



# ORC Club Rule

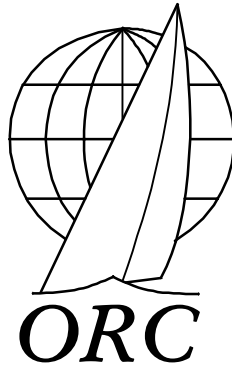


ORC

World Leader in Rating Technology

*Simplified Handicap System*

*Published by the*



*World Leader in Rating Technology*

# ***ORC Club***

## **Handicap Rule**

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Ariadne House, Town Quay  
Southampton SO14 2AQ, UK  
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[www.orc.org](http://www.orc.org)

### ***ORC Club Administrative Philosophy***

As the name implies, ORC Club is an economical, simplified handicapping system intended mainly for racing at the club or area level. The measurement input used to produce Club certificates is not as rigorously controlled as that for IMS. It is important that owners and administrators understand Club's objectives, how it achieves these, what Club's limitations are and what compromises have been made and why. Owners are responsible for doing their best to supply correct input information and for asking their Rating Office or local measurer for assistance when in doubt.



## **ORC Club -- General**

### **Summary Description of ORC Club:**

*ORC Club* handicaps are calculated using the ORC Velocity Prediction Program (VPP). The handicaps are compatible with IMS for scoring races. *Club* and IMS rated boats may be scored together in the same race or *Club* and IMS boats may be segregated for racing and *Club* may be administered as a stand-alone system.

From the owners' and race administrators' perspective, *ORC Club* is considerably simplified relative to IMS. It is on a par in this regard with other simplified systems, but does not sacrifice the rating accuracy possible with VPP handicapping. It also offers the Rating Authority and/or race organiser with scoring flexibility not available with other simplified systems. *ORC Club* scoring can be done with a hand calculator if desired.

Measurement input is minimized. Declarations, owner-measured input, design specifications and class standardized data are accepted in most cases, although local administrators may exercise discretion as may suit their standards. The IMS Regulations may be used in conjunction with *ORC Club*. These accommodation and outfit specifications classify boats as either Racing Division or Cruiser/Racer Division, there being further time allowance credit applied to yachts of the C/R Division.

### **Administration**

The sole authority for *ORC Club* is the ORC and the Rule shall be maintained and administered at ORC discretion, including, *inter alia*, periodic rule and formula changes, rule interpretations, designation of Rating Authorities and specification of input data used to produce certificates, whether for a specific yacht or yachts or for yachts in general. Valid *ORC Club* certificates may be issued only by the ORC and by rating authorities so authorized by the ORC.

*ORC Club* ratings may change due to annual revisions to formulations in the VPP. Ratings may also change due to refinement of default measurement calculations and/or additions to and refinements in the analysis of the world database on which certain default values are based, including changes in assignment of offset files to yachts for which there are no full hull measurements.

### **Time Allowances**

The basic scoring options displayed by default on all *ORC Club* certificates are three; A) Performance Line OFFSHORE, B) Time-on-Distance (GPH) and C) Time-on-Time (ILC). Some of these scoring selections may be replaced by others or the titles given to them may be changed by the Rating Authority issuing certificates. Any available options will all appear on the IMS certificate as well, so there is always scoring compatibility between the two rules.



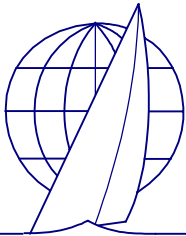
## **ORC Club Certificate**

### **Data Displayed on the Club Certificate:**

For the most part the data displayed on the *ORC Club* certificate is intended to be self-evident and requires little explanation. In water freeboard heights fore and aft will not show values if the rated yacht's hull has not actually been machine measured. The diagram of the yacht is representational, not accurately to scale.

Listed below are items which may require explanation or may not be evident from examining only a single example of a certificate for a particular boat.

- The rig configuration details vary with the input. Thus, the spreaders diagrammed match the spreader count, the standing rigging matches adjustable stays recorded, jumpers are shown if recorded and split rigs are shown with a mizzen together with appropriate dimensions.
- A bow sprit is shown if the jib can be tacked forward of the stem.
- The transom geometry will match the *Club* transom code (or default to a reverse transom without an outboard rudder if not coded). Codes are provided for outboard rudders. Neither of these codes has any effect on ratings.
- Asymmetrical spinnakers are shown according to the type declared for the yacht; i.e., the type which the rule requires to be tacked on the yacht's centerline (and no pole is permitted aboard) or else the type of asymmetrical which may be tacked on a spinnaker pole aboard the yacht.
- A cruising-type jib furler/reefer, is displayed if fitted.
- Only a polyester/nylon sail inventory produces a message to that effect adjacent to the sailplan.
- "Issued" date and time in the Rating Authority box identify when the certificate was calculated.
- "Rated Data as of..." date between the diagram and the data table is the date of most recent measurement or revision to the certificate input data.
- Dynamic Allowance (DA) prints on *ORC Club* certificates under Division and is a calculated credit which applies only where the yacht is identified as of the Cruiser/Racer Division (see IMS Regulations booklet).
- The *Club* certificate will not display values related to Stability Index and Limit of Positive Stability where there is neither actual inclining measurement nor a database for the class. In these cases, a message referencing the appropriate section of the ORC Special Regulations (3.02.1, Stability) is printed instead.



# ORC Club

"VPP Inside"

Offshore Racing Council  
Southampton SO14 2AQ, UK  
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**Rating Certificate -- 2001**

Not Valid Beyond 12/31/2001

Sail No.: **US-12345**

**"PARAGON OF VIRTUE"**

Certificate No.: **12345**

## Scoring Selections

A. Performance Line OFFSHORE:



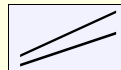
**Corrected Time = (0.826 x Elapsed Time) - (87.1 x Distance)**

B. Time-on-distance (GPH):



**Corrected Time = Elapsed Time - (588.9 x Distance)**

C. Time-on-Time: (ILC)



**Corrected Time = 1.0329 x Elapsed Time**

ORC Rating Authority

Owner

Issued 2/NOV/2001, 09:50:26 by:

"I certify that I understand my responsibilities under the Club Rule"

ORC

Signed \_\_\_\_\_

Tel: +44 1473 785 091

Tel: +44 1473 785 092

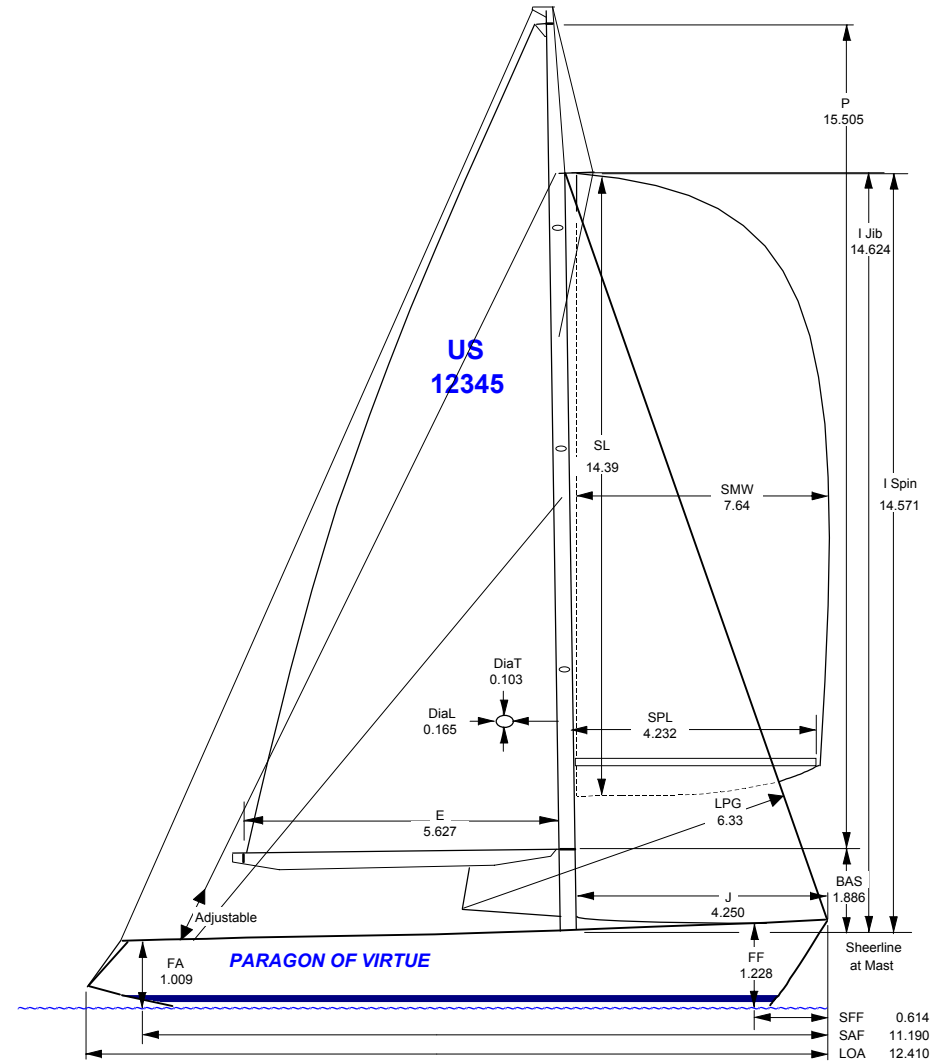
ORCclub@compuserve.com

Ref: PARAVIRT/SA/PARAVIRT

MR JOHN Q SAILOR

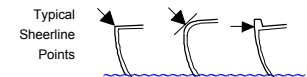
123 SPINNAKER LANE

PORTSMOUTH, RHODE ISLAND 02871



**Rated Data as of 8/JUN/2001 (meters/kilos)**

Rig (spreaders, etc.) as diagrammed above.



Class:	TRIPP 40	Displacement:	5747	Keel/CB:	FIXED KEEL
Designer:	TRIPP	Draft:	2.305	RudConst:	STANDARD
Builder:		MaxBeam:	3.630	AgeDate:	5/1991
PropInst:	EXP/FLD	FwdAccom:	NO	SeriesDate:	
PRD:	0.434	AccomLgth:	11.797	CrewWt:	815
StabIndex:	121.9	BoomCnst:	NOFIBER	Division:	C/R DA=0.00%
LPS:	MEETS REQ	MastMatl:	NOCARB	HullCnst:	LIGHT/OTHER



# ORC Club

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CERTIFICATE No. 12345

ORC CLUB 2001

GPH	ILC
588.9	653.5

Offshore Racing Council  
Southampton SO14 2AQ, UK  
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--- YACHT DESCRIPTION ---

Name: PARAGON OF VIRTUE  
Sail No: US-12345  
Class: TRIPP 40

RATING OFFICE:

Issued: OFFSHORE RACING COUNCIL  
07/AUG/01 Tel: +44 1473 785 091  
18:04:58 Fax: +44 1473 785 092  
ORCclub@CompuServe.com

OWNER:

MR JOHN Q SAILOR  
123 SPINNAKER LANE  
PORTSMOUTH, RHODE ISLAND 02871

Files:

PARAVIRT.DAT 08/JUN/2001 10:00:25  
PARAVIRT.OFF 05/JUN/1992 15:50:08

----- ORC CLUB OPTIONAL SCORING SHEET -----

----- TIME ALLOWANCES IN SEC/MI BY TRUE WIND VELOCITY & ANGLE -----

Wind Velocity:	6kt	8kt	10kt	12kt	14kt	16kt	20kt	CHECKSUM
BEAT ANGLES:	44.0°	41.6°	39.3°	37.8°	36.9°	36.5°	36.5°	( 272.6)
BEAT VMG:	917.0	785.3	723.8	691.3	672.6	661.8	656.0	(5107.8)
52°:	592.8	527.3	502.1	488.3	479.8	474.5	469.5	(3534.3)
R 60°:	557.3	505.4	484.5	472.2	464.0	458.7	452.8	(3394.9)
E 75°:	532.3	486.8	463.9	451.2	442.4	436.1	427.8	(3240.5)
A 90°:	535.7	483.3	458.7	441.4	427.8	418.5	407.7	(3173.1)
C 110°:	549.7	488.6	457.3	434.9	418.4	406.5	390.0	(3145.4)
H 120°:	584.0	506.4	468.8	441.9	420.3	402.5	375.4	(3199.3)
135°:	700.5	561.7	501.9	467.8	441.4	418.6	379.0	(3470.9)
150°:	853.9	671.3	568.4	509.3	474.2	447.5	403.5	(3928.1)
RUN VMG:	986.0	775.2	656.3	572.7	518.3	482.5	432.7	(4423.7)
GYBE ANGLES:	138.6°	142.2°	149.3°	164.4°	170.2°	173.1°	174.1°	(1111.9)

NOTE: To convert any time allowance above to speed in knots: Kt = 3600/TA

Performance Line Scoring -- Time Factor: 0.826 Distance Factor: 87.1

----- TIME ALLOWANCES FOR SELECTED COURSES -----

Wnd/Lwd VMG	1036.2	831.5	719.4	652.2	609.4	581.0	546.0	(4975.7)
Olympic 6-leg	963.5	781.7	685.0	629.1	594.6	571.9	543.8	(4769.6)
Circular Rndm	793.5	649.0	572.8	528.8	501.4	483.1	459.2	(3987.8)
Non-Spinnaker	866.7	699.3	608.8	555.5	522.2	500.4	473.3	(4226.2)
Ocean for PCS	918.8	722.8	612.8	544.9	500.1	468.6	425.6	(4193.6)

----- SIMPLIFIED SCORING OPTIONS -----

	Time-on-Distance (sec/mi)	Time-on-Time TMF	Performance Line PLT PLD
OFFSHORE	588.9 (=GPH)	1.0188 (=600/GPH)	0.826 87.1 (Ocean)
INSHORE	653.5 (=ILC)	1.0329 (=675/ILC)	1.001 272.4 (Olympic)

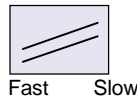
Performance Line Corrected Time = (PLT x Elapsed Time) - (PLD x Distance)



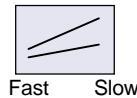
### Scoring Icons:

The time allowance data under “Scoring Selections” was explained above, the formulae are shown on the certificate and scoring icons are displayed to remind users of the scoring types. Very briefly, the scoring icons are a visual cue to owners and race committees as to the time allowance effects of the three fundamental types of scoring (PLS, T-o-D, T-o-T).

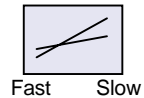
TIME-ON-DISTANCE



TIME-ON TIME



PERFORMANCE LINE



The two plot lines in any icon represent the time allowances (TAs) of two hypothetical boats across the wind velocity spectrum, the left side of the graphs being high wind velocity, the right side low velocity. Let’s say they represent the TAs for your boat and my boat. The distance between the two lines represents the time your boat gives my boat in a race.

With T-o-D, the time allowance your boat gives my boat will not change with wind velocity (it will change with race distance, of course). Your boat will always give time to my boat, no matter what wind velocity in the race.

With T-o-T scoring (TMF), this time given will increase progressively as the wind velocity decreases (see icon). Again, your boat will always give mine time, no matter the wind velocity.

With PLS, your boat may give mine time at high wind velocity, but the VPP says mine is faster than yours at low wind velocity. Thus, there is a crossover of the two plots, a point of wind velocity at which we actually race “even-up”.

Of course, with PLS (VPP) handicapping, it is not necessarily the case that any two boat’s TA plots will actually cross over; it all depends on their relative predicted performance across the wind spectrum. This icon is meant to remind users that only under PLS can there be cross-over.

### Club Optional Scoring Sheet

At the National Authority’s or event organizer’s discretion, yachts with *ORC Club* certificates may be scored along with yachts with IMS certificates under more sophisticated IMS scoring systems such as Performance Curve Scoring. To ensure scoring compatibility in such circumstances, an Optional Scoring Sheet may be provided by the Rating Office. This sheet is a facsimile of the tabular time allowance data presented on IMS certificates. The data may be necessary for manual input to local scoring programs. Details of IMS time allowance data and scoring procedures are given in the ORC publications IMS Rule book and IMS Guide.





## **ORC Club Input**

### **ORC Club Input -- Measured Data Set and Constructed Data Set:**

By definition, an *ORC Club* certificate is produced on the basis of some combination of “measured” and “constructed” measurement input (see also IMS 103.2(c)). Immediately below is a list of minimum measurement inputs required to produce an *ORC Club* certificate (in addition to the usual owner, yacht and administrative information). In the section which then follows is a list of each of the “constructed” inputs the Club rating program is capable of supplying, given the minimum inputs below. Once the required inputs have been entered and the constructed inputs have been generated by rating program, the combined set of data will be processed by the VPP in the same way as for IMS processing.

### **ORC Club Model Application Form:**

The *ORC Club* model Application Form provides for the complete set of minimum inputs listed below. Rating Offices may establish *Club* input practices more stringent than the minimum input provided as standard on the Form and listed below, but not fewer inputs.

Where additional measurement data beyond the minimum is supplied, the additional input supplied will replace what otherwise would be the corresponding *Club* constructed data. Any additional data must be provided in complete logical sets (e.g., **all** mainsail girths **and** HB, not just one or two girths).

As determined by the Rating Authority, in instances where class standard values are available, the standard data may be used (again, in logical sets) for all and any required values.

### **Summary of Minimum ORC Club Inputs & Cross-Reference to IMS Measurement Rules:**

Yacht/Owner Information & Office Administrative Information (see Application Form)

Forward Accommodation (Yes/No -- IMS 724.3)

Hull Construction (Solid/Cored/Light/Carbon -- IMS 724.1)

Mast Material (Carbon or Other)

Rudder Construction (Standard or Carbon -- IMS 724.2)

Boom Material (Light/Heavy -- IMS 724.7)

Spreader Count (IMS 724.4)

Runner Count (adjustable backstays below the hounds -- IMS 810.2.c)

Jumpers (Yes/No -- IMS 724.5)

Age Date (IMS 108.1)

Series Date (IMS 108.2)

Forestay (Adjustable/Fixed -- IMS 810.1)

Inner Forestay (Adjustable/Fixed -- IMS 810.2.a & b)



Jib Furler/reefer -- cruising type (Yes/No -- *Club* only)

Sail Cloth (entire inventory Dacron/Terelyne/Nylon or Otherwise -- *Club* only)

Transom/Rudder Code (Reverse/Traditional/Vertical/Canoe/Outboard)

Declared Crew Weight, if any (IMS 712 & 713)

Division (Racing or Cruiser/Racer -- see IMS Regulations booklet)

Prop Installation Type (IMS 604; note additional type for *Club* only -- Exposed, No Strut)

Propeller Type Code (IMS 602)

PRD (IMS 603.1)

General Sail Measurement Prescriptions -- IMS 801

Measurement Reference Point (Datum) for Rig Heights -- IMS 802 & 508

IG (IMS 805.1)

ISP (IMS 805.2)

SPL (IMS 804.2)

TPS (IMS 804.3)

J (IMS 803)

SFJ (IMS 803.1)

P (IMS 806)

BAS (IMS 807)

E (IMS 808.1)

MDL1 (IMS 805.6)

MDT1 (IMS 805.5)

Taper (Yes/No)

Asymmetrical Spinnaker Category, if any (IMS 804.1)

SL (IMS 820)

SMW (IMS 819) or SMG (IMS 822)

LPG (IMS 813.1 & 2)

JR (Yes/No -- IMS 813.)

IY (IMS 829)

PY (IMS 831)

BASY (IMS 832)

EY (IMS 833.1)

EB (IMS 835)

MDL1Y (method follows MDL1)

MDT1Y (method follows MDT1)

Taper (Yes/No)

YSF (IMS 840)

YSD (IMS 841)

YSMG (IMS 842)

DSPM (IMS 402 -- if Standard/sistership or Measured Freeboards are not used)

LOA (IMS 507)



**Table of Constructed Measurement Inputs:**

Below are listed all measurements for which IMS98.EXE can produce constructed values, given the minimum set of inputs in the list above. Where any of the measurement values below have not been supplied, values for ORC Club are supplied by Club default formulae.

*IM*  
*MW*  
*GO*  
*TL*  
*MDL2*  
*MDT2*

*Carbon Mast Gyradius Adjustment*

*BD*  
*FSP*  
*SPS*  
*LPIS* (assumed 0.0 all boats unless measured otherwise)  
*BAL*  
*CPW*

*HB*  
*MGT*  
*MGU*  
*MGM*  
*MGL*  
*MSW*

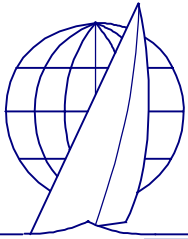
*BALY*  
*BDY*

*TLY*  
*MDL2Y*  
*MDT2Y*

*HBY*  
*MGTY*  
*MGUY*  
*MGMY*  
*MGLY*

*Prop Installation -- all inputs except Installation Type, Prop Type and PRD*

*FF*  
*FA*  
*RMC*



APPLICATION FORM

# ORC Club

“VPP Inside”

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OFFSHORE RACING COUNCIL  
Ariadne House, Town Quay  
Southampton, SO14 2AQ, UK

NATIONAL AUTHORITY

**OWNER INFORMATION** - please print clearly

Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Tel: \_\_\_\_\_  
Fax: \_\_\_\_\_

OFFICE USE

Certificate No: \_\_\_\_\_  
Series Date: \_\_\_\_/\_\_\_\_/\_\_\_\_  
Meas Date: \_\_\_\_/\_\_\_\_/\_\_\_\_  
DAT: \_\_\_\_\_  
OFF: \_\_\_\_\_

**YACHT IDENTIFICATION**

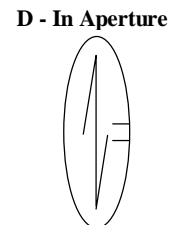
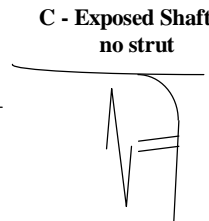
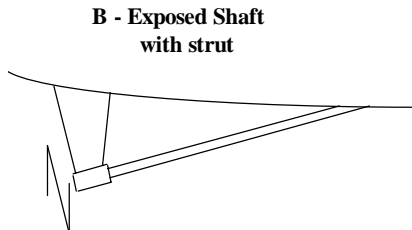
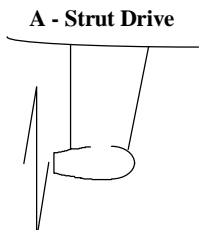
Yacht Name: \_\_\_\_\_ Sail Number: \_\_\_\_\_  
Class or Model: \_\_\_\_\_ Designer: \_\_\_\_\_  
Builder: \_\_\_\_\_ Builder's Hull Identification Number: \_\_\_\_\_  
Model Version (e.g. Tall Rig, CB or Iron Keel): \_\_\_\_\_  
Month and Year first launched: \_\_\_\_/\_\_\_\_  
Have **modifications** been made to original **rig**? • yes: \_\_\_\_\_  
Have **modifications** been made to the original **hull** or **appendages**? • yes: \_\_\_\_\_

**UNITS OF MEASUREMENT**

Measurements to be in consistent units (meters/kilograms or feet/pounds). Take each measurement to the number of decimal places indicated (for measurements made in feet, 1/8" may be taken as equal to 1/100 of a foot).

**PROPELLER INSTALLATION**

Installation Type (see types below): \_\_\_\_ If type A, enter builder & model: \_\_\_\_\_



E - No Inboard Engine

(omit questions below)

(Check here • and provide photos or drawings if none of the illustrations resemble your installation.)

Propeller Type: • Fixed • Folding • Feathering      Number of blades: \_\_\_\_

Propeller Diameter: \_\_\_\_ (tip-to-tip, fully opened -- nearest millimeter or 100th ft)

**CONSTRUCTION & ACCOMMODATION DATA**

**Hull & Deck Construction:** (check one)

- SOLID FRP, metal or wood construction (cored decks included)
- CORED FRP or wood skins with core of lighter material
- LIGHT advanced composite construction, excluding carbon fibre
- CARBON FIBRE construction

**Rudder Construction:** check here • if the rudder or ruddershaft contains carbon fibres.

**Forward Accommodation:** check here • if this yacht has fully fitted out sleeping or living accommodations of solid construction forward of the mainmast (e.g. solid bunks with personal stowage lockers, etc.).

**CREW WEIGHT DECLARATION**

Enter the maximum total crew weight aboard while racing: \_\_\_\_ kilograms or pounds (circle one)

v2

## RIG & SAILPLAN

V2

Guided by diagrams at right, fill in all entries relevant to your rig and sailplan. Measurements across cloth (marked \*) are taken to the nearest centimeter / tenth of a foot; all others to the nearest millimeter / hundredth of a foot). Each sail dimension is to be largest found on any such sail used.

### Mainsail:

BAS \_\_\_\_\_ P \_\_\_\_\_ E \_\_\_\_\_

### Foretriangle:

SFJ \_\_\_\_\_ IJib \_\_\_\_\_ J \_\_\_\_\_ LPG\* \_\_\_\_\_

### Spinnakers

ISpin \_\_\_\_\_ SPL\* \_\_\_\_\_ SL\* \_\_\_\_\_ SMW\* \_\_\_\_\_

### Mizzen:

BASY \_\_\_\_\_ PY \_\_\_\_\_ EY \_\_\_\_\_ EB \_\_\_\_\_

IY \_\_\_\_\_ YSMG\* \_\_\_\_\_ YSD\* \_\_\_\_\_ YSF\* \_\_\_\_\_

### Mast dimensions:

DiaL \_\_\_\_\_ DiaT \_\_\_\_\_ DiaLY \_\_\_\_\_ DiaTY \_\_\_\_\_

### Sail Details: Is the yacht fitted with...

...sails of materials other than woven Dacron (Terylene) or Nylon? • yes

...a **jib furler**? • yes ...a jib luff foil • yes ...jib **roach**? • yes \_\_\_\_\_

...an **asymmetric spinnaker** • yes

...if it is tacked on centreline, enter TPS \_\_\_\_\_ and note that **no spinnaker pole is allowed on board while racing.**

### Spar details: Does the **mast** contain any **carbon fibre**? • yes

Is the **boom** made of a **composite**, other than E-glass? • yes

Is the • mainmast or the • mizzenmast **tapered**?

Number of **spreader sets** on mainmast: \_\_\_\_\_ (do not count jumpers)

## HULL DATA

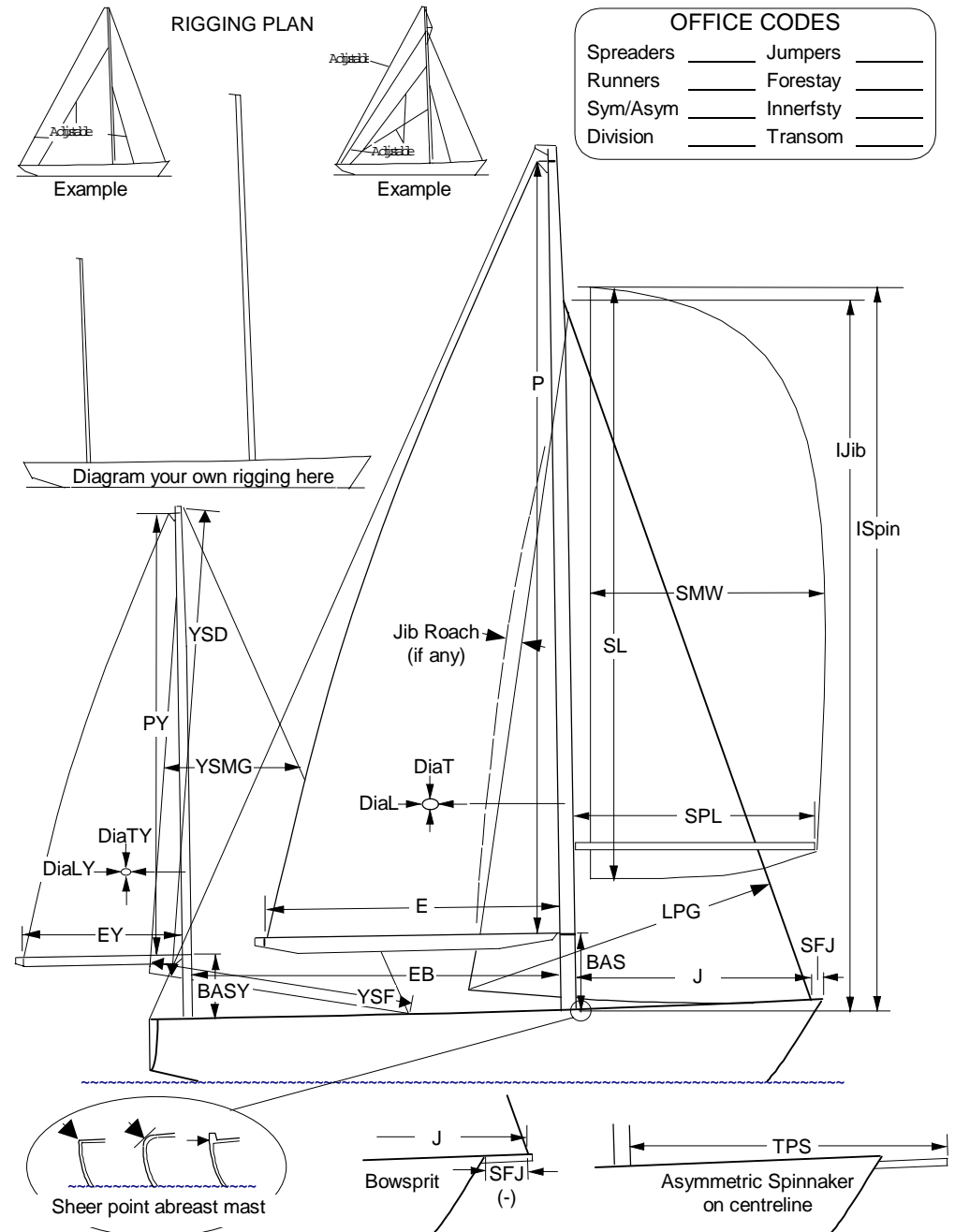
Design **displacement**• or empty measured **weight**• : \_\_\_\_\_ kg or lbs.

**Keel ballast** material ...• lead ...• iron LOA: \_\_\_\_\_

Contact your Rating Authority to learn if your yacht is on the list of classes for which hull lines are on file. They will advise of any further requirement.

I hereby certify that the measurements entered hereon are accurate to the best of my knowledge and ability.

Owner's Signature: \_\_\_\_\_ / /



## DEFINITIONS -- *ORC Club* MINIMUM MEASUREMENT INPUTS

(Note: For reference, numbering relates to the corresponding IMS measurement prescriptions.)

### **108. Rule Dates.**

1. **Age Date.** This date shall be the month and year of launching, completed and equipped for sailing.
2. **Series Date.** The Rating Authority may authorize a Series Date, being the Age Date of the earliest yacht of a production series. Rating Authorities are entitled to modify the Series Date as a result of a boat being modified from the original model.

### **402. Measurement Afloat and Displacement.**

The displacement of the yacht may be derived from in-water measurement of fore and aft freeboards, class freeboards or the yacht may be weighed and that weight recorded directly as its displacement. The displacement used in the rule is based on a loading called Measurement Trim. The fundamentals of this loading are:

The yacht shall be completed and equipped for sailing, including bunk cushions in place, anchors and batteries in their normal locations, any internal ballast secured to the hull, bilges dry and, normally, any tanks are to be empty. Navigational, cooking and safety equipment shall be on board, but no liferaft nor dinghy. If the yacht's engine is an outboard and carried while racing, it shall be aboard. No clothing, spares, food or other stores may be on board. No sails may be aboard and no persons shall be on board during in-water measurement or weighing. The Rating Authority or Measurer may specify and record the loading condition in greater detail in specific cases at the time of measurement. Where deemed appropriate by the Rating Authority, the displacement/weight may be taken from class data or design data.

Weight shall not be reduced for racing, for example by the removal of ballast, fixtures or gear on which the rated weight was based or which were aboard for measurement nor by replacing such rated items with lighter ones.

### **501. The Hull**

The yacht's hull is represented by "full hull lines" (i.e., a table of offsets) as determined by the Rating Authority. For many yachts these lines will have been taken by a hull measuring device and stored in the ORC library of hull files, especially in the case of production boats. Where hull lines have not been taken by the hull measuring device, other schemes for representing the hull will be applied by the Rating Authority using data provided by a design office or a set of photographs together with appropriate simplified measurements. The Rating Authority must be consulted for details in such cases.

At a minimum, either a set of lines drawings of the yacht's profile, body plan and deck plan are required or alternatively, clear hull photographs taken from directly forward, directly abeam and directly aft may be submitted, subject to approval of the Rating Authority. Photographs must show the full height of the hull from the tip of the keel to the sheer line. In the case of centerboards, these need not be in the lowered position unless the yacht is to be raced and rated with the board locked down. Lines drawings may be of a simplified form, for example as used for promotional material, but must include the three views noted above and also must show the keel and rudder.

### **507. Length Overall (LOA).**

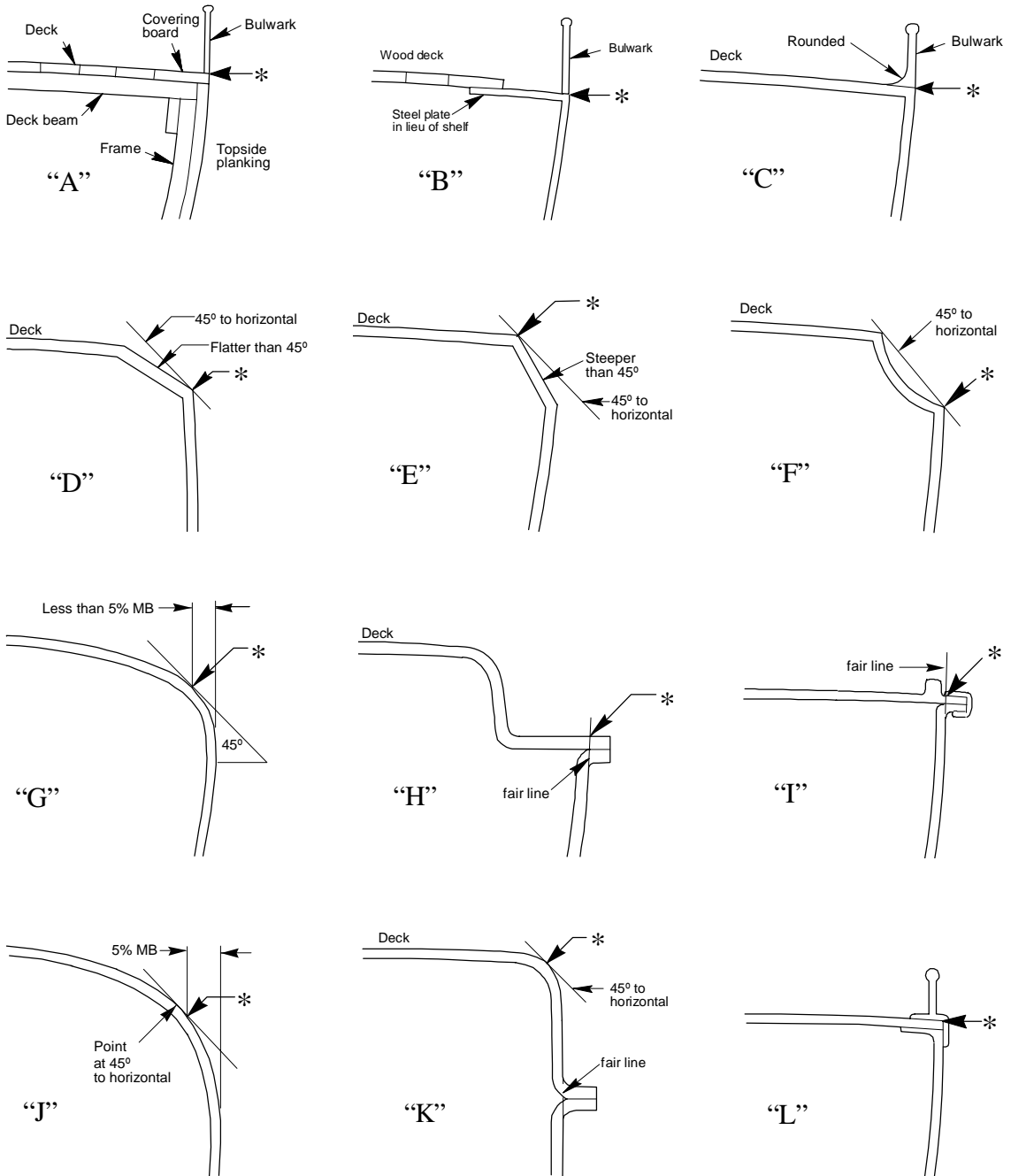
The length overall of a yacht will be measured to include the whole hull, but not spars or projections fixed to the hull such as rudders, chainplates, bowsprits, boomkins, pulpits, etc. It shall be measured from the forwardmost point of the stem to the aftermost point of the hull at the stern.

**508. Sheer Point.**

The sheer points or sheerline are defined in order to have a known reference for the measurement of rig heights and for measuring flotation freeboard heights (where these are measured). The sheer point at any location along the sheerline is normally taken to be the intersection of the deck and the topsides. Where there is a sheer rounded in section as the deck meets the topsides, a sheer point is taken as the point on round where a 45-degree tangent would rest on the sheer (i.e., the middle of the round as seen in section, e.g., as in Diagram "K" below). If it is necessary to locate the sheer point on a hull with unusual geometry, the Rating Authority should be consulted for details.

**EXAMPLES of VARIOUS SHEER POINTS**

**\* = SHEER POINT**





## PROPELLER & INSTALLATION

### 601. Propeller Installation -- General

The drag of a propeller installation driven by an inboard engine will be taken into account only provided the propeller is at all times ready for use. It shall not be retracted, housed or shielded except by a conventional strut or aperture.

### 602. Propeller Types.

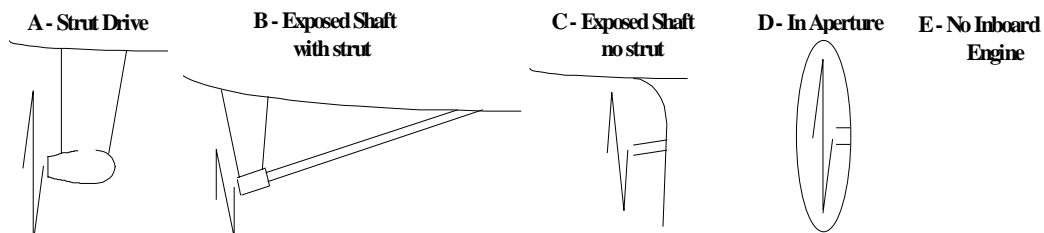
1. Folding Propeller. To qualify, a "folding" propeller shall be a standard model in series production having a minimum of two blades that fold together.
2. Feathering Propeller. To qualify, a "feathering" propeller shall be a standard model in series production having a minimum of two blades that pivot to align with the flow of water when not in use.
3. Solid Propeller. To qualify as "solid" a propeller shall be a standard model in series production having a minimum of two fixed blades of normal elliptical shape.

### 603. Minimum Data Required for Propeller Installations.

1. Propeller Diameter (PRD). PRD shall be the diameter of the propeller disc, tip-to-tip or in the case of a three-bladed propeller, twice the radius from shaft center to tip.
2. Where full propeller installation measurements are provided, e.g., as determined by the Rating Authority, they shall comply with the measurement requirements of IMS Part 6.

### 604. Installation Types.

The propeller installation shall be classified as illustrated below:



In the case of a Strut Drive, the builder and model must be identified.

To qualify as an "in aperture" installation, the propeller must be solid or three-bladed and entirely surrounded (in the vertical plane of the shaft line) by the keel, skeg, and/or rudder.





## CREW WEIGHT & PITCHING ALLOWANCE

### **712. Crew Weight (CW).**

A maximum crew weight is calculated for each yacht. The owner may, by "owner declaration" (see 713), adjust his yacht's maximum allowed crew weight up or down within calculated limits.

### **713. Declared Crew Weight.**

Declared Crew Weight (DCW) shall not be taken as less than the greater of 555.0 lb. or 0.65 times the calculated default for the yacht. Nor shall DCW be taken as greater than 1.2\* the calculated default.

### **724. Elements of Pitch Gyradius.**

The following elements of the pitch gyradius calculation shall be determined by examination of the yacht and recorded on her certificate.

1. Hull and Deck Construction: Hull and deck construction shall be classified as one of the following types:

**SOLID:** Non-cored, solid E-glass, metal or wood hull and deck, but including also E-glass decks with core material. Where the construction is of wood, the minimum density of any layer shall not be less than 300 kg/cu.m.

**CORED:** Hull skin of E-glass (see above) or wood, but incorporating a core material of less density than the skin.

**LIGHT:** All other construction types, but excluding the incorporation of any carbon fiber (see below).

**CARBON:** Where carbon fiber has been incorporated anywhere in the construction of the hull and/or deck.

2. Rudder Construction. Rudder construction shall be classified as one of the following:

**STANDARD:** Neither rudder nor rudder post contain any carbon fiber.

**CARBON:** Rudder and/or rudder post contain carbon fiber in any amount.

3. Forward Accommodation. Where the bow forward of the mast is fully fitted out as a separate sleeping or living space built of solid construction, including bunks (pipe berths do not qualify), personal gear stowage, etc., the yacht shall be classified as having Forward Accommodation which shall be recorded on the Certificate.

4. Number of Spreader Sets. The number of sets of mainmast spreaders shall be displayed on the Certificate.

5. Jumper Struts. Where the mainmast incorporates jumper struts, this shall be displayed on the Certificate.

6. Number of Adjustable Inner Forestays and Runners; see 810.2.

7. Boom Material. Where any fiber (except glass) reinforced plastic is incorporated in the structure of the boom, the boom shall be classified FIBER. Otherwise, the boom shall be classified NOFIBER.



## **RIG AND SAILS**

### **801. General.**

All sails must be set and trimmed in a manner consistent with the way they are measured. A sail shall not be constructed in such a manner that any portion may be completely detached.

Measurements of all sails required to be measured must be measured with such tension between measurement points as will remove all wrinkles across the line of measurement and must include the fabric length between measurement points. Measurements across fabric shall be recorded only to the nearest centimeter or tenth of a foot. Measurement points at the corner of a sail shall be the intersection of the adjacent sides projected except in the case of the head of a jib which shall be determined in accordance with the diagrams below. For jibs other than storm jibs, the head measurement point is the highest point of the sail. In the case of a storm jib the head measurement point is the lower of the highest point of the sail or the intersection of the adjacent sides projected. All other measurement points shall be at the extreme outside of rope, wire or fabric of the sail's edge.

### **802. Height of Deck.**

The height of deck used as a datum for sail area measurements shall be the sheer line abreast the mast (see 508).

### **803. Base of Foretriangle (J).**

J shall be the actual foretriangle base measured horizontally from the foreside of the mast at its lowest point above the deck or coachroof to the center line of the foremost stay on which jibs are set (the center line of the luff if the foremost jib is to be set flying), extended if necessary, to intersect the level of the sheer line, or to a bowsprit if used

#### **803.1 Stem to Forward End of J (SFJ)**

SFJ shall be the horizontal distance from the forward end of J to the forward end of LOA (negative if a bowsprit is used).

### **804. Spinnaker Pole and Spinnaker Tack Point.**

1. The yacht's spinnaker configuration shall be declared by the owner and recorded as one of three permitted types:
  - a) Symmetrical spinnakers only, spinnaker pole allowed.
  - b) Asymmetrical spinnaker, no spinnaker pole allowed aboard the yacht while racing, any spinnaker to be tacked only on the centerline of the yacht.
  - c) As in (b) above, except that spinnakers are tacked to a spinnaker pole as in (a) above.
2. **Spinnaker Pole Length (SPL).** SPL shall be the length of the spinnaker pole when forced outboard in its fitting on the mast and set in a horizontal position athwartships, measured from the center line of the yacht to the extreme outboard end of the pole and any fittings used when a spinnaker is set.
3. **Tack Point of Spinnaker (TPS).** TPS shall be the horizontal distance from the foreside of the mast at its lowest point above the deck or coachroof to the point of attachment at deck level of the foremost tacking point of an asymmetric spinnaker or to the extreme forward end of any bowsprit in its maximum extended position.



**805. Mast Measurements.**

Measurements shall be taken parallel to the axis of the spar with the spar straight.

1. **Height of Jib Halyard (I Jib).** I Jib shall be the genoa height measured from the point of attachment of the forestay to the mast structure, or the intersection of the center line of the forestay with the foreside of the mast where the point of attachment is internal, to the level of the sheer line abreast the mast.
2. **Height of Spinnaker Halyard (I Spin).** I Spin shall be the height of the uppermost spinnaker halyard. It shall be the distance from the underside of the spinnaker halyard, when drawn horizontally forward from the mast, to the level of the sheer line abreast the mast.
5. **Lower Transverse Diameter of Mainmast (DiaT).** DiaT shall be the maximum thickness of the mast in the thwartships direction occurring below the lowest spreaders.
6. **Lower Longitudinal Diameter of Mainmast (DiaL).** DiaL shall be the maximum thickness of the mast in the fore and aft direction occurring below the lowest spreaders.

**806. Mainsail Hoist (P).**

P shall be the measured length of the hoist of a jib headed mainsail. It is the distance along the afterside of the mainmast from the highest level to which the head of the sail, or any part of a headboard carriage abaft the track or mast groove, may be set to the lowest position of the tack. The highest point shall be taken as the top of the highest sheave used for the main halyard, or to the lower edge of a one-inch measurement band. The lowest position of the tack shall normally be the fair extension of the top of the boom or any external track or groove.

1. If a sliding gooseneck is used, measurement is to be made with the boom at the extreme bottom of the slide unless the lowest sailing position of the foot of the sail (boom or boom track) is marked by the upper edge of a one-inch measurement band around the mast. The top of the boom (or track) shall not be carried below this point when the mainsail is set, except when actually putting in or shaking out a reef in the mainsail.
2. In the event that the tack of the sail is carried below the boom, its lowest position shall be marked by the upper edge of a one-inch measurement band around the mast from which the low point of P shall be measured.

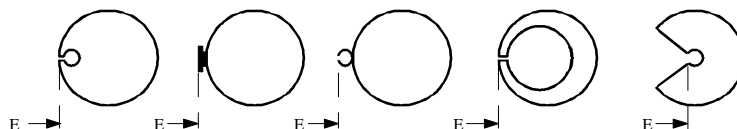
**807. Boom above Sheerline (BAS).**

BAS shall be the distance between the low point used in the determination of P and the level of the sheer line abreast the mast.

**808. Foot of Mainsail.**

1. **Foot of Mainsail (E).** E shall be the length measured along the boom from the aft side of the mast including any external track or groove, or its fair extension parallel to the axis of the mast, to the aftermost position to which the sail is permitted to extend. Where this latter point is inside of the boom end, it shall be located by the inner edge of a one inch measurement band around the boom.

Any part of the mast which extends abaft the aft side of the track or mast groove shall be ignored in determining E.





**810. Rigging Plan.**

Stays which are adjustable fore and aft while racing shall be recorded as follows:

**1. Forestay Tension Control.**

- a) Where forestay tension can be controlled by an adjustable backstay opposing the forestay, this shall be recorded as “forestay adjustable aft”. A stay opposing the forestay is one whose primary load line, projected if necessary, meets the mast within 0.15\*I Jib of the attachment point of the forestay.
- b) Alternatively, where the forestay itself is adjustable, this shall be recorded as “forestay adjustable forward”.
- c) Where forestay tension cannot be controlled while racing, this shall be recorded as “forestay fixed”.

**2. Fore and Aft Stays Below the Hounds.**

- a) Where there is an adjustable inner forestay, this shall be recorded as “inner forestay adjustable”.
- b) Where there is a permanent inner forestay which is only disconnected when gybing, this shall be recorded as “inner forestay fixed”.
- c) Where forestay tension cannot be controlled while racing, record this as “forestay fixed”.

**813. Longest Perpendicular of Jibs (LPG).**

1. Jibs shall be measured on the perpendicular from the luff (outside edge of the sail and/or luff rope) to clew (intersection of the lines of the foot and leech).
2. LPG shown on the rating certificate shall be the largest such dimension found on the jibs carried on the yacht.
3. Jib Roach (JR), where permitted (see 811.2 (b)), shall be measured as the maximum excess of the three girths as defined in 812.1. JR multiplied by 1.5 shall be added to LPG for the purpose of calculating the sail area. An excess in any of the girths shall not exceed 10% of the maximum defined in 812.1.

**820. Spinnaker Luff and Leech (SL).**

1. Spinnaker Luff and Leech (SL) Symmetric Spinnaker.  
SL shall be the greatest length of spinnaker luff and leech measured along the edges of the sail from head to foot.
2. Spinnaker Luff (SLU) and Leech (SLE) Asymmetric Spinnaker.
  - a) SLU shall be the length of the longer edge (luff) of the spinnaker measured along the edge of the sail from head to tack.
  - b) SLE shall be the length of the shorter edge (leech) of the spinnaker measured along the edge of the sail from head to clew.
  - c) SL shall be calculated from the following formula:

$$SL = 0.6 * SLU + 0.4 * SLE$$



For symmetric spinnakers, where stiffening is used to extend the angles at the tack and clew of spinnakers beyond an included angle of 110 degrees the greatest length of any such stiffening in the foot of the sail, measured from the clew, shall be added to the luff length to determine SL.

**829. Height of Mizzen Mast (IY).**

IY is the height measured along the foreside of the mizzen mast from the sheer line abreast the mast to the higher of:

1. The center of the highest eyebolt or eye used for a mizzen staysail;  
or
2. The intersection of the foreside of the mast with the highest strop used for the halyard of a mizzen staysail.

**831. Mizzen Hoist (PY).**

PY is the measured length of the hoist of a jib headed mizzen sail. The method by which this is measured shall follow that used for the hoist of the mainsail (see 806).

**832. Boom above Sheerline (BASY).**

BASY shall be the distance between the low point used in the determination of PY, and the level of the sheer line abreast the mizzen mast.

**833. Foot of Mizzen.**

Foot of Mizzen (EY). EY is the measured length of the foot of the mizzen sail. The method by which this is measured shall follow that used for the foot of the mainsail (see 808).

**835. Distance between Masts (EB).**

EB is the distance at deck level between the after side of the mainmast to the foreside of the mizzen mast.

**840. Mizzen Staysail Foot (YSF).**

Mizzen staysails shall be three-cornered. YSF is the distance measured along the edge of the foot of the mizzen staysail from tack to clew. For measurement purposes, the foot shall be taken as the shortest side. YSF shall be the largest such dimension found on the staysails carried on the yacht.

**841. Mizzen Staysail Depth (YSD).**

YSD is the shortest distance that can be measured across the mizzen staysail from head to foot. For measurement purposes the head shall be taken as the junction of the two longest sides. YSD shall be the largest such dimension found on the staysails carried on the yacht.

**842. Mizzen Staysail Mid Girth (YSMG).**

YSMG is the distance measured on the surface of the sail between the mid points of the two longest sides. YSMG shall be the largest such dimension found on the staysails carried on the yacht.



## CRUISER/RACER HEAVY ITEMS PITCHING ALLOWANCE

This credit scheme is intended to allow for the greater pitching inertia of more fully fitted Cruiser/Racers (see IMS Regulations booklet). Use the form provided below for recording any qualifying items.

The CENTRAL ZONE shall lie between 30%LOA and 65%LOA aft of the stem.

1. **Anchor** (and associated chain) gyradius contribution is established from the actual recorded weight and distance from the stem of the foremost anchor on board at the time of measurement. To be counted for gyradius adjustment the anchor must be placed in the forward 30% LOA and carried whilst racing in a locker or compartment accessible from deck, and not stowed within the yacht's cabin.
2. **Anchor Windlasses** will be recorded only if permanently installed. If hydraulic or electric, they shall be permanently connected to a hydraulic system, or to AC or DC on board current, of size and power commensurate to the size of the boat, and shall weigh no less than the greater of **2.9 \*LOA - 17 (kg) or 15 kg** (Dry weight). Qualifying anchor windlasses shall be operational in association with the anchor and chain recorded above.
3. **Air Conditioning, Water Heater, Desalinator.** Where fitted outside the Central Zone, a maximum of two of these items shall each be credited in pitch gyradius.

Minimum qualifying (dry) weight per item shall be the greater of:

<b>Air conditioning system</b>	<b>19*LOA-210 (kg) or 25 kg</b>
<b>Desalinator</b>	<b>4.6*LOA-21 (kg) or 25 kg</b>
<b>Water Heater</b>	<b>5.5*LOA-53 (kg) or 12 kg</b>

4. **Electric Generator** shall be recorded if placed outside the Central Zone, and connected to the main electrical system of the boat. For a pitch gyradius credit to apply, the minimum qualifying weight shall be the greater of **17.5\*LOA - 120 (kg) or 50 kg**.
5. **Bow Thruster.** If a bow thruster is installed and functioning at a distance not more than 25% LOA aft of the stem, it will be credited in pitch gyradius, provided it is of the qualifying weight. The minimum qualifying weight shall be the greater of **6.4\*LOA - 46 (kg) or 15 kg**.
6. **Liferafts on Deck.** If carried aboard in all races (independently from the ORC Special Regulations Category for a given race) and placed on deck or in dedicated deck lockers, outside of the Central Zone, a credit in pitch gyradius will be applied.
7. **Furler.** A pitch gyradius credit will be applied provided the furler is used in association with one headsail only. The minimum qualifying weight shall be the greater of **2.7\*LOA - 16 (kg) or 10 kg**.
8. **Permanently Mounted Radar.** Provided the unit was not already included in the weight of a weighed mast, if a functioning radar unit is installed on the mast or spreaders a gyradius credit will be applied. The same will apply to radar installations on a suitable structure within 10% LOA of the stern.
9. **Main Furler.** Provided the furler was not already included in the weight of a weighed mast, such a unit will receive a pitch gyradius credit. Only mainsails capable of being furled while racing shall be credited.



10. **Heavy Deck.** Where a teak veneer or other heavy deck covering material is fitted to the deck structure over more than 50% of the working deck area (to include the forward 30% LOA zone), and has a nominal thickness of at least 9 mm and/or weight of 6 kg/m<sup>2</sup>, a pitch gyradius credit will be applied. When the total deck skin weight (excluding stiffening but including covering) is in excess of 15 kg/m<sup>2</sup> the credit will be applied even in absence of heavy covering.
11. **Inner Deck Headliners.** When inner deck mouldings and/or liners made of wood, metal or plastic, with a minimum panel weight of 3 kg/m<sup>2</sup> are fixed to the inner side of the whole coachroof area and not less than 50% of the remaining total deck area including 50% of the living/sleeping room forward of the forward mast, a pitch gyradius credit will be applied.
12. **High superstructures.** High superstructure must be found above the sheerline, with a minimum length of 0.15 \* LOA, and a minimum height above the sheer and minimum width of 0.075 \* LOA. A pitch gyradius credit for high superstrcutures will be applied.



## HEAVY ITEMS GYRADIUS ADJUSTMENT FOR C/R

Tick YES for any item NOT located in the CENTRAL (30%-65%) LOA zone.

HEAVY ITEMS	CENTRAL ZONE	YES	
Anchor Windlass - Min. Weight 15 kg or 2.9 *LOA - 17 (kg)			
Electrical Generator - Min. Weight 50 kg or 17.5*LOA - 120 (kg)			
Air Conditioning / Water Heater / Desalinator (Specify how many are on board and outside the Central Zone) - Min. Dry Weights:			
Air conditioning system            25 kg    or 19*LOA-210 (kg)			
Desalinator                                25 kg    or 4.6*LOA-21 (kg)			
Water Heater                                12 kg    or 5.5*LOA-53 (kg)			
Liferaft - if on deck or dedicated lockers outside Central Zone			
Genoa Furling - Min Weight 2.7*LOA - 16 (kg) or 10 kg			
Bow Thruster - Min. Weight 15 kg or 6.4*LOA - 46 (kg)			
Main Furler - (if not included in Mast Weight - MWT)			
Radar on mast - (if not included in Mast Weight - MWT)			
Radar on stern - (within 10% of LOA from Stern)			
Heavy Deck - Min. covering weight 6 kg/m2 over 50% of deck (to include the forward 30% LOA zone) or deck skin weight > 15 kg/m2			
Inner Deck Headliners - Min. Weight 3 kg/m2 – over 100% of coachroof – 50% of deck			
High superstructure - Min. length 0.15 LOA, Min. height above sheer and width 0.075 LOA			
This Form Completed by: <input type="radio"/> Measurer <input type="radio"/> Owner			

ANCHOR WEIGHT	
ANCHOR DISTANCE FROM BOW	
Note: the Anchor is counted only if it is placed in the forward 30% LOA and carried in a locker or compartment accessible from deck whilst racing, and not stowed within the yacht's cabin.	





## **ORC Publications & Services**

The ORC produces bound publications, meeting minutes, releases, notices, and various other official documents totaling upwards of half a million words and, in addition, computer software comprising tens of thousands of coded program statements. Most of this material is directly available to the offshore community; owners, administrators, designers and industry. The publications and services below are currently available and others are under development.

### **International Measurement System (IMS):**

The fundamental IMS Rule Book for the IMS international handicapping system, required to be aboard while racing IMS. It covers all measurement and administrative details, owner's responsibilities and many formulations.

### **IMS Regulations:**

A companion to the IMS Rule Book spelling out accommodation regulations for the Racing Division and Cruiser/Racer Division respectively, along with sail inventory and construction materials requirements. Unlike the IMS Rule Book, the provisions of the IMS Regs are applied by National Authorities and event organisers.

### **IMS Guide (Race Committees and others):**

A general background on IMS concepts and scoring details, including examples and illustrations. Specifically drafted for Race Committees, it has also been a popular introduction to IMS.

### **Race Management Scoring Software Package (RMS):**

A Windows PC scoring program for race committees. Provides for a full spectrum of IMS scoring choices from the simplest to the most sophisticated, including Performance Curve Scoring and also for scoring of non-IMS classes. Entry list/Scratch Sheets, Results Sheets, series scoring, etc. are all features of RMS. An operator's manual is included and remote technical support is provided.

### **International Level Class Rules**

The "class" rules cover geometric limitations (e.g., maximum keel depth, etc.) and the "rating" limits or rating bands which define the class level. Yachts rating within ILC classes race boat-for-boat without time allowance.

### **International Offshore Rule (IOR):**

Complete statement of the IOR, the predominant international handicapping rule of the 1970s & 80s, still active in some quarters.



### **Championship Rules for Offshore Classes ("Green Book"):**

Although also a reference for other events, the Green Book sets forth primarily administrative rules for running world championships of offshore classes including model Notice of Race and Sailing Instructions.

### **Special Regulations Governing Offshore Racing:**

The ORC "Special Regs" are broadly used throughout the offshore community regardless of the handicapping systems in use. The booklet sets forth widely accepted minimum requirements for build, outfit and emergency equipment relating primarily to matters of seaworthiness and preparedness.

### **ORC Year Book:**

Lists ORC Council and Committee Members, National Authorities, Rating Offices, Chief Measurers, schedules and events. Constitutional details and a brief ORC history are included.

### **Designer IMS LPP/VPP:**

The IMS computer program, as with most publications updated annually immediately following the November Annual General Meeting. With respect to time allowance calculations, the program produces results identical to the Rating Office software and stands as a complete statement of the Velocity Prediction formulations intrinsic to the IMS Rule.

The Designers VPP also outputs a complete spectrum of hydro- and aerodynamic data, both as defined by the Rule and as conventionally calculated. Any designer may process design data through the LPP/VPP to analyse rating effects and the software is therefore regarded as essential to anyone contemplating an "IMS design" project.

### **Bulletin Service:**

The Bulletin Service is intended for designers, sailmakers, event organisers and others who have a need to keep abreast of the latest Rule developments -- includes IMS, ILC and IOR updates, copies of the IMS Regulations, ORC Year Book, Annual General Meeting minutes, all International Technical Committee (ITC) Minutes and periodic information bulletins. Subscriptions expire 31st October and include all material for the full subscription year.

### **Individual Membership:**

Individual membership helps to support the work of the ORC. Members receive the ORC Year Book, Minutes of the Annual General Meeting, Press Releases and, in recognition of their support, enjoy discounts on publications and services. New members receive the ORC tie.



## ORC Publications and Membership

	Non-Members	Members	Non-Europe Air Postage
International Measurement System (IMS)	£ 16	£ 20	£ 4
IMS Guide (Race Committees and others)	£ 4	£ 6	£ 2
IMS Regulations	£ 5	£ 7	£ 2
International Level Class Rules	£ 5	£ 7	£ 2
International Offshore Rule (IOR)	£ 12	£ 15	£ 4
Championship Rules for Offshore Classes (formerly "Green Book")	£ 5	£ 7	£ 2
Special Regulations Governing Offshore Racing	£ 5	£ 7	£ 2
Year Book	£ 4	£ 6	£ 2
ORC Tie	£ 10	N/A	£ 2
Bulletin Service	£ 75	£ 85	£ 10
Designer LPP/VPP - Original Subscription			£ 455
Annual Update			£ 275
Individual Membership	£ 25		

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Your individual membership helps to support the work of the ORC. If you join and order publications at the same time, member discounts apply. Members receive the ORC Year Book, Minutes of the Annual General Meeting, Press Releases and, in recognition of their support, enjoy discounts on publications and services. New members receive the ORC tie. Annual membership fee includes VAT as appropriate; EC members please give VAT Registration Number, if any.

Payment may be made by VISA or Mastercard. Please quote card number, expiry date and cardholder's name and address. Orders may be made by Fax: +44 23 80632167 or by Telephone: +44 23 80632231.