Association Technical Office

Title: IMA ATO Annual Report to IRC Congress
Date: 17th September 2025
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Below is a general update on the IMA events of 2025

1. **Preseason Measurement Checks**

As per previous years, a number of the fleet has made modifications, such as adding or amending water ballast capacity, altering bulb weight and various other alterations. These have been done with constant discussion between the teams and the ATO so that data is collected correctly and accurately. As normal Pablo Ferrer has been very busy with this. Between Pablo and I we have also measured the new competitors in the fleet. All such modifications have resulted in reweighing the yachts and bulbs as necessary and we are retaining the position where all competitors in M1 and MGP have been fully measured within the last 2 annual cycles, and we are increasing that position within the rest of the fleet also. This work continues.

2. **Reduced Crew Rating**

It has been agreed at the 2025 IMA AGM that the current approach of allowing a 70% reduction in crew shall, when declared and permitted in the NOR, shall have a rating reduction as calculated by IRC. It has also been agreed that the following rule should be added to the NOR for all IMA recognized events where the OA agrees:

> *The maximum number of crew that may sail aboard a yacht shall be the number shown on the IRC certificate except that; when the crew includes EITHER– at least 2 females, at least 2x 21 years old or under (21 or under [at the time of the prize giving]) OR at least 1 female and 1x 21 years old or under (21 or under [at the time of the prize giving]) then the crew limit is certificate number plus 1. There is no weight limit.*

3. **Equipment Inspection**

Equipment inspection at events continues with the Maxi European Championship and Maxi Yacht Rolex Cup being the focus, but with direct contact between the ATO and the Equipment Inspection teams at all events being developed.

4. **Water Ballast**

It is noted that water ballast systems have become standard in the most competitive maxis. Whilst this is seen by most to improve performance as well as allow for reduced crew, thus not being a bad thing in a maxi yacht, the systems complexity for an inshore racing set up is high and with it the costs are high. This may be justifiable in a maxi where the reduction in crew can offset these costs. But for smaller sizes, the complexity and cost do not reduce proportionally, and it may be worth ensuring that the optimization routes seen in maxis are not seen in smaller sizes, where the costs may be proportionally higher.

5. **Trim Tabs**

A large number of competitors expressed considerable concern at the development of Trim Tabs. It was appreciated that the note was sent around by IRC in 2024 on this. However, there are concerns

that whilst the message was received, the penalty is actually about right considering the extra gear it gives in tactics for windward/leeward competitions, and some teams are considering adding trim tabs next year. If the message of this being penalized is to be followed through, the view is that it needs increasing. Increasing the penalty would be recommended.

6. **Automated controls**

It has been noted that a number of competitors have systems where appendages can be adjusted automatically based on the inputs of onboard electronics. This can vary from rudder toe in systems for tin rudders, to trim tabs or canting keel systems and daggerboards etc. Whilst we do not believe that this is currently being used, there is no denying that it is possible and a fairly simple step. Should IRC send a clear message about it's use as is done with autopilots?

7. **Rating System Review**

At the IMA AGM 2024, the ATO was tasked with reviewing the current rating systems and consulting widely with industry experts on the matter. This was shared with the Officers in December 2024, and it was concluded that the current systems should be retained for a minimum on a 3-year rolling cycle. The recommendation of the ATO is that this be continued for a further rolling year until at least the end of the 2028 season.

It should be noted that the Rating Review Group recommended that this be a 5-year cycle due to the length of time needed to take a maxi from concept to sailing.

The detail of the paper is given below:

CONCLUSIONS:
Following detailed discussion, the Rating Review Group has a clear and unanimous opinion that changing from IRC to ORCi will not resolve the issues that are recognized with the existing maxi fleet. It is considered that a review of class splits to possibly include aspects such as length as well as performance would have greater effect, also, scoring systems should be investigated, as well as a review of racecourse type and style.

Changing the rating system would have significant detrimental effects on the existing fleet, likely to reduce their value, the value of IMA as an organization and significantly increase costs. Furthermore, it would introduce instability into the fleet, could delay the construction of new boats and stifle the path of development. It is strongly recommended that the IMA sends a clear message that the current use of IRC for the Maxi fleet, ORCsy for the Supermaxi fleet and ORCmh for the multihull fleet is confirmed for the next 5 years at least to ensure stability within the worldwide fleet and to encourage growth in maxi racing.

DISCUSSION:

At the IMA AGM on 13 September 2024, the members asked that the ATO create a Rating Review Group to review the choice of rating system for the maxi fleet. The initial question is whether the current system (IRC) is the correct choice, or whether ORCi should be considered as a replacement.

The group consists of:

Gavin Brady (Sailor and project manager, Beau Geste, Vesper, PAC52, TP52, MOD70)

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Adolfo Carrau (Botin Partners Naval Architects (Deep Blue, Jolt, Caro, Django 7X etc.))
Juan Kouyoumdjian (Juan Yacht Design (Lucky, My Song, etc.))
Mark Mills (Mills Design (Caol ila R, V, Leaps & Bounds 2, Balthasar etc.))
Rob Ouellette (Sailor and project manager, Bella Mente)
Nick Rogers (Sailor and manager, Northstar)
Chris Sherlock (Sailor and skipper, Leopard 3)
Mark Somerville (CTO, Persico Marine (My Song, Vesper, V, Magic Carpet e, etc))
Vasco Vascotto (Sailor and project manager (Jolt, TP52, Django 7X etc))
Rolf Vrolijk (Judel Vrolijk Design (Capricorno, Vesper, Jethou, Spirit of Malouen X, Y3K, etc)

> *Please note that whilst many of these people are linked to Maxi72 programs, this means that they have a large amount of experience with both IRC and ORC, as well as ORR and other rating rules. They also recognize that the health of all maxi racing is a benefit to us all and needs to be fostered. Many are also involved in TP52 racing and One Design fleets. The scope of knowledge goes way beyond the maxi fleet.*

We need to look at not only the ratings, but the approach we take. If a boat is designed for a very specific wind range and course type, they will do best in those conditions but will likely suffer more outside of that range. Do we need to consider widening the range to correct this out and encourage more rounded performance? Do we need to consider a range of scoring options?

It is extremely important to consider whether a change will increase stability and confidence in the IMA structure and future or have the opposite effect. Critically, the maxi fleet is a highly valuable set of assets, and the financial implications of such a change cannot be ignored. Any change of optimization will have financial implications and may alter the value of the assets, or alternatively, the value of IMA within a fleet that is not solely members of the association and does not race solely in IMA events.

Furthermore, building a new maxi is a long-term commitment, and instability in the guidance of the IMA in this regard makes decisions more of a gamble. Stability in racing is key to this, and stability in the choice of rating system is critical to that.

It is important to note that the main area of argument is that any boats that race against the current Maxi 2 fleet (ex Maxi72 class boats) cannot compete and are easily beaten by these boats. It is assumed by many that this is due to anomalies in the rating system used. To confirm this or not, it was recommended by the members that we re-score events using the ORC system to see if this is true. If the Maxi 2 boats also win easily under ORC them it would suggest that this is not the case.

We see similar issues worldwide with the TP52 class that compete under both IRC and ORC. In both rating systems, TP52s dominate. It is generally recognised that this is not due to rating systems, but the level of refinement that the TP52s have gone through over the last 20 years, particularly with regard to their abilities in W/L courses, that they are primarily designed for. That is true also with the Maxi72s. It is worth noting that the Maxi 1s have also gone through a high degree of refinement, although not from the same starting point, and are probably pushing the Maxi72s far harder than any smaller boats are pushing the TP52s. But the budgetary constraints are equally smaller with the Maxi fleets. So, development of the Maxi72s remains a step ahead, and is not unconstrained by the box rule.

Research has started. However, with the change in ORC approach to now only use multiple scoring options, with the PCS approach, there is not a single number rating to use for comparisons. Instead, ratings in a given class are calculated relative to the "scratch" boat (fastest boat) in the class and change on a daily basis depending on the calculated conditions. It is not possible to back calculate this, or fully understand the calculation of the daily rating. This therefore makes comparisons impossible across a wider fleet, and it is not possible to compare deltas.

That is also only the start of the story. If we consider that ORC does a better job with these boats, we also need to consider how they affect the whole Maxi fleet, from Maxi 5 to Maxi 1.

If a study into this demonstrates that ORC is a more favourable system to the Maxi fleet, we then need to consider the longer-term effects. At the moment we have a fleet of yachts that are generally designed to race under IRC and have been optimized to meet that brief. If we change system, we have to consider what will be the optimization path for ORCi. We also need to consider that most of the offshore classics and many of our Offshore Challenge events only have IRC classes. Would this push for boats to be dual optimized and dual rated, or might they then simply not participate in IMA events?

It is anticipated that ORCi optimization would involve at minimum a change of keels and sail inventories and likely a change of mast spars, and possibly position. It would also likely mean the removal of water ballast systems, changes to appendage configurations etc. As the optimization path is followed further, as it will be with the Maxi owner budgets in mind, hull modifications to optimise LCG to the rule rather than reality and internal fit out to align with ORC dynamic allowance rather than IRC Hull factor will be needed to remain competitive.

At this stage, these are all unknown. Investigation into this is likely to cost a great deal of funding and time. That will, however, happen in coming years as new designs are considered, should IMA swap to ORCi.

Right now, we do not know what an ORCi optimized maxi will look like, as no one has built one. We do not know if the current fleet can be optimized to be competitive against them. The current fleet would probably be devalued overnight for IMA purposes. Alternatively, non-IMA events may remain IRC, and we may find IMA becomes less relevant to the maxi calendar as well as offshore events.

Some research has been conducted as a result of the question being raised about adopting ORCi for the maxi fleet. Initial study shows a likely outcome to be heavier boats with a fixed keel, single rudder, lower righting moment and no water ballast. The owner who commissioned this research has concluded that it is not worth changing from the yacht he currently sails, as it would be slower and a step backwards by a decade for their program. As such, they would not commission a new build.

We have also seen in recent years with both ORCsy and ORCmh that late rating changes occur. This year for example, the ORCsy ratings for the J class entries were modified 10 days prior to the event. The ORCmh ratings have also seen similar changes throughout the year. We need to consider the implications of such changes that IMA has no control of.

If it is found that both IRC and ORC favour the Maxi 2 yachts, or rather, this is not caused by the rating system, we need to look elsewhere as we need a solution for when the 2 classes race together. For this it is apparent that when competing together on short Windward/leeward courses, the Maxi 2 class is more clearly separated from Maxi 1 than on coastal or offshore courses in the corrected results. On short courses, the more maneuverable Maxi 2 yachts don't allow the larger boats to

stretch their legs and use their waterline length. Downwind, both are governed by the true wind speed, so again the larger boats cannot escape and sail to their ratings. It is suggested that we investigate different racecourses for times when the fleets race together, possibly incorporating longer first windward legs and more reaching legs. This should be investigated further.

Looking at the Maxi Yacht Rolex Cup 2024 results, ORC have rescored the results using the ORC PCS scoring system. This takes the racecourse and effectively races each individual boat against its own polars. Effectively turning each race into a time trial between individual boats and their predicted performance. The boat that does best against its virtual self, winning. This makes comparisons very difficult, and also makes combining fleet results from the same course less meaningful, as the ratings are based on a different scratch boat in effect. Reviewing corrected times is also meaningless, as IRC TCCs are based on the worldwide fleet, whereas a comparable PCS base line is only based around the boats in that class at that time.

This scoring system is also reliant on complete trust of the race committee scorer, their data and use of it. We need to consider the accuracy of measurement of the racecourse not only in terms of distances and directions, but also windspeeds at different heights above the water, knowing that wind shear will mean that what you are seeing on your instruments is not going to be comparable to that seen and used by the scorer. Furthermore, competitors will not be able to know their rating and therefore their results until after the scorer has completed their work, and an understanding of this and the full data used is not going to be available. Drawn then to the point where onboard, individual weather data may be used, this would lead a competitor who sees their light air performance to be better than the predictions to hunt for holes in the wind rather than avoid them. This removes various important elements of the sport from the play sheet.

This brings us onto the discussion on transparency. The reality is that neither IRC nor ORC will give us access to their source code. As with most businesses, this is confidential. IMA have worked hard with IRC to encourage them to be more visible with this, and they are working in this direction, now making boat data available online to all for free and planning to make online automated trials available from 2025. But it must be recognized that the reason IRC has lasted 40 years is that designers are not given full access to the source code, so they cannot dig down and find errors and unintended consequences to the degree that we have seen in all open code rules that have been fully investigated. The distortions seen in IOR and IMS, for example, were not intended or anticipated. They occurred as a result of finding ways to make the rule think the boat was slower than it actually was.

Both IRC and ORC protect their source code to ensure that this does not happen further, and with ORC, we have seen changes happening in the mid-season to account for this, whilst in IRC, changes are only made annually.

Having considered all of this, we need to look ahead at this matter as not a rating system review, but a racing system review. But we need to instill confidence in all that the current choice of rating system is not going to be reviewed on a yearly basis, and that when all is considered, the strong recommendation is that the Maxi fleet should continue racing using the IRC rating system, and this should be set for the next 5 years minimum to ensure that there is a known structure of IMA racing for the future.