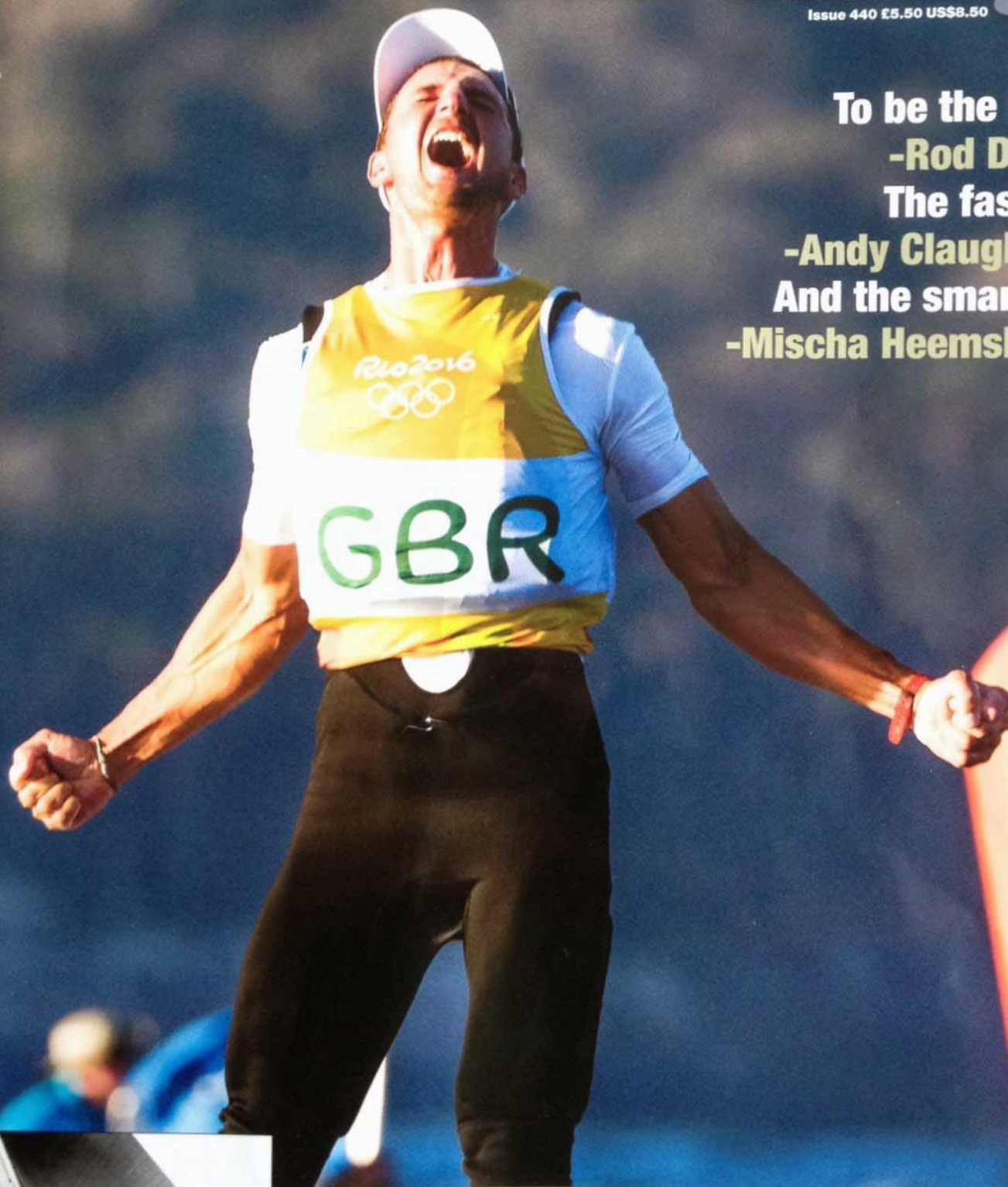


# Seahorse

## International Sailing

Issue 440 £5.50 US\$8.50



To be the best  
-Rod Davis  
The fastest  
-Andy Cloughton  
And the smartest  
-Mischa Heemskerk



**The last hurrah**  
- 1920 and all that

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## Contributors



**Mischa Heemskerk** used his latest DeckSweeper rig to crush a 118-boat fleet at this year's A-Class Worlds by winning 7 straight races



**Javier Soto Acebal** mixes superyacht design with the creation of a nice line in very fast but affordable small and mid-sized designs



**Sebastian Carlini** is a former Germán Frers design protégé about whom we should soon be hearing a great deal more



**Bernard Schopfer** is the Swiss driving force behind the Yacht Racing Forum – into its ninth edition in Malta this November



**Sir Ben Ainslie** looked unusually emotional (but not 'angry'...) after winning AC World Series Round 6 on home waters

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## Commodore's letter

**A**t this halfway juncture in my term of office the editor has asked me to share some thoughts on the possibility of a common rating system that he believes would benefit sailors worldwide. So here are some disconnected thoughts on a complex and sometimes colourful subject...

I often think that rating arguments have a very long history and am sure that Cleopatra's skipper challenged a Nile fisherman to a felucca race and they then agreed a rating formula taking length, breadth, draft and sail area into account. It has been downhill (or downriver) ever since.

I wonder if rating systems are a new religion in our largely secular Western world, the inclining test the substitute for the immaculate conception and hull factor the transubstantiation. The rules certainly attract some religious zeal. I have been struck by the considerable passion generated by the subject and seen some correspondence on the topic with language that would make a sailor blush.

I am a simple man with a non-scientific background. I have sailed under several rating systems. I have yet to lose a race where I could blame our rating for a poor outcome.

Our great club wears a few hats in this debate – we are, above all, an international association of members, the majority cruiser-racers, but with a strong and vital high-performance



Kiwi Boats, Florida, November 1976 and the aluminium spaceframe is ready to be lowered into designer Ron Holland's breakthrough 40-footer *Imp*, which would go on to be top boat in the 1977 SORC and the 1977 Admiral's Cup. With more powerful aft sections than typical designs of the day, *Imp* as expected powered away from her rivals downwind... but upwind she surprised even her designer

segment. We are proprietors, jointly with UNCL in France, of a longstanding, popular and widespread rule, managed by dedicated and specialist staff. We are lucky to run some amazing races. And we are looked upon as a credible leader in the evolution of our sport.

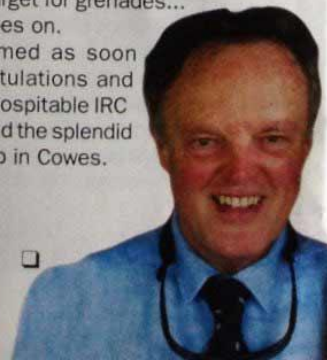
Many fine men and women have worked long and hard to simplify and globalise a common rule – sometimes gaining a couple of steps forward, only to lose a few back. We are inching forward on the universal measurement system, a model of IRC/ORC co-operation.

We continue to organise and expand our race programme and to ensure that IRC evolves to satisfy our many thousands of clients around the globe. As many of them have requested, we plan to offer them an IRC world championship and hope that World Sailing will soon give us that recognition.

The goal of a common international system, in the interest of sailors, remains and, to quote conflict negotiators, 'we continue to work on confidence-building measures'. Our peace table, however, is sometimes a target for grenades... *La luta continua* – the struggle goes on.

Normal service will be resumed as soon as possible. Meanwhile, congratulations and felicitations to the winners at the hospitable IRC European Championship in Cork and the splendid Brewin Dolphin Commodores' Cup in Cowes.

Michael Boyd  
Commodore



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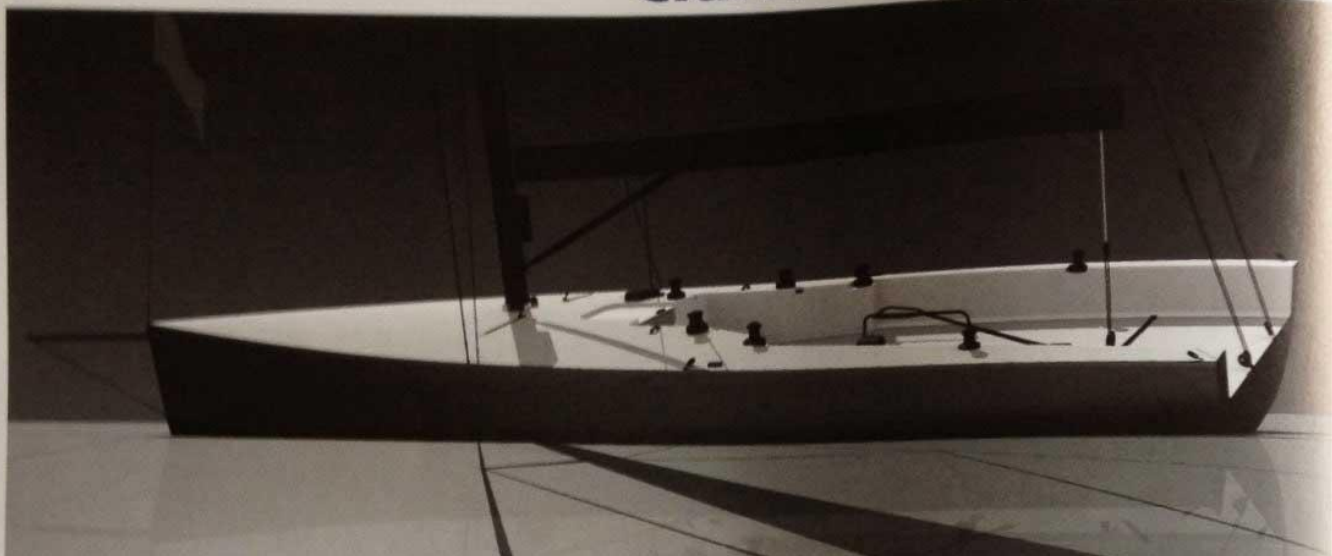
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# Most of the fun (less than) half of the price

Javier Soto Acebal describes his new 40ft raceboat design as 25-30 per cent IRC, 25-30 per cent ORCi with all the rest being pure Fast40+. Given the sales success of Acebal's Soto 40 and a base price of US\$345,000 for his latest boat, this one will surely give a lot of ambitious owners serious pause for thought...

This project has focused on a predetermined balance between the formulas ORC, Fast40+ and IRC. We first studied the varying formats used for local racing here in South America and from that identified the order of priority across the three systems while also ensuring international appeal to a wider audience.

The choice of variables that most influence performance, accounting for rating effects, varies depending on the system being considered. Displacement, draught, stability, materials and distribution of wetted surface, as well as sailplan, must all reflect the rule at hand.

But these variations can each be quite

subtle, which today allows us to create a boat that will be a satisfactory all-round performer under the different systems.

The brief for this boat was to take account of the balance between these formulas while creating an affordable 40-footer that was both very fast as well as quite simple and easy to sail to her potential. Given current strong competition in the 40ft size range, the last requirement in particular presented a serious challenge. What makes an easy-to-steer raceboat, for example, does not often make for the fastest boat possible.

To have a design with the capacity to make easy mode changes in the future, to suit different venues and different rule systems more specifically (realistically, variations in displacement, trim and stability), it is essential to have a strong base to start from, thus a structurally strong and lightweight hull with efficient appendages as standard and a high-ballast ratio.

The new boat is being built by Javier Mendez at M-Boats in Argentina, using primarily uni-directional and bi-directional E-Glass fibres, consolidated with epoxy resin, vacuum and post-cured in an oven. Uni-directional carbon is employed in those areas that are permitted under ORC without incurring big penalties; carbon capping of the keel floors, plus all of the longitudinals and primary structural frames, is permitted between 30 and 70% aft of the stem and below deck only.

Outside this area only E-Glass is used, similar to the Soto 40 one-design. This way we avoid triggering the ORC 'carbon

hull penalty' (and maintain better control of the boat's price).

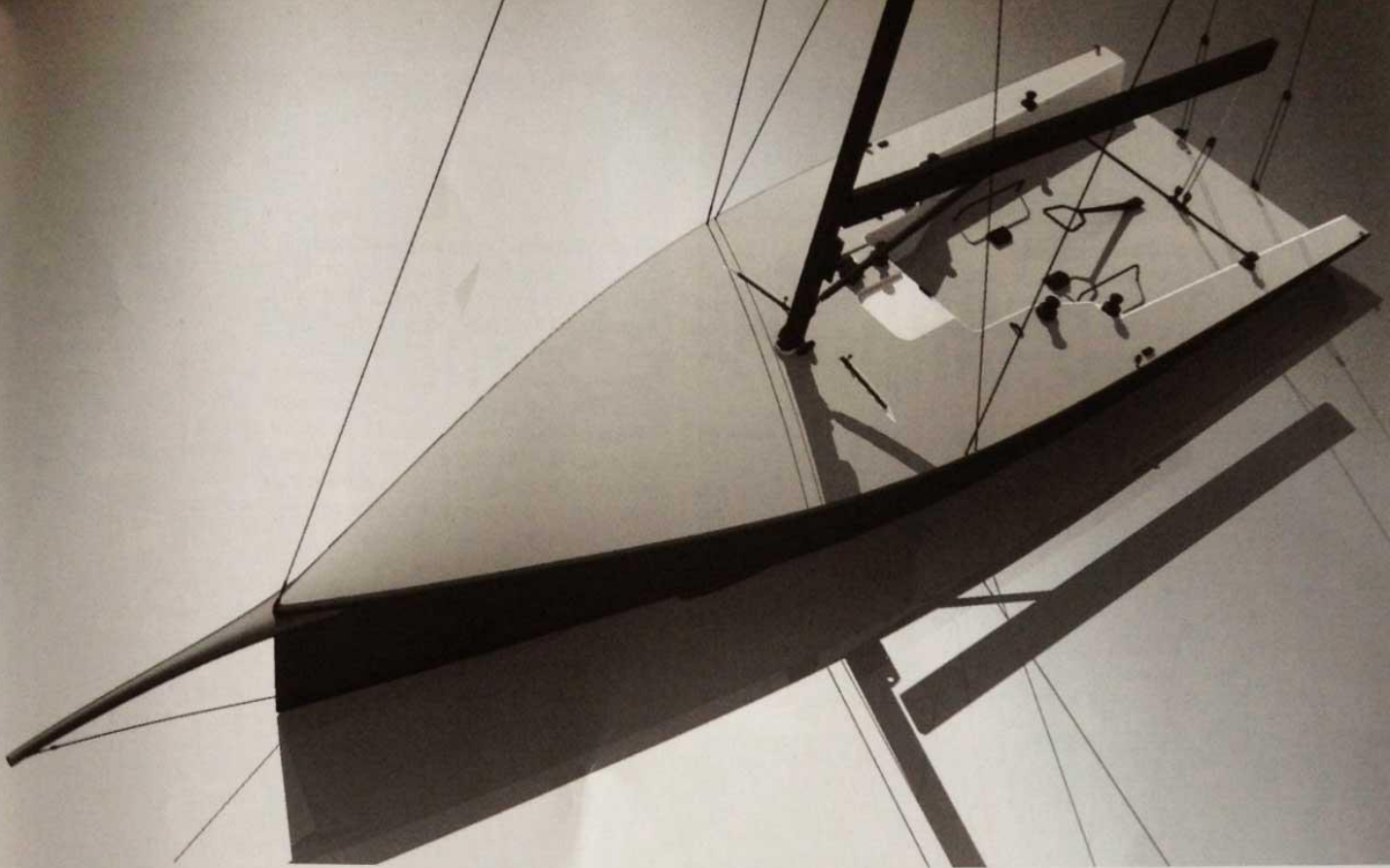
This construction system results in significant cost savings compared with a higher-tech build, along with the improvement in rating. And executed correctly you will still get a boat with excellent stiffness. Engineering is being undertaken by Pure Design & Engineering under the direction of Giovanni Belgrano.

The deck plan features the maximum beam carried aft to the transom, allowing the crew to move to the stern with no loss of righting moment. The topside sections are flared heavily all the way from bow to stern with little variation in angle, thanks to the use of a local chine in the bow area and a complex set of compound curves as you approach the transom.

The design quickly achieves a high-stability form with heel while maintaining a well-balanced underwater shape. This allowed us to use powerful stern sections to ensure a flat wake at most speeds with little or no lateral waterflow aft adding to hull drag. The final result offers the potential of very high-speed sailing with plenty of dynamic stability and good control.

The underwater sections start off circular at the bow turning elliptical towards the middle and stern of the boat. The final shape was identified after following an iterative process aimed at minimising the ratio of wetted area (variable) versus displacement (fixed), without losing sight of preserving the correct inertia (stability) with the chosen waterplane. The emphasis was on rapidly gaining dynamic stability with





For owners dazzled by the electric performance of the Fast40+ fleet but who do not necessarily want to sign on for an escalating arms race – and who may also prefer to race on handicap with their regular non-pro crew – Acebal's new 40-footer offers the impressive value for money for which this Argentinean designer is well known. However, since the boat also fits the Fast40+ rule very neatly there is no reason to miss out on the drama of the hottest new (almost) level rating fleet in the world when the mood takes you

heel plus the potential for exciting offwind sailing using a hull of minimum resistance and wetted surface when upright.

Our possible variations in displacement (4,000-4,200kg) have been carefully accounted for, focusing on the treatment of overhang shapes in the stern and bow area as well as controlling the stem entry angle at different boatspeeds. Achieving flexibility here allows us to identify the optimal final trim under ORC while leaving enough capacity to re-mode to other systems. The standard draft is 2.7m.

We are now seeing a steady trend to the less punitive rating of well-designed boats of lower displacement/length ratio than previously, particularly under IRC. This is encouraging. At the same time there has been a gentle but clear shift towards smaller boats also being able to enjoy the type of lighter-displacement sailing previously only enjoyed by their larger cousins.

Under IRC we are already seeing good results from the Fast40+ fleet, something we would not have witnessed three or four years ago, when of the lighter designs only the TP52s (and larger) regularly sailed to their IRC number.

However, still missing in my opinion is a similar move to accommodate asymmetrics, A-sails, tacked to a centreline sprit. IRC is working to accommodate today's preferred rig configuration with a mixture of rating adjustments and the encouragement of a wider mix of courses; but the ORC's complex aero model is not so kind.

One day it will be nice to finally bury the symmetrical spinnaker for everybody.

In the case of pure upwind-downwind courses, in the medium wind ranges the rating equations all remain quite tough to solve. Heavier and usually older designs continue to be very hard to beat in these conditions, particularly under ORC. Having established the all-round hull type we ultimately wanted, for this case we tried hard to optimise upwind performance, the important variables here being appendage area and planforms, distribution of sail area and mast location. Downwind pace depends on simpler variables such as upright resistance. Eventually we decided to go for a relatively large foretriangle, moving the mast aft, with a higher-aspect ratio mainsail plus appendages that are relatively more conservative than if we were designing a modern one-design or a pure, no-compromise Fast40+. For handicap racing it is all about attempting to sensibly balance these types of boats while preserving the capacity for exciting high-speed sailing.

On deck simplicity was the primary goal. The minimum of control systems pass below deck to minimise deck incursions and maximise watertightness. Below deck you will still find tackle systems for the traveller, outhaul, vang, cunningham and control of the jib tack, which seems a lot but is very little compared with, say, a current TP52 or the latest Fast40s.

Initially the boat will not feature a pedestal but this has been catered for as an easy retro-fit when required. Obviously for tight inshore racing the pedestal is a big aid to fast manoeuvres, particularly for hoists and drops.

The pit is offset to starboard with a single winch operating the halyards as well as the twin tack lines for the big A-sails – to allow proper peels. The deck layout also allows the halyards to be rerouted to the primary winches if a pedestal is installed.

The emphasis on simplification extends to the rig, with no backstay deflectors or locks on the jib halyards – the only lock being for the mainsail. Cost is a driver here – while use of the very latest technologies is always tempting, it is also too easy to allow costs to spiral. For the same reason the boat is delivered as standard with rod standing rigging in lieu of PBO or carbon. We have also limited the range of mast rake and forestay/jib cunningham adjustment to avoid the need for complex and expensive hydraulic systems.

The bowsprit might be considered unusually long; however, in our latest studies we observed that beyond the normal length needed for the A-sail there is further advantage in performance vs rating in continuing to move the tack of the sail away from the mast. At the same time you enjoy better balance and control and therefore higher average speeds when pressing the boat hard off the wind.

The interior is rather minimal, basically an open structure where the priority is on race functionality, sail handling and stowage and weight concentration. There are some concessions... a toilet, a sink, a two-burner stove but nothing more.

The first boat will go afloat in February 2017. The ex-factory price is US\$345,000. Javier Soto Acebal, Argentina