INTERNATIONAL TECHNICAL COMMITTEE

Meeting

10 – 12 October 2025 at the Royal Malta Y.C.

MINUTES

Present on site: Andy Claughton (GBR) - Chairman, Alessandro Nazareth (ITA) – vice chairman, Davide Battistin (ITA), Zoran Grubiša (CRO), Jason Ker (GBR), Marcus Mauleverer (GBR), Matteo Polli (ITA), Robert Ranzenbach (USA), Jim Schmicker (USA), Robin Zinkmann (GER) (replacing Antoine Cardin)

Present online: Simon Forbes (GBR), Nicola Sironi (ITA)

Apologies: David Lyons (AUS), Manolo Ruiz de Elvira (ESP)

Observers on site: Panayotis Papapostolou (GRE), ORC programmer, Pietro Zanirato (ITA), ORC VPP programmer, Godwin Zammit (MLT), Aaron Gatt Floridia (MLT)

Observers online: Eike Claas Carmincke (GER), Dobbs Davis (ORC-USA), Marianna Douka (GRE), Max Gurgel (GER), Robert Jacobsen (GER), Spencer Kunath (USA), Peter Lezhnin (ITA), Peter Lytvyn (UKR), Tobias Merkel (DEN), Eiji Mizukoshi (JPN), Javier Mulas (ESP), Casper Nielsen (DEN), Martin Orav (EST), Arthur Peltzer (NED), Hannes Renzsch (GER), Ernst Rohner (SUI), Karl-Hannes Tagu (EST), Chris Tutmark (USA), Johan Tuvstedt (SWE), John Victorin (GER)

1. Approval of minutes of last meeting

Minutes of the last meeting were unanimously approved.

2. Submissions

a) ARG 1 - Spinnaker retrievers
DEN 1 - Cunningham with powered assistance
DEN 2 - Tack lines with powered assistance
DEN 3 - Spinnaker retrieval system
DEN 4 - Furling system with powered assistance
ESP 2 - Mast jack on board
GER 1 - Non-manual power
GER 2 - Self-adjusting non-manual power
SWE 1 - Adjusting the base of the mast while racing
SWE 3 - Forestay adjustment with turnbuckles

Being related to similar issues, these submissions were discussed together. Reviewing the way how different rig and sails adjustments together with use of the non-manual power are currently treated by the VPP, it was decided that all these features can be removed from the VPP itself and added to the rating assessment on the top of VPP calculations. New scheme will define a list of items that can be adjusted with appropriate rating effect when used with or without non-manual power.

In the table below the controls that will attract a handicap adjustment are listed in the first column. In the 'Manual' column is the weight afforded to each control if it is manually adjusted, and in the non-manual column an additional weight afforded if the control is made with non-manual power. The 'Total' column is the sum of the two columns, and if all controls are present and non-manually powered the sum of the weights is 62. The contribution of each individual control is relative to this total.

The proposal is to fix the maximum rating adjustment to say 1.5%, and the table below determines how much of that is applied for each control, either manually or non-manually powered. For some of the listed controls an adjustment is currently made in the VPP. These adjustments are not doing a good job, and the committee recommend that they be folded into this new subjective scheme.

	Manual	Non-Manual	Total	Currently in the VPP
maximum	**5**	**5**		
Backstay	5	3	8	X
Forestay	5	3	8	X
Forestay turnbuckle	2	0	2	
Running backstay	5	3	8	X
Checkstays	3	1	4	
Inner forestay fixed	1	0	1	
Inner forestay adjustable	2	1	3	
Base of the mast	2	2	4	X
Vang	0	2	2	X
Halyards	0	2	2	X
Outhaul	0	1	1	X
Main cunningham	0	1	1	
Headsail cunningham	0	2	2	
Traveller	0	4	4	
Sheets	0	4	4	X
Spinnaker retriever	2	2	4	
Headsail furler	0	0	0	
Mainsail furler	0	0	0	
Tack line	0	2	2	
Jib track	0	2	2	
Total	**27**	**35**	**62**	

Final values of total rating assessment and each item contribution will be reviewed before the release of final 2026 ORC Manager and VPP.

b) FIN 5 - Outriggers
USA 6 - Outriggers

Being related to the same issue, these submissions were discussed together. It was noted that outriggers are not allowed by the RRS unless RRS is changed by the class rules. ORC VPP can currently rate whisker poles that have to be attached to the mast and a headsail clew. Use of outriggers can extend clew position even further and that would require changes in the aero model. Planned updates of the aero model already include evaluation of the sheeting angles and use of outriggers can be considered with it. However, this is part of research agenda for 2026, and updates can be planned for 2027 or beyond.

c) EST 2 - Hull construction

The ITC does not find any changes to the IMS Rule B7.1 needed. If the problem is identified in non-consistent application of four available hull construction definitions, it should be rather discussed within the Rating Officers Committee to which the submission is referred

d) ESP 4 - Scoring wind

The ITC firmly confirmed that PCS scoring shall be calculated with the same scoring winds for all boats. Use of different scoring winds for each boat is making it impossible to create a scratch sheet and give relative difference in time allowances between the boats. Furthermore, corrected times may be affected by the slope of the performance curve and some boats can get unwanted advantage or disadvantage because of that. PCS shall be used where all boats are sailing in same condition where course construction and wind can be used as input for the corrected times calculation. Even though first place will not change if the highest scoring wind is used for all boats in the fleet, or individual scoring winds are used, other places may be affected and final series scores may be changed.

The submission is not supported, and furthermore ITC will recommend two improvements of the PCS scoring:

- Removal of ORC Rule 402.10 and keeping the scoring with highest scoring wind only
- Rounding highest scoring wind to be use in PCS calculations to the nearest 0.1 kts .
- It may be noted that any errors in results calculation can always be corrected and that in cases where the scoring wind does not represent fairly the real wind strength during a race, the wind strength may be determined by the Race Committee as already defined in the rules.

e) FIN 6 - Liferaft in measurement trim

This submission was also discussed last year, and it may only be confirmed that boats are supposed to be measured in the light ship measurement conditions without any safety equipment including the liferaft. VPP is using sailing trim that is calculated from the measurement trim adding weight of the crew, sails, gear and equipment. Adding liferaft to the measurement trim can cause boats to start being measured with the liferaft to get better rating. Additionally, it may again be confirmed that boats are measured regardless of OSR category of the race they are entering and if the liferaft is required or not.

The submissions is therefore not supported.

f) GER 6 - Use of time allowances for TWS of 4 kts

As it is confirmed that 2026 VPP will calculate time allowances for TWS od 4 kts directly from the VPP calculations (without any extrapolation of values calculated for TWS of 6 – 24 kts), it may be confirmed that boundary for the scoring wind used in PCS calculations can be now moved from 6 kts to 4 kts.

g) GER 7 - Clarification on using WRS or APH scoring

This was discussed under Item 9 – Weather Routing Scoring.

h) GRE 1 - Headsail furler credit.

The submission is correct; the roller furling credit is mor powerful in light winds. The committee discussed if this was plausible. The design of a roller furling headsail is a compromise; it can be designed to set well at different amounts of furling. The committee agreed to make no changes for 2026, but roller furling effects will be considered as part of the proposed aerodynamic force model upgrade.

i) GRE 2 - Spinnaker pole effect on NS certificate

It is confirmed that the rating may change on the Non-Spinnaker certificate when there is a spinnaker pole present regardless of fact that no spinnaker is in use. However, a spinnaker pole may be used with a headsail, and a rating change is appropriate.

Submissions is therefore not supported.

j) SWE 2 - Spreaders and jumpers

Jumpers are not defined by the ERS and it may be considered that they fall under the ERS definition of spreaders. The jumper struts should be recorded on the certificate. The handicap allowance will be reviewed during 2026.

k) USA 1 - Overlapping headsails

Overlapping headsails will be part of the aerodynamic model update describe in section 4.2. Until that is concluded the aerodynamic force model will not be amended in this respect.

l) USA 2 - Twin rudders drag

The current hydrodynamic force model calculates the immersed wetted surface area of the windward rudder based on the static waterline at each heel angle. If the twin rudders are recorded as having a 90 degree 'swing angle' then the windward rudder will be assumed to be retracted. The presence of 'swingable' rudders should be noted by the measurer.

m) USA 3 - Measurement inventory accounting

The item is more related to the administration of DXT files of boats with flotation date before 01/01/2013 than the VPP effect on automatic deduction of 1% of DSPM + 50 kg for these boats.

The submission is referred to the Rating Officers Committee.

n) USA 7 - Articulating bowsprits

Boats with articulated bowsprits are rated with the spinnaker pole with SPL = TPS. Calculating a different SPL value based on actual length of the bowsprit part that can be articulated would require additional research that is not feasible at this moment. Not affecting many boats in the fleet this is not considered as a priority at this moment.

The submission is not supported, but it may be noted that planned updates of the aero model can affect this as well.

o) USA 8 - Cruiser/Racer requirements

A similar submission was discussed last year, and 2025 certificates of C/R boats are updated to show C/R requirements. Also, the C/R requirements were reviewed last year and it was found that no changes are really necessary.

The submissions is not supported, but it is confirmed that additional tools that can clearly show C/R requirements in the ORC Manager and ORC Sailor Service can be designed.

p) USA 9 - "Interceptor" hull feature

Fixed Interceptors as currently manifested in the ORCi fleet are not a significant influence on hydrodynamic resistance. They increase drag at low speeds by increasing transom immersion and reduce drag at planning speeds. Treating interceptors as having a net zero effect on the handicapping polars will continue for 2026 as described in 3(d) below. Adjustable interceptors will continue to be prohibited.

q) USA 10 - ORC and IRC spinnaker areas

Sail area is not a "measurement" in context of UMS and it is not included on the sail measurement sticker. The sail areas are only used in the VPP so there is no meaningful consequence.

The difference between ORC and IRC in spinnaker areas is rather small (ORC is using 1/6 in the formula, while IRC is using 0.166 in the formula).

Therefore, the submission is not supported.

r) USA 13 - Age Allowance

Age Allowance has been discussed many times. Each time it was noted that it is an arbitrary rating assessment not coming from the VPP and used to protect older designs up to maximum of 15 years. Increasing this limit would give an additional advantage to boats still actively racing at the ORC Championships and just amending Age Allowance is not solution answering any boat that feels not rated properly. Instead, such a boat may be added to the Performance database.

The submission is not supported.

s) USA 14 - Tacking point of spinnaker

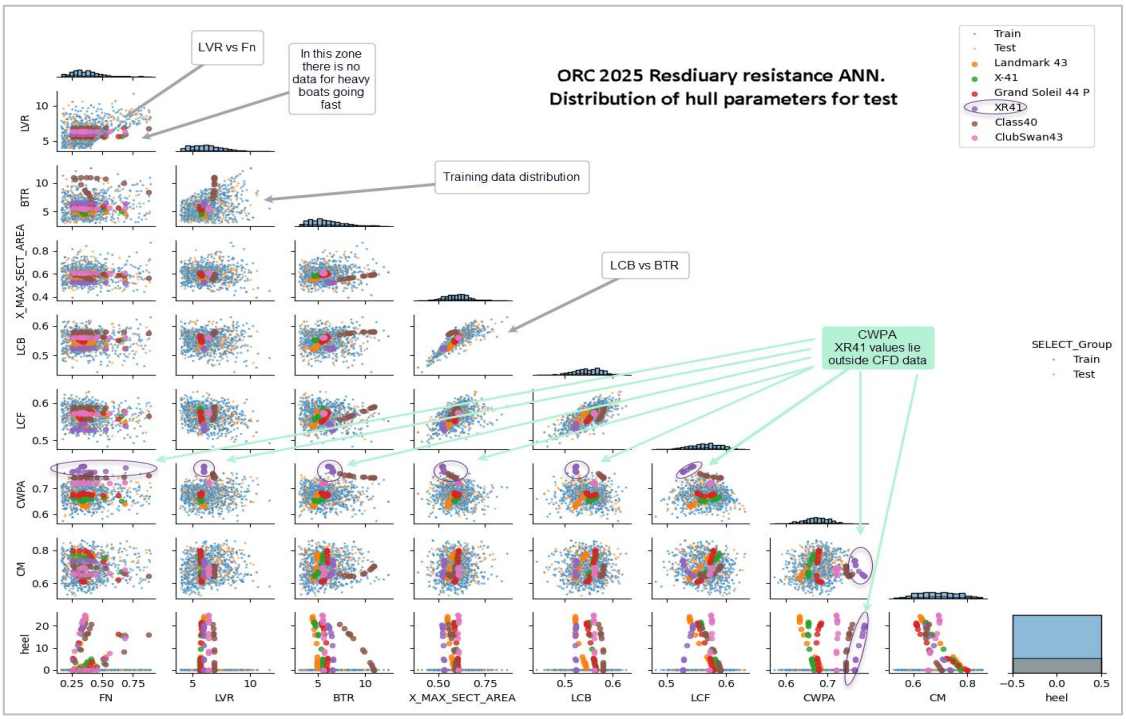
It was agreed that current ORC Rule 108.8 can impose a penalty on boats with large SFJ. However, the solution is not deleting completely the ORC Rule 108.8, but instead modifying it to limit rated TPS not be taken less than J.

3. Hydro

a) XR 41 performance

The X-Yachts XR41 is a new design for 2025. A boat of this design won her class in the 2025 World Championships, and other boats to this design were highly placed. The ITC were asked to review the design with respect to the ORCi VPP formulations.

The figure below shows the distribution of the CFD (Computational Fluid Dynamics) data points in the parameter spaces of the residuary resistance force model. Also shown are the parameters for some specific designs.



The left-hand column of plots shows the seven parameters plotted vs FN (Froude Number) which is the non-dimensional Speed/Length ratio. Two concerns arise from this column.

Firstly, in the top plot (LVR (length volume ratio) vs. FN) there is a lack of CFD data for heavy boats going fast, i.e. low LVR (short L or high volume) at higher Froude Nos. This was a deliberate choice when setting up the test program to avoid running data points that were not likely to happen. Now at the highest speeds, boats are falling outside the available data and the ANN is being asked to guess a value for Rr.

Secondly in the CWPA (Coefficient of Water Plane Area) vs FN plot the XR-41 data lies completely above the CFD data. Once again this means the output of the ANN force model is a guess.

For all the other parameters the XR-41 data lies comfortably inside the CFD data. Looking along the row of plots for CWPA vs the other parameters LVR, BTR, etc. the XR-41 parameters lie above the cloud of test data points from which the Rr model is built. The same is true for the Class 40 to a lesser extent.

This means that the ANN (Artificial Neural Network) for calculating residuary resistance has no data to work out the interactions between CWPA and the other parameters. This makes the ANN unreliable, and as intended by the designers, the Rr is unrealistically high.

This is an error that the ITC agreed should be corrected in the 2026 VPP using the following approach:

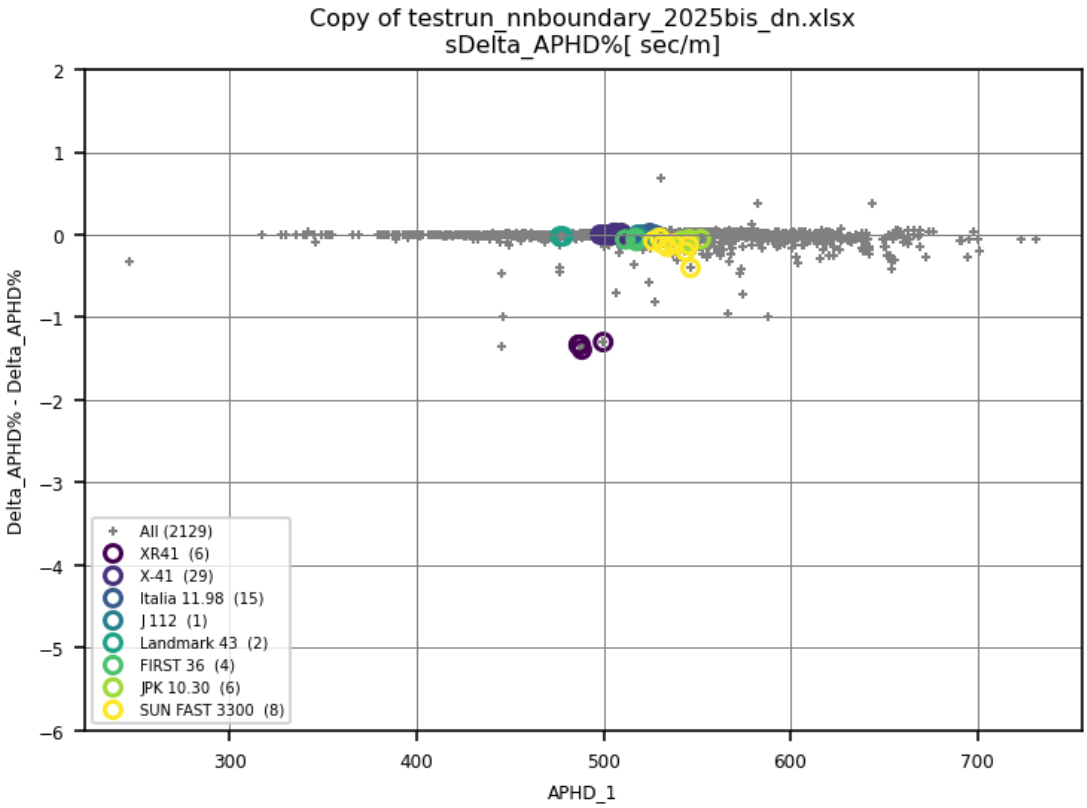
a) Introduce hard limits on the input parameters to the Rr force model that prevent the use of values that lie outside the appropriate range. The limits are shown in the table below.

	Min	**Max**
FN	0.18	0.85
LVR	4.1	9.0
LVR4	4.5	9.0
LVR6	4.3	9.0
BTR	3.1	9.5
LSM1RATIOXYA	0.0020	0.0130
LSM4RATIOXYA	0.0028	0.0192
LSM1RATIOXYB	0.0020	0.0106
LSM4RATIOXYB	0.0024	0.0156
X_MAX_SECT_AREA	0.45	0.75
LCB	0.49	0.6
LCF	0.51	0.61
CWPA	0.61	0.725
CM	0.58	0.82

b) In the few instances where the LVR and Fn approaches or lies outside the test data the Rr prediction will be blended to match the 2013 model

The overall effect of these changes is shown in the figure below, the change between the APH 2025 and 2026 is expressed as a percentage, vs the 2025 APH (sec/m). Boats below the delta=0 are sped up by the 2026 VPP.

2025 vs 2026 VPP Test Run. APHD percentage change. Negative values 2026 faster



As might be anticipated the boats with lower CWPA values that that lie within the test data range are generally unaffected. The LVR vs FN effect has an effect on a larger number of boats.

The committee acknowledged that whilst this approach was equitable and robust, they will expand the CFD test database and implement a more sophisticated assessment of the optimum trim for the 2027 VPP. In all these VPP developments the ITC must strike a balance between handicap stability year to year and making incremental improvements.

b) Albacore and long keels residuary resistance

Albacore's owner kindly provided the yacht's performance data and this was processed into the ORC Performance Database (ORC-PD). The observed polars are always slower than the VPP prediction, particularly in 6 knots True Wind., and the predicted true wind angles were much narrower than observed.

The ITC reviewed this performance shortfall and undertook several studies that concluded:

- Albacore is not a typical ORCi design, she has a long keel, and a transom hung rudder. She has a fractional rig with a very large genoa overlap, and a wide shroud base.
- First the effect of varying the aerodynamic coefficients was explored by shifting the coefficient curves to wider apparent wind angles. Even very large changes did not change the predicted true wind angles.
- Then the effect of arbitrarily reducing the hulls effective draft (Te) and the rigs effective height (Heff) was tested. The reduction of the keel and rig span increased the amount of induced drag calculated by the VPP. These tests showed that if the Te and Heff were reduced by 10% then the observed and predicted speeds in TWS above 8 knots moved into much closer alignment.

Whilst this study was valuable to understanding the physics of the situation, there is not enough data to make a change to the VPP. The hydrodynamic performance of long keel yachts will continue in 2026 with a view to making a revision for the 2027 VPP, it is likely this will speed up this style of boat. The aerodynamic effects of the Albacore style rig are not well handled by the current aerodynamic model, but these will be part of the updated aerodynamic model scheduled for the 2028 VPP.

c) Foiling, status report

The combination of Offset 2.0 for foil geometry definition and the 'Power Axis' concept to define lift distribution have been programmed into the VPP. During 2026 the force model will be tuned with the help from subject matter experts, with particular reference to the multihull fleet.

d) Interceptors

There is a growing trend for owners to add interceptors under the transom. The committee concluded that there was no easy way to accommodate this feature in the VPP, because

a) The effects were small and
b) The interceptor increases drag at low speed and reduces it at higher speeds.

Whilst the interceptors longitudinal span is of the order of tens of millimetres the committee agreed they would not introduce a change to the VPP. If the interceptors are adjustable then a handicap adjustment would be applied.

e) Infiniti 52 and planning

The Infiniti 52 won her class at the San Francisco series by a large margin. The committee reviewed the results and studied the VPP output for this boat. The changes made to the residuary resistance prediction will have some effect for this 'fast' boat, and the effect of the DSS foil may be revised during the foiling force model study.

The committee also noted that to handicap a class where high speeds are seen downwind it is important to use a scoring TWS / TWA mix that reflects the race conditions as closely as possible.

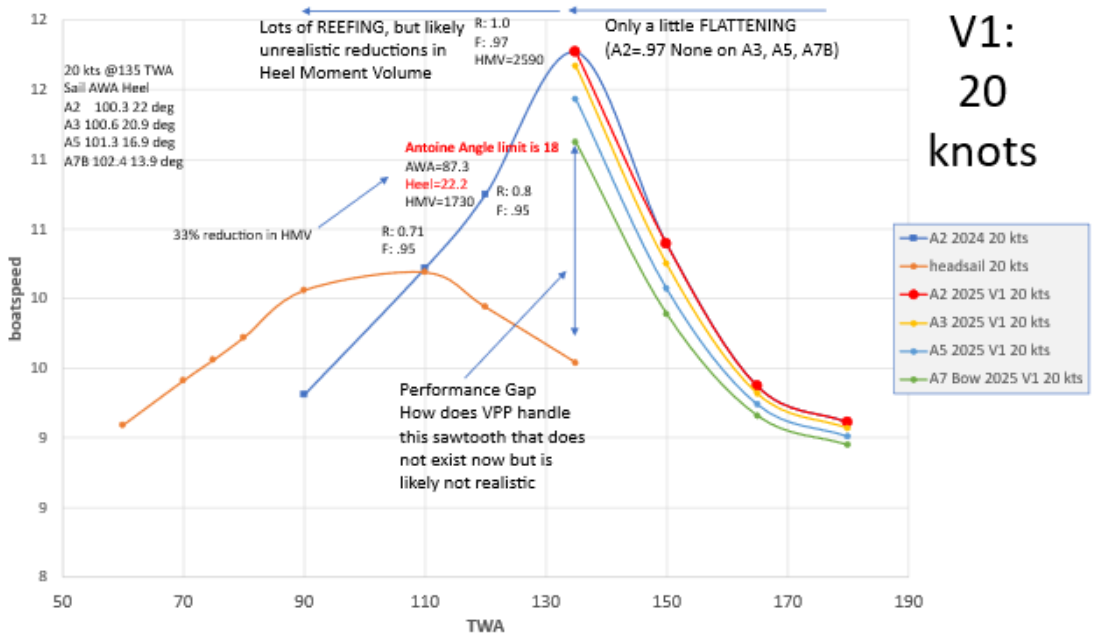
4. Aero

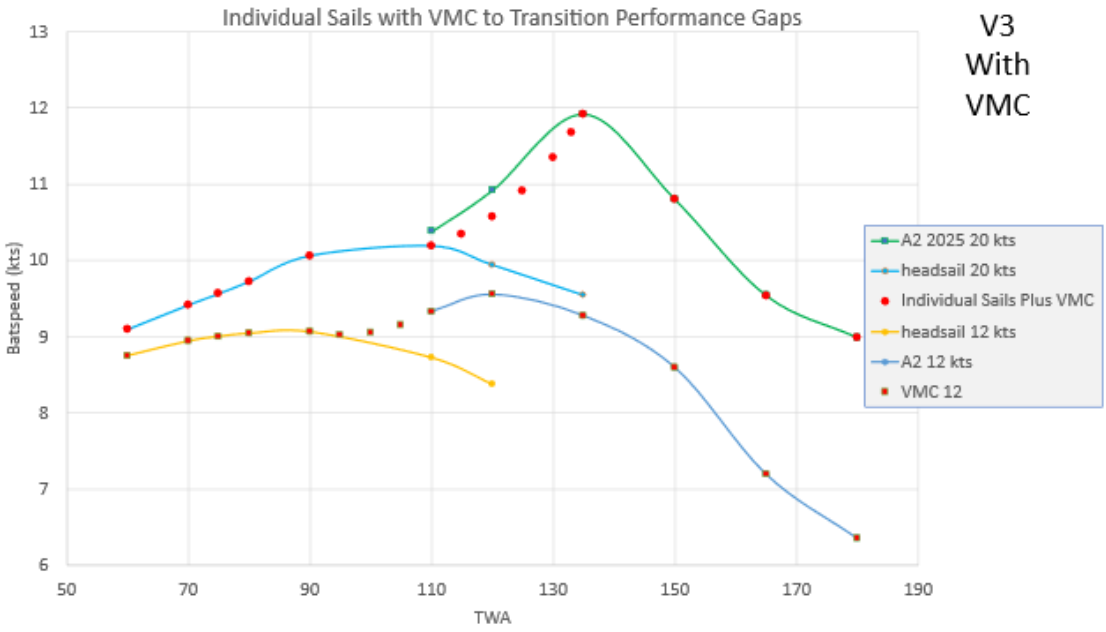
a) Spinnaker study

Robert Ranzenbach reported the continued studies about spinnaker depowering. This is of importance as the ORC VPP's move towards creating scoring polar curves based on the boats actual sail inventory, where we will need to predict the performance with a single spinnaker. This is in contrast to the current ORCi approach of depowering the largest spinnaker allowing the REEF parameter to reduce to 0.5 or less.

With a single spinnaker the wind tunnel test data suggests that the minimum achievable REEF for a spinnaker is 0.92. With this REEF limit the spinnaker can no longer be depowered at small enough TWA's to blend smoothly into the headsail only polars.

Boat Speed vs. TWA showing effect of curtailing the REEf and FLAT parameters for a spinnaker.





This 'saw tooth' discontinuity between the headsail and spinnaker polars makes it hard to build a smooth scoring polar. This issue can be partly resolved by adopting a VMC (Velocity Made along the Course) using a combination of the headsail and spinnaker polar curves to predict the maximum speed possible using each sail for a portion of the leg. This largely removes the gaps between headsail and spinnaker but still results a discontinuity in the performance curve that will require an update to the ORC VPP to handle in an appropriate manner. This concept will be refined as part of the ORC research projects for 2026 for introduction at a later date.

b) New aero model plan

During 2026 and 2027 the ITC will work on a revised aerodynamic force model. This model will capture the effects of sheeting base, and rig envelope which are absent from the current model. The methodology will be like that used in the residuary resistance model, i.e. an AAN derived from CFD tests. The same engineers will execute the work.

Program of work

Months 0-6 Source generic sail geometry, design the "systematic approach ", and do a proof of concept on the Beneteau 36.7 jib and Genoa cases.

Months 7-15 Production running on other geometries to explore other parameters and sail types.

Months 9-24 Refine the new model and incorporate into the 2028 VPP.

This is subject to Congress approval of the necessary funds.

c) Passive rotating masts

There are reports from outside the ORC fleet that some boats have built passively rotating masts. The mast is allowed to rotate within the partners at the deck under the torque applied by the rigging. It is assumed that the mast is also free to rotate on the step. The ORC will monitor the growth of this trend and respond as necessary.

d) Single spinnaker coefficients

For boats that carry only a single spinnaker, there is a desire to be able to differentiate between a reaching and running spinnaker. ORC will explore how typical spinnaker measurements and available mechanisms within the VPP might be able to differentiate between reaching and running spinnakers and appropriately predict the different performance between them as part of a 2026 research project.

e) Outriggers

See submissions FIN 5 and USA 6. It is intended to explore the performance impact of outriggers in the upcoming aerodynamics development plan for introduction at a later date.

e) Earth boundary layer

It was observed during Block Island Race week this summer that significant shear was present on the racecourse and this created deltas between predicted performance and actual performance based upon measured windspeed at the masthead. The ITC discussed this phenomenon, and Robin Zinkmann shared his observations as he was competing at this event. While it is acknowledged that large differences between the boundary layer profile used in the ORC VPP and actual sailing conditions inevitably occurs, introducing this as an additional variable into handicapping is unworkable so no action will be taken. It was also noted that the boundary layer profile used in the ORC VPP was modified a few years ago in an effort to address the perception that smaller boats were being treated unfavourably by the ORC VPP.

5. VPP

a) Changes for 2026

The ITC will recommend following changes to the VPP for 2026

1. Rr update as described in 3(a)
2. Non-VPP performance features as described in 2(a)

b) Pitch inertia and Added Resistance in Waves.

In the ORCi VPP the added resistance in waves formulation has been substantially depowered because, absent a method to determine wave height and period on the race course, the assumed wave parameters vary only with wind speed. This means boats with high pitch inertia are disadvantaged when the waves are high.

It is now possible to get a reliable now-cast of wave height, period, and direction. Given this data the VPP can do a much better job than that currently implemented in ORCi. To move forward with this we need only to make a tolerably reliable estimate of the boat's pitch inertia. This development will be most effective in ORCsy and ORCj.

6. World Sailing

a) Stability database

In 2025 the OSR's (Offshore Special Regulations) were amended to require AVS (angle of vanishing stability) values to be determined by an inclining experiment ,with the yacht in its sailing condition, for Category 0,1, and 2. The following paragraphs are from the working groups report to : Oceanic and Offshore Committee, Special Regulations Sub-Committee .

During the Stability Screening Working Group presentation at the 2024 annual conference, the concept of having World Sailing host a database which lists the stability screening values was mentioned. It was agreed that a working group be formed to explore this concept. The purposes of the database are to:

- provide interested parties, typically boat owners and organizing authorities, a sense for whether a particular boat is likely to meet the stability requirements for a race. For example, for a model where no boats meet category 3, the owner would realize that entering a category 2 race would be a waste of time
- provide a centralised list of ISO 12217-2 values.
- list only production boats that have had no stability altering modifications.

The recommendation is that the database gets seeded by: (a) Production boats obtaining rating certificates from the two senior rating offices (RORC and ORC), or from other willing to and capable rating offices. (b) Production boats whose designers or builders provide CE-ISO values.

b) Keel inspection and design standards

International standard ISO12215-9 "Sailing craft appendages" has undergone a systematic review under ISO TC188 Working Group 35 chaired by ITC member David Lyons. The proof is in the hands of the ISO Secretariat ahead of imminent publication.

Key changes are a doubling of design fatigue life to 16 million cycles and special attention paid to stress near welds. Attention is drawn to the need for re-design where critical weld failure would lead to the loss of the keel.

The focus on design in the standard continues to make it the best reference for World Sailing Structural Plan Review that is required in the Special Regulations. It does not cover testing during keel construction, in service or after damage such as grounding. The need for such tests is currently the subject of a submission to the Offshore Special Regulations Sub-Committee this November.

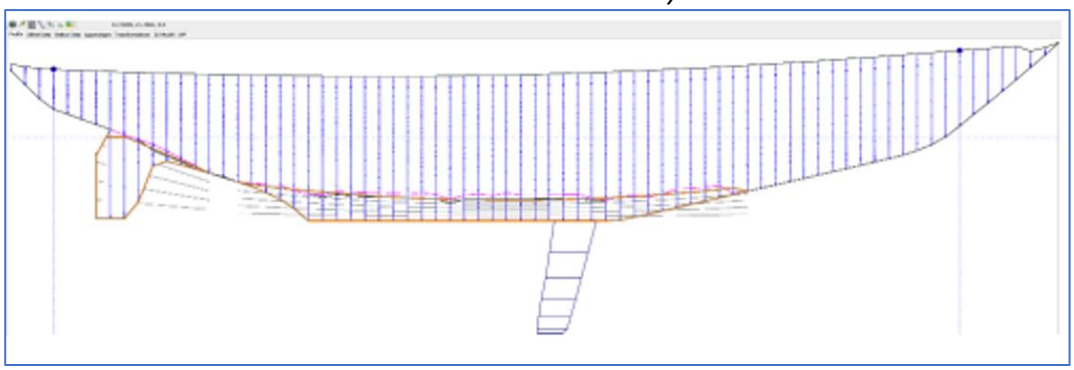
7. ORCsy

The ORC Superyacht certificates issued in 2025 is over 100 boats. The regatta's have been successful, and the use of scoring based on wind bands or constructed course PCS has offered all boats an opportunity to head the standings.

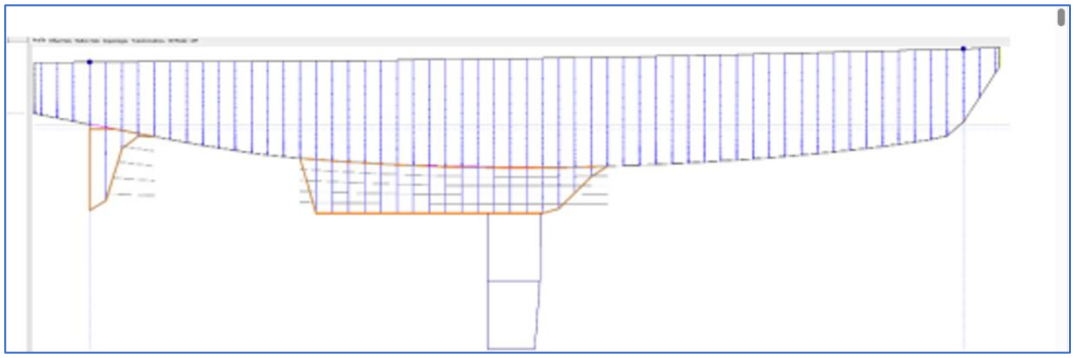
The main technical project has been a complete reworking of the calculation of effective draft. For fixed keel hulls the induced drag force model is very robust, but the IMS legacy force model for centreboards and stub keels was shown to be inadequate. So during 2024 the ORC have concluded a complete revision of the force model for Superyacht centreboards.

Typically, Superyachts with centreboards have 3 or 4 components making up their appendage set, as shown in the figure below.

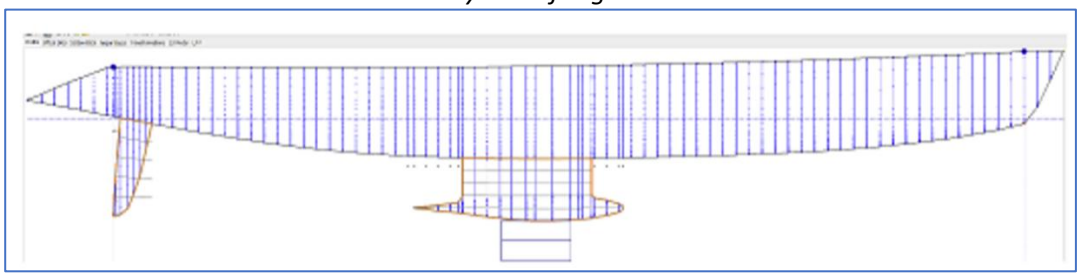
Small or non-existent stubby keel



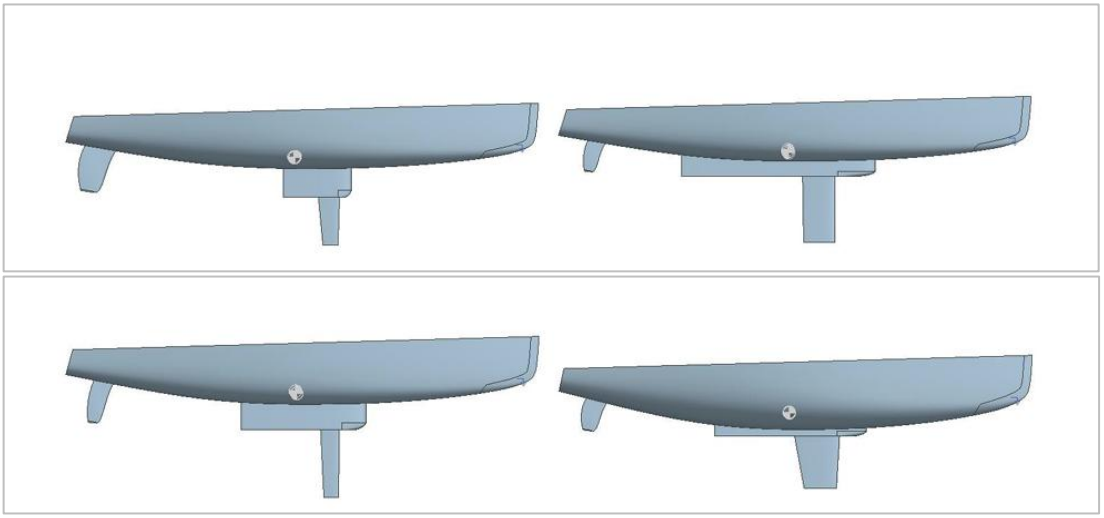
Stubby keel with centreboard



Stubby and lifting board



The new model for induced drag is based on the results of CFD tests on a series of parametric variations of keel and hull configuration based on affine transformations of a base model.



The adoption in 2025 of the new force model has caused significant changes to the relative handicaps through the fleet because the old inadequate model was manually tweaked by an 60% artificial reduction of the effective draft.

So, to smooth the transition between 2024 and 2025 model a 20% of this artificial reduction of effective draft was retained in 2025 VPP with the aim of deleting it completely for 2026 ORCSY VPP, as this model is a much more ration treatment of the problem. Considering that ORC and SYRA agreed about using the 2025 ORCSY VPP for the beginning of the next season (Millennium Cup in NZ and the 3 Caribbean events) for the above events a new version of 2025 VPP will be used removing only the manual adjustment of effective draft.

For the 2026 Mediterranean season a new VPP will be prepared with the following amendments:

a) Centerboard case drag

- Fine tuning of the flow angle
- Different assessment of vertical lifting centerboards
- Considering some drag reduction in the presence of gaskets

b) Tankage

It was agreed with SYRA working group to inspect the effect of declaring a max/min range of levels for the tanks and make two VPP runs to see the fastest condition

c) Propeller

The non-measured installations have a default PIPA calculation that is based on existing measured installation of many years ago. Now that the number of measured boats is quite bigger, we have to revise the regressions used to compute default PIPA

d) Schooners

Increase a little the Heff for schooners

e) Frictional resistance

Increase the frictional coefficients for dirty hull (only for Corinthian Spirit class). The tricky thing is not to make this VPP amendment but to decide which is the level of cleanliness that deserve the added resistance (normally some % of OPF is added to those boats considered with dirty bottom)

f) Tacking Allowance

Revise the TA as a function of the distance between the forestay and the inner stay and according to the furler speed

8. ORCmh

38 ORCmh Certificates issued so far in 2025. During the year, the ORCMH VPP was upgraded to version 2025 1.02 to incorporate the work of Marcus Mauleverer and Davide Battistin on CFD runs of a wide-range of multihull-type hull shapes via the methodology used for the ORC monohull VPP. The 2025 Multihull Cup Fleet. Racing Scored using constructed course and observed wind.

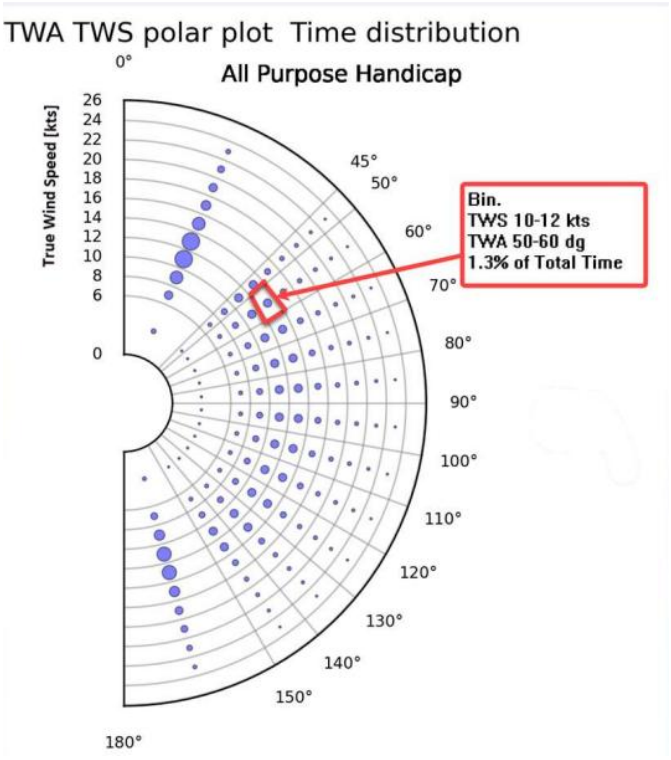
9. Weather Routing Scoring

To date the ORC WRS team have scored 68 races, and shadow scored 51 races. The Scorer software uses an API to the PredictWind forecast and routing engine. The ORC is very grateful to PredictWind for their continued support and very reliable process. In broad terms the WRS system has been well received, the race organiser (RO) prepares the fleet, the ORC team set the course, execute the routing at pre-agreed time before the start, check the predicted tracks and TWS/TWA distributions are viable, and sends the scratch sheet to the RO. For large races the ORC has run a few tests in the week prior to the race.

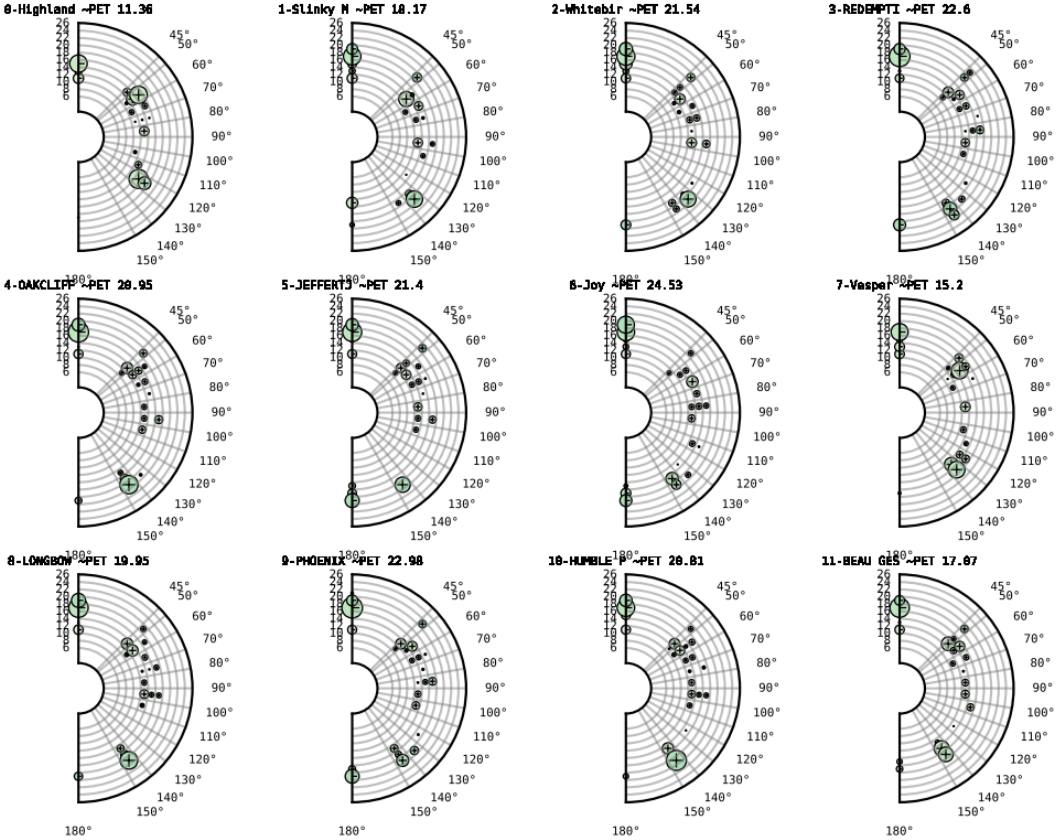
Our learnings to date are:

- The WRS TCF's are nearly always better than a pre-chosen wind and course mix.
- What does better mean?
- The TWS/TWA distribution matches the actual conditions better than a pre-chosen distribution

All Purpose Handicap assumed wind distribution

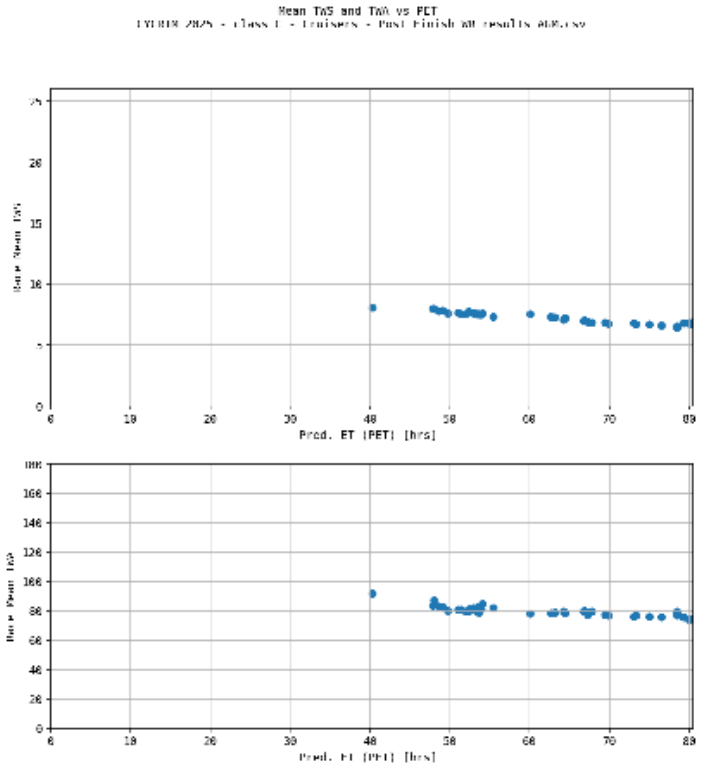


TWA & TWS Bins from WRS prediction



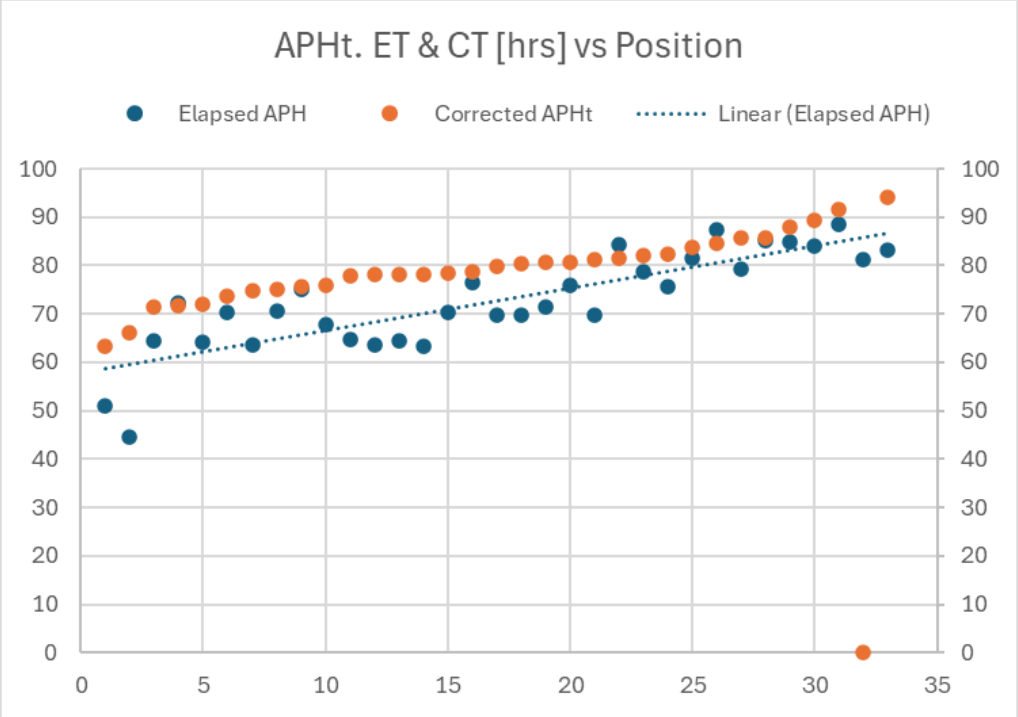
- The corrected times reflect the effects of a rising or falling or shifting wind as the slower boats approach the finish

Average TWS and TWA vs. Predicted Elapsed Time (PET)

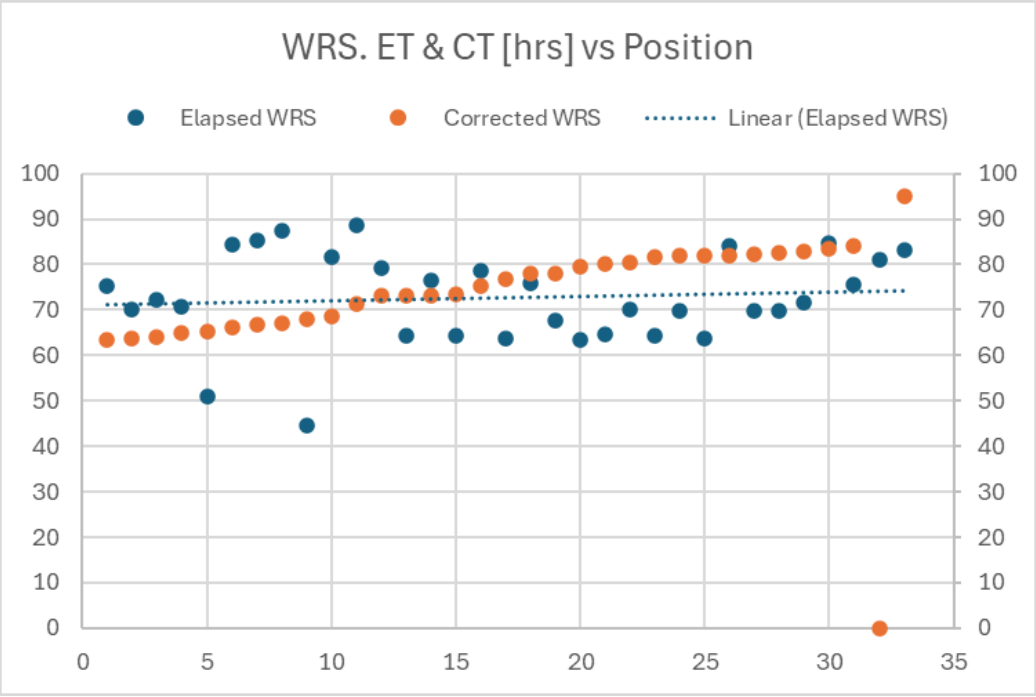


The Elapsed time distribution with race position is evenly distributed. Assuming that the majority of the boats are similarly well sailed a measure of equity can be found by looking at the Elapsed time for the top places in the overall fleet. There should be boats from throughout the handicap range at the top of the rankings.

Plotting Elapsed time vs. Overall position, the plot below shows the results for CMUW scoring. The boats to the left (the winners) have not only the lowest Corrected time (CT), but also the lowest Elapsed Time (ET). Note also that the first two boats are several hours ahead of the third-place boat on CT.



Switching to WRS scoring, the Elapsed times of the winners and the losers are more evenly distributed, and the CT differences from 1st to 4th do not have a different slope, and the spread of CT is reduced.



Long term forecasts are better than short term ones.

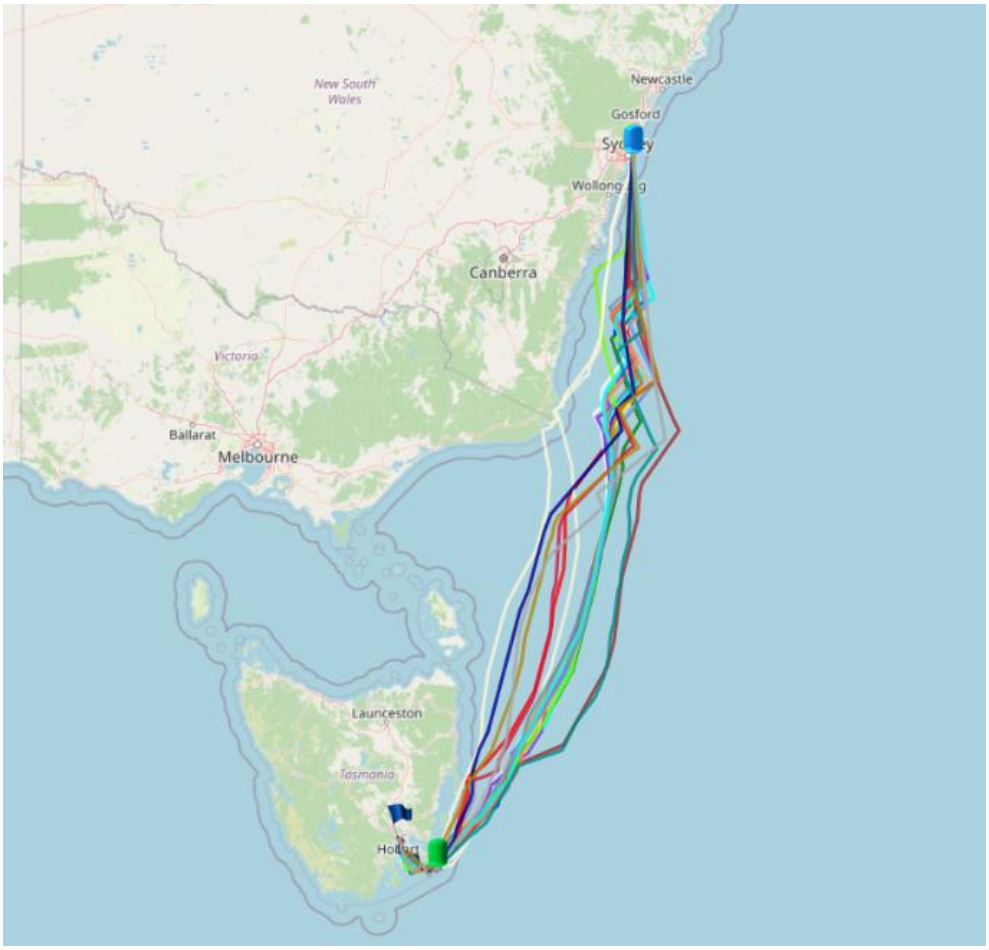
- Using a high-resolution forecast offers the prospect of the routing engine predicting a wide variety of routes which a real navigator would view as high risk. Using a lower resolution forecast mitigates this risk.
- Also fixing on a single widely known forecast prevents a prolonged 'beauty contest' in the days before the race.

What if something goes wrong?

The process has a lot of moving parts, in case of 'force majeure' prevents delivery of a viable WRS prediction the RO should specify in the SI's a fall-back scoring method. How to judge a WRS scratch sheet before the race? At best there will be a few hours for the RO to assess the WRS prediction.

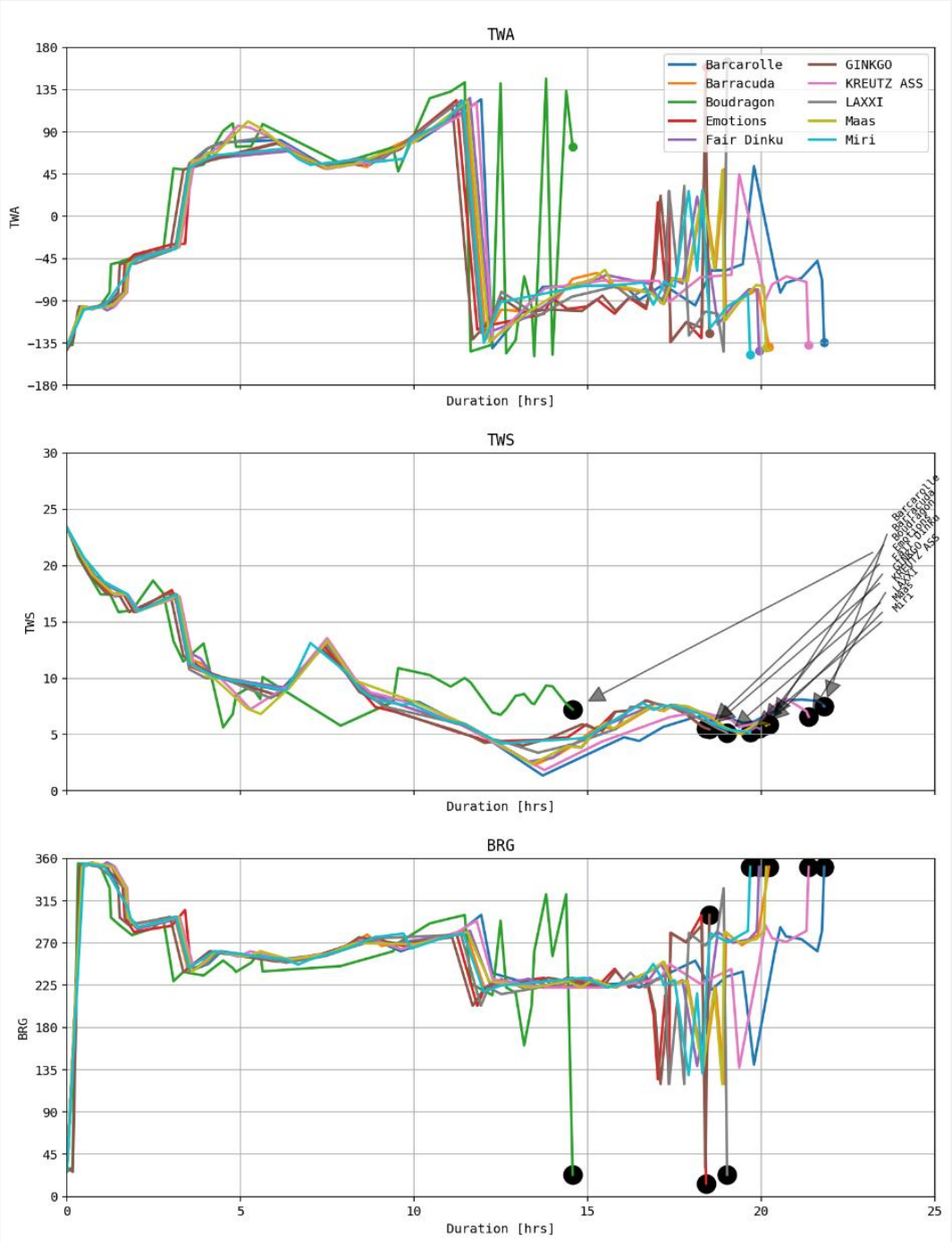
- Do the tracks look plausible?

Predicted Tracks for the 2025 RSHYR



- Is the TWS TWA consistent across the race duration. The plot below shows good consistency boat to boat for the duration of the race.

  TWS, TWA and Heading vs race duration from WRS prediction.



- Would a pre-chosen TWA/TWA distribution do a 'fairer' job?
- If in the hour before the race the RO is wondering whether to use WRS, a simple 'what if test' can be applied
- Assume the race has finished, and the elapsed time for all boats was exactly as predicted by WRS. Thus all the boats will have the same Corrected Time (CT).
- Then take the WRS PET's and score the race using some other method (APH for example) and look at the new Corrected Times. Are these more equitable than the WRS results where there was a dead heat on Corrected Time.

Plans for 2026.

WRS will be made available to Race Organisers who want to score or shadow score events. The RaceFlow app, a version of the WRS scorer that runs in a Web app, has been trialled during the year. In 2026 this testing will be extended to race organisers with the intention that it can be used by them to experiment with the WRS process.

10. Performance database

a) Report

Robert Ranzenbach reported the addition of three boats to the database this year this year; the Carkeek 40 equipped with code zeros, which dovetails with Fox and provides a good range of modern offshore racing boats. Also Albacore is a valuable data set for a long keel hull with an unusual rig, (long overlap fractional genoa) and the ongoing process of acquiring data for a Beneteau 43 Jax.

b) Data viewer feedback

The committee expressed the need to better utilize the performance database and proposed publishing a basic report of upwind/downwind performance across the speed range for every node in the database, aligning with the 2026 VPP. This report would serve as a readily available "80% solution" for all stakeholders.

11. ITC Work list review

The ITC proposed the following items be included in the 2026 research program

- New Aero model
- Long Keel hull residuary resistance and effective draft.
- Multihulls, foiling and longitudinal stability

Additionally the ITC will support the wider ORC team to:

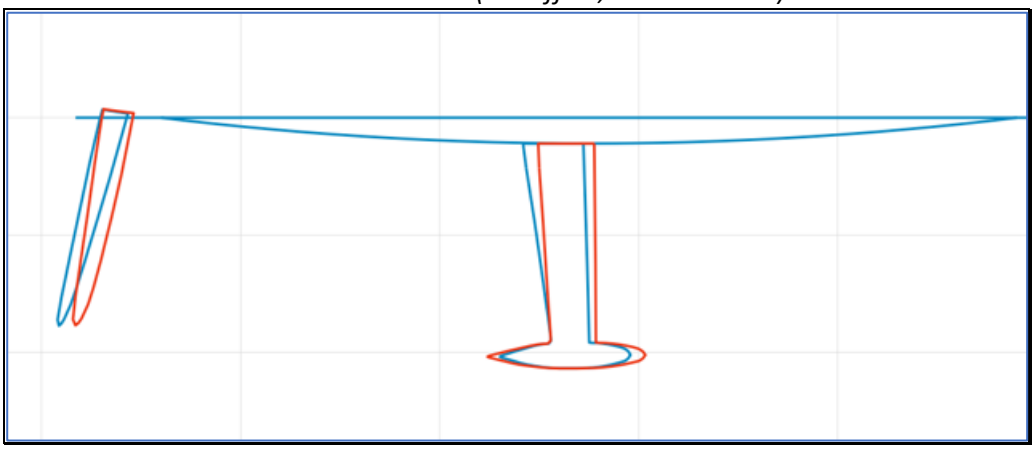
- Improve Weather Routed Scoring accessibility for RO's
- Develop Real Time Race Tracking and Scoring

12. Certificate Cartoon.

The committee unanimously agreed a scheme to re-introduce the underwater part of the hull and keel into the ORCi certificate drawing. The approach strikes a balance between the designers' need to preserve their IP, and the measurers and competitors need to check that the rudder and keel configuration accord with what they see.

The canoe body profile will be represented as a circle, passing through the waterline endings and the maximum canoe body draft. The appendages will be positioned forward or aft of the location detailed in the offset file, and the chord length and sweep angle will be changed. A typical result is shown in the figure below.

Cartoon distortion (red offset, blue distorted)



Chords are scaled between +-5 and 25% for keel and +-5 and 15% for the rudder. Translation is between +-5 and 25% of longitudinal dimension (roughly max chord). The tip chord is scaled down between 3 and 30%, scaled up between 3 and 5% (the scaling is progressive all along the depth). Sweep angle is altered between 3 and 9 degrees back, 1 and 3 degrees forward.

14. Next meeting

Next live meeting is planned for 28-29 March. Venue to be defined. An online meeting will be held in the meantime with date to be defined.