

THE RULES OF THE International DRAGON Class

With acknowledgement to the designs by Johan Anker

Authority: International Yacht Racing Union, 5 Buckingham Gate, London, S.W.1.

Copies of this booklet (price 5/- each, surface post free) and the official set of eight building plans (price 45s. 0d., surface post free) are obtainable from:—

International Yacht Racing Union, 5 Buckingham Gate, London, S.W.1.

Amendments effective from the 1st March 1970 are marked by a line in the margin

CONSTRUCTION

These rules must be complied with in order that a certificate of registration may be issued by the national authority after construction is completed in accordance with I.Y.R.U. racing rule 19.

These rules shall be read in conjunction with the official set of plans. Should any difference exist the text shall prevail. The builder shall supply a certificate to the measurer stating that the yacht has been built to the current international DRAGON class rules and to the current official set of plans.

In these rules where particular kinds of wood are mentioned, other kinds of wood may be used provided they have the same specific weight and durability.

Where the inboard edges of structural members are not fayed to other structural members, they may be rounded off. Such rounding shall not exceed 5 millimetres radius. (This applies to boats that have been contracted and laid down after 15th November, 1958).

Departure of any kind from the plans, unless already sanctioned by the rules, shall not be allowed without a plan of the proposed departure being submitted to the I.Y.R.U. and duly approved: should any doubt exist in measuring the boat to these rules the matter shall be referred to the national authority.

1. Stem, wood keel, counter timber and sternpost to be of oak. Deadwood to be of oak or pine, to dimensions given on the plans.

The ballast keel must be made of cast iron to weigh 1,000 kilogrammes as defined in rule 26. Uneven surfaces or blowholes must not be filled with lead. Inside ballast is not permitted.

The measurer shall check that the fore end of the keel conforms to the measurements (plan no. 7.2).

2. Rudder stock to be of at least 25 millimetres diameter round steel, galvanised or stainless, or bronze. Rudder pipe of same material as rudder stock.

3. Sternboard or transom to be of oak or mahogany, 20 millimetres thick. Transom to be flat.

4. Planking to be at least 17 millimetres thick. Any kind of wood may be used for planking provided that the minimum weight of such wood shall not be less than 550 kilogrammes per cubic metre (34.4 pounds per cubic foot). To be fastened to frames with No. 11 gauge copper nails clenched on rooves or turned over or with No. 10 bronze screws 32 millimetres long.

5. Stations are spaced 600 millimetres centre to centre. Two frames abreast the mast and frames at stations 4, 8 and 12 are to be of ash, oak or elm moulded 30 millimetres by 34 millimetres. If of oak they shall be laminated or grown, if of ash or elm they shall be laminated. All other frames to be of ash, oak or elm 200 millimetres centre to centre. To be moulded 25 millimetres x 30 millimetres for half the yacht's length amidships, and moulded 22 millimetres x 25 millimetres at the ends. These frames can be hot bent or laminated except at stations 2 and 14 where they shall be laminated or grown.

6. Shelf to be of Scandinavian pine or fir or larch or Oregon pine at least 27 millimetres x 100 millimetres or at least 24 millimetres x 115 millimetres.

7. Beams to be of larch, Scandinavian pine or fir or Oregon pine of the following dimensions:—

Mast beams and beams at end of cockpit and cabin top openings—40 millimetres x 60 millimetres at middle line to 40 millimetres x 40 millimetres at sides.

Complete between stations 3 and 13—30 millimetres x 45 millimetres at middle line to 30 millimetres x 30 millimetres at sides.

Half beams at sides of cockpit, etc.—25 millimetres x 38 millimetres to 25 millimetres x 25 millimetres at sides.

Spacing not to exceed 25.4 centimetres centre to centre.

The round of the beam shall not exceed 9.5 millimetres in 305 millimetres of its length, for example, 58 millimetres at station 6.

8. Deck to be of larch, Scandinavian pine or fir, Oregon pine, plywood or spruce, with a minimum weight of 432 kilogrammes per cubic metre, not less than 14 millimetres thick, and covered with canvas of not less than 236 gr./sq. m. and painted, or other material of equivalent weight.

The deck may be of plywood only, then it must be 15 millimetres thick, and of 7.6 kilogrammes per square metre.

9. Covering board to be of mahogany 95 millimetres maximum width. It is also permitted to have a mahogany covering board of optional width round the cabin top.

10. Floor timbers to be of oak, sided 70 millimetres for the length of the ballast keel and 50 millimetres beyond the keel. For one half of their length the siding can be tapered down to two-thirds of the specified width.

11. The mast step is to be made of 1350 millimetres x 150 millimetres x 60 millimetres. The siding should be 150 millimetres throughout. The moulding may be tapered as shown on the official drawings.

Two lifting eyes shall be attached to the keel, keel bolts or floor timbers for the purpose of weighing. The weight of each lifting eye of this arrangement shall not exceed 3 kilogrammes.

CABIN, COCKPIT AND HATCHES

12. The cabin, which may be totally enclosed, shall have built-up cabin sides of 16 millimetres mahogany and a coach roof of 10 millimetres of optional wood or plywood, on wooden beams. The wooden cabin roof may be covered with canvas or other material, and the length of the top must not be less than 1,000 millimetres.

Where the mast passes through the cabin, the distance from the aft side of the mast to the aft side of the cabin top must not be less than 900 millimetres. The shape of the cabin top is optional but its breadth must be at least 500 millimetres at a distance of 1,000 millimetres from the after end of the cabin top, and at this point the height of the coaming must not be less than 80 millimetres.

The after end of the cabin top must never come forward of station 8, and in no place may the cockpit or any portion thereof, or the opening of any cabin hatch, be forward of station 8 during races.

The height of the cabin sides above the top of deck, measured vertically from the under side of the coach roof at station 8, must be at least 170 millimetres and the arch of the coach roof measured at the same place must be at least 100 millimetres.

The height of the cockpit coaming abaft the cabin must be at least 100 millimetres. The coaming may be plumb or sloping.

Internal arrangements of cabin and cabin fittings are optional and a hatch forward of the mast is permitted, but its size must not exceed 508 millimetres square, and it must be properly framed out and have a hinged top, or a top permanently secured at one point at least.

Floor boards shall not exceed 16 millimetres in thickness and shall be of wood. The original floor boards in boats contracted and laid down before 15th November, 1958 may be retained but all floor boards fitted in any boat after that date shall conform with this rule. The weight of the floor boards and stiffeners shall not exceed 40 kilogrammes.

13. The cockpit must not be extended further aft than 200 millimetres forward of station 12, and this coaming must follow a fair convex curvature. The minimum width of the deck outside the cockpit coaming is to be 300 millimetres, and the coaming should fair into the cabin sides. Rounded corners are permitted at the after end of the cockpit but the radius of these rounded corners must not exceed 152 millimetres.

Extension of the coaming forward of the cabin top and abaft the cockpit is not obligatory.

The arrangement and layout of the cockpit are optional.

14. The tiller shall be above deck, shall not be of divided or hooped design, and its length from the rudder head shall be not more than 1.20 metres. A tiller extension not exceeding 400 millimetres in length is permitted.

RIGGING, SPARS, ETC.

15. The standing rigging and spars must be in accordance with the plans. The sizes of the standing riggings are minimum sizes and it is to consist of the best galvanised plough or stainless steel wire.

The runner backstays and topmast backstay, whether standing or running must be galvanised or stainless steel wire, plough or flexible. They shall not be smaller than shown on the plans.

The dimensions of the other running rigging are optional.

It is permissible to have topping lifts and to run the jumper stays through fairleads at the lower spreaders and down along the mast.

The halyards may be run through the deck and it is permissible to lead only the main jib and spinnaker halyards through the mast, horizontally to the mainsail luff groove.

The mainsail luff rope and the halyard may run in a groove, provided such a groove is outside the prescribed minimum sectional dimensions of the mast.

The attachment of the spinnaker halyard shall be at a maximum of 7.10 metres above the deck and not more than 30 millimetres out from the mast.

Backstays or runners and top mast stay or preventer are obligatory, but their location on deck is optional in the fore and aft directions, and they may be stretched either on or below the deck.

The runners shall be attached at either side of the mast at one point only. No attachment between the runner and the mast shall be permitted except where an elastic material is employed to prevent the runner fouling the lower spreader, in which case such material shall be capable of being extended a further 20 per cent of its length from the position where the runner is set up taut.

The extension of the forestay must intersect the mast at 7.00 metres above the deck. The forestay or its extension must go to or through the deck at a point between 1.774 millimetres and 1.85 metres forward of the mast. Double forestays are permitted. A furling device for the headsails is permitted provided the double luff principle is not contravened and the headsail is hanked to the forestay by not less than three hanks approximately equally spaced over the length of the luff.

The shrouds are to be fixed to steel chain plates inside the hull. The shrouds may pass through the deck inside the gunwale but not nearer the centreline than 700 millimetres.

The fore and aft positioning of the shrouds at the deck in relation to each other shall be optional.

16. The mast is to be made of one kind only of optional wood. The diameter of the solid section must not be less than is shown on the plans. Except that the heel may be reduced in way of a metal keel fitting.

A metal runway track or groove for luff rope or slides is not allowed. A luff groove may be formed in the mast which shall not impinge upon the prescribed minimum diameter of the solid part of the mast. The groove shall be formed of the same material as the mast.

The groove at the back of the mast may be strengthened at the lower part with hardwood or metal which shall not extend more than 500 millimetres along the mast in total.

A bracket or chock may be fitted at the mast head to keep the preventer clear of the sail. This bracket must not extend aft more than 102 millimetres from the back of the mast.

The mast must not be made to rotate and the mast hole in the deck must not allow more than 10 millimetres clearance around the mast. An oblong masthole is permitted if it is closed with screw or nail fastened filling pieces to permit not more than the allowed 10 millimetres clearance around the mast.

The fore and aft position of the mast in the deck and of the longitudinal position of the mast step are optional. It is not permissible to make changes during a race. The structural member forming the mast step must comply with plan no. 4. Mechanical devices for moving the mast at the step are not allowed. If the mast is moved more than 10 millimetres forward or aft at the deck, then partial remeasurement must take place and the position of the marks altered accordingly. A metal mark 20 millimetres in width shall be placed on deck on either side of the mast opening, in such a position that its centre point shall mark

the measurement position of the foreside of the mast. The foreside of the mast when racing must not lie outside the limits of these marks.

A further metal mark 76 millimetre in fore and aft dimension shall be placed on deck along the centreline, with its after edge 1,774 millimetres forward of the centre point of the mast marks.

The forestay extension must lie within the limits of this forward mark when racing.

The weight of the mast including all fixed fittings, jumper struts and diamond shrouds, but excluding all other standard rigging, running rigging, slides on any track fixed to the mast and lower spreaders shall not be less than 35 kilogrammes (77.2 lbs). The centre of gravity of the mast stripped for weighing shall be not less than 4.20 metres above the deck. Any corrector weights shall be permanently fixed to the surface of the mast. This rule shall apply to all masts regardless of the date of construction.

When check weighing the masts the following method may be adopted. The weight, including all fixed fittings, jumper struts, diamond shrouds, standing rigging, running rigging, swages or end attachments, slides on any track and lower spreaders, shall not be less than 40 kilogrammes.

With rigging laid along the mast towards the heel, the centre of gravity shall not be less than 4,000 millimetres above the deck. Any slide shall be at the lower end of its track. In case of doubt the basic rule shall prevail.

17. Jumper struts are to have their upper edge at 7.10 metres above the deck and are to have a minimum length of 300 millimetres.

The angle between the arms of the jumper struts must not exceed 150 degrees. They may be made of optional material.

The spreaders are to have their upper edge at 4.4 metres (14 feet 5½ inches) above deck and are to have a minimum length of 450 millimetres from the side of the mast. They may be made of optional wood and may be secured with one bolt allowing a movement in the fore and aft direction not exceeding 10 degrees either way.

18. The boom is to be solid, of optional wood. It must have a circular or oval transverse section and a groove for the foot rope is allowed. Depth of the groove not to exceed 22 millimetres and the least transverse width of the spar is to be 80 millimetres.

The length of the boom from its after end to the aft side of the mast must not exceed 3.550 millimetres.

It is permitted to cut away the after end of the groove in the boom and to encroach upon the solid section for the insertion of a track or other device to control the clew of the mainsail to a distance not exceeding 250 millimetres forward of the forward edge of the after black band. The cut away portion of a groove at the forward end of the boom to permit the insertion of the mainsail footrope shall not extend along the boom for more than 250 millimetres from the aft side of the mast.

19. Winches, tackles and levers are allowed to be used for any purpose on board, with the exception of shrouds, which have to be trimmed with turn buckles only.

Method of sheeting the mainsail and headsails is optional, but fittings for sheets must be placed so that they do not protrude outside or beyond the hull.

20. The spinnaker boom must be circular and solid. Length 1.85 metres and is to be measured in the position of the greatest extension from the mast to the inner edge of the eye of the tack fitting.

Over a minimum distance of half its middle length the spinnaker boom must have a diameter of at least 50 millimetres, tapering evenly towards the ends.

The spinnaker boom may have a claw or pintle for attachment to the mast or an arrangement with guide or fitting in the spinnaker boom in the middle of the front of the mast is permitted.

If a claw is used, the spinnaker boom is to be measured according to the International Rule. It is permitted to carry a spare spinnaker boom on board.

PAINTING

21. Reinforced coatings are not permitted on the topsides or on the under water body except on the rudder.

SAILS

22. Sails which do not comply with the following dimensions shall not be allowed.

(i) MAINSAIL Leech, 9,500 mm. maximum.

The cross measurements shall be taken as follows: The mid-point of the luff shall be determined by folding the sail upon itself, with the highest point of the headboard nearest the luff even with the lowest edge of the bolt rope nearest the tack. The mid-point of the leech (afteredge of the sail) shall be determined with the highest point of the headboard nearest the luff even with the lowest point of the sail directly under the centre of the clew cringle. The cross measurement shall be the distance between the mid-points of the luff and leech with the sail laid on the floor, and with sufficient tension to remove wrinkles. The bolt rope shall be included, and the $\frac{3}{4}$ height cross measurement shall be determined in a similar way by folding a second time. The measurements shall not exceed:

$\frac{1}{2}$ height: 2,080 mm.

$\frac{3}{4}$ height: 1,170 mm.

The width across sail at a distance of 300 millimetres below the highest point of the headboard measured at right angles to luff shall not exceed 280 millimetres. All the above cross measurements are to be measured from the fore side of the luff rope.

(ii) (a) FORESAIL No. 1	Maximum	Minimum
Luff	6,200 mm.	6,080 mm.
Foot	2,150 mm.	2,110 mm.
Leech	5,600 mm.	5,490 mm.
(b) FORESAIL No. 2	Maximum	Minimum
Luff	5,200 mm.	5,100 mm.
Foot	1,900 mm.	1,860 mm.
Leech	4,500 mm.	4,410 mm.

Two battens are allowed in the respective jibs, maximum length 300 millimetres.

(iii) GENOA	<i>Maximum</i>	<i>Minimum</i>
Luff	6,600 mm.	6,470 mm.
Foot	3,550 mm.	3,480 mm.
Leech	6,100 mm.	5,980 mm.

The depth of the roach in the foot of the genoa shall never exceed 178 millimetres. For a total of half the length of the genoa foot the depth of the roach shall not exceed 127 millimetres. These measurements shall be taken on the sailcloth, perpendicular to the straight line joining tack to clew. The foot of the genoa shall be nowhere concave.

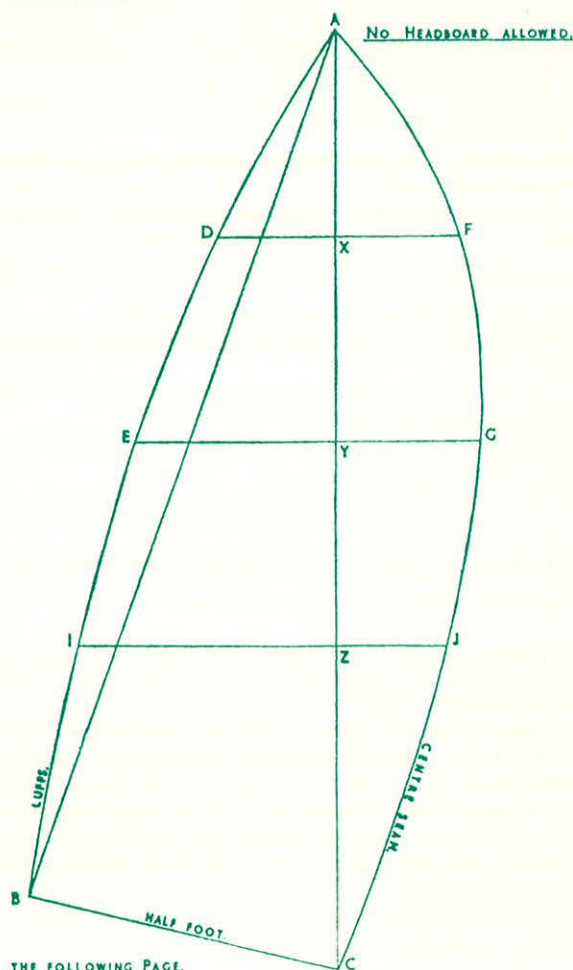
- (iv) SPINNAKER Leeches 7.00 metres.
 Foot 4.80 metres.

To be made and measured in accordance with the official spinnaker measurement diagram and the measurement instructions related thereto. No sail may be used after the 7th November, 1958 which does not conform to this plan, except that national authorities may prescribe that in races in which only yachts of their own national registration take part, spinnakers certified before 7th November, 1958 may be used.

No dimension of the attachment of the swivel or cringle at the head of the spinnaker which falls within the area of the sail shall exceed 38 millimetres. Any device at the head of the spinnaker which exceeds 38 millimetres horizontally shall be considered a headboard and is, therefore, prohibited.

For spinnakers registered after 1st March, 1968, woven material of optional weight may be introduced within a radius of 150 millimetres from the corners of the sail. Outside this radius strengthening shall be restricted to not more than two layers of the material of which the sail is constructed, which layers shall only be stitched.

DRAGON CLASS ONE DESIGN SPINNAKER DIAGRAM NOT TO SCALE



SEE NOTES ON THE FOLLOWING PAGE.

NOTES ON THE SPINNAKER DIAGRAM

Measurements

ADEIB	7,000 mm.	Measured on curve	XY	1,600 mm.	Measured straight
AB	6,980 mm.	Measured straight	YZ	1,600 mm.	Measured straight
AC	7,200 mm.	Measured straight	DX	710 mm.	Measured straight
BC	2,400 mm.	Measured straight	EY	1,330 mm.	Measured straight
AD	1,740 mm.	Measured straight	IZ	1,850 mm.	Measured straight
AE	3,470 mm.	Measured straight	DF	1,710 mm.	Measured straight
AI	5,130 mm.	Measured straight	EG	2,530 mm.	Measured straight
AX	1,600 mm.	Measured straight	IJ	2,750 mm.	Measured straight

The following tolerances are allowed:—

DF	Minus	100 mm.
EG	Minus	100 mm.
IJ	Minus	100 mm.
AB	Minus	50 mm.
AC	Minus	50 mm.
ADEIB	Minus	50 mm.
BC	Minus	25 mm.

Notes to Sailmakers

The sail must be made flat in two halves and joined at the centre seam. The seams of the sail must be cut straight (except the centre seam).

The wires in the luffs to be 7.00 metres long, of uniform thickness, the minimum diameter being 1.25 millimetres and to be securely fastened to the sail at the points A, D, E, I and B.

The foot must be taped with non-stretch tape.

Notes to Measurers

Before measuring the sail, the diagram must be marked, full size, on the floor or other flat surface. The sail is then laid thereon folded in half, with the luffs together and placed on the line A.D.E.I.B. The sail must then be able to lie flat and conform to the remaining dimensions as specified, and shall lie within the confines of the diagram.

I.Y.R.U. November, 1962.

23. For all sails other than the spinnaker, the provisions of the International Sail Measurement Instructions are applicable. As from 15th November, 1958 sailmakers shall make the following declaration:—

"We certify that to the best of our ability we have checked the weight of the cloth and built the sail to conform with the requirements given in the class rules. All sails shall be measured in a dry state".

Headsails, the cloth of which is not permanently attached to a luff wire, are permitted provided the measurer is satisfied that it is impossible to stretch these sails so that they exceed the dimensions allowed under the rules.

Sails registered after 1st November, 1957 shall be made of woven fibre cloth of the following weights:—

Mainsail, foresail number 1, foresail number 2 and heavy genoa: minimum 8.0 ounces per square yard (270 grammes per square metre); maximum 9.0 ounces per square yard (304 grammes per square metre).

Light genoa: minimum 4.5 ounces per square yard (150 grammes per square metre); maximum 5.5 ounces per square yard (185 grammes per square metre).

Spinnaker: minimum 1.5 ounces per square yard (50 grammes per square metre).

During racing it is prohibited to use more than one mainsail, one foresail number 1, one foresail number 2, two genoa stay-sails and one spinnaker, and no sail may be used unless the serial number is clearly stamped thereon by the sailmaker and the boat's certificate of measurement carries the appropriate endorsements.

Sails registered prior to 1st November, 1957 shall comply with the regulations for weight and material in force at the date they were registered.

One unwoven transparent panel not exceeding 0.28 square metres may be permitted below half height in any sail. No part of the window shall be closer to the luff, leech, or foot than 150 millimetres. Sails shall be capable of being stowed in bags of conventional dimensions.

SIZES AND NUMBERS OF LETTERS ON SAILS

Minimum height of figure and letters	380 mm.
Minimum width occupied by each figure except figure 1	250 mm.
Minimum thickness of every portion of each figure or letter and of line between	640 mm.
Minimum space between adjoining figures	100 mm.

I.Y.R.U. Racing Rule 25 refers.

(National authorities may prescribe that in races in which only yachts of their own national registration take part, races shall be sailed under the following rule 23:—

'The mainsail, number 1 foresail, number 2 foresail and heavy genoa are to be made from cloth of the same weight and texture as swallow wings number 620, the weight of which is 8.7 ounces per square yard (295 grammes per square metre). A tolerance of 1 ounce per square yard (34 grammes per square metre) plus, and ½ ounce per square yard (17 grammes per square metre) minus is allowed. The weights allowed will thus be not more than 9.7 ounces per square yard (329 grammes per square metre) nor less than 8.2 ounces per square yard (278 grammes per square metre). A light genoa is permitted from cloth of the same weight and texture as swallow wings number 460 (now called 466), the weight of which is 6 ounces per square yard (203 grammes per square metre). A tolerance of ½ ounce per square yard (17 grammes per square metre), plus or minus is allowed. The weights allowed will thus be not more than 6.5 ounces per square yard (220 grammes per square metre) nor less than 5.5 ounces per square yard (186 grammes per square metre). The spinnaker to be optional quality, weighing not less than 2.25 ounces per square yard (76 grammes per square metre), and fitted with wires in the leech and luff, the minimum diameter of which shall be 1.25 millimetres (1/20 inch). Nylon, silk or similar material are not permitted in any sails, cotton canvas only may be used. Spinnakers measured and stamped in 1949 or earlier are permitted even if they have no wire leech until 1st January, 1953.

During racing it is prohibited to use more than one mainsail, one foresail number 1, one foresail number 2, one light and one heavy genoa staysail and one spinnaker, and no sail may be used unless the serial number is clearly stamped thereon by the sailmaker and the boat's certificate of measurement carries the appropriate endorsements.'

24. Patent reefing gear for the mainsail is permitted, also reefs for number 1 and number 2 foresails. The pockets in the leech of the mainsail shall not exceed by more than 50 millimetres the measurements given for the battens on the sail plan, which are for the lower and upper battens maximum 600 millimetres and for the two middle battens maximum 900 millimetres. The battens shall each be spaced within 127 millimetres above or below the respective points on the leech of the sail which divide the leech into five equal parts. No dimension of the headboard is to exceed 120 millimetres.

The luff shall be measured from the top of the black band, below which the top of the boom shall not be lowered, to the bottom of the black band above which the top of the headboard shall not be carried. A stop shall be fitted at the former of these positions.

EQUIPMENT

25. Equipment must include:—

- (a) Anchor or anchor and chain which together must weigh not less than 12.7 kilogrammes. The anchor must weigh not less than 5 kilogrammes and be of a recognised pattern.
 - (b) One anchor rope at least 30 metres in length, weighing not less than 6 kilogrammes, and two mooring ropes each not less than 10 metres in length, weighing not less than 2 kilogrammes each.
 - (c) One bilge pump, three life-belts or jackets, two oars or paddles, or one of each, one bucket or baler.
 - (d) Devices transmitting or correlating data relative to wind direction or speed, or boat speed and location, by means such as, but not limited to, electronic, mechanical, hydraulic or pneumatic, shall be prohibited.
- Depth sounders may be permitted by National Authority in races confined to yachts of their nationality.

WEIGHT

26. The minimum weight of a DRAGON shall be 1,700 kilogrammes. For the purpose of weighing a DRAGON, the hull shall be complete, painted and ready for racing and free of water and shall not have on board any items other than enumerated below:—

Floor boards, seats, all winches and handles for same, levers if used, tracks, leads, blocks above and below deck—one set only, of a size and weight normally used, cleats, fairleads and all fixed deck fittings, mast and rigging including running rigging, main boom and fittings, one set of sheets for working the main and headsail, spinnaker sheets, spinnaker topping lift and downhaul, one spinnaker boom.

All the above items, which shall be on board when weighing, must be kept on board while racing.

Note: A pump may be on board but its weight must be deducted.

Should a DRAGON weigh less than 1,700 kilogrammes lead correctors are to be placed at station 8. No part of the correctors shall be lower than 508 millimetres vertically below the underside of the deck. Any correctors in excess of 40 kilogrammes shall be divided into four equal weights, placed up under the deck and permanently attached to the beam stringer at stations 4 and 12. These additional correctors are to be permanently secured for the life of the yacht. Corrector weights shall be recorded on the certificate.

For the purpose of this rule the keel must be weighed separately in the presence of a measurer or a disinterested person whom he may appoint and who is qualified to issue a certificate of weight. The keel weight which shall not be more than 1,010 kilogrammes and not less than 990 kilogrammes shall be inserted on the certificate together with a note that the keel measurements have been taken.

DRAGONS may be reweighed and the compensating weights at station 8 only adjusted.

- (a) Before any international regatta provided due notice is given.
- (b) After protest.
- (c) On the instructions of the owner.
- (d) Under circumstances requiring remeasurement.

The measurer shall satisfy himself that the weighing apparatus is accurate.

CREW

27. During a race there may not be more than three persons on board, all amateurs.

SUPPORT FOR CREW PROHIBITED

The use of any apparatus or contrivance outboard or extending outboard and attached to the hull, spars, rigging or crew, the purpose or effect of which is or may be to support or assist in supporting a member of the crew outboard or partially outboard is prohibited.

28. A yacht of which the keel is laid down after 1st January, 1958, shall have the letter(s) showing her nationality and the number awarded by her national authority to her first owner carved in her horn timber. These shall not be less than 50 millimetres in height and carved to a depth of not less than 4.5 millimetres.

OBLIGATION OF OWNER

29. It is the obligation of the owner, when acquiring a Dragon, to satisfy himself that the one design principle has not been violated and to do nothing during the course of his ownership to cause this principle to be violated. Failure in this obligation shall render the certificate liable to cancellation by the national authority.

MEASUREMENT INSTRUCTIONS

Before the certificate of measurement is issued, the following special requirements must be checked. In the event of any discrepancy the metric system shall prevail:—

1. Length Overall	Maximum	Minimum
8,900 mm.	8,944 mm.	8,855 mm.
The length forward of section 8 is:—		
	Maximum	Minimum
	4,724 mm.	4,675 mm.
The length aft of section 8 is:—		
	Maximum	Minimum
	4,680 mm.	4,220 mm.
2. Width over deck, under:—		
Station 2	Maximum	Minimum
828 mm.	838 mm.	818 mm.
Station 2	Maximum	Minimum
828 mm.	838 mm.	818 mm.
Station 4	Maximum	Minimum
468 mm.	1,480 mm.	1,456 mm.
Station 8	Maximum	Minimum
1,958 mm.	1,974 mm.	1,942 mm.
Station 12	Maximum	Minimum
1,550 mm.	1,560 mm.	1,540 mm.
Station 14	Maximum	Minimum
1,128 mm.	1,138 mm.	1,118 mm.

It is the responsibility of the builder to mark stations, 2, 4, 8, 12 and 14 by permanent wood-screws on the upper side of the covering board on the starboard and port sides, and in the middle of the wood keel at station 8, on the centre line of the stem at stations 2 and 4 and on the centre line of the horn timber or outreach on stations 12 and 14.

3. The form of hull section at stations 2, 4, 8, 12 and 14 shall be checked by metal templates certified and stamped by the national authority.

The allowed deviation plus or minus is:—

at station 2		5 millimetres
at station 4		6 millimetres
at station 8		8 millimetres
at station 12		5 millimetres
at station 14		5 millimetres

The templates are to be cut to the allowed plus deviation. The greatest allowable clearance between the template and the skin is to be marked on the templates, thus, 10 millimetres on station 2, 12 millimetres on station 4, 16 millimetres on station 8 and 10 millimetres on stations 12 and 14.

When applying the templates they are to be set to the correct width over the deck at the covering board plus the allowed deviation at each measurement station. At station 8 the template shall be attached to the keel template in the form shown on drawing no. 8.

The templates shall be made in the form shown on drawings nos. 8 and 8a. When applying templates, the levelling bars are to be sighted in line (in transit). These templates apply from 15th November, 1958. The templates shown on drawing 8a (2, 14 and additions to 8) apply after 1st December, 1962.

4. A certificate from the foundry that the weight of the keel is:—

	Maximum	Minimum
1,000 kilogrammes	1,010 kilogrammes	990 kilogrammes

A deviation of plus or minus 1 per cent, as shown, is allowed.

All Dragons first registered after December 1st, 1960 shall have their keels measured in the following manner:—

The templates shall be shown up at stations 5a, 6, 6a, 7 and 8. Tolerances and depth tolerances shall all be plus or minus 4 millimetres.

These templates shall be 'U' shaped and shall be of plywood or aluminium alloy, the top of the template being aligned with the top of the iron keel and to be provided with aluminium alloy gauge bar 50 millimetres long by 8 millimetres square.

Note: When keel templates made before January, 1963, are used to check the keel, the section of the gauge bars shall be as follows:

Station 6.	10 mm. x 2 mm.
Station 6(a).	12 mm. x 4 mm.
Station 7.	14 mm. x 6 mm.

The gauge bars shall pass between template and hull when laid flat but not when on edge.

There shall be a bevelled chock at the top of the foreside, 50 millimetres fore and aft by 30 millimetres deep, bevelled to suit the angle of the top of the keel to the line of section.

The gauge bar shall be used to see that the keel is not smaller at any point than indicated by the thickness of the gauge bar and that the depth tolerance is not being used to fine the keel section, i.e. the round at the bottom must follow the design line, and any tolerance gap shall not be reduced anywhere on the round. The position of the stations shall be marked with a station marker forward from station 8 as follows:—

Station 7.	0.608 metres;
Station 6a.	0.912 metres;
Station 6.	1.215 metres;
Station 5a.	1.521 metres.

All measured along the top of keel line (not horizontal).

This measurement instruction is to assist the measurer in checking the shape of the keel and nothing herein overrides the requirements that the keel shall conform to Plan Nos. 7, 7(i), and 7(ii), and the keel must fall within the keel limits for station 9 and 9a for which templates are not provided, the tolerances shall be 4 millimetres plus or minus.

5. That the mast has an upper black band marked upon it, the lower edge of which is the maximum height permitted for the mainsail, 10 metres from the deck, and a lower black band marked upon it, the upper edge of which determines the lowest position of the top of the boom at mast, 0.80 metres from the deck.

That the boom has a black band marked upon it, the inner edge of which determines the maximum outhaul of the sail, 3.45 metres from the after side of the mast.

6. It is the responsibility of the measurer to satisfy himself that in addition to conforming at the above-mentioned measurement stations, the boat conforms in every way with the international DRAGON class plans and rules, and that no material other than that permitted by the rules has been used in the construction of the boat or of her spars or gear.

7. The duration of the certificate shall be for the life of the boat and she shall not be liable for re-measurement at any time except under the circumstances enumerated below. In the event of re-measurement such re-measurement shall be in accordance with the rules in force at the time of the issue of the original certificate. Except that in the case of the sails and mast they shall be re-measured in accordance with the current rule, and that re-measurement after a major repair may at the owner's option be in accordance with the rule in force at the time of re-measurement.

(a) Re-measurement after a major repair—in which case such re-measurement shall be restricted to the affected part.

(A major repair is any repair, change or replacement to any part or portion of the yacht, the specifications of which are stated in the current rules and current plans of the international DRAGON class.)

(b) A dragon may be re-weighed as stated in class rule 26.

(c) Under any of the circumstances of (a), (b), (c) or (d) contained in class rule 26 the committee may also check the following:—

The measurement of the sails.

That all the measurement marks are in position.

Details, weight, centre of gravity and the position of the mast.

The measurement of the rudder and general arrangement and details of the boat, except those items marked thus* on the work sheet.

The organising committee at any international regatta may restrict the number of sails presented for measurement by any one boat. This number shall not be exceeded except in emergency, at the discretion of the committee.

- (d) Action may be taken under racing rules 68.4a and 73.2. In this case the measurement alleged to have been infringed shall be specified. In the event that such measurements are found to be in error, the certificate shall be invalidated until the affected part has been corrected.

(Reasons for measurement instruction 7 as issued in November, 1962.

- (i) The additions under paragraph 7c are to extend the powers of the race committee to embrace all features within the control of the owner.
- (ii) The addition of paragraph 7d is to prevent the perpetuation of a certificate that for some reason may have been issued against incorrect measurement. Wider powers of re-measurement were considered to be impracticable partly in view of the work involved and partly in view of the nature of the material of the hull and certain features of its construction which render the boat liable to distortion, but attention is drawn to the extended working of class rule 29.)

8. The official keel boat measurer shall submit the measurements to the national authority on the current issue of the I.Y.R.U. measurement work sheet.

THE INTERNATIONAL DRAGON CLASS PLANS

The following set of building plans is available, price 45/- surface post free, comprising:—

Plan No.	Description	Date
1	Body plan	.. November 1962
2(a)	Offsets for laying off (metric)	.. November 1958
2(b)	Deleted November 1969	
3(i) }	Deleted November 1965	
3(ii) }		
4	Construction plan	.. November 1962
5	Sail and rigging plan	.. November 1968
6	Contracted sketch of mast	.. November 1962
7	Alternative rudder fittings	.. November 1960
7(i)	Details of iron keel	.. November 1965
7(ii)	Sections of iron keel and details of heel	.. November 1965

The following additional plans for constructing the hull and keel templates are also available, priced £1, surface post free:—

Plan No.	Description	Date
8	Template plan for stations 4, 8 and 12	.. November 1962
8(a)	Template plan for stations 2 and 14	.. November 1962
9	Keel template plan	.. November 1963

Only plans dated as shown on this List should be used with this issue of the class rules.

Measurement Work Sheet price 3/-.