*English version*

# TECHNICAL SUBMISSION - IRC CLASS 2026

## PREAMBLE

### Governance and role of the IRC Class

The IRC rating system is based on an international regulatory framework approved by World Sailing. Its foundations are detailed in the IRC Constitution 2023 and in its governance principles.
As the national association of owners, the IRC Class acts as the National IRC Committee for France. In this capacity, it serves as the essential link between the fleet and international decision-making bodies. In accordance with Article 4 of the Constitution, IRC governance is based on a separation of functions ensuring political coherence and technical rigor:

- **The Board (Article 4.1)**: Defines the political strategy and ensures the durability of the rating.
- **The IRC Congress (Articles 4.2 to 4.5)**: Representative body composed of one elected member per country (including France, via our Class). It is the place where rule changes are proposed and debated annually.
- **The Technical Committee (Article 4.6)**: Appointed by the Congress, it holds exclusive authority over the technical content and the rules' algorithms.

### Mandate of the IRC Class

Our mission is to carry the voice of French owners to these bodies. We are committed to:

- **Guaranteeing sporting equity**: Identifying gaps between the calculation model and real performance to propose constructive adjustments.
- **Supporting innovation**: Ensuring that technological developments are integrated without breaking the accessibility of the rating.
- **Participating in the decision-making process**: Submitting documented technical changes, in accordance with international procedures, to enrich the debates of the IRC Congress.

### Purpose of the submissions

The following document gathers a series of technical proposals developed by the Technical Commission of the IRC Class. In accordance with the regulatory submission process, these proposals are transmitted to the IRC Board for preliminary study by the Technical Committee, with a view to being debated during the annual IRC Congress and then voted upon. These submissions must be filed at least 28 days before the congress, which usually takes place in early October each year.

## INTRODUCTION

One of the main questions from runners who are members of the IRC France Class concerns the designs of new boats, mainly the JPK 1050 and POGO RC, which are setting very fast times in specific conditions and giving them a sometimes very significant advantage, to the detriment of equity.

The first step of this subject is to be able to objectively characterize the “dynamic” criterion of their waterline length (subject of submission 1) and also more generally the capacity of modern hulls to be able to plane and free themselves from the Archimedean regime (subject of submission 2).
The second step is: once these performance gaps are characterized, how to restore sporting equity (subject of submission 3). And paradoxically, it seems that this step is as, if not more, complex than the first, because it is as much technical as it is political. As the performance curves of a planing boat and a more classic design are not homothetic, restoring equity by adjusting a single coefficient is a complex and delicate exercise.
The phenomenon is not new, it is amplified by the new designs of new boats. We note on this subject a first fracture in the 2010s when the SF3200 and JPK 9.60 started to seriously sweep the bodies of water. The performance comparison shows that the performance gaps are equivalent between a First 36.7 and a JPK 1010 on one hand, and between a JPK 1010 and a JPK 1050 on the other hand (see study of submission 3).
Submissions 1, 2 and 3 are linked and dictated by the architectural innovations currently underway in the IRC class. The context elements exposed in submission 3 are also to be retained for submissions 1 and 2.
Submission 4 is independent and concerns the treatment of “Code 0” sails, which are currently considered as spinnakers.

## SUBMISSION 1: Optimization of the waterline length (LWP) model accuracy for Scow and Semi-Scow designs

**Context:**

The significant emergence of "Scow" or "Semi-Scow" type designs, characterized by voluminous bow sections, makes an adjustment related to the evolution of modern hulls necessary. This proposal is a continuation of the technical work carried out by the IRC Class on the evolution of hull designs, aiming to maintain the historical equity of the rating.

**Proposal:**

In order to increase the accuracy of the model, we suggest integrating a weighting factor based on the volume distribution at the bow. The analysis would be based on existing metrics such as the bow fineness ratio (BO/LH) and the forward volume ratio (x/BO).

**Reasons:**

1. The static measurement of the LWP does not reflect the dynamic waterline length under navigation. Under the effect of speed, pitching, heel, and the bow wave, the forward volumes of modern hulls come into greater contact with the water. This increased immersion considerably increases the effective waterline length, and by extension, the boat's limiting speed potential.
2. The recent analysis of our rating data on 47 boats shows that designs identified as "Probable Scow" present unconventional geometric characteristics:
    - The BO/LH ratio is greater than 0.12, i.e., a forward fineness exceeding 12% of the hull length.
    - The x/BO ratio exceeds 0.85, placing the maximum volume on the 85% most forward of this fineness.
3. Even more telling, the x/BO ratio for these Scow designs oscillates between 94.2% and 100%, where traditional designs show significantly lower values. This geometric signature

demonstrates that the volume is concentrated at the ends, generating a dynamic length not captured by the current rating.

**SUBMISSION 2: Evolution of the formula for equitable treatment of hulls capable of planing**

**Context:**

We observe a proliferation of light sailboats, characterized by wide stern sections, voluminous bows, and powerful rigging downwind. These platforms quickly leave their Archimedean regime to switch to planing mode, creating a major performance distortion compared to conventional displacement sailboats.

**Proposal:**

It is proposed to integrate the planing potential. This evolution, aiming to maintain the attractiveness of the fleet, relies on the IRC Class's historical capacity to support major architectural evolutions.

**Reasons:**

1. To objectively evaluate this leap in performance, the simulations are based on a mathematical "planing score." This score allows for the precise classification of the dynamic behavior of sailboats.
2. This score perfectly isolates sportboats, ultra-light cruiser-racers, and modern reaching hulls. As soon as weather conditions allow planing, these types of hulls show a disproportionate advantage downwind that the current TCC fixed increment does not compensate for.
3. Conversely, sailboats typed as "displacement" or of more classic design remain prisoners of their hull speed limit. The use of a dedicated index allows for the adjustment of the Hull Factor in a progressive and non-linear manner according to the real planing potential, thus protecting the competitiveness of Archimedean hulls.
4. The comparative analysis reveals a significant performance gap: in pure Archimedean regime, performances are convergent, but as soon as access to planing is gained, an additional speed gain of 5 to 10% is observed in the transition phase, reaching 20% and more in stable planing mode.

**SUBMISSION 3 (DISCUSSION TOPIC): Harmonization of equity on modern coastal courses**

**Context:**

With the dispersion of performance typologies, the IRC's single coefficient system (TCC) accentuates the prevalence of weather conditions on coastal-type courses. On these routes, wind angle and wind strength become the dominant factors, critically increasing performance gaps between different architectural generations.

**Proposition / Question to the Board:**

"How can we have a rating that better represents the reality of modern coastal courses?" Based on the simulations and data collected during our recent technical commissions, the Class wishes to open a constructive exchange with the Technical Committee to explore solutions allowing to preserve equity on coastal courses.

**Reasons:**

1. On prolonged reaching or broad reach sections, Scow or planing-typed hulls show speeds 10% to 25% higher than Archimedean sailboats within the same class. Un tel écart de vitesse pure rend toute compensation par un TCC unique mathématiquement inefficace.
2. We request the opening of a global reflection on the future of the rating faced with these design ruptures, notably through the study of modular ratings according to the type of course or wind strength or configurations allowing to smooth these gaps and preserve the attractiveness of coastal regattas.

**SUBMISSION 4: Evolution of the treatment of "Code 0" type sails**

**Context:**

The evolution of the design of certain Code 0s can create an imbalance in the evaluation of upwind performance in light wind for sailboats equipped with them. These sails, tacked on a bowsprit, with clew points forward of the shrouds, are used to go upwind to very tight angles while being counted as spinnakers.

**Proposal:**

A sail considered a spinnaker for measurement purposes, but whose calculated area (SPA) is less than 60% of the permitted spinnaker area stated on the boat's IRC certificate, will be measured and declared as a flying jib.

**Reasons:**

1. **Performance distortion:**: These sails allow maintaining efficient upwind sailing (45° to 60° TWA) with a large sail area (approximately 2x more surface than a J1), their design (relatively short foot) allows them to work efficiently upwind.
2. **Adaptation of the measurement framework:**: The current measurement mode equates these sails to spinnakers, whereas they are used upwind; this is indeed a diverted use.