

# ILLUSION YACHTS

One-Design Class Rules

Draft Rules

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## Illusion Yachts - One-Design Class Rules

### 1 GENERAL

- 1.1 The object of these rules, specifications and official plans is to ensure that Illusion One-Design Class Yachts are as nearly alike as possible as regards:
- a) Hull and deck shape and weight
  - b) Shape of rudder
  - c) Shape and area of sail plan
  - d) Size and weight of spars and rigging
  - e) Weight distribution
  - f) And any other matter which may influence the speed, performance or seaworthiness of the yacht.

### 2 ADMINISTRATION

- 2.1 The administering authority for the class shall be the Illusion One-Design Class Association, which may cooperate with such National or International Authority as will best promote the management and popularity of the class.
- 2.2 **LANGUAGE** - The official language for the class shall be English. The word "shall" is mandatory. The word "may" is permissive. In the event of dispute over class rule interpretation, the English text shall prevail.
- 2.3 **BUILDERS** - Illusion's shall be built only by builders licensed to do so under the copyright of Illusion Yachts (21-23 Victoria, Cowes, Isle of Wight), and shall comply to the building specifications detailed by the copyright holder.
- 2.4 **BUILDING FEE** - The building fee shall be payable to Illusion Yachts when the moulding of the hull commences.
- 2.5 **REGISTRATION AND MEASUREMENT CERTIFICATES**
- 2.5.1 No yacht SHALL be deemed to be an Illusion until it has been completed with a building number assigned by Illusion Yachts, attached to the hull.
- 2.5.2 The sail number shall be as required by the owners class association. Each country shall have consecutive sail numbers starting 1 and preceded by the national letters.
- 2.5.3 No yacht shall race unless a current valid Measurement Certificate has been issued by the owners National Class Association.
- 2.5.4 Change of ownership shall invalidate the registration certificate.

- 2.5.5 Any alteration, replacement or major repair to an item of equipment measured in the rules invalidates the measurement certificate until re-measured.
- 2.5.6 It is the responsibility of an owner to ensure that the yacht complies at all times with the current class rules.
- 2.5.7 No yacht shall race unless the owner(s) is a full member of an Illusion class owners association.
- 2.5.8 Alterations and modifications to official class rules and diagrams shall be permitted only with the joint approval of the copyright holder. and the international class association.

## **2.6 MEASUREMENTS**

- 2.6.1 Yachts shall be measured only by an approved Illusion Class Measurer.
- 2.6.2 A measurer shall not measure a yacht, spars, sails or equipment owned or built by himself, or in which he is an interested party, or has a financial involvement.
- 2.6.3 Tolerances in measurement in the rules and measurement plans are to provide for minor building errors or age distortion.
- 2.6.4 The measurer shall report on the measurement form anything which is considered to be a departure from the intended nature and design of the yacht, or to be against the general interest of the class. A certificate may be refused if the specific requirements of the rules are satisfied.
- 2.6.5 The method of measurement, unless otherwise stated, shall be in accordance with the recommendations of the I.Y.R.U.

## **3 CONSTRUCTION AND MEASUREMENT**

- 3.1 **GENERAL** - The hull, deck, interior layout, ballast, rudder, sail plan and deck layout shall conform to the building specifications class rules, and official diagrams.

### **3.2 HULL**

- 3.2.1 The hull and deck flange shall be moulded by a licensed builder, in glass reinforced plastics to the building specifications of lamination.
- 3.2.2 **HORIZONTAL FLOTATION MARKS** of not less than 4mm in height, and 20mm fore and aft length, shall be permanently displayed on the hull as follows:  
Stem Flotation Marks - The upper edge of the stem flotation mark. shall be 365mm measured down the hull from measurement point 1, as shown in the official diagram C.  
Stern Flotation Marks - The upper edge of the stern flotation mark shall be 345mm measured up the hull from the point where the rear of the skeg meets the hull, as in official diagram C.  
A moulded waterline may substitute for flotation marks, providing the lower edge of the waterline conforms to the position of the upper edge of the flotation of the flotation marks.
- 3.2.3 The cockpit, deck, interior bulkheads and buoyancy tanks shall conform to the details of official diagram A.
- 3.2.4 The deck and bulkheads shall be constructed from either Glass Reinforced Plastics, or Marine Plywood. G.R.P. decks and bulkheads shall be constructed on an approved mould to the building specifications of laminations. Plywood decks and bulkheads shall be in marine grade plywood, with a minimum, thickness of 6mm. Tolerance to B.S. 1088
- 3.2.5 The deck shall be flat in section with no camber either positive or negative, with a tolerance of plus or minus 5mm.
- 3.2.6 The cockpit coaming shall be as detailed in official diagram A and shall not exceed a height of 30mm from the deck level.
- 3.2.7 A watertight deck recess shall be fitted in the forward section of the deck (as shown in diagram A) with a minimum depth of 35mm.
- 3.2.8 Chainplates shall be affixed in line with the mast step and there shall be a minimum shroud base of 580mm and a maximum shroud base of 630mm.

- 3.2.9 The following are not permitted:
- a) Coring, drilling out, rebuilding, replacement of materials or grinding in any way to reduce weight.
  - b) Reshaping the hull profiles or contours.

3.2.10 The maximum beam, at any point on the sheerline, shall not be more than 830mm.

### **3.3 BALLAST**

3.3.1 Ballast shall be made up of solid lead ingots, and/or bags of lead shot. No individual ingot or bag shall weight more than 15kg.

3.3.2 The casting of lead ingots to conform specifically to the contours of the hull is not permitted.

3.3.3 The fore and aft trim of the boat when ballasted, but without helmsman, or corrector weights, shall conform to diagram C, part 2.

3.3.4 Trimming ballast may be placed in the forward buoyancy compartment to allow correct sailing trim.

3.3.5 No ballast with a greater specific density than lead shall be used.

### **3.4 BILGE PUMP**

3.4.1 An adequate bilge pump shall be fitted.

3.4.2 The bilge pump shall drain from the lowest point in the keel and shall exit through the deck at a point between the forward edge of the cockpit coaming and the aft edge of the mast.

### **3.5 RUDDER AND STEERING SYSTEM**

3.5.1 The external dimensions and configuration of the rudder shall comply with the official rudder drawing and table of offsets contained in official diagram D.

3.5.2 The rudder shall be constructed of either solid timber or glass-reinforced plastic or a combination of both.

3.5.3 The rudder stock shall be constructed of aluminum tube, with a minimum outside diameter of 22mm.

3.5.4 The rudder bearings shall consist of simple plastic or nylon rings.

3.5.5 The steering system shall be controlled by means of a foot-bar unless an exemption has been granted by the class association for a handicapped person.

3.5.6 Steering control lines shall be of synthetic rope not less than 2mm in diameter.

3.5.7 Solid linkages in the steering system are not permitted.

### **3.6 SPARS**

#### **3.6.1 MAST**

a) The mast shall be of aluminum extrusion supplied by a licenced builder. No alterations or modifications to the mast extrusions are permitted except to facilitate the attachment of rigging and fittings as specified in these rules.

b) Permanently bent masts and rotating masts are not permitted.

c) The distance from the forward surface of the mast at deck, measured horizontally to the stem at sheerline, shall not be more than 1550mm nor less than 1530mm.

d) The mast shall be deck stepped.

e) Bands, minimum width 10mm shall be put on the mast in contrasting colour to the mast as follows:

No. 1 – Whose upper edge shall be minimum 350mm above deck level.

No. 2 - Whose upper edge is maximum 3880mm above the upper edge of No. 1.

f) Not more than one spinnaker boom attachment fitting shall be fixed to the forward surface of the mast. The maximum height shall not be more than 280mm above deck level. The fitting shall project not more than 20mm horizontally from the forward surface of the mast.

#### **3.6.2 STANDING RIGGING**

- a) The mast standing rigging shall consist of only one forestay, one backstay, two upper shrouds, two intermediate shrouds, and two lower shrouds. The standing rigging shall be only of stainless steel or galvanized steel multi-strand wire.
- b) The position of the forestay on the centreline is optional but shall be forward of the luff on the jib.
- c) The shrouds shall not be less than 2mm in diameter. The backstay and forestay shall not be less than 1.5mm in diameter.
- d) The shrouds shall be attached at their lower ends by lanyards, and shall not be adjusted while racing.
- e) The backstay shall be fixed to the masthead crane.

### 3.6.3 **RUNNING RIGGING**

- a) One spinnaker halyard of synthetic rope not less than 2mm diameter which shall not bear more than 35mm forward of the mast or more than 270mm above the upper surface of the lower black band.
- b) One mainsail halyard of synthetic rope not less than 3mm diameter.
- c) One genoa halyard of wire not less than 2mm diameter and/or rope of 4mm diameter. Which shall not bear more than 2550mm above the upper surface of the lower black band. The genoa halyard may be adjustable in length but no means of mechanical advantage or purchase system shall be used.
- d) One boom vang of synthetic rope, not less than 3mm diameter and not more than 2:1 power ratio.
- e) One spinnaker boom downhaul of not less than 3mm diameter.
- f) One mainsail outhaul of synthetic rope.
- g) One Cunningham control of synthetic rope using a maximum 2:1 power ratio.
- h) One backstay adjuster tackle of synthetic rope using a maximum 4:1 power ratio.
- i) One mainsheet of synthetic rope not less than 4mm diameter and having a maximum power ratio of 1.5:1
- j) Spinnaker and headsail sheets of synthetic rope not less than 4mm diameter.
- k) One spinnaker boom uphaul of synthetic rope not less than 2mm diameter.

### 3.6.4 **MAIN BOOM**

- a) The boom shall not be tapered or permanently bent.
- b) The boom shall be of aluminum extrusion supplied by a licensed builder.
- c) A contrasting coloured band of minimum width 10mm shall encircle the boom. The forward edge of the band shall be not more than 1350mm from the aft surface of the mast when the boom is held at right angle to the mast.

### 3.6.5 **SPINNAKER BOOM**

The overall length of the spinnaker boom, including fittings, shall not be more than 1260mm.

## 3.7 **SAILS: SAIL PLAN**

- 3.7.1 One mainsail, one genoa and one spinnaker only shall be carried when racing.
- 3.7.2 The sails shall be single ply except for permitted reinforcements, constructional seams, tabling, camber lines and genuine repairs to damage, and may be woven or unwoven material.
- 3.7.3 The genoa may be fitted with transparent windows of any material. If fitted no window shall be of more than 350mm in any dimension.
- 3.7.4 The maximum reinforcement of any corner of any sail shall not exceed 10% of the length of the luff. Reinforcement is defined as two or more layers of material, other than normal seaming. Self-adhesive spreader patches are permitted.
- 3.7.5 National letters and distinguishing numbers shall be placed on the mainsail, genoa and spinnaker.

3.7.6 The class emblem on the mainsail shall be as in diagram B, and contained within two 140 x 130mm rectangles located starboard on top of port but separated by a 30mm space. The rectangles shall be located immediately below the midpoint of the top batten.

3.7.7 The national letters and distinguishing numbers shall be of equivalent height and size to the class emblem, and shall be located immediately below the midpoint of the second batten.

### 3.7.8 **MAINSAIL**

- a) A double luffed or loose-footed mainsail is prohibited.
- b) The headboard may be of any material and shall not extend more than 90mm aft of the head when measured at right angles to the luff.
- c) The cross width measurements shall be taken from the three-quarter, half, and quarter points on the leech, located when the head is folded to the clew for the half-mast point, and when the head and clew are folded to the half-height point to determine the three-quarter height points.
- d) The maximum three-quarter-height width between the leech and the nearest point on the luff, including the luff rope, shall be not more than 530mm.
- e) The maximum half-height width between the leech and nearest point on the luff, including the luff rope, shall be not more than 900mm.
- f) The maximum quarter-height width between the leech and the nearest point on the luff, including the luff rope, shall be not more than 1175mm.
- g) The length of the leech shall not exceed 4050mm.
- h) The sail shall have four battens. The top and bottom battens shall be not more than 230mm in length, and the intermediate battens shall be not more than 310mm in length. The maximum width of the battens shall be not more than 12mm. The battens shall divide the leech into five approximately equal sections
- i) A Cunningham hole may be fitted in the luff.
- j) Camber lines are permitted.

### 3.7.9 **GENOA**

- a) The intersection between the sheerline and the extension of genoa luff shall be between 350mm and 370mm aft of the stem.
- b) The width of the head measured at right angles to the luff, including the luff tape shall be not more than 25mm.
- c) The luff shall be not more than 3890mm nor less than 2860mm.
- d) The diagonal (LP) shall be not more than 1700mm nor less than 1660mm measured to the forward side of the luff tape.
- e) The leech shall not be convex
- f) Camber lines are permitted.
- g) No headboard, battens or footclub are allowed in the genoa.

### 3.7.10 **SPINNAKER**

- a) The spinnaker shall be a three-cornered sail, symmetrical about its centreline.
- b) The sail, laid out on a flat surface, shall be measured when folded in half about its centreline, with the leeches superimposed. Sufficient tension shall be applied to remove wrinkles and creases along the lines of measurement.
- c) The length of the leeches shall be not be more than 3330mm nor less than 3250mm.
- d) The length of the vertical centrefold shall be not more than 3690mm nor less than 3660mm.

- e) The half-height, half-width, shall be taken as the distance between the points on the leech and the centrefold 1640mm, measured in a straight line from the head. The half-height, half-width, shall be not more than 960mm nor less than 940mm.

### **3.8 CREW**

- a) The crew shall consist of one person only.
- b) There shall be a standard weight for crew of 100 kilograms, which each helmsman shall weigh-in at with the aid of corrector weights. Corrector weights shall be stowed in the side buoyancy tanks, so that the boat shall float at the loaded flotation marks, as set out in rule 3.3.2

### **3.9 BUOYANCY**

- a) There shall be four separate buoyancy compartments as detailed in official diagram 4.
- b) The side buoyancy compartments and forward buoyancy compartment shall be accessible through watertight hatches.
- c) No part of a side buoyancy compartment shall be more than 500mm below the level of the sheerline when measured on a perpendicular plane.

### **3.10 WEIGHT**

- 3.10.1 The all-up weight for racing, including crew and crew corrector weights, shall be indicated by the flotation marks. In still water these marks shall not show above the surface

### **3.11 FIXED FITTINGS & EQUIPMENT TO BE CARRIED WHEN RACING**

- 3.11.1 Two headsheet tracks, each not more than 250mm, in length, located in the positions as indicated on diagram A.
- 3.11.2 One operational genoa furler, attached to the genoa tack, located in the foredeck recess.
- 3.11.3 One swivel attached to the genoa halyard, capable of allowing the genoa to be furled under normal sailing loads.

### **3.12 GENERAL PROHIBITIONS**

- 3.12.1 Hydraulics.
- 3.12.2 Running backstays or devices to simulate such.
- 3.12.3 Stowage of the spinnaker boom on the main boom.
- 3.12.4 Spinnaker chutes through the deck.
- 3.12.5 Rigging utilizing kevlar or similar proprietary synthetic materials.
- 3.12.6 Bushed or unbushed holes or slots to feed halyards or control lines through the hull, transom or buoyancy compartments.
- 3.12.7 Levers or other equipment that may increase the power ratio of the running rigging.
- 3.12.8 Hiking: at no time while racing shall the majority of the crew's torso be above deck level.
- 3.12.9 Trimming of genoa sheets by means other than by a sheet from the clew directly to the block fastened to the headsail track.
- 3.12.10 The use of barber haulers and similar devices is prohibited.
- 3.12.11 Angling of headsail tracks or athwartships movement is prohibited. The tracks are to be approximately as shown in diagram A.
- 3.12.12 Reef points fitted to either the mainsail or genoa are prohibited.