



ORR-EZ™
A Rating System for Sailboat Handicapping

Rule Book

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ORR-EZ™

Rules Governing Handicaps and Certificates

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I. Introduction and Overview

- A. The non-profit **Offshore Racing Association (ORA)** was organized to own, maintain and administer the **Offshore Racing Rule (ORR)** and the associated **ORR Velocity Prediction Program (VPP)**.
- B. The **ORR-EZ** handicapping rule was created by the **ORA** to accommodate regional racers over a full season of racing in all types of regattas. The expense and effort needed to acquire and maintain a valid **ORR-EZ** rating certificate is significantly less than for full **ORR** handicapping. Each handicapped boat is issued a valid rating certificate that officially documents the boat's rating as well as key measurements and configuration assumptions.
- C. **ORR-EZ** has a central core that is based on the latest version of the **ORR-EZ 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 and is periodically refined and updated by the **ORA**. **ORR-EZ** ratings may be adjusted based on observed performance, especially for those boats whose racing abilities may be compromised by a design emphasis on cruising capabilities. These adjustments are applied nationally and are made by the **ORR-EZ National Rating Committee**, made up of naval architects, designers, sailmakers and other qualified individuals. Requests for rating adjustments should be submitted by sailors to their Regional Representative for forwarding to the committee for review.
- D. In this document, the terms “handicap” and “rating” are used interchangeably. The “Organizing Authority” is as defined by the Racing Rules of Sailing (RRS).
- E. **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 **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.
- F. Primary speed factors are determined from existing measurement databases of production boats and simple sail measurements. The data is run through the **ORR-EZ VPP** to produce certificates. In some cases where the boat design is not competitive, subjective corrections can be made by the National Rating Review Committee.
- G. Race organizers may select from ratings for various scoring systems, courses, wind speeds and race specific ratings as shown on the Certificate Example in Appendix A.
- H. **Safety requirements are not part of this Rule Book. It is the Organizing Authority's responsibility to address safety.**

II. Obtaining a Rating

- A. 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 via the **ORA** web site at <https://www.offshoreracingrule.org/orr-ez> or the QR code shown on the cover page.
- B. Applications are not complete unless accompanied by the required fees. Central to generating a new certificate for a boat, is the hull's Offset File. For boats with an Offset File already in the database, certificates are typically completed within a few days. Certificates for boats not in the database will typically take longer. Due to the additional work required, there is a one-time fee for the creation of a new Offset File.

- C. Boats are allowed up to three (3) concurrent valid certificates, as follows:
 - 1. Standard or One-Design Class Certificate.
 - 2. Standard Certificate (alternate configuration).
 - 3. Short-Handed Certificate.
- D. Unless specifically allowed by the Organizing Authority (not recommended), a boat shall not use more than one rating certificate during any given regatta or series.

III. Handicapping Procedure

A. General

- 1. The definitions and technical descriptions in the current **ORR Rules** shall apply to these rules.
- 2. In assigning a rating, **ORR-EZ** may use any data sources that the handicappers deem appropriate including, but not limited to:
 - (a) measurements of the boat's sails and rig data as supplied by the applicant, **ORR** measurer, sailmaker, or **ORR-EZ** regional representative;
 - (b) hull file geometry as supplied from the **ORA** data base or a constructed hull file;
 - (c) displacement data as supplied by the manufacturer or as weighed in lightship configuration or as is contained in the **ORA** default data file;
 - (d) one-design class rules;
 - (e) observed performance and race results of the boat or other boats that are similar;
 - (f) boat configuration data maintained by **ORA**;
 - (g) ratings for the same or similar boats in other areas of the country.
- 3. **ORR-EZ** assumes a boat is equipped to race. There are no allowances made for boats in non-race configuration.

B. Standard Certificate

- 1. Boats shall meet the following characteristics for their certificate to be valid:
 - (a) moveable ballast boats are permitted;
 - (b) 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;
 - (c) Ketch and Yawl rigs will have PY and EY banded.
- 2. Handicaps further assume that, unless reported otherwise:
 - (a) for boats with symmetric spinnakers, the SPL is equal to J or manufacturers specifications, default spinnaker girths will be taken as 180% of SPL;
 - (b) for boats with asymmetric spinnakers, default spinnaker girths will be taken as 175% of TPS or manufacturer base boat specifications;
 - (c) the default symmetrical spinnaker luff is taken as $0.95 \times (ISP^2 + SPL^2)^{.5}$;
 - (d) the default genoa LP dimension equal to 155% of the J dimension;
 - (e) a Code Zero spinnaker is not carried;
 - (f) using Whisker Pole with either a headsail or asymmetric spinnaker tacked on centerline is allowed;
 - (g) 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;
 - (h) interiors are in the configuration that comes standard from the manufacturer.

3. The owner shall declare any sails or spars with larger dimensions, smaller or retractable propellers or lightened interior and may declare smaller sails.

C. One-Design Class Certificate

1. **ORR-EZ** may, at its discretion, offer One-Design (OD) certificates for established OD Classes and also for groups of owners with boats with a given hull design, and that agree upon the size of sails and other equipment required to compete.
2. OD Class restrictions apply only to the measurement data and parameters taken from the OD Class rules including, but not limited to, hull, rig, sails, crew weight and required equipment.
3. **Conformity with other OD Class rules is not required by these rules.**

D. Short-Handed Certificate

1. Boats shall meet the requirements of a Standard certificate except that the declared crew weight shall be less than 65% of the default crew weight or 555 lbs, whichever is greater, and it is assumed that the boat is configured for short-handed sailing.
2. The Organizing Authority may restrict the eligibility of short-handed entries.

E. Crew Weight

1. The Rated Crew Weight (RCW) shall be either the default Base Crew Weight (BCW) as determined by the **ORR-EZ VPP** or the Declared Crew Weight (DCW) submitted by the owner in the application process.
2. For One-Design certificates, the OD Class rules regarding crew weight shall apply and the maximum allowed crew weight shall be used as the RCW. OD classes without crew weight rules shall be assigned an appropriate RCW.
3. **The RCW is the Maximum crew weight allowed while racing under ORR-EZ.**
4. If specifically invoked by the Organizing Authority in the race documents, the Minimum crew weight allowed while racing shall be 75% of the RCW.

F. Sail Limitations

1. A boat shall not carry on board more sails of each type than the number listed in the table below unless modified by the Organizing Authority.

Large headsails	5
or 4 Large headsails plus 1 Large Roach Headsail (LRH) >50% mid-girth foot ratio	4+1
Small headsails	4
Light staysails	1
Spinnakers	5
Mainsail	1
Storm Trysail	1
Storm jib (headsail)	1
Heavy-Weather jib (headsail)	1
Mizzen	1
Mizzen Staysails	3

2. Except when changing sails, only one headsail and one staysail per mast may be flown, unless specifically rated otherwise.
3. For Non-Spinnaker ratings, the **ORR-EZ VPP** assumes that boats shall not use Spinnakers or Large Roach Headsails.

G. Auxiliary Propulsion

1. The arrangement and design of a boat's auxiliary propulsion shall be as specified on the certificate application. If an outboard motor is specified, its weight (without fuel) must be declared.
2. **Auxiliary propulsion is not required by these rules.**

H. The Certificate

1. An approved, valid certificate shall be available online for inspection by the Organizing Authority.
2. By accepting the certificate for release, the applicant attests that the information on the certificate is true and accurate.

IV. Changes and Adjustments to Handicaps

A. General

1. Changes in ratings shall be made whenever an adjustment is needed to provide equitable handicap racing.
2. Changes in ratings shall be effective upon the release date of the revised certificate and shall not be retroactive.
3. 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**. All changes to a certificate that affect the rating and are initiated by an Owner or competitor shall incur a fee.
4. If a boat races in a configuration that is inconsistent with the assumptions and declarations used to establish its rating, she is in breach of **RRS 78. Compliance with Class Rules**. If deviations become apparent; other competitors are urged to protest the boat directly, and/or to bring such deviations to the attention of the **ORR-EZ** Committee.
5. Unless otherwise allowed by the Organizing Authority, once a regatta or series is completed, issues with a certificate shall not be protested or appealed with regards to that event.

B. Changes in Ownership

ORR-EZ certificates are not transferrable. If a boat is sold to a new Owner, all active certificates immediately become invalid and must be purchased by the new Owner. This does not apply to chartered or borrowed boats.

C. Changes during the Season

A boat shall be allowed to revise each of its rating certificates once per year (in addition to renewal) for an additional fee. Further revisions may be allowed at the discretion of **ORR-EZ**. This shall not prevent an owner or competitor from requesting a rating adjustment or appealing a rating decision as described below, nor prevent **ORR-EZ** from changing the rating in order to maintain equitable racing.

D. Changes with Renewal

A boat may revise the application data for each certificate upon annual renewal. Fees may vary depending upon the nature of the revisions.

E. Trial Certificates

Trial certificates are only available for boats with recent (within 48 months) certificates. New hull configurations or other major changes may prohibit the availability of a Trial certificate and a new certificate will need to be issued prior to running trials. The fee for a Trial certificate is not refundable.

F. Ratings Appeals

1. Any person holding a current **ORR-EZ** certificate may appeal the rating of their boat, or of another boat holding a current **ORR-EZ** Certificate, whereupon the certificate holder will be notified of the pending appeal and by whom it was made.
2. Appeals shall be made initially at the regional level and will be advanced to the national level as needed. Appellants must present documentation in support of their appeal. Appeals which escalate to involve the **ORR-EZ VPP** Technical Team shall incur a **\$200** non-refundable fee which may be waived at the discretion of the Technical Team.

V. Fees

The fees associated with **ORR-EZ** ratings shall be as set forth in the **ORR-EZ Product Price List**. In special circumstances, discounts may be granted at the discretion of the **ORR-EZ** national and regional representatives. Prices are subject to change without notice.

VI. Definitions

See **ORR-EZ Cert Form Glossary**, including Course & Wind Range definitions:

https://www.regattaman.com/certificates_page.php

See also the current **ORR Rules**.

VII. Privacy

All data submitted, collected, created and published in association with an **ORR-EZ** rating certificate is the sole property of **ORR-EZ** and **ORA**. **ORR-EZ** and **ORA** do not share the personal or contact information of its clientele without prior notice and consent.

Appendix A – Certificate Example

See attached.

Sample Yacht J/125 12345

Class: J/125 Configuration: Sail Number: 12345 Year Built: 1999 Builder Test: JBoats Owner(s): Sailor, Joe	<p style="color: red; text-align: right;">Sails drawn in RED are based on Default Values</p>		
Certificate #: EZ11631 Valid Year: 2023 Issue Date: 2023-02-02 Exp.Date: 2023-12-31 Offsets_file: US30894A.OFF Cert Group: ORR-Ez SOCAL Comment:			
Rig Type: Sloop Forestay: Fractional Keel Type: Fin with Bulb Prop Type: Folding Prop Install: Exposed Prop Blades: 2			
LOA: 12.52 m LWL: 11.28 m Rated Length: 11.88 m Beam Max: 3.20 m Draft: 2.48 m Disp Empty: 4353 kg Disp Sailing: 5274 kg Crew: 779 kg Water Ballast: kg Wetted Area: 28.5 m ² LPS: 131.7 ° RM20: 127.7 kg·m Stab Index: 133 °			
Spinnaker: Asymmetrical tacked centerline on bow, sprit or prod Code Zero: Yes Genoa/Jib Leech: No Roach - Leech is straight Large Roach Headsail: No Jib Furler: No Main Roller Furling: No			
Rig Dimensions IG: 14.94 m ISP: 15.88 m J: 4.57 m P: 14.33 m E: 5.49 m TPS: 7.13 m	Mainsail Meas. HB: 0.14 m MGT: 1.22 m MGU: 2.16 m MGM: 3.60 m MGL: 4.62 m Area: 48.6 m ²	Jib/Genoa Meas. LP: 6.74 m LPG %: 147.3 % J Luff: 14.64 m J Leech: 14.19 m Area: 49.3 m ²	Asymmetric Spin. Meas. ASLU: 17.37 m ASLE: 15.75 m AMG: 12.84 m ASF: 12.84 m Area: 177.1 m ²

Sample Yacht J/125 12345

Table of Time Allowances (sec/mile)* (at True Wind Angles)

True Wind Speed	4 kts	6 kts	8 kts	10 kts	12 kts	16 kts	20 kts	24 kts
Opt Beat Angle	46.1	45.0	43.6	40.2	37.8	35.6	35.5	35.6
Beat VMG	1,305.8	927.1	743.6	664.3	624.3	588.4	572.9	564.8
52°	818.87	593.06	486.84	454.62	438.06	420.60	410.11	403.95
60°	736.05	546.33	462.14	436.36	421.68	404.85	394.23	387.65
75°	667.33	505.65	439.23	414.61	400.02	377.74	363.34	352.92
90°	617.67	477.36	425.85	398.32	378.60	349.78	329.31	313.67
110°	616.67	471.85	415.23	384.06	360.19	320.16	291.28	273.09
120°	645.65	485.80	418.14	382.67	356.68	311.53	279.19	257.83
135°	771.3	554.58	458.00	417.70	385.64	318.30	269.02	241.93
150°	944.7	678.9	552.3	492.6	446.95	382.07	310.2	252.9
165°	1,053.7	757.3	616.0	549.4	498.4	423.8	345.9	282.1
Run VMG	1,090.8	784.0	637.7	568.8	516.0	438.8	358.2	292.1
Opt Run Angle	133.2	135.7	138.9	144.3	150.7	156.8	139.1	143.9

* Sec/mile rating assume gybing downwind when target angles are deeper than best VMG angles.

Performance Metrics

SA/D Dnwind:	75.770
SA/D Average:	54.49
SA/D Upwind:	33.200
D/Length:	87.7
Ave Perf Screen:	62.100
DnWind Perf Screen:	86.4

Standard Ratings

	TOT (Spin)				TOD (Spin)			
	V.Light	Light	Medium	Heavy	V.Light	Light	Medium	Heavy
RANDOM LEG	0.485	0.767	1.023	1.247	988.7	625.5	468.5	384.4
W50/L50	0.481	0.764	1.010	1.242	1,219.6	768.8	581.5	472.7
W60/L40	0.483	0.767	1.011	1.213	1,241.0	781.3	592.9	494.2
MOSTLY WW	0.497	0.788	1.017	1.141	1,214.4	766.2	593.8	529.0
MOSTLY LW	0.507	0.782	1.016	1.348	933.2	605.6	465.8	351.1

Benchmark Ratings

	TOT (Spin)	TOD (Spin)
GPH	1.016	520.2
IR#	1.015	527.5

ORR-Ez PHRF

	TOD (Spin)
ORR-Ez PHRF	-8.8

ORR-Ez PHRF are based on the Farr 40 MH as Scratch Boat.

Standard PCS Ratings

	TOD (Spin)							
	4	6	8	10	12	16	20	24
RANDOM LEG	989.7	710.3	577.0	506.9	464.6	415.6	383.3	360.0
W50/L50	1,219.7	872.5	705.8	624.8	577.1	517.9	470.0	432.6
W60/L40	1,241.0	886.9	716.8	634.8	588.2	533.3	491.7	460.2
MOSTLY WW	1,214.4	867.8	701.2	628.2	588.9	549.5	527.1	512.4
MOSTLY LW	933.2	679.0	560.5	503.9	463.1	402.8	348.0	305.6

ORR-Ez PHRF Time Allowance 4 Winds

	TOD (Spin)			
	V.Light	Light	Medium	Heavy
RANDOM LEG	-1.7	-7.8	-13.4	-19.2
W50/L50	12.7	0.4	-5.2	-13.7
W60/L40	24.9	6.7	-3.2	-11.3
MOSTLY WW	47.3	15.5	-5.9	-12.4
MOSTLY LW	-11.3	-14.3	-12.0	-23.0

Sample Yacht J/125 12345

Table of Time Allowances (sec/mile)* (at True Wind Angles)

True Wind Speed	4 kts	6 kts	8 kts	10 kts	12 kts	16 kts	20 kts	24 kts
Opt Beat Angle	46.1	45.0	43.6	40.2	37.8	35.6	35.5	35.6
Beat VMG	1,305.8	927.1	743.6	664.3	624.3	588.4	572.9	564.8
52°	818.87	593.06	486.84	454.62	438.06	420.60	410.11	403.95
60°	736.05	546.33	462.14	436.36	421.68	404.85	394.23	387.65
75°	667.33	505.65	439.23	414.61	400.02	381.80	369.14	359.45
90°	659.33	500.10	435.00	401.34	384.76	362.61	344.82	330.05
110°	730.24	543.08	460.53	422.40	393.06	343.37	318.44	297.80
120°	842.18	607.71	496.70	449.34	417.78	365.98	311.46	288.27
135°	1,181.99	810.30	625.43	524.43	468.04	404.77	354.69	300.36
150°	1,527.11	1,012.74	755.59	615.57	525.23	432.85	379.27	329.91
165°	1,579.02	1,058.08	797.64	644.34	546.12	438.91	380.03	328.48
Run VMG	1,606.1	1,075.7	810.4	653.9	553.7	443.7	384.1	332.1
Opt Run Angle	172.3	172.3	172.4	172.4	172.3	172.6	172.2	171.3

Performance Metrics

SA/D:	33.20
D/Length:	87.7
Perf Screen:	37.9

* Sec/mile rating assume gybing downwind when target angles are deeper than best VMG angles.

Standard Ratings

	TOT (Non-Spin)				TOD (Non-Spin)			
	V.Light	Light	Medium	Heavy	V.Light	Light	Medium	Heavy
RANDOM LEG	0.423	0.689	0.956	1.176	1,134.1	696.0	501.4	407.6
W50/L50	0.403	0.677	0.973	1.211	1,458.4	867.4	603.7	484.7
W60/L40	0.419	0.697	0.981	1.190	1,431.5	860.2	610.7	503.8
MOSTLY WW	0.476	0.766	1.008	1.133	1,267.1	787.7	598.6	532.9
MOSTLY LW	0.378	0.637	0.926	1.253	1,253.0	743.5	511.0	377.8

Benchmark Ratings

	TOT (Non-Spin)	TOD (Non-Spin)
GPH	0.932	567.3
IR#	0.966	554.0

ORR-Ez PHRF

	TOD (Non-Spin)
ORR-Ez PHRF	17.7

ORR-Ez PHRF are based on the Farr 40 MH as Scratch Boat.

Standard PCS Ratings

	TOD (Non-Spin)							
	4	6	8	10	12	16	20	24
RANDOM LEG	1,139.7	803.2	638.9	550.0	496.5	438.7	406.2	382.1
W50/L50	1,470.5	1,015.7	790.3	668.8	597.0	521.7	482.9	452.5
W60/L40	1,441.1	1,001.5	784.4	670.1	604.1	536.3	502.1	476.1
MOSTLY WW	1,269.5	899.2	719.4	637.0	593.3	551.3	531.2	518.0
MOSTLY LW	1,267.4	873.6	678.3	573.1	506.4	427.1	373.9	337.8

ORR-Ez PHRF Allowance 4 Winds

	TOD (Non-Spin)			
	V.Light	Light	Medium	Heavy
RANDOM LEG	143.7	62.7	19.5	4.0
W50/L50	251.5	99.0	17.0	-1.7
W60/L40	215.4	85.6	14.6	-1.7
MOSTLY WW	100.0	37.0	-1.1	-8.5
MOSTLY LW	308.5	123.6	33.2	3.7