

# PHRF BC – Rules

## 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](http://www.bcsailing.bc.ca/Content/Competition/PHRF)).
- 1.2 Complete the application form and return it to BC Sailing with payment as outlined on the form. Certificates may take up to 3 weeks to process.
- 1.3 If you change yachts or the equipment on your yacht you must complete a new application form at the time the changes are enacted.
- 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 are valid from January 1<sup>st</sup> through December 31<sup>st</sup> each year.
- 1.5 Certificate fees will be reviewed annually. Current fees are indicated on the Application and Change form.

## 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 the yacht or its equipment will invalidate the current certificate. Owners who make changes to their yachts are obligated to report the change to PHRF BC and obtain a new rating certificate at the time the changes are made.
- 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. Yachts with retractable ballasted keels must keep their keels fully extended while racing.

## 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 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 organizer. Protesters 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) =  $650 / (520 + \text{rating})$ . 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 of 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 to 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 and NG (next generation) 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 Boat yachts ie. oversize spinnaker poles, oversize mainsails, undersized jibs, etc. and as determined by the Handicappers Committee. These yachts will be assigned Class Base Yacht ratings that reflect their racing in their one-design class rule configuration in the case of ODR yachts or their original, as-designed configuration in the case of NG yachts. ODR or NG yachts that have been altered or that intend to race with sails that do not conform with that yacht's class rules/as-designed configuration will be subject to the same rating adjustments as are applied to standard yachts unless the alterations result in a slower "As Sailed" rating than the original ODR/NG rating. If the original ODR/NG Base Yacht Rating is faster than the "As Sailed" rating resulting from rig/sail/yacht alterations the ODR/NG Base Yacht Rating will continue to apply.  
This Rule will also apply to any yacht designated an 'X' with Base Yacht Rating and configuration established at the time of the 'X' designation.
- 6.4 PHRF BC Certificate Holders, Race Organizers and Handicappers have the right to submit information to be used in determining a Base Yacht 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 current 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 current PHRF BC certificate holder, any handicapper recognized by PHRF BC or the Handicapper's Committee.
- 8.3 Certificate holders 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 current PHRF BC Certificate Holders that 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 current PHRF BC certificate holders informing them of the time and place of the Hearing. Certificate holders who have applied to the Committee for a Base Yacht Rating change will be required to present their appeal request to the Committee (either 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 except that unsecured cushions and salon tables may be removed.
- 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 sheave, 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".
- ISP: As designed spinnaker hoist height measured vertically from the deck datum to the halyard sheave exit.
- H: Actual height of the spinnaker sheave above deck datum if modified from design original.
- J: Base of fore triangle, measured horizontally from the fore side of the mast to the point where the forestay attaches to the deck.
- JC: As designed base of the spinnaker foretriangle. For boats designed with asymmetric spinnakers JC is measured horizontally from the fore side of the mast to the point where the tack of the spinnaker attaches to the deck or bowsprit. For boats designed with symmetric spinnakers and conventional mast mounted spinnaker poles JC is measured from the fore side of the mast to the extreme end of the spinnaker pole.
- SPL: Measured base of spinnaker foretriangle. For boats with asymmetric spinnakers SPL is measured horizontally from fore side of the mast to the point where the tack of the spinnaker attaches to the bowsprit or articulating pole in sailing position. For boats tacking an asymmetric spinnaker to their bow stem fitting, anchor roller or pulpit SPL will be considered equal to JC (SPL = JC). Extended anchor rollers will be considered bowsprits. For boats with conventional mast mounted poles SPL is measured from the fore side of the mast to the extreme end of the spinnaker pole. For boats racing with both symmetric and asymmetric spinnakers SPL is measured for the largest spinnaker carried.
- 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 75% of foot length. Code 0 sails will be classified as genoas.
- 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 equal to or greater than 75% of foot length.
- SLU: Spinnaker Luff length measured from head to tack when stretched taut.\*
- SLE: Spinnaker Leach length measured from head to clew when stretched taut.\*
- SGM: Girth of spinnaker measured from the midpoint of the luff and leach with the spinnaker stretched taut across the girth. Midgirth (SGM) will be at least 1.8\*JC.
- SGF: Foot length measured from tack to clew when stretched taut.
- \*For symmetric spinnakers SLU and SLE will be equal.

### MAINSAIL

- 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"

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

**MAINSAIL (cont.)**

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

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

- 11.1 Jib  $0.765 * I * J$
- 11.2 Spinnaker  $1.494 * ISP * JC$
- 11.3 Mainsail  $0.59 * P * E$

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

- 12.1 Jib  $0.5 * LLJ * LP$
- 12.2 Spinnaker  $0.83 * ((SLU + SLE / 2) * ((SGF + (4 * SGM)) / 5))$
- 12.3 Mainsail  $(3 * E + 4 * MGM + 4 * MGU + HB) * P / 12$

12.4 For yachts where H is greater than ISP use the greater value of SLU or  $(0.95 * (H^2 + JC^2)^{0.5})$  to calculate the non standard spinnaker area.

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.
- 15.2 Yachts whose largest rated spinnaker is symmetric shall not fly an asymmetric spinnaker from any tack point forward of their rated SPL.

15.3 Sail Area Factor Spinnaker (SAFS)

$$\text{SAFS} = \frac{\text{Actual Spinnaker} + \text{Standard Main}}{\text{Standard Spinnaker} + \text{Standard Main}}$$

15.4 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
1.045+ - 1.075	-3	6
0.955+ - 1.045	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

15.5 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.

15.6 To be classified as NFS a yacht may not fly more than one jib nor fly any sail forward of the mainmast which does not qualify as a jib, (14.2).

15.7 Yachts classified, as NFS shall receive the following credits.

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

## 16. Spinnaker Pole and Whisker Poles

16.1 If SPL is longer than "JC" it shall result in Actual Spinnaker Area being calculated with  $\text{SGM} = 1.8 * \text{SPL}$  or the sail's measured girth whichever is greater.

16.2 Yachts originally designed with a symmetric sail plan retrofitting to an asymmetric spinnaker with tack point on centreline shall receive a 6 second credit.

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

16.4 Whisker poles longer than  $.8 * \text{LP}$  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)

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

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

<b>SAFM</b>	<b>Adjustment</b>	<b>Code</b>
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 - Fourth Code**

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:

<b>Feature</b>	<b>Adjustment</b>	<b>Code</b>
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:

<b>Feature</b>	<b>Adjustment</b>	<b>Code</b>
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:

<b>Item</b>	<b>Adjustment</b>	<b>Code</b>
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
Rudder alteration	as estimated	S
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.

19.3 All changes made to a yacht will be deemed to be speed enhancing.

**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.