



World Leader In Rating Technology

Annual General Meeting held in Barcelona, Spain on 9th November 2016

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MINUTES of the Annual General Meeting of the Offshore Racing Congress, Ltd. held at 11:30 on 9th November 2016 in Barcelona, Spain

| | | |
|----------------------------------|--|--------------------|
| Congress Members Present: | Bruno Finzi (Chairman) | Italy |
| | Wolfgang Schäfer (Deputy Chairman) | Germany/Austria |
| | Jose' Frers (Deputy Chairman) | Argentina |
| | Vassiliy Alekseev | Russia |
| | George Andreadis | WS/Greece |
| | Steve Benjamin | USA |
| | Thomas Blixt | Sweden |
| | Rafael Bonilla Paz | Spain |
| | Per Boeymo | Norway |
| | Sverre Ellinsen | Norway |
| | Bruno Frank | Switzerland |
| | Don Genitempo (Honorary Treasurer) | USA |
| | Zoran Grubisa | Croatia |
| | Ioannis Kalatzis | Greece |
| | Noboru Kobayashi | Japan |
| | Michel Korneszczyk | Poland |
| | Patrick Lindqvist | Finland |
| | Alessandro Nazareth | Italy |
| | Thomas Nilsson | Norway |
| | Ab Pasman | The Netherlands |
| | Daniel Pillons | France |
| | Christian Plump | Germany |
| | Michael K. Quist | Denmark |
| | Veiko Rosme | Estonia |
| | Manuel Torres | Spain |
| | Lazaros Tsalikis | Greece |
| | Roy van Aller | The Netherlands |
| | Ecky von der Mosel | Germany |
| | Zvi Zviblat | Israel |
| Alternate Members: | Glen Stanaway substituting David Lyons (Australia) | |
| | Eva Holmsten substituting Sverre Ellinsen (Norway) | |
| | Paolo Massarini substituting Alessandro Maria Rinaldi (Italy) | |
| | Robert Jacobsen substituting for Peter K. Burger (Switzerland) | |
| | Totos Theodosiou substituting for Philippos Georgakis (Cyprus) | |
| Apologies for absence: | H.M. King Harald V of Norway | Honorary President |
| | Gabor Csernussi | Hungary |
| | Ivan Drinkovic | Croatia |
| | Paulo Freire | Brazil |
| | Martin Hannon | New Zealand |
| | Andrew Hurst | UK/RORC |
| | Magdalena Maria Ion | Romania |
| | Gary Jobson | World Sailing |
| | Yooj Yae-hoo | Korea |
| | Joaquin Holzapfel | Ecuador |
| | Roberto Peschiera | Peru |
| | Antonio Roquette | Portugal |
| | Gerd Schmiedleitner | Austria |
| | Toni Tio Sauleda | Spain |
| | Henk Sol | Netherlands |
| | Makoto Uematsu | Japan |
| | Godwin Zammit | Malta |

| | | |
|--------------------------|--|---|
| Officers present: | Vivian Rodriguez Nicola Sironi | Secretary Chief Measurer |
| Observers: | Gennaro Aveta Stelios Charalambus Dobbs Davis Hans Drakenberg Sten Edholm Egon Elstein Bojan Gale Boris Hepp Akihiro Kanai Edwin Lodder Aileen Loo Joaquin Majander Jean Malassis Tacha Montaner Panayotis Papapostolu Fabrizio Pirina Edoardo Recchi Teresa Rios Sintija Simane Nathan Titcomb Elena Papazoglou Masakazu Takagaki Kazuyuki Suzuki | Italy Cyprus USA Sweden Sweden Estonia Slovenia Germany Japan The Netherlands Singapore Finland France Spain Greece Italy Italy Spain Latvia USA Cyprus Japan Japan |

1. CHAIRMAN'S REPORT

The Chairman, Bruno Finzi, reported:

This past year was another excellent year for ORC. The number of certificates and countries using the ORC Rating System have increased this year, two out of three major ORC Championship events set records once again, and without doubt our system is strong and working well. The numbers of both boats and certificates have increased for the fourth consecutive year, with a projected total of 10,300 certificates to be issued to 9400 boats, representing a 3% increase over 2015. Rating offices were established in 3 new countries in 2016: Antigua, Netherlands Antilles, and Israel, and new countries with boats receiving ORC certificates for the first time include BUL, GBR and IRL.

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. At the ORC World Championship hosted by the Royal Danish YC in Copenhagen there were 131 teams from 14 countries in 5 continents, the ORC European Championship hosted by the Nautical Club of Thessaloniki in Porto Carras, Greece drew a record 73 entries from 12 countries, and the ORC Sportboat European Championship held in Chioggia, Italy also set a record for this event with 40 entries from 6 nations.

ORC this year has continued to assist the SuperYacht Racing Association (SYRA) in developing and refining the ORC Superyacht Rule (ORCs_y), with a significant increase in both the number of regattas and certificates in 2016: in all, 140 boats received ORCs_y certificates and raced in nine Superyacht regattas using ORCs_y scoring.

ORC's Sportboat Rule for high performance keelboats remains popular in Europe and is receiving more interest worldwide, so a Working Party has been working this year to better accommodate a broader range of these boat types.

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 2017 ORC World Championship will be organized by a consortium of clubs to be held in Trieste, Italy over 30 June – 8 July, the 2017 ORC European Championship will be hosted by the Pomeranian Sailing Federation and held in Gdansk, Poland over 23-29 July, and the 2017

Growth is seen in use of ORC systems in new regions – such as the Caribbean and South Africa - also within established regions for regional races and championships in the Baltic, Mediterranean, and South American regions, with 17 nations within these regions organizing ORC National Championship events in 2016. Some high-profile classes used ORC ratings for the 2016 season, including 84 entries in the Rolex Swan Cup in Porto Cervo, and next year there will be 100+ entries using the ORC system in the X-Yacht Gold Cup in Denmark.

The ORC's Sailor Services system remains an important component of the accessibility and transparency of ORC, with free access to some 94,000 measurement records online. It is also getting more popular use, with 2722 test certificates run in the system in 2016 and a reported increase of 35% in income from Test Certificates, Speed Guides, and Target Speed products.

ITC has just finished their test runs for the 2017 VPP and indicates some improvements in the treatment of some boat types, yet with only very small changes in the ratings.

2. TREASURER'S REPORT AND AUDITED ACCOUNTS

The Honorary Treasurer, Don Genitempo reported.

The 2015 Report and Accounts Year ended 31st December were distributed to Congress members for email approval. It appears that the 2016 outcome will be at a similar positive level as in 2015, which was another successful year with a 63.905 Euro surplus. This surplus allows ORC to pursue the development of special projects and uses of the system, such as new ORC scoring software and other program enhancements, a new Race Management Guide, continued work on ORC Superyachts, etc.

The 2016 expenses provided by the Secretariat for the first 3 quarters are on target with the budget. General sales are exceeding last year's numbers, with a slight drop in sponsorships on the web. Since the financial situation of the Company is in good shape, it was proposed to Congress to maintain levies at the same amount as for the past six years as follows:

| | |
|--------------------------|--|
| ORC Int. | 70 Euro |
| ORC Club | 42 Euro |
| Sportboat OD certificate | 21 Euro |
| IOR | 42 Euro plus ORC Club certificate for free |
| Speed Guide | |
| & Stability Datasheet | 50 Euro when issued locally |
| Target Speeds | 10 Euro |

Superyacht certificates will adjust their fees in accordance with the reviewed 2017 dedicated budget.

3. APPOINTMENT OF HONORARY TREASURER

The Chairman made a motion to appoint Management Committee member Patrick Lindquist to start assuming the role of Honorary Treasurer, while Don Genitempo, who announced he wishes to retire after many years of active and loyal service to ORC, is asked to serve some months longer during the transition. The motion was seconded and unanimously approved.

4. MEMBERSHIP OF COMMITTEES

There are the following changes to Congress & Membership of Committees for 2017:

Congress – new members

According to the number of 2015 levies, new nominations were received from Sweden (Thomas Blixt), Poland (Michal Korneszcuk), and France (Luc Gellusseau). RORC has appointed Andrew Hurst to represent them as a Founding Member. Nominations of additional members from the following countries are still to be received: Australia, Canada and Lithuania.

Membership of Committees

| | |
|-----------------------------------|-------------------------------------|
| International Technical Committee | Robert Ranzenbach added |
| Measurement Committee | Nathan Titcomb replacing Dan Nowlan |
| Roll of Honor | Fabio Fossati added |

REPORTS AND RECOMMENDATIONS OF COMMITTEES

5. INTERNATIONAL TECHNICAL COMMITTEE

ITC Chairman Alessandro Nazareth reported:

5.1 REPORT ON 2016 SEASON – CURRENT VPP FEEDBACK

Few issues were reported from the 2016 Championship events, aside from those mentioned in the Submissions below, and there were no major changes made to the VPP model.

5.2 SUBMISSIONS REVIEW

5.2.1 AUS 1 - STABILITY AND BALLAST LEEWARD RECOVERY INDEX (BLRI)

BLRI was removed from last year's certificates as no screening is in the OSR based on this factor. The current Stability Data Sheet is still showing the value of BLRI and this will be retained through 2017 but with an added warning (that will be extended also to LPS and IMS Stability Index) that the computation of the above three factors is made not taking into account deck shape, cockpit, coachroof and superstructures.

The Submission is therefore not supported for ORCi certificates.

5.2.2 GRE 3 - WEIGHT DEDUCTION FOR PRE-2013 MEASURED BOATS

The committee believes that adding this automatic weight deduction to boats measured prior to January 2013 will oblige all such boats (eg, boats normally not racing at a very high level) to re-measure to avoid a handicap disadvantage, and this is not the aim of the ORC policy.

Since the advantage (if present) is very small, the committee decided to not support this Submission.

5.2.3 ITA 2 – DEFAULT MAST WEIGHT FOR SMALL BOATS

The default weights calculated with the current formulation are not so far from the measured weights, even in small boats, so the Submission is not supported. However, since the current default weight is based on a formulation introduced in 1996, the committee agreed to inspect this and compare it in 2017 to a new formulation proposed by Jason Ker.

5.2.4 ITA 4 – OFF FILES VALIDATION

ITC discussed this issue at length. The list of prescriptions that the current rule 301.1 already requires for Designer Offset files seems adequate, but it is acknowledged that this needs further enforcement. Further checks may require the same amount of time as a full scan of the boat, so this Submission is therefore not supported.

5.2.5 ITA 5 – USE OF FIXED IMPLIED WIND

The committee confirms that use of the highest Implied Wind to score the race as introduced two years ago is yielding the most fair results and there is no reason to change it. Therefore, the submission is not supported.

5.2.6 MANCOM 1 –SAIL LIMITATIONS

ITC agrees that the table of sail limitations in ORC rule 206 should be related to CDL instead of GPH, to be consistent with current class divisions (made on CDL), and would avoid strange situations as explained in the rationale. If the CDL limits are adjusted in 2017 according to the new VPP then the limits should be changed accordingly. The Submission is therefore supported.

| CDL (m) | Above 17.000 | 17.000 – 11.501 | 11.500 – 9.651 | 9.651 m |
|-----------------|--------------|-----------------|----------------|---------|
| Mainsail | 1 | 1 | 1 | 1 |
| Headsails | 8 | 7 | 6 | 5 |
| Spinnakers | 6 | 5 | 4 | 3 |
| Mizzen Staysail | 1 | 1 | 1 | 1 |
| Mizzen | 1 | 1 | 1 | 1 |

5.2.7 NED 1 – CORRECTION PIPA DEFAULT CALCULATION

Last year the Default PIPA calculation was changed to avoid situations where the estimated PIPA (based only on the kind of installation and propeller diameter PRD) was higher than the actual measured value. This concept should be retained so the Submission is not supported.

5.2.8 NED 2 – SPECIFICATION OF MATTRESSES

The committee still believes that the current Regulations for the C/R division should remain as they are without adding complications (such as the mattresses thickness or foam density). This concept should be retained so the Submission is not supported.

5.2.9 POL 1 – CDL CHANGES DUE TO DOWNWIND SAILS CHANGE

CDL formulation, based on rated length and upwind VMG speed with TWS=12, should not be affected by spinnaker area. A test run made on the world fleet increasing the spinnaker area of 10% for each boat was prepared and no CDL change was observed. The Submission is therefore not supported.

5.2.10 POL 3 – STABILITY ESTIMATION FOR ORC CLUB

The committee believes the current formulation is not returning a poor estimate of stability, and a Bias was introduced some years ago on the estimated RM for ORC CLUB (+3%) to avoid unwanted advantages over ORC INT measured boats. The committee has in its 2017 agenda the revision of the Default RM calculation, to change to a component weight method to estimate VCG. The Submission is therefore not supported.

5.2.11 RUS 1 – RESISTANCE IN WAVES

The committee is continuously working on the Added Resistance in Waves formulation. Last year a modification was introduced to obtain a more balanced evaluation for small boats. This year the added resistance has been thoroughly inspected and a revised formulation has been proposed for 2017.

Lex Keuning announced that a long-term research on Added Resistance in Waves will be made at TU Delft. ITC will try to send feedback about possible issues to be included in the research that could be useful to further improve the current Added Resistance model. Lex made a presentation during the meeting of a possible issue related to the added resistance and the concept he explained will be retained as a reference for the long term research.

This topic will be kept in ITC agenda for 2017.

5.2.12 RUS 3 – HEADSAILS WITH BATTENS

While a study of the ORCi fleet indicated little change, the ITC proposes to unify all the coefficients for luffed headsails without battens, so the Submission is supported.

5.2.13 RUS 4 – STABILITY DATA SHEET

ITC confirmed again the decision taken last year. LPS and IMS Stability Index will be printed on the certificate for information purposes but no limit will be introduced again in the ORC rule. The safety screening criteria are left for the World Sailing OSR to define for the various categories of races.

The submission is therefore not supported.

5.2.14 RUS 5 – RESISTANCE CURVE

The committee is not in favor of providing Resistance Curves in Sailor Services, since ORC VPP calculations are used for handicapping boats and not for estimating speeds of the boats, so posting the values of the resistance curves of the boats could create some complaints from the constituency - there may also be some proprietary issues.

Besides, the current VPP for ITC already allows the possibility for the user to print the resistance curve values (with the switch /FORCESVARS) in the output so it could also be possible to extend this switch to the DVP users manager and thus all designers using the DVP VPP could generate Resistance curves of their boats.

The submission is therefore not supported and is deferred to the Management Committee.

5.2.15 RUS 9 – ORC SPORTBOAT CLASS RULES

This Submission is deferred to the Offshore Classes committee, but if the Working Group and this committee will make a more clear definition of what they want to achieve in their class then ITC is available to provide possible technical solutions.

5.2.16 SUI 2 – FLYING HEADSAILS SET ON A NOT FULLY EXTENDED BOWSPRIT

The TPS is already taking into account the tacking point of the flying headsails, and nothing prohibits to tack them in any place along the bowsprit, provided it's on centerline. The submission is therefore not supported.

5.2.17 GER 2 – HEADSAIL HEADBOARDS

The introduction of the same requirements of the mainsail to the headsail for the definition of the upper girth measurement is complicating the measurement process, so the submission is not supported and deferred to the Measurement Committee.

5.3 AERODYNAMIC REVISIONS TO THE VPP

5.3.1 Upwind Aero Model research status update

In the past month the research by Jason Ker and Wolfson Unit has made progress and another report describing the activities performed was prepared and presented (in the ITC report minutes). It is expected that before the first 2017 ITC meeting in March the research will be concluded and in 2017 ITC will utilize the results to revise and modify the upwind aero model.

5.3.2 Flying headsails coefficients revision

During the season some concerns have been raised about the use of small headsails set flying (code 0's) because some boats exploit their use in not having their VMG upwind allowance increased in light winds. The ITC revised the sail coefficients for these headsails set flying, taking into account that 2 years ago an opposite complaint was raised and the coefficients were lowered as the headsails set flying were considered unfairly treated. Since the previous set of coefficients was derived from wind tunnel tests it was decided to come back to these. The test run prepared was in the expected direction with upwind VMG handicap slightly increasing in light winds. This modification is proposed to be included in the 2017 VPP.

5.3.3 Heeled Hull windage formulation

On the discussion about the hull sheerline and corresponding windage the ORC programmer explained that for evaluation of windage only the upright surface of the hull is taken into account with just a $\cos(\text{heel angle})$ attenuation. The ITC decided then to modify the LPP to compute the correct hull lateral area at every heel angle to better evaluate the windage of wide boats that when heeled are increasing the lateral surface area much more than that of narrow hulls. A test run was prepared and the results were in the expected direction.

Also, the programmer discovered clipping problems in the LPP that affected the rated effective span of a small number of yachts, so he advised continuing with a program to de-sensitize the rule to offset file irregularities. Improving the LPP will also help solve problems in some keel shapes with a double poke-through treatment. These modifications are proposed to be included in the 2017 VPP.

5.4 HYDRODYNAMIC REVISIONS TO VPP

5.4.1 Effective span in heeled conditions – F_{unsteady} function revision

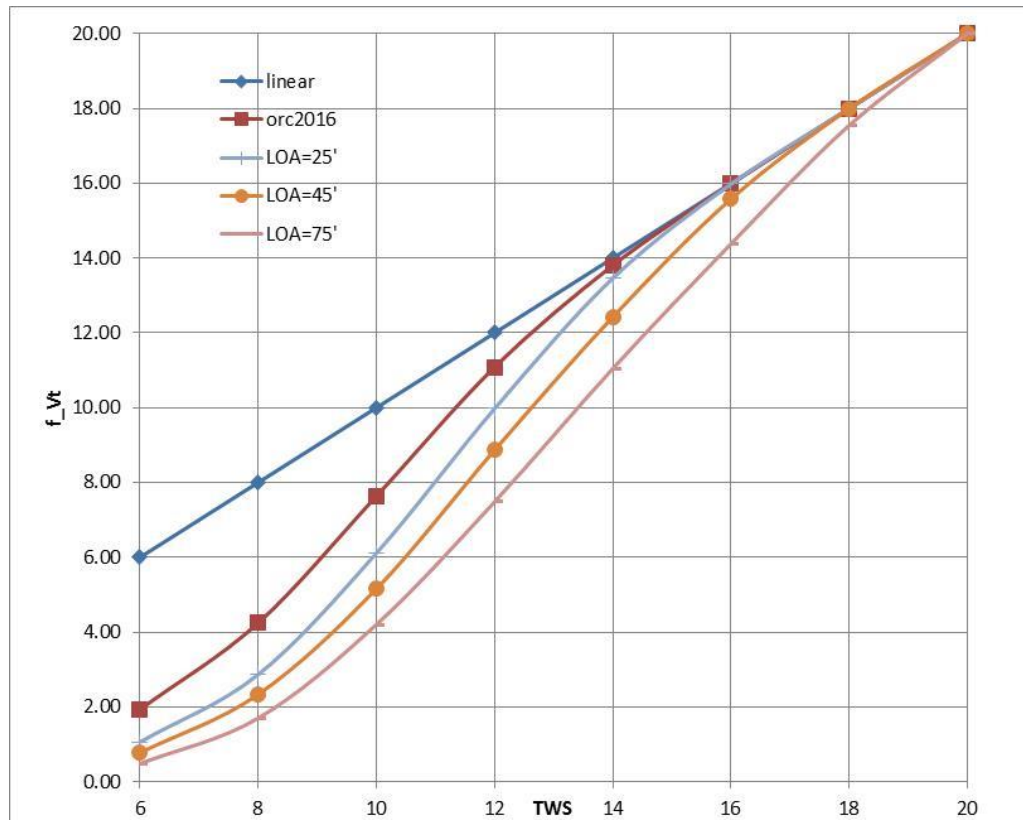
The effective span of hull in heeled conditions has been thoroughly checked by the committee against both Tank and CFD data. The correlations were remarkably good, so it has been decided that no short term intervention is necessary. However ITC believes that this validation exercise should be extended to heavy boats as well, so this item will be kept in the agenda for 2017.

5.4.2 Added resistance in waves

See above para. 3.10 submission **RUS 1 - ADDED RESISTANCE IN WAVES**

A thorough analysis of the current formulation of added resistance in waves (see VPP Documentation 2016 chapt. 6.8 p. 77) was performed by the committee.

First, the wave energy spectrum has been revised taking into account the different ways that waves affect boats of different sizes, smoothing the energy for larger boats and reducing the energy at low wind speeds when the sea state is almost flat.



The above plot shows how the energy curve has been corrected for boats with LOA=25', 45', and 75'.

For intermediate lengths the energy is interpolated between the two adjacent curves, while below 25' the lower curve is retained and above 75' the higher curve is retained.

Then the R_{aw} formula that computes the boat's added resistance with reference to a base boat with all its terms was reviewed as follows:

$$R_{aw} = f_s \cdot 2gL \cdot f(VT) \cdot 0.55 \cdot f(\beta_T) \cdot f(L30) [0.00146 + f(Fn) + f(K_{YY}) + f(L/B) + f(B/T)]$$

The term

$$f(LCB - LCF) = 0.115((LCB - LCF) - (-0.03)) + 0.0578((LCB - LCF)^2 - (-0.03)^2)$$

was removed since there is no relationship between the relative LCB and LCF position and R_{aw} .

Also, the ranges of the various parameters (that were deactivated in the past) have been re-introduced:

| PARAMETER SERIES | RANGE | BASE VALUE |
|------------------|-------------|------------|
| GYR | 0.17-0.29 | 0.25 |
| B/TC | 1-9 | 4.443 |
| L/B | 2.77 – 4.16 | 3.327 |
| B/T | | 4.443 |
| Fn | 0.14 – 0.45 | 0.325 |

The issue of the GYR calculation was discussed, and it is now based on a base gyradius ($0.22 \cdot \text{IMS L}$), then adding the effects of mast weight and CG and of the construction material of the hull.

The committee agrees that construction materials are not affecting the gyradius of a boat since all the weight saved is put in the keel and not in the bilge as was happening when this adjustment was introduced more than 10 years ago, so it was decided to remove the gyradius adjustment due to the construction materials as reported in VPP Documentation 2016 p. 80):

| | |
|-----------------|---|
| SOLID: | $0.016 \cdot \text{CANOEL}$ is added to Gyradius |
| CORED: | $0.008 \cdot \text{CANOEL}$ is added |
| LIGHT: | No adjustment |
| CARBON: | $0.005 \cdot \text{CANOEL}$ is subtracted |
| CARBON FOR C/R: | $0.010 \cdot \text{CANOEL}$ is subtracted |
| HONEYCOMB: | $0.006 \cdot \text{CANOEL}$ is subtracted where applicable in addition to adjustments listed above; |

A discussion developed to find an alternative, concluding that stiffer materials make the boat longer upwind when tension on the fore and aft stays is applied, so a new routine is applied – only upwind - that makes a boat longer and hence faster according to the following table:

CARBON construction, 0% increase in upwind speed due to length
LIGHT construction, 0.2% decrease in upwind speed due to length
CORED construction, 0.4% decrease in upwind speed due to length
SOLID construction, 0.6% decrease in upwind speed due to length

This will allow construction materials to retain a different VPP treatment that will keep similar speed differences between the listed categories, but distributed in a different way along the TWS range.

Single and combined test runs were prepared and the results were in the expected direction, so the committee will propose to include this new formulation for added resistance in 2017 VPP.

5.5 DEFAULT VCG DETERMINATION IN LIEU OF DEFAULT RM – COMPONENT WEIGHTS FORMULATION

No progress was done on this project but the item will be retained on 2017 agenda.

5.6 NEW DEFAULT MAST WEIGHT EVALUATION

No progress was done on this project so the item will be retained on 2017 agenda.

5.7 PERFORMANCE LINE SCORING

Following the submission ITA 1 and RUS 2 (not addressed to ITC) the committee supports the inclusion of Triple Number ToD allowances in the certificate format - they are currently not shown but scoring programs are already programmed to use it using the formula $\text{ToD} = 675/\text{ToT}$.

An analysis of several currently available scoring options was performed showing the weakness of the Performance Line Scoring option where the performance curve is approximated with the straight line using time allowances at 8 and 16 kts and without any boundaries below 6 kts and above 20 kts TWS.

Therefore the slope of these lines can have a strong effect on the scoring (more than using other scoring options), and with conditions of very light or very strong winds it can give results that are completely opposite to the predicted boat speeds. Therefore, the committee is strongly suggesting removal of Performance Line from available scoring options and recommends its replacement by either the Ocean for PCS or Triple Number options.

5.8 BULWARK / SHEERLINE DEFINITION REVISION

The chairman reported that more and more boats (especially among SuperYachts) are featuring bulwarks extending the topsides above the deck level. The offset files are normally measured with stations extending up to the top of the bulwark, and not stopping where the hull intersects the deck. This offset configuration allows consideration of the entire hull surface for windage purposes. So it was decided to amend IMS rule B.2 accordingly expanding the various different sheerline definitions, and decouple the position of measurement freeboard points from the sheerline identification.

5.9 CENTERBOARD MEASURES DEFINITION REVISION

Another item discussed was the definition of KCDA (IMS rule C2.3) in some particular centerboard designs. The chairman presented some sketches to be added to the rulebook that will be refined for publication.

5.10 VPP DOCUMENTATION RELEASE

Davide Battistin completed the transfer of the current Documentation to the LATEX platform. He circulated a draft during the summer and the committee was invited to give feedback. The new 2017 VPP modifications will be included too in this new format.

5.11 2017 VPP - PREPARATION OF AN “ALL EFFECTS” TEST RUN AND A BETA VPP FOR IMMEDIATE RELEASE

An “all effects” test run including the following modifications has been prepared:

REVISED ADDED RESISTANCE IN WAVES see 5.5.2

CONSTRUCTION MATERIALS LENGTH REDUCTION see 5.5.2

FLYING HEADSAILS REVISED COEFFICIENTS see 5.4.2.

HEELED HULL WINDAGE see 5.4.3

OVERLAPPING HEADSAILS WITH BATTENS NEW COEFF see 5.3.12

A beta VPP with the above modifications is ready for distribution to DVP users and rating offices for their review.

5.12 OTHER BUSINESS

A measurement issue with a Headsail set Flying arose at the Maxi72 Worlds in Porto Cervo. This sail had a missing forward part near the tack to artificially reduce ASF and thereby allow it to be measured as a spinnaker having a midgirth of 0.75ASF.

To avoid a similar sail being presented for measurement in ORC, ITC proposes an amendment to ORC rule 208.1 with the following wording:

208.1 Spinnakers shall be set flying from no more than 3 external attachment points

Zoran Grubisa pointed out that in the new World Sailing ERS there is a new definition of “set flying”:

ERS Set flying definition is modified to read “**A sail set with no sail edge attached to the forestay.**”

So the following wording is proposed for rule 208.1: “Spinnakers shall be **set flying**. If there is a luff wire, it shall be completely attached to the **luff**, with no voids between the sail and the luff wire.

5.13 SUMMARY OF RECOMMENDATIONS TO THE CONGRESS

- a) New formulation for the added resistance in waves (see 5.5.2)
- b) New length assessment for different construction materials (see 5.5.2)
- c) New flying headsails coefficients (see 5.4.2)
- d) Revision of Hull windage in heeled conditions (see 5.4.3)
- e) Adoption for Overlapping headsails with battens of the same coefficients of non-overlapping headsails (see 5.3.12)
- f) New LPP with double poke-through treatment and housekeeping modifications for appendage clipping (see 5.4.3)
- g) New wording about set flying (see 5.13)
- h) PLS scoring option removal (see 5.8)
- i) New table on sail limitations based on CDL (see 5.3.6)
- j) Interpretation on KCDA measurement of centerboards (see 5.10)
- k) Clarification about sheerline and bulwarks (see 5.9)

Congress approved all recommendations unanimously.

5.14 ORC RESEARCH FUND BUDGET PLANNING FOR 2017

The committee discussed possible new research projects that could be established for 2017 after the completion of the upwind aero model project now in progress. As a main project a broad hydro research using CFD could be established covering the following subjects:

- Effective length assessment
- Transom drag
- Residuary Resistance at high F_n (>0.7)

A more complete project will be prepared before the next meeting. The ITC also discussed some possible future projects that are not a priority at this time:

- CFD research on the downwind aero model
- An advanced tracking system to be installed on boats during major regattas to return real data log useful for VPP tuning and validation

TU Delft will go on with a long-term research project on added resistance (see above para. 5.5.2). The chairman has discussed research funding with Management Committee in Barcelona.

5.15 STRATEGIC PLANNING FOR WORK AFTER THIS MEETING

Looking at items already in the agenda and other items coming from submissions deferred to next year, this is the list of possible projects for 2017:

- Revision of upwind aero model based on CFD research results
- Added resistance in waves
- Effective span of hulls
- New Default Mast Weight
- Default VCG determination in way of default RM – Component weights formulation.
- Frictional resistance of long chord keels

ITC members will make their availability to be part of working groups known to the chairman, with work needed on one or more projects by each member. A priority list will be established, with each item having nearly equal importance.

5.16 NEXT MEETINGS SCHEDULING

The next ITC meeting (first of the 2017 season) is scheduled in one of the following weekends 25th – 26th March or 1st – 2nd April. The possible location could be at the World Sailing offices in Southampton. Simon Forbes, who was participating at the meeting, will confirm availability soon.

6. RATING OFFICERS COMMITTEE

Rating Officers Committee chairman Zoran Grubisa reported.

6.1 SUBMISSIONS REVIEW

6.1.1 ITA 1 – Triple Numbers ToD

The committee supports adding Triple Number ToD coefficients to the certificate. These will be added in the Simple scoring option box. ITC recommendation is for the removal of Performance Line from the certificate. If accepted, this will also create some additional space for ToD numbers.

6.1.2 ITA 3 – Integrity check of measurement data

The intention of the submission is supported. There are already several validations in the ORC Manager software, and Rating officers will report to the Tech Staff any additional information that they may find as useful.

6.1.3 RUS 1 – Graphic on ORC Certificate

The submission is not supported. Overlapping drawings and measurements of symmetric and asymmetric spinnakers will probably make the certificate unreadable. The same submission was discussed a few years ago when it was decided for the same reason to draw the larger of the symmetric and asymmetric spinnakers, but areas labeled in words when both a symmetric and an asymmetric sail exists in the inventory.

6.1.4 RUS 6 – Full sail inventory on ORC Club certificate

The submission is supported by adding the Sails inventory to an additional measurement page available to those Rating offices that select this option. However, the general philosophy of keeping the ORC Club certificate simple and on one A4 page is maintained.

6.1.5 SUI 1 – Dual ORC certificates for the same boat

The committee believes that a boat shall have only one valid certificate at a time as currently prescribed by the ORC Rules. However, administering two certificates for the same boat in different configurations is available either through the different profiles in the ORC Manager (as successfully used by NED RO for their double handed fleet) or by the simple use of different DXT files. The discussion then led to the conclusion that if more requests like this may be expected then the entire certificate issuing system should be updated by allowing entered data for the multiple configurations of the same DXT file. This is seen as a project for the future, but not a priority at this moment, so the submission is not supported.

6.2 ORC MANAGER SOFTWARE and ORC DATABASE – updates, suggestions for improvements

An additional report is added to the ORC Web Database where Rating officers can check the list of offset files marked as erroneous, so they can be replaced with corrected ones.

6.3 OTHER BUSINESS

It was agreed to create a database of ORC measurers, and Rating officers are asked to provide the names and e-mail addresses of measurers in their countries. ORC Sailor Service credentials will be provided to the ORC measurers (to those who are not already registered) and some additional services will be provided like getting information with photos or drawings for the freeboard points where available.

7. MEASUREMENT COMMITTEE

ORC Chief Measurer Nicola Sironi reported.

7.1 SUBMISSIONS REVIEW

7.1.1 GER 1 – Abbreviations for mizzen staysails

The Submission is supported.

7.1.2 GER 2 - Headsail headboards

The Committee confirmed the ITC opinion that this is not needed, so it is not supported.

7.1.3 GRE 1 - Spinnaker pole during flotation

The Committee agreed to add to IMS B4.1(f) “in their normal position when racing upwind.”

7.1.4 GRE 2 - Small flying headsails

The Committee discussed the matter, considering that there are headsails called “jib tops” with an area smaller than the largest headsail, which are set flying on a bowsprit, and not inside the foretriangle as staysails. It was reminded that Rule 207.6 prohibits the use of 2 headsails simultaneously when the clew of the foremost one is forward of the clew of the aft one.

Furthermore, the submission is asking for the removal of having all headsails set flying declared in the sail inventory, but instead as headsails set flying that are smaller than the largest headsail because they do not affect the rating, because applying ORC rule 305.2 makes no penalty. Therefore, the submission is not supported.

7.1.5 GRE 3 - Weight deduction for pre-2013 measured boats

The Committee acknowledges that the weight deduction that was introduced 4 years ago to make easier the transition to the new “light ship” measurement trim may in some cases be less than reality, yet this did not cause problems.

Confirming the ITC opinion, the Committee therefore does not support the Submission, but reminds that Organizing or local Authorities may require a post-2013 measurement in their eligibility criteria.

7.1.6 ITA 4 - OFF file validation

The Committee agrees on the rationale of the Submission, but does not see any need to change any wording. What is written needs to be enforced, including the fact that the validation needs to be performed with the help and endorsement of the ORC Chief Measurer and staff.

7.1.7 ITA 5 - Hull Measurement Manual

Prior versions of this manual will be updated and made available on the website. It will be possibly included also in the International Measurers manual.

7.1.8 NED 2 - Specifications on mattresses

A long discussion developed, and the Committee does not see the reason to re-introduce mattresses specifications in the Rule, and therefore the submission is not supported. If sailors prefer discomfort, and don't use their bunks, it's their own choice. As far as Rule compliance is concerned, it is important that the boat is measured with the same mattresses they have while racing, and mattresses needs to cover the bunks completely.

7.1.9 POL 3 - Stability estimation for ORC Club

Confirming the ITC opinion, the Committee does not support the submission.

7.1.10 SUI 2 - Flying headsails not set at bowsprit end

The Committee confirms the ITC opinion, and does not see the need to introduce a new measurement that has no influence on the VPP results. The submission is thus not supported.

7.2 2016 SEASON REPORT: 3 ORC Championships

The Chief Measurer made a brief report on the measurement aspects of the 3 Championships, where he was present together with Zoran Grubiša and different groups of measurers. At the European and World Championships, where the sails inventories need to be controlled, a very simple and web-based system has been developed and tested, and worked very well. Its use can be expanded to any event controlling the number of sails that can be used.

7.3 HULL MEASUREMENT: 3D scan vs manual Total Station

The use of the Total Station continues to be the standard method, stationing the instrument and taking points in sequence along transverse stations. Measurements made properly require very short processing times.

The use of 3D scanning continues to develop worldwide, and some measurers and rating offices are investing in the equipment and training needed to not only produce scans properly, but also learn to handle the software needed to do post-processing.

The ORC programmer is developing a software tool for this purpose in order to standardize the creation of OFF files, but for the moment all clouds will have to be delivered to the ORC Tech, to validate them, and produce the OFF file, and the freeboard reference points will have to be identified with their coordinates in the same system as the cloud.

7.4 BOOM INCLINING REVIEW

The inclining test using the boom has been discussed again, and practiced on many super yachts and other large boats. The setup of the JM software has in a few cases led to a misunderstanding, so it was has agreed to update this software and create a special menu for the boom inclining, as it is provided in the Manager.

7.5 SAIL STAMPS/INVENTORIES

The use of sail stamps continues to be made with stickers, made by the individual countries. The new UMS nomenclature agreed last year has been adopted worldwide, but the use of a unique identifier and the creation of a database have not been implemented yet.

7.6 MATTERS FROM ITC

7.6.1 Bulwarks, sheer, freeboard points

The Committee agreed to accept the ITC clarification on bulwarks, and include in the station geometries in the Offset files also the part constituted by the bulwarks above the deck, and not stop the stations at the deck level. The Rule wording will be changed to reflect this effect, and also the illustrative sketches.

Regarding freeboard points, it was again confirmed that the reference points need to be clearly identifiable, and the preferred positions are on centerline, corresponding to features belonging to the mold, which need to be pictured and accompany the OFF files.

7.6.2 Mainsail hoist measurement, CM interpretation

The Committee agreed on the CM interpretation. Rule modification for the next year will leave the ERS method for mainsail measurement unchanged but will define the way the mainsail shall be set on the mast: head point shall be the highest point of the sail when set on the mast and the mainsail may be reefed only from its bottom side.

7.6.3 Headsails set flying

A long discussion developed from the photo presenting the headsail partially set on the luff line with foot length shortened to reach SHW/SFL ratio of 75% with the lower part supported with several rope lines to the luff wire. It was noted that current ORC Rule 208.1 requires the spinnaker to be set flying, and that this sail is a spinnaker by having SHW/SFL = 0.75.

However, a rule change may be needed to amend the ERS definition of “Set flying” to clarify this case, but also any other rules dealing with the headsail set flying.

7.7 SUPERYACHT SPECIAL MEASUREMENT REQUIREMENTS

Superyachts require special measurements in addition to those described in the IMS, and Alessandro Nazareth and Paolo Massarini presented to the Committee a presentation on these measurements needed for certificates issued in the ORCs rule.

8. SPECIAL REGULATIONS COMMITTEE

Sten Edholm reported briefly on the Special Regulations meeting. Refer to the World Sailing Special Regulations Sub-Committee Minutes for more information.

9. OFFSHORE CLASSES AND EVENTS COMMITTEE

Committee chairman Paolo Massarini reported.

9.1 SUBMISSIONS

9.1.1 GER 3 - TACTICS TO INTERFERE WITH AND HINDER OTHER BOATS

The submission was not supported by the Committee.

9.1.2 GER 4 - CONSTRUCTORS / DESIGNER WORLD CHAMPIONSHIP

The submission was supported in principle and a draft rule will be presented in November to be adopted in the 2018 International ORC Championships.

9.1.3 MANCOM 1 – SAIL LIMITATIONS, MANCOM 2 – RACE MANAGEMENT GUIDEBOOK, MANCOM 3 – GREEN BOOK REVIEW

The Committee has supported them all. The CDL will be the reference value for the number of sails on board. A new publication, the ORC Race Management Guidebook, in electronic format will be created based on all the information already present on the ORC web site and adding few more instructions. The Green Book is under review and will be divided into three main sections plus a dedicated one for the Sportboats:

- General requirements and bid form/agreement
- Standard Notice of Race
- Standard Sailing Instructions

9.1.4 RUS 8 – GP 26 CLASS RULES

The Committee supports the submission with the friendly amendment of section b to be read: “Exclusive of storm sails required by the Offshore Special Regulations, sails allowed on board while racing are limited to:

- 1 Mainsail
- 2 Headsails set on a forestay 1 Headsail set flying
- 1 Asymmetric spinnaker or 2 asymmetric spinnakers (added sentence)

9.1.5 RUS 9 – ORC SPORTBOAT CLASS RULES

The Committee supports the submission and the new draft rule prepared by the Working Party has been briefly read and approved.

9.1.6 NED 3 - DOUBLE HANDED CLASS ORC CHAMPIONSHIP

The Committee supports the principle of the submission and the creation of a dedicated DH rule.

9.2 REPORTS OF 2016 ORC CHAMPIONSHIPS

Reports about the ORC Europeans, held in Porto Carras, Greece, and the ORC Worlds, held in Skovshoved, Denmark, have been briefly mentioned by the Chairman in his opening remarks, and the podium finishers and results are available online on the ORC website. Full reports are also available in separate documents. Zoran Grubisa also reported about the ORC Sportboats European Championship held in Chioggia, Italy.

9.3 CLASS DIVISION LENGTH (CDL)

CDL has been successfully used in the most important ORC Championships during the 2015 and 2016 seasons. Class breaks have been respected at the Worlds in Skovshoved while, at the Europeans, Class A & B have been grouped together in accordance with the Green Book prescriptions and the lower limit for Class C (8,5) has been lowered to 8,0 to accommodate the Organizers requests. CDL limits for 2017 will be revised pending a review of the 2017 ratings for the ORC fleet once available from the ITC.

9.4 GREEN BOOK FORMAT

A review is in place and will be presented before the end of 2016.

9.5 ORC SUPERYACHT REPORT

The ORCsy system is still evolving and growing, with revisions and improvements made to the ORCsy rule in partnership with the Superyacht Racing Association (SYRA). To date 166 Superyachts are in the ORC database over two seasons, and 115 new certificates were issued in 2016, with 29 Superyachts fully

measured during the year.

ORC has also been providing full support before the event and on site with assisting the Organizing authority in the preparation of the official documents and the rating certificates, to interact with the competitors and the different designers for information purposes and to supply the scoring software and event results. This support covered 9 events in 2016 - 3 in the Caribbean, 1 in USA, and 5 in the Med – and 37 races were completed among entries with an average length of 36 meters.

9.6 ROLEX SWAN WORLD CUP

84 entries (including SuperYachts) raced the Rolex Swan World Cup in Porto Cervo using ORC ratings for the first time. The fleet was divided in 4 classes (not including one designs), Maxi (ORCs), MiniMaxi, Grand Prix and S&S designs rated using ORC Club and ORC International certificates.

The legacy from the previous system was not been easy to use, so a huge amount of data cross checks were done during the preparation time leading to the event. Nonetheless, with the support of Nautor, the different designers and the rating offices, the ORC has been able of build a large database in just a few months.

Overall the event was regarded as a great success among owners, many who were skeptical at the outset. For the future, greater attention to the checks on site should be made, both before and during the event.

9.7 ORC EVENT CALENDAR

Presentations of the 2017 ORC World Championship made by Giancarlo Crevatin and the 2017 ORC Europeans in Gdansk made by Michal Korneszczyk were given to the committee. Conversations and agreements are in progress to find the best technical solutions for the success of these events.

The 2017 ORC Sportboat European Championship has been presented and assigned to the city of Riga in Latvia. The Committee approved the 2018 ORC Championships to be ratified by the Congress as follows: ORC World Championship: The Hague (Holland/Netherlands), preliminary date 12-20 July 2018. ORC European Championship: Lymassol (Cyprus), dates to be confirmed (end August-beginning September). 2018 ORC Sportboat European Championship, Riga, Latvia, 6-13 August.

A long list of bids have been read for future ORC Championships until 2021, including letters of presentation from different locations in Spain, Norway, Sweden, Greece, Estonia and, extremely important, an official interest coming from USA to organize the ORC Worlds in 2019.

10. RACE MANAGEMENT COMMITTEE

Committee chairman Ecky van der Mosel reported.

10.1 SUBMISSIONS REVIEW

10.1.1 ITA 1: TRIPLE NUMBER ToD

The Committee clarifies that the Triple Number ToD is available in the data base. The request of the submission is to add the six Triple Number ToD values on the certificates in the space at the bottom of the yellow box. The committee supports the submission, but expressed its concern to keep the design of the certificate clearly arranged.

10.1.2 ITA 6: USE OF FIXED IMPLIED WIND

After some brief discussion and clarifications from ITC Chairman Alessandro Nazareth on the use of Implied Wind on W/L courses, the majority decided not to support the submission, alongside the same decision from ITC.

10.1.3 MANCOM 2 & RUS 2: RACE MANAGEMENT GUIDEBOOK

The intention of both submissions is almost the same: it is the request to develop a manual as an assistance for the Race Managers. This request is unanimously supported. The committee had a long and lively discussion about the contents and the structure of this publication. The preferred structure should be a fleet chart which leads the user to the recommended scoring method for his event, showing also the pros and cons of the choice. A working group was founded under the leadership of Dobbs Davis and the Chairman. With support from Zoran Grubisa it should be possible to finish a first draft by the middle of January 2017.

10.2 ORC RACE MANAGEMENT SURVEY

Similar to last year, Ab Pasman had circulated a survey to ask ORC Rating Offices about the situation around ORCi and ORCclub in their country. Some more questions related to use and certificate costs were added by Dobbs Davis. The re-circulation was very satisfying with 25 federations having replied. Most of the results were not surprising and approved the good standard and the general high satisfaction of the owners. The full questionnaire and the statistics are available via e-mail to the Chairman (ecky.mosel@gmx.de).

10.3 SCORING SOFTWARE DEMONSTRATIONS

ORC programmer Panayotis Papapostolou presented the new ORC scoring software which was in use at the Europeans 2016. The sense of the software is mostly to possess one ORC-specific software, which is independent and is a reference to other products.

By invitation of the Chairman, Radek Masnica, Head of Development at Swiss Timing and main developer of the Yacht-Management-System Manage2Sail (M2S) software, also made a short presentation of some highlights of M2S. The company helped to develop and re-write the source machine of ORC PCS calculations and is willing to offer this core to other developers free of charge.

The software is used for offshore events in Germany, Norway, Switzerland, and Austria. It is possible to transfer it to every language, with many translations in the Olympic and one-design areas already available. If problems with the use of the software arise, there is a cooperative hotline, and as it is a web-based system, M2S personnel can be available to help

11. PROMOTION AND DEVELOPMENT COMMITTEE

Chairman Dobbs Davis reported.

11.1 SUBMISSIONS REVIEW

11.1.1 MANCOM 2 & RUS 2 – RACE MANAGEMENT GUIDEBOOK

The Committee supports the submission, with the recommendation to the Race Management Committee that this document is produced in a modular format, such as the Green Book, where topical chapters may be made available separately. Content should include topics such as scoring options, course selections, and guidance pathways to making the correct decisions for each race and/or regatta, as well as how to educate sailors on the reasons for the choices made. There was strong support for this guide to be made available in .doc format so that translations could be made in GER, ESP, ITA, JPN, POL, and other languages (eg, FRA).

The Committee will work with the Race Management Committee and ManCom to form a Working Party to create the document, circulate a draft copy for review, and devise appropriate publishing and promotion strategies based on results from the ORC use Survey conducted by the Race Management Committee.

11.1.2 POL 2 – PROMOTIONAL CERTIFICATES

The Committee does not support the submission, only because it already exists as an ORC policy, which is to offer levy-free promotional certificates to boats that have not received an ORC certificate in the past 5 years. The use of these is at the discretion of the Rating Office in each country.

Comments were also made about the irregular application of the production boat builder program, where as boats are built they automatically receive ORC Club certificates. It has been found in practice there are too many variations within even series-built boats for this program to be effective at delivering the same quality of data necessary for a Club certificate. The one-design ORC certificate is a better application of like-built boats.

11.2 PDC OVERVIEW FOR 2016

The chairman reported that 2016 was a highly active year for promotion and development, with presentations on ORC made by invitation in Texas, New York, Ireland, Miami, St Maarten, Japan, Cyprus, and San Francisco, with another presentation and measurement seminar conducted in Texas. These are based on a powerpoint developed for new users in the ORC system, and the continued increase in ORC certificate growth (see graph) in the year may have been due in part to these efforts.

The development and publishing of the ORC Guidebook 2016 was completed in July and distributed to a circulation of 27,000 subscribers to Sailing World magazine in the US, and 5000 extra copies printed for promotional uses by ORC. These have been distributed to numerous nations, and will continue to be used as an introduction to the system for new users. This book's contents will be made available to all interested in .doc or .txt format suitable for translation.

New perpetual trophies were created at the request of the Japan Sailing Federation (JSF) to help promote the re-growth of ORC use in JPN. Glass keeper trophies were also created to help promote ORC use in regional races, and ORC is a Silver-level sponsor at Quantum Key West Race Week, being now the only handicap system used at this prestigious US event.

11.3 NEW INITIATIVES

The poll developed with Ab Passman (see 10.2 above) has revealed a need to continue with promotion and presentation of the features of the ORC system, even to nations that currently use the system. So, new trips will be planned to ARG, AUS, more areas in the USA, and locations with approved new ORC events (eg, POL and LAT).

PDC will work with OC&EC to promote new events, including those not with strict Green Book formats, particularly in new regions, with the concept being that ORC offers not just a new system but also a new approach to racing that may help to re-activate dormant markets that are asking for help.

ORC has been asked to participate in a US-based project to develop a new multihull rating system for fast cruising, where ORC's framework of measurement, data management and certification could be used provided a VPP could be provided. Similarly, ORC has been approached to help develop a new system for Classic yachts, built on the framework of the ORCsy system.

An app development program is very much desired by PDC, and it is hoped the ORC programmers can be available to make themselves available to create, troubleshoot, and launch new apps that can perform both informational and technical functions that highlight the value of a transparent system.

12. MANAGEMENT COMMITTEE

Management Committee Chairman Bruno Finzi reported.

12.1 WORLD SAILING SUBMISSIONS AND ORC REPORT

The ORC annual report to World Sailing was assembled, giving an overview of the ORC system, the number of countries in the system, and presenting both the current fleet statistics of certificates and boats receiving certificates, including projections to year-end 2016. This also contained reports from the ORC Championships held in 2016.

The Chairman states that regardless of the outcome of a vote on WS Submission 45 from IRC Congress in WS Offshore & Oceanic Committee, ORC is a strong organization that will continue to provide an important and relevant service to many thousands of boats and sailors around the world.

12.2 ORC SUBMISSIONS REVIEW

12.2.1 POL 2 – PROMOTIONAL CERTIFICATES

ManCom agrees, but confirms provisions are already in place to promote new users to our rating system.

12.2.2 RUS 5 – RESISTANCE CURVES

The ManCom does not support the submission and agrees with the ITC: resistance curves will be available on the Designer VPP, but not in Sailor Services.

12.2.3 RUS 8 – GP26 CLASS RULES

ManCom supports the submission in the following terms:

Proposal A) delete Rule 203.2 all together

Proposal B) reword Rule 205.3 allowing on board while racing:

- 1 mainsail
- 2 headsails set on the forestay
- 2 asymmetric spinnakers or 1 asymmetric spinnaker plus 1 headsail set flying.

12.2.4 SUI 1 - ORC CERTIFICATES FOR SAME BOAT

The submission, while it contains some positive aspects, needs to be further studied especially in the handling process and in the limit of the double certificates. Therefore the submission is not supported and deferred to future study with an outcome to be agreed between SUI and the ORC staff.

12.3 US SAILING & SYRF

Dobbs Davis reported relations with US Sailing have improved markedly in the past year, with technical cooperation enhanced by new hires in the Offshore office and the increase in growth and interest in ORC in the US. Their programming of a new SAP database for handling measurement data is envisioned to cooperate with the ORC Manager software to make certificate issuance easier than in the past. With certificates approaching 100, a second ORC Congressman will be anticipated in 2017 with the selection made by US Sailing president Bruce Burton, who will work directly with the Chairman in helping build further ORC fleet participation in the US. Currently there are several areas and important events using ORC, and several more considering use for 2017.

SYRF continues on research projects with some cooperation and interest from ITC, particularly in the Wide Light and Downwind Aero projects. SYRF staff have been approached to assist in structuring a new Multihull rule, with interest solicited towards ORC for providing a framework for rule administration, even though details are still under discussion. Currently this group is experimenting with use of an empirical performance log and position-based VPP system scored using PCS.

12.4 ORC SUPERYACHT

Paolo Massarini reported the relationship with SYRA and ORCsy events is strong, with much work being done at events and in ORCsy rule improvements. However, better definition is needed on what are the roles of ORC personnel in support of each event so that a new business plan can be made.

There is also a developing problem with the number of Super Yachts desiring full-measurement and the shortage of available and qualified measurers. Seminars on ORCsy measurement are therefore a priority and will be planned in the near future. SYRA has also requested an analogue to ORC Club for ORCsy which they hope could make for easy application in a new “spirit of tradition” class.

12.5 UK AND RORC

Use of ORC in the UK is not widespread, however, there are local fleets using the system, and so all UK ORC certificates produced in 2016, many for the Rolex Swan Cup, were done from the ORC central office. No other approach was made or received by RORC after they denied and turned down the proposal verbally accepted last January in Hamburg.

12.6 SAILOR SERVICES REPORT; FLEET STATISTICS AND SAILOR SERVICES STATISTICS

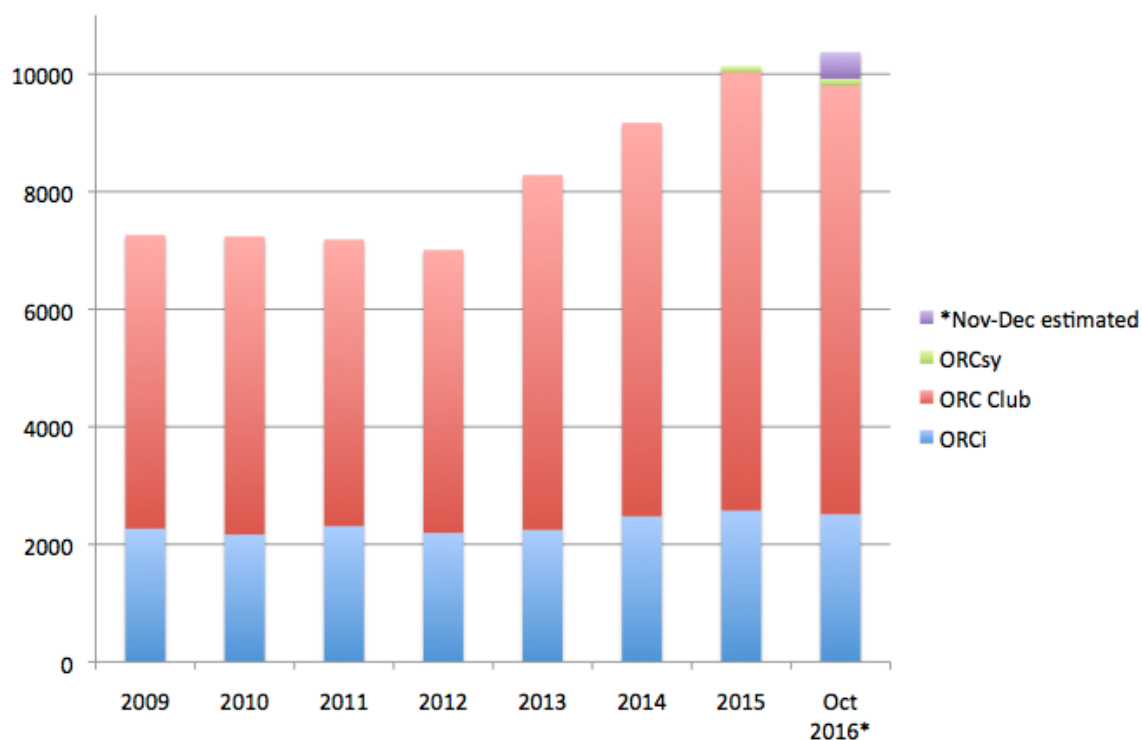
There is a significant rise in all numbers, especially in test certificates, compared to all previous years. There is also a significant increase in the income compared to previous year (35.2%).

| | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|-------------------|------|------|------|------|------|------|
| Speed Guide | 10 | 52 | 104 | 240 | 212 | 220 |
| Target Speeds | | | | 221 | 219 | 276 |
| Test Certificates | 1052 | 1097 | 1967 | 2065 | 1804 | 2276 |

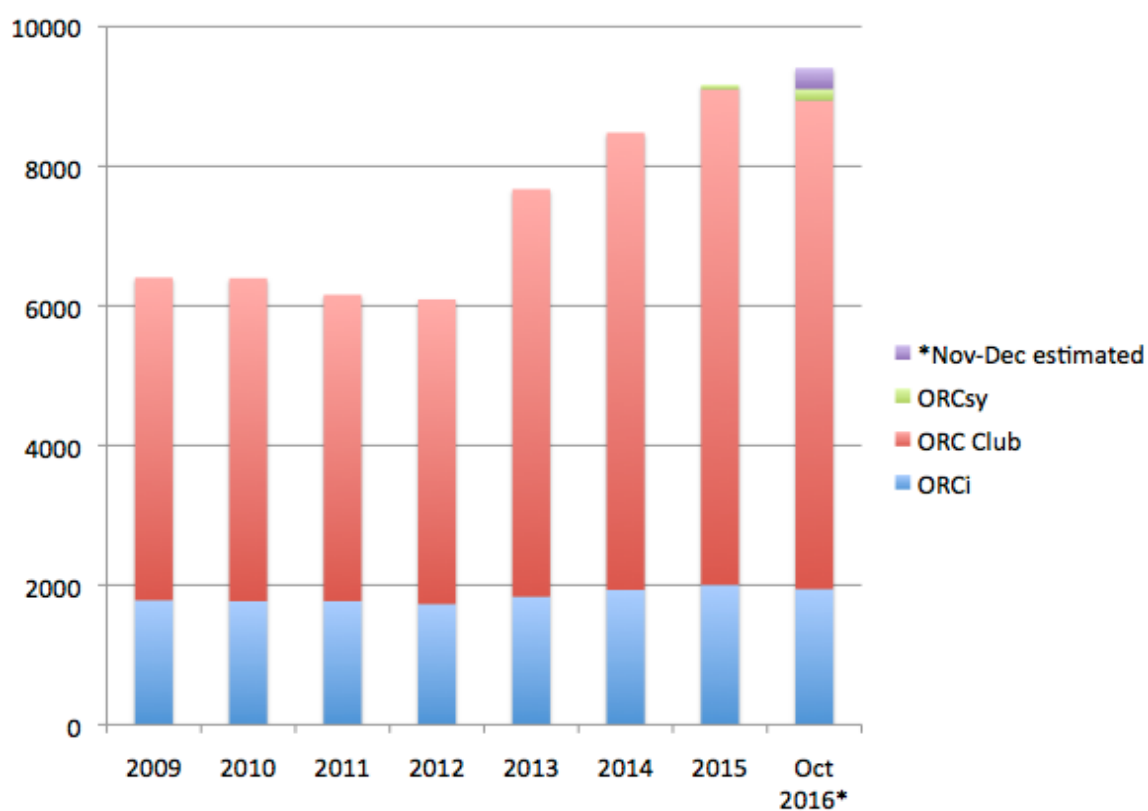
Fleet certificates are depicted in the World Sailing Report and are summarized here:

| | 31.12. | 2009 | 31.12. | 2010 | 31.12. | 2011 | 31.12. | 2012 | 31.12. | 2013 | 31.12. | 2014 | 31.12. | 2015 | | 31.10. | 2016 | |
|-----|--------|------|--------|------|--------|------|--------|------|--------|------|--------|------|--------|-------|-------|--------|------|------|
| | Int | Club | Int | Club | Int | Club | Int | Club | Int | Club | Int | Club | Int | Club | ORCs | Int | Club | ORCs |
| ARG | 24 | 38 | 39 | 155 | 27 | 158 | 23 | 156 | 37 | 122 | 34 | 121 | 39 | 72 | | 41 | 54 | |
| AUS | 32 | 0 | 72 | 0 | 90 | 0 | 80 | 0 | 121 | 0 | 212 | 1 | 154 | 14 | | 125 | 73 | |
| AUT | 8 | 37 | 6 | 34 | 10 | 47 | 9 | 54 | 4 | 34 | 5 | 40 | 7 | 35 | | 5 | 36 | |
| BRA | 75 | 36 | 72 | 101 | 71 | 11 | 118 | 18 | 84 | 4 | 67 | 1 | 66 | 0 | | 73 | 0 | |
| BUL | | | | | | | | | | | | | | | | 3 | 8 | |
| CAN | 0 | 63 | 0 | 46 | 0 | 70 | 0 | 18 | 0 | 10 | 0 | 28 | 0 | 39 | | 1 | 85 | |
| CHN | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 10 | 0 | 15 | | 0 | 10 | |
| CRO | 102 | 151 | 64 | 143 | 73 | 133 | 59 | 207 | 64 | 161 | 54 | 190 | 58 | 209 | | 51 | 197 | |
| CYP | 0 | 29 | 1 | 32 | 2 | 28 | 1 | 29 | 1 | 14 | 4 | 13 | 5 | 16 | | 3 | 30 | |
| DEN | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 29 | 0 | 20 | 0 | | 36 | 0 | |
| ECU | 24 | 39 | 24 | 0 | 26 | 2 | 18 | 0 | 23 | 0 | 54 | 0 | 34 | 1 | | 32 | 1 | |
| ESP | 226 | 202 | 328 | 193 | 385 | 230 | 385 | 371 | 579 | 430 | 637 | 709 | 812 | 675 | | 746 | 709 | |
| EST | 46 | 67 | 45 | 64 | 37 | 70 | 46 | 73 | 25 | 65 | 17 | 75 | 37 | 58 | | 14 | 66 | |
| FIN | 65 | 19 | 60 | 26 | 63 | 28 | 140 | 15 | 72 | 11 | 74 | 6 | 76 | 10 | | 65 | 11 | |
| FRA | 1 | 196 | 1 | 212 | 1 | 212 | 0 | 161 | 5 | 181 | 6 | 196 | 10 | 216 | | 6 | 265 | |
| GBR | | | | | | | | | | | | | | | | 1 | 55 | |
| GER | 259 | 489 | 250 | 491 | 278 | 478 | 189 | 372 | 210 | 368 | 284 | 379 | 217 | 435 | | 222 | 465 | |
| GRE | 293 | 343 | 297 | 398 | 320 | 450 | 252 | 449 | 227 | 458 | 212 | 505 | 185 | 531 | | 178 | 546 | |
| HUN | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 17 | 0 | 33 | 0 | 49 | | 0 | 40 | |
| IRL | | | | | | | | | | | | | | | | 0 | 1 | |
| ISR | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 62 | 3 | 81 | | 2 | 82 | |
| ITA | 824 | 1037 | 671 | 1218 | 749 | 941 | 599 | 981 | 588 | 762 | 560 | 1181 | 599 | 1230 | | 622 | 1212 | |
| JPN | 2 | 147 | 2 | 98 | 1 | 60 | 2 | 72 | 4 | 138 | 14 | 122 | 8 | 67 | | 3 | 53 | |
| KOR | 0 | 44 | 3 | 26 | 1 | 15 | 0 | 39 | 0 | 23 | 1 | 32 | 1 | 33 | | 0 | 36 | |
| LAT | 1 | 39 | 1 | 16 | 1 | 8 | 2 | 10 | 1 | 10 | 1 | 3 | 2 | 5 | | 1 | 3 | |
| LTU | 0 | 0 | 3 | 47 | 3 | 51 | 4 | 63 | 4 | 47 | 2 | 59 | 3 | 63 | | 4 | 67 | |
| MLT | 1 | 33 | 0 | 29 | 2 | 23 | 2 | 24 | 4 | 27 | 2 | 19 | 5 | 14 | | 1 | 18 | |
| MNE | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 8 | 1 | 8 | 1 | 14 | | 0 | 12 | |
| MRI | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 3 | | 0 | 0 | |
| NED | 2 | 1281 | 3 | 1202 | 2 | 1409 | 3 | 1289 | 1 | 1107 | 20 | 1039 | 5 | 1322 | | 27 | 1113 | |
| NOR | 63 | 80 | 47 | 17 | 41 | 1 | 43 | 13 | 45 | 1572 | 50 | 1638 | 44 | 1485 | | 53 | 1480 | |
| PER | 20 | 0 | 17 | 1 | 30 | 2 | 24 | 0 | 31 | 2 | 34 | 4 | 42 | 4 | | 42 | 9 | |
| POL | 13 | 4 | 19 | 21 | 22 | 17 | 16 | 10 | 13 | 12 | 20 | 26 | 16 | 267 | | 22 | 74 | |
| POR | 24 | 127 | 11 | 103 | 14 | 98 | 15 | 89 | 9 | 79 | 8 | 59 | 7 | 69 | | 8 | 63 | |
| ROU | 1 | 30 | 0 | 0 | 0 | 8 | 0 | 16 | 0 | 46 | 0 | 61 | 5 | 51 | | 16 | 50 | |
| RUS | 4 | 101 | 34 | 91 | 9 | 73 | 7 | 58 | 9 | 92 | 11 | 101 | 18 | 78 | | 0 | 29 | |
| SLO | 4 | 29 | 3 | 14 | 6 | 16 | 7 | 11 | 7 | 12 | 8 | 10 | 11 | 12 | | 12 | 85 | |
| SUI | 0 | 242 | 2 | 230 | 0 | 194 | 2 | 179 | 1 | 174 | 0 | 166 | 1 | 178 | | 13 | 13 | |
| SWE | 53 | 17 | 42 | 10 | 43 | 17 | 144 | 1 | 60 | 1 | 57 | 0 | 82 | 8 | | 0 | 164 | |
| TUR | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | | 73 | 8 | |
| UKR | 0 | 18 | 0 | 14 | 2 | 21 | 0 | 20 | 1 | 27 | 0 | 14 | 0 | 73 | | 5 | 21 | |
| USA | 0 | 19 | 0 | 26 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 3 | 20 | | 10 | 49 | |
| | 2269 | 4995 | 2168 | 5071 | 2311 | 4875 | 2196 | 4813 | 2249 | 6033 | 2480 | 6924 | 2576 | 7457 | 107 | 2516 | 7293 | 115 |
| | | 7264 | | 7239 | | 7186 | | 7009 | | 8282 | | 9404 | | 10033 | 10140 | | 9809 | 9924 |

ORC Certificates 2009 – Oct 2016:



ORC boats 2009 – Oct 2016:



12.7 FINANCIAL REPORT, BUDGET UPDATE, FLEET STATISTICS & LEVY PAYMENTS, VAT AND PAYPAL

See para. 2.00 above.

12.8 UMS UPDATE

Chief Measurer Nicola Sironi reported. 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 set up a data converter, able to write measurement data in IRC format, and conversely to read in IRC data.

IRC adopted the abbreviations, but not the full set of measurements originally established, and ORR continued with the previous abbreviations.

Meanwhile, in the US a project has started, sponsored by SAP, departing from the original structure of the data. Being a proprietary project, we are waiting for some detailed information about it to allow data conversion, but this has not been possible this far. Once available to others and not only US Sailing, the SAP platform may become the new standard, and repository of measurement data accessible by different Rating Systems.

13 CALENDAR FOR 2017 – MEETINGS AND EVENTS

13.1 AGM 2017

The next World Sailing AGM venue will be in Puerto Vallarta, Mexico on dates to be confirmed.

13.2 MANAGEMENT COMMITTEE

The next Management Committee is planned in Athens on April 1st and 2nd 2017, with the following meeting planned in Porto Cervo on September 10th and 11th.

13.3 STAFF MEETINGS

Staff meetings will begin from mid-November up to Xmas for the delivery of ORC rules in 2017.

14. ELECTION OF ORC CHAIRMAN

Bruno Finzi was proposed, seconded and voted Chairman of the Offshore Racing Congress for the next four years 2017-2020.

15. ELECTION OF DEPUTY CHAIRMEN

Jose Frers and Wolfgang Schaefer were proposed, seconded and voted unanimously as Deputy Chairmen of the Offshore Racing Congress for the next four years 2017-2020.

16. APPOINTMENT OF CHIEF MEASURER AND SECRETARY

Congress re-appointed unanimously Nicola Sironi as Chief Measurer and Vivian Rodriguez as Secretary for 2017.