

PERFORMANCE HANDICAP RACING FLEET RULES OF FCSA

INTRODUCTION

First Coast Sailing Association (FCSA) promotes both one-design and Performance Handicap Racing Fleet (PHRF) racing in area clubs listed below. These rules apply only to PHRF racing of boats that are not racing in a one-design class. One-design class boats racing in a PHRF fleet shall adhere to one-design class rules and will be rated in accordance with local PHRF rating procedures, unless prescribed otherwise in the Notice of Race and Sailing Instructions for a particular race. The PHRF rating for one-design classes will account for differences between the one-design class rules and standard PHRF rating rules.

FCSA provides rules and guidelines for participation in FCSA PHRF races. For FCSA PHRF Races and Regattas, where points are accumulated for Annual Series Trophies, the individual clubs must include in their Notice of Race (NOR) and Sailing Instructions (SI's) as a minimum the following classes: Performance Classes consisting of Spinnaker and Non-Spinnaker Class boats and a Cruiser Class that may contain both Spinnaker and Non-Spinnaker class boats.

PHRF is not a measurement system, but relies on the honesty and sportsmanship of its membership to ensure that accurate information on a boat's configuration is made available to the Rating Committee for review. PHRF is a low-cost system that facilitates the enjoyment of racing for anyone who owns a sailboat that can be rated under PHRF rules.

Ratings are established for boat models, not individual vessels or their crews. Base ratings are established for each production model of boats in our area. For each PHRF member, information is declared on a PHRF Rating Application Form. This information is used to modify the rating based on specific guidelines as well as allowances by the Rating Committee. These ratings are reviewed periodically, no less than annually, for consistency and accuracy by all members of the Rating Committee, composed of volunteers from area clubs and the Chief Rater. The area clubs that participate and govern FCSA are:

Epping Forest Yacht &CC	North Florida Cruising Club	St. Augustine Yacht Club
Florida Yacht Club	Rudder Club of Jacksonville	Harbour Sailing Club, Inc.
Halifax River Yacht Club	Smyrna Yacht Club	St. Augustine Sailing

FCSA PHRF base boat ratings and Class designations have been adopted from other PHRF rating areas that have similar wind patterns with larger racing fleets. This information has been in use for many years and is very well vetted. PHRF ratings are commonly expressed in terms of seconds per nautical mile, usually in 3-second/nautical mile increments. Under Time on Distance (TOD) scoring, a boat's handicap is multiplied by the

distance of the race course (Course lengths are based on the shortest rhumb line distance) and deducted from the elapsed time to obtain the corrected time. Under Time on Time (TOT) scoring, a Time Correction Factor (TCF) is derived from a boat's PHRF rating (usually carried out to the fourth decimal place). Under TOT scoring, a boat's elapsed time on a race course is multiplied by its TCF to obtain a corrected time. With TOT scoring, the actual distance of the race course is not critical. Sponsoring organizations that conduct races are not limited to any one applied methodology of the PHRF handicap values defined by these rules.

PERFORMANCE HANDICAPPING

PHRF is an acronym meaning "Performance Handicap Racing Fleet", a rating system organized under U.S. Sailing Association guidelines, using compiled data of sailboats of varying performance characteristics that are handicapped for racing on the basis of observed performance, rather than the measured dimensions. It is the purpose of the PHRF system to handicap yachts of various classes or types on the basis of the potential speed of a well-sailed, well-maintained, and well-equipped specimen of each type. It is not the purpose of the PHRF system to handicap skippers and crews. Lack of sailing skill, poor sail inventory, fouled or poorly prepared bottom, and excess equipment are not accounted for in the Base Ratings. None of these factors should be basis of a higher adjusted rating. Conversely, the well-prepared, well-sailed boat with new sail inventory should not be penalized. The Base Ratings are conditioned on the assumption that each boat is well-prepared; with clean, well-prepared bottom and foils, new sails, and sailed with a high level of skill.

PHRF certification is open to single-hulled, self-righting boats and multi-hulled boats that conform to the requirements as described in the FCSA Bylaws, Sections 3.2.1 and 3.2.2, current revision approved in a Special General Meeting of FCSA in March 2010. These sections are reiterated below:

Section 3.2.1 Offshore Racing: Boat shall be a minimum of 20 feet in hull-length, and fit for sea, with a minimum of two berths below, and self-bailing cockpit. Boat shall have auxiliary power on board capable of powering the boat to 75% of its theoretical hull speed in flat water and shall conform to minimum U.S. Coast Guard requirements for safety and equipment applicable to the boat's size. Boat shall be single-hulled, self-righting, which shall include lifelines, or multi-hull, all crew working areas shall be protected by lifelines or jackstays and safety harness attachment points. Lifelines or jackstays with or without safety harness attachment points may be substituted for pulpits.

Section 3.2.2 Inshore Racing: Boat shall be single-hulled and self-righting or multi-hull. Boat shall have auxiliary power on board capable of powering the boat to 50% of its theoretical hull speed in flat water, and shall conform to minimum U.S. Coast Guard requirements for safety and equipment applicable to the boat's size.

Boats not meeting the minimum requirements of Section 3.2.2 Inshore Racing shall not be issued a PHRF Rating Certificate. Boats not meeting Section 3.2.1 Offshore Racing requirements shall not be eligible to register in offshore races. The Notice of Race and Sailing Instructions for a given Race or Regatta may contain additional or more restrictive minimum requirements such as minimum overall length and equipment requirements based on offshore category. Trapezes, hiking straps, hiking boards, or any other hiking aid are not permitted.

RATING CERTIFICATE

Rating certificates are issued annually by the Chief Rater with a renewal fee of \$30.00, due January 1st each year. This fee is subject to change by the FCSA Board of Directors at the beginning of each year. Rating certificates are valid for 12 months, from January 1 of the current year through December 31 of that year. New PHRF applicants and current PHRF certificate holders who change boats or declare modifications during the year will be charged an additional \$5.00 administration fee for each revised or new certificate. Certificate holders who renew after February 1 (late renewals) will be subject to a \$5.00 late fee. A boat may have only one valid rating certificate at any given time.

The FCSA PHRF certificate will contain pertinent boat information used in calculating the final rating. The final PHRF TOD spinnaker and non-spinnaker ratings as well as the TOT correction factors and the FCSA boat classification will be prominently displayed on each certificate.

Boats that are not FCSA PHRF Certificate Holders, but are current members of other PHRF organizations with valid rating certificates, may obtain a temporary PHRF rating certificate subject to local FCSA rules and base ratings for an administrative fee of \$5.00. The temporary rating certificate shall be valid only for the duration of the individual Race or Regatta for which the temporary rating was obtained. Boats that have obtained temporary PHRF rating certificates shall not be eligible for the annual FCSA Series Trophies. A FCSA member club may request at no cost, a temporary PHRF certificate for a boat owner that has not held a PHRF certificate in the past, and who is considering racing PHRF for the first time.

Any current PHRF Rating Certificate Holder may request that another PHRF Certificate Holder's boat be inspected to verify conformance to its certificate. Any such request shall be in writing, addressed to the FCSA Chief Rater, stating the basis for the request. The Rating Committee will evaluate the request and shall determine if the request is reasonable with respect to these Rules. If the request for inspection is approved by the Rating Committee and subject to permission from the boat's owner, a member of the Rating Committee will perform the inspection in the presence of the boat's owner. If the inspected boat's configuration is found to be substantially different than stated on the Rating Certificate, or if the boat's owner refuses to permit an inspection, the Rating Certificate may be invalidated at the discretion of the Rating Committee.

RATING APPEALS

Ratings and boat classifications may be appealed to the Rating Committee. The Certificate Holder must submit his/her appeal in writing and submit evidence to substantiate the appeal. A Certificate Holder having an appeal lodged against his/her boat either by another skipper or by a club handicapper shall have the right to defend his/her case in person or in writing at the appeal hearing. The Chief Rater shall make notification. The decision of the Board shall be final and binding.

PHRF PROCEDURES

PHRF ratings are available to members of FCSA upon submittal of a Rating Application Form to the Rating Committee. The form will be used by the Rating Committee for assignment of a rating. If the boat is one of a standard class or type, to which a "base rating" has already been assigned, the Chief Rater will assign that rating, adjusted where necessary for differences in sail area, propeller type, spinnaker pole length, crew weight declaration, etc., provided that such differences are within the range of the "standard modifications" listed herein. A Rating Certificate will then be validated and forwarded to the applicant. If the boat is one of a standard class or type to which no base rating has yet been assigned, or if the differences from the standard version are beyond the scope of the standard modifications, or if the boat is the only one of its kind, the Rating Committee will review the application and assign the rating. In cases where a rating must be assigned by the Rating Committee and where an imminent regatta requires the applicant to have a rating before the Rating Committee can meet, the Chief Rater shall issue a provisional rating, valid until the next meeting of the Rating Committee. At that meeting, the provisional rating will be reviewed and either accepted or altered as the Rating Committee may decide.

Established base ratings can only be changed by a majority vote of the handicappers at a Rating Committee meeting. Quorum for the Rating Committee is a simple majority of the club handicappers including the Chief Rater. In recent years this has been successfully handled using e-mail exchange.

It must be recognized that no system of handicapping will adequately rate all types of boats on all points of sail and in all wind and sea conditions. It is the aim of this committee to assign ratings for conditions prevailing in our area considering a mix of racing in protected waters and offshore coastal racing.

RATING REVIEW

There is no such thing as a "final" PHRF rating. Any rating may be reviewed at any time. Whenever the Rating Committee is satisfied from observed performance that the rating of a particular boat or type of boat does not fairly reflect the speed potential of that boat or type, the Rating Committee may initiate a review of a rating whenever it considers such action warranted. If a Certificate Holder's boat rating may be adversely affected by a rating review, the Chief Rater shall notify said boat owner(s) of proposed action in advance of any changes. Changes to base boat ratings that have been long established are seldom made. In the case of more recently rated boats, particularly where little data was available when the rating was first assigned, changes are more likely as experience accumulates.

Any PHRF Certificate Holder can request a review of any yacht's rating by writing to any member of the Rating Committee. The letter will be more likely to be considered if it sets forth details of the boat's performance relative to other boats on various points of sail and in various wind speeds. Information of this kind is more useful than race results, because race results are influenced by many factors in addition to potential boat speed. The Rating Committee will consider every such application at its next meeting. In addition, a Certificate Holder who considers that he/she has not been fairly and reasonably treated by the Rating Committee may bring his/her complaint before the Board of the FCSA. While the FCSA Board will not undertake to assign or change

PHRF ratings, it will investigate actions of the Rating Committee with respect to the complainant's case and take steps necessary to ensure a fair and reasonable disposition.

The effective date of a rating change is the weekend following the change. If this results in a yacht's rating being changed during a Regatta, races that have been scored shall not be recalculated as per US Sailing Rules. Rating changes will generally be issued by e-mail following approval by the Chief Rater.

THE RATING COMMITTEE

The Rating Committee is made up of one member from each FCSA member club and a Chief Rater. The names, addresses, and telephone numbers of all the members of the current PHRF Committee are available upon request from FCSA. E-mail addresses should be listed on the FCSA website (www.sailjax.com). These committee members are working hard to make this program a success. Feel free to contact any of them for advice or help when you need it.

PHRF RULES

A. PHRF CERTIFICATE RATINGS

Base Rating:

The "base rating" is the rating assigned to a "standard" boat of a class or type. It assumes the standard rig dimensions for the class and a folding or feathering propeller if exposed, or a two-bladed fixed one if in an Aperture. If propulsion is by an outboard engine, it assumes the engine remains on board the boat while it is racing and the propeller is not in the water. An outboard engine may be dismounted and stowed in an optimum location aboard when racing with no penalty. It assumes that boat if equipped with a symmetric spinnaker, that the spinnaker pole length (SPL) is equal to the width of the base of the fore triangle (J), and that the maximum girth (SMW) of the spinnaker at any point is in the range of 168.1% to 183% of J. Finally, it assumes that the boat is in all other respects similar to the standard boat of its type as originally supplied by its manufacturer.

Each PHRF certificate contains two assigned ratings:

1. **Spinnaker Rating:** The assigned rating (adjusted base rating) shown on the PHRF certificate in bold font is the sum of the base rating and any adjustments as outlined in Handicap Adjustments, based on information provided by the Certificate Holder on the PHRF Rating Application Form. This is the rating to be used for boats flying a spinnaker in any Class.
2. **Non-Spinnaker Rating:** In addition to the assigned rating on the PHRF certificate there is also included a rating denoted as the "Non-Spinnaker rating". The Non-Spinnaker rating is the adjusted base rating with a non-spinnaker adjustment as defined in Handicap Adjustments, based on the boat's rig dimensions. Boats with a smaller ratio of mainsail area to headsail area receive a larger adjustment than boats with larger ratio of mainsail area to headsail area.

How the Non-Spinnaker Ratings are used:

Non-Spinnaker Classes: Primary purpose of the Non-Spinnaker rating is to allow non-spinnaker boats to compete fairly in non-spinnaker classes in which spinnakers are not flown and headsails are used for off-wind sailing. Non-Spinnaker racing is defined for this purpose as prohibiting the use of any headsail whose mid girth (mid-luff to mid-leech) measurement is more than 50% of its foot measurement. Participating yachts may not fly more than one headsail at a time except when changing headsails. (Yachts that are permanently cutter rigged may fly their staysails.)

B. CLASS DEFINITION AND RULES

The Class designations SB (Sport Boat), P (Performance), C (Cruiser), which shall appear on the PHRF certificate, like the PHRF rating, is assigned by the PHRF committee. It in no way implies less knowledge or experience on the part of the skipper and crew. The purpose of this designation is to provide uniform guidelines for FCSA members, clubs, and race organizers to easily identify Cruiser Class and Performance Class boats in their racing events. For purposes of competitive racing under the rules of FCSA and for annual scoring, the PHRF Fleet will be treated as two Fleets, the Performance Fleet and the Cruiser Fleet. When possible, given sufficient number of entries, the organizers of a regatta should provide classes for the three class designations. When not possible, SB and P boats may be combined into a single class. C boats should be scored separately. The organizers may further split the fleet into Spinnaker and Non-Spinnaker sub-classes.

C. RULES PERTAINING TO ALL CLASSES

The following rules apply to all classes, both Performance Fleet and Cruiser Fleet in all PHRF Races and Regattas except as modified by the Notice of Race and Sailing Instructions for a particular race:

1. Whisker poles may not be longer than "LP" without penalty. Extendable poles must be banded to indicate their maximum permitted length.
2. Staysails are permitted on designated cutter rigs. Fore staysails and mizzen staysails are permitted on ketches and yawls. Mizzen staysails must be three-cornered (head, tack, and clew). The tack or tack pennant must be secured abaft the point of intersection of the aft face of the main mast with the deck, and also must be secured no higher than the rail cap, deck, or cabin top. Sheet leads may be to the hull or to the rail and to the mizzen boom, but not to any other spar or outrigger.
3. Multi-hull boats shall not race in a mixed class with single-hull boats. Multi-hull boats with PHRF certificates may race in a separate multi-hull class if provided for in the Notice of Race and Sailing Instructions for a particular Race or Regatta.
4. Performance Class boats and Sport Boat Class boats shall not race in the Cruiser Class. A Cruiser Class boat may race in the Performance Boat Class or Sport Boat Class.

D. SPORT BOAT CLASS

The Rating Committee reserves the right to identify any boat that it feels is or is not a sport boat, regardless of whether it meets the listed criteria.

1. D/L Ratio less than **100, AND** upwind SA/D Ratio greater than **29.0**, OR
2. Boat with sprit length greater than 50% of J Dimension, OR
3. Highly modified production boats that are determined to be Sport Boats by the Rating Committee

It is recognized there are inherent differences between boats classified as a Sport Boat and traditional displacement hull designs of racer/cruisers and cruisers. FCSA encourages fair sailing and supports the development of a Sport Boat Class in the FCSA Series Races. Member clubs are encouraged to offer a Sport Boat Class in the Notice of Race and to allow the boats identified as Sport Boats to race in a separate class. If there is insufficient number of Sport Boats entered in any race, they should race in the Performance Fleet, whenever possible. If there is sufficient participation FCSA will offer annual trophies in the Annual Series for the Sport Boat Class.

E. PERFORMANCE BOAT CLASS

The Rating Committee will use the following criteria to define a Performance Class boat. The Rating Committee reserves the right to identify any boat that it feels is or is not a Performance Class boat, regardless of whether it meets either of the listed criteria.

1. D/L Ratio less than **215, AND** upwind SA/D Ratio greater than **19.5**
2. Boats with performance sails and/or twin-groove headstay foils that do not meet the Cruiser Class criteria in Section F, regardless of the D/L Ratio and SA/D Ratio

F. CRUISER BOAT CLASS

Cruiser Boats are defined as having listed criteria.

1. D/L Ratio greater than or equal to **215, OR**
2. Upwind SA/D Ratio less than or equal to **19.5**

Cruiser boats shall be subject to the following restrictions. Boats not meeting these restrictions shall be classified as Performance Class boats:

1. Shall use upwind sails made of woven polyester.
2. Shall not use a twin-groove headstay foil as a means to change headsails while racing. If a sail change is required, the previous sail must be completely dropped to the deck prior to raising the new sail.
3. Shall have at least one anchor with appropriate chain and rode ready for immediate deployment.
4. Shall have all furnishings and equipment as supplied standard by the manufacturer onboard and installed in its original locations. This includes, but is not limited to, passageway doors, floorboards, cushions, cooking appliances, dining tables, etc.

5. May use self-steering devices (Autopilots, wind-vane steering, etc.) while racing, unless restricted by specific regatta rules.
6. May use electric and/or hydraulic winches while racing, unless restricted by specific regatta rules.

G. ANNUAL DECLARATION OF LP

The LP dimension (largest headsail) declared for a yacht at the time her certificate was issued or renewed must remain in effect for the duration of the year for which the certificate was issued. Rating changes resulting from changes in the LP dimension can, therefore, be made only once a year, except upon written application to the Rating Committee, stating the reasons for the change. Such applications will not be approved if the Rating Committee finds that the proposed change is an attempt to fine tune the yacht for anticipated weather conditions in any specific race, series, or time of year.

H. PROPER RACING TRIM

Boats shall race as rated with at least all the equipment and furnishings supplied as standard by the manufacturer. A boat that has altered or has removed bulkheads, permanently attached furniture, or structural interior components shall be considered a modified boat. Drawers, integral structural headliners, cabinet and locker doors, steps, ladders, and engine enclosures shall remain in place as supplied as standard equipment. If they do not so remain, then the boat shall be considered a modified boat and rated accordingly. Lifting keels (not designed to be adjusted while racing) must be fixed and locked in the lowered position while racing. There are no restrictions on sail materials or construction for Performance or Sport Boats. Cruiser boats while racing in a cruiser class are restricted under Section F.

I. SAIL MEASUREMENT LIMITATIONS

The ratings assigned by the Rating Committee assume that sail dimensions not specifically stated on the certificate conform either to the boat's class or to limitations that have long been standard in all measurement rules. Any departure from these limitations amounts to a change from the standard or norm. Therefore, notice of the departure must be given to the Rating Committee.

In the case of boats not belonging to a one-design class, attention is specifically directed to the following:

1. Mainsail headboards may not exceed in width the greater of 6 inches or 4% of E.
2. Any Mainsail or Mizzen where the Mainsail Girth Upper measurement (MGU) is greater than 38% of E or the Mainsail Girth Middle measurement (MGM) is greater than 65% of E shall be declared. The increase in sail area above the mainsail girth maximums shall be stated as a percentage of increase. This data can be obtained from the sail maker. The measurement points for MGU and MGM are found by the following procedure:
 - a. Find the mid-point of the leech by folding the head to the clew. Mark mid-point with pencil.
 - b. Find the $\frac{3}{4}$ point of the leech by folding the head to the mid-point of the leech. Mark $\frac{3}{4}$ point leech with a pencil.
 - c. For MGU measure from $\frac{3}{4}$ of the leech to closest point on luff.
 - d. For MGM measure from mid-point of the leech to closest point on luff.

3. Mainsails with full battens are allowed without penalty if the roach of the mainsail has not been increased from the above maximum girth limits.
4. For symmetric spinnakers, the SL may not exceed 95% of the square root of the sum of I squared plus JC squared.
5. A sail may not be measured or used as a jib unless its mid girth does not exceed 50% of its foot length, and the length of any intermediate girth does not exceed a value similarly proportionate to its distance from the head of the sail.

J. CERTIFICATE HOLDER'S OBLIGATION TO DISCLOSE ALTERATIONS

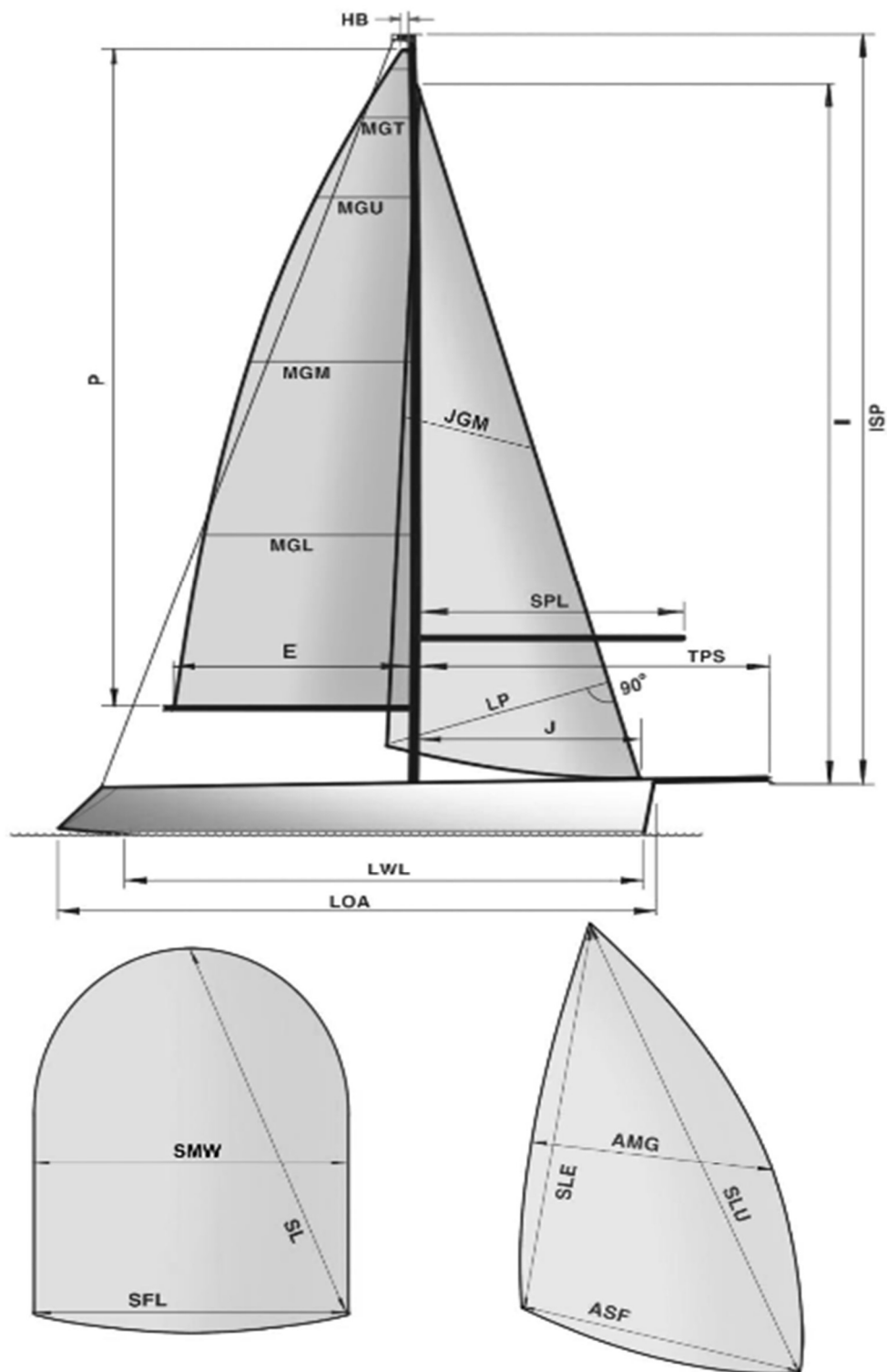
PHRF ratings are based on information supplied to the PHRF Committee by the applicant. The success of the program is entirely dependent upon the integrity of the participants. In signing an application for a rating, or for the renewal of a rating, the applicant attests to the accuracy of the information supplied. Any subsequent changes in the boat or alterations in that information must be reported to the Rating Committee. If the Rating Committee is notified or discovers that a Certificate Holder is not in compliance with the above, the Rating Committee may file a protest with the FCSA Board. This protest will be heard by a properly constituted panel of three Judges. The panel of Judges may recommend to the Rating Committee the revocation of the certificate in question. The revocation may be made retroactively. The panel may also suspend the Certificate Holder's privilege to participate in any FCSA event for a prescribed period of time.

DEFINITIONS

NOTE: All linear dimensions entered in the Rating Application Form shall be stated in feet to two decimal places.

AMG	Asymmetric spinnaker mid-girth, measured from the midpoint of the luff to the midpoint of the leech.
APERTURE	Any cavity, opening or hull configuration that shields a fixed propeller from the flowing water, thus limiting its drag.
ASF	Asymmetric spinnaker foot length, measured in a straight line from tack to clew.
ASLIM	Equal to: $1.15\sqrt{ISP2 + TPS2}$.
BAL	Ballast of vessel in pounds.
BEAM	Maximum width of the vessel.
DISP	Displacement of vessel in pounds, without any water, fuel, etc.
DRAFT	Distance from bottom of keel to LWL . Also include draft with board down if a centerboard vessel.
E	Distance from the after face of the mast to the center of the outhaul sheave or band whichever is less.
EC	Calculated value of an E dimension such that max girths become allowable under Section V of these Regulations.
EY	The mizzen correspondent of “ E ”.
G	Maximum symmetric spinnaker girth measured luff to leech (IMS uses SMW).
I	The distance above sheer line to the point of intersection of the head stay and the mast.
ISP	The distance above sheer line to the highest headsail halyard (if above the intersection of the head stay and the mast).
J	Horizontal base of fore triangle measured from head stay intersection at deck edge to front of mast.
JGM	The length measured between the mid points of the luff and leech of a jib.
LLY	Luff length of the largest mizzen staysail (mule, etc.).
LOA	Length overall of hull.
LP	Distance perpendicular from the luff to the clew of the jib.
LPY	Distance perpendicular from the luff to the clew of the largest mizzen staysail.
LWL	Load waterline length in feet.
MAT	Construction material of the keel or mast, e.g., lead, iron, carbon, aluminum.
Measurements	All measurements shall be in feet to two decimal places [Note: 1 Meter = 3.280833 Feet]
MGL	Mainsail girth measurement from a point along the leech, one-quarter (1/4) of the distance from the clew to the head, to the nearest point of the luff.
MGM	Mainsail girth measurement from a point along the leech, one-half (1/2) of the distance from the clew to the head, to the nearest point of the luff.

MGT	Mainsail girth measurement from a point along the leech, seven-eighths (7/8) of the distance from the clew to the head, to the nearest point of the luff.
MGU	Mainsail girth measurement from a point along the leech, three-quarters (3/4) of the distance from the clew to the head, to the nearest point of the luff.
Modification	Any alteration or change (other than restoration or repair) made to a base boat since manufacture, that may be deemed to change the performance of a boat.
P	Height of main luff between black bands or from bottom of upper band to bottom of fixed boom track. (Use center of halyard sheave if no upper band).
PY	The mizzen correspondent of “P”.
Rated Sail	Those sails upon which the handicap is based; specifically the largest Jib/Genoa, Mainsail, and largest Spinnaker.
SFL	The length of the foot of a symmetric spinnaker, measured between the clews.
SHEER	The height of the deck above the LWL abreast of the mast.
SL	Length of symmetric spinnaker measured along either luff from head to tack, with only enough tension to remove wrinkles. Sail to be stretched flat while measuring.
SLE	Asymmetric spinnaker leech, measured from head to clew, with only enough tension to remove wrinkles. Sail to be stretched flat while measuring.
SLIM	Equal to: $0.95V(I2 + J2)$, [or $0.95V(ISP2 + TPS2)$, if ISP is greater than I or TPS is greater than J or both].
SLU	Asymmetric spinnaker luff, measured from head to tack, with only enough tension to remove wrinkles. Sail to be stretched flat while measuring.
SPL	Spinnaker pole length measured from centerline of mast to outboard end of pole when set in a horizontal position, athwartship.
TPS	Tack Point Spinnaker; the horizontal distance from the front of the mast at its lowest point above the deck, to the point of attachment at deck level of the foremost tacking point of an asymmetric or symmetric spinnaker, or to the forward end of any bowsprit in its maximum extended position. If an asymmetric spinnaker is flown from a pole, TPS is equal to SPL .
WPL	Whisker pole length. Measured similarly to SPL.
D/L Ratio	$=1000*DISP/2.24/(LWL^3)$
SA/D Ratio	$=((P*E+I*J)*0.5)/((DISP/64)^(2/3))$



HANDICAP ADJUSTMENTS

A. JIB & MAIN

Adjustment is based on the largest headsail and is determined by the LP/J ratio stated as a percentage.

Headsail LP/J expressed as percentage	Adjustment
over 195%	-15 seconds/nm
over 185% but not exceeding 195%	-12 seconds/nm
over 175% but not exceeding 185%	-9 seconds/nm
over 165% but not exceeding 175%	-6 seconds/nm
over 155% but not exceeding 165%	-3 seconds/nm
over 145% but not exceeding 155%	-0 seconds/nm
over 135% but not exceeding 145%	+3 seconds/nm
up to but not exceeding 135%	+6 seconds/nm

NOTE: No headsails may be set to extend aft of the LP line used to establish the handicap.

A +6 seconds credit will be given to any boat that has been modified to use (and will always use) a roller furling head sail. Boats that are designed and provided with roller furling headsails as a standard design and whose Base Rating is based on a roller furling headsail shall not receive the roller furling credit.

To receive credit, the roller furling gear must typically have an above-deck drum and upper swivel. Roller furling designs with a below-deck drum will be accepted provided the headsail has a high clew and meets all other aspects of this requirement.

Any boat that uses any type of deck tacked or “full hoist” sail will not be granted a rating adjustment.

Mainsail Adjustments - Oversized mainsails must be declared and adjustment will be subject to review by the Rating Committee. No penalty shall be given for full-batten mainsails. No credit will be given for undersized mainsails. Roller stowing mainsails shall be given a +6 sec/nm credit.

B. SPINNAKER

A Symmetric spinnaker is defined as having luff and leech within 2% of each other and being symmetric about the centerline in shape and material. An asymmetric spinnaker shall have over 5% difference in luff and leech lengths.

Adjustment is normally based on the largest spinnaker and for symmetric spinnakers is determined by the SMW/J ratio stated as a percentage.

Spinnaker Maximum Width / J ratio (SMW/J) expressed as a percentage	Adjustment
over 228%	-12 seconds/nm
over 213% but not exceeding 228%	-9 seconds/nm
over 198% but not exceeding 213%	-6 seconds/nm
over 183% but not exceeding 198%	-3 seconds/nm
over 168% but not exceeding 183%	-0 seconds/nm

NOTE: For symmetric spinnakers, if the spinnaker pole (SPL) is greater than J, then the spinnaker percentage is equal to SMW / J or $1.8 \times \text{SPL} / J$, whichever is greater.

The following shall be reported for asymmetrical spinnakers if requested by the Rating Committee:

1. How the sail will be attached to the boat (i.e., centerline tacked on bow, on fixed sprit, on articulating sprit, pole, etc.) If a boat has multiple asymmetric spinnakers that are attached in different manners, the largest of each must be reported separately.
2. The luff, leech, and foot dimensions.
3. The area of the sail as measured using the IACC formula:

$$\text{Area} = ((\text{SLU} + \text{SLE}) * (0.25 * \text{SF})) + ((\text{SMG} - 0.5 * \text{SF}) * ((\text{SLU} + \text{SLE})/3))$$

One design boats with their standard asymmetric spinnakers will have such reflected in their base rating. The Rating Committee will consider the need for a penalty adjustment for all other boats on a case by case basis. In evaluating adjustments, the goal of the Rating Committee will be to presume that in order for identical hulls, each with different asymmetric spinnaker configurations (fixed sprit, articulating sprit, centerline, pole), to all go the same speed (averaged across a variety of wind strengths and angles), the sail area of the more efficient configurations will have to be reduced compared to that of the standard symmetric spinnaker.

Asymmetric spinnakers that meet the following conditions will be considered as standard and not subject to penalty:

1. When tacked to standard spinnaker pole (SPL):
 - a. The average of the lengths of the luff and leech do not exceed the luff length permitted for a standard spinnaker. $(0.95 \times \sqrt{I^2 + JC^2})$
 - b. SMG does not exceed $1.75 \times JC$.
 - c. The foot (SF) does not exceed $1.8 \times JC$.
 - d. The point at which the sail is tacked is not at a greater distance from the mast than the value reported for SPL on the certificate.
2. When tacked to sprit or centerline (TPS):
 - a. The average of the lengths of the luff and leech do not exceed $1.15 \times \sqrt{ISP^2 + TPS^2}$.
 - b. SMG does not exceed $1.8 \times TPS$.

- c. The foot (SF) does not exceed $1.75 \times \text{TPS}$.
- d. TPS does not exceed $1.15 \times J$, otherwise apply an adjustment as follows.
 - TPS > $1.15 \times J$: -3 sec/NM
 - TPS > $1.23 \times J$: -6 sec/NM
 - TPS > $1.31 \times J$: -9 sec/NM
 - TPS > $1.39 \times J$: -12 sec/NM

C. MAST AND RIG

The effect on performance of changes from standard rig dimensions varies from boat to boat to so great an extent that no rational table of rating changes based on rig size can be formulated. Accordingly, these changes are treated on a case by case basis. If your boat is one of a class and your rig differs from the standard for that class, you must notify the Rating Committee of that fact. If you have a custom boat and your rig is changed from that described on your rating application, you must notify the Rating Committee of the changes. A "change" refers not only to length, but also to material, weight, number of spreaders, mast diameter, etc.

D. PROPULSION

Adjustment is based on propeller type and its installation.

Prop Installation	Adjustment
Folding/Feathering Out of Aperture	+0 seconds/nm
Fixed 2-Blade in Aperture	+0 seconds/nm
Outboard Retracted When Racing	+0 seconds/nm
Fixed 2-Blade Out of Aperture	+6 seconds/nm
Fixed 3-Blade in Aperture	+6 seconds/nm
Fixed 3-Blade Out of Aperture	+9 seconds/nm
Non-Standard	TBD

NOTE: If the propeller or installation type is not included in the adjustment table, then the Rating Committee will assign the adjustment based on the assumed relation to the table and indicate the action in its notes.

E. NON-SPINNAKER ADJUSTMENT

Non-Spinnaker adjustments are based on the ratio of mainsail triangle size (including mizzen sails, if applicable), to fore triangle size based on the equation as follows:

$$\text{Mainsail/Fore triangle Ratio} = (P \times E + [PY \times EY] + [0.6LLY \times LPY]) / (ISP \times J)$$

Non-Spinnaker adjustments are contained in the following table:

Mainsail/Fore triangle Ratio	Non-Spinnaker Rating Adjustment
Greater than 0.3 but less than 0.4	+26 seconds/nm
Greater than 0.4 but less than 0.5	+25 seconds/nm
Greater than 0.5 but less than 0.6	+24 seconds/nm
Greater than 0.6 but less than 0.7	+23 seconds/nm
Greater than 0.7 but less than 0.8	+22 seconds/nm
Greater than 0.8 but less than 0.9	+21 seconds/nm
Greater than 0.9 but less than 1.0	+20 seconds/nm
Greater than 1.0 but less than 1.1	+19 seconds/nm
Greater than 1.1 but less than 1.2	+18 seconds/nm
Greater than 1.2 but less than 1.3	+17 seconds/nm
Greater than 1.3 but less than 1.4	+16 seconds/nm
Greater than 1.4 but less than 1.5	+15 seconds/nm
Greater than 1.5 but less than 1.6	+14 seconds/nm
Greater than 1.6 but less than 1.7	+13 seconds/nm
Greater than 1.7 but less than 1.8	+12 seconds/nm
Greater than 1.8 but less than 1.9	+11 seconds/nm
Greater than 1.9 but less than 2.0	+10 seconds/nm
Greater than 2.0 but less than 2.2	+ 9 seconds/nm
Greater than 2.2 but less than 2.4	+ 8 seconds/nm
Greater than 2.4 but less than 2.6	+ 7 seconds/nm
Greater than 2.6 but less than 3.0	+ 6 seconds/nm
Greater than 3.0 but less than 3.4	+ 5 seconds/nm
Greater than 3.4 but less than 4.0	+ 4 seconds/nm
Greater than 4.0 but less than 5.0	+ 3 seconds/nm
Greater than 5.0 but less than 6.0	+ 2 seconds/nm
Greater than 6.0 but less than 7.0	+ 1 seconds/nm
Greater than 7.0	+ 0 seconds/nm