



World Leader in Rating Technology

# OFFSHORE RACING CONGRESS



**ORC Grand Prix 42**  
*Class Rules – v.1.01*

Copyright © 2009 Offshore Racing Congress.

All rights reserved. Reproduction in whole or in part is only with the permission of the Offshore Racing Congress.

Cover picture by courtesy Antonio Latini

Version 1.01 ó 20.01.2009. ó corrected misprint of max FFM in the Table of limits. Correction is marked with margin bar.

## ***Part 1 - ADMINISTRATION***

### **100 General**

It is the intention that the rules and specifications for the ORC Grand Prix Classes provide close racing without time allowance in grand prix competition and that the yachts designed to this rule be fast, sound and seaworthy, retaining thereby, with a minimum of modification, good value beyond their competitive life as grand prix racers.

### **101 Language**

101.1 The official language of the ORC GP Class Rules is English and in case of dispute over translations the English text shall prevail.

101.2 The word "shall" is mandatory and the word "may" is permissive.

### **102 Abbreviations and Definitions**

ERS	Equipment Rules of Sailing
GP	Grand Prix
IMS	International Measurement System
ISAF	International Sailing Federation
ORC	Offshore Racing Congress
RRS	Racing Rules of Sailing

### **103 Authorities**

The sole authority for the GP 42 Class is the Offshore Racing Congress and it shall be maintained and administered at the ORC's discretion.

### **104 ISAF and ORC Rules**

104.1 IMS and ERS shall apply except when changed by these **class rules**.

104.2 IMS Accommodation Regulations for Racing Division shall apply with AL = 12.8 m.

104.3 Except where used in headings, when a term is printed in **öboldö** the definition in the ERS applies and when a term is printed in *öitalicsö* the definition in the RRS applies.

104.4 When printed in ***öbold italicsö*** the term is used as measurement taken or recorded by the measurer.

104.5 Category C of the ISAF Advertising Code shall apply.

104.6 ISAF Offshore Special Regulations Category 3 with liferaft shall apply.

### **105 Rules Amendments**

Amendments to the GP 42 Class Rules are subject to the submission by the ORC Nominating bodies or GP 42 Class Association and approval of the ORC in accordance with the Articles of Association of ORC Ltd. GP 42 Class Association shall give its opinion about any submission concerning GP 42 Class Rules and ORC will be bounded by that opinion before making final decision.

### **106 Rules Interpretations**

The Class Technical Committee with approval of the ORC Chief Measurer may at any time issue interpretations or correction of the GP class rules. Any such interpretation or correction shall be published and then deemed final unless and until overruled by the ORC Management Committee and Congress.

### **107 Measurement**

107.1 All measurement shall be under the metric system.

- 107.2 All measurements shall be within the limits defined in these **class rules** without any rounding of measured or calculated values (e.g. where a limit is given as maximum 12.5, a measured value of 12.501 would not comply.)
- 107.3 Measurement shall be carried out by an **official measurer** who shall complete the **measurement form** and send it to the ORC.

## **108 Certificate**

- 108.1 Upon receipt of a satisfactory completed **measurement form** and **certification** fee, the ORC will issue a **measurement certificate**.
- 108.2 A boat shall have only one valid **certificate** at any one time. The valid **certificate** shall be only the last issued. The **certificate** shall be valid until 31st December of the current year.
- 108.3 A **certificate** shall be changed upon the change of any measurement recorded in the **certificate** or change of ownership.
- 108.4 A boat shall have no more than two valid **certificates** issued as a result of a change of recorded measurement values in period from January 1<sup>st</sup> to December 31<sup>st</sup> each year.
- 108.5 ORC in agreement with the Class Technical Committee can withdraw any **certificate** in any time when it finds that boat may not comply with intention of these **class rules**. In such a case it will inform the owner about further actions and if needed, appoint the measurer to re-measure the boat.

## ***Part 2 - GENERAL***

### **201 Hull**

- 201.1 **Permitted materials.** In the construction of the hull and deck structures and in interior panels, except for hardware, fastenings and keel support structures, only the following materials are permitted: E-glass, Carbon, Kevlar, Epoxy, Vinylester and Polyester resin, Foam Core with minimum density of 75 kg/m<sup>3</sup>, Balsa Core, Plywood.
- Stainless steel and aluminium are permitted for keel support structures inside the hull shell.
  - Titanium is not permitted in any purpose. Carbon is not permitted in winches or winch systems except if standard, unmodified production winches usually supplied are used.
  - The modulus of the carbon used in the rudder is limited to 250 GPa.
- 201.2 **Construction Scantlings.** The boats shall have been designed and built either in accordance with the ABS Guide for Building and Classing Offshore Yachts or, when ultimately published, in accordance with ISO Standard 12215. The designer and the builder, respectively, shall confirm by signed written declarations that the design and build comply. The Owner shall sign the declaration printed on the **measurement certificate**.
- 201.3 **Hollows in Hull.** Aft of 30% LOA the hull there shall be no hollows in the hull surface below the sheerline. The sheerline shall be a fair, concave curve in profile view and a fair, convex curve in plan view with no double inflections in either view. Hollows generated by any protrusion outside the outer skin of the hull are not allowed. A recess, of a maximum of 20 litres of volume, is permitted in the hull, only in the area of the keel attachment and for this purpose only. The keel (when in position) shall totally fill this recess. Any part of the keel contained in this recess, as well as outside the hull outer skin, is considered keel and will be weighed as keel.
- 201.4 **Working Deck.** The working deck shall have a positive camber (i.e., convex) and be continuously fair. Except for the coach roof on the cockpit, at any transverse section the deck camber, as measured from a horizontal datum passing through the sheer points, shall be not less than 2%. Trunks and troughs are not permitted. Fittings may be recessed, provided the recess dimensions are not larger than 120% of the fitting dimension.

### **202 Appendages**

- 202.1 Except for a single rudder located aft of the keel, no other moveable appendages are permitted.

- 202.2 Except for fairing (no more than 10 mm thick), no material other than lead, antimony, steel or iron are permitted in the structure of the keel blade, fin and in any bulb.
- 202.3 Hollows between the sections at *KTHU* and *KTHL* are not permitted.

### 203 Propulsion Engine and Strut Drive

- 203.1 A securely covered inboard propulsion engine as water cooled diesel of minimum 29 HP shall be provided together with permanently installed exhaust and fuel supply systems and fuel tank(s). The engine and drive train shall be orientated for and aft, located on the centerline of the boat.
- 203.2 Retractable propellers as well as retractable or custom strut drives are not allowed. Only standard, unmodified production strut drives usually supplied with the following engines are allowed: Volvo Penta, Yanmar, Lombardini Marine.

### 204 Rig

- 204.1 Throughout its length, the mast shall be fair with no hollows and be of continuous section from the butt to the upper measurement point of *IG*.
- 204.2 Where carbon fiber is incorporated in the construction of any spars on the yacht, this shall be limited to 250 GPa and the walls of the spar shall not be of cored construction.
- 204.3 There shall be two spreader sets. The sweep-back angle of spreaders shall be not less than 15 degrees. Curved spreaders are not permitted.
- 204.4 Jumper struts and stays, outriggers, sprits and halyard locks are not permitted.
- 204.5 **Standing Rigging.** Except for the permanent backstay, all standing rigging shall be of stainless steel rod or twisted stainless steel wire and subject to the limitations set forth below. Titanium is not permitted in any purpose.

- a) **Backstay.** Backstays are limited to a single, permanent backstay, which may be of stainless steel or composite fiber construction. The backstay may be adjustable. From the upper attachment point of the backstay there shall be a single part only, of length not less than  $\bar{P}\bar{o}$ , the intention being to prohibit any configuration which might simulate double backstays. Below the lower end of this single part, the backstay configuration is unrestricted except that the fixed anchor point of the backstay configuration shall be not higher than 200mm above the working deck.

A  $\bar{o}$ fixed anchor point $\bar{o}$  is any point where a block or the end of any rope used to tune the backstay is attached. When in tension, the backstay shall form a straight line between the top (mast crane) and bottom fixed anchor attachment points. The centre of any bottom fixed anchor point shall not be above a horizontal plane which is established 0.8 m from the waterline in measurement trim.

Pre bent backstays and/or any system to artificially increase the distance between the straight backstay line and the mainsail roach is not allowed, except for soft battens  $\bar{o}$ flippers $\bar{o}$ .

- b) **Forestay.** Except for backstay adjustment, means for adjusting forestay tension while racing is not permitted. Any luff-groove device shall not incorporate carbon fibers in construction.

### 205 Sails

- 205.1 Maximum of five battens are permitted in the mainsail, and no battens are permitted above *MGT* point.
- 205.2 Asymmetric spinnaker luff shall be calculated as:  $ASL = 0.6 * SLU + 0.4 * SLE$
- 205.3 Exclusive of storm sails required by the Offshore Special Regulations, sails allowed on board while racing are limited to:
- 1 Mainsail
  - 4 Jibs
  - 1 Inner Jib
  - 3 Spinnakers (symmetric, asymmetric or both)

205.4 In addition to the standard ORC stamp, all sails shall be stamped by official GP class measurement stamp where sail number, date of measurement, name of measurer and type of sail with appropriate identification per year will be recorded. First set of sails shall be measured in the same year when boat is launched. Maximum number of sails measured in one calendar year (January 1<sup>st</sup> ó December 31<sup>st</sup>) for boat when participating to the official GP 42 Circuit is defined as follows:

- 2 Mainsail
- 6 Jibs
- 1 Inner Jib
- 6 Spinnakers (symmetric, asymmetric or both)

Damaged sails can be repaired, but than shall be re-measured and re-stamped with both ORC and GP measurement stamp where same sail identification will be used.

## 206 Crew weight

The weight of all crew members on board while racing in light street clothes shall not be greater than 800 kg.

## ***Part 3 - MEASUREMENT***

### 301 Changes to the IMS

301.1 IMS Rule E2 is changed to:

The measurement trim for weighing and measurement afloat shall include the following:

- a) Internal ballast, if any of total weight less than 7% of Max **DSPW**. The weight and location of internal ballast shall be recorded on the Measurement Inventory.
- b) Batteries of the total weight of batteries less than 2% of Max **DSPW**. The weight and location of batteries shall be recorded on the Measurement Inventory.
- c) Fixed and/or essentially permanent interior accommodation, hatch covers and floor boards.
- d) Fixed and/or essentially permanent machinery, electrical and plumbing systems.
- e) Mast, boom and any sprit, fully rigged as for racing.
- f) Standing rigging and fittings as intended for racing.
- g) Rudder, wheel/tiller and steering gear, fitted complete as for racing.
- h) Keel and any bulb, fitted complete as for racing.
- i) All fixed electronics, instruments, compasses, lights, antennas and masthead devices.
- j) All halyards as for racing.
- k) Boom running rigging and any vang, as for racing.
- l) Pulpits, stanchions and lifelines.

301.2 Specifically excluded from Measurement Trim are the following:

- a) All fuel and other fluids except normal amounts within hydraulic systems and the engine.
- b) Any sails, including storm and emergency sails.
- c) Sheets, blocks, winch handles and other running rigging, except as in 301.1 above.
- d) All portable safety gear, including fire extinguishers and liferafts.
- e) Mattresses, cushions, pillows and any other bedding, towels, etc.
- f) All cooking and eating utensils, portable heaters and compressed gas bottles.
- g) All tools, spares and stores.
- h) Miscellaneous portable and personal gear, books, navigation tools, etc.
- i) Anchors and anchor ropes, including both chain and fiber.
- j) Dock and mooring lines and any other cordage.
- k) Outboard engines and portable fuel containers.

301.3 IMS Rules B3.2 and B3.3 are amended as follows:

- a) **SFFP** shall be taken as 0.200 m
- b) **SAFP** shall be normally taken as defined in IMS B2.2(c), but not forward of 12% **LOA** of the aftermost point of the hull

301.4 In addition to the IMS following measurements shall be taken.

- a) **KTHU** shall be the maximum thickness found at a horizontal section located 100 mm below the intersection of the keel root and the hull surface.
- b) **KTHL** shall be the maximum thickness found at a horizontal section located 100 mm below the intersection of the keel blade and keel bulb.
- c) **KTHM** shall be the maximum thickness found at a horizontal section located midway the sections at **KTHU** and **KTHL**.
- d) **KBW** shall be the maximum transverse width of the keel bulb.
- e) **KBL** shall be the maximum longitudinal length of the keel bulb.
- f) **KBH** shall be the maximum vertical height of the keel bulb.
- g) **DSPW** shall be the total weight of a boat in measurement trim recorded to the nearest kilogram.
- h) **KW** shall be the weight of complete keel, including any bulb, excluding fasteners to hull recorded to the nearest kilogram. Keel and bulb, if any shall be permanently marked by measurer.
- i) **SDM** shall be the distance from the bow to the maximum draft section.
- j) **DMT** shall be the vertical distance from the deepest point of keel (including any bulb) to the sheerline at the same section.
- k) **FMD** shall be the average of port and starboard freeboards measured vertically from the sheer point to the water level at the section at SDM from stem.
- l) **GOA** shall be the distance between the **upper point** on the aft face of the mast to the center of attachment point of the upper end of the backstay.

### 302 Maximum draft

The Maximum Draft of the yacht shall be calculated as  $DHKM = DMT \text{ ó } FMD$ .

### 303 Measurement Inspection

Following tolerances will be acceptable on the measurement inspection during an event:

<b>DSPW</b>	+/- 30 kg
<b>KW</b>	+/- 10 kg
<b>FFM, FMD, FAM</b>	+/- 4 mm

## Part 4 - TABLE OF LIMITS

### 401 Limits

All measurements shall be within the limits defined in the following table:

	<i>Min.</i>	<i>Max.</i>	<i>Rule</i>	<i>Description</i>
<b>Hull</b>				
LOA	---	12.800	IMS B3.1	Length Overall
MB	3.500	3.900	IMS B3.4	Maximum Beam
DSPW	4200	4400	GP 301.4(g)	Displacement as Weighed
DHKM	---	2.600	GP 302	Maximum Draft
EDL	0.530	---	IMD D4.8	Strut Drive Length
FFM	1.340	1.460	IMS E3.1	Freeboard Forward
FMD	1.160	1.280	GP 301.4(k)	Freeboard at Maximum Draft
FAM	1.020	1.140	IMS E3.2	Freeboard Aft
<b>Keel</b>				
KW	2100	2300	GP 301.4(h)	Keel Weight
KTHU	0.090	---	GP 301.4(a)	Keel Thickness ó Upper
KTHM	0.080	---	GP 301.4(c)	Keel Thickness ó Mid
KTHL	0.070	---	GP 301.4(b)	Keel Thickness ó Lower
KBW	---	0.640	GP 303.3(d)	Keel Bulb Transverse Width
<b>Rig</b>				
P	---	16.800	IMS F2.1	Mainsail Hoist
IG	---	16.200	IMS F3.1	Height of Genoa Hoist
ISP	---	18.600	IMS F3.2	Height of Spinnaker Hoist
BAS	1.700	1.800	IMS F3.4	Boom Above Sheerline
MWT	200.0	---	IMS F4.6	Mast Weight
MCG	5.560	---	IMS F8.3	Mast Centre of Gravity
MDT1	0130	---	IMS F4.1	Max. Transverse Mast
MDL1	0.250	0.300	IMS F4.2	Max. For-and-Aft Mast
MDT2	0.090	---	IMS F4.3	Min. Transverse Mast
MDL2	0.150	---	IMS F4.4	Min. For-and-Aft Mast
TL	---	2.400	IMS F4.5	Taper Length
GOA	---	0.500	GP 301.4(l)	Backstay Gantry Overhang
CPW	2.850	---	IMS F6.3	Chainplate Width
E	---	5.900	IMS F5.1	Mainsail Foot
BD	---	0.295	IMS F5.2	Boom Diameter
J	---	5.000	IMS F6.1	Foretriangle Base
SPL	---	6.550	IMS F7.1	Spinnaker Pole Length
FSP	---	0.068	IMS F6.4	Forestay Perpendicular
<b>Sails</b>				
HB	---	0.25	IMS G2.1	Mainsail Top Width
MGT	---	1.52	IMS G2.1	Mainsail 7/8 Width
MGU	---	2.60	IMS G2.1	Mainsail 3/4 Width
MGM	---	4.06	IMS G2.1	Mainsail 1/2 Width
MGL	---	5.15	IMS G2.1	Mainsail 1/4 Width
LPG	---	5.35	IMS G4.1	Jib Perpendicular
JGU	---	1.45	IMS G4.1	Jib 3/4 Width
JGM	---	2.80	IMS G4.1	Jib 1/2 Width
SMW	---	11.00	IMS G6.4	Spinnaker Maximum Width
SL	---	19.10	IMS F7.1	Spinnaker Luff/Leech
AMG	---	11.00	IMS G6.5	Asymmetric Spinnaker Mid Girth
ASL	---	19.10	GP 205.2	Asymmetric Spinnaker Luff/Leech