



Royal Ocean Racing Club Rating Office

Secrets of Success

Rating Office Technical Director Mike Urwin reveals some of the inner workings of the IRC Rule

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It's a rating rule. Obvious perhaps, but important. Why? Because it is not a 'handicap rule'! What's the difference you might ask? A handicap rule is subjective. In simplistic terms, it is trying to answer the question 'How fast did this boat go last week' and then assigning (not calculating!) a handicap to match the answer to that. IRC is not that. Each boat's TCC (in usual parlance her 'handicap') is an objective calculated figure. The calculations use each boat's individual data, but are then *identical* for all boats. So what is the effect of this fundamental feature?

First is consistency. All boats are rated ('handicapped') using the same maths and methodologies. So, boats of different designs but similar physical characteristics will rate at a similar level. Their owners can be sure that they have been treated the same. But IRC includes subjective factors I hear you say. Yes. But we have over the years developed objective methodologies to arrive at these subjective answers. So, objective and consistent calculation of ratings.

Second is also consistency. The TCCs for boats in different places in different parts of the world are compatible. So an owner can go to an IRC regatta and compete without having to re-rate. Imagine for instance the chaos at Cork Week in Ireland (with 350 boats from all over the UK, France, the Netherlands, Spain, the USA, etc, etc, not to mention Ireland itself) arriving with locally assessed handicaps and these all needing to be re-assessed under the local ECHO system. It wouldn't happen. Nor would Cork Week!

Third is consistency too. From year to year, owners have the re-assurance that unless the underlying maths have changed, their TCCs, and those of their competitors, will be broadly relatively the same. They are not at the whim of the local handicapper. Nor are they affected by the standard of sailing. Good sailing is not penalised.

I could go on. So how is this all achieved? It starts in essence with the Constitution of the International IRC Owners' Association (*see IRC Yearbook or website*). It will be seen that Policy is influenced by owners through their national associations and the IRC Congress. Ultimately policy is then set by the RORC and UNCL taking note not just of comment received from owners and the IRFC Congress, but also looking to the future in a strategic sense of where IRC should be. The link to the ISAF Offshore Committee shows that IRC can (and does) influence the international governance of the sport.

Technically, the relevant group is the IRC Technical Committee, myself and Jean Sans, my opposite number within UNCL. Our activities are influenced by IRC policy and by the comments and suggestions of the IRC Congress. Directly, how does the IRC Technical Committee work?



We have a continually rolling agenda based on input from not just the above, but also our own direct and personal observations. We also regularly receive (and often actively solicit) comment direct to us from owners, sailors, race committees, etc. We foster good relationships with builders, designers, sailmakers, rig and structural engineers, etc and regularly receive design and (sometimes confidential!) research and performance data from all of these. We keep an eye on technical developments in the sport. We analyse race results.

We are in constant contact with UNCL's Centre De Calcul and the RORC Rating Office, and Jean and I are in regular contact normally via E-Mail. Formally, we meet at least once per year, alternately in France and England. Informally we meet more often, at other meetings and at the ISAF Annual Conference for instance.

Given our starting premise that IRC is a rating rule, any changes that we agree (and that is how we work; if we do not agree we do not change!) must be generic and objective. ie, any change must be applied to all boats in the IRC fleets, although in practice changes often only directly affect sections of the fleets. They must also be capable of application using logical, repeatable, methodology with minimal individual assessment. Changes are made on an annual basis at the time that a boat revalidates her IRC certificate.

In practice, either Jean or I will 'lead' each individual research project. The detail will of course depend on the nature of the issue being researched. Typically however, we will make a theoretical analysis of the effect on speed of a design feature using appropriate design tools. We will review the actual performance of relevant boats and any full scale measured data or research data if that is available from any source. The outcome of this may lead to the development of a proposed change to IRC methodology. That change will then be tested against a small test set of boats following which Jean and I will review the potential effects. That is followed by a test of the proposed change against the whole IRC fleet by both the UNCL Centre de Calcul and the RORC Rating Office. Assuming a satisfactory outcome, we will then agree the change and coding of the change into the rating software or instructions to the rating offices will happen. The change will then be tested against the IRC fleet for correct implementation and anomalies.

As an example, during 2004, reports, observation, race results, and designer comment all suggested that modern, large fast boats fitted with bowsprits were beneficially rated. Analysis of race results supported by confidential performance data confirmed this, and research identified the particular features of the boats which gave the advantage. The existing mathematical treatment of bowsprits was reviewed and modified to reflect these findings. Tests against the whole IRC fleet showed small undesirable effects of the proposed change in some sections of the fleet. 'Fine tuning' of the maths removed these effects. The rating software was modified, the changes tested, and implemented with effect from 1st January 2005.

What then of the management of IRC on a day to day basis? Within the RORC Rating Office, that lies with Jenny Howells, Katherine Harker and Emma Cary. Within UNCL's Centre de Calcul responsibility lies with Ludovic Abollivier and Nic Lemarchand. While historically the software used has been independently generated by the two offices (but RIGOROUSLY tested to ensure absolute similarity), with effect from 1st January 2006, we are using the same software package. The underlying database will be resident in both offices, but will be synchronised daily to allow both offices access to up to date data for all boats in the fleets. This significant development not only improves the operational handling of IRC certification, but removes at a stroke the long standing (but in practice entirely unfounded) perception that certificates issued by the two offices produce different TCCs.



Apart from software, working practices and methodologies are also agreed between the two offices. Methodologies for the assessment of hull, rig and overhang factors are defined, agreed and written down. Increasingly, these are now being incorporated into the rating software. The offices are in regular contact with much sharing of information to ensure the consistency at the heart of IRC.

And IRC policy? That can best be summed up by directly quoting from IRC Rules:

- 2.2 *The IRC concept protects the existing IRC fleet.*
- 2.3 *IRC encourages design innovation consistent with stability, rounded performance, seaworthiness and safety.*
- 2.4 *IRC discourages unnecessary expense at all levels.*

Expanding slightly on this, IRC accepts novelty. But only consistent with *stability, rounded performance, seaworthiness and safety*. And only consistent with protection of *the existing IRC fleet*. In practice, that means that novelty is treated with caution. Do we always get this right? No. Do we then change when we have got it wrong? Yes. We work to the best of our abilities to recognise what is actually going on and to incorporate that into the calculation of IRC TCCs.

Mike Urwin

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