

SLVYRA PHRF HANDICAP SYSTEM



The SLVYRA PHRF system is a rating system designed to serve the handicap racing needs of racer-cruiser monohull sailboats. Characteristically, these will have outside ballast for self-righting, cabins, inside living equipment, engine and propeller. The SLVYRA PHRF system is adaptable to many variations from this general theme, however, up to a certain limit. Thus, unballasted monohulls and multihulls have such different sailing characteristics from the ballasted monohull racer-cruisers that handicapping them to race together is very difficult. SLVYRA prefer to use separate PHRF handicap lists for unballasted monohulls, for multihulls and for ballasted monohull. SLVYRA also recommend separating results for each of these types of sailboats in joined regattas. The SLVYRA handicap lists for unballasted monohulls and multihulls are available on the SLVYRA website under "Handicaps; Dinghy's and Multihulls"

PHRF ratings are based on a "standard class boat" to which is fitted a "standard class rating".

A. DEFINITION OF "STANDARD CLASS BOAT":

1. Is built to a single design of which the manufacturer has made, or intends to make, a number of copies with nearly identical hulls and nearly identical rigs.
2. Has external ballasted keel as designed;
 - a. Some boats are designed with retractable keels, or retractable ballasted centerboards. These are acceptable as standard parts of a PHRF standard boat if kept locked down at all times while racing.
 - b. Some boats are designed with ballast inside the hull plus daggerboard or centerboard, which may be entirely unballasted. This is acceptable as PHRF standard if the daggerboard or centerboard is locked down at all times while racing.
3. Has displacement as designed.
4. Has **I**, **ISP**, **J**, **JC**, **P** and **E** dimensions as designed.
5. Largest jib has **LP** = 1.55(**J**).
6. Has mainsail with standard **P** and standard **E**, where **E** is measured horizontally and is assumed at 90 degrees to **P**.
7. Largest spinnaker has Girth (**G**) of 1.80(**JC**), and luff length, **LLS** = $0.95\sqrt{[(\mathbf{ISP})^2 + (\mathbf{JC})^2]} = \mathbf{ISP}$ (approx.). The top of the spinnaker halyard sheave is at the upper end of the **ISP** dimension. If top of spinnaker halyard sheave is placed higher than top of **ISP**, the **H** dimension must be taken and a rating adjustment will be made per section H par.3 and shown coded in the 5th digit, under "S".

SLVYRA PHRF HANDICAP SYSTEM



8. Spinnaker pole length = **JC**.
9. Is equipped with engine and propeller and fuel tanks.
10. If Inboard Auxiliary Engine: has folding or feathering propeller, propulsion assembly sufficient to drive boat at 90% of "hull speed" in flat water. Hull speed defined: V (knots) = $1.33\sqrt{LWL}$ (ft.)
11. If Outboard Auxiliary Engine: Installed on permanent mounting, permanently connected to securely fastened fuel tanks, completely retracted but ready for instant immersion, propulsion assembly sufficient to drive the boat at 90% of "hull speed" in flat water.
12. Fuel onboard sufficient for two hours running at 90% of hull speed.
13. Has inside fittings and equipment as intended by the manufacturer. This may include all or part of the following: Head, sinks, stoves, icebox, navigation desk, berths, lockers, shelves, drawers, table, doors, curtains, instruments, domestic water, plumbing, wiring, fuel and water tanks, etc.
14. Has outside equipment required by safety regulations of the National Authority and also equipment intended by the manufacturer. This may include all or part of the following: ground tackle, lifelines, pulpits, pushpits, life preservers, emergency signalling equipment, fire extinguishers, self-draining cockpits, waterproof decks and cabins.
15. The PHRF standard class boat excludes hiking aids (straps, trapeze, planks)
16. For boats without lifelines such as *Soling*, *Etchells*, *Star*, the PHRF standard class boat is defined with skipper and crew in a normal seated position.

B. GENERAL PHILOSOPHY ON RATING ADJUSTMENTS:

Although many sailboats vary from the definition of "standard" above, it is not intended that these be barred from PHRF racing or penalized or that boats will be forced to recut sails or alter. Instead, rating adjustments will be made proportionately to the speed changes caused by "non-standard" variations. Thus, ratings will be adjusted proportionately "faster" for non-standard variations which cause the boat to sail "faster" and proportionately "slower" for non-standard variations which cause the boat to sail "slower".

Some typical adjustments are as follows:

SLVYRA PHRF HANDICAP SYSTEM



Modified Standard Class Sailboats: Common variations which may call for rating adjustments are:

- "Faster" because:
- larger than standard sails
 - significantly altered rigging
 - significantly altered keel or hull
 - significant removal of interior or exterior equipment ("stripping")
 - propulsion does not meet criteria in section A. 9, 10, or 11.
 - less than standard displacement

- "Slower" because:
- smaller than standard sails
 - more than standard displacement
 - IB propulsion with solid propeller
 - OB propulsion with immersed propeller
 - conversion from OB to IB

One-Off/Custom/Non-Class Sailboats: These are rated individually as there is no "standard class". However, to develop the code that goes along with "non-class" rating, the handicappers approach should be to develop a rating which would be a "standard" class rating if there were a class and then thereafter make rating adjustments for variations from the assumed "standard".

Ballasted "bare" boats such as *Soling, Star, Dragon, Etchells, Six Meter*, etc. These by intent of the manufacturer are devoid of much equipment as described in section A. Standard class ratings for these boats take this into account. Standard class ratings in other words, are "faster" than they would be if the boats had the missing equipment. "Bare" boats may vary from "standard" and, if so, rating adjustments should be made proportionately to changes in boat speed.

C. RATING CODE:

The purpose of this Code is to show the factors on which the rating is based. A typical rating code is 6355A.

First Column	Second Column	Third Column	Fourth Column	Fifth ** Column
JIB	SPINNAKER	MAIN	PROPULSION	MISCELLANEOUS
6*	3	5	5	A

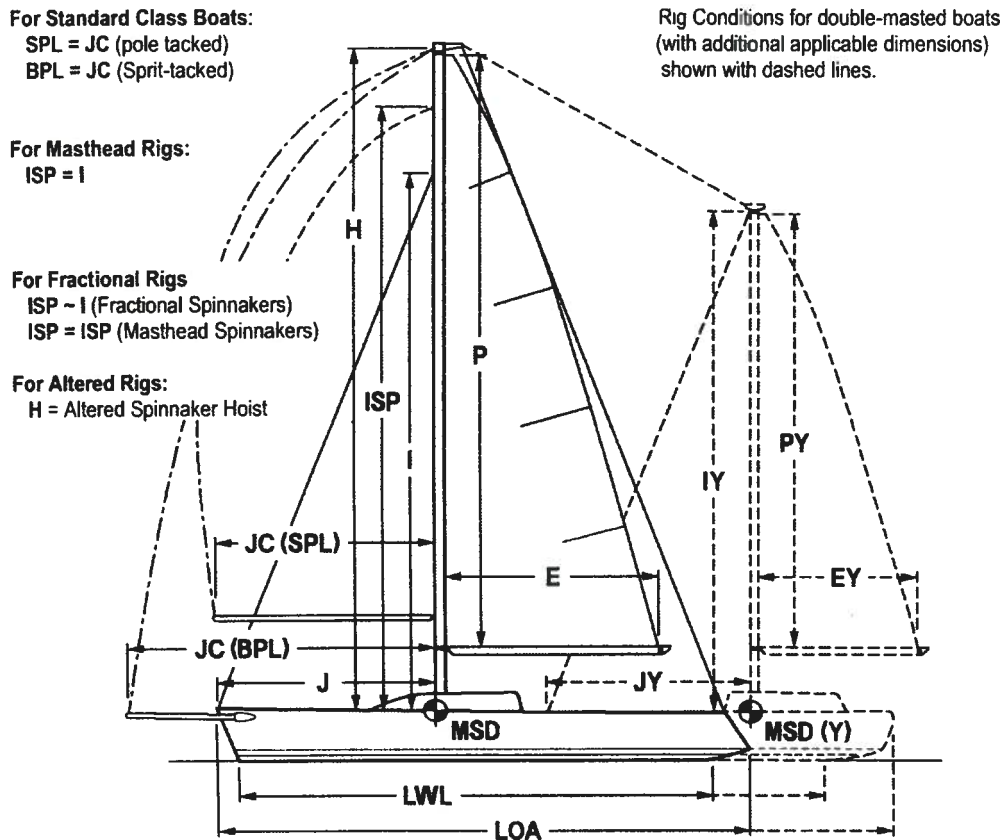
* For the meaning of the symbols appearing in each column space see text hereafter.

** The fifth column space usually will not be occupied, but may be used by a letter representing a miscellaneous adjustment, where such is required. In the event of more than one miscellaneous item, additional Code columns will be shown in the sixth, seventh, etc. column.



D. RIG AND SAIL AREA TERMS AND DEFINITIONS:

STANDARD CLASS RIG DIMENSIONS



"MSD" MAST-TO-SHEAR DATUM. The height of the deck used as datum shall be taken as 4% of beam above the shear line abreast of the mast

"I" AS-DESIGNED headsail hoist height measured vertically from the **MSD** to the intersection of the head stay, or its projection, with the forward face of the mast.

"ISP" AS-DESIGNED spinnaker hoist height measured vertically from the **MSD** to the top of the spinnaker halyard sheave.

"J" AS-DESIGNED fore triangle base length measured horizontally from the **MSD** to the point where the head stay or its projection intersects the shear line abeam of the point of stay attachment. For boats with bowsprit stays, the shear line shall be projected to determine the point of intersection.

SLVYRA PHRF HANDICAP SYSTEM



- "**JC**" AS-DESIGNED spinnaker foot rig length measured horizontally from EITHER the **MSD** to the tack point on the forward end of a fully extended bowsprit pole OR from the forward face of the mast to the tack point of a mast-mounted spinnaker pole in standard position. For stem head-tacked spinnakers, **JC=J**.
- "**E**" AS-DESIGNED mainsail foot length measured from the after face of the mast to the forward edge of the boom clew measurement band.
- "**P**" AS-DESIGNED mainsail hoist measured vertically from the inside edges of the tack and head mast measurement bands.
- "**SPL**" Spinnaker pole length. The horizontal distance measurement of the spinnaker pole, when in its fitting on the mast and set in a horizontal position athwart ships, measured from the center line of the yacht to the extreme outboard end of the pole and fittings used when spinnaker is set.
- "**BPL**" Bowsprit pole length. The horizontal distance measurement of a fixed or fully extended, telescoping bowsprit pole from the **MSD** to the pole's forward tack point, wherein the tack point shall be taken as the forward-most point of a pole fixed tack sheave or the centerline of an articulating pole tack fitting.
- "**WPL**" Whisker pole length. The horizontal distance measurement of the whisker pole, set in a horizontal position athwart ships, measured from the center line of the yacht to center of clew cringle (or D ring of clew) of the jib to which whisker pole is attached.

ALTERED RIG DIMENSIONS

- "**H**" ALTERED spinnaker hoist height measured vertically from the **MSD** to the top of the altered spinnaker halyard sheave.

MEASURED SAIL DIMENSIONS

MAINSAIL

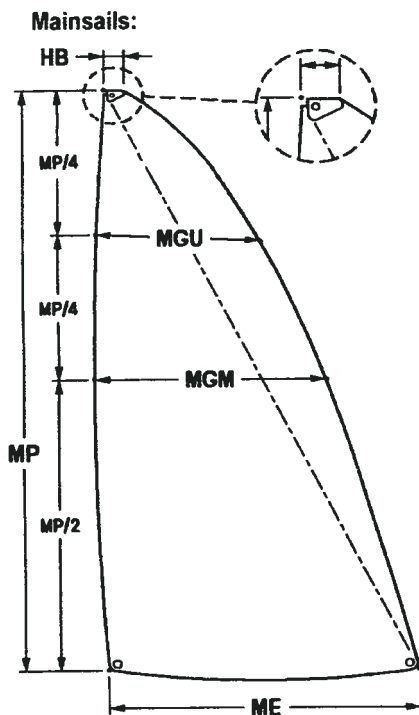
- "**ME**" MEASURED mainsail foot length from tack to clew measuring points.
- "**MP**" MEASURED mainsail luff length from head to tack measuring points.
- "**HB**" MEASURED mainsail headboard length from after top edge of the headboard to the head measuring point.

SLVYRA PHRF HANDICAP SYSTEM

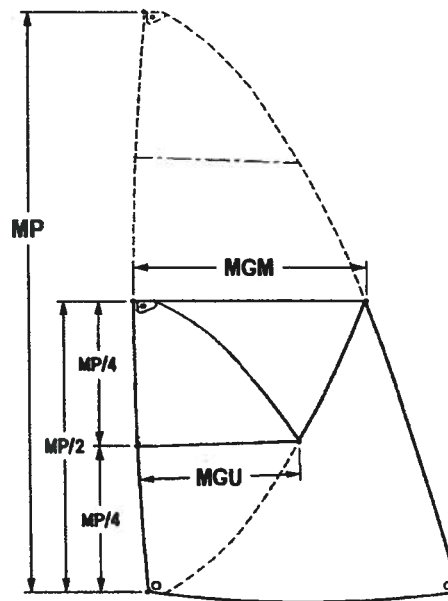


"MGM" MEASURED mainsail mid-girth (1/2 girth) length from luff to leech mid-girth measuring points.

"MGU" MEASURED mainsail upper-girth (3/4 girth) length from luff to leech upper-girth measuring points.



Folding Diagram:



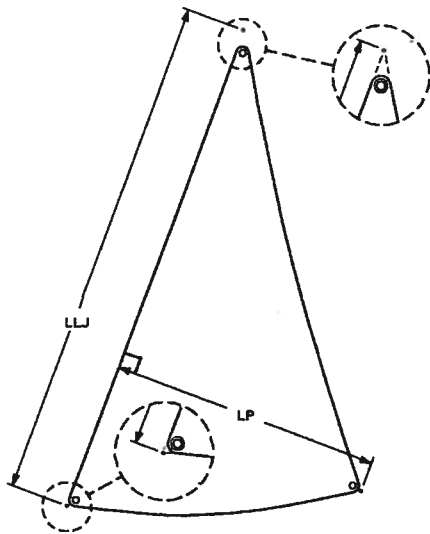
JIB / GENOA

"LLJ" MEASURED headsail luff length from head to tack measuring points.

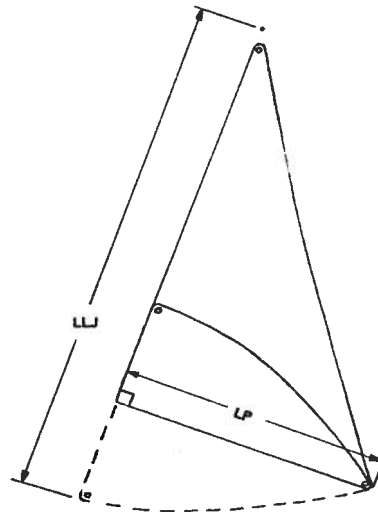
"LP" MEASURED headsail perpendicular length from clew measuring point to forward edge of the luff.



Headsails:



Folding Diagram:



SPINNAKER

Symmetric

"LLJ" MEASURED symmetric spinnaker luff / leech length from head to tack measuring points.

"Gmax" MEASURED symmetric spinnaker maximum horizontal girth between luff and leech edge.

Asymmetric

"SLU" MEASURED asymmetric spinnaker luff length from head to tack measuring points.

"SLE" MEASURED asymmetric spinnaker leech length from head to clew measuring points.

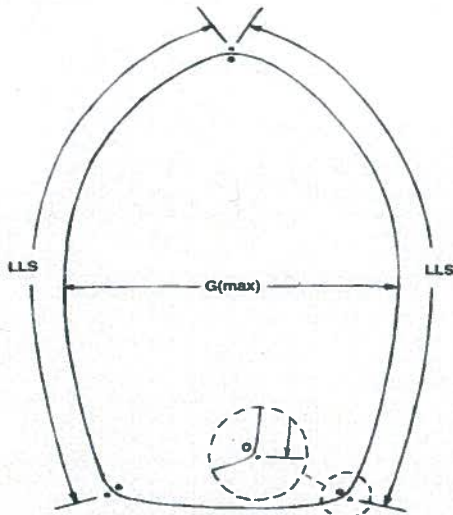
"SGM" MEASURED asymmetric spinnaker mid-girth (1/2 girth) length from luff to leech mid-girth measuring points.

"SGF" MEASURED asymmetric spinnaker foot length from tack to clew measuring points.

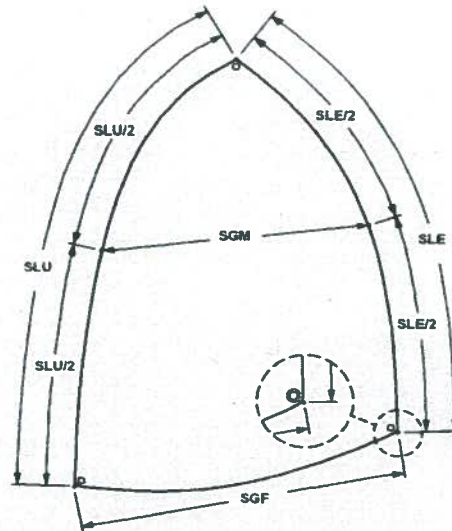
SLVYRA PHRF HANDICAP SYSTEM



Symmetrical spinnaker



Asymmetrical spinnaker



E. SAIL AREA FORMULAS: (Summary)

STANDARD SAIL AREAS: (Standard sail areas are denoted by "STD")

Use the Standard Dimensions **I**, **ISP**, **J**, **JC**, **P**, **E** from SLVYRA's "Standard Handicap and Dimension" list. This list is available on the SLVYRA website under "Standard Handicap and Dimension"

$$\text{STD Jib Area} = (1.02)(I)(1.55)(J)/2 = 0.790(I)(J)$$

$$\text{STD Symmetric Spinnaker Area} = (0.87)(ISP)(1.80)(JC) = 1.566(ISP)(JC)$$

$$\text{STD Asymmetric Spinnaker Area} = (0.72)(ISP)(1.80)(JC) = 1.3(ISP)(JC)$$

$$\text{STD Mainsail Area} = 0.59(P)(E)$$

$$\text{STD Average Headsail Area} = 2/3(\text{STD Jib SA}) + 1/3(\text{STD Spin SA})$$

SLVYRA PHRF HANDICAP SYSTEM



ACTUAL SAIL AREAS: (Actual sail areas are considered non-standard and are denoted by "NS")

Use Actual Sail and Rig Dimensions:

$$\text{NS Jib Area} = 0.50(\text{LLJ})(\text{LP}) \text{ (preferred)}$$
$$\text{or} = 1.02(\text{I})(\text{LP})/2$$

$$\text{NS Symmetric Spinnaker Area} = 0.87(\text{LLS})(\text{Gmax})$$

$$\text{NS Asymmetric Spinnaker Area} = 0.83[\frac{(\text{SLU}+\text{SLE})}{2}(\frac{\text{SGF}+4(\text{SGM})}{5})]$$

$$\text{NS Mainsail Area} = [3(\text{E})+4(\text{MGM}+\text{MGU})+(\text{HB})](\text{MP})/12$$

(if you don't have girth measurements, use Area= 0.59(MP)(ME)

F. SAIL MEASUREMENTS:

When determining actual sail areas, the following measurement instructions shall apply: "Sails shall be measured in a dry state, with just sufficient tension to remove wrinkles across the line of the measurement being taken. Corners of the sail will be taken at the intersection of the projections of the adjacent sides.

As an option, mainsail **MP** & **ME** dimensions may be taken between black bands on mast and boom. Sails measured thus may not extend beyond the black bands when racing.

G. RATING ADJUSTMENTS FOR NON-STANDARD JIBS: ("NS" Jibs)

A boat is rated on its largest jib / genoa or upwind staysail, if staysail is larger. Rating adjustment is based on area change over or under the total area of standard (STD) sails, resulting from a non-standard (NS) jib. A standard SLVYRA jib has **LP/J** = 1.55.

JIB SAIL AREA FACTOR: (SAFJ)

$$\text{SAFJ} = \frac{\text{Total SA with NS Jib}}{\text{Total SA with STD 1.55 Jib}} = \frac{\text{NS Jib SA} + \text{STD Main SA}}{\text{STD 1.55 Jib SA} + \text{STD Main SA}}$$

Compute standard (STD) and actual (NS) sail areas using formulas in Section E. Compute SAFJ, enter the Rating Adjustment Table in column 2, read adjustment in column 3, and read Code in column 4.

In determining area of STD **LP/J** = 1.55 Jib, use STD **J** and STD **I** for the class, even though actual **I** and actual **J** on the boat have been altered. Altered **I** and **J** would be used in computing area of NS Jib. STD **I** and **J** for all classes are listed in SLVYRA's "Standard Handicap and Dimension" list.

SLVYRA PHRF HANDICAP SYSTEM



RATING ADJUSTMENT TABLE FOR NS JIBS: (SAFJ)

NOMINAL SAFJ	SAFJ RANGE	RATING ADJUSTMENT	RATING CODE
1.19	1.17+ - UP	- 15 sec.	L (Large)
1.15	1.13+ - 1.17	- 12	9
1.11	1.09+ - 1.13	- 9	8
1.07	1.05+ - 1.09	- 6	7
1.03	1.01+ - 1.05	- 3	6
1.00 STD	0.97+ - 1.01	0	5
0.96	0.94+ - 0.97	+ 3	4
0.92	0.90+ - 0.94	+ 6	3
0.88	0.86+ - 0.90	+ 9	2
0.84	0.82+ - 0.86	+ 9	1
0.80	0.00+ - 0.82	+ 9	S (Small)

For cat rigged boats use Code (C).

No rating adjustment for staysails flown between large jib on headstay and the mast.

No rating adjustment for use of headfoil on headstay in place of hanks.

H. RATING ADJUSTMENTS FOR NON-STANDARD SPINNAKERS: ("NS" Spinnakers)

A boat is rated based on its largest spinnaker. The rating adjustment is based on the area change over or under the total area of STD sails, resulting from a NS spinnaker. A STD spinnaker has **G/J** (or **JC**) = 1.80, and luff, **LLS** = **ISP**. **ISP** and **JC** are the STD for the class, even though actual **ISP** and **JC** have been altered. Altered **ISP** and **JC** would be used in computing area of NS spinnaker. STD **ISP** and **JC** for all classes are listed in SLVYRA's "Standard Handicap and Dimension" list.

SPINNAKER SAIL AREA FACTOR: (SAFS)

$$\text{SAFS} = \frac{\text{Total SA with NS Spin}}{\text{Total SA with STD Spin}} = \frac{\text{NS Spin SA} + \text{Std Main SA}}{\text{STD Spin SA} + \text{Std Main SA}}$$

Compute sail areas using formulas in Section E. or boats where the **H** dimension is greater than **ISP**, use the greater of **H** or **LLS** in conjunction with the adjusted girth dimension to calculate the non-standard spinnaker area. Compute SAFS and enter the Rating Adjustment Table below in column 2 to determine adjustment in column 3 and rating Code in column 4.

SLVYRA PHRF HANDICAP SYSTEM



RATING ADJUSTMENT TABLE FOR NS SPINNAKERS: (SAFS)

NOMINAL SAFS	SAFS RANGE	RATING ADJUSTMENT	RATING CODE
1.72	1.705+ - UP	- 69 sec.	P (Large)
1.69	1.675+ - 1.705	- 66	O
1.66	1.645+ - 1.675	- 63	N
1.63	1.615+ - 1.645	- 60	M
1.60	1.585+ - 1.615	- 57	L
1.57	1.555+ - 1.585	- 54	K
1.54	1.525+ - 1.555	- 51	J
1.51	1.495+ - 1.525	- 48	I
1.48	1.465+ - 1.495	- 45	H
1.45	1.435+ - 1.465	- 42	G
1.42	1.405+ - 1.435	- 39	F
1.39	1.375+ - 1.405	- 36	E
1.36	1.345+ - 1.375	- 33	D
1.33	1.315+ - 1.345	- 30	Z
1.30	1.285+ - 1.315	- 27	Y
1.27	1.255+ - 1.285	- 24	X
1.24	1.225+ - 1.255	- 21	W
1.21	1.195+ - 1.225	- 18	V
1.18	1.165+ - 1.195	- 15	U
1.15	1.135+ - 1.165	- 12	9
1.12	1.105+ - 1.135	- 9	8
1.09	1.075+ - 1.105	- 6	7
1.06	1.015+ - 1.075	- 3	6
1.00 STD	0.955+ - 1.015	0	5
0.94	0.895+ - 0.955	+ 3	4
0.88	0.835+ - 0.895	+ 6	3
0.82	0.775+ - 0.835	+ 9	2
0.76	0.715+ - 0.775	+ 9	1
0.70	0.000+ - 0.715	+ 9	S (Small)

For cat rigged boats with no spinnaker use Code (T)

CODE "ZERO" SPINNAKERS:

A code "zero" is a spinnaker with a mid-girth less than 75% of its foot girth. These sails are usually flown in front of the headstay on a free furler and must be considered as jibs. Calculate the sail area of code "zero" spinnakers using the asymmetric spinnaker formula but rate as a headsail using the sail area adjustment factor formula and adjustment table for jibs. A boat shall be rated on the basis of its largest jib or code "zero" spinnaker.

SLVYRA PHRF HANDICAP SYSTEM



Boats using only code “zero” spinnakers are not eligible for NSF (No Flying Sail) rating credits and a “5” shall be entered as the second digit of their rating Code.

MISCELLANEOUS RATING ADJUSTMENTS: (Associated with spinnakers)

There is no adjustment for staysails flown in addition to a spinnaker, in the space between spinnaker sheet and guy, forward of the mast and aft of the forestay, and tacked to foredeck.

For “streakers” (also “bloopers”) flown in addition to a spinnaker, add miscellaneous Code A (fifth column) to boat’s rating Code and adjust rating by – 3 seconds. This changes RRS 50.1.

“NFS” RATING ADJUSTMENTS: (For boats without spinnakers or “Flying Sails”)

To be eligible for "NFS" rating adjustments boats must use working sails only, attached by their luffs to permanent stays or spars. Not less than 90% of the **P** or **LLJ** must be attached to a permanent stay or spar with not less than eight snaps or sail track slides distributed evenly along the luff; or alternately, attachment may be in a luff rope groove. Only one working sail luff may be attached to each permanent stay or spar. Only one sail may be used forward of the main mast on sloops, cutters, yawls and ketches unless the yacht is specifically rated for carrying additional sails.

When changing jibs, the "up" jib must be lowered to the deck before the replacement jib is raised. Before lowering the "up" jib, the replacement jib may be hanked on the forestay or inserted in the second groove of headfoil up to five feet above deck. The second halyard may be attached before lowering the "up" jib. Jibs may not be attached to temporary or detachable stays.

“NFS” rating adjustments exclude such sails as spinnakers, mizzen staysails, streakers, spinnaker staysails, drifters, etc. flying from their own temporary stays. The rating adjustment is based on the largest jib’s SAFJ. For eligible boats use the following table:

“NSF” RATING ADJUSTMENT TABLE:

Actual (NS) Jib Size	Rating Adjustment	2nd Column Code
Jibs Coded 7,8,9	+ 15 secs	A
Jibs Coded 4,5,6	+ 18 secs	B
Jibs Coded 1,2,3	+ 21 secs	C

ROLLER FURLER

Boats with roller furling jibs mounted on their own rollerstays, immediately aft of the permanent forestay, are eligible for “NSF” rating adjustment provided that no sail is flown from the permanent forestay.



I. RATING ADJUSTMENTS FOR NON-STANDARD SPINNAKER POLES AND SPRITS:

SPL or **BPL** = spinnaker pole length. (See Section D Definitions) **ASPL** = Allowable spinnaker pole length

For spinnakers with **Gmax** or **SGM** = 1.8(**JC**) and smaller, **ASPL** = **JC**

For spinnakers with **Gmax** or **SGM** greater than 1.8(**JC**), **ASPL** = **Gmax** or **SGM/1.8**

For calculation of the rated spinnaker area, the spinnaker girth used shall be determined as follows:

If 1.8(**SPL**) is not equal to **Gmax** or **SGM**, then the rated **Gmax** or **SGM** shall be the greater of the actual **Gmax** or **SGM** or 1.8(**SPL**).

There are no rating adjustments for spinnaker poles shorter than **ASPL**.

Sprits for asymmetrical spinnakers can be fixed, telescoping or articulating. Adjustments for the effect of tacking an asymmetrical spinnaker on a sprit at a distance **JC** greater than **ASPL** forward of the mast shall be as follows:

JC greater than ASPL	Rating Adjustment	5th Column Code
0.01 to 3 ft.:	-3 secs	X
3+ to 6 ft.:	-6 secs	Y
6+ ft. and longer:	-9 secs	Z

J. RATING ADJUSTMENTS FOR NON-STANDARD WHISKER POLES:

The Whisker pole is defined as a pole (or substitute) used to wing out a jib to weather on off-wind legs. **WPL** is the pole length. **AWPL** is the allowable length. (See Section D)

For jibs whose **LP** = 1.25(**J**) and smaller, **AWPL** = **J**

For jibs whose **LP** is larger than 1.25(**J**), **AWPL** = 0.8(**LP**)

SLVYRA PHRF HANDICAP SYSTEM



For whisker poles whose length is in excess of **AWPL**, add rating adjustments as follows:

Excess Length	Adjustment	Code (fifth column)
(1.001 to 1.10)(AWPL)	-3 sec.	B
(1.111 to 1.20)(AWPL)	-6 sec.	C
(1.201)(AWPL) and longer	-9 sec.	D

No rating adjustment for whisker poles whose length is less than **AWPL**.

Any equipment combination used to obtain a length **WPL** (or **WP** plus penalty length) is authorized, provided the length for which the boat is rated **AWPL** is not exceeded.

K. RATING ADJUSTMENTS FOR NON-STANDARD MAINSAILS: ("NS" Mainsails)

A standard mainsail has a standard **E** as designed measured horizontally and a standard **P**, assumed at 90 degrees to **E** and a standard leech area = 0.09(**P**)(**E**). STD **E** and **P** for all classes are listed in SLVYRA's "Standard Handicap and Dimension" list.

Non-standard mainsails can result from changes in **P**, in **E**, in leech area, from "droopy boom", mast rake or mast bend. Calculate the standard and non-standard mainsail areas using formulas in Section E.

MAIN SAIL AREA FACTOR: (SAFM):

$$\text{SAFM} = \frac{\text{Total SA with NS Main}}{\text{Total SA with STD Main}} = \frac{0.33(\text{STD Spin SA}) + 0.67(\text{STD Jib SA}) + (\text{NS Main SA})}{0.33(\text{STD Spin SA}) + 0.67(\text{STD Jib SA}) + (\text{STD Main SA})}$$

Or for « NFS » boats;

$$\text{SAFM} = \frac{\text{STD Ave. Headsail SA} + \text{NS Main SA}}{\text{STD Ave. Headsail SA} + \text{STD Main SA}}$$

Compute sail areas. With computed SAFM, enter the Rating Adjustment Table in column 2, read the rating adjustment in column 3, and read rating Code in column 4. The Code goes in third column of the boat rating Code.

SLVYRA PHRF HANDICAP SYSTEM



RATING ADJUSTMENT TABLE FOR NS MAINSAILS: (SAFM)

NOMINAL SAFM	SAFM RANGE	RATING ADJUSTMENT	RATING CODE
1.10	1.086+ - UP	- 15 sec.	L (Large)
1.08	1.066+ - 1.086	- 12	9
1.06	1.046+ - 1.066	- 9	8
1.04	1.026+ - 1.046	- 6	7
1.02	1.006+ - 1.026	- 3	6
1.00 STD	0.986+ - 1.006	0	5
0.98	0.966+ - 0.986	+ 3	4
0.96	0.946+ - 0.966	+ 6	3
0.94	0.926+ - 0.946	+ 6	2
0.92	0.906+ - 0.926	+ 6	1
0.90	0.000+ - 0.906	+ 6	S (Small)

On boats whose mainsail dimensions result in a smaller than standard area rating code "Black Bands" are required on the mast and boom to limit the mainsail to the **P** & **E** dimensions provided by the owner for calculation of the mainsail area.

L. RATING ADJUSTMENTS FOR NON-STANDARD PROPULSION: (Engine and Propeller)

SLVYRA's "Standard handicap and dimension" table shows for each boat the Standard Rating and type of motor, inboard (IB) or outboard (OB), associated with the Standard Rating.

If an Outboard rated boat is converted to Inboard, revise STD boat rating to 6 sec. slower (+6). If an Inboard rated boat is converted to Outboard, revise STD boat rating to 6 sec. faster (-6).

With the revised STD rating, go to the appropriate Schedule; Inboard Schedule for inboard equipped boats, and Outboard Schedule for outboard equipped boats and for other rating adjustments in the event engine or propeller installation is non-standard.

Sail Drive (also "Volvo Drive") is considered the same resistance as the shaft, strut and propeller hub of a typical inboard installation. Propellers of different kinds attached to a Sail Drive shall get the same allowances as if attached to a typical propeller shaft.

SLVYRA PHRF HANDICAP SYSTEM



INBOARD ENGINE RATING ADJUSTMENT SCHEDULE:

ADJUSTMENT DESCRIPTION	RATING ADJUSTMENT	RATING CODE
Engine plus folding or feathering prop too small to drive boat at 90% of "Hull Speed":	- 6	7
A boat with this deficiency is not eligible for slower adjustments coded 4, 3 and 2.		
Retractable prop with flush fairing plate:	- 6	6
TD folding or feathering prop:	0 STD	5
Solid 2 blade prop in aperture:	0 STD	5
Solid 2 blade prop exposed to water flow; not in aperture:	+ 6	4
Solid 3 blade prop in aperture:	+ 6	3
Solid 3 blade prop exposed to water flow; not in aperture:	+ 12	2
Out-of-Ordinary prop. installation; Handicapper to estimate resistance relative to STD prop adjustments:	(as estimated)	1

OUTBOARD ENGINE RATING ADJUSTMENT SCHEDULE:

No outboard motor onboard, - 3 for not being able to drive boat at 90% of "Hull Speed", - 6 for no installation:	- 9	F
Outboard of sufficient size, onboard but not installed in accordance with Section A, Paragraph 11:	- 6	E
Outboard motor and prop on board but not capable of driving boat at 90% of "Hull Speed":	- 3	P
A motor with this deficiency is not eligible for slower adjustments coded "K".		
Standard boat: Outboard installed as described in Section A, Paragraph 11; engine retracted when racing:	0 STD	M
Engine not retracted, prop immersed on both tacks, any number of blades:	+ 6	K

SLVYRA PHRF HANDICAP SYSTEM



M. MISCELLANEOUS RATING ADJUSTMENTS:

Insert miscellaneous rating adjustment Codes in the fifth and, as required, successive columns of a boat's rating Code. For rating adjustments greater than 3 sec per mile, use multiple Code columns. I.e., for a keel change of - 6 sec per mile, use Code KK.

For extensively altered boats, where there may be three or more alteration items, rate boat as a custom or "one-off" boat as opposed to a standard class boat and indicate as special rating by adding a (MOD) suffix to the boat's class designator; i.e., C+C 29-2 MOD.

ADJUSTMENT DESCRIPTION	RATING ADJUSTMENT	RATING CODE
Streaker (also "Blooper") is a sail set flying in the space to leeward of the spinnaker sheet, forward of the mainsail and alongside the spinnaker. "Streaker" adjustment will apply to any sail flown in this space. (i.e. genoa, drifter, small spinnaker.):	- 3	A
Whisker pole longer than AWPL :	- 3 to - 9	B, C or D
Items unanticipated by this schedule:	- 3	E
Faster due to removal of gear and equipment: required by Section A	- 3	G
Significant hull alterations:	- 3	H
Significant keel alterations:	- 3	K
Non-standard use of retractable (lifting) keels and daggerboards:	- 3	L
Adjustment for "non-standard" hiking and "hiking aids":	- 3	N
Significantly altered rig; thinner mast, mast bend equipment, more stays, etc.:	(as estimated)	R
Spinnaker sheave above ISP dimension	(indicator only)	S
JC greater than ASPL (X = - 3, Y = - 6, or Z = - 9)	- 3 to - 9	X, Y or Z
Adjustment for multiple jibs	(indicator only)	W

Adapted from the Chapter 2 of the 2003 PHRF-NW handicap manual.
Revised in 2010 with PHRF-NW protocol changes and US Sailing guidelines.