ORC Cruiser & ORC Club Certificate Seminar

Presenters:

Jonathan Bartlett, *Past Commodore*

John White, *AYC Sailing Committee Chair*

Ben Capuco, *AYC's ORC Class Liaison*

Seminar Agenda

ORC Cruiser Seminar – 1000	
Jonathan	Opening remarks
Ben	What is ORC, scoring, etc.
John	ORC Cruiser (spinnaker & non-spinnaker) eligibility & requirements
John	ORC Cruiser schedule for 2022
Ben	ORC Club certificate process
Jonathan	Moderated Q&A
Jonathan	Closing remarks
ORC Full Crew and DH Seminar – 1100	
Jonathan	Opening remarks
Ben	What is ORC, certificate options, scoring, etc.
John	ORC and ORC DH schedule for 2022
Ben	ORC Club certificate process
Jonathan	Moderated Q&A
Jonathan	Closing remarks

Reminders:

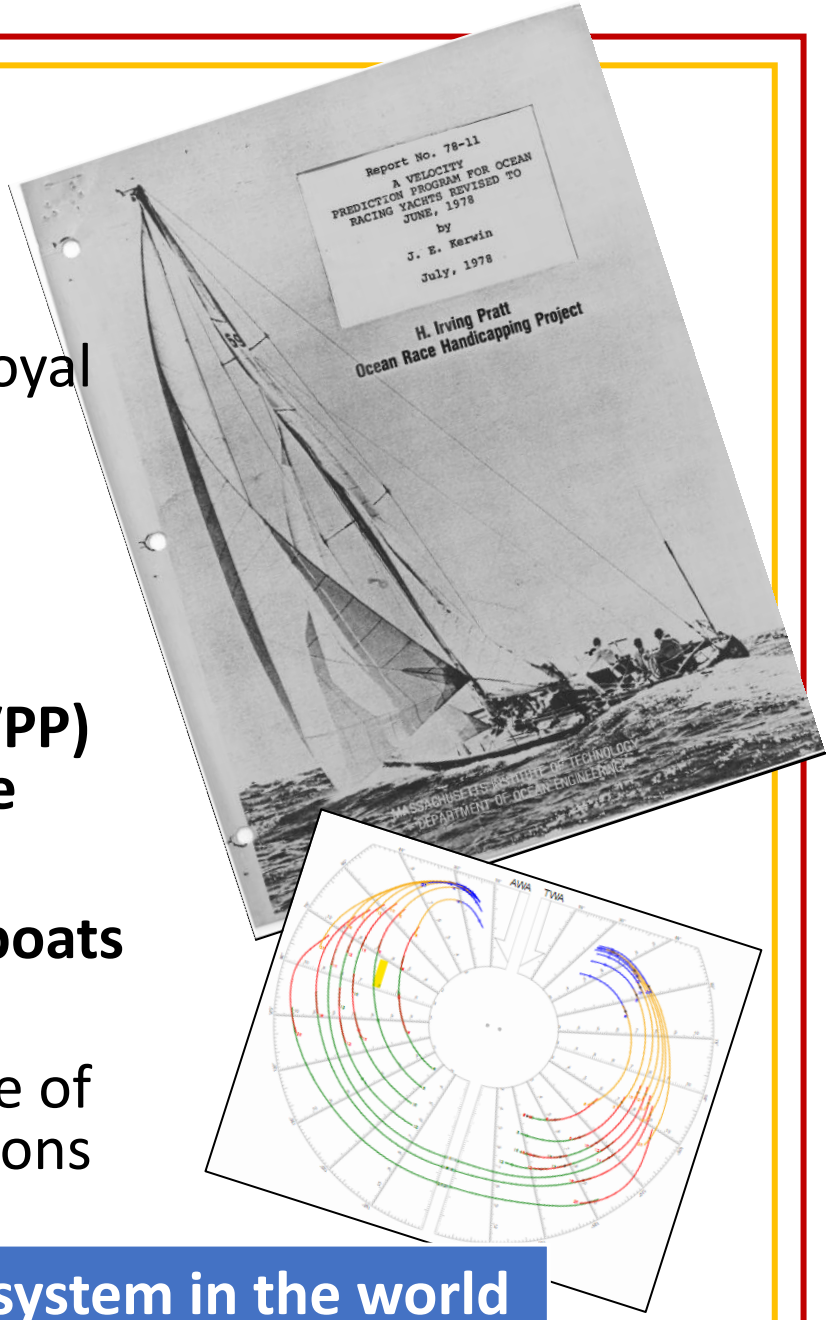
- Use the **Q&A** function (not chat) to type any questions you might have
- You can write in your questions at any time during the seminar
- The moderator will decide whether to address a question during the presentation or hold it until the end
- We are recording this seminar so you can re-watch later – the recording will be available on Monday

ORC Cruiser

How to apply and manage the process for your boat

What is ORC?

- Offshore Racing Congress (ORC) - founded in 1969 by the Royal Ocean Racing Club (RORC) and the Cruising Club of America (CCA) to develop an international handicap standard
- ORC has supported IOR, IMS, and currently the ORC rating systems
- **ORC ratings are based off a Velocity Prediction Program (VPP) using hull, appendage, rig and sail measurements from the Universal Measurement System (UMS)**
- **The VPP is essentially a computer tool that predicts each boats performance in a full range of wind conditions**
- ORC ratings are based on these predictions for a given range of wind speeds over an assumed set of typical racecourse options



ORC is the most popular measurement-based rating system in the world

Scoring Options

- Single and Triple Number
  - Time on Time - Corrected time depends only on the elapsed time. The longer the race in time, the larger the handicap.
  - Low, Medium & High help refine accuracy of the ratings, create closer and more fair results
- Std options: All Purpose & W/L
- Other options: Predominant upwind, downwind, 5-band scoring etc.

Single Number	Time On Distance	Time On Time
Triple Number All Purpose Low	643.6	0.9323
Triple Number All Purpose Medium	510.5	1.1754
Triple Number All Purpose High	457.3	1.3121
Triple Number Windward/Leeward Low	836.9	0.7169
Triple Number Windward/Leeward Medium	632.1	0.9492
Triple Number Windward/Leeward High	560.3	1.0709
Predominantly Upwind	559.1	1.0731
Predominantly Downwind	513.4	1.1687
Predominantly Upwind Low	735.4	0.8158
Predominantly Upwind Medium	586.1	1.0237
Predominantly Upwind High	556.5	1.0782
Predominantly Downwind Low	736.0	0.8152
Predominantly Downwind Medium	572.2	1.0486
Predominantly Downwind High	521.9	1.1496

ORC offers multiple scoring options for better accuracy & closer results

ORC Cruiser Division **Intent**

To group like- performing, equipped, and prepared boats into classes based upon objective measures.

As the number of entries allows, AYC will divide the ORC Cruiser Division into classes based upon boat configuration and ORC data.

Configuration Requirements For ORC Cruiser Division

ORC DYNAMIC ALLOWANCE

- Valid ORC certificate **MUST** specify a value for Dynamic Allowance of 0.230% or greater.
- Dynamic Allowance (DA) is a rating credit representing the dynamic behavior of a boat taking into account performance in unsteady states (i.e. while tacking) calculated on the basis of:
  - Upwind Sail Area/Volume ratio
  - Upwind Sail Area/Wetted Surface ratio
  - Downwind Sail Area/Volume ratio
  - Downwind Sail Area/Wetted Surface ratio
  - Length/Volume ratio.
- Dynamic Allowance is displayed on ORC certificates of boats which have met the requirements of the IMS Cruiser/Racer Division
  - Boats which have been assigned to the IMS Performance Division will have the Dynamic Allowance displayed when its Series Date is older than 30 years.

Where to find Dynamic Allowance

ORC

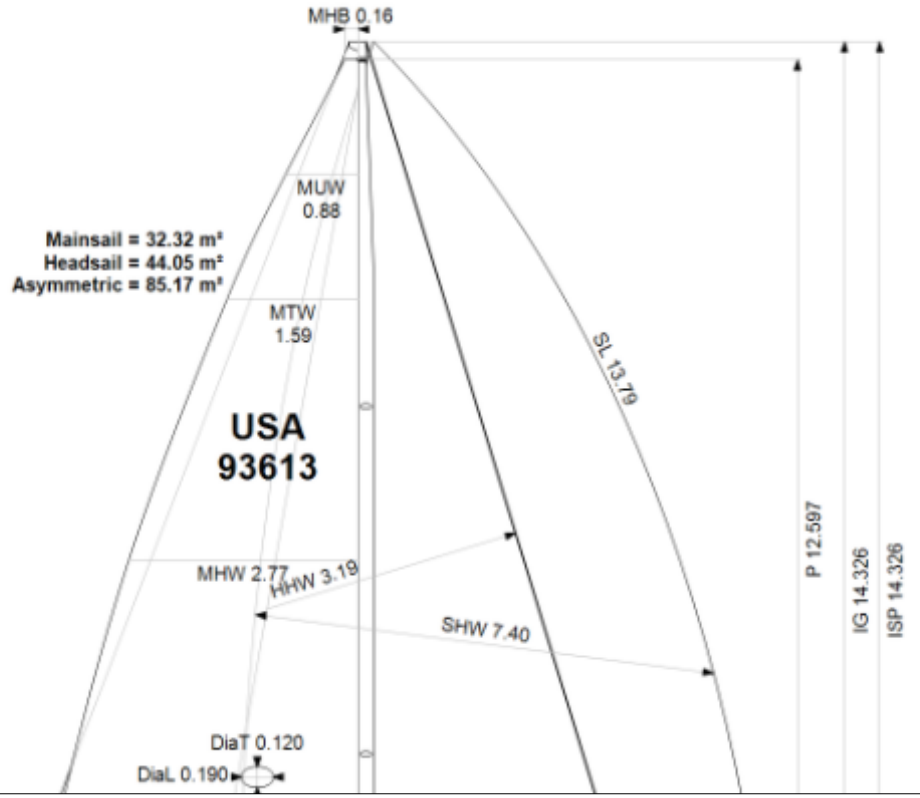
Club Certificate **2021**

Boat **RESOLUTE** USA 93613

Offshore Racing Congress

Certificate number:US6038

Copy ONLY Invalid for Racing



GPH = **671.2** CDL = **8.193**

BOAT

Class	**Tartan 3500 WK**
Designer	**Jackett**
Builder	**Tartan**
Age Date	**02/1993**
Series Date	**01/1991**
Offset File	**TR3500WK.OFF**

HULL

Length Overall	**10.668 m**
Maximum Beam	**3.627 m**
Draft	**1.542 m**
Displacement	**6,389 kg**
DLR	**7.6462**
IMS Division	**Cruiser/Racer**
Dynamic Allowance	**0.357%**
Age Allowance	**0.487%**

Configuration Requirements For ORC Cruiser Division (cont.)

HEADSAILS
- A **maximum of two (2) headsails** (including staysails) may be carried onboard
- If two headsails are carried onboard, one headsail shall be no larger than 110% of the fore-triangle area
- The full length of the luff of all headsails must be secured or fastened to the forestay or inner forestay
- Headsails set flying are not permitted
- No more than one headsail may be flown at a time.

SPINNAKER
- (If applicable) A maximum of one spinnaker may be carried onboard
- The spinnaker maximum girth must be greater than 85% of the length of the foot of the sail. Example: Code Zero sails are not permitted.

PROFESSIONAL SAILORS - A maximum of one (1) Category 3 sailor may be onboard who may not steer unless they are the owner of the boat, or a threatening emergency arises.

OWNER'S DECLARATION - Owner/skipper must affirm that all configuration requirements have been met and the boat will be sailed in compliance with the boat's valid ORC certificate.

2022 AYC & EYC Regatta Calendar - ORC Starts

			ORC Class Starts			
Date	**Club**	**Regattas**	**ORC (full crew)**	**Cruiser**	**Doublehanded**	**Notes**
April 27	AYC	Wednesday Night Racing (beings)	✓			
May 7	AYC	Spring Race to Oxford	✓	✓	✓	
May 14	Both	Helly Hansen Sailing World Regatta	✓			**TBD (still in planning)**
June 3	EYC	Annapolis to Bermuda Ocean Race	✓	✓		
July 9	EYC	Boomerang	✓	✓		
July 15-17		Screwpile Lighthouse Challenge	✓	✓		
July 23	AYC	Annual Regatta	✓	✓	✓	
July 31	AYC	Two Bridge Fiasco			✓	
August 20	EYC	CRAB Cup	✓	✓		
August 27	EYC	Race to Cambridge Lighthouses	✓	✓		**TBD (still in planning)**
September 3	Both	Annapolis Labor Day Regatta	✓	✓	✓	
September 24	AYC	Fall Race to Solomons	✓	✓	✓	
October 1-2	AYC	DH Distance Race			✓	
October 8-9	AYC	Fall Series	✓			
October 9	AYC	Fall Series		✓	✓	

Notes:

- ORC denotes full use of allowable sails and crew. Regattas will be windward/leeward, point to point, and fixed government marks. See NOR for each event.
- **ORC Cruiser subject to eligibility criteria and class rules. Single race per day using government marks or point to point. See NOR.**
- ORC DH Double-Handed crews only. Single race per day using government marks or point to point. See NOR.

Cruiser Applicable Certificates

ORC through US Sailing offers several options for cruiser-focused rating certificates:

1. ORC Club – Club Certificate:
   - Allows for owner-declared measurements
   - Relies on default and estimated measurements applied by US Sailing
   - Sail measurements are still necessary
2. ORC Club – Non-Spinnaker
   - Same VPP, more accurately recognizing the influence of headsails only downwind

ORC Club is simple, quick and NOT limited to “race boats”

2022 US Sailing certificate pricing (same as 2021)

ORC 2021 Fee Schedule					
LOA	**<29.99 ft**	**30-39.99 ft**	**40-49.99 ft**	**50-59.99 ft**	**>60 ft**
ORC Club New	$3.00	$4.00	$5.00	$6.00	$7.00
ORC Club Renewal	$2.55	$3.40	$4.25	$5.10	$5.95
ORC Club Amendment	$1.50	$2.00	$2.50	$3.00	$3.50

- US Sailing membership required
- Club certs apply online
- Sail measurements required
- Processing time usually 1-2 weeks after receipt

✓ US Sailing is including a free speed guide and an additional Double Handed and/or Non-Spinnaker Certificate with new certificates

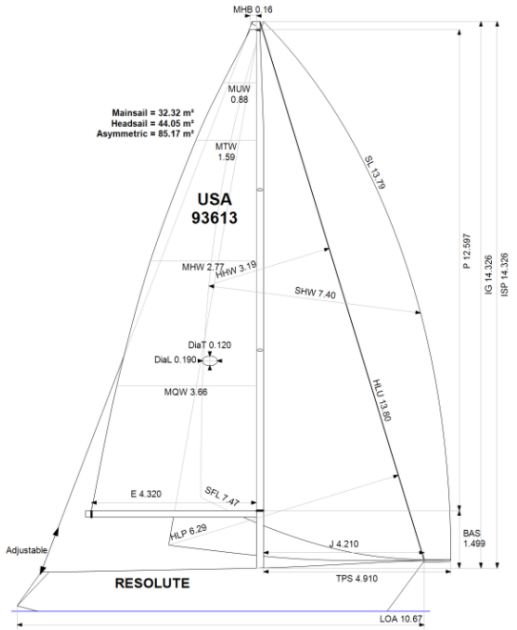
ORC Club certificates – Excellent Value

ORC Club certificate

- Scale drawing
- Basic hull dimensions
- Propeller type
- Rated boat speed table
- Crew weight: default or declared
- Sail limitations
- Stability: measured or unmeasured

ORC Club Certificate 2021

Boat **RESOLUTE** USA 93613



Rated boat velocities in knots

Wind Velocity	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Beat Angles	45.0°	43.5°	43.5°	43.3°	42.4°	41.8°	42.0°
Beat VMG	3.11	3.73	4.20	4.52	4.68	4.76	4.76
52°	4.83	5.71	6.39	6.75	6.89	6.96	6.99
60°	5.18	6.06	6.66	6.95	7.10	7.17	7.21
75°	5.47	6.36	6.89	7.15	7.32	7.46	7.59
90°	5.62	6.60	7.08	7.37	7.61	7.80	8.02
110°	5.46	6.48	7.03	7.37	7.68	8.00	8.56
120°	5.19	6.24	6.92	7.29	7.63	7.99	8.67
135°	4.65	5.70	6.57	7.06	7.39	7.73	8.44
150°	3.96	4.97	5.81	6.47	6.88	7.16	7.67
Run VMG	3.43	4.31	5.03	5.60	6.01	6.57	7.23
Gybe Angles	146.0°	147.5°	147.0°	148.0°	170.0°	172.0°	178.0°

ORC Ref **03410000W36** Issued on **05/03/2021** Valid until **31/12/2021**

Offshore Racing Congress

Certificate number:US6038

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IMS Division	**Cruiser/Racer**
Dynamic Allowance	**0.357%**
Age Allowance	**0.487%**

PROPELLER

Installation	**Shaft exposed**
Type	**Folding 2 blades**
Diameter	**0.405m**

CREW

Maximum weight	**480 kg**
Minimum weight	**360 kg** ** when applied*
Non Manual Power	**No**
Crew Arm Extension	

SAIL AREAS (m²)

	Measured	Rated
Mainsail	**32.32**	**32.93**
Headsail Luffed	**44.05**	**44.05**
Headsail Flying		
Symmetric		
Asymmetric	**85.17**	**85.17**

** 1 asymmetric(s) with SHW/SFL < 85%*

SAIL LIMITATIONS

Headsails	**5**
Spinnakers	**4**

STABILITY

Righting Moment	**152.6 kg·m**
Stability Index	**113.3**

COMMENTS

cushions on board except in forepeak

OWNER

The owner certifies that he/she understands his/her responsibilities under ORC Rule and Regulations.

VPP ver: 2021 1.00 | © **ORC** | www.orc.org

ORC Club Certificate 2021

Boat **RESOLUTE** USA 93613

Offshore Racing Congress

Certificate number:US6038

Time Allowances in secs/NM

Wind Velocity	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Beat VMG	1155.9	965.7	858.1	796.2	768.7	756.4	757.0
52°	744.9	630.2	563.3	533.5	522.5	517.5	515.3
60°	695.0	593.9	540.7	517.7	506.9	502.1	499.1
75°	658.5	566.0	522.2	503.7	491.7	482.4	474.2
90°	640.8	545.6	508.4	488.2	472.8	461.8	448.9
110°	659.6	555.3	511.8	488.8	468.9	450.1	420.6
120°	693.9	577.3	520.3	493.6	471.9	450.5	415.1
135°	773.6	631.5	548.1	509.8	487.0	465.8	426.3
150°	908.6	723.8	620.0	556.4	523.0	502.6	469.3
Run VMG	1049.2	835.8	715.9	642.5	599.4	548.2	497.8
Selected Courses							
Windward / Leeward	1102.5	900.7	787.0	719.3	684.0	652.3	627.4
All purpose	839.2	695.6	619.0	576.9	553.8	536.3	517.4

Single Number Scoring Options

Course	Time On Distance	Time On Time
Windward / Leeward	751.8	0.7981
All purpose	598.7	1.0022

Custom scoring options for United States of America

	Single Number	Time On Distance	Time On Time
Triple Number All Purpose Low		767.5	0.7818
Triple Number All Purpose Medium		595.1	1.0083
Triple Number All Purpose High		533.6	1.1245
Triple Number Windward/Leeward Low		1001.7	0.5990
Triple Number Windward/Leeward Medium		748.1	0.8020
Triple Number Windward/Leeward High		650.9	0.9218
Predominantly Upwind		650.2	0.9228
Predominantly Downwind		605.8	0.9904
Predominantly Upwind Low		871.2	0.6887
Predominantly Upwind Medium		675.2	0.8886
Predominantly Upwind High		624.9	0.9601
Predominantly Downwind Low		832.1	0.7210
Predominantly Downwind Medium		602.0	0.9968
Predominantly Downwind High		508.9	1.1791
Chicago-Mac Upwind			0.9043
Chicago-Mac All Purpose			0.9370
Chicago-Mac Downwind			0.9737
Bayview-Mac Cove Island			0.8730
Bayview-Mac Shore			0.8785
Harvest Moon Regatta		521.9	1.1496
Victoria-Maui			1.0354

AUT CAN DEN ESP EST FIN FRA GER GRE ISR ITA JPN
KOR LTU NED NOR POR RSA RUS SLO SUI SWE UKR USA

ORC Ref **03410000W36** Issued on **05/03/2021** Valid until **31/12/2021**

VPP ver: 2021 1.00 | © **ORC** | www.orc.org

Other ORC Benefits

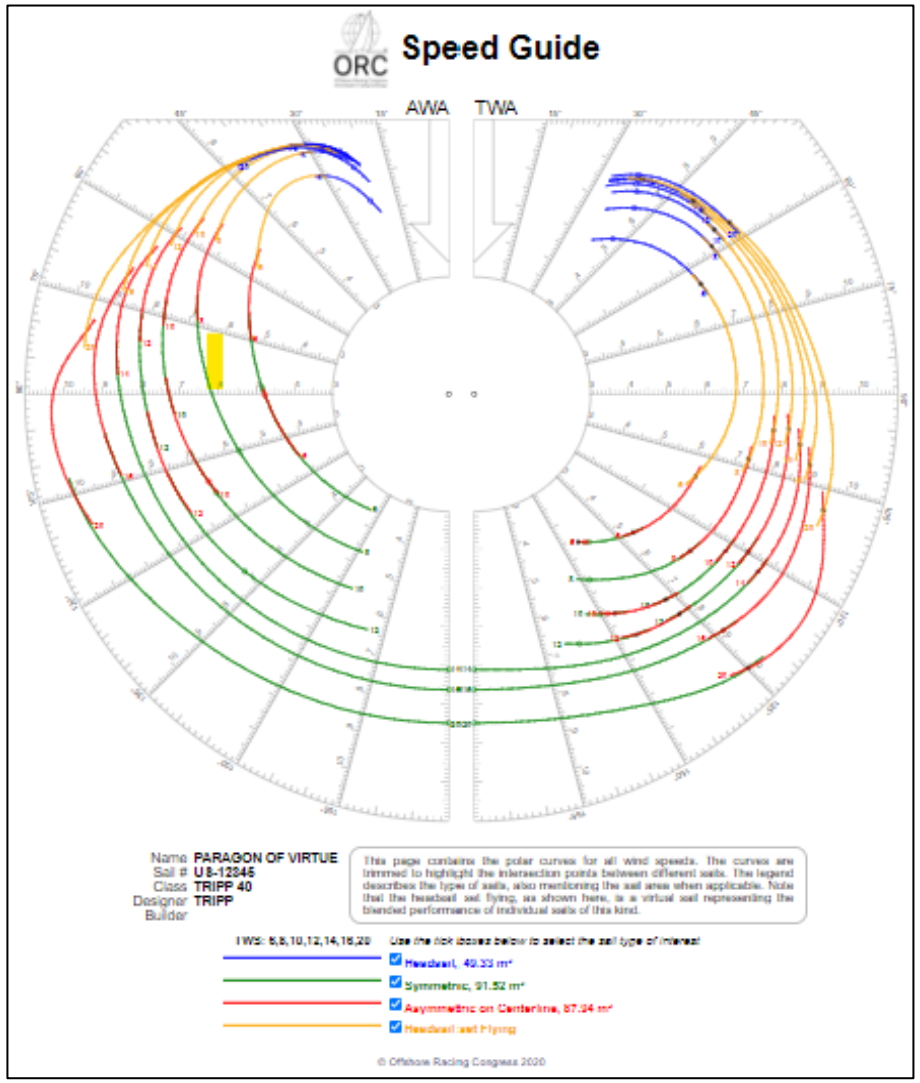
- **Speed Guide**
- **Target Speeds**
- **Database of Certificates**
- **Trial Certificates**

ORC

Target Speeds for
PARAGON OF VIRTUE (US-12345)

www.orc.org
2020

TWS	AWA UP	BS UP	TWA DN	BS DN
6	22°	5,39	142°	4,85
8	23°	6,35	148°	5,64
10	23°	6,73	150°	6,56
12	24°	6,87	157°	7,00
14	25°	6,97	180°	7,10
16	26°	7,01	180°	7,62
20	28°	7,10	180°	8,48



ORC Sailor Services offers a wealth of information

ORC Club Application Walk-Through

Online at US Sailing – *Stay tuned, new process being designed now*

All applications need sail measurements from sailmaker – forms are at:

https://cdn.ussailing.org/wp-content/uploads/2018/12/UMS-Mainsail-Certificate-2019.xls

https://cdn.ussailing.org/wp-content/uploads/2018/12/UMS-Headsail-Certificate-2019.xls

https://cdn.ussailing.org/wp-content/uploads/2018/12/UMS-Symmetric-Spinnaker-Certificate-2019.xls

https://cdn.ussailing.org/wp-content/uploads/2018/12/UMS-Asymmetric-Spinnaker-Certificate-2019.xls

Questions and help:

Offshore office US Sailing: offshore@ussailing.org

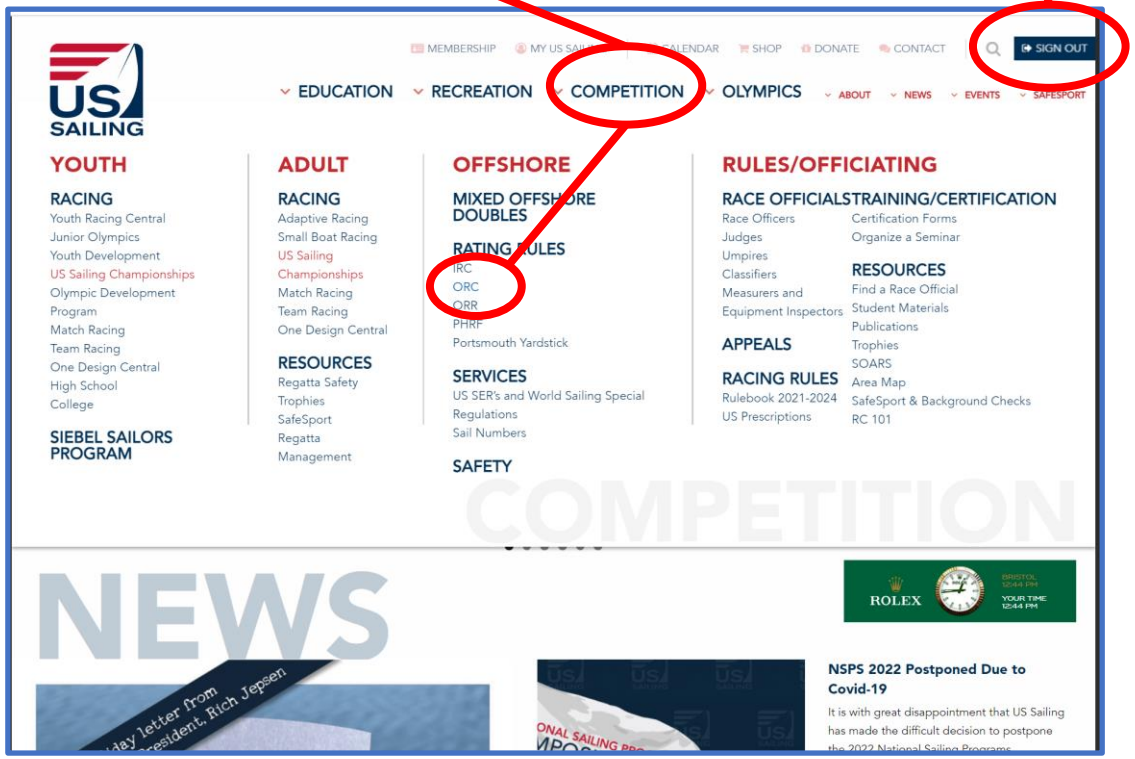
Dobbs Davis, certified measurer and ORC Communications Director: dobbs.davis@orc.org

Application Steps

https://www.ussailing.org/

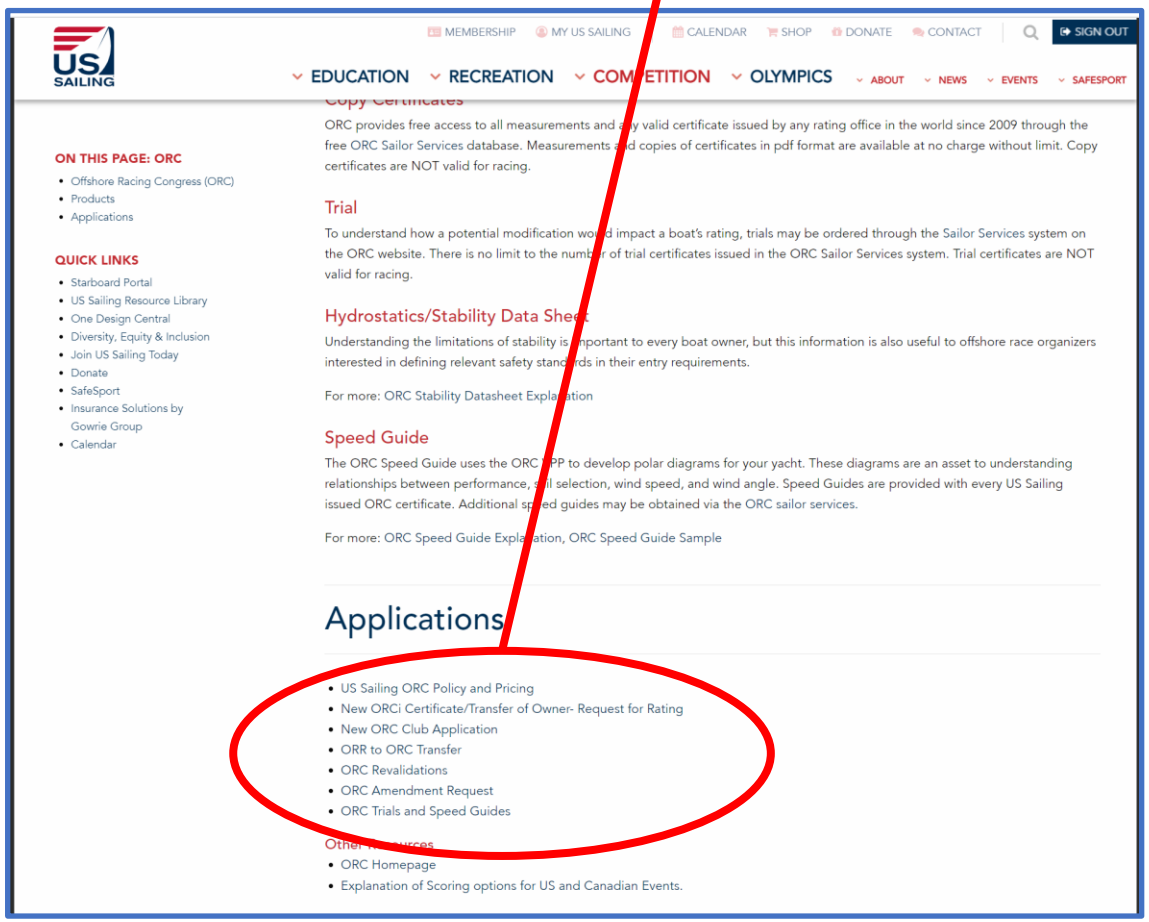
1. Sign in or Join US Sailing

2. Navigate to the Competition pulldown and ORC Page

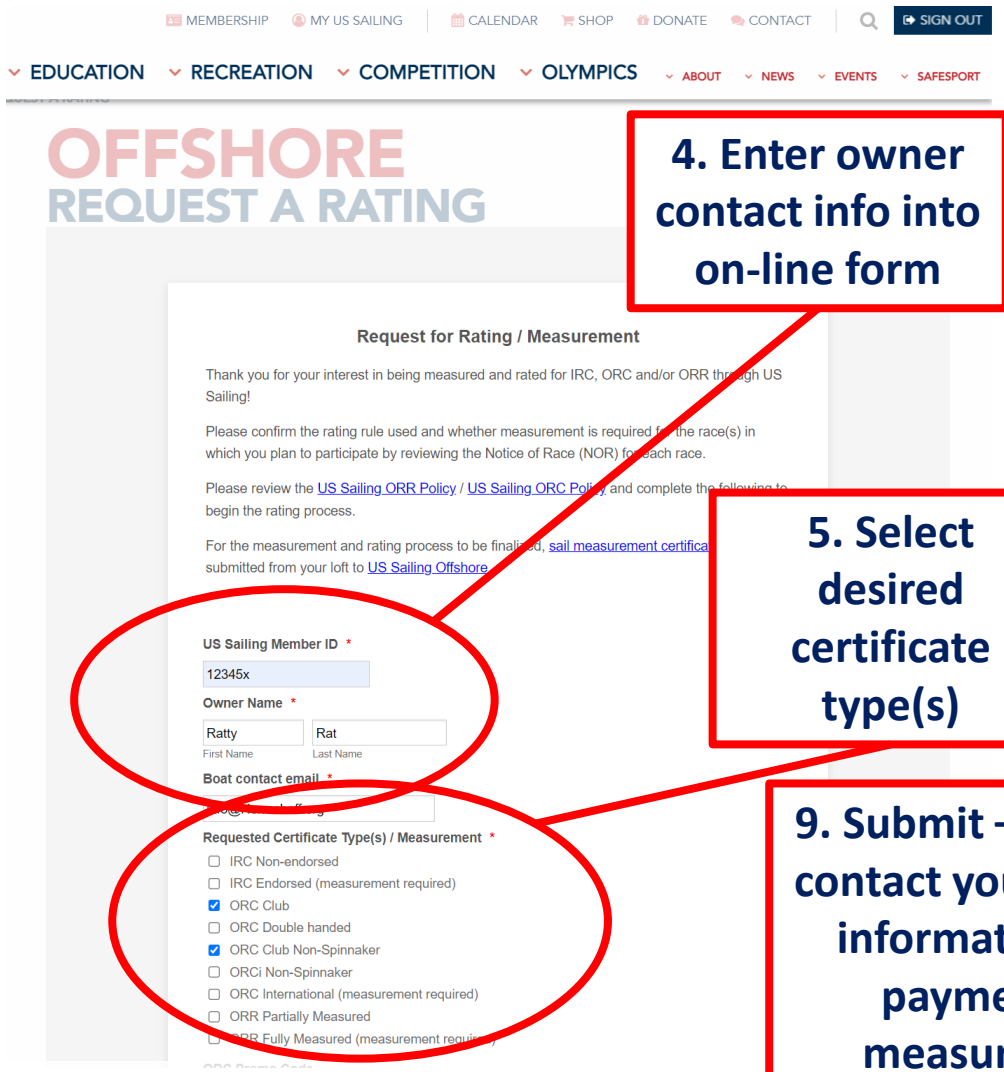


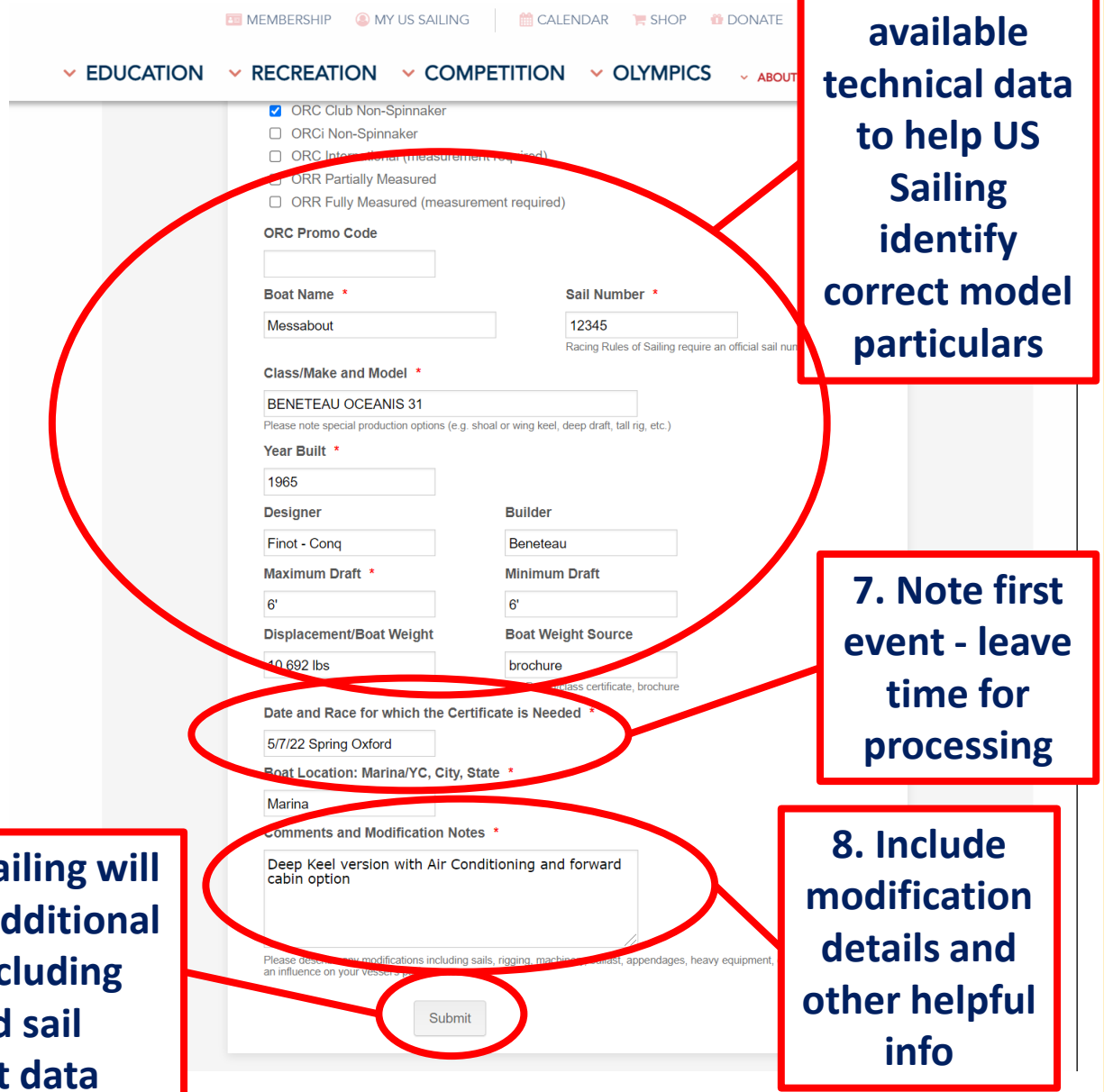
3. Scroll down to Applications, New ORC Club Application

*** Note ORRez to ORC is also an option**



Application Steps





4. Enter owner contact info into on-line form

5. Select desired certificate type(s)

6. Add best available technical data to help US Sailing identify correct model particulars

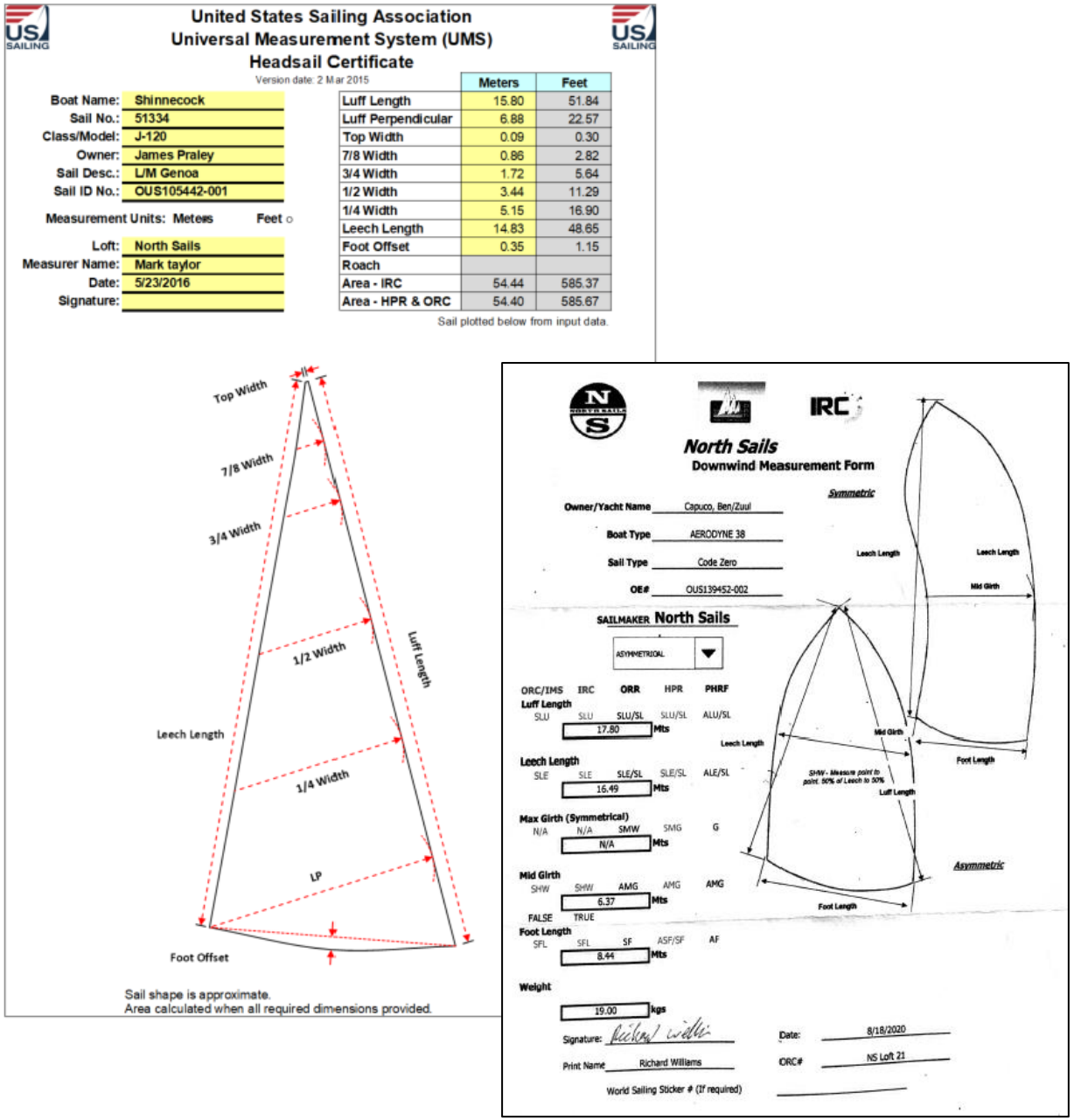
7. Note first event - leave time for processing

8. Include modification details and other helpful info

9. Submit – US Sailing will contact you for additional information including payment and sail measurement data

Application Steps

- US Sailing will respond with any questions or issues associated with issuing you a certificate
- Reach out to a sailmaker to have your sails measured and have these submitted to US Sailing
- Certificates can be issued in as little as one or two weeks, but apply early and try to avoid peak times before major events (Bermuda, Mackinac Race, etc.)



United States Sailing Association
Universal Measurement System (UMS)
Headsail Certificate

Version date: 2 Mar 2015

Boat Name:	Shinnecock
Sail No.:	51334
Class/Model:	J-120
Owner:	James Praley
Sail Desc.:	L/M Genoa
Sail ID No.:	OUS105442-001
Measurement Units:	Meters ● Feet ○
Loft:	North Sails
Measurer Name:	Mark taylor
Date:	5/23/2016
Signature:	

	Meters	Feet
Luff Length	15.80	51.84
Luff Perpendicular	6.88	22.57
Top Width	0.09	0.30
7/8 Width	0.86	2.82
3/4 Width	1.72	5.64
1/2 Width	3.44	11.29
1/4 Width	5.15	16.90
Leech Length	14.83	48.65
Foot Offset	0.35	1.15
Roach		
Area - IRC	54.44	585.37
Area - HPR & ORC	54.40	585.67

Sail plotted below from input data.

Sail shape is approximate.
Area calculated when all required dimensions provided.

North Sails
Downwind Measurement Form

Symmetric

Owner/Yacht Name: Capuco, Ben/Zuul
Boat Type: AERODYNE 38
Sail Type: Code Zero
OE#: OUS139452-002

SAILMAKER North Sails

ASYMMETRICAL

ORC/IMS IRC ORR HPR PHRF

Luff Length: SLU | SLU | SLU/SL | SLU/SL | ALU/SL — 17.80 Mts
Leech Length: SLE | SLE | SLE/SL | SLE/SL | ALE/SL — 16.49 Mts
Max Girth (Symmetrical): N/A | N/A | SMW | SMG | G — N/A Mts
Mid Girth: SHW | SHW | AMG | AMG | AMG — 6.37 Mts
FALSE TRUE
Foot Length: SFL | SFL | SF | ASF/SF | AF — 8.44 Mts

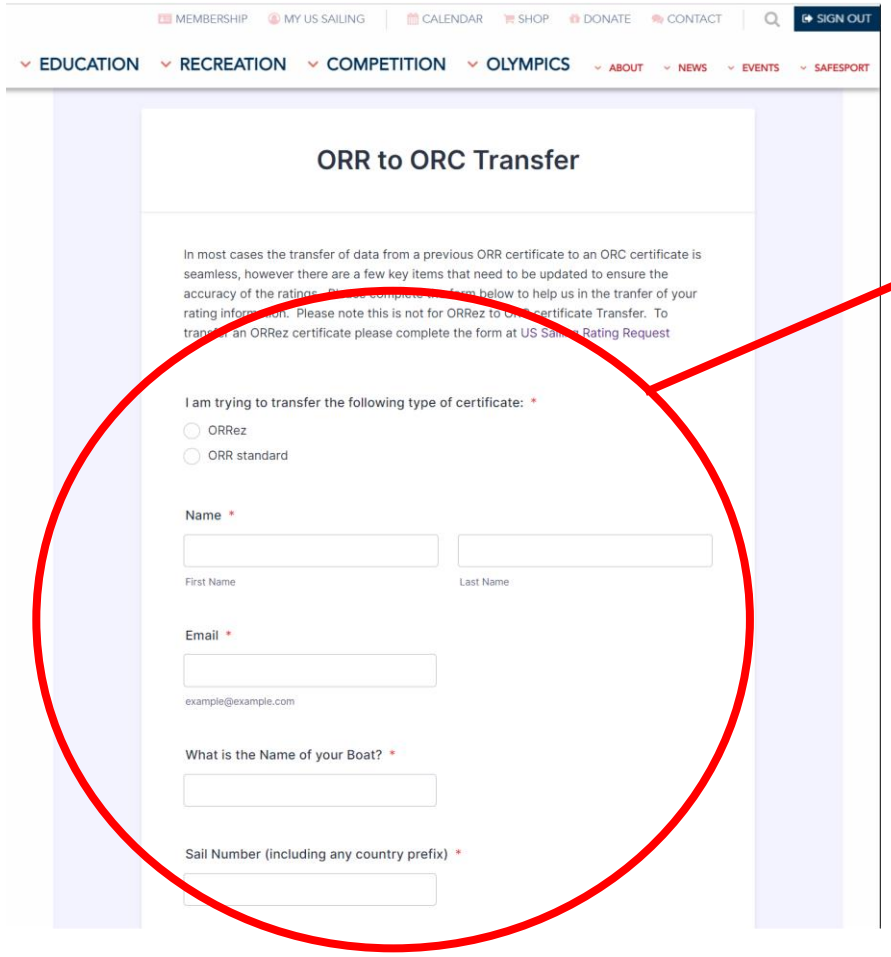
Weight: 19.00 kgs

Signature: Richard Williams
Print Name: Richard Williams
Date: 8/18/2020
ORC#: NS Loft 21
World Sailing Sticker # (If required)

Asymmetric

Application Steps

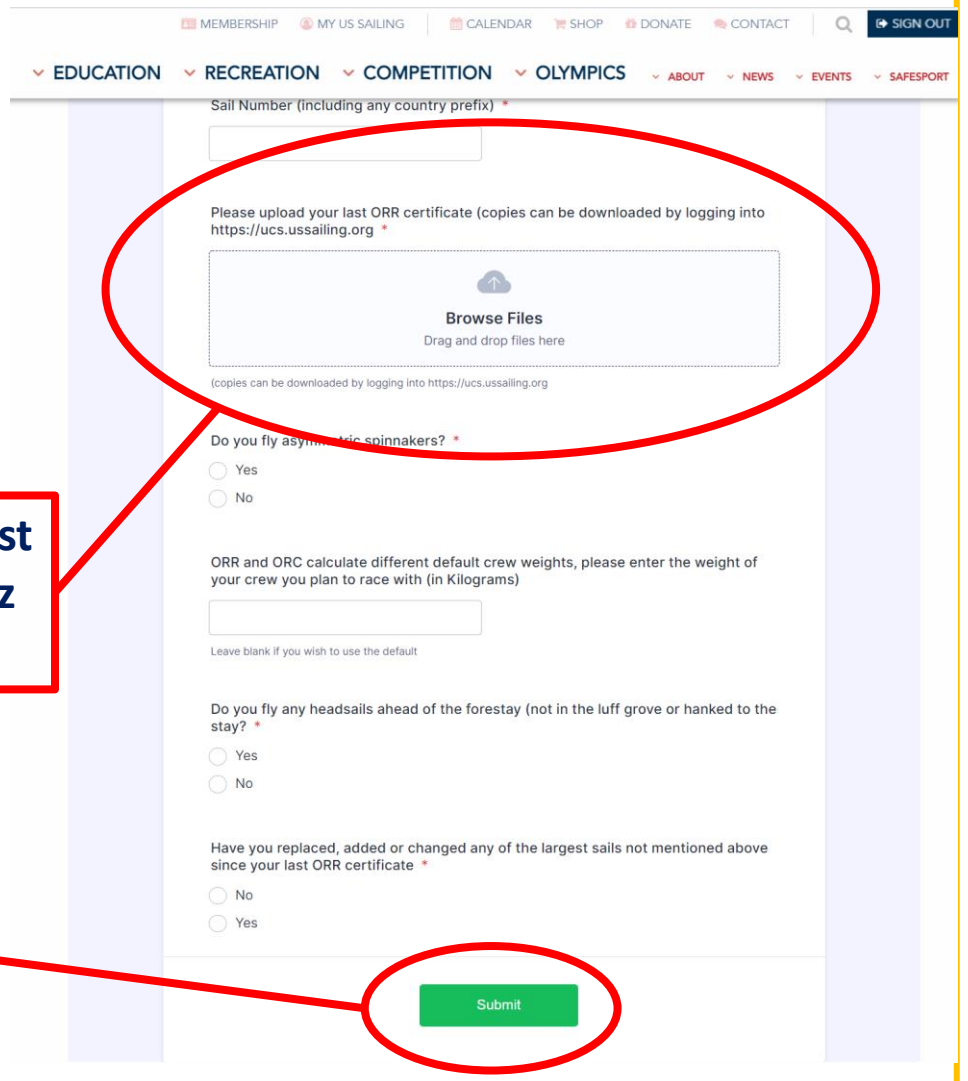
Already Have an ORR or ORRez Certificate?



1. Enter Basic contact and boat info

2. Upload latest ORR or ORRez Certificate

3. Add additional details, note if sails are unchanged and submit



Application Steps

- ❑ Join US Sailing (https://www.ussailing.org/)
- ❑ Complete online application for ORC rating or transfer of ORR Certificate (https://www.ussailing.org/competition/offshore/orc/)
- ❑ Have your mainsail, largest headsail and largest spinnaker measured See sail measurement contact information on next slide
- ❑ Plan for completing online application and sail measurement 3-4 weeks in advance of need
- ❑ Pay fees and respond to any requests from US Sailing to complete measurement

Local Sail Lofts with registered US Sailing ORC measurers

You must have a certified measurer measure your main, largest genoa and largest downwind sail

North Sails	Ridgely Mackenzie	ridgely.mackenzie@northsails.com
Quantum	Mike Crump	MCrump@quantumsails.com
Elvstrom	Chuck O'Malley	chuck@chesapeake-sailmakers.com
Ullman	Scott Steele	scott@ullmansailsannapolis.com
Evolution	Jerry Latell	jerry@latellsails.com

QUESTIONS?

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ORC in 2022 & ORC Club Certificate Seminar

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ORC Full Crew and Double Handed Seminar

How to apply and manage the process for your boat

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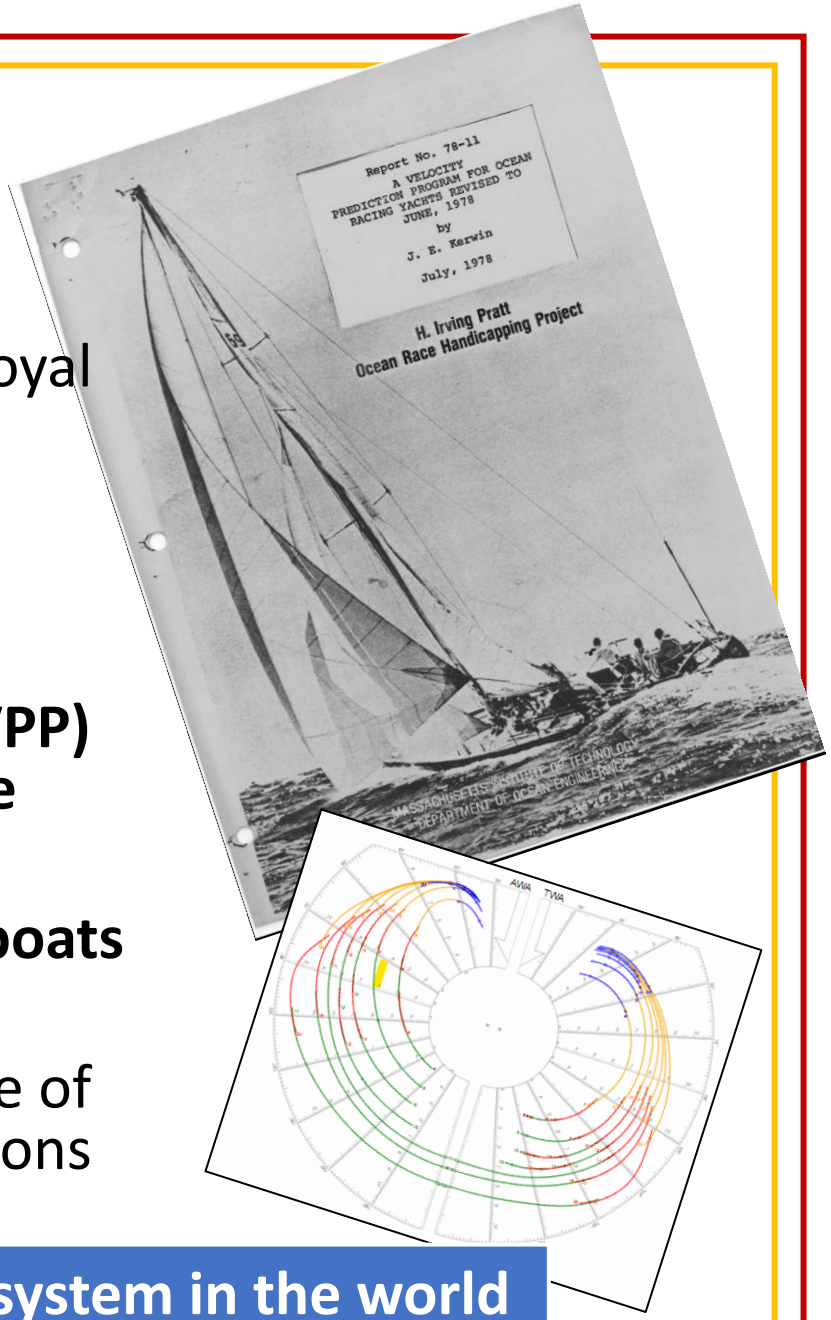
- **The VPP is essentially a computer tool that predicts each boats performance in a full range of wind conditions**
- ORC ratings are based on these predictions for a given range of wind speeds over an assumed set of typical racecourse options



ORC is the most popular measurement-based rating system in the world

Certificate Options

- ORC through US Sailing offers two basic options for rating certificates
  - ORC Club – Club Certificate:
    - Allows for owner-declared measurements
    - Relies on default and estimated measurements applied by US Sailing
    - Sail measurements are still necessary
  - ORCi - International Certificate
    - Incorporates a full set of UMS Measurements
    - More accurate because no default values are used
    - Necessitates measurements carried out by a US Sailing Certified Measurer
  - ORC One Design *others coming soon
    - For a select set of one designs adhering to their one design class rules
    - Includes* Etchells; Fareast 28; Farr 30 and 40; J/22, 24, 70 and 80; Melges 20, 24, 32, 37
  - Double Handed … Non-Spinnaker … Superyacht … & Multihull

ORC Club is simple, quick and NOT limited to “big boats”

2022 US Sailing Certificate Pricing

- US Sailing membership required
- Sail measurements required
- Processing time usually 1-2 weeks after receipt
- Club certs apply online
- Measurements req'd for ORCi – contact dobbs.davis@orc.org

ORC 2021 Fee Schedule					
LOA	**<29.99 ft**	**30-39.99 ft**	**40-49.99 ft**	**50-59.99 ft**	**>60 ft**
ORCi New or Owner Transfer (per foot)	$7.50	$8.50	$9.50	$10.50	$11.00
ORCi Renewal (per foot)	$6.40	$7.25	$8.10	$9.00	$9.35
ORCi Amendment (per foot)	$3.75	$4.25	$4.75	$5.25	$5.50
ORC Club New	$3.00	$4.00	$5.00	$6.00	$7.00
ORC Club Renewal	$2.55	$3.40	$4.25	$5.10	$5.95
ORC Club Amendment	$1.50	$2.00	$2.50	$3.00	$3.50

✓ US Sailing is including a free speed guide and an additional Double Handed and/or Non-Spinnaker Certificate with new certificates

ORC Club certificates – Excellent Value

ORC Club Certificate

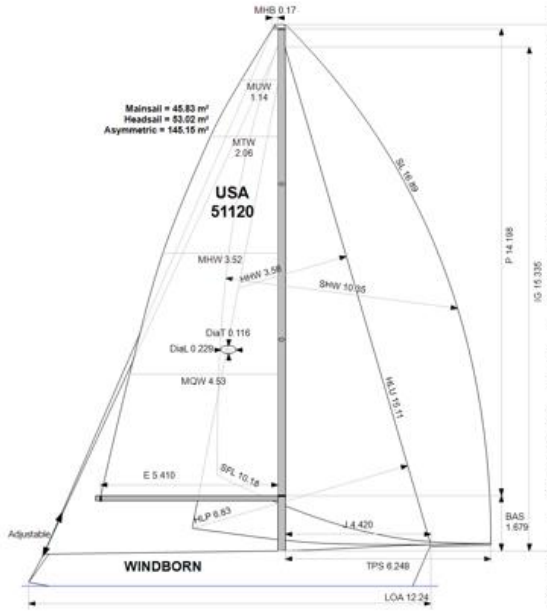
- Scale drawing
- Basic hull dimensions
- Propeller type
- Rated boat speed table
- Crew weight: default or declared
- Sail limitations
- Stability: measured or unmeasured

ORC Club Certificate 2021

Boat
WINDBORN
USA 51120

Certificate number: US6292

GPH = **579.4** CDL = **10.610**



BOAT

Class	J-120
Designer	JOHNSTONE
Builder	TPI
Age Date	07/1994
Series Date	06/1994
Offset File	US30532.OFF

HULL

Length Overall	12.244 m
Maximum Beam	3.670 m
Draft	2.162 m
Displacement	6,872 kg
DLR	4.7709
IMS Division	Cruiser/Racer
Dynamic Allowance	0.018%
Age Allowance	0.487%

PROPELLER

Installation	Shaft exposed
Type	Folding 2 blades
Diameter	0.436 m

CREW

Maximum	771
Minimum	578 * when applied
Non Manual Power	No
Crew Arm Extension	0.00 m

SAIL AREAS (m²)

	Measured	Rated
Mainsail	45.83	46.96
Headsail Luffed	53.02	53.02
Headsail Flying		
Symmetric		
Asymmetric	145.15	145.15

* *All asymmetric spinnakers with SHW/SFL < 85%*

SAIL LIMITATIONS

Headsails	6
Spinnakers	4

STABILITY

Righting Moment	167.9
Stability Index	N/A

OWNER

The owner certifies that he/she understands his/her responsibilities under ORC Rule and Regulations.

Rated boat velocities in knots

Wind Velocity	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Beat Angles	43.1°	41.8°	40.9°	39.0°	38.3°	37.9°	37.1°
Beat VMG	3.75	4.56	5.10	5.37	5.51	5.59	5.69
52°	5.74	6.84	7.43	7.63	7.73	7.79	7.85
60°	6.08	7.13	7.63	7.83	7.94	8.00	8.06
75°	6.37	7.33	7.78	8.05	8.24	8.36	8.50
90°	6.32	7.32	7.80	8.12	8.42	8.70	9.06
110°	6.14	7.38	7.97	8.36	8.65	8.91	9.42
120°	6.00	7.27	7.92	8.39	8.89	9.31	9.96
135°	5.30	6.68	7.61	8.10	8.60	9.18	10.58
150°	4.47	5.62	6.73	7.53	7.91	8.25	9.18
Run VMG	3.87	4.87	5.83	6.53	6.88	7.36	8.15
Gybe Angles	143.5°	147.0°	146.5°	150.5°	151.8°	176.0°	178.0°

ORC Ref 02940000U29 Issued on 28/01/2021 Valid until 31/12/2021

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ORC Club Certificate 2021

Boat
WINDBORN
USA 51120

Certificate number: US6292

Time Allowances in secs/NM

Wind Velocity	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Beat VMG	959.5	790.0	705.4	670.1	653.3	644.3	632.2
52°	627.4	526.2	484.6	471.5	465.5	462.1	458.3
60°	592.0	504.8	472.1	459.7	453.6	450.0	446.9
75°	565.1	491.0	462.8	447.3	437.0	430.4	423.5
90°	569.9	492.1	461.3	443.2	427.6	413.8	397.2
110°	586.5	487.8	451.9	430.5	416.2	403.9	382.0
120°	599.5	494.9	454.7	429.2	405.0	386.8	361.3
135°	679.3	539.1	473.4	444.6	418.7	392.2	340.4
150°	806.2	640.2	535.0	477.9	455.0	436.2	392.3
Run VMG	930.9	739.2	617.7	551.7	523.4	489.1	441.7
Selected Courses							
Windward / Leeward	945.2	764.6	661.6	610.9	588.4	566.7	536.9
All purpose	723.3	594.9	531.0	499.9	482.7	468.4	445.7

Single Number Scoring Options

Course	Time On Distance	Time On Time
Windward / Leeward	640.5	0.9368
All purpose	517.5	1.1595

Custom scoring options for United States of America

	Single Number	Time On Distance	Time On Time
Triple Number All Purpose Low		659.1	0.9103
Triple Number All Purpose Medium		513.9	1.1676
Triple Number All Purpose High		463.5	1.2946
Triple Number Windward/Leeward Low		854.9	0.7018
Triple Number Windward/Leeward Medium		634.9	0.9450
Triple Number Windward/Leeward High		561.0	1.0696
Predominantly Upwind		558.4	1.0746
Predominantly Downwind		525.7	1.1414
Predominantly Upwind Low		737.6	0.8134
Predominantly Upwind Medium		579.3	1.0357
Predominantly Upwind High		544.1	1.1027
Predominantly Downwind Low		743.5	0.8070
Predominantly Downwind Medium		572.2	1.0485
Predominantly Downwind High		520.2	1.1535
Chicago-Mac Upwind			1.0423
Chicago-Mac All Purpose			1.0478
Chicago-Mac Downwind			1.0526
Bayview-Mac Cove Island			0.9879
Bayview-Mac Shore			1.0043
Harvest Moon Regatta		464.0	1.2930
Victoria-Maui			1.1055

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ORCi Certificate

- Scale drawing
- Basic hull dimensions
- Propeller type
- Rated boat speed table
- Crew weight: default or declared
- Sail limitations
- Stability: measured or unmeasured

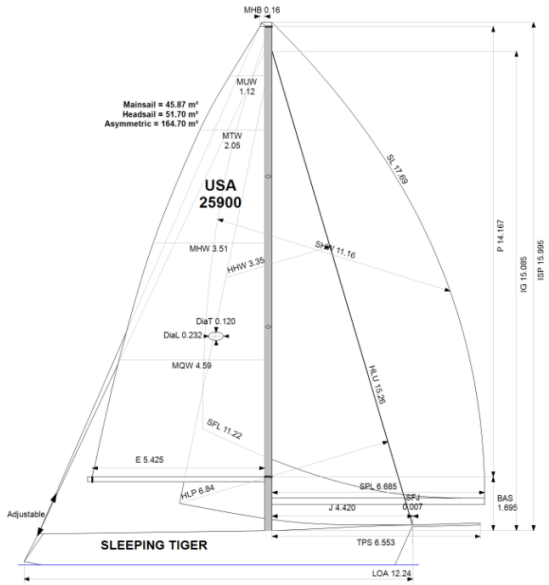
ORC International Certificate 2021

Boat **SLEEPING TIGER** USA 25900

Offshore Racing Congress

Certificate number: US7149

GPH = **570.3** CDL = **10.820**



Rated boat velocities in knots

Wind Velocity	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Beat Angles	43.1°	41.6°	40.5°	38.8°	37.5°	36.9°	36.6°
Beat VMG	3.73	4.53	5.15	5.47	5.64	5.74	5.81
52°	5.71	6.81	7.45	7.71	7.83	7.90	7.97
60°	6.07	7.11	7.64	7.89	8.03	8.12	8.22
75°	6.37	7.32	7.78	8.07	8.32	8.50	8.71
90°	6.28	7.31	7.80	8.12	8.43	8.75	9.26
110°	6.26	7.48	8.03	8.45	8.77	9.04	9.60
120°	6.14	7.40	8.00	8.49	9.02	9.47	10.15
135°	5.48	6.88	7.73	8.21	8.76	9.39	10.88
150°	4.64	5.79	6.92	7.72	8.17	8.66	9.85
Run VMG	4.02	5.01	5.99	6.79	7.34	7.86	8.75
Gybe Angles	142.1°	148.0°	147.5°	155.5°	169.0°	180.0°	180.0°

BOAT

Class	**J-120**
Designer	**JOHNSTONE**
Builder	**TILLOTSON-PEARSON**
Age Date	**06/1994**
Series Date	**06/1994**
Offset File	**US30532.OFF**

HULL

Length Overall	**12.240 m**
Maximum Beam	**3.670 m**
Draft	**2.167 m**
Displacement	**7,009 kg**
DLR	**4.8052**
IMS Division	**Cruiser/Racer**
Dynamic Allowance	**0.049%**
Age Allowance	**0.487%**

PROPELLER

Installation	**Strut**
Type	**Folding 2 blades**
Diameter	**0.428m**

CREW

Maximum weight	**1,010 kg**
Minimum weight	**758 kg** ** when applied*
Non Manual Power	**No**
Crew Arm Extension	**0.00 m**

SAIL AREAS (m²)

	Measured	Rated
Mainsail	**45.87**	**47.00**
Headsail Luffed	**51.70**	**51.70**
Headsail Flying Symmetric		
Asymmetric	**164.69**	**164.69**

** All asymmetric spinnakers with SHW/SFL > 85%*

SAIL LIMITATIONS

Headsails	**6**
Spinnakers	**4** ** Asymmetric may be tacked on the pole*

STABILITY

Righting Moment	**186.1 kg·m**
Stability Index	**121.6**

OWNER

The owner certifies that he/she understands his/her responsibilities under ORC Rule and Regulations.

ORC Ref **03410001EF9** Issued on **02/07/2021** Valid until **31/12/2021**

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ORC International Certificate 2021

Boat **SLEEPING TIGER** USA 25900

Offshore Racing Congress

Certificate number: US7149

Time Allowances in secs/NM

Wind Velocity	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Beat VMG	964.1	794.6	698.9	657.8	638.2	627.2	619.1
52°	630.0	528.6	483.0	466.7	459.7	455.5	451.7
60°	593.0	506.3	471.5	456.2	448.3	443.3	438.2
75°	565.3	491.5	462.9	446.1	432.9	423.5	413.4
90°	572.9	492.7	461.8	443.5	426.8	411.2	388.8
110°	574.7	481.6	448.2	425.9	410.5	398.3	374.8
120°	586.0	486.7	449.9	424.0	399.3	380.3	354.5
135°	656.8	523.1	466.0	438.2	410.8	383.6	330.8
150°	776.5	621.9	520.6	466.4	440.7	415.7	365.5
Run VMG	896.6	718.1	601.1	530.5	490.3	458.2	411.4
Selected Courses							
Windward / Leeward	930.3	756.3	650.0	594.1	564.3	542.7	515.2
All purpose	714.4	589.8	525.0	491.7	471.5	454.8	431.2

Single Number Scoring Options

Course	Time On Distance	Time On Time
Windward / Leeward	623.3	0.9626
All purpose	508.5	1.1799

Custom scoring options for United States of America

Single Number	Time On Distance	Time On Time
Triple Number All Purpose Low	652.1	0.9201
Triple Number All Purpose Medium	505.9	1.1860
Triple Number All Purpose High	450.1	1.3330
Triple Number Windward/Leeward Low	843.3	0.7115
Triple Number Windward/Leeward Medium	618.8	0.9696
Triple Number Windward/Leeward High	537.8	1.1157
Predominantly Upwind	551.8	1.0874
Predominantly Downwind	514.0	1.1672
Predominantly Upwind Low	731.8	0.8199
Predominantly Upwind Medium	569.5	1.0536
Predominantly Upwind High	528.2	1.1359
Predominantly Downwind Low	708.8	0.8465
Predominantly Downwind Medium	509.3	1.1781
Predominantly Downwind High	423.3	1.4176
Chicago-Mac Upwind		1.0692
Chicago-Mac All Purpose		1.1036
Chicago-Mac Downwind		1.1479
Bayview-Mac Cove Island		1.0242
Bayview-Mac Shore		1.0314
Harvest Moon Regatta	450.1	1.3329
Victoria-Maui		1.2278

AUS AUT BUL CAN CYP DEN ESP EST FIN FRA GER GRE ISR ITA
JPN KOR LTU NED NOR POR RSA RUS SLO SUI SWE UKR USA

ORC Ref **03410001EF9** Issued on **02/07/2021** Valid until **31/12/2021**

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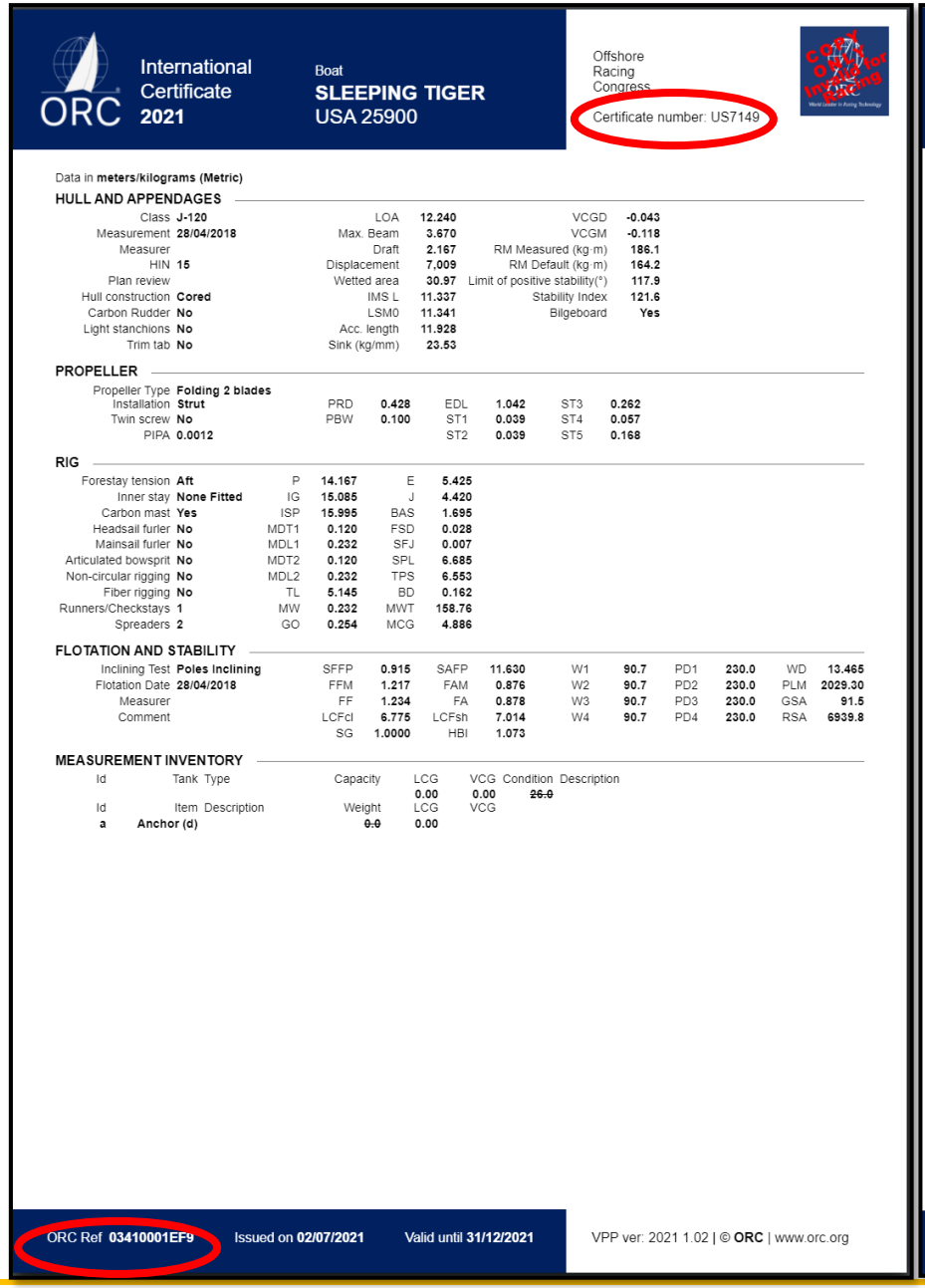
ORCi Certificate

Measurement data:

- Hull
- Rig
- Propeller
- Weight & Stability
- Sails



ORC International Certificate 2021

Boat **SLEEPING TIGER** USA 25900

Offshore Racing Congress

Certificate number: US7149

Data in **meters/kilograms (Metric)**

HULL AND APPENDAGES

Class	J-120	LOA	12.240	VCGD	-0.043
Measurement	28/04/2018	Max. Beam	3.670	VCGM	-0.118
Measurer		Draft	2.167	RM Measured (kg·m)	186.1
HIN	15	Displacement	7,009	RM Default (kg·m)	164.2
Plan review		Wetted area	30.97	Limit of positive stability(°)	117.9
Hull construction	Cored	IMS L	11.337	Stability Index	121.6
Carbon Rudder	No	LSM0	11.341	Bilgeboard	Yes
Light stanchions	No	Acc. length	11.928		
Trim tab	No	Sink (kg/mm)	23.53		

PROPELLER

Propeller Type	Folding 2 blades						
Installation	Strut	PRD	0.428	EDL	1.042	ST3	0.262
Twin screw	No	PBW	0.100	ST1	0.039	ST4	0.057
PIPA	0.0012			ST2	0.039	ST5	0.168

RIG

Forestay tension	Aft	P	14.167	E	5.425
Inner stay	None Fitted	IG	15.085	J	4.420
Carbon mast	Yes	ISP	15.995	BAS	1.695
Headsail furler	No	MDT1	0.120	FSD	0.028
Mainsail furler	No	MDL1	0.232	SFJ	0.007
Articulated bowsprit	No	MDT2	0.120	SPL	6.685
Non-circular rigging	No	MDL2	0.232	TPS	6.553
Fiber rigging	No	TL	5.145	BD	0.162
Runners/Checkstays	1	MW	0.232	MWT	158.76
Spreaders	2	GO	0.254	MCG	4.886

FLOTATION AND STABILITY

Inclining Test	Poles Inclining	SFFP	0.915	SAFP	11.630	W1	90.7	PD1	230.0	WD	13.465
Flotation Date	28/04/2018	FFM	1.217	FAM	0.876	W2	90.7	PD2	230.0	PLM	2029.30
Measurer		FF	1.234	FA	0.878	W3	90.7	PD3	230.0	GSA	91.5
Comment		LCFcl	6.775	LCFsh	7.014	W4	90.7	PD4	230.0	RSA	6939.8
		SG	1.0000	HBI	1.073						

MEASUREMENT INVENTORY

Id	Tank	Type	Capacity	LCG	VCG	Condition	Description
				0.00	0.00	~~26.0~~	

Id	Item	Description	Weight	LCG	VCG
a	Anchor (d)		~~0.0~~	0.00	

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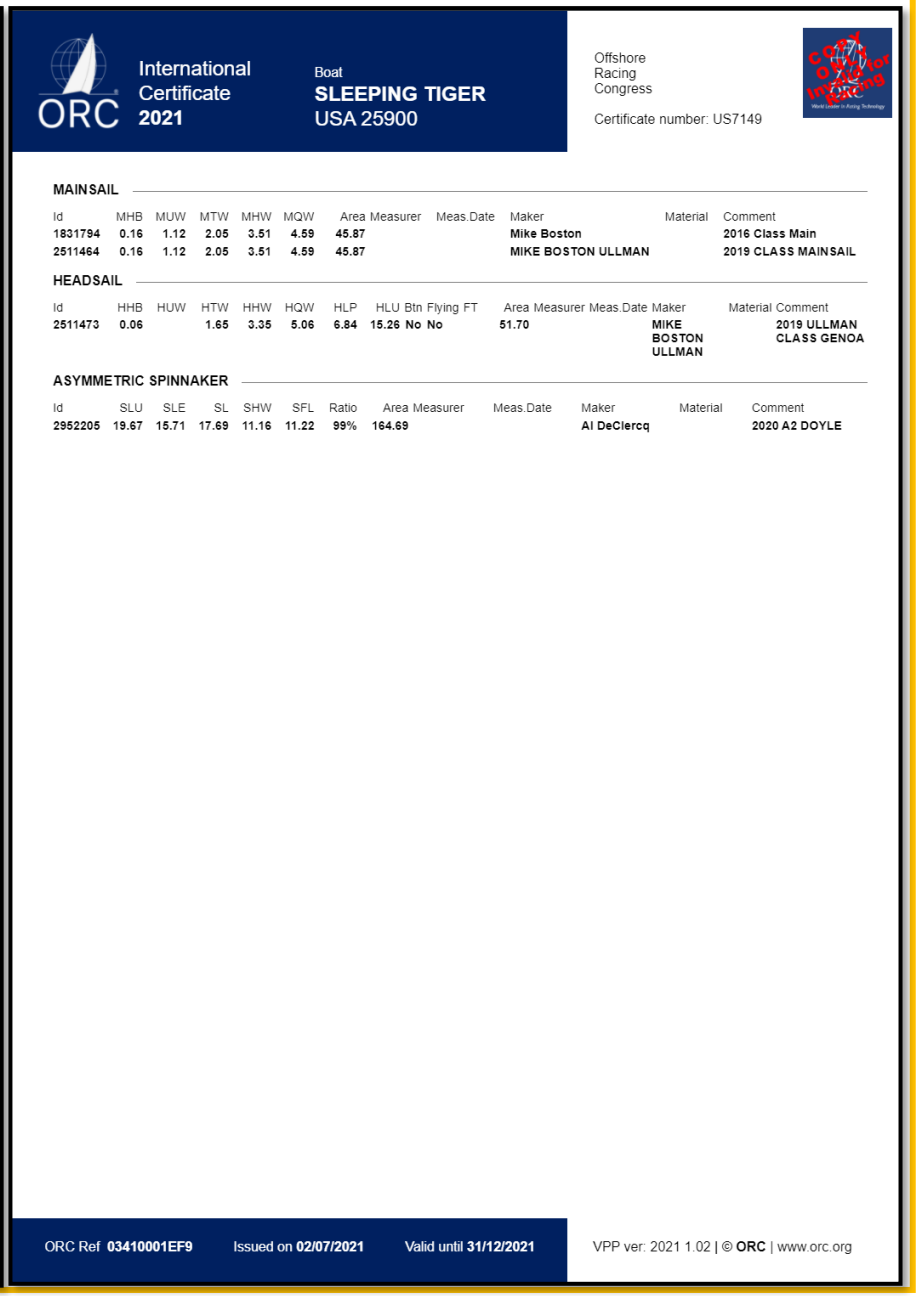

ORC International Certificate 2021

Boat **SLEEPING TIGER** USA 25900

Offshore Racing Congress

Certificate number: US7149

MAINSAIL

Id	MHB	MUW	MTW	MHW	MQW	Area	Measurer	Meas.Date	Maker	Material	Comment
1831794	0.16	1.12	2.05	3.51	4.59	45.87			Mike Boston		2016 Class Main
2511464	0.16	1.12	2.05	3.51	4.59	45.87			MIKE BOSTON ULLMAN		2019 CLASS MAINSAIL

HEADSAIL

Id	HHB	HUW	HTW	HHW	HQW	HLP	HLU	Btn	Flying FT	Area	Measurer	Meas.Date	Maker	Material	Comment
2511473	0.06		1.65	3.35	5.06	6.84	15.26	No	No	51.70			MIKE BOSTON ULLMAN		2019 ULLMAN CLASS GENOA

ASYMMETRIC SPINNAKER

Id	SLU	SLE	SL	SHW	SFL	Ratio	Area	Measurer	Meas.Date	Maker	Material	Comment
2952205	19.67	15.71	17.69	11.16	11.22	99%	164.69			Al DeClercq		2020 A2 DOYLE

ORC Ref **03410001EF9** Issued on **02/07/2021** Valid until **31/12/2021**

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Scoring Options

- Single and Triple Number
  - Time on Time - Corrected time depends only on the elapsed time. The longer the race in time, the larger the handicap.
  - Low, Medium & High help refine accuracy of the ratings, create closer and more fair results
- Std options: All Purpose & W/L
- Other options: Predominant upwind, downwind, 5-band scoring, Performance Curve Scoring (PCS), Custom courses, etc.

Single Number	Time On Distance	Time On Time
Triple Number All Purpose Low	643.6	0.9323
Triple Number All Purpose Medium	510.5	1.1754
Triple Number All Purpose High	457.3	1.3121
Triple Number Windward/Leeward Low	836.9	0.7169
Triple Number Windward/Leeward Medium	632.1	0.9492
Triple Number Windward/Leeward High	560.3	1.0709
Predominantly Upwind	559.1	1.0731
Predominantly Downwind	513.4	1.1687
Predominantly Upwind Low	735.4	0.8158
Predominantly Upwind Medium	586.1	1.0237
Predominantly Upwind High	556.5	1.0782
Predominantly Downwind Low	736.0	0.8152
Predominantly Downwind Medium	572.2	1.0486
Predominantly Downwind High	521.9	1.1496

ORC offers multiple scoring options for better accuracy & closer results

Scoring Options

- Windward Leeward –
  - 50% upwind VMG
  - 50% Downwind VMG
- All Purpose –
  - Equal distribution of all wind angles
- Single Number –
  - Wind speed distribution:

TWS (kt)	*6*	*8*	*10*	*12*	*14*	*16*	*20*
Time Allowance percentage	5%	10%	20%	30%	20%	10%	5%

- Triple Number W/L and AP –

TWS (kt)	6	8	10	12	14	16	20
Low	50%	50%					
Medium		8.4%	33.3%	33.3%	25%		
High					25%	37.5	37.5%

- Single Number Predominantly upwind / downwind

Upwind

TWS (kt)	*8*	*12*	*16*
Beat VMG	10%	15%	7%
52°	10%	15%	9%
90°	5%	7%	3%
135°	4%	5%	2%
Run VMG	3%	4%	1%

Downwind

TWS (kt)	*8*	*12*	*16*
Beat VMG	3%	4%	1%
52°	4%	5%	2%
90°	5%	7%	3%
135°	10%	15%	9%
Run VMG	10%	15%	7%

- Triple Number Predominately upwind / downwind

- Low

up

TWS (kt)	6	8
Beat VMG	20%	25%
52°	15%	10%
90°	5%	5%
135°	5%	5%
Run VMG	5%	5%

down

TWS (kt)	6	8
Beat VMG	5%	5%
52°	5%	5%
90°	5%	5%
135°	15%	10%
Run VMG	20%	25%

- Med

TWS (kt)	8	10	12	14
Beat VMG	5%	15%	15%	12%
52°	3%	12%	12%	8%
90°	0.4%	4.3%	4.3%	3%
135°	0	1%	1%	1%
Run VMG	0	1%	1%	1%

TWS (kt)	8	10	12	14
Beat VMG	0	1%	1%	1%
52°	0	1%	1%	1%
90°	0.4%	4.3%	4.3%	3%
135°	3%	12%	12%	8%
Run VMG	5%	15%	15%	12%

- High

TWS (kt)	14	16	20
Beat VMG	12%	18%	18%
52°	8%	12%	12%
90°	3%	5.5%	5.5%
135°	1%	1%	1%
Run VMG	1%	1%	1%

TWS (kt)	14	16	20
Beat VMG	1%	1%	1%
52°	1%	1%	1%
90°	3%	5.5%	5.5%
135°	8%	12%	12%
Run VMG	12%	18%	18%

Multiple scoring options for course and weather increase accuracy

Other ORC Benefits

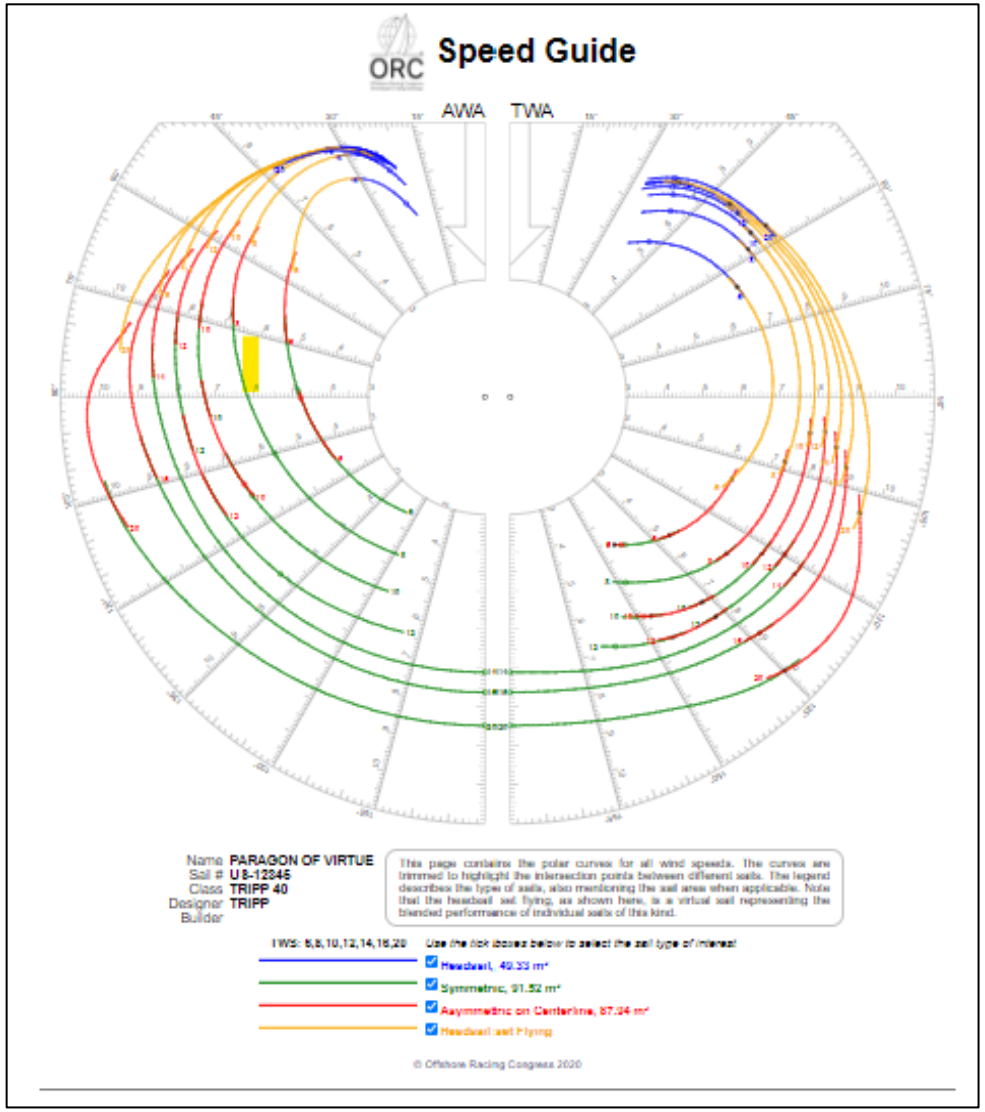
- Speed Guide
- Target Speeds
- Database of Certificates
- Trial Certificates

ORC

Target Speeds for
PARAGON OF VIRTUE (US-12345)

www.orc.org
2020

TWS	AWA UP	BS UP	TWA DN	BS DN
6	22°	5,39	142°	4,85
8	23°	6,35	148°	5,64
10	23°	6,73	150°	6,56
12	24°	6,87	157°	7,00
14	25°	6,97	180°	7,10
16	26°	7,01	180°	7,62
20	28°	7,10	180°	8,48



ORC Sailor Services offers a wealth of information

2022 AYC & EYC Regatta Calendar - ORC Starts

			ORC Class Starts			
Date	**Club**	**Regattas**	**ORC (full crew)**	**Cruiser**	**Doublehanded**	**Notes**
April 27	AYC	Wednesday Night Racing (beings)	✓			
May 7	AYC	Spring Race to Oxford	✓	✓	✓	
May 14	Both	Helly Hansen Sailing World Regatta	✓			**TBD (still in planning)**
June 3	EYC	Annapolis to Bermuda Ocean Race	✓	✓		
July 9	EYC	Boomerang	✓	✓		
July 15-17		Screwpile Lighthouse Challenge	✓	✓		
July 23	AYC	Annual Regatta	✓	✓	✓	
July 31	AYC	Two Bridge Fiasco			✓	
August 20	EYC	CRAB Cup	✓	✓		
August 27	EYC	Race to Cambridge Lighthouses	✓	✓		**TBD (still in planning)**
September 3	Both	Annapolis Labor Day Regatta	✓	✓	✓	
September 24	AYC	Fall Race to Solomons	✓	✓	✓	
October 1-2	AYC	DH Distance Race			✓	
October 8-9	AYC	Fall Series	✓			
October 9	AYC	Fall Series		✓	✓	

Notes:

- **ORC denotes full use of allowable sails and crew. Regattas will be windward/leeward, point to point, and fixed government marks. See NOR for each event.**
- ORC Cruiser subject to eligibility criteria and class rules. Single race per day using government marks or point to point. See NOR.
- **ORC DH Double-Handed crews only. Single race per day using government marks or point to point. See NOR.**

ORC Club Application Walk-Through

Online at US Sailing

New certs: www.ussailing.org/competition/offshore/request-a-rating

Re-validate previous year ORC certs for 2022: www.ussailing.org/competition/offshore/orc/orc-revalidation

Conversion from ORR certs: www.ussailing.org/competition/offshore/orc/orr-to-orc-transfer

All applications need sail measurements from sailmaker – forms are at:

https://cdn.ussailing.org/wp-content/uploads/2018/12/UMS-Mainsail-Certificate-2019.xls

https://cdn.ussailing.org/wp-content/uploads/2018/12/UMS-Headsail-Certificate-2019.xls

https://cdn.ussailing.org/wp-content/uploads/2018/12/UMS-Symmetric-Spinnaker-Certificate-2019.xls

https://cdn.ussailing.org/wp-content/uploads/2018/12/UMS-Asymmetric-Spinnaker-Certificate-2019.xls

Questions and help:

Offshore office US Sailing: offshore@ussailing.org

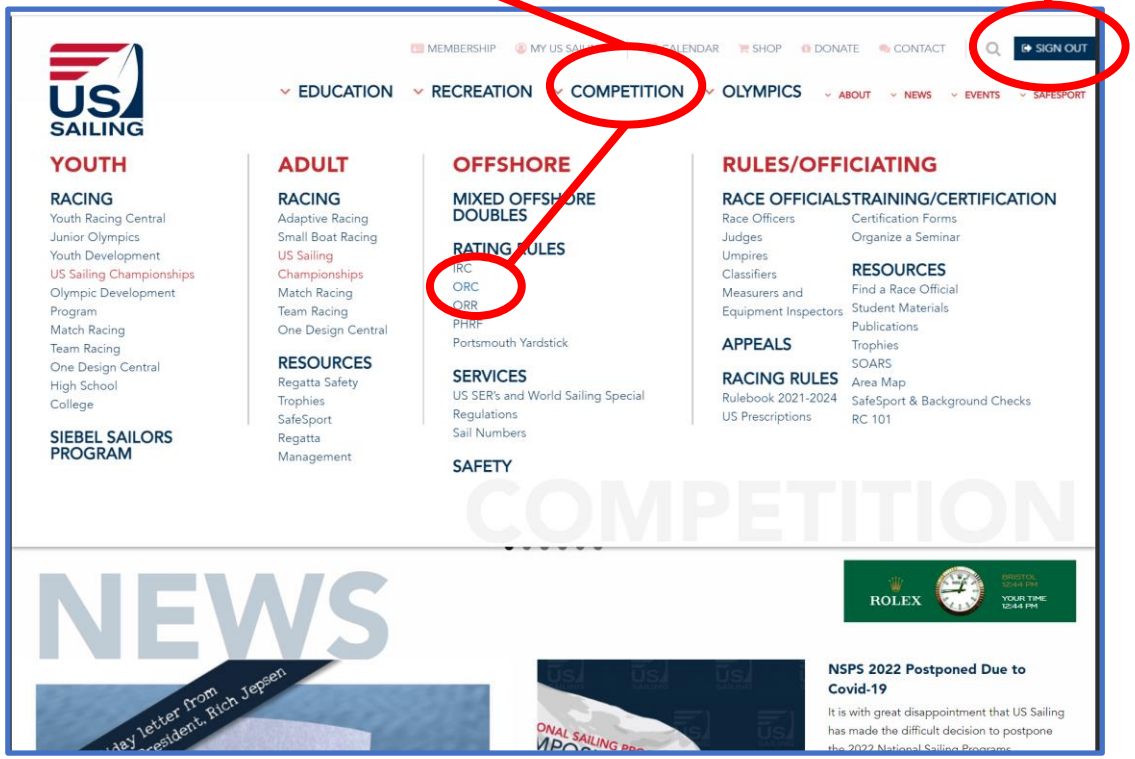
Dobbs Davis, certified measurer and ORC Communications Director: dobbs.davis@orc.org

Application Steps

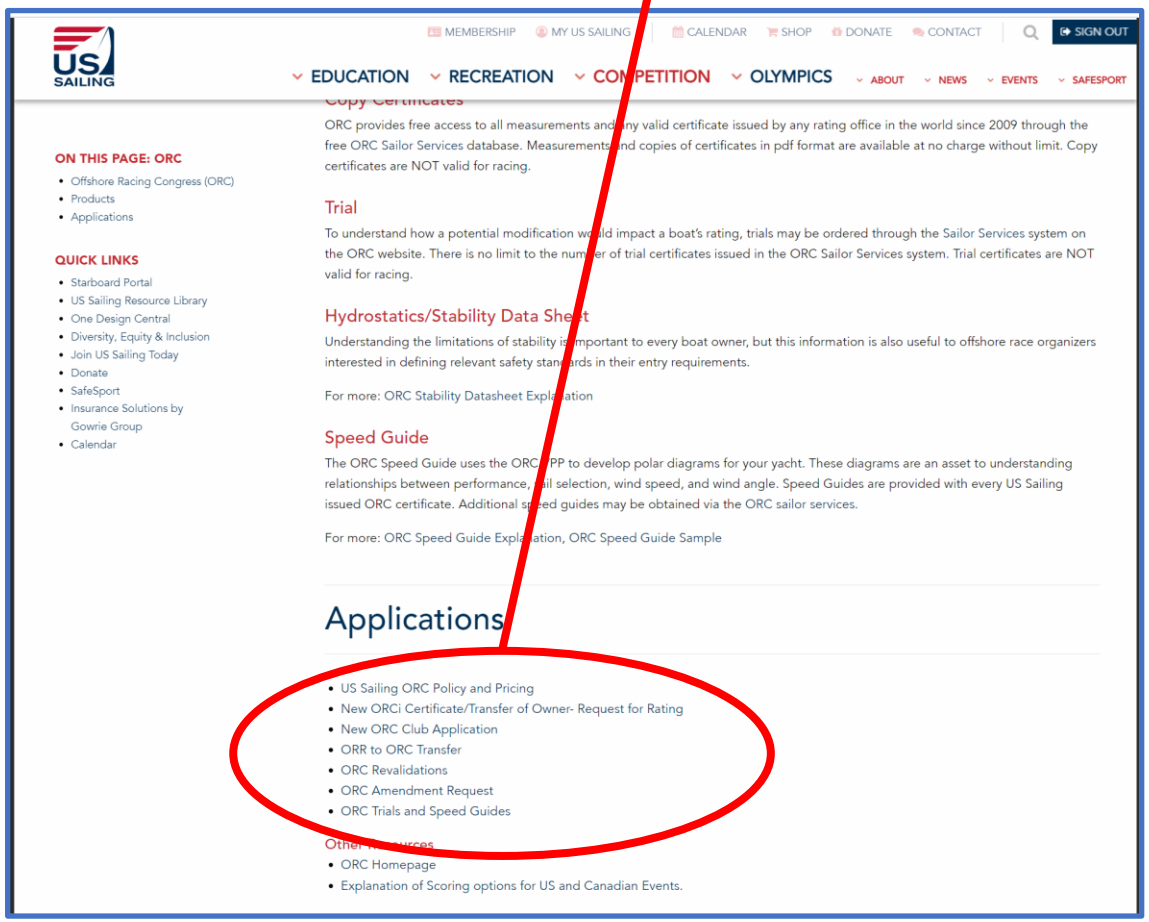
https://www.ussailing.org/

1. Sign in or Join US Sailing

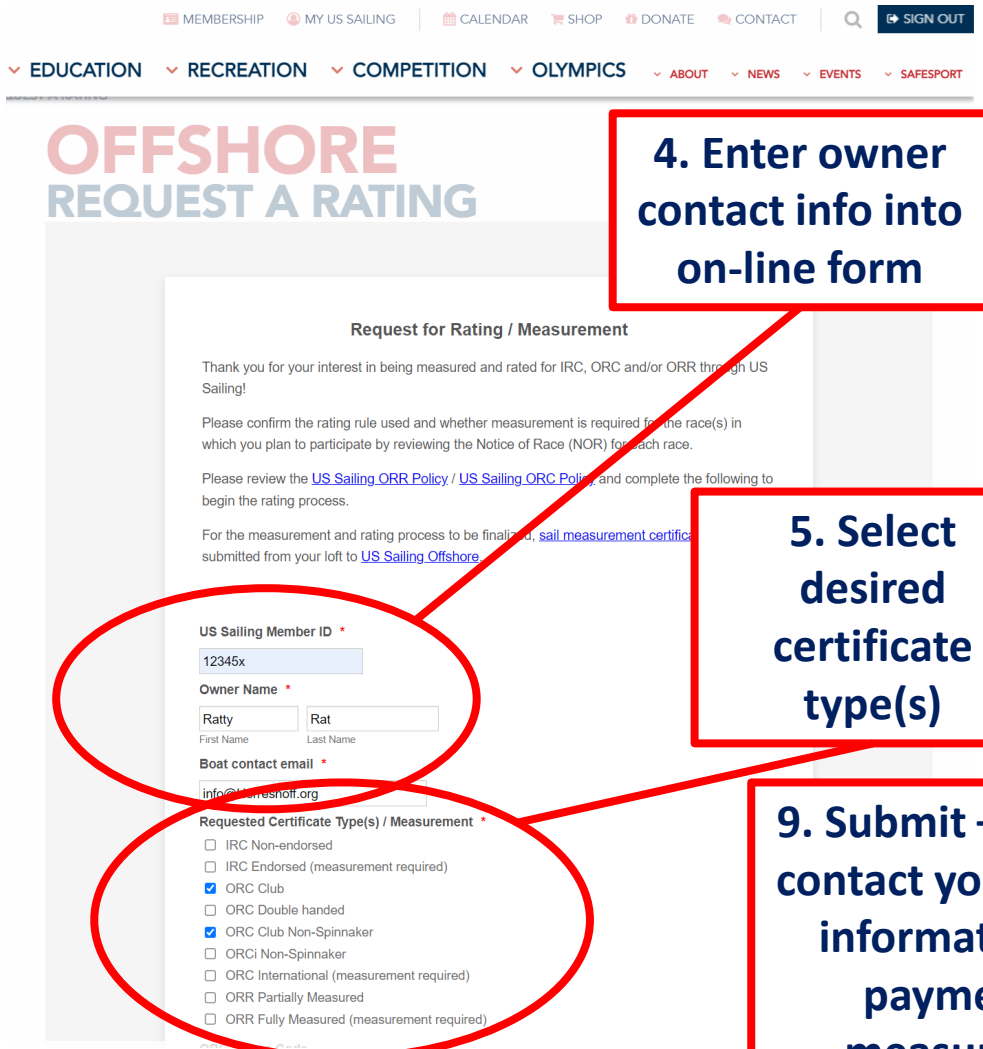
2. Navigate to the Competition pulldown and ORC Page

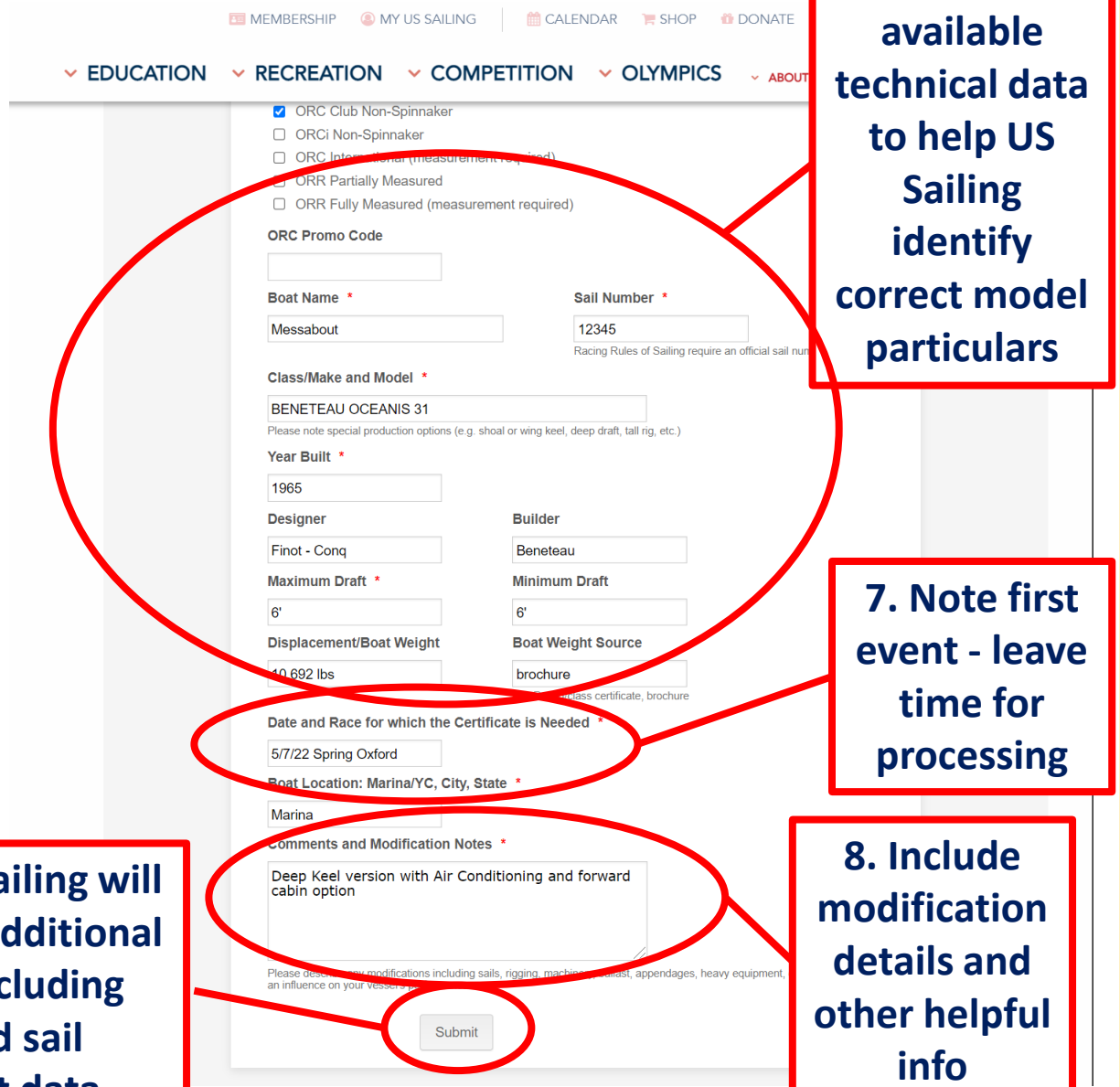


3. Scroll down to Applications, New ORC Club Application



Application Steps





4. Enter owner contact info into on-line form

5. Select desired certificate type(s)

6. Add best available technical data to help US Sailing identify correct model particulars

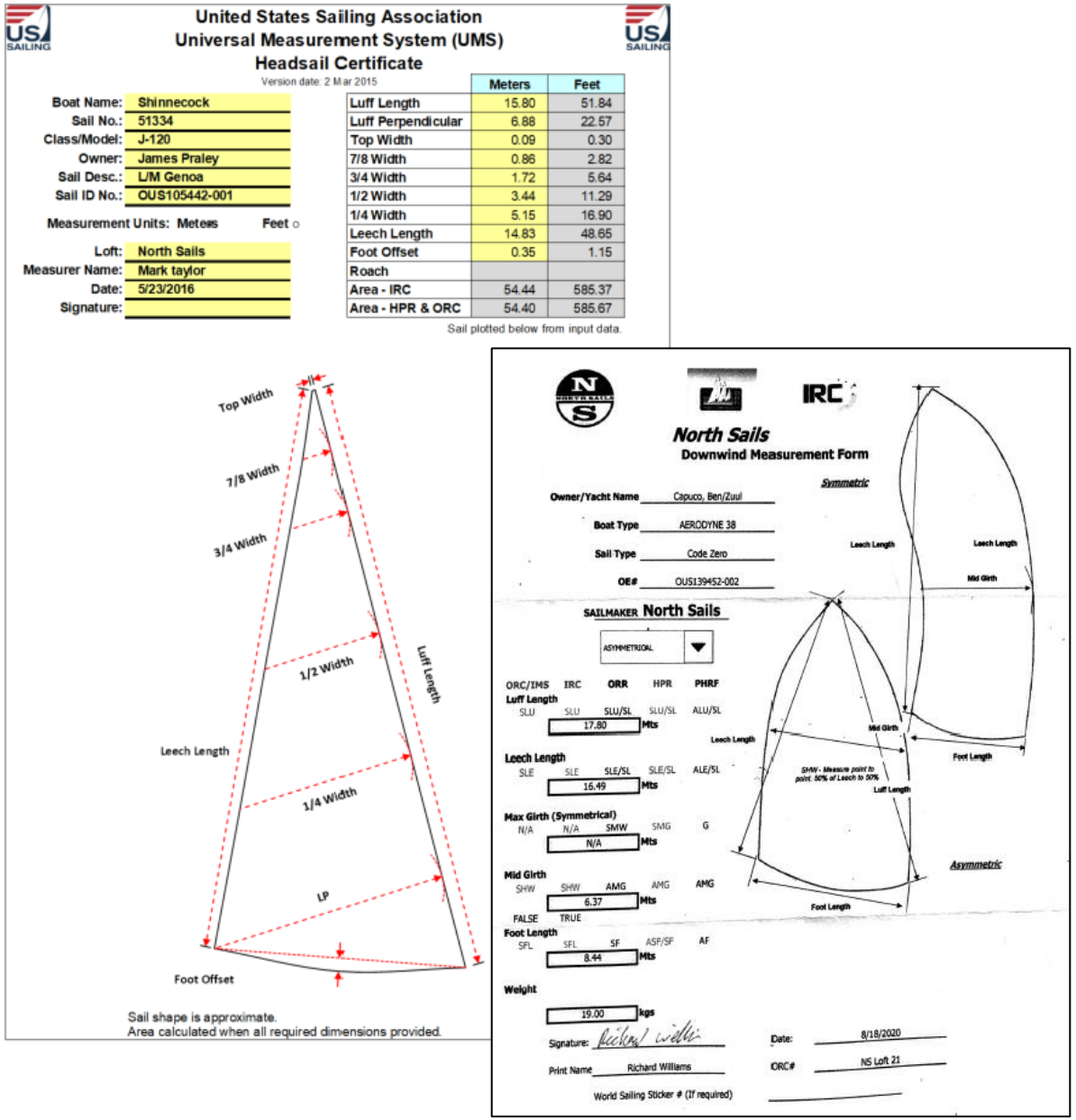
7. Note first event - leave time for processing

8. Include modification details and other helpful info

9. Submit – US Sailing will contact you for additional information including payment and sail measurement data

Application Steps

- US Sailing will respond with any questions or issues associated with issuing you a certificate
- Reach out to a sailmaker to have your sails measured and have these submitted to US Sailing
- Certificates can be issued in as little as one or two weeks, but apply early and try to avoid peak times before major events (Bermuda, Mackinac Race, etc.)



United States Sailing Association
Universal Measurement System (UMS)
Headsail Certificate

Version date: 2 Mar 2015

Boat Name:	Shinnecock
Sail No.:	51334
Class/Model:	J-120
Owner:	James Praley
Sail Desc.:	L/M Genoa
Sail ID No.:	OUS105442-001
Measurement Units:	Meters ● Feet ○
Loft:	North Sails
Measurer Name:	Mark taylor
Date:	5/23/2016
Signature:	

	Meters	Feet
Luff Length	15.80	51.84
Luff Perpendicular	6.88	22.57
Top Width	0.09	0.30
7/8 Width	0.86	2.82
3/4 Width	1.72	5.64
1/2 Width	3.44	11.29
1/4 Width	5.15	16.90
Leech Length	14.83	48.65
Foot Offset	0.35	1.15
Roach		
Area - IRC	54.44	585.37
Area - HPR & ORC	54.40	585.67

Sail plotted below from input data.

Sail shape is approximate.
Area calculated when all required dimensions provided.

IRC

North Sails
Downwind Measurement Form

Symmetric

Owner/Yacht Name: Capuco, Ben/Zuul
Boat Type: AERODYNE 38
Sail Type: Code Zero
OE#: OUS139452-002

SAILMAKER North Sails

ASYMMETRICAL

ORC/IMS IRC ORR HPR PHRF

Luff Length: SLU SLU SLU/SL SLU/SL ALU/SL — 17.80 Mts

Leech Length: SLE SLE SLE/SL SLE/SL ALE/SL — 16.49 Mts

Max Girth (Symmetrical): N/A N/A SMW SMG G — N/A Mts

Mid Girth: SHW SHW AMG AMG AMG — 6.37 Mts
FALSE TRUE

Foot Length: SFL SFL SF ASF/SF AF — 8.44 Mts

Weight: 19.00 kgs

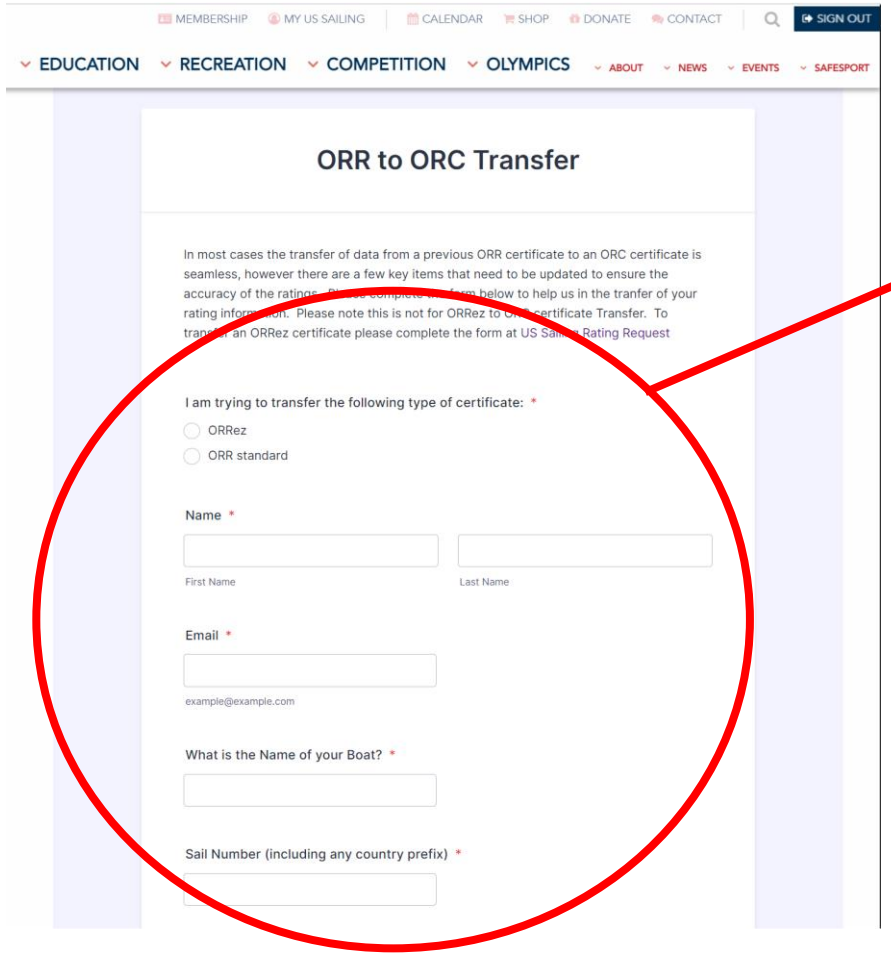
Signature: Richard Williams Date: 8/18/2020

Print Name: Richard Williams ORC#: NS Loft 21

World Sailing Sticker # (If required)

Application Steps

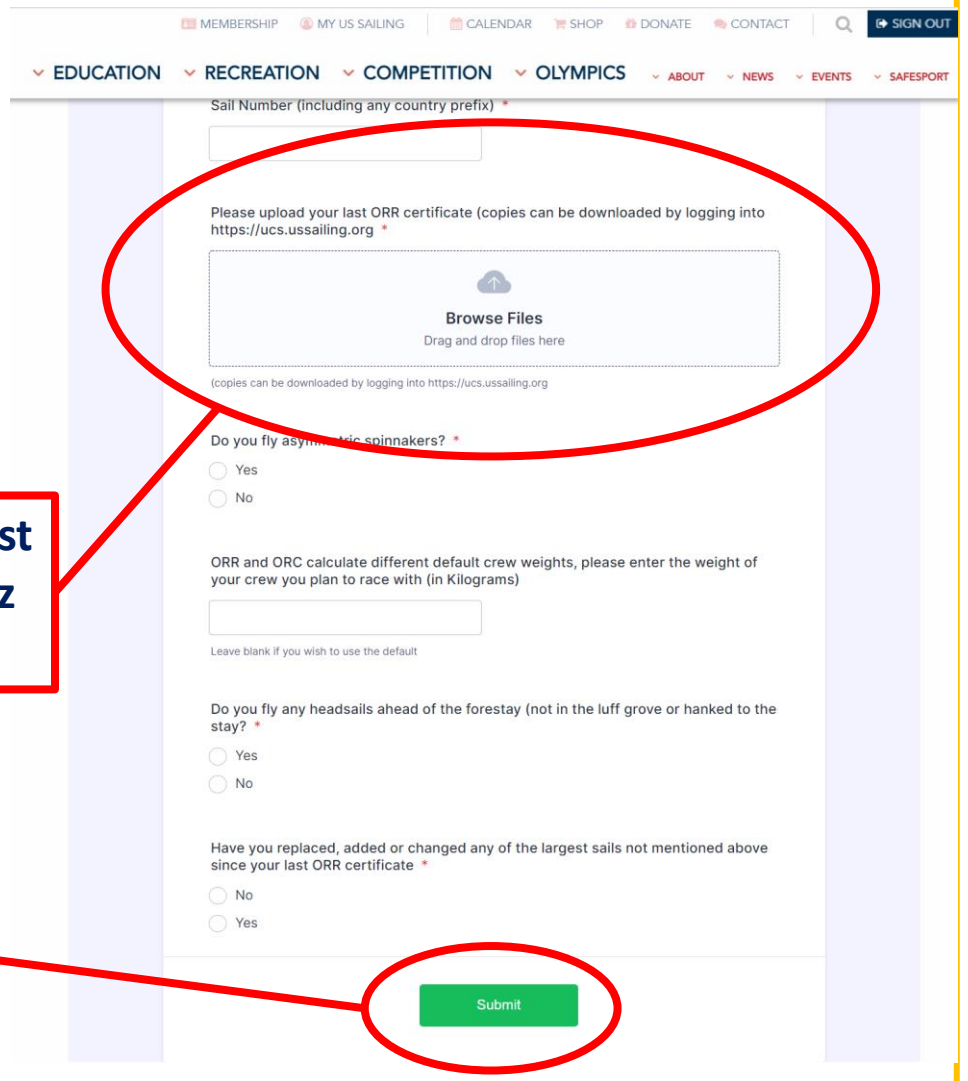
Already Have an ORR or ORRez Certificate?



1. Enter Basic contact and boat info

2. Upload latest ORR or ORRez Certificate

3. Add additional details, note if sails are unchanged and submit



Application Steps

- ❑ Join US Sailing (https://www.ussailing.org/)
- ❑ Complete online application for ORC rating or transfer of ORR Certificate (https://www.ussailing.org/competition/offshore/orc/)
- ❑ Have your mainsail, largest headsail and largest spinnaker measured See sail measurement contact information on next slide
- ❑ Plan for completing online application and sail measurement 3-4 weeks in advance of need
- ❑ Pay fees and respond to any requests from US Sailing to complete measurement

Local Sail Lofts with registered US Sailing ORC measurers

You must have a certified measurer measure your main, largest genoa and largest downwind sail

North Sails	Ridgely Mackenzie	ridgely.mackenzie@northsails.com
Quantum	Mike Crump	MCrump@quantumsails.com
Elvstrom	Chuck O'Malley	chuck@chesapeake-sailmakers.com
Ullman	Scott Steele	scott@ullmansailsannapolis.com
Evolution	Jerry Latell	jerry@latellsails.com

QUESTIONS?

Use the Q&A function (not chat) in the menu to type any questions you might have