



2017 ORR-EZ™
A Rating System for Sailboat Handicapping

Published by the

Offshore Racing Association

www.offshoreracingrule.org

ORR-EZ™

Rules Governing Handicaps and Certificates

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I. Introduction and Overview

ORR-ez is the ORA handicapping rule that has been created for entry level and local competition. The initial expense and annual certificate fee to the boat owner are significantly lower than for a full measurement rule like ORR. It is also less accurate. Primary speed factors are determined from existing measurement databases of production boats and ORR certificates and simple sail measurements. The limited data is run through the ORR Velocity Prediction Program (VPP) to produce certificates. . In some case where the boat design is not-competitive subjective corrections can be made by the National Technical Rating Committee. Like ORR, race organizers may select from customizable wind mixes to match the range of boats in the fleet to the expected wind speed and degrees of upwind, downwind and reaching on the race course.

In this document, the terms “handicap” and “rating” are used interchangeably. ORR-ez handicaps are intended to reflect the potential speed of a boat. Conversely, ORR-ez handicaps are not intended to reflect the ability of skipper and crew. The Offshore Racing Association (ORA) is the Rule and Rating Authority for administration of ORR-ez. The ORA is responsible for the development, promotion and implementation of the rule.

The handicaps of an individual boat are expressed as “time-on-time” or “time-on-distance”. Four ratings will be provided per boat; custom course rating, a distance (point to point) rating as specified by the fleet, a National Rating and 50-50 w/l rating and there is an option for one, two or three wind ranges of ratings, customized course wind mixes, other course configurations and scoring options. If the option is for the one wind range choice then it will be the average wind mix that the fleet uses. Further, these ratings will be generated for typical course configuration specified by the fleet, i.e. % windward, % reaching, and % running. There will be a section for non-spinnaker ratings as well. ORA reserves the right to add other ORR-ez ratings.

ORR-ez is a hybrid rule. Its central core is based on the Offshore Racing Rule Velocity Prediction Program (ORR VPP) that calculates the speed potential of each boat at any combination of wind speed and wind direction. The ORR VPP is a set of algorithms developed through systematic research that use fundamental scientific methods. Ratings may be adjusted based on observed performance, especially for those boats whose racing abilities may be compromised by design emphasis on cruising capabilities. These adjustments are made nationally by a five member Technical Rating Committee made up of naval architects, designers, sailmakers and other qualified individuals. Requests for rating adjustments are submitted by sailors to this committee for review and adjustment. Adjustments will be made on a quarterly basis.

ORR-ez handicaps are assigned based on very specific assumptions about the boat's overall configuration and measurements, based on the ORR VPP with an added observed performance factor (OPF). Each handicapped boat is issued a rating certificate that officially documents the boat's rating (ORR VPP plus OPF), as well as these key measurements and configuration assumptions. Each boat owner must keep a copy of this certificate and be able to produce it when required by race officials.

ORR-ez only issues handicaps for monohull sail boats. Safety requirements are not part of this Rule Book and it is the organizing authority's responsibility to specify them.

II. Obtaining a Rating

To obtain a new rating certificate or a renewal of an existing certificate, individuals shall complete and submit the appropriate application, which can be found the ORA web site at www.offshoreracingassociation.org. Applications are not complete unless accompanied by the required fees. New ratings for boats not in the ORR-ez database will typically be issued a certificate within 30 days of a completed application.

III. Handicapping Procedure

In assigning a rating, ORR-ez may use any data sources that the handicapper(s) deem appropriate including (but not limited to):

- measurements of the boat's sails and rig data as supplied by the applicant, ORR measurer or sailmaker;
- hull file geometry as supplied from the ORA data base or a constructed hull file;
- displacement data as supplied by the manufacturer or as weighed in lightship configuration or as is contained in the ORA default data file;
- observed performance and race results of the boat or other boats that are similar;
- boat configuration data maintained by Offshore Racing Association (ORA); and,
- ratings for the same or similar boats in other areas of the country.

ORR-ez handicaps assume a boat is equipped to race. There are no allowances made for boats in non-race configuration.

A. Boats SHALL meet the following characteristics for their certificate to be valid:

- the boat shall be self-righting;
- no trapezes, hiking straps, or other hiking devices are permitted;
- moveable ballast boats are permitted;
- the boat shall have an auxiliary propulsion system capable of propelling the boat at hull speed;
- spars shall be banded (black band on white spars, white band on black spars) for the proper P (mainsail luff) and E (mainsail foot) dimensions listed on the ORR-ez certificate. Ketch and Yawl rigs will have PY and EY banded; and,
- the boat shall have pulpits and lifelines that conform at minimum to the US Safety Equipment Requirements.

Base handicaps further assume that:

- the boat will have a spinnaker pole/sprit or whisker pole conforming to the base design for that boat;
- for boats with symmetric spinnakers, the SPL is typically equal to J or manufacturers specifications. Spinnaker girths will be taken as 180% of SPL;
- for boats with asymmetric spinnakers, TPS is typically greater than J. Spinnaker girths will be taken as 175% of TPS or manufacturer base boat specifications;
- the default symmetrical spinnaker luff is taken as $0.95 \cdot (ISP^2 + SPL^2)^{.5}$;
- the default genoa LP dimension equal to 155% of the J dimension;
- the boat has a fixed propeller, folding propeller, feathering propeller, outboard motor or retractable propeller;

- the hull and appendages are unmodified from the manufactured version, except that an owner may fair the hull, keel, and rudder to original design specifications without penalty; and,
- Interiors are in the configuration that comes standard from the manufacturer.

B. One-Design Boats:

ORR-ez may, at its discretion, assign a one-design rating. The presence of a national or international class association does not guarantee a one-design base rating will be assigned. Nor does the assignment of a one-design base rating constitute certification that the boat is class-legal. For boats rated as one-designs (OD), base ratings shall assume:

- Each boat being assigned the rating shall meet all applicable class standards, except that it need not have a current class measurement certificate and the owner need not be a current member of the class association; and,
- ORR-ez crew limits described below in these guidelines shall apply, unless the sailing instructions or notice of race specifically call for use of class rules governing crew number and/or weight.

C. Crew:

The crew weight will be declared on the application as the Maximum Crew Weight (CW) not to be exceeded or a default crew weight will be computed using the most recently published ORR Rule Book as listed under “Part VIII, 8.11 and 8.12 Crew Weight.” In the case of a Double Handed Boat Certificate the Crew Weight will be set at 500 pounds.

<https://www.offshoreracingrule.org>

D. Sail Limitations

ORR-ez will use the same Sail Limitations as referenced in the most recent published ORR Rule Book as listed under “Part X-Sails, 10.02 Sail Inventory”.

<https://www.offshoreracingrule.org>. This may be changed by the notice of race or sailing instructions.

E. Certificate

A printed and signed copy of the certificate shall be available for inspection by the race organizer or race/rule measurer. By signing the certificate the owner/charterer attests that the information thereon is accurate.

IV. Changes and Adjustments to Handicaps

Changes in ratings shall be made whenever an adjustment is needed to provide equitable handicap racing.

If there are changes to the hull, rig, sails, or other factors upon which a yacht's rating is based, they must be reported immediately to the ORR-ez Committee of the ORA.

If any boat races in a configuration that is inconsistent with the assumptions used to establish its rating, whether or not those items are specifically listed on its certificate, that certificate is invalid. If possible deviations on the part of an owner become apparent; other contestants are urged to protest the boat directly in accordance with The Racing Rules of Sailing Rule 64.3, or to bring such deviations to the attention of the ORR-ez Committee.

To prevent boats from being reconfigured for specific races, no boat shall be allowed to change its rating more than once in any given year except in extraordinary cases where the changes reported are clearly permanent. This means that if a boat changes its configuration during the course of a year and a reviewed revised certificate and rating is issued, it must sail in that configuration for the remainder of the year. This shall not prevent an owner or competitors from requesting a rating adjustment or appealing a rating decision as described below, or prevent ORR-ez from changing the rating in order to maintain equitable racing.

A. Requests for Rating Review:

Any person holding a current ORR-ez certificate may request a rating review of his/her boat, or of another boat holding a current ORR-ez Certificate. Requests for rating review shall be made using the request for rating review form available from the ORA ORR-ez Committee. The request for review shall be accompanied by a fee of \$25.00 for review of applicant's boat or \$100 for review of another boat's data.

B. Appeals:

Any ORR-ez certificate holder who has been denied a rating adjustment by the ORR-ez Committee or who disagrees with the amount of the adjustment may appeal that decision.

The documentation accepted by the Appeals Committee is limited to the data requested in the ORR-ez request for rating adjustment form, supporting documents provided in that request, ORR-ez season or a minimum of 12 race results, plus a written narrative describing the reason for the appeal (suggested length of two pages). The request for review shall be accompanied by a fee of \$200.00.

When a complete appeal is received, the appellant will be notified of the date of the hearing. The appellant's appeal to the committee will be decided solely on the basis of his/her written supplied documentation, and these ORR-ez Rules Governing Handicaps and Certificates. ORR-ez will provide the appellant a written decision on the appeal within ten (10) days of the hearing.

V. Propulsion

Propeller types for boats with inboard engines will be made based on the type of prop and will be made as follows:

Prop Type
Folding/Feathering/Geared

Solid 2-Blade, in aperture
Solid 2-Blade, out of aperture
Solid 3-Blade
Other

VI. Definitions

LOA = The length overall of a boat will include the whole hull, but not spars or projections fixed to the hull such as chainplates, bowsprits, boomkins, pulpits, etc.

Rated L = The Sailing Length (L) is an effective sailing length which takes into account the hull form at the ends of the yacht.

CW = Crew Weight

D = Draft

Disp = The displacement is taken from the ORA data base of standard designs, manufacturer data or measured certificate (i.e. ORR).

E = Distance between colored bands on the boom, or the maximum foot length of the main.

EY = Similar to E, but for a mizzen.

J = Distance between the headstay termination at the deck and the front of the mast at the sheer line.

IG = Height of highest jib halyard above the deck

ISP = Height of highest spinnaker halyard above the deck.

IG = Height of headstay termination above the sheer line.

JLuff = The length of the luff shall normally be the distance between the lowest part of the sail of the luff at the tack and the highest point of the sail on the luff at the head

LP = The distance from the clew of the jib/genoa to the luff, measured perpendicular to the luff.

P = Distance between colored bands on the mast, or the maximum luff length of the main.

PY = Similar to P, but for a mizzen.

ASym = Symmetric spinnaker area.

AAsym = Asymmetrical spinnaker area.

SL = SL shall be the greatest length of a symmetric spinnaker luff and leech measured along the edges of the sail from head to foot.

SF = Symmetrical spinnaker foot length shall be the distance from tack to clew, measured by the shortest path.

SMW = For symmetrical spinnakers only, maximum girth leech to leech. (Fold on centerline, measure max. width, and multiply by two).

SPL = The length of the spinnaker pole (or whisker pole), when in its fitting on the mast, and set in a horizontal position fore and aft, measured from forward face of the mast to the forward most point of the pole and fittings.

TPS = Tack point of an asymmetric tacked on the centerline, to the deck or to a sprit, measured from the tip of the sprit to the front of the mast, horizontally to the water.

ASLU = Asymmetrical spinnaker luff length.

ASLE = Asymmetrical spinnaker leach length.

ASL = Average of ASLU and ASLE.

AMG = Asymmetrical spinnaker mid-girth, found by measuring between the luff and leech.

ASF = Asymmetrical spinnaker foot length.

Main Sail:

HB = head board

MGT = mainsail girth top

MGU = mainsail girth upper

MGM = mainsail girth middle

MGL = mainsail girth lower

A Main = mainsail area

Mizzen:

HBY = head board
MGTY = mizzen girth top
MGUY = mizzen girth upper
MGMY = mizzen girth middle
MGLY = mizzen girth lower
A Mizzen = mizzen area

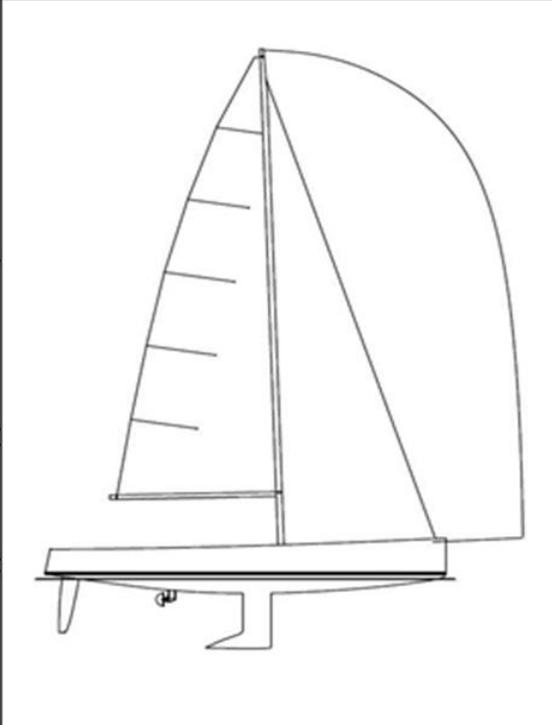
VII. Certificates: The Certificate shall be carried aboard the boat and be signed by the Owner or Person in Charge.

A. Certificate Example:





2017 ORR-ez Certificate



YACHT NAME: Example SAIL NUMBER: USA-00000 OWNER: Mr. Good Sailor ADDRESS: 1 Big Boat Lane World Waters, Anywhere USA 1111-11111 Signature:	
CERTIFICATE # 41983 ISSUED DATE: 25-Jul-16 10:15:42 YEAR VALID: 2016 CLASS: First 53 F5 (SD) BUILDER: Beneteau	
OFFSETS FILE: F045.OFF MEASUREMENT: ORR-ez RIG TYPE: MASTHEAD SLOOP SPINNAKER TYPE: SYMMETRIC KEEL TYPE: FIXED KEEL PROP INSTALL: EXPOSED PROP TYPE: FEATHERING 3-BLADE	

		Rig Dimensions		Genoa Meas.		Spinnaker Meas.			
LOA	15.58	DISP Meas	13669	IG	19.29	LP	7.76	SL*	19.03
BMAX	4.503	Wetted AREA	49.36	ISP	19.47	LPG %	146%	SMW*	9.62
DRAFT	1.988	LPS	109.8	J	5.38	J Luff*	19.50	SF*	9.43
CREW	1361	RM20	414	P	17.34			A Symm	151.96
Water Ballast	0.0	Rated L	14.222	E	5.91			ASL*	
				PY	0.00			AMG*	
				EY	0.00			ASF*	
				SPL/TPS	5.45	A Genoa	76.6	A Asym	
Capsize Screen <input type="text" value="117.0"/> (SI)									

Table of Ratings		Mainsail Meas.		Mizzen Meas.	
		HB*	0.04	HBY*	0.00
		MGT*	1.02	MGTY*	0.00
		MGU*	1.90	MGUY *	0.00
		MGM*	3.47	MGMY *	0.00
		MGL*	4.68	MGLY *	0.00
		A Main	56.6	A Mizzen	0.0

* Note: measurements marked with * may have estimated, default values