World Leader in Rating Technology

Annual Report – ORC Rating Systems (ORC International and ORC Club)
November 2017 – Season Activity – from ORC

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1. ORC Rating Systems - summary:

The ORC Rating Systems (ORC International, ORC Club) are managed in 34 countries by National Rating Offices on five continents and centrally managed by ORC for 11 countries where a national office is not yet established. The ORC Superyacht Rule, first introduced in 2015, is centrally managed by ORC. Thus, in total **ORC issues certificates for boats in 45 countries**.

Developments for ORC this year include a steady number of rating offices, certificates, boats and participants using ORC rating systems for 2017.

The 2009-2017 fleet certificate statistics are shown in Section 8: at the end of 2016 there were 10124 certificates issued to 8913 boats, and through the end of October 2017 there were 9916 certificates issued to 8897 boats. Using estimates of previous years statistics for November and December, ORC estimates a projected total of certificates similar to the end of 2016, to be issued to approximately 9000 boats **representing 1% increase in boats over 2016**. ORC Club and ORCi remains strong in most countries – those that have the largest number of ORC boats and certificates include ITA, NOR, ESP, NED, GRE and GER, with significant increases noted in AHO, BUL, FRA, HKG, RUS, RSA, UKR, and USA. AHO and HKG are new countries with boats receiving ORC certificates. The Central Rating office has hired a new staff member, and measurement and rating office seminars were held in five countries in the last year: AUS, CAN, POL, RSA and SWE.

ORC this year has continued to assist the SuperYacht Racing Association (SYRA) in administering, developing and refining the ORC Superyacht Rule (ORCsy), with a slight decrease in boats and certificates from 2016 due to the split of SY fleets between the Caribbean, USA and the Mediterranean. More details on ORCsy are found in Section 2 of this report.

Since ORC Rating systems are unique in measuring the stability of offshore yachts, the size and types of boats using ORCi/ORC Club is quite broad, ranging from very small cruisers to the racing SuperYachts. The rule is thus quite versatile, since the VPP can characterize all manner of performance-enhancing features and thus rate them under ORC Rules. These include movable ballast features such as water ballast and canting keels, with all combinations of associated appendages, such as DSS, bilgeboards, etc. ORC's Sportboat Rule for performance keelboats remains popular in Europe, is receiving more interest worldwide and a Working Party has this year produced a rule that better accommodates a broader range of these boat types.

ORC championship events continue to be popular and competitive, with the highest-quality teams emerging on top after a combination of several inshore and offshore races. Individual races are competitive and often resolved only within seconds of corrected time. Inspections and measurement controls are strictly enforced at championship events, with a variety of designs – both racers and cruiser/racers – winning these events, suggesting fairness in the system for all boat types.

This year one of two ORC annual championship events set new attendance records. The **2017 ORC World Championship Trieste** hosted at Porto San Rocco by a consortium of clubs in Trieste, Italy attracted 116 teams from 19 countries, and the **Dr Irena Eris ORC European Championship** organized by the

Pomeranian Sailing Federation in Gdnask, Poland drew a record 83 entries from 11 countries.

The demand for hosting future ORC championship events remains strong, with bid proposals and expressions of interest received from prospective hosts located both in Europe and the USA for as far in advance as 2020. Next year the **2018 Offshore Sailing Worlds** will be organized by ORC, RORC and a local organizing committee in The Hague, Netherlands and held over 12-20 July, the **2018 ORC European Championship** will be hosted by the Famagusta Nautical Club in Limassol, Cyprus and held over 8-15 September, and a **2018 ORC European Sportboat Championship** is planned for Portopiccolo, Sistiana, Italy over 29 May – 3 June.

Details of the 2017 events are found in Section 5 of this report.

Growth of use of ORC systems is mostly in new regions – such as the Caribbean, USA and South Africa – and has been mostly in ORC Club-level fleets, however the USA issued more than 5 times the number of ORCi certificates this year than last year (55 total). Activity in the Caribbean and southern regions of the US were suppressed by the two late summer hurricanes, yet other areas grew in numbers of fleets and regattas as well as boats and certificates.

In all, a total of **19 countries held ORC National Championship regattas in 2017**.

Among several dozen regattas using ORC ratings held in six continents around the world, several Rolex-sponsored events in 2017 also used ORC scoring, including **Rolex Circuito Atlantico, Rolex Sydney-Hobart Race, Rolex Giraglia Cup,** and the **Rolex Middle Sea Race.**

2. ORC Superyacht Rule (ORCsy)

ORC's cooperation with the Super Yacht Racing Association (SYRA) started in 2015 and continued through this year, with a slight decrease in the numbers of certificates and boats, but a continued effort made towards having boats measured for their ratings.

Part of the reason for the decrease came in the third and fourth quarters of the year due to storm damage in the Caribbean delaying the start of the winter season. Accordingly, the number of regattas using the rule system in Europe, the Caribbean and the USA reduced from 9 to 7 and is forecast to be 6 in 2018.

The acceptance of the ORCsy system is due in part to its rigorous measurement protocols, flexible scoring, and transparency in rules and process which is appreciated by its users, who are often advised by professional America's Cup-level tacticians and crews. Periodic updates are made to the rule to increase its accuracy, with rationale agreed by ORC and SYRA and published on the rule website.

3. Technical developments & Submissions

A hallmark of ORC is that it is an open and accessible system for its users, both through local rating offices and through access to the ORC website. Besides allowing access to all ORC rules, rating system documents and even the VPP used to generate ratings, ORC gives easy access to all available rating and measurement data from a database of nearly 105,000 records gathered from the past 25 years.

The easy access, breadth and depth of this information made available is unique among international rating systems. This access is facilitated by the **ORC Sailor Services system**, which gives **free online access to the ORC database.** At this portal is where copies of issued certificates from the past 8 years are available, as well as the ability to run ORCi or ORC Club test certificates under the current VPP. ORCsy uses the same web portal with similar features, with access restricted to registered ORCsy users.

Through the ORC Sailor Services, a customized **Speed Guide** package of polar performance data for any ORC-measured boat is available. The **Target Speed** product is also offered in Sailor Services, where a formatted PDF sheet is generated that gives target boat speed and wind angles based on VMG performance on windward-leeward courses.

This system has proven to be a great success among boat owners, sailmakers, project managers and others inquiring about rating changes to their boat, and the system is available for use in German, Spanish, Greek,

French, Croatian, Italian, Polish, Portuguese and Brazilian languages, as well as English. The system had strong initial growth after its introduction in 2011, with a more steady level of over 3,000 registered users again accessing the system this year. To date in 2017, 622 users ran 2651 test certificates and 294 have made 448 requests for Speed Guides and Target Speed outputs.

This performance data is in addition to the rating and basic VPP information already included on certificates in ORC International and optionally on ORC Club formats.

This level of easy access and transparency has also prompted web and app developers: for $1.99 an app called **ORCee** can look up basic measurement and rating information for every boat in the system with a valid certificate. A web developer in the Netherlands has also created a website (http://jieter.github.io/orc-data/site) that provides even more information – such as rated speeds of the boat – for any boat in the ORC system and presents them in both tabular and graphic formats.

The **ORC website** offers easy public online access to ORC publications, explanations of the rating systems, scoring methods and measurement, as well as regular news items related to ORC events and a comprehensive online calendar of races and regattas held in countries where ORC certificates are issued worldwide. Traffic on the site averages about 40,000 visitors/month.

A new edition of the **ORC Guidebook** is under construction as is a similar **ORC Race Management Guidebook** that is being planned to help educate local fleets on topics such as measurement, course types, and scoring options, and when to use and not use these options.

In response to a variety of scoring options available but not all being updated to each year's new rules, to have uniformity among results styles and display formats, and to help archive results from ORC Championship events, ORC has invested in developing a new software package for ORC scoring called **ORC Scorer**. This is available now from the Sailor Services web portal and was used at both the World and European ORC Championship events this year.

Similarly, ORC is investing in programming other useful tools on its website, such as a scratch sheet calculator for use by sailors and race managers to estimate time allowances between boats while sailing.

For the technical public, the Designer version of the VPP is available for download and purchase from the ORC website. Another important tool for complete transparency of the ORC system, the **ORC VPP Documentation** that explains all the formulations of the VPP calculations and methodologies is available to the public online on the ORC website.

The **International Technical Committee (ITC)** is the research and development group for ORC and is composed of some of the world's most prominent designers and technologists. ITC met three times in 2017 (Southampton in March, Rome in September, and Delft in October).

In addition to responding to 7 Submissions for review, ITC's research work in 2017 included these topics:

- Upwind aerodynamic model improvement to ORC VPP: CFD research indicates minor adjustments are needed to the VPP to get a good match with observed performance data. This research will continue in 2018 focusing on overlapping jibs and Effective Re number in light winds with a slight size factor;
- The ORC Hydro model is also being improved using CFD tools to update the current Residuary Resistance model and develop a new formulation for induced drag.
- A new Working Group has been formed to examine what tools are needed to evaluate boats with foils.
- Work at Delft will continue on a new formulation to model added resistance in waves for possible inclusion in the 2019 VPP.
- Performance data from 7 boats ranging in size from a Melges 32 to a Wally 94 has been collected into a database easily readable for comparison with runs of beta VPP's.
- A new formulation of the default Righting Moment was investigated, with results indicating another year of study is needed before recommendations to update the VPP.
- A new rule on construction materials was researched and is being proposed to Congress.

19 Submissions have been received this year **from 7 National Authorities** – this is the lowest number of submissions in ORC, which is taken to indicate a general satisfaction with the current system by its users. These submissions are discussed in the following committees, with many reviewed by multiple committees: 9 for the Management Committee, 4 for the Offshore Classes and Events Committee, 7 for the ITC, 2 for the Rating Officers Committee, 7 for the Measurement Committee, 1 for the Promotion and Development Committee, and 1 for the Race Management Committee. These deal variously with topics regarding the ORC Rating Systems, the ORC VPP, championship rules, and with general policies. Most of these are addressing improvements and refinements of current rules and policies, with no major complaints about overall operation of the system.

4. Measurement and Rating Offices

ORC has been continuing to work to develop the **UMS**, the Universal Measurement System, where a year ago an agreement was reached among the UMS constituents regarding abbreviations of the measurements described in the ERS. In the 2016 implementation, ORC did use all the abbreviations, and continue to use a data converter, able to write measurement data in IRC format.

The ORC technical staff has also cooperated with the US Sailing Offshore office to establish compatibility of their new SAP system with the existing ORC software tools and measurement database.

A new ORC rating office was established and approved this year for CAN, with other new rating offices planned to be established in the near future.

5. Championship Events

The **2017 ORC World Championship Trieste** hosted at Porto San Rocco by a consortium of clubs in Trieste, Italy was held over 30 June – 8 July. The event attracted 116 teams from 19 countries who raced on two course areas to contest for World Championship titles in each of three classes. Race entries were limited to 50 in each class, with Class C having to put many boats from ITA on a waitlist for approval to entry. There were a wide variety of boat types represented, from custom race designs to series-produced production boats, with class splits determined by the CDL scheme: 17 entered in Class A, 49 in Class B and 50 in Class C.

Racing followed the Green Book format, Windward/Leeward inshore races combined with the offshore race scored as two races with a midpoint scoring gate.

The Race Committee for the one course area was led by Costanzo Villa from ITA while Race Committee Chairman of the second course area was Giancarlo Crevatin, both with experience in managing numerous past ORC championship events. The Jury Chairman was IJ Jan Stage (DEN) leading a team of 10 experienced IJ members, with the addition of ORC representative Bruno Finzi.

ORC Staff member and IJ Zoran Grubisa (CRO) led the Technical Committee composed by 11 members and representing 4 countries. The team was quite busy with pre-race inspections and a few measurement issues and protests, all resolved using the ORC rules. Before the event the measurers performed safety inspections and sail inventory checks, while during the event controls on freeboards and inclining tests, crew weights and sail measurements were implemented among top three finishers in each class.

Conditions were light to moderate breeze, with tough racing in all the three Classes and winners not determined until the final day's results. Unlike last year, the Class A podium finishers were separated by only 2 points, with Vincenzo Onorato's canting-keeled Cookson 50 Mascalzone Latino (ITA) prevailing to be the new World Champion in Class A.. In second was last year's champion, Vadim Yakimenko's TP 52 Freccia Rossa (RUS), with a penalty imposed for a safety equipment violation in the first two offshore race scores. And in third was Maurizio Poser's Swan 42 Sheraa YCH (ITA).

Class B was won by Renzo Grottesi's Swan 42 BeWild (ITA), with clear dominance of the inshore races on scores never worse than second place. Another Swan 42, Massimo Campo's Selene Alifax (ITA) finished second 5 points back and Nadia Canalaz's M45 Horus Tempus Fugit in third another 10 points back.

Class C was won by Roberto Monti and his Airis (ITA) sailing team, who sailing his former GP 42 were Class A Bronze medalists in 2012. This year they raced a Melges 32 well-prepared for the conditions in Trieste. Only 3.5 points back was runner-up Sease (ITA), a Farr 30 co-skippered by Giacomo and Franco Loro Piana, with another Farr 30, Alessio Querin's Mummy One-Lab Met (ITA), in third place.

A Corinthian Trophy, eligible for award to teams with all crew members confirmed to be WS Group 1 sailors, was also awarded in each class. Determining authenticity of Group 1 sailors from dozens of crew lists was a challenge greatly facilitated with help from the Race Office staff and WS staff in Southampton. Winners of this award were somewhat deep in the results compared to last year's championship in Copenhagen: for Class A this was 9th place Zerocould (ITA), Danilo Falzitti's TP 52, in Class B it was 9th place Reve de Vie (ITA), a Grand Soleil 43R skippered by Ermanno Galeati, and in Class C it was 4th place Extrema (ITA), an X-35 skippered by Andrea Bazzini.

The **2017 Dr Irena Eris ORC European Championship** was organized by the Pomeranian Sailing Federation in Gdansk, POL for 24-29 July. Placed in the city marina in the heart of historic Gdansk, the event was well-placed for the public to see the moored boats and attracted a new record turnout of 83 teams from 11 countries who raced in a week-long format that included measurement, seven inshore windward/leeward races and long and one short offshore race. For the first time since 2013 three complete classes were formed according to CDL standards – 13 entries in Class A, 29 in Class B and 40 entries in Class C – with racing held in two course areas. IRO Ariana Mainmarie (ESP) headed the Race Committee, IJ Paul Withers (GBR) headed the International Jury, and Zoran Grubisa (CRO) led the seven-member Technical Committee from 4 countries. In all committees the high number of young new talent was noteworthy.

Race conditions varied from moderate to light winds throughout the week, making racing particularly close. In Class A the winner was Blue Nights (FIN), a Swan 45 owned by Tea Ekengren-Sauren, who won by 5 points over another Swan 45, Erik Berth's Tarok VII (DEN), and finishing third was Axel Seehafer's Soto 40 Sportsfreund (GER). Out of only 4 eligible entries, the Corinthian Trophy winner in the class was Tarok VII.

The podium in Class B was dominated by X-41's, a competitive one-design class in the Baltic region, with Martin Estlander's Xini Freedom (FIN) winning by only 2 points over Dockenhuden (GER) skippered by Thomas Jungblut, with Priit Tammemagi's Premium (EST) only one point back. The hard-fought last race resulted in the Gold and Bronze medalists scoring OCS, but these were discarded in the scores.

In Class C, Patrik Forsgren's modified First 36.7 Pro4U (SWE) repeated their victory from 2015 with a 4.5 point lead over runner-up Katariina II (EST), Alvar Tuulberg's Arcona 340, and with an all-amateur team was also awarded the Corinthian Trophy in the class. These two teams dominated the results, because third-placed Sugar 2 (EST), the Leitvaagen OU's NM38S skippered by Sandro Montefusco, 16 points behind.

6. RRS 69 action in 2016 European Championship

Following a protest from an Estonian competitor against the Class C winner of the 2016 ORC European Championship in Porto Carras, Greece, an International Jury was convened in Athens over 30 March – 1 April to review technical evidence presented by ORC that the class winner, Scugnizza-Total Lubmarine (ITA), an NM38S owned by Vincenzo de Blasio, had willfully violated RRS 2 and ORC measurement rules, and thereby RRS 69.

The IJ reviewed evidence and testimony presented by all parties and determined this yacht had breached these rules, and ORC removed their title and awarded it to the runner-up, Aivar Tuulberg's Katariina II (EST).

7. ISAF Classification Code

Application of the ISAF Classification Code is a regular feature to both the ORC Worlds and ORC European Championships in defining the criteria for entries eligible for the Corinthian Trophy. The difficulty in applying the Code is usually in the application process, where applicants are still confused about the difference in registering for a Sailor ID and completing the application completely and correctly. Notices of Race specify

applications to be completed for review by the Commission two weeks in advance of registration on site, yet this rule is usually relaxed on site in order to maximize participation.

At the World Championship and European Championship, Commission member Dobbs Davis worked hard over two days of Registration at each event to screen crew lists, and had minor problems that could get resolved with the help of the OA and WS staffs. Troubleshooting individual cases was resolved by on-site interviews. One problem that arose in Trieste is when a Group 1 crew is substituted after the start of racing when challenges to crew lists are closed by the NOR…this will be addressed at the next Commission meeting scheduled for January. Online regatta management software use its at the discretion of the OA, but was not used in either event, making automated Group 1 verification in the crew lists impossible. ORC intends to assist future events with development of a website template that will include an online crew list functions to help streamline this function.

8. Fleet Statistics

On the following page is a summary table of countries and the numbers of issued ORC International, ORC Club and ORCsy certificates, and the current status as of 31 October 2017:

	1st	QT	2nd	QT	3rd	QT	4th	QT	31.10.	2017
	Club	Int	Club	Int	Club	Int	Club	Int	Club	Int
AHO	42	0							42	0
ARG	52	22	13	6	3	4			68	32
AUS	5	13	3	25	37	72	1	14	46	124
AUT	9	2	24	6	4	1			37	9
BRA	0	33	0	11	0	19	0	6	0	69
BUL	41	4	19	1	17	0			77	5
CAN	38	0	33	2	6	0	2	0	79	2
CRO	98	11	60	22	28	8	7	9	193	50
CYP	2	1	19	5	6	0			27	6
DEN			0	4	14	10			14	14
ECU			0	26	0	7	0	1	0	34
ESP	348	347	189	223	120	174	22	25	679	769
EST			45	9	14	12			59	21
FIN	2	0	12	43	3	9	1	1	18	53
FRA			243	2	44	5	15	0	302	7
GBR	23	1	18	0	6	0	1	0	48	1
GER	2	2	418	202	67	29	1	5	488	238
GRE	141	34	355	99	58	10	17	10	571	153
HKG			1	0	12	0			13	0
HUN			19	0	3		1		23	0
ISR	38	0	18	0	11	0	7	0	74	0
ITA	500	263	410	307	156	50	97	56	1163	676
JPN	5	3	36	2	7		2	1	50	6
KOR	8	0	8	0	8		16		40	0
LAT			2	0	1	2			3	2
LTU			29	5	38	2	2	1	69	8
MLT			1	0	3		12	4	16	4
MNE	2	0	3	0	8				13	0
NED	864	24	160	23	49	1	18	2	1091	50
NOR			1160	15	152	13	2	0	1314	28
PER	5	5	4	15	0	8	0	4	9	32
POL	1	0	22	27	19	7			42	34
POR	26	12	15	2	18	8			59	22
ROU			30	15	5	7			35	22
RSA	75	0	2	0	22	0	14	0	113	0
RUS	5	1	42	10	48	4	0	1	95	16
SLO			3	15	4	3			7	18
SUI	49	0	111	0	14	0			174	0
SWE			3	38	0	9			3	47
TUR	14	1	15	1	2	0			31	2
UKR	0	1	32	1	28	1			60	3
USA	32	10	34	30	24	5	11	10	101	55
	2385	790	3611	1192	1059	480	249	150	7304	2612
		3175		4803		1539		399		9916
SY		49		41		18				108

The next page shows graphs of ORC certificate and boat statistics for the periods 2009 – October 2017, with a projection of the entire year for 2017.

The current number of boats having ORC certificates through October 2017 is 1989 with ORCi certificates, 6841 with ORC Club and 67 SuperYachts with ORCsy measurements, for a total of 8897 yachts to date. Based on previous years, the estimated number of boats that will be receiving certificates in November & December will reach approximately 9000 boats using ORC certificates for the calendar year.

The number of ORC certificates issued through October 2017 is 2612 ORCi, 7304 ORC Club, and 108 ORCsy, for a total of 10024 certificates.

Based on previous years, the estimated number of additional certificates issued in November & December will be another 110, bringing the year-end estimated total to 10134 ORC certificates.

ORC boats and certificates 2009 – October 2017