

17.2 A yacht's rating will be adjusted for a Non Standard Mainsail as per the following table.

SAFM	Adjustment	Code
1.086+	-19	L
1.066+ - 1.086	-15	9
1.046+ - 1.066	-11	8
1.026+ - 1.046	-7	7
1.006+ - 1.026	-3	6
0.986+ - 1.006	0	5
0.966+ - 0.986	3	4
0.946+ - 0.966	6	3
0.926+ - 0.946	9	2
0.906+ - 0.926	12	1
0.000+ - 0.906	15	S

## 18. Non Standard Engine and Propeller Installation

18.1 Standard yachts normally equipped with inboard engines shall rate 6 seconds faster when converted to outboard engines.

18.2 Standard yachts normally equipped with outboard engines shall rate 6 seconds slower when converted to inboard engines.

18.3 Yachts with engine and propeller installations incapable of driving the boat at 90% of hull speed shall receive a 6 second penalty (Code 7).

18.4 A yacht with an inboard engine will receive one of the following rating adjustments as appropriate:

Feature	Adjustment	Code
Folding or feathering prop	0	5
Solid 2 blade exposed to flow	6	4
Solid 3 blade exposed to flow	12	2

Sail drives shall be considered standard and treated as above.

18.5 A yacht with an outboard engine will receive one of the following rating adjustments as appropriate:

Feature	Adjustment	Code
Outboard mounted on a bracket ready for immediate use with fuel tank connected	0	M
Outboard on board but not ready for use	-6	E
No outboard	-9	F

## 19. Miscellaneous

19.1 Standard yachts with alterations may have adjustments made to their ratings as follows:

Item	Adjustment	Code
Unanticipated alteration	as estimated	D
Removal of standard equipment	as estimated	G
Hull alteration	as estimated	H
Keel alteration	as estimated	K
Significant rig alteration	as estimated	R
Extreme displacement	as estimated	W

19.2 When a yacht has been modified so that the Handicappers Committee feels it no longer has the general characteristics of the original Base Yacht, the yacht may be assigned an "X" classification and the yacht will be assigned a new Base Yacht Rating as estimated by the Committee.

## 20 Changes and Modifications to these Rules

Certificate Holders should be aware that the formulas and tables listed can be altered and that the Handicappers will attempt to improve the handicapping system by making adjustments from time to time. Certificate Holders are encouraged to make submissions for consideration at any time to the Handicappers Committee through the BC Sailing office.