

### **ITC – INTERNATIONAL TECHNICAL COMMITTEE**

Meeting of the **International Technical Committee** of the Offshore Racing Congress held on  $23^{rd}$  to  $25^{th}$  October 2015 in TU Delft (Holland)

Present: Alessandro Nazareth (Chairman) Jason Ker (UK) Nicola Sironi (ORC Chief Measurer) Zoran Grubisa (CRO-ORC Staff) Panayotis Papapostolou (GRE-ORC Programmer) Davide Battistin (ITA-ORC Programmer) Jim Schmicker (USA) Lex Keuning (Research Associate) Tobias Kohl (GER)

Observers:

Gennaro Aveta (ITA-ORC SY) Stefan Qviberg (Yacht Designer - Swe) Arthur Peltser (NED – KNWV) Peter De Jong (NED – KNWV) Ab Pasman (NED Noordzee Club) Wick Hillege (NED – TU Delft) Konstadina Skafianki (GRE NTVA) Javier Cela (ESP – RFEV) Leo Van Raam (Noordzee Club) Michiel Voor (NEED KNWV)

Apologies for absence were received from committee members Kay Enno Brink (Germany), Andy Claughton (UK), David Lyons (AUS), and Research Associate Fabio Fossati (ITA)

#### **1. WELCOME, MEETING LOGISTICS**

The Committee thanks TU Delft for hosting the meeting, Lex Keuning for hosting the whole ITC and all observers for the Saturday dinner and for his assistance during the meeting.

#### 2. PREVIOUS MEETING MINUTES APPROVAL.

The minutes of the last meeting in Southampton in March 2015 were approved with a slight amendment (Tobias Kohl was not present) and no further discussions.

#### 3. REPORT ON 2015 SEASON - CURRENT VPP FEEDBACK

Nicola Sironi reported about the 2015 season. No major issues were reported, apart from a couple that are dealt with in several of the submissions reported below.

Secretariat c/o Vivian Rodriguez Casella Postale 21, 07026 Porto Rotondo (OT), Italy Tel: +39 0789 386990, Fax: +39 0789 381275 secretariat@orc.org Offshore Racing Congress Ltd. Company Reg. 1523835. Reg. Office: Marlborough House Victoria Road South, Chelmsford, Essex CM1 1LN, UK Tel: +44 1245 495 111, Fax: +44 1245 494 771

#### 4. SUBMISSIONS REVIEW

#### 4.1 Submission ESP 1 - DOUBLE BACKSTAY

The committee confirmed that the double backstays are acting as single backstay in sail tuning so fully in line with VPP.

There is in fact a necessity to clarify the wording of IMS F9.5 specifying that if the attachment point of the double backstay is above the mast datum point (the P upper mark) and the backstay is crossing the aft face of the mast below the datum point, the backstay should not be considered a runner, being the actual bearing point that counts, and not the intersection with the mast tube, found below the upper P mark.

Furthermore, some wording should be changed to clarify that deflectors count as runners if they are fitted in absence of any other pair of running backstays.

#### 4.2 Submission **ESP 3 IMS APPENDIX 1 – CRUISER/RACER REGULATIONS**

The issue of interiors standards for each individual series produced yacht has been discussed at length many times in the ITC over the years, but no action has ever been taken as it is difficult to define how much the boat has been modified from the original construction. The only rules that must be considered are the C/R regulations that could define if a boat belongs to the C/R or Performance divisions.

Therefore the Submission is not supported

#### 4.3 Submission **ESP 4 - DYNAMIC ALLOWANCE**

A change of Age Date has never been triggered by appendages modifications, and only by hull modifications.

The age date is the same as the series date for all series production yachts.

The committee believes that the current age date (maximum 0.5% about for a 15 years old boat, reduced in value two years ago) seems to be working well to fairly rate the old hull designs versus the newer ones.

The Dynamic allowance is applied, gradually year by year, starting form 4 years old performance division yachts, and it is typically well below the average of a C/R boat.

In addition, a C/R yachts has a gyradius adjustment of 0.06 \*L that a performance yacht does not have.

The submission is therefore not supported

#### 4.4 Submission **ESP 6 - INCLINING TEST WITH BOOM**

The ITC confirmed that measuring stability with horizontal boom is returning a lower RM compared to the standard inclining with poles.

To correct the measurement, the ITC recommends to include into the LPP a different treatment of the inclining when it is performed with poles (as the majority of the fleet) or with the boom.

Taking into account that LPP is now considering the VCG of the weights used for inclining at 0.5 m above the local freeboard, in the inclining with boom the weights will be considered at BAS-BD/2 over the local freeboard.

Local freeboard calculation will be changed to compute correctly the freeboard in way of LCF (longitudinal position where the weights should be placed). It was mistakenly left at BMAX.

The Submission is therefore supported, and final Rule wording provided.

## 4.5 Submission FIN 1 - USE OF IMPLIED WIND ON W/L COURSES (combined with ITA 2 - IMPLIED AND FIXED WIND)

ITC continues to support the approach of "fixing" the IW based on the IW of the winner, even ackowledging that the system has not been applied in several constituencies, and some objections have emerged defending the IW as the "genuine" Performance index, instead of having to fix a wind for the whole fleet, that may be "corrupted" by errors in the course construction by the RC, actions from the Jury disqualifying or penalizing the first boat, so changing the IW of the fleet.

It must be noted that the committee do not agree with principle of using as fixed wind speed the average of the IW of top 10% of the fleet as it still believes that the boat with the highest IW should win the race.

The only situation that may affect scoring is when it is found that the winning boat does not comply with its certificate and its certificate needs to be recalculated. An addition to the ORC rule 402.10 will be therefore added explaining when re-scoring needs to be done. In case of re-scoring IW wind of the next best boat shall be used.

The committee reminds that PCS and IW calculation should be used only when wind conditions are the same for whole fleet and in cases of big wind shifts effecting only part of the fleet IW can be significantly different IW from reality. In such a cases ORC 402.10 should be used

# 4.6 Submission FIN 2 - P AND MAINSAIL AREA OPTIMIZATION (combined with USA 1 - RATING COST OF MAINSAIL)

ITC discussed the issue. It is a fact that many boats lower their P to allow a higher roach in the mainsail without having to fit double backstays.

It was noted also that this happens mostly in fractional rigs, as in masthead rigs ORC 108.2 comes into effect (P + BAS shall not be less than the greater of 0.96\*IG or 0.96\*ISP.).

A modified treatment of the mainsail area has therefore been introduced, working on the existing aero code especially in the routine SML (Spoiler Multiplier for Lift).

It is a multiplier of the mainsail area when the global sails coefficients are computed.

Its core (h1\_poor\_frac) is acting on the top part of the mainsail, when the wake length is longer than the local mainsail girth, this piece of area is not accounted for.

A 'Spoiler Multiplier of Drag' function, that increases the drag area was added too.

At the end the results of the test run were in the expected direction with an increasing effect with fractionality

The committee support its inclusion in 2016 VPP

### 4.7 Submission USA 1 - RATING COST OF SPINNAKER AREAS

The committee believes that the current SHAPE function is working correctly to avoid any typeforming versus small spinnaker areas.

In any case ITC recognizes that looking at the real situations the current optimum downwind TWA are too deep, returning jybe angles too high.

Hence the drag coefficients of symmetric and asymmetric spi on pole and asymmetric on CL have been reduced in the range of 110° to 180° and slightly adjusted returning more steep curves of all three sets of coefficients versus AWA.

The main effects on the fleet have been:

- To slow down high performance boats in the light to moderate, but speed them up significantly over 12kts.
- To speed up slow/heavy boats in the light-moderate, but leave them unchanged in the strong.

- Boats with small symmetrical kites seem to be sped up relative to boats with larger sym kites
- bowsprit kites are sailing at much more realistic angles, which has been a credibility issue.

It must be noted that the reduction in drag coefficient will make the increase of spinnaker area cheaper, encouraging the boats to increase their sail area downwind. A test run was prepared and the results were in the expected direction The ITC support its inclusion in 2016 VPP

### 4.8 Submission **FRA 1 - ROACH IN MAINSAIL LEECH (combined with ITA 1 - MAINSAIL WIDTH MEASUREMENTS and RUS 6 MAINSAIL GIRTH)**

The ITC recognizes that the additional paragraph introduced last year for increasing the mainsail girths when excess is found between two measurement points is not working, so proposes to return to the previous wording, deleting the paragraph that was added last year.

"For sails measured after 01/01/2015, if there is any excess of the leech from the straight line joining two adjacent leech points, widths at these points shall be increased for the half of maximum excess."

#### 4.9 Submission **GER 1 - ADJUSTABLE INNER FORESTAY**

The committee agrees that there is no need to keep the requirements of ORC 108.4, so supports the removal of it

#### 4.10 Submission **GER 2 – BILGEBOARD**

In the current VPP the measurements for a double keel (with and without bulb) are entered in the DXT files, and are not part of the offset file.

The ITC recognizes that more indications on measurement of this special appendage is needed.

A new wording will be added to IMS rulebook and also more explanations will be introduced in the MANAGER.

#### 4.11 Submission ITA 3 - DACRON SAILS

The size of the boat should be considered, as the small boat can better tune a set of Dacron sails while in bigger yachts there is less efficiency when having this kind of sails material

Checking the results of the last Italian championship, were a Mumm 30 won the series with a set of Dacron sails it was noted that the boat would have won even without considering the Dacron sails allowance, with a reduced margin but always with a good advantage over the second.

To avoid any future exploitement of this feature (e.g. a sail set built only for an event) the committee agreed to reduce to 1/3 the difference between dacron sails and normal sails coefficients

The committee will support its inclusion in the 2016 VPP

#### 4.12 Submission ITA 5 - DEFAULT CREW WEIGHT

The current formulation of Default CW is returning a value that is very close in range with what is declared and used while racing.

However, as it occurred this year with the boat winning the Sportboat Europeans, when the size gets close to our absolute minimum (6m LOA) and the boat is very light, the default crew weight becomes very high, almost twice the actual weight that was used for racing and

winning the Championship. This is due to the fact that the boat is small, very light in displacement and races with a reduced crew.

After considerable discussion, it was agreed that the default crew weight should not exceed a certain percentage, and that 50% of Displacement in Measurement Trim would be a safe margin.

A check on the fleet showed that there are just a handful of boat possibly being affected.

The committee agreed also to apply this limit on the Declared Crew Weight to avoid unexpected VPP results, that is the VPP will run with a CW=0.5\*DSPM maximum, whatever the declared value will be.

The committee will support its inclusion in the 2016 VPP

#### 4.13 Submission NOR 1 - HULL FORMS NOT CORRECTLY RATED

The current hydro model doesn't take into account the position of BMAX as a direct factor in computing boat resistance. For Residuary Resistance only BTR and LVR are taken into account.

So the new RR model leaves to designers the freedom to create the best hull form they like, for a given LVR and BTR.

The ITC checked the boats listed in the submissions against other similar boats in the ORCi fleet

Looking at the asymmetry factor (parameter taken into account for the hull induced drag calculation) and BTR at all heel angles HH42 and Next 37 resulted among those with the higher values for the above parameters, but the other boats with similar characteristics were not considered so unfavored and the high asymmetry angle is returning even a higher induced drag.

The recorded data that the submission claims as attached arrived late and in a raw format, so not useful for the committee.

Being an important hydro item in agenda that hopefully will be concluded within 2016 (Dynamic Wetted Area) the committee will devote some time next year to perhaps include some other correction to the hydro model

The submission is then deferred to next year

#### 4.14 Submission **POL 2 - BOW THRUSTER**

The correct coding of bow thruster would imply a differentiation across configurations (retractable, in tunnel with closures, in open tunnel with grids, etc) and a gyradius adjustment evaluation with the weight of the whole system accounted (and CG too).

This seems too complex for the actually negligible effect, which is the reason why the bow thruster "bonus" after being in use for several years has been abandoned.

The submission is not supported

#### 4.15 Submission **POL 4 - EXTENTION OF TRUE WIND SPEEDS IN THE VPP**

The proposal of extending wind speeds range has been on the table of ITC for many times in the last years but ITC always explained that extending the true wind speed at 24 kts or even more is opening the possibility of having the solver not able converge, as multiple solutions could be found, being the curve of speed non monothonic with increasing winds above 20 kts. The submission so is not supported

## 4.16 Submission POL 5 - REDUCTION OF SAIL AREA (REEFING) (combined with SWE 1 - VPP ADJUSTMENTS FOR JIB/GENOA AT 14 – 20 KTS)

The Committee examined the depowering of the 36.7 with both jib and genoa configurations.

The depowering for this boat is not reaching the full reduction of jib in both cases (that for this boat would have meant the same jib area at the maximum reduction) as it starts reefing after 16 kts).

This is a normal situation with boats with high stability and having the flat making a big part f the depowering process

The committee inspected the full depowering scheme introducing some modifications that reduced the total differences between overlapping and non-overlapping boats in the higher wind ranges.

The depowering scheme modification are:

- 1. reduction on LP down to 105% first and then of both LP and JL together down to the present minimum jib (JL\_m=90% JL, LP\_m=90%J)
- 2. delay the CEH decrease coupled with ftj (jib reduction) to the second phase, from LP=105% on.
- 3. use in the apparent wind calculation the real CEH (from the previous iteration), not the pre-calculated CEH as it is now. This pre-calculated CEH created a bias between the boats with jib and boat with genoa that was not corrected when lowering this CEH with the depowering.

The test run results were in the expected direction so the committee will support its inclusion in 2016 VPP

In any case this item will be kept in 2016 ITC agenda for further development.

#### 4.17 Submission **RUS 1 - ADDED RESISTANCE IN WAVES**

Davide Battistin completed a complete revision of the formulation and corrected the terms that in some cases caused a slightly negative resistance, that is physically impossible.

In any case the committee examined the possibility to tune the only size related term into the formulation (the logarithmic term referred to a base boat length of 40').

Modifying the base boat at 30' returned a correct size effect variation of handicap with smaller boats slowed down by a maximum 0.5% compared to the rest of the bigger boats of the fleet (0.1%)

The committee will support the inclusion of this revised term of Added Resistance in Waves in the 2016 VPP

#### 4.18 Submission RUS 3 - CORRECTION OF GYRADIUS

The ITC agreed on removing this gyradius adjustment for old boats between 1981 and 1992, based on Age Date, that Davide confirmed is still in action. It was therefore agreed to eliminate this special condition.

The submission is supported

#### 4.19 Submission - RUS 4 - OFFSHORE PERFORMANCE LINE

The chairman proposed to revise the PLT/PLD formulation basing it on the same wind distribution of the current OSN.

The proposed matrix of wind distribution for the new Ocean for PCS handicap will be:

KTS	6	8	10	12	14	16	20
Beat							
VMG	0.45	0.4	0.35	0.3	0.25	0.2	0.1
60	0	0.05	0.1	0.15	0.175	0.2	0.25
90	0	0.05	0.075	0.1	0.125	0.15	0.2
120	0	0.05	0.1	0.15	0.175	0.2	0.25
150	0	0.05	0.1	0.15	0.15	0.15	0.1
Dwn							
VMG	0.55	0.4	0.275	0.15	0.125	0.1	0.1

PLT/PLD will be then computed taking into account 8 and 16 kts allowances

A test run showing new PLT/PLD was prepared and also the last MSR has been rescored with results going into the expected direction The committee support its inclusion in 2016 VPP

#### 5. AERODYNAMICS.

5.1 Revision of SHAPE & POWER functions

See par 4.7 submission USA 1 - RATING COST OF SPINNAKER AREAS

#### 6. HYDRODYNAMICS

6.1 Evaluation of dynamic wetted area

The implementation of the calculation of a dynamic wetted area into the VPP as a further improvement in the viscous resistance formulation has continued, and Jason Ker worked with the ORC programmer on this coding since last year.

A test run was prepared but the results obtained were not in the expected direction. This item is deferred to next year to better develop the code.

6.2 Revision of added resistance in waves

#### See par. 4.17 submission RUS 1 - ADDED RESISTANCE IN WAVES

6.3 Fine tuning of frictional resistance of long chord keels at low leeway angles

The coding of a reduced frictional resistance of long chord keels at low leeway angle was nearly concluded last year. The approach was to shift the induced drag with leeway by creating a smooth drag bowl, ignoring laminar buckets.

Some concerns were still left as this new treatment of keels was also affecting older boats with large keels (or even with long keels extending below the canoe hull).

A test run was prepared but the results obtained were not in the expected direction. This item is deferred to next year to better develop the code. 6.4 Evaluation of possible fine tuning of RR multipliers at high Fn

There is still a slight perception in the sailing constituency that high LVR boats are still favoured, especially when these boats get in surfing condition, which lets them sail well past their ORC predicted polars.

The data from VOLVO provided by Jim Schmicker will be used together with SYRF results of Wide Light Boats research and also (if available).

In Delft a new series of tests on hulls developed from ITC last model of a TP52 will be performed and if available the results will be included into this research.

No action is in progress at the moment on this topic, but Jason Ker volunteered to coordinate a WG on this

# 7. REVISION OF SAFETY SCREENINGS (LPS, BLR AND STABILITY INDEX) – COMPARISON WITH SPEC. REG. REQUIREMENTS

The chairman produced a report on the current situation of the stability safety screening in ORC INT, comparing with the requirements of OSR (new submission presented for this year ISAF AGM) and ISO 12217-2 (for boats with LOA below 24 m) These are some notes about the situation:

- Boats with LOA<24 with CE CAT A (a 12 m production boat around) could enter an oceanic race (OSR CAT 0-1-2)
- Boats with LOA<24 with CE CAT B (a 10 m production boat around) could enter OSR CAT 3</li>

ISAF OSR is not specifying that some requirement about ISO STIX should be limited to boats with LOA<24 m, so we should suggest them to introduce this in the new release of OSR, adding a special prescription section for yacht above 24 m.

For boats that cannot demonstrate compliance with ISO 12217-2 (LOA>24m and mainly all boats not produced in Europe) OSR introduced alternative prescriptions to fulfil based on AVS, IMS STIX, minimum energy and IRC SSS.

That said it must be noted that ORC risks to not issue a certificate for boats that could enter a SR cat0 race (a boat with CE STIX>32 and AVS=100 is fully compatible with ISAF SR for entering a category 0 race, but doesn't get a valid ORC int certificate.

It was noted also that boats with LOA> 24mcomply with class requirements that usually require LPS>90° (or even less in some particular cases over 45 m of LOA).

This was confirmed this year in issuing ORC SY certificates based on Stability Booklets, the majority of these Super Yacht could not obtain a valid ORC INT certificate

A discussion followed and ITC reached a general consensus about the removal of all the restrictions in stability screening to issue a certificate, as ORC is an handicapping rule and the safety issues should be left to correspondent organizations (like ISO, MCA, Registers) or depending only to OSR.

The final ITC proposals (with some objections from the Chief Measurer) where::

- Removal of LPS>=103° for issuing a valid ORC int certificate, being the minimum requirement for LPS (AVS) listed in the OSR
- Removal of IMS SI (stability index) requirements in ORC 106.3 as they are already listed into the OSR

• Removal of BLRI from the certificate of moveable ballast boats and from ORC rule as this kind of boat must fulfil the Appendix K of OSR where ISO FKR and FIR minimum values are required (BLRI was derived from FKR)

• Do not remove from certificates LPS and IMS SI values that will be showed for information

• If necessary the STABILITY DATA SHEET could be amended including stability curves in ISO trims, like Mmoc (Minimum Operating Conditions) and Mlc (Maximum Loading Conditions), specifying in any case that the correct values could be slightly different as in IMS offset there are no informations about coachroof and cockpits that are changing stability close to LPS.

This suggestions will be proposed to the congress for final approval

### 8. REVISION OF CURRENT DEFAULT RM REGRESSION

A new DEFAULT RM regression based on the current 2015 fleet stability data has been performed and it is not showing any movement in stability level of ORCi fleet. It seems that overall stability is slightly less than that estimated by current formulation of DEFAULT RM, so the committee decided to not take any action, and leave unchanged the regression formula for 2016.

#### 9. EVALUATION OF "TUNNEL SHAPE" OF HULL

Looking at the hull shape of modern canting keel racers as COMANCHE, to allow the keel to rotate, a recess in the hull is necessary in way of the keel main pivoting axis, which contravenes IMS B1.1, so the "tunnel shape" in hulls was discussed at the ITC spring meeting.

The committee agreed that this is not an issue so a new wording has been prepared, and ITC proposes to included in the IMS rule 2016 the wording that follows.

For IMS B1.1 the draft is:

B1.1 Hull shall be monohull only. Except at the recess in the area where appendages connect the hull, canoe body depth in any section shall not decrease towards the center line.

### 10. DEFAULT VALUES FOR PIPA REVISION IN ORC CLUB

The current PIPA calculations for ORC Club when no propeller installation measures (apart PRD) are entered, returns a PIPA value that is frequently above the real ones.

Panayotis Papapostolou completed an analysis of current ORC INT fleet measures and derived a new formulations for the default values of the propeller installation.

The formulations will be checked with chief measurer Nicola Sironi and discussed also in Measurement committee. This change will cause a more unfavourable handicap for most of the Club fleet with no prop measurements, and will probably be the numerically most visible in the test runs.

# 11. LPP UPDATE – DOUBLE POKE-THROUGH INTRODUCTION - RHINO PLUG IN FOR DERIVING OFFSET FILES

The LPP rewriting is under development by the ORC programmer Davide Battistin. Davide earlier this year made a complete check and validation tests on the LPP hydrostatic routines, focusing mainly on the movable ballast boats, and LPP has been confirmed to return results fully in line with other hydrostatics programs. Regarding the Rhino plug in to create offset files from a 3D surfaces like a Rhino or IGES or STP. Jason Ker volunteered to work on his own software to make it available for ORC as an additional tool for Rating Offices and DVP users.

The issue of the "double poke through" was discussed because during the season some boats with this feature in the keel shape were found.

Currently LPP doesn't support double poke-through and the above cases were solved modifying in the OFF file some points on the keel so that with only one poke-through the same area and volume would result from the VPP run.

The ORC programmer will work this year to solve the problem and allow for the future a double poke-through, but is not a solution that can be forecast for 2016.

# 12. 2016 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:

- a) New treatment of fractional mainsail (FIN1+USA1)
- b) New set of downwind coefficients (USA1)
- c) New set of coefficients for Dacron sails (ITA3)
- d) New limits on Default and declared CW (50% of DSPL)
- e) Revised depowering scheme for jibs (POL5+SWE1)
- f) Revised added resistance in waves (RUS1)
- g) Removal of gyradius correction for boat built between 1989 and 1992 (RUS3)
- h) New default PIPA formulation for ORC CLUB

A beta VPP with the above modifications is ready for distribution to DVP users and rating office

#### 13. COMPLETION OF RECOMMENDATIONS TO THE CONGRESS.

- a) new wording about double backstay (ESP1)
- b) new routine for inclining performed with boom (ESP6)
- c) Recommendation for rescoring with IW in case of protests (FIN1+ITA2)
- d) New treatment of fractional mainsail (FIN1+USA1)
- e) New set of downwind coefficients (USA1)
- f) Eliminate mainsail girths excess to be added to measurements (FRA1+ITA1+RUS6)
- g) Eliminate restrictions on the attachment point of inner forestay (GER1)
- h) New rule wording for double keels with and without bulbs (GER2)
- i) New set of coefficients for Dacron sails (ITA3)
- j) New limits on Default and Declared CW (50% of DSPL)
- k) Revised depowering scheme for jibs (POL5+SWE1)
- l) Revised added resistance in waves (RUS1)
- m) Removal of gyradius correction based on Age Date for boat built between 1981 and 1989 (RUS3)
- n) New formulation for Ocean performance line scoring (RUS4)
- o) Removal of the requirement of LPS>=103° for issuing certificates.
- p) New default PIPA formulation for ORC CLUB

#### 14. ORC RESEARCH FUND BUDGET PLANNING.

The chairman will discuss with Mancomm in Sanya about the funding of one or more projects listed in chapt. 15 below.

### 15. STRATEGIC PLANNING FOR WORK AFTER THIS MEETING. MAIN PROJECTS FOR 2016. ESTABLISHMENT OF WG'S:

Looking at items already in agenda and other items coming from submissions deferred to next year, this is the list of possible projects for 2016.

The ITC members will try to give their availability to be part of working groups working on the one or more project and to establish a priority list, being the amount of items almost big.

- a) Revision of current upwind model Different depowering schemes WU CFD research proposal
- b) New Default Mast Weight
- c) Default VCG determination in way of default RM Component weights formulation.
- d) Hull forms with very aft BMAX inspection.
- e) Spi coefficients revision Small spi issue, POWER and SHAPE function revision.
- f) Downwind wind tunnel results post-processing completion
- g) Dynamic Wetted Area
- h) Added resistance in waves. Long term research in TU Delft
- i) Frictional resistance of long chord keels
- j) Residuary Resistance for fast boats

### **16. UNIVERSAL MEASUREMENT SYSTEM UPDATE**

Nicola Sironi updated the committee about the progress made to unify the measurements and abbreviations between the ORC and the IRC systems.

The first step is a unification of sails measures and acronyms that materialized in submission 090-15 to ISAF presented jointly by ORC/IRC.

The submission has been also submitted by Mancomm to the Congress, in order to implement this change independently from its inclusion in the ERS future text to be in force in 2017, but to be finalized this year. It is assumed that IRC will do the same.

	ERS	Dimension	New Abbreviation	Old Abbreviation
Mainsail	G.7.4 (a)	Mainsail Quarter Width	MQW	MGL
	G.7.5 (a)	Mainsail Half Width	MHW	MGM
	G.7.6 (a)	Mainsail Three Quarter Width	MTW	MGU
	G.7.7 (a)	Mainsail Upper Width	MUW	MGT
	G.7.8 (a)	Mainsail Top Width	MHB	HB
Headsail	G.7.3	Headsail Luff Length	HLU	JL
	G.7.4 (a)	Headsail Quarter Width	HQW	JGL
	G.7.5 (a)	Headsail Half Width	HHW	JGM
	G.7.6 (a)	Headsail Three Quarter Width	HTW	JGU
	G.7.7 (a)	Headsail Upper Width	HUW	JGT
	G.7.8 (a)	Headsail Top Width	HHB	JH
	G.7.11	Headsail Luff Perpendicular	HLP	LPG
Spinnaker G.7.1		Spinnaker Luff Length	SLU	SL (SLU)
	G.7.2	Spinnaker Leech Length	SLE	SL (SLE)
	G.7.3	Spinnaker Foot Length	SFL	SF (ASF)
	G.7.5 (b)	Spinnaker Half Width	SHW	SMG (AMG)

Here below the table of the acronyms for the sails measurements:

The next step will be next year hopefully the rig dimensions.

# 17. 2016 VPP DOCUMENTATION RELEASE - DOCUMENTATION TRANSFER TO LATEX PLATFORM UPDATE

A new version of Documentation (fully compatible with 2015 VPP) has been prepared by ORC programmer Davide Battistin on the more powerful LATEX platform, to deal with a very complicated technical text developed in several layers.

It will be now easier to update and maintain the documentation in the years to come.

#### **18. NEXT MEETINGS SCHEDULING.**

As a first proposal the committee agreed to verify the possibility to make the spring 2016 meeting in Annapolis, in the same days of the CSYS.

This will be decided soon also taking into account the Working Group appointment and advancement of work.

#### **19.** ANY OTHER BUSINESS.

The chairman announced that after 8 years of assiduous attendance Kay-Enno Brink decided to retire from the committee, due to personal commitments.

The ITC thanks Kay for his contributions, wishing him a good luck for the future ambitious projects in ship building industry.

Shaun Carkeek was asked to join the Committee, and he accepted, but will become effective member after the next AGM approval in November.

He should have attended this meeting, but a sudden family problem obliged him to fly to South Africa.

The committee welcomes another world top yacht designer

Finally the chairman informed the committee that SYRF Board voted not to fund the ITC wind tunnel/force boat project.

Jay Hansen informed that instead the Board decided to fund a project with North to obtain data from RANS/FEA runs for three different boats, in three different wind speeds - 6, 12 and 16 - and through 5 different apparent wind angles - 45, 65, 85, 105 and 150.

Tentatively they've chosen the following three boats:

- One TP-52, Spookie. that represents the high performance end of the scale.
- A middle size boat, that should be a popular "middle-of-the-road" boat raced in both Europe and the US, like a Beneteau 40.7.
- the third choice should be a smaller (10-11m around) older and heavier boat.

The idea is to obtain a good cross section of data points through the wind range angles, not for the absolute data, but for the ability to compare.

They asked if ITC wish to join in on this project to enable the study to be more far reaching - using a greater variety of boats and/or obtaining data through more angles or wind speeds. They also asked ITC input on the above choice of boats.

The ITC will give his opinion about the above issue

30th October 2015