

# INTERNATIONAL NACRA INFUSION CLASS RULES

2011



The NACRA Infusion Cat was designed in 2003 by Morelli & Melvin and was adopted as a International class in November 2010.

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# INTRODUCTION

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*The Nacra Infusion Class has been formed to support owners throughout the world with better racing and race support service. The concept is to ensure fair racing through a simple one-design manufacture that allows all sailors to complete fairly on the water. Nacra Infusion hulls, hull appendages, tillers, rigs and sails must be produced by Nautical Sports bv or their licensed builders and sail makers. Equipment is required to comply with the NACRA Infusion Building Specification and is subject to an ISAF approved manufacturing control system.*

*Nacra Infusion hulls, hull appendages, rigs and sails may, after having left the manufacturer, only be altered to the extent permitted in Section C of the class rules.*

*Owners and crews should be aware that compliance with rules in Section C is NOT checked as part of the manufacturing process.*

*Rules regulating the use of equipment during a race are contained in Section C of these class rules, in ERS Part 1 and in the Racing Rules of Sailing.*

*This introduction is intended to provide a non-binding overview.*

**THESE RULES ARE CLOSED CLASS RULES WHERE IF IT DOES NOT SPECIFICALLY SAY THAT YOU MAY – THEN YOU SHALL NOT.**

**COMPONENTS, AND THEIR USE, ARE DEFINED BY THEIR DESCRIPTION.**

# PART I – ADMINISTRATION

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## Section A – General

### A.1 LANGUAGE

- A.1.1 The official language of the class is English and in case of dispute over translation the English text shall prevail.
- A.1.2 The word “shall” is mandatory and the word “may” is permissive.

### A.2. ABBREVIATIONS

- A.2.1 ISAF International Sailing Federation
- MNA ISAF Member National Authorities
- N.S. bv Nautical Sports bv and their licensees, referred to in rules as NACRA.
- INCA International Nacra Class Association
- NNCA National Nacra Class Association
- ERS Equipment Rules of Sailing.
- RRS Racing Rules of Sailing.

### A.3. AUTHORITIES

- A3.1 The international authority of the class is the ISAF who shall co-operate with NACRA and the INCA in all matters concerning these **Class Rules**.
- A3.2 The INCA may declare ineligible any Nacra Infusion, which does not conform to the letter of these rules and the official drawings and specifications held by the ISAF.

### A.4. ADMINISTRATION OF THE CLASS

- A4.1 The Class is administered by the INCA in conjunction with NACRA.
- A4.2 In countries where there is not a NNCA, the functions can be managed by the INCA

### A.5. ISAF RULES

- A5.1 These **Class Rules** shall be read in conjunction with the ERS.
- A5.2 When the term is printed in “**bold**” (except headings) then the definition in the ERS applies, and when the term is printed in “*italics*” then the RRS shall apply.

### A.6. CLASS RULES VARIATIONS

- A.6.1 At Class events – see RRS 89.1(d) –ISAF Regulation 26.5(f) applies.  
At all other events RRS 86 applies.

### A.7. CLASS RULES AMENDMENTS

Amendments to these **Class Rules** are subject to the approval of the ISAF in line with ISAF Regulations.

## **A.8. CLASS RULES INTERPRETATION**

Interpretations of **Class Rules** shall be made in accordance with ISAF Regulations.

## **A.9. ISAF BUILDING PLAQUE AND INTERNATIONAL CLASS FEE**

A.9.1 The licensed **hull** builder shall pay the International Class fee to the ISAF.

A.9.2 For all boats measured after 1<sup>st</sup> November 2009, **hulls** shall carry the ISAF plaques permanently placed on starboard transom, IF18CA plaques are acceptable

A.9.3 Having received the payment, the ISAF shall send the ISAF building plaques to NACRA which shall then be attached to the transom of the **hull**.

## **A.10. SAIL NUMBERS**

A10.1 Sail numbers shall be issued by NACRA.

A10.2 Sail numbers shall be issued in consecutive order.

## Section B – Boat Eligibility and Equipment Inspection

For a **boat** to be eligible for *racing*, it shall comply with the rules in this section.

### B.1 CLASS RULES

B.1.1 The boat shall:

- (a) Be in compliance with the **class rules**.
- (b) Have valid manufacturers declarations.
- (c) Have valid **certification marks** on **sails**
- (d) Display an ISAF plaque for boats measured after 01.11.2009

### B.2 CLASS ASSOCIATION MARKINGS

B.2.1 A valid Class Association Sticker, if required by the NNCA or the INCA, shall be affixed to the hull on the transom.

### B.3 EQUIPMENT INSPECTION

B.3.1 In the case of a dispute at an event alleging non-compliance with **class rules** where specific measurements are not stated, the **Equipment Inspector** shall adopt the following procedure:

- (a) A group of 5 or pieces of equipment is randomly selected and measured the same manner (control group).
- (b) The dimensions of the **boat** or pieces of equipment under dispute shall be equal to, or fall between the maximum and minimum dimensions of the control group.
- (c) If the dimensions of the **boat** under dispute are outside the dimensions, then the matter shall be referred to the ISAF, which shall consult the TECHNICAL COMMITTEE of the INCA. The ISAF shall give a binding ruling which shall be communicated to INCA which shall take appropriate action.

### B.4 EVENT LIMITATION MARKS

B.4.1 If an event uses **event limitation marks** these marks shall not be removed during the event. If the **event limitation mark** becomes damaged or lost this shall be reported to the race committee as soon as possible.

# PART II – REQUIREMENTS AND LIMITATIONS

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The **boat** and **crew** shall comply with the rules in Part II when *racing*. If there is any conflict with the **Class Rules** then Section C shall take precedence.

The Class Rules in Part II are **closed class rules**, where anything that is not specifically allowed in **Class Rules** is prohibited.

Any **equipment inspection** shall be carried out in accordance with the ERS except where varied by Part II of these **class rules**.

## Section C. Conditions for racing.

### C.1 GENERAL

#### C.1.1 RULES

- (a) The ERS Part I – Use of Equipment shall apply.
- (b) RRS 42.3 is changed as follows:
  - Add to RRS 42.3:
    - (i) *A boat's crew may pump the mainsail repeatedly to release one or more battens.*
- (c) RRS 49.1 shall not apply.
- (d) RRS 50.4 shall be amended to read 75%.
- (e) RRS Appendix G1.3 (d) shall not apply.

#### C.1.2 LIMITATIONS

- (a) The Nacra Infusion shall only be raced with original or replacement equipment supplied by NACRA, for the Nacra Infusion, except where otherwise authorized by these class rules.
- (b) Where replacement equipment other than from NACRA is authorized, it may be obtained from any supplier provided that the replacement is of a similar weight, size and type and performs the same function.

### C.2 ADVERTISING

Competitor advertising may be displayed in accordance with ISAF Regulation 20.

### C.3 CREW

#### C.3.1 LIMITATIONS

- (a) One member of **crew** shall be a member of the INCA.
- (b) The **crew** shall consist of two sailors
- (c) No **crew** members shall be substituted during a regatta unless agreed in writing with the Race Committee. The Race Committee shall consider any advantage that may give the **boat**, if this replacement will take place.

## C.4. PERSONAL EQUIPMENT

### C.4.1 MANDATORY

- (a) A **boat** shall be equipped with a **personal floatation device** for each **crewmember** to the minimum standard EN393, ISO 12402-5 (CE 50 Newtons), USCG Type III, or AUS PFD 2 unless an alternative standard is prescribed otherwise in the Notice of Race.

### C.4.2 OPTIONAL.

- (a) Trapeze harness for each member of **crew**
- (b) Other personal equipment
- (c) Magnetic devices.
- (d) Mechanical timing devices
- (e) Electronic devices that provide timing, heading and heading memory but which do not receive or transmit data
- (f) Water, food and clothing containers
- (g) Emergency Positioning Indicating Radio Beacons (EPIRB) devices
- (h) Towing line if required in Sailing Instructions.
- (i) A paddle, fit for purpose if required in Sailing Instructions
- (j) Wind indicator(s)

## C.5 EQUIPMENT

Replacements parts may be obtained from any supplier unless otherwise stated.

### C.5.1 MANDATORY

A righting line of minimum of 10mm thickness and 4 metres in length shall be fitted on the **boat** at all times.

## C.6 BOAT

### C.6.1 MODIFICATIONS, MAINTENANCE AND REPAIR

The following is permitted without the approval of NACRA. Unless stated otherwise items mentioned in this section may be obtained from NACRA.

- (a) Holes no larger than the necessary size for the passing of lines may be made in any part of the **boat**
- (b) Routine maintenance for minor repairs, filling, sanding, cleaning, polishing and waxing is permitted as long as the **hull** is in a similar condition as when new ie gel coat
- (c) Replacements for any boat equipment, including but not limited to **hull appendages, rig, sails**, battens, spinnaker bag frame or fittings, whether original or replacements shall only those produced by NACRA except where otherwise authorised by this section.
- (d) Foot loops,
- (e) **Crew** restraining lines
- (f) **Daggerboard** retention systems may be added
- (g) Compass holders may be added

- (h) **Sail** calibration marks may be added
- (i) Replacement of fittings on a like for like basis

#### C.6.2 WEIGHT

The minimum weight of the **boat** in dry condition, excluding optional equipment detailed in C.4.3, shall be 180 kg.

#### C.6.3 CORRECTOR WEIGHTS

- (a) **Corrector weights** of lead may be added of up to 7 kg permanently fastened to the outside of the forward beam to achieve the **boat** weight.

### C.7 HULL

#### C.7.1 MODIFICATIONS, MAINTENANCE AND REPAIR

The following is permitted without the approval of NACRA. Unless stated otherwise items mentioned in this section may be obtained by any manufacturer or supplier.

- (a) Additional hiking straps are permitted
- (b) Storage pockets are permitted
- (c) Additional sail adjustment devices may be added to and fitted through the trampoline
- (d) Spinnaker bags are permitted
- (e) Non slip surfaces may be applied to the **hulls**
- (f) Vinyl or similar may be added to the hull above the waterline to facilitate the displaying of advertising.
- (g) Further NACRA hatches may be added
- (h) Waxing and polishing of the **hull** is permitted.

#### C.7.2 USE

Hiking straps may not be adjusted while racing.

### C.8 HULL APPENDAGES

#### C.8.1 MODIFICATIONS, MAINTENANCE AND REPAIR

The following is permitted without the approval of NACRA. Unless stated otherwise items mentioned in this section may be obtained from any manufacturer or supplier.

- (a) All **hull appendages** shall be original equipment supplied by NACRA.
- (b) Waxing and polishing of the **hull appendages** is permitted.
- (c) The **hull appendages** may be lightly sanded to key the surface.
- (d) Sanding and filing to improve fit and function is permitted
- (e) Shims may be added to reduce or compensate for wear
- (f) Tiller Extension may be allowed to be exchanged for an alternative ( Adjustable = Arriba type or single one piece).

#### C.8.2. LIMITATION

- (a) Only two rudder blades and daggerboards may be used during an event, permission to change agreed in writing with the Race Committee.

## **C9 RIG**

### **C.9.1 MODIFICATIONS, MAINTENANCE, REPAIR**

- (a) Maintenance or replacement of running rigging and fittings with similar materials is permitted.
- (b) Replacement of standing rigging shall be supplied by NACRA.
- (c) Masts may have wind indicators and compasses
- (d) Additional sail adjustments added as long as the water ingress and integrity of the mast is maintained
- (e) The maximum limitation of downhaul (Cunningham) is at 16:1.  
Mainsheet is standard at 10:1.  
Any increase on these ratios will void mast warranties.
- (f) Sheets and lines may be replaced without any restrictions as to length, diameter and taper providing the part is not made of wire.
- (g) A preventer or otherwise known as a positive mast rotator, may be added to keep the mast rotation, and may be rigged in any manner.

### **C.9.2 LIMITATION**

- (a) Only one set of **spars** and **standing rigging** may be used during an event, permission to change must be agreed in writing with the Race Committee.

### **C.9.3 MAST**

Shall be supplied by NACRA.

### **C.9.4 BOWSPRIT**

Only **bowsprits** supplied by NACRA are class legal.

- (a) The **bowsprit** shall be in the longitudinal centreline of the **boat** and not be adjusted while sailing.
- (b) The end cap of the **bowsprit** shall always be smooth, round and blunt.

### **C.9.5 STANDING RIGGING**

**Standing rigging** shall be supplied by NACRA.

### **C.9.6 RUNNING RIGGING**

**Running rigging** may be replaced from the original supplied by NACRA as long as it is equal to or greater than original gauge .

#### **(a) USE**

- (1) **Running rigging** shall be arranged as supplied by NACRA.
- (2) Spinnaker sheet blocks and mounting is open and additional blocks may be added.

Additions of snuffer type retrievable systems of any design are allowed.

## **C.10 SAILS.**

### **C.10.1 MODIFICATIONS, MAINTENANCE AND REPAIR**

- (a) Telltales are allowed, number and placement are optional
- (b) Advertising, in line with ISAF Regulation 20, is allowed as long as size and shape of sail are not altered.

- (c) Battens shall be supplied by NACRA
- (d) Battens shall be placed in **batten pockets**.
- (e) Sails shall not be altered in any way, however routine maintenance and repair are allowed as long such actions do not alter shape or size from the original.

C.10.2 LIMITATION

- (a) Only one set of **sails** may be using during an event, permission to change agreed in writing with the Race Committee

C 10.3 MAINSAIL IDENTIFICATION

- (a) Numbering shall be in line with ISAF Appendix G.
- (b) The class Insignia shall be the NACRA logo as prescribed by NACRA and shall be displayed near the head.

## **Section D – Hull.**

### **D.1 PARTS**

#### **D.1.1 MANDATORY**

- (a) **Hull** shells
- (b) Front beam
- (c) Rear Beam
- (d) Trampoline

### **D.2 GENERAL**

#### **D.2.1 RULES**

(a) The **hulls** shall comply with the **Class Rules** and building specification in force at the time of initial manufacture declaration.

#### **D.2.2 MODIFICATIONS, MAINTENANCE AND REPAIR**

The **hulls** shall not be altered in any way except those allowed in Section C of these **Class Rules**.

- (a) Coloured gel coat may be used during construction
- (b) If any **hull** is damaged and requires repaired in any other way than described in section C, it shall be carried out by a licensed builder and the details shall be recorded on the Manufacturers declaration.

#### **D.2.3 IDENTIFICATION**

(a) The hull shall carry the ISAF Plaque permanently placed on the transom.

#### **D.2.4 BUILDERS**

(a) The **hull** shall be built by NACRA.

### **D.3 HULLS**

D.3.1 (a) The **hulls** shall comply with the Building Specification in force at the time of manufacturer and shall be manufactured by NACRA,

(b) Modifications, maintenance and repairs are permitted to include sanding, polishing, waxing BUT not any friction reduction materials.

(c) Sail adjustment fittings may be added to the **hulls** but preventing any water ingress

### **D.4 BEAMS**

(a) The beams shall not be convex except for the necessary pre-bend to counteract mast loading

(b) Beams may be fitted with sail adjustment fittings

(c) Beams may have compass(es) fitted.

(d) Any holes drilled shall only be as large as necessary for fittings

## **D.5 TRAMPOLINE**

The trampoline shall be made of mesh and supplied by NACRA and must completely cover the area between the beams and the hulls.

## **D.6 ASSEMBLED HULL**

### **D.6.1 FITTINGS**

Hull fittings shall comply with the Building Specification in force at the time of manufacture except when altered, added or replaced as permitted by Section C of these **class rules**.

## Section E – Hull Appendages

### E.1 PARTS

#### E.1.1 MANDATORY

- (a) **Daggerboards**
- (b) **Rudder** blade, **rudder** stock, **tiller** and **cross bar**

### E.2 GENERAL

#### E.2.1 RULES

- (a) **Hull appendages** shall comply with the **class rules** in force at the time of **certification** and be manufactured by NACRA.

#### E.2.2 MODIFICATIONS, MAINTENANCE AND REPAIR

- (a) Hull appendages shall not be altered in any way except as permitted by Section C of these class rules.
- (b) Routine maintenance such as waxing and polishing is permitted without re-measurement and re-certification provided the intention and effect is to polish only.

#### E.2.3 MANUFACTURERS

The **daggerboards, rudder blades, rudder** stock/tiller and cross bar shall be made only by a manufacturer licensed by NACRA to produce these.

### E.3 DAGGERBOARDS

The **daggerboards** shall comply with the Building Specification in force at the time of manufacture.

### E.4 RUDDER BLADE, RUDDER STOCK, TILLER AND CROSS BAR

The **rudder** blades and **rudder** stock/tiller and cross bar assembly shall comply with the Building Specification in force at the time of manufacture by NACRA.

## Section F- Rig

### F.1 PARTS

#### F.1.1 MANDATORY

- (a) **Mast**
- (b) **Boom**
- (c) Standing **Rigging**
- (d) Running **rigging**
- (e) **Bowsprit**

### F.2 GENERAL

#### F.2.1 RULES

- (a) The, **spars** and fittings shall all comply with the **Class Rules** applicable at time of manufacture by NACRA.
- (b) The standing and running **rigging** shall comply with the current **class rules**.

#### F.2.2 MODIFICATIONS, MAINTENANCE AND REPAIR

- (a) The **spars** shall not be altered in any way except as permitted in Section C of the **class rules**.

### F.3 MAST

The mast **spar** and its fittings shall comply with the Building Specification in force at the time of manufacture of the **spar**.

### F.4 BOOM

The boom **spar** and its fittings shall comply with the Building Specification in force at the time of manufacture by NACRA.

### F.5 BOWSPRIT

The **bowsprit** and its fittings shall comply with the Building Specification in force at the time of manufacture by NACRA.

### F.6 STANDING RIGGING

The **standing rigging** and its fittings shall comply with the Building Specification in force at the time of manufacture by NACRA.

### F.7 RUNNING RIGGING

The **running rigging** and its fittings shall comply with the Building Specification in force at the time of manufacture by NACRA.

#### F.7.1 CONSTRUCTION & MATERIALS

##### MANDATORY

- (1) All lines, mainsheet, jib sheet, spinnaker, downhaul etc are free to be replaced with length and materials as desired. See C.9.1.f.

## **Section G – Sails**

### **G.1 PARTS**

#### **G.1.1 MANDATORY**

- (a) **Mainsail**
- (b) **Headsail**
- (c) **Spinnaker**

### **G.2 GENERAL**

#### **G.2.1 RULES**

The **sails** shall comply with the **class rules** applicable at time of manufacture by NACRA

#### **G.2.2 SAILMAKER**

The **sails** shall be made only by a manufacturer licensed by NACRA to produce sails.

### **G.3 MAINSAIL**

The **mainsail** shall comply with the Building Specification in force at the time of manufacture by NACRA.

#### **G.3.1 IDENTIFICATION**

- (a) The **class insignia** shall affixed as specified in Section C.

### **G.4 JIB**

The **jib** shall comply with the Building Specification in force at the time of manufacture by NACRA.

### **G.5 SPINNAKER**

The **spinnaker** shall comply with the Building Specification in force at the time of manufacture by NACRA.