JCH 2017 Rules

2017 EDITION – MARK XXI

2016 edition changes are in red.

ARTICLE 1 -   PREAMBLE

The **Jauge Classique Handicap - JCH –** is a handicap system designed to allow classic boats with very different characteristics to race together, each having an equal chance of winning.

The seven core principles are :
• **Adaptability** to the requirements of classics : designed for a time defined fleet emphasizing fidelity to the original construction
• **Equality** : to give each boat an equal chance
•**Self certification** using straightforward measurements
• **Free** certificate
• **Universality** : designed for regattas utilising a individual race result, either time on time or time on distance, for all sizes and types of classic boats.
• **Transparency** : the formula is in the public domain and is evolutional
• **Objectivity** : based on strictly measurable criteria

ARTICLE 2 -   ELIGIBLE BOATS These rules apply to boats applying or holding a Jauge Classique Handicap certificate**.**

2.2. Certificate validity

The validity of certificates is limited to January 1st of the year following the year of issue.

ARTICLE 3 -   RESULTS

3.1. Results based on the time on time formula :

$$\text{TCorrected = TReal x Ftc}$$

3.2.Results based on the time on time formula :

$$\text{TCorrected = TReal - SMxD}$$

where :

SM = Secondes per Mille bonus = (672/FTC) - 600

D = theorical lenght of the course in nautical milles

ARTICLE 4 -   (NOT USED)

ARTICLE 5 - AUTHORIZED SAILS

5.1. Mainsails

A boat may carry on each mast a maximum of a regular mainsail, a "Swedish" mainsail without battens and a trysail

5.1.1. Bermudan sails

The maximum leech round of bermudan sails is limited to:

- MGM (half width) ≤ 65% E,
- MGU (three-quarter width) ≤ 38% E,
- MGT (seven-eight width) ≤ 22% E
- HB (top width) ≤ 4% E or 0.152 m.

Bermudan sails area: Mainsail, mizzen sail and foresail:

$$S = 0.575*P*E$$

5.1.2. Gaff sails

Gaff sails area: Mainsail, mizzen sail and foresail :

$$S = \sqrt{(V*(V-A)*(V-B)*(V-D))} + \sqrt{(W*(W-C)*(W-D)*(W-E))}$$

Where V=0,5*(A+B+D) et W=0,5*(C+D+E)

5.1.3. Topsail

Topsail area :

$$S = \sqrt{(Q*(Q-F)*(Q-G)*(Q-H))} \text{ where } Q=0,5*(F+G+H).$$

5.2. Headsails (jib, high cut jib, staysail, flying jib, genoa)

5.2.1. Definition

A headsail is a sail that has its luff attached to a stay and with a half width (HHW) less than 55% of its foot (HF).

Battens are allowed for headsails but will receive a penalty.

Area of headsails

$$S=HLP*HLU*0,522$$

5.3. Reaching sails (eg Cruising Chute, Fisherman, Mizzen Staysail).

5.3.1. Definition

A triangular sail for reaching has a half width (HMW) greater or equal to 55% and shorter than 75% of its foot (HF).

5.3.2. Cruising chute

Cruising chute area:

S=HLU*HLP*0.625

The measurements are to be displayed on the handicap certificate: luff length (HLU), luff perpendicular (HLP), foot length (HF), half width (HMW).

5.3.3. Fisherman

Fisherman area:

$$S = \sqrt{V*(V-A)*(V-B)*(V-D)}+\sqrt{W*(W-C)*(W-D)*(W-E)}$$

where V=0,5*(A+B+D) and W=0,5*(C+D+E)

5.3.4. Mizzen staysail

Mizzen staysail area :

$$S = 0,5 * (ALU+ALE)*(ASF+4AMG)/6$$

5.4. Downwind sails (symmetric or asymmetric spinnaker).

5.4.1. Definition

A downwind sail has a half width length (SHW) greater than 75 % of its foot (HF).

For downwind sails, only sewn panels of Nylon or other similar polyamide are allowed.

5.4.2. Symmetric spinnaker

Symmetric spinnaker area:

$$S = SL*(HF+4SHW)/6$$

Their measurements are to be displayed on the handicap certificate: leech length (SL), foot length (HF), half width (SHW).

5.4.3. Asymmetric spinnaker

Asymmetric spinnaker area:

$$S = 0,5 * (ALU+ALE)*(ASF+4AMG)/6$$

The measurements are displayed on the handicap certificate: luff length (ALU), leech length (ALE), foot length (ASF), half width (AMG).

5.4.4. Authorized sails

The number of downwind sails carried on board may be no more than three.
Big-boys, tall-boys, spinnaker staysails and other special sails are allowed if their area is smaller than 75% of largest downwind sail. There are not taken into account for the number of downwind sails.

5.5. The same suit of sails shall be used throughout the duration of an event. In case of damage to a sail which cannot be repaired during an event, the race committee may be allowed the use of a new sail on the advice of the race measurer. The sailing instructions will specify whether this limitation applies to a series of regattas over a short period.

5.6. Sail furling system.- Sails on furling systems are allowed

5.7. Use of sails :

Two jibs or genoas can be set simultaneously when sailing downwind. Only one may be poled out, and no spinnaker may be set at the same time.
Only one jib or genoa can be used with a spinnaker provided it is attached to a stay.

5.8. Tack of downwind sails.

Tacks of downwind sails can be attached to:

- A spinnaker pole with one end attached to the mast,
- A bowsprit if provided in the original plan,
- The stem of the boat (but not the pulpit)

ARTICLE 6 - SAIL MATERIAL

Mainsails, mizen sails, headsails and reaching sails.
Material :
Type 1 : sails made of woven natural material (cotton, linen, hemp) will receive a bonus.
Type 2 : the following type of material are considered as standard material for the sail, the batten gussets and strengthening pieces. Woven polyester fabrics (PET, PEN, DACRON, VECTRAN) , high density polyethylene fabrics (Dyneema) and laminated fabrics with polyester scrim core (PET, PEN) and with polyester woven taffeta either side.
Type 3 : The following types of material are allowed but will be penalised. Sails made of laminated polyester fiber between 2 mylar films (film / film), Aramid, carbon, technora, twaron, vectran and other "exotic" fibers made of stitched panels, as well as membrane (3DL, DIAXM, TAPE DRIVE, TRILAM, FUSION or similar), with or without taffeta.

As per 5.4.1, spinnakers and other downwind sails shall be made of nylon or other similar polyamide fabrics.

ARTICLE 7 - (NOT USED)

ARTICLE 8 - BOATS IDENTIFICATION

8.1. All racing boats must display on the mainsail as a minimum their identification number provided by their national authority or Class Authority.

8.2. The place and dimension of the letters and numbers will comply with the specification of appendix G of ISAF rules. However for smaller boats, the height of numbers and letters should not be less than 25 cm.

ARTICLE 9 - BOATS SPECIFICATION

9.1. Compliance

Boats must comply with the specification displayed on their certificate.

9.2. Design year

The design year is the year of the design plans that were used for building the boat.

9.3. Build year

The build year is based on the date when the hull construction commenced.
For boats whose hull has been rebuilt, the year of the rebuilding has to be used. A hull is "rebuilt" when at least two thirds of the structure and planking were changed.

9.4. Characteristic changes

9.4.1. Minor change

A change of boat specification requiring changes of its JCH certificate is limited to two per calendar year.

9.4.2. Major change

Changes which are considered as major change are those affecting the hull (change of the keel shape, change of position of the rudder, addition of a rear centreboard, etc)
In these cases the vintage bonus (C6) will be established based on the new design year and the launching year after the change.
Changes in the material of spars or in the rigging are not considered as a major change.

ARTICLE 10 - USE OF ELECTRICAL EQUIPEMENT

Equipment using stored energy :
- Electronics :   all electronic aids to navigation are permitted.
- Autopilot :   Permitted unless the SI's state otherwise.
- Windlass :   Permitted unless the SI's state otherwise.
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ARTICLE 11 - (NOT USED)

ARTICLE 12 - MEASUREMENTS : LIMITS, CORRECTING FACTORS, VERIFICATION

12.1.   LIMITS.

12.1.1. Fittings

Removal of any fittings to lighten boat, even if not needed for racing, is forbidden. When boats are checked by a measurer, the suitability of fittings will be assessed according to the boat's size.

12.1.2. Displacement.

The displacement to be declared is the loaded displacement, the boat being ready to sail but with no crew onboard.

12.1.3. Miscellaneous

<u>Bowsprit</u>

A bowsprit is permitted, provided it is part of the original design and it cannot be rotated in the horizontal plane.

12.2.   Correction factors

$$C= C1+C2+C2a+C3+C4+C5+C6+C7$$

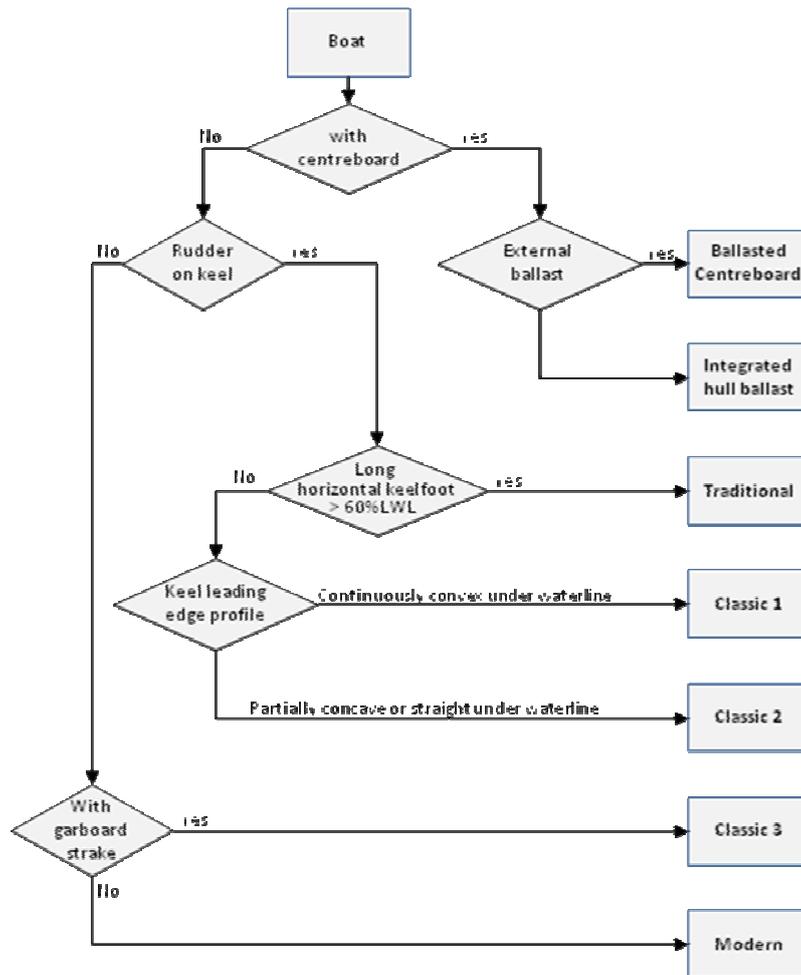### 12.2.1. C1 - Rigging type

Bermudan sloop or cutter	1,000
gaff or gunter cutter or sloop	0,980
Bermudan yawl	0,980
gunter yawl	0,965
gaff yawl	0,940
bermudan or wishbone ketch	0,980
bermudan or wishbone schooner	1,000
bermudan catboat:	0,900
Topsail schooner or gaffer ketch	0,850

12.2.2. C2 and C2a - Hull type

The hull type is determined using following flow chart

Note : a garboard strake must have a radius greater or equal to 50 mm. Otherwise the vessel will be considered as Modern Hull.

A coefficient K is used to take into account the draught : K=(Tmax/L)

The Kref is K reference value for each type hull type defined hereafter.

Boats receive a bonus or a penalty depending of the K value :

$$C2a = 3(K - Kref)$$

Hull type	Characteristics	C2	Kref
Ballasted Centreboard	Centreboard and external ballast	0,12	0,215
Integrated hull ballast	Centreboard with no external ballast	0,13	0,170
Traditionnal	Horizontal keel foot longer than 60% of L_{WL}	-0,05	0,170
Classic 1	Keel leading edge profile continously convex under waterline	0,05	0,185
Classic 2	Keel leading edge profile partially concave or straight under waterline	0,08	0,187

Hull type	Characteristics	C2	Kref
Classic 3	Rudder separated from the keel and garboard strake (radius > 50mm)	0.13	0.200
Modern	Rudder separated from the keel and no garboard strake (radius $\leq$ 50mm)	0.15	0.210
Hard Chined Hull - fixed ballast		Same as Modern	
Hard Chined Hull - ballasted centreboard		Same as Ballasted Centreboard	

12.2.3.C3 - Sails and spars

(See Article 6 for definitions of sail types).

Type 1 Sails	- 0.150
Type 3 Sails (see note)	0.035*L-0.15

Mast or boom material different from original	0.020
Other spar material different from original	0.020
Mast and/or boom made of material other than wood, aluminium or steel (see note*)	0.050
No winches (providing the original design is with no winches)	- 0050
Penalty in case of battens in headsails (see 5.2.1)	final sail area = S*0.15

Note : * This equipment is clearly discouraged by JCH from being on classic yachts. However, in order to allow regatta organisers flexibility on their eligibility rules, the above penalties are considered appropriate.

12.2.4.C4 - Hull material

Traditional wood	-0.030
Laminated / Moulded wood	0.020
Plywood	0.000
Aluminium	0.050
Iron / steel	0.030
Other	0.050

12.2.5.C5 - Inboard engine with propeller of appropriate size

- 3 fixed blades   - 0,110
- 2 fixed blades   - 0,090
- folding/feathering   - 0,030
- others   0.030

Appropriate propeller size means that the engine and propeller are able to move the boat forward during five minutes at a minimum speed of:
$$1.811 \times L_H^{0,5}$$
Outboard engines installed permanently in a recess will be considered as equivalent to inboard engines if the shaft is from the original design and the permanent position of the engine certified by a measurer.

12.2.6.C6 - Vintage bonus

$$C6 = C6.1 + C6.2$$

Where :   C6.1 = Build year

   C6.2 = Design year

Same formula is used for C6.1 and C6.2 :
Until 1955 : $C6.x = year / 1000 - 1,95$
From 1956 on : $C6.x = (0,00168 x year^4 - 3,27015 x year^3) 10^{-10}$

12.2.7.C7 – Regatta classes

If the yacht is part of a regatta class or is a day boat, a sailing dinghies or an open boat or has fittings that do not correspond to those of a cruising yacht of the same size, C7 = 0.30

Following classes are considered as regatta classes (non limitative list) : Requin, Dragon, Aile, Star, YW Diamond, Tumlare, Viking, NYYC30, 12m² du Havre, Neptunkryssare, Quarter tonners, Scows, and yachts of the metric or sqm classes, except if equipped with fittings corresponding to those of a cruising yacht of the same size, ...

Article 13 - RATING CALCULATION

$$R = \frac{L * \sqrt{S}}{6 * \sqrt[3]{FD}}$$

Where   L = L_{WL} +0.3x(L_H-L_{WL}) in metres.
        With L_H Length of hull in metres
              L_{WL} Length Water Line in metres

       S = SGV +0.7x SVP + 0.1xSVL + 0.3xSVGL

       With   SGV : Mainsail Area + Foresail area or Mizzen area or Wishbone area or mizzen sail area + Gaff topsail area

              SVP : area of the largest headsail (Genoa) or of the combination of headsails used simultaneously for reaching (cut jib, staysail flying jib). In case of no headsail, the area of the largest reaching sail will be used.

              SVL : area of the largest reaching sail (flying chute) + Max(largest staysail area or largest fisherman on each mast).

              SVGL : area of the largest downwind sail (spinnaker). If no downwind sail, largest area SVP or SVL

       FD = Displacement Factor, calculated using one of the following formulas in order of applicability :

1.   Traditional hull boats: FD = $(L^{1,55} x B^{1,12} x T_{max}^{0,43})/22$
2.   Boats with L_H less than 7 metres   FD = $(L^{1,32} x B^{1,18} x T_{max}^{0,45})/22$

3. Full centreboard boats : $\quad\quad\quad\quad\quad\quad\quad\quad\quad$ FD = $(L^{1,50} \times B^{1,17} \times T_{max}^{0,40})/22$
4. Modern hull or hard chined hull with fixed ballast $\quad$ FD = $(L^{1,50} \times B^{1,12} \times T_{max}^{0,45})/22$
5. Regatta series (see C7) $\quad\quad\quad\quad\quad\quad\quad\quad\quad$ FD = $(L^{1,28} \times B^{1,55} \times T_{max}^{0,60})/22$
6. Other boats $\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad$ FD = $(L^{1,50} \times B^{1,15} \times T_{max}^{0,70})/22$

In these formulas, B is the max Beam and Tmax is the maximum draught (with centreboard down for centreboard boats).
The maximum draft shall be the draft reported in the design unless it has been measured.

Hull characteristics of in-series production boats are those declared to the F.F.Voile by the designer or the builder, a list is available on the JCH website.
In case a series does not appears on this list, a declaration to JCH must be done.

Corrected rating: Rc = R x C

Time corrected Factor: Ftc = 0,4536 + 0,1563 x √Rc