

The X-99 International Constitution and Class Rules

2007 Edition

Revision following International Meeting of 04 November 2006

CONSTITUTION

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CONSTITUTION

1. NAME

The name of the Association shall be THE X-99 INTERNATIONAL CLASS ASSOCIATION.

2. INSIGNIA

The emblem of the class shall be the recognised 99 symbol as per Drawing No. 10.

3. OBJECTS

The objects of the Association are: (A+B)

3.1 (A) To provide a medium of exchange of information among National X-99 classes and to enhance the enjoyment and fairness of racing these sailboats.

3.1 (B) To promote and develop X-99 class racing in all countries under uniform rules.

4. POLICY

It shall be the policy of the Association to maintain the X-99 as a one-design yacht.

5. JURISDICTION

The International Authority of the Class shall be the X-99 International Class Association in cooperation with the Offshore Racing Congress and International Sailing Federation.

6. LANGUAGE

The official language of the class is English and in the event of any dispute over translation the English text shall prevail.

7. MEMBERSHIP

7.1 The members of the Association shall be every recognised National X-99 Association and X-Yachts.

7.2. Each National Association shall have two votes plus one vote per each 15 yachts registered, rounded to the nearest integer multiple of 15; X-Yachts shall have the average of the current votes of all the National Associations, rounded to the nearest integer number.

7.3. Any changes to the Constitution or the Class Rules must be approved by a three-quarter majority of all the votes.

7.4. Any request for changes to the Class Rules or Constitution must be filed by a member of the Association with the International Secretary not later than two months before the date of an official International Meeting.

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7.5. All members must be represented or cast proxy votes at all International Class meetings. In the event of any member failing to appear at any International Association meeting or to have cast a proxy vote, the International Secretary shall satisfy the member that all reasonable effort has been made to secure such a vote, and that member shall be deemed to have voted with the majority of the Association.

7.6. The International Secretary shall be elected by the Association and may or may not be a representative of a National Authority. If the International Secretary is not a representative of a National Authority she/he shall not be entitled to vote.

8. COPYRIGHTS

Copyright of the X-99 shall remain the property of X-Yachts of Denmark and designer Niels Jeppesen.

9. BUILDERS

Sole rights to build the X-99 shall remain with X-Yachts unless otherwise licensed by X-Yachts with the approval of the X-99 International Class.

10. TECHNICAL COMMITTEE

In the event of a dispute over the Class Rules the matter shall be forwarded to the X-99 International Class Association which will appoint a Technical Committee to consider any dispute. The Technical Committee shall comprise of X-Yachts and two other members of the International Board.

The Technical Committee present at International event should consist of a minimum of two Board members.

For international events the Technical Committee must be appointed by the Board prior to the event.

11. MEETINGS

11.1 Every two years an official International Meeting must be held in November or at an alternative agreed date. However, if deemed necessary an annual meeting could be held.

Only at this meeting can changes and additions to the Rules be made, according to Rule 7. Interim Rulings must be incorporated or omitted from the Rules at this meeting.

11.2 The summons including the agenda and, if any, requests for amendment of Class rules or Constitution must be notified to all members not later than one month before the date of an official International meeting.

11.3. Every year at the World Championship an informal international meeting will be held.

12. CHAIRMAN

The chairman of the International Board will be the Board Member from the country in which the World Championship will be held that year.

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13. WORLD CHAMPIONSHIP

The date and location of the World Championship or corresponding International event must be approved by the International Class Association to become effective.

14. ADVERTISING

Category C applies (ISAF Reg. 20.4).

RULES

1. GENERAL

1.1 The X-99 is a one-design class. The intention of these rules is to ensure that all boats are as alike as possible in hull shapes, appendages, weight, weight distribution, rig and sail plan. The construction of the hull, spars, sails and rigging are controlled by these rules except where variations are specifically permitted.

1.2 The word "shall" is mandatory and the word "may" or "can" are permissive,

1.3 Wherever in these rules the words "Class Rules" or "Standard Build" are used they shall be taken as included in the official drawings and diagrams as produced by X-Yachts and shall mean as fitted by the builder.

1.4 In general it should be considered that any alteration to the Standard Build is not permitted unless specifically permitted by these rules.

2. MEASUREMENT AND MEASURERS

2.1 Except where other methods of measurement are specifically indicated all measurements shall be carried out in accordance with the ISAF measurement instructions.

2.2 In the case of a measurement dispute on hull, spars, sails, fittings, equipment to be carried, keel, rudder or rigging, the matter shall be referred to the International Class Technical Committee for a written ruling.

If a yacht owner or skipper, being a paid-up member of their respective National Association, wishes to question one of the Rules, he/she should put their question to their National representative on the International Board, who will, if considered appropriate, forward it to all members of the International Board who shall make a judgement within one month. For a Ruling to be made it must be agreed by a majority of Board members (>50%),

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Any question must be placed with the National representative with a minimum of three months' notice before an International event is scheduled.

2.3 No yacht shall take part in a Class event unless it conforms to the Class Rules and its owner is a member of a National Association.

2.4 It is the responsibility of the owner to see that his yacht, spars, sails and equipment comply with the Class Rules and the relevant ISAF Racing Rules of Sailing at all times and that alterations, replacements or repairs to the yacht, spars, sails comply to the Class Rules.

2.5 Every yacht which takes part in world championships or corresponding International event must have a class measurement and weight certificate according to Enclosure 1 completed and signed by an accredited national or international measurer.

3. HULL

3.1 The hull, deck, interior layout, keel, rudder, rig and sails shall conform to the Building Specifications, Class Rules and Official Plans. The sheer line and profile shall be as shown on the Lines Plan and all dimensions that affect the hull shape shall be as defined in the I.M.S International Hull Standard H012.

3.2 The hull, deck and interior shall be moulded in reinforced plastics to the builders lamination specification in moulds provided by X-Yachts.

3.3 The Datum Weight of the yacht shall be a minimum of 2980 kg., including the following equipment: mast, boom, kicking strap, standing and running rigging, floorboards, washboards, blocks, spinnaker pole, pipecots, and toilet and batteries. (as per rules 15.2 and 16.0). Operational galley cooker with or without oven, and in case of gas cooker, gas cylinder installation and box, pulpit, pushpits and lifelines (as per rule 3.8). Fixed compass, navigation lights, and ladder if fixed. Water and diesel tank are to be empty.

When the combined weight of the engine and sail-drive (weight declared by the engine manufacturer) is less than 126 kg, and the yacht is found to weigh less than 2980 kg, a maximum of 48 kg compensation weight is to be fixed at the engine as per drawing 11, until minimum datum weight is achieved.

Yachts supplied without steel floors and still found to weigh less than 2980 kg, shall have additional compensation weights of a maximum of 92 kg fixed at the floors until the minimum datum weight is achieved - all as shown on drawing 11.

For instance the following shall not be included in the datum weight minimum:

Sails, sail battens, boom-cover, spinnaker and genoa-sheets, Barber-haul, winch handles, safety equipment (except fixed compass,

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navigation light, and fixed ladder) galley gear, cabin table, cushions, additional berth bottoms.

3.4 If it is necessary to add ballast to a yacht to meet the rules of the minimum displacement, this ballast (lead or iron) shall be split up into 3 equal parts. Two parts are to be secured on the underside of the sidedeck at the chainplates on the starboard and port side. This ballast must not be thicker than 10 cm measured at right angles to the underside of the sidedeck. The third part of the ballast shall be fixed in the bilge of the yacht just aft of the mast. Any kind of inboard ballast (lead or iron) shall be glassed into the yacht.

3.5 The shape of the hull shall be in accordance with the Lines Plan and Table of Offsets, and be within tolerances specified.

3.6 The hull number shall be inscribed on a metal plaque fixed to the aft part of the cockpit.

3.7 Any repairs to the hull shall return the affected area to the standard shape.

3.8 The deck shall be fitted with 3 stainless steel stanchions each side, as defined in Plan 5. Upper lifelines of wire not less than 4 mm shall be attached to the pulpit and pushpit and pass through the stanchions and between both aft pushpits. The height of the upper lifelines above the sheer line when measured vertically shall not be less than 600 mm.

A second set of parallel lifelines of wire not less than 3 mm shall be fitted approximately 300 mm above the sheer line. When lifelines are secured by lanyards, the lanyard shall be of synthetic rope with an exposed length of not more than 100 mm.

The maximum deflection of the upper lifelines shall not exceed 50 mm when a 5 kg weight is suspended midway between supports. The maximum deflection of the lower lifelines shall not exceed 150 mm when a 5 kg weight is suspended midway between supports. Artificial tensioning devices (such as shockcord) are forbidden.

The stanchions shall not extend outboard of the sheer in plan by more than 10 degrees.

3.9 Prohibitions

The following are not permitted:

(a) Coring, drilling out, rebuilding, replacement of materials, grinding or relocating standard equipment in any way to reduce weight, to improve moments of inertia or to change standard shapes.

(b) Re-shaping of the hull.

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4. KEEL

General: Standard production methods may result in unavoidable differences in keel parameters.

4.1 The keel shall be of moulded iron/lead to the building specifications and cast in a mould licensed by X-Yachts.

4.2 The external dimensions and configuration of the keel shall comply with the table of offsets contained in Official Drawing 7. The keel may only be overcoated with protective material, such as synthetic filler, gelcoat, glassfibre and paint, and faired, provided it complies with the dimensions in Official Drawing 7. It is forbidden to alter or modify the shape of the cast iron or lead part of the keel by adding to, moving or removing any of these materials.

4.3 The keel shall be bolted in position as shown on the Drawings 1, 7 and 7a.

4.4 The weight of the keel casting shall be 1125 kg, +/- 25 kg. This keel weight shall be recorded by the Builder.

4.5 It is forbidden to alter the curve of the keel stub to hull connection by rendering the radius less than 50 mm so that the effective cross sectional area of the keel stub to hull connection is reduced, or to remove it such that a right angle is produced.

5. RUDDER

5.1 The rudder blade shall be of GRP and Kevlar and made from moulds licensed by X-Yachts and supplied by the Builder. Minimum weight 18 kg.

5.2 The external dimensions and configuration of the rudder shall comply with the Official Rudder Drawing and table of offsets contained in Official Drawing 8. The rudder may be overcoated in any base liquid or paste protective material, provided it complies with the minimum dimensions in Drawing 8. Needle bearings are permitted.

5.3 It is prohibited to alter the skeg or use rudder flaps.

5.4 The gap between the top of the rudder and the skeg and hull may be filled.

5.5 The tiller shall be identical to the teak and stainless steel tiller as supplied by the builder. The design of the tiller extension is free.

6. MAST

6.1 The mast shall be of aluminium alloy extrusion with integral luff track to accept luff slides. The mast shall conform to the spar specification and be supplied by the Builder. Replacement masts may only be supplied by the Builder or the Licensed Spar Manufacturer. No alterations or modifications to the spars extrusion are permitted except to facilitate the attachment of rigging and fittings as specified

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in these rules. The Licensed Spar Manufacturer must be approved by X-Yachts and the Association. No alterations to the mast are permitted, except for the sole purpose of fitting navigation lights, wind vanes and pre-feeders. No alterations to halyard exits are permitted nor any alterations which might change the moment of inertia of the spar.

6.2 The mast shall be placed as per the Drawings 2, 3, and 5. The mast base shall not be moved during racing. The mast shall not be moved at cabin top level during racing. The forestay length shall not be changed during racing.

Max. J = 3450mm Min. J = 3435 mm

Mast dimensions shall conform to the following:

- Profile length: min. 136 mm - max. 140 mm, I min 310 cm⁴
- Profile width: min. 90 mm - max. 94 mm, I min 132 cm⁴
- Weight per m.: min. 3.6 kg - max. 4.1 kg
- Tapering length: max. 2100 mm
- min. measurement at top of tapering 80 x 60 mm

6.3 Bands of contrasting colour of a minimum width of 15mm shall encircle the mast. The distance from the upper edge of the lower band (at standard boom height) to the lower edge of the upper band shall not be more than 12500mm. Movement of the bands or a failure to display them whilst racing is prohibited. The mainsail shall be set between these bands at all times when racing.

6.4 The distance to the upper edge of the boom band shall be no more than 2850 mm from the base of the mast tube and 1660 mm above the deck line.

6.5 Spinnaker Outrigger Crane.

A Spinnaker halyard outrigger with one spinnaker halyard is permitted. The fixation point of halyard guide block is to be a maximum of 60mm in front of the forward edge of the mast and a minimum of 40 mm below the intersection of the forestay with the forward edge of the mast and ISP is not to be larger than IG.

6.6 Spreaders shall be standard supplied by licensed mast builder and shall conform to the following dimensions:

<i>Length</i>	<i>Placing above lower band</i>
Upper 520 mm +/- 10 mm	6290 +/- 30mm
Lower 850 mm +/- 10 mm	2540 +/- 30mm

6.7 Spreaders must be raked aft between 2-4 degrees and in accordance with the official drawings.

7. BOOM

7.1 The main boom shall be of aluminium alloy extrusion with integral foot track to accept the foot of the mainsail. The boom shall conform

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to the spar specification and be supplied by the Builder. Replacement booms may only be supplied by the Builder or the Licensed Spar Manufacturer. Sectional dimensions shall be 140 mm maximum in depth. Sectional minimum weight shall be 3.0 kg/metre.

7.2 A band of contrasting colour shall be painted on the boom with its forward edge not more than 4500 mm from the after edge of the mast extrusion. The mainsail foot shall be set forward of this band at all times when racing. It is not permitted to shorten the boom beyond the band.

7.3 The main boom shall be equipped for double slab reefing and outhaul. No other method of reefing is permitted. A flattening reef and provision for a third reef may be fitted.

7.4 A boom vang shall be fitted. This must support the boom and weigh no less than the standard supplied Easy Kick.

7.5 A track for an outhaul traveller at the end of the boom is allowed.

8. SPINNAKER POLE

8.1 The overall length of the spinnaker pole including fittings shall be not more than 3450 mm.

8.2 Only one aluminium spinnaker pole shall be used. Reaching struts are prohibited.

8.3 The spinnaker pole may be replaced by a crew member. While doing this, the crew member is allowed to have the torso outside the life lines.

9. MAST RIGGING

9.1 Standing Rigging, all standing rigging shall be of 1 x 19 stainless steel wire, with the exception of the permanent and running backstay and check stay which may be out of Aramid or comparable material. Sizes shall as minimum be as defined in 9.4, and lengths shall be as defined in the Sail Plan. A Dyeform or special wire forestay is permitted but only with a diameter of 5mm. A forestay turnbuckle is permitted.

9.2 The forestay shall be attached to the mast so that the centreline of the wire would intersect the fore side of the mast at a point not more than 9645 mm +/- 20 mm above the lower band.

9.3 The forestay and shrouds shall not be adjusted whilst racing.

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9.4 The rigging shall be the following size

- Forestay, 1 x 19 stainless steel wire - 6mm.
- Forestay, Dyeform or special wire – 5 mm.
- Running Backstay 5mm. minimum.
- Permanent Backstays 4mm. minimum.
- Cap Shrouds 6mm.
- Lower Shrouds 6mm.
- Intermediate Shrouds 4mm
- Check Stays 4mm. minimum.

9.5 The rigging shall be fixed as per drawing 2.

Cap shrouds fixed - 9645mm +/- 20 mm above lower band.

9.6 Load cells are prohibited. Boats fitted with load cells prior to 31.12.91 may retain them, however, they must be disconnected or the readout be covered over for class racing.

9.7 Check stays shall only be adjusted by block and tackle system mounted on Genoa tracks.

9.8 Running backstay chain plates shall not be moved from the position as shown in Drawing 5.

10. RUNNING RIGGING

10.1 The mast shall be equipped with the following:

- 1 main halyard
- 1 genoa halyard
- 1 spinnaker halyard
- 1 topping lift.

10.2 The size and material of halyards are free to owner's choice.

10.3 Plastic, titanium or aluminium snap shackles are prohibited and therefore shall be stainless steel or bronze.

11. SAILS

11.1 All sails shall be measured in accordance with the ISAF instructions.

11.2 All sails shall be of woven polyester with the exception of the No. 1 Genoa which may be a laminate consisting of a polyester film and a polyester scrim made of reinforcement fibres. All sails shall be constructed using conventional panel construction. Moulded sails are not permitted. The application of reinforcing tapes or fibres taking load across panels is forbidden with the exception of local reinforcements at the corners of the sail according to ISAF Rules.

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The sails are to be made of prefabricated tissues which have the yarns spread evenly throughout the entire width of the panel (=width of roll of sail cloth).

Spinnakers shall be Nylon or Polyester. All sails shall be as per Official Drawing 2.

This Rule will be amended effective from 1 January 2006 as follows:

All sails shall be of woven polyester with the exception of the No. 1 Genoa which may be a laminate consisting of a polyester film and a polyester and/or aramid scrim made of reinforcement fibres. All sails shall be constructed using conventional panel construction. Moulded sails are not permitted. The application of reinforcing tapes or fibres taking load across panels or non-uniformly laid out fibres within panels is forbidden with the exception of local reinforcements at the corners of the sail according to ISAF Rules.

The sails are to be made of prefabricated tissues which have the yarns spread evenly throughout the entire width of the panel (=width of roll of sail cloth).

Spinnakers shall be Nylon or Polyester. All sails shall be as per Official Drawing 2.

11.3 The sails shall be measured in accordance with the ISAF Equipment Rules of Sailing.

11.4 National letters and distinguishing numbers shall be provided in accordance with ISAF Racing Rules of Sailing.

It is preferred to use the build number of the X-99 as sail number preceded by the National letters, for example build No 400 from Denmark - DEN 400, except where the local National Sailing Authority has its own sail number system.

11.5 The Class emblem shall be displayed on both sides of the mainsail, as shown in Drawing 10 and shall be red.

11.6 Mainsail

11.6.1 The top edge of the headboard shall not exceed 160 mm.

11.6.2 The cloth weight minimum shall be 260 g/m².

The soft shelf may be of lighter cloth (definition of the soft shelf, the area of the mainsail below the straight line from the tack to the clew).

11.6.3 The mainsail shall be fitted with plastic luff slides.

11.6.4 The length of the leech shall not exceed 13200 mm.

11.6.5 The cross width measurements shall be taken from the three quarter and half points on the leech, located when the head is folded

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to the clew for the half height point, and when the head is folded to the half-height point to determine the three quarter height point.

The maximum three-quarter height width between the leech and the nearest point on the luff, including the luff rope, shall not exceed 1650 mm. (MGU)

The maximum half height width between the leech and the nearest point on the luff, including the luff rope, shall not exceed 2800 mm (MGM)

11.6.6 The sail shall have four battens evenly distributed over the length of the leech. The top batten may be full length maximum 1500 mm, the bottom batten shall not be more than 1100 mm in length and the two intermediate battens shall be not more than 1500 mm in length. No batten shall be wider than 52 mm. No batten shall consist of any Kevlar or carbon.

11.6.7 The sail shall be fitted with minimum two reefs. The bearing surface of the cringle in the leech shall be not less than 1000 mm from the bearing surface of the clew cringle for the first reef and 3200 mm for the second reef.

Mainsail reef lines must be inside the boom, fitted with blocks to the stoppers (no camcleats). Minimum thickness 8 mm.

11.6.8 A leech line, Cunningham hole in the luff, flattening cringle in the leech, camber stripes and spreader chafe patches and a third reef are permitted.

11.6.9 The mainsail shall not be extended beyond the black bands placed on the mast and boom while racing.

11.6.10 Loose-footed mainsails are allowed.

11.6.11 The mainsail may be equipped with 1 window maximum size 0.32m² which shall not be placed within 200 mm of the leech.

11.6.12 Pressure sensitive adhesive spreader patches of aramide with a minimum of 15000 dpi and a maximum diameter of 25 cm are allowed.

11.7. Headsails

11.7.1 All headsails shall have a half height width (measured between the mid points of luff and leech,) less than 0.5 x foot length, a three-quarter height width less than 0.25 x foot length and a quarter height width of less than 0.75 x foot length. Headsail material shall only be as Rule 11.2.

11.7.2 Either jib hanks or a luff groove headfoil are permitted however yachts fitted with headfoils shall remove the old headsail completely from above deck before the new headsail has left the cockpit.

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11.7.3 Double lufftape and adjustable hanks are not allowed

11.7.4 If the yacht is supplied with a forestay luff groove headfoil LP shall be reduced by the largest dimension of the forestay profile, measured at right angles to the stay x 2, rounded off to the nearest whole cm. (E.g. forestay profile 33 mm results in $2 \times 33 = 66$ mm which means LP shall be reduced by 7 cm. Then the No. 1 genoa allows an LP = $5,170 - 70 = 5100$ mm, and the No. 3 genoa allows an LP = 3280 mm, and the No. 4 /storm jib allows an LP = 2340 mm).

11.7.5 **No. 1 Genoa.** Minimum cloth weight 140 g/M^2 maximum LP (per ISAF measurement) 5170 mm, maximum luff length 11500 mm. The luff length at the top of the genoa shall be measured perpendicular to the luff, and the head of the genoa shall not be wider than 70 mm. Window allowed with a maximum area of 0.1 M^2 but not placed nearer than 250 mm of any leech with the exception of a small telltale window.

Pressure sensitive adhesive spreader patches of aramide with a minimum of 14000 dpi and a maximum dimension of 1000 mm in horizontal direction and 300 mm in vertical direction and pressure sensitive adhesive stanchion patches of aramide with a minimum of 14000 dpi and a maximum dimension of 1000 mm in vertical direction and 300 mm in horizontal direction are allowed.

If the No. 1 Genoa is a laminate consisting of a film and a scrim made of reinforcement fibres (Rule 11.2), at least 65% of the No. 1 Genoa must include reinforcement fibres of minimum 14000 dpi in principal load direction, the remaining surface of the No. 1 Genoa must include reinforcement fibres of minimum 9000 in principal load direction, and the minimum thickness of the film must be 1,5 mil. All existing No. 1 Genoas having a date of first measurement before 1 January 2006 are allowed.

11.7.6 **No. 3 Genoa.** Minimum cloth weight 310 g/M^2 , maximum LP 3350 mm, maximum luff 11500 mm. The luff length at the top of the genoa shall be measured perpendicular to the luff, and the head of the genoa shall not be wider than 70 mm. 3 battens allowed of which top may be full length. Lower battens maximum 500 mm. Battens are not compulsory.

11.7.7 **No. 4/Storm Jib.** Minimum cloth weight 310 g/M^2 , maximum, LP 2410 mm, maximum luff 8300 mm. The luff length at the top of the genoa shall be measured perpendicular to the luff, and the head of the genoa shall not be wider than 70 mm. Maximum leech 6600 mm length. Three battens and reef allowed.

11.8 Spinnakers

11.8.1 2 spinnakers allowed. Both spinnakers shall be three cornered symmetrical sails.

11.8.2 The sails, laid out on a flat surface, shall be measured when folded in half about their centreline, with the leeches superimposed. Sufficient tension shall be applied to remove wrinkles and creases across the lines of measurement. The length of the leeches for the spinnakers shall not be more than 11200 mm.

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11.8.3 Maximum Spinnaker

Minimum cloth weight 40 gm/M² Maximum SL 11200 mm Maximum foot SF 6350 mm Maximum width SMW 8400 mm

11.8.4 Reaching Spinnaker

Minimum Cloth Weight 40 G/M² Maximum SL 11200 mm Maximum Foot 6200 mm Maximum Width at 1/2 height 6200 mm

Minimum Foot 5900 mm

Minimum width at 1/2 height 5900 mm

11.9 The following sails may be carried on board during an X-99 series:

Maximum:

- 1 mainsail
- 1 No. 1 Genoa
- 1 No. 3 Genoa
- 1 No. 4 Storm jib
- 1 Class Spinnaker
- 1 Reaching Spinnaker

Sails which are on board at the first start shall be carried on board throughout the entire series. Sails measured and approved by officials in connection with a race shall be stamped and shall be carried on board throughout the entire series. Sails which are not on board at the first start cannot be taken on board after the first race. If the Race Committee require a storm jib to be carried on board it must be mentioned in the Notice of Race and the Sailing Instructions

If a sail is damaged it must to be repaired before the next race, or if there are two or more races a day, before the next day. In the meantime a spare sail may be used. When a sail is damaged beyond repair, it can be replaced for the remainder of the series only with the written permission of the Race Management Committee.

12. SETTING OF SAILS

All sails must be sheeted to tracks or toe rail as per standard build. Outboard Barber-haulers may be used to the toe rail. It is prohibited to Barber-haul the Genoa inboard.

13. MINIMUM SAFETY EQUIPMENT

Life lines as per Rule 3.8. In addition the following shall be carried whilst racing,

- a) Anchor minimum weight 10 Kg with 3.000 mm chain weighing 5 Kg or similar weight lead line.

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- b) Anchor warp minimum diameter 8 mm. Minimum length 30.000 mm, minimum weight of A + B 20 Kg.
- c) Min. 2 mooring lines of at least 8 mm diameter and 10.000 mm each in length or one at least 21.000 mm in length.
- d) 1 life-jacket per each crew member
- e) 1 safety harness per each crew member
- f) 1 heaving line min. length 15.000 mm and 6 mm min diameter.
- g) 1 bilge pump and 1 bucket, or 2 buckets.
- h) 1 first aid kit and manual.
 - i) 1 fire extinguisher minimum 2 Kg.
- i) 1 fog horn.
- j) 1 fixed compass (standard on cockpit bulkhead but may be elsewhere) and 1 spare.
- k) 1 heavy torch.
- l) Navigation lights in accordance with International Regulations for Preventing Collision at Sea. (Pt C and Technical Annex)
- m) Tools adaptive for cutting away the rigging including at least a 300 mm hacksaw with 3 extra HSS blades.
- n) Flares – minimum
 - i) 2 red parachutes
 - ii) 4 red hand holds
 - iii) 4 white hands hold or signal pen with 8 mini flares
- o) 1 radar reflector
- p) Suitable method of recovering a man overboard. Either a fixed ladder or folding type ladder which may be stowed below deck.

14. CREW LIMITS

The minimum number of crew shall be 5.

The maximum total crew weight allowed is 512 kg. The crew shall remain the same throughout any class event unless substitution is authorised by the Race Committee.

15. ACCOMMODATION

Unless otherwise stated all X-99s must be fitted out as "standard build" and removal of any standard interior wood or fitting is prohibited. However the table may be removed for racing. As a minimum all X-99's shall be equipped with the following standard equipment and placed as shown in Drawing 4.

Tanks shall be placed between frame 2 and 4 (per Drawing 4). Cushions must remain on board whilst racing with the exception of the two forward cabin cushions which may be removed for racing.

15.1 Stainless Steel sink in galley, 50 litre water tank with foot- or hand-operated pump at galley. Portable chemical toilet or fixed plumbed in toilet in front of main bulkhead. Sink with foot- or hand-operated pump in toilet and/or min. 20 litre holding tank with pump-out deck fitting for toilet waste. Through hull outlets for galley and toilet sinks 2 of 1/2" and 2 through hull outlets 1 of 1 1/4" and 1 of 1/2" for toilet, regardless of the toilet type.

It is prohibited to close sea valves to flush fit hull, using filler, tape or the like to reduce water resistance. In exceptional circumstances and

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where skin fittings to be shut off are banned by local law (e.g. on Swiss and German lakes), then dispensation may be granted by the Technical Committee as far as Rule 15.1 is concerned.

15.2 Batteries shall be placed between galley and chart table bulkhead and frame 5 as per Drawing 4,

15.3 Forward cabin. 2 hinged pipe cots with or without cushions, foldable along hull-side, minimum length 1700 mm. Toilet as per 15.1. Wardrobe lockers with shelf per standard build minimum weight 5 kg. Double wooden locker above sink unit.

15.4 Main Cabin. 2 berths 2000 x 600 mm with cushions, storage space below berths. Folding upholstered seatbacks with shelves/berths. Heavy gauge stainless steel hoop for table. 6 floorboards of 12 mm marine plywood as per standard build. Galley cooker with or without oven and lockers. Minimum weight excluding cooker 30 kg. Navigation table opposite galley, minimum weight excluding instruments 30 Kg.

Engine box and ladder must be standard build.

15.5 Aft. 2 pipe cots minimum with cushions either as double centre berth and/or two quarter berths. Extra berths allowed.

15.6 The inside topsides shall be covered with foam backed vinyl or plywood or strip wood. Canvas bulkhead pockets on aft face of coach roof shall be fitted.

16. ELECTRICS

16.1 At least one battery shall be carried., 12 volt minimum 70 AH, Weight, minimum 15 kg, maximum total weight of batteries 60 kg. Charger on main engine with fuse panel fitted at chart table. 7 internal light fittings - no restriction on instruments subject to Racing Instructions.

16.2 Navigation lights to International Regulations for Preventing Collision at Sea (Part C and Technical Annex 1). Size and type must be as standard supplied by the builders. This means that it is forbidden to change to a smaller type.

Approved white steaming light mounted on mast at height 2000 mm +/- 300 mm above lower band. Mast deck lights and tri-colour top light are permitted.

17. DECK

17.1 Minimum deck equipment as shown in Drawing 5. Genoa and main sheet track must be positioned as shown in Drawing 5. Maximum lengths of the genoa tracks according to the appointed places SB and PS in the polyester deck (not in Drawing 5). Genoas shall only be sheeted outboard via a Barber haul to the toe rail. Systems to adjust genoa cars or sheeting positions under load are permitted. Ball-bearing genoa cars are permitted. It is permitted to use cam cleats rather than standard cleats for the genoa sheets. It is

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permitted to place genoa turning blocks further aft. All winches must be placed as Drawing 5. Boats that moved secondary winches prior to 31.12.91 shall be permitted to leave them in revised position. All winches shall be operated above deck. The number of winches shall be 4. The make and size are unrestricted.

It is permitted to move permanent backstay control lines forward to the main sheet trimmer each side.

A Jib Cunningham system is allowed providing all control lines and cleats remain above deck.

It is permitted to mount an extra base for a turning cam cleat arm on the mainsheet traveller beam. It is not permitted to bend the mainsheet traveller. It is permitted to mount the cam cleats for the mainsheet traveller system on the traveller car. It is prohibited to remove "standard build" vent on coach roof.

It is permitted to mount extra deck blocks around the mast.

17.2 Toe-rail with minimum height 45 mm and minimum weight 1.15 kg/M bolted along full length of topsides with maximum centres of 200mm. Stainless steel pulpit with standard build teak step and 2 stainless steel pushpits. Titanium and carbon fibre is prohibited anywhere on the boat, except for electronic instruments incl. transducers and their mast mounts.

17.3 Bowfitting in stainless steel minimum weight 4.56 Kg. Stainless steel chainplates with minimum distance 830 mm to outboard chainplate from centre line.

17.4 The size, make and placing of other deck fittings is optional. Extra cleat allowed on mast to enable foredeck hand to hoist spinnaker. Mooring cleats shall be fitted fore and aft with the same weight as supplied by the builder

17.5 Number of stoppers:

Main halyard, headsail halyard and two reeflines must run through the standard stoppers. That means four stoppers on the cabin are mandatory. Remaining lines on the cabin, including the spinnaker halyard, can go through camcleats.

17.6 Running backstay control lines must run through the stoppers with safe workload limit (SWL), at 10 mm lines, no less than 700 kg.

18. MISCELLANEOUS

18.1 Trapeze, toe-straps, handgrips and the like, to assist righting moment are prohibited,

18.2 All heavy equipment such as batteries, anchor, gas bottle, tanks, instruments etc., shall be securely fixed so that they cannot move in the event of a capsize. The movement of all equipment for purposes other than sail-changing during racing is prohibited.

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18.3 The organizers of events where X-99 yachts race as one-design class are recommended not to start racing of the X-99 yachts when the mean wind speed is 28 knots (14 m/s) or greater.

19. ENGINE

19.1 Inboard diesel engine with sail-drive, weight see Rule 3.3. The sail-drive shall be made either by Bukh or Volvo. Standard built engine box shall be positioned as per Drawing 4. 25 litre diesel stainless steel fuel tank installed as per Drawing 4.

19.2 The propeller has to have the minimum size of 11.5" x 8" and to be functional. Both 2 and 3 blades are allowed. Water inlet for the engine must not filled out

The shape of the sail-drive shall not be changed e.g. by sanding or filling.

19.3 It is permitted to change the standard build rubber flap around the Sail-drive strut to stiff plastic, or to remove the flap and fill the defect with filler in order to avoid increased water resistance caused by a loose rubber flap.

20. LIST OF OFFICIAL DRAWINGS

1. Lines Plan
2. Sail Plan
3. Rig Plan
4. Accommodation Plan
5. Deck layout
6. Laminate Specification
7. Keel Drawing
8. Rudder Drawing
9. Spreader Specification
10. Class Insignia
11. Compensation weight according to Rule 3.3

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