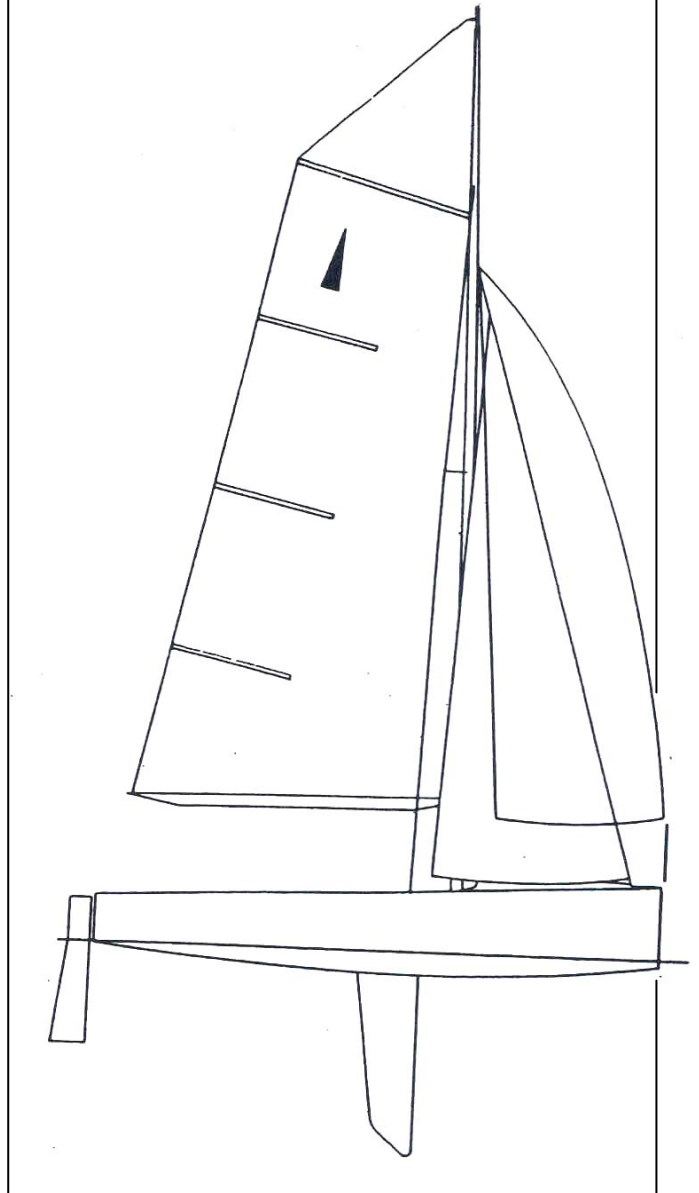


NATIONAL MERLIN-ROCKET™ CLASS RULES



AUGUST 2011

NATIONAL MERLIN-ROCKET™ CLASS – CLASS RULES

09 AUGUST 2011

Authority: The Royal Yachting Association

Notes printed in [] are for guidance and do not form part of these rules.

1 APPLICATION

- (a) These rules shall apply to all boats and sails first certificated or endorsed after 09 August 2011.
- (b) For the measurement certificate and sail and buoyancy endorsements to be valid, all hulls, spars, sails and equipment shall comply with the current class rules, or those class rules applying to them at the time when the original measurement certificate was issued or endorsement signed. Any alteration, replacement or repair to the buoyancy apparatus shall comply with the current class rules.
- (c) All measurements shall be in metric units.
- (d) The items that a Measurer may measure under these rules are restricted according to his measurement grade as follows:
 - (i) RYA Approved National Merlin-Rocket Class Full Measurer: all items other than buoyancy renewal tests.
 - (ii) RYA Approved National Merlin-Rocket Class Maintenance Measurer: replacement sails, spars and centreboard and reweighing.
 - (iii) The owner: buoyancy renewal tests.

2 DECLARATIONS

The Measurer shall not sign the measurement form for a hull where the parts corresponding to the planking in a wood or plywood boat are constructed of reinforced plastic sandwich until the Measurer has examined the following certification, which shall be appended to the measurement form:

Builder's Certification.

The Builder of a bare hull shall certify in writing that the moulding complies with the class rules.

3 DEFINITION

The SHEERLINE is formed by the intersection of the upper surface of the deck or gunwale and the outer surface of the sheer strake, or skin representing the sheer strake in reinforced plastic sandwich hulls, extended if necessary.

4 HULL MEASUREMENT

- (a) LENGTH overall shall not exceed 4270mm including stem band but excluding:
- (i) Rudder fittings.
 - (ii) Closing devices fitted to the draining ports in the transom.
 - (iii) Overlap of a non-wood deck not exceeding 7mm at the bow and 7mm at the stern and not extending more than 50mm below the sheerline.
- (b) (i) BEAM overall at the widest point including rubbing strakes if fitted shall not exceed 2200mm.
- (ii) At the mid-length measured 210mm above the points on the outside surface of the skin, 51mm from the fore and aft centreline shall not be less than 1170mm. This measurement shall be taken to the straight line bridging adjacent lands on the outside of the skin along the side of the keel at 2135mm forward from the intersection of the gar plank and the aft face of the transom.
- (c) The GUNWALE/RUBBING STRAKE assembly, if fitted, shall have a plan width not exceeding 50mm measured outside the sheerline and shall not extend more than 75mm below the sheerline.
- (d) (i) DEPTH measured at points 150mm on each side of the centreline at a station 2135mm along the centreline horizontally forward from a vertical line at the aft face of the transom shall not be less than 500mm measured vertically from the sheerline to the inside of the skin of the hull.
- (ii) The height of the sheerline measured vertically at the after end shall be not less than 280mm above the point on the outer surface of the hull skin at the after end which is 50mm laterally from the fore and aft centreline.
- (e) The SHEERLINE shall be a fair continuous curve.
- (f) In boats certificated prior to the 21 June 1988 there shall be no hollow greater than 8mm in the TOPSIDE of any transverse section more than 1500mm from the foreside of the stem. In boats certificated after the 21 June 1988 there shall be no hollow greater than 4mm in the TOPSIDE of any transverse section more than 1500mm from the foreside of the stem.
- (g) (i) There shall be a transom at the extreme aft end of the hull which shall form part of the hull shell. It may have openings and cutaways. The aft surface of the transom shall be flush with the topsides and bottom.
- (ii) No part of any opening or cutaway may lie within 40mm of the outside of the skin of the hull except that no restriction is placed

on the location of drain holes whose diameter does not exceed 30mm and of which not more than two are permitted.

- (h) (i) The hull shall not be SELF DRAINING other than by means of draining ports and/or suction bailers.
 - (ii) There shall not be any surface within the hull lower than 80mm below the sheerline, which can divert water overboard, or into the centreboard case, or through the transom openings, other than the inner surface of the skin of the hull.
 - (iii) Partitions which could contain a significant amount of water in any part of the boat shall be pierced to allow a free flow of air and/or water through them at top and bottom. This requirement does not apply to built-in buoyancy disposed in accordance with rule 15(e).
- (j) (i) A KEELBAND of metal or plastic and of depth not less than 2mm and not exceeding 7mm shall run the whole length of the hull.
 - (ii) The CENTREBOARD SLOT shall not exceed 50mm in width.

(k) **Hull Measurement**

Hulls shall be constructed in one of the following ways:

- (i) Planked in wood or plywood.
- (ii) Planked in closed cell structural foam.
- (iii) Moulded to form a reinforced plastic sandwich shell.

Any material may be used for the other parts of a wooden, plywood or closed cell structural foam, or completion of a reinforced plastic sandwich shell or for any repairs, except that any repair to the hull surface finishes (external or internal) shall comply with rule 4(l)(i), and that no material other than wood, plywood, closed cell structural foam, glass, polyester and epoxy based resins, paint and fillers are permitted to form any repair to the hull shell.

The amount of curvature, measured across the external surface of any plank, at right angles to the outside land of that plank, perpendicular to the plank's surface, shall not, at any point, exceed 1mm.

- (l) (i) Hull surface finishes shall be of paint, resin or fillers. In boats of wood, plywood or closed cell structural foam construction any part of the hull surface finish (external or internal) may be reinforced by layers of woven or non-woven glass-fibre.
- (ii) One bilge keel or chafing piece of which the cross section shall contain a rectangle not less than 20mm x 10mm for a length of 1200mm shall be fitted over a land on each side, and so placed that the weight of the boat will bear on the main keel and one bilge keel only, when the boat is on a level surface. Each bilge keel shall be in contact with one plank only, and no part of

a bilge keel shall be within 4mm of any adjacent plank. Each bilge keel shall not extend forward of a transverse line 2400mm from the intersection of the keel and the transom. In alteration to Rule 1 (b), this rule shall apply to all boats.

- (m) In boats of wood or plywood construction:
- (i) The planking shall be of uniform thickness of not less than 6mm throughout. No plank may exceed 160mm in external exposed width. Each plank shall overlap the next plank nearer the garboard on the outside. Where the surface of the planks are in contact at the lands, only the plank nearer the keel may be bevelled except that commencing at not more than 550mm from each of the extreme ends of the hull as determined for the purpose of rule 4(a), the lands may be bevelled or rabbetted together towards the end of the boat. The exposed edges, whether inside or outside the hull, may be rounded off to a radius not exceeding the plank thickness. The angles at the lands on the outside of the hull shall not be filled to a radius greater than 4mm. [This rule refers to actual thickness in the finished hull and not to timber merchants' nominal thickness.]
 - (ii) All boats shall be built with a rabbetted keel or keel and hog-piece. The inside width of keel or hog shall not exceed 160mm. From the aft face of the transom to the forward edge of the lowest planks at the bow, the exposed depth of the keel, inclusive of keel band shall be not less than 20mm or more than 30mm. The width of the keel outside the hull shall not exceed 100mm.
- (n) In hull shells of reinforced plastic sandwich construction:
- (i) Any materials may be used to make two reinforced plastic surfaces separated by a low-density core to form a bare hull shell. The same materials shall be used throughout the construction of the bare hull shell except in areas subject to high local stress and within 550mm of the stem, within 100mm of the sheerline, in the centreboard case sides and the transom. No materials other than wood, plywood, closed cell structural foam, glass, polyester and epoxy based resins, paint and fillers are permitted to form part of the bare hull shell.
 - (ii) The shape of the outside surface of the hull shall be a faithful reproduction of either:-
 - (a) The outside surface of an actual boat constructed from wood or plywood planks not less than 6mm or more than 7mm in thickness, or an actual boat constructed from closed cell structural foam planks not less than 6mm or more than 12mm thickness, that has been both measured and certificated and is, at the time that any mould is taken from it, in full compliance with the current class rules.
 - (b) A plug built with wood or plywood planks of uniform thickness, not less than 6mm and not more than 7mm

thick and which also conforms with all the requirements of rule 4(m) or with closed cell structural foam planks of uniform thickness not less than 6mm and not more than 12mm thick and which also conforms with all the requirements of rule 4(o). Before any mould is taken from any such plug, the plug shall be measured by an RYA Approved Merlin-Rocket Class Full Measurer and a Registration Number issued by the RYA. The Registration Number of the plug shall be clearly and indelibly impressed on the finished boat into the centre thwart or into the hog aft of the centreboard case in figures not less than 25mm in height. Any alteration to the plug after measurement and registration will invalidate the registration and the plug must be re-measured and re-registered before another mould is taken from it.

- (iii) Except in the regions of those parts corresponding to the lands and for any area excepted by rule 4(m)(i), those parts corresponding to the planking in a wood or plywood, or closed cell structural foam, boat shall be uniform in thickness, manner of construction and density, the actual thickness between the inner and outer surfaces shall be not less than 7mm or more than 12mm. [This is the range within which the Constructor may choose a suitable thickness, NOT a tolerance.] In those regions corresponding to the lands in a wood or plywood boat additional filling and reinforcement is permitted between the inner and outer surfaces provided that it is uniform along the length of each "land".
- (iv) However, a mould taken from an actual boat or a plug in accordance with rule 4(n)(ii), the original mould, may be altered so long as:
 - (a) Any alteration does not result in a hull shape that would not be capable of being built from wood or plywood in accordance with rule 4(m) or in foam in accordance with rule 4(o).
 - (b) Any hull moulded from an altered mould shall conform, in all relevant respects, with rule 4(m).

Where a mould is altered in accordance with this rule, the mould shall be inspected by an RYA Approved Merlin-Rocket Class Full Measurer, both before and after the alteration, and a new Registration Number issued by the RYA. The Registration Number of the altered mould shall be clearly and indelibly impressed on the finished boat on the inside face of the transom in figures not less than 25mm in height. Any further alteration to the mould after measurement and registration will invalidate the registration and the mould must be re-measured and re-registered before another moulding is taken from it.

- (o) In boats of closed cell structural foam construction:
 - (i) The planking shall be of the same material and of uniform thickness of not less than 6mm throughout. No plank may

exceed 160mm in external exposed width. Each plank shall overlap the next plank nearer the garboard on the outside. Where the surfaces of the planks are in contact at the lands, only the plank nearer the keel may be bevelled except that commencing at not more than 550mm from each of the extreme ends of the hull as determined for the purpose of rule 4(a), the lands may be bevelled or rabbetted together towards the end of the boat. The exposed edges, whether inside or outside the hull, may be rounded off to a radius not exceeding the plank thickness. The angles at the lands on the outside of the hull shall not be filled to a radius greater than 4mm. The actual thickness between the inner and outer surfaces shall not be less than 7mm or more than 12mm. [This is the range in which the Constructor may choose a suitable thickness, NOT a tolerance.] Additional filling and reinforcement of the lands is permitted between the inner and outer surfaces provided that it is uniform along the length of each land.

- (ii) All boats shall be built with a rabbetted keel or keel and hog-piece. The inside width of the keel or hog shall not exceed 160mm. From the aft face of the transom to the forward edge of the lowest planks at the bow, the exposed depth of the keel, inclusive of a keel-band shall not be less than 20mm or more than 30mm. The width of the keel outside the hull shall not exceed 100mm.
- (iii) The same materials shall be used throughout the construction of the bare hull shell except in areas subject to high local stress and within 100mm of the sheerline, in the centreboard case sides and the transom. No materials other than wood, plywood, closed cell structural foam, glass, polyester and epoxy based resins, paint and fillers are permitted to form part of the bare hull shell.

5 BOAT WEIGHT

- (a) Boats shall be weighed with their internal and external surfaces dry to the satisfaction of the Measurers.
- (b) The TOTAL WEIGHT of the boat including centreboard, buoyancy and its fastenings, fixed fittings rigidly attached to the hull, fixed bottom boards and correctors, and adjustment tackles for shrouds, lower shrouds, kicking strap and jib halyard but stripped of sails, spars, rudder, tiller, pump, sheets, standing rigging and all other gear shall never be less than 98kg
- (c) A corrector is a piece of any material added to the hull for the purpose of adjusting the total weight to comply with class rule 5(b). Correctors, if required, shall be permanently and rigidly attached by screws, bolts or adhesive.

- (d) In boats built after the 1 March 1982, the weight of each corrector shall be endorsed on the measurement certificate. Modifications to the correctors are permitted on subsequent re-weighing by an RYA Approved Merlin-Rocket Class Full or Maintenance Measurer, when a new certificate shall be issued by the RYA.

6 CENTREBOARD

- (a) The centreboard shall be raised or lowered only by rotation about a pin, bush or bolt passing through the centreboard and located in the centreboard case. The location of the pin, bush or bolt shall either be a fixed one or be adjustable only along a line parallel to the fore and aft axis of the hull.

When fully lowered the centreboard shall not extend more than 1400mm below the keel.

When fully raised the centreboard shall not extend below the keel or above the sheerline.

- (b) The weight of the centreboard shall not exceed 8kg.

7 SAIL PLAN

- (a) The rig shall be a single masted Bermudan sloop. The fitting of a forestay is optional.

[RRS rule 54 requires the forestay(s) to be fitted approximately in the centreline of the yacht.]

- (b) Height measurement shall be taken along the aft edge of the mast from the upper edge of the lower band.
- (c) Measurement bands, minimum width 10mm, shall be painted on the mast and boom so that they encircle the spar and are clearly discernible when racing. Only one set of measurement bands is permitted and any alteration may take place only on re-measurement.
- (i) Upper band. No part of the mainsail or headboard shall extend above the lower edge of the upper band, and the height of the lower edge (L) shall not be capable of being made to exceed 6180mm.
- (ii) Lower band. The top of the boom in way of the mast or the tack of the mainsail if this lies below the centreline of the boom, shall be not lower than the upper edge of the lower band, and this upper edge shall be not less than 630mm or more than 730mm above the sheerline in way of the aft edge of the mast when the boat is rigged as it is raced. The tack, for the purpose of this rule is defined as any point of attachment on the sail or near the junction of the luff and foot.

- (iii) Boom band. No part of the mainsail or cringle shall extend abaft the forward edge of this band.
- (d) The height of the fore triangle, measured to the point at which the luff of the foresail being extended cuts the forward edge of the mast shall not exceed 4170mm.
- (e) The spinnaker shall not be suspended from any point higher than 4220mm.

8 SPARS

- (a) Masts may rotate through 90° on each side of the centreline of the boat.
- (b) Permanently bent masts are prohibited.
- (c) The bare mast and boom with their tracks, if any, shall each be capable of passing through a circle of 130mm diameter.
- (d) The overall length of any spinnaker boom shall not exceed 2300mm. When attached to the mast no part of any spinnaker boom, including fittings, shall be capable of extending more than 2320mm from the mast.

9 SAIL AREA

- (a) All measurements, provided they are not outside the allowed maxima or minima, shall be taken to the nearest 1mm and areas shall be calculated to the nearest 0.01 of a square metre.
- (b) TOTAL SAIL AREA in square metres is:

$$13.80 - (0.60 \times (L + 0.680))$$
 but shall not exceed 10.20 square metres.
- (c) MAINSAIL AREA. The mainsail in square metres shall be measured as:

$$(L \times F) / 2$$
 where L and F are luff and foot measurements in metres as follows:
 - (i) The luff, L, shall be measured along the mast from the upper edge of the lower band to the lower edge of the upper band.
 - (ii) The foot, F, shall be measured along the top of the boom in its normal position from the fore edge of its measurement band to the aft side of the mast and the dimensions, F, shall be marked legibly and indelibly in metric units of not less than 20mm in height on the boom adjacent to its measurement band.

The measured MAINSAIL AREA shall not exceed 80% of the total sail area.

- (d) MAXIMUM FORESAIL AREA is the total sail area less the mainsail area measured in 9(c) and shall be marked legibly and indelibly in metric units of not less than 20mm in height on the boom adjacent to the band.
- (e) ACTUAL FORESAIL AREA shall not exceed the maximum foresail area.

The actual area in square metres shall be calculated as:

$$(L \times P) / 2$$

Where L is the luff and P the perpendicular in metres (see rule 12).

- (f) Sails shall be measured in a dry state, laid on a flat surface, with just sufficient tension to remove wrinkles across the line of measurement being taken.

10 SAIL CONSTRUCTION

- (a) Except in way of reinforcement as detailed in rule 10(b), the body of the sail shall be capable of being folded flat in any direction without permanently damaging the sail or its reinforcement.
- (b) Reinforcement at each corner of the sail and at Cunningham and reefing eyes (or reef points) adjacent to the luff and leech may consist of any number of layers of any material. It shall extend no further from the relevant corner or Cunningham or reefing eye than 250mm plus 3% of the length of the luff of the sail.
- (c) Other reinforcement may consist of any number of layers of any material, provided it can be folded as described in rule 10(a).

11 MAINSAIL

- (a) The HEAD is the point on the forward edge of the luff rope, extended if necessary, at the height of the uppermost point of the sail.

The CLEW is the intersection of the line of the leech and the lower edge of the foot rope, or for sails without a foot rope, the line of the lowest edge of the sailcloth at the foot, all lines extended if necessary.

The HALF HEIGHT LEECH POINT shall be determined by folding the HEAD down to the CLEW.

The THREE-QUARTER HEIGHT LEECH POINT shall be determined by folding the HEAD down to the HALF HEIGHT LEECH POINT. In each folding the parts of the leech shall be tensioned equally.

The width at half height shall be the distance from the HALF HEIGHT LEECH POINT to the nearest point on the fore edge of the sail including bolt rope. The width at three-quarter height shall be the distance from the THREE-QUARTER HEIGHT LEECH POINT to the nearest point on the fore edge of the sail including bolt rope. Both half height and three-quarter height widths shall be measured with the sail smoothed out on a floor with just sufficient tension to remove wrinkles.

The area of the sail adjacent to the leech shall be smoothed+ out to lie flat on the floor. If any part of the leech below the HALF HEIGHT LEECH POINT lies outside the straight line from the CLEW to the HALF HEIGHT LEECH POINT, or if any part of the leech between the HALF HEIGHT LEECH POINT and the THREE-QUARTER HEIGHT LEECH POINT lies outside the straight line from the HALF HEIGHT LEECH POINT to the THREE-QUARTER HEIGHT LEECH POINT, then any hollow in the leech of the sail shall be bridged by a straight line and the width measurements shall be extended to the bridging line.

No part of the leech above the THREE-QUARTER HEIGHT LEECH POINT shall extend more than 10mm outside the extension of a straight line joining the HALF HEIGHT LEECH POINT to the THREE-QUARTER HEIGHT LEECH POINT.

- (b) WIDTH in mm at:
- (i) HALF HEIGHT shall not exceed $F/2 + 500\text{mm}$.
 - (ii) THREE-QUARTER HEIGHT shall not exceed $F/4 + 640\text{mm}$.
- Where F is the dimension of the foot measured as in rule 9(c)(ii).
- (c) The leech shall not be held out other than by the cut of the sail, the headboard and battens.

Up to four battens are allowed, each shall not exceed 50mm in width. No part of any batten position shall be within 600mm of any part of any other batten. The points at which the leech intersects the centreline of any of the battens, extended if necessary, shall be not less than 1250mm from the HEAD and from the CLEW, measured in a straight line. The length of any batten, except the top batten, shall not exceed 920mm.

If the length of the top batten, including sail protector fittings, if any, exceeds 920mm, such batten shall comply with the following:

- (i) It shall not extend more than 50mm outside the leech, and
- (ii) Its centreline, extended if necessary, shall intersect the aft edge of the luff rope at a point not less than 1000mm and not more than 1400mm measured in a straight line from the HEAD with just sufficient tension to flatten the cloth adjacent to the luff rope.

The AFT HEAD POINT of the mainsail shall not exceed a distance of 130mm measured from the HEAD, perpendicular to the luff. No part of the leech shall extend more than 25mm outside the straight line from

the AFT HEAD POINT to the point where the centreline of the top batten intersects the leech.

- (d) The headboard or headstick, if any, measured at right angles to the mast shall not exceed 100mm.

12 FORESAIL

- (a) The foresail shall be nominally triangular, i.e. supported by the luff only (which shall be straight except as deflected by the wind on the sail) and sheeted by one clew cringle only.
- (b) The leech and foot shall not be held out other than by the cut of the sail and no battens or other form of stiffening are allowed except for permitted corner reinforcement.
- (c) The HEAD shall be taken as the highest point of the sail projected perpendicular to the luff or its extension. The TACK shall be taken as the intersection of the luff and foot (each extended if necessary). The CLEW shall be taken as the intersection of the leech and foot (each extended if necessary). The length of the luff (L) shall be measured between HEAD and TACK with the luff under sufficient tension to remove wrinkles or, if the luff length is thus restrained, with the luff rope or check wire straight. The perpendicular length (P) shall be measured along the cloth from the CLEW to the nearest point on the luff leading edge of the sail.
- (d) The width of the sail when measured from the point on the luff 50mm from the HEAD to the nearest point on the leech shall not exceed 50mm.
- (e) Head and clew boards are not permitted.

13 SPINNAKER

- (a) Only one spinnaker shall be on board whilst racing.
- (b) The spinnaker shall be a three cornered sail, symmetrical about its vertical centreline.
- (c) The Area (A) of the spinnaker, as defined, shall not exceed 10 square metres, measured in accordance with the Equipment Rules of Sailing by the following formula.

$$A = 0.25 \times L \times ((0.5 \times F) + H1 + H2 + H3)$$

Where

L = the (greater of the two) Leech Lengths

F = the Foot

H1 = the Quarter Width

H2 = the Half Width
H3 = the Three Quarter Width

- (d) The body of the sail shall be of uniform weight material of single thickness excluding:
- (i) Normal sail numbers, darts and seams forming joins between the edges of adjacent panels of single thickness material.
 - (ii) Leech tabling and a sail maker's label or mark.
 - (iii) Permitted corner reinforcement and not more than two recovery patches each not exceeding 500mm in any direction.
 - (iv) Genuine repair damage.
 - (v) Headboard not exceeding 102mm in any direction.
- (e) All definitions are as the Equipment Rules of Sailing.

14 SAIL ENDORSEMENTS

For all sails which have been measured and found to comply with the rules:

- (a) The following shall be marked legibly in metric units of not less than 20mm in height:
The measured area of the foresail shall be marked adjacent to its tack.
The foot measurement, F, of a mainsail shall be marked adjacent to its tack.
The measured area of a spinnaker shall be marked on its clew.
- (b) The Measurer shall sign and date the sails, on mainsails and jibs at the tack and on spinnakers on the clew.

15 BUOYANCY

- (a) Whenever afloat the boat shall be capable of passing the tests described in rule 16 below. Buoyancy units shall, unless built-in, be securely attached. Each unit, with the exception of a shaped bow unit, shall have a minimum of two retaining straps. The total number of straps being determined by the requirements of one strap per 350mm, or part thereof, of maximum overall length of each unit. Each strap shall be securely attached to the hull in two places. Each inflatable unit shall be properly inflated and all openings effectively stoppered.
- (b) Inflatable units shall be seen to be properly inflated unless completely contained within another watertight unit.
- (c) There shall be not less than three single buoyancy units and the flooding of any single unit shall leave not less than 135kg total positive buoyancy. A unit(s) contained within another unit shall be counted with that unit as a single unit. The flooding of any single unit shall be assumed to flood all units within it unless the latter are of the foam type.

- (d) Inflatable buoyancy units may be placed anywhere in the hull. Rigid units of permanent buoyancy may be placed only in those parts of the hull where built-in buoyancy is permitted.
- (e) Built-in buoyancy is permitted only in boats of glued plywood or reinforced plastic sandwich construction and only as follows:
 - (i) In the bow not extending aft of the lines from the forward edge of the mast heel to the main shrouds (extended if necessary) at the height of the sheerline.
 - (ii) In the stern extending not more than 1100mm forward of the aft side of the transom.
 - (iii) Provision shall be made for emptying all built-in units.

16 BUOYANCY TESTS

New boats built of plywood, foam planks or GRP foam sandwich and having built-in buoyancy tanks shall satisfy the requirements of the **Inspection** detailed in rule 16(a).

New boats with any form of buoyancy other than a bow tank shall pass the requirements of the **Immersion Test** detailed in rule 16(b).

The buoyancy shall thereafter be endorsed annually after fulfilling the requirements of the **Inspection**. Boats constructed with bow bags or rigid buoyancy units (e.g. polystyrene) may have their buoyancy endorsements renewed twice by Inspection after an Immersion Test, but every 36 months an Immersion Test is obligatory.

In all cases where there is doubt that the boat conforms to the rule, an Immersion Test shall be carried out.

(a) **Inspection:**

- (i) The fastenings of all attached buoyancy units shall be capable of restraining the units and all built-in tanks shall be capable of sustaining an overpressure of 1,25kPa (125mm of water) which shall not drop by more than 0,75kPa (75mm of water) within 30 seconds.
- (ii) Boats presented for inspection shall be provided with at least one hole of 20mm nominal diameter in each built-in unit. Such hole may be within a hatch cover. Such hole shall be either stopped or removed whilst sailing. Hatches shall be closed normally using only the boats hatch covers and fastenings.

(b) **Immersion Test:**

- (i) The boat with the mast stepped but with boom, sails and all loose gear removed, shall, when swamped, float for 15 minutes approximately level with the whole length of the gunwale clear of the water with a weight of 200kg distributed as evenly as possible between 1500mm and 3400mm aft of the stem. The

weight shall be made up of persons not immersed above the knees and/or cast iron or denser material.

- (ii) Security and airtightness shall be further tested with the swamped boat floating on its beam ends for not less than 1 minute to port and 1 minute to starboard while supporting a minimum crew weight of 135kg. For this test the mast may be supported above its upper measurement band.
- (iii) After these tests any defects shall be made good and retested and the buoyancy units shall be inspected for leakage and their fastenings for security. Built-in tanks may not contain more than 1 litre of water.

(c) **Endorsements:**

New Boats – Initial Endorsement

The date of satisfactory initial buoyancy test/inspection shall be entered on the measurement form and signed by the owner* who shall indicate what type of test/inspection has been carried out and arrange for such signature to be witnessed and endorsed by a club/class official prior to the issue of the initial measurement certificate. Such endorsement is valid for 12 months.

Annual Renewal Endorsement

The dates of satisfactory renewal buoyancy test/inspection shall be entered on the measurement certificate and signed by the owner* who shall indicate what type of test has been carried out and arrange for such signature to be witnessed and endorsed by a club/class official. All such endorsements are valid for 12 months.

*In the case of the owner being under the age of 14 the responsibilities set out in this rule should be undertaken by a parent or guardian.

17 GENERAL

- (a) The following are prohibited:
Double luffed mainsails, mainsails passing round the mast and attached back on themselves, inside ballast, bowsprits, bumpkins, outside channels, outriggers, bilge-boards, winged rudders, double rudders and similar contrivances, the use of any apparatus or contrivance outboard or extending outboard and attached to the hull spars or rigging or to the person of the helmsman or crew the purpose or effect of which is or may be to assist in supporting a number of the crew outboard or partially outboard.
- (b) Electronic aids are prohibited except that a Merlin-Rocket may use an electronic digital compass with chronograph (timer and/or clock). The compass must be entirely self-contained with either an internal battery and/or solar power. The compass shall have no external connections. This includes power supply and data inputs, such as wind information,

boat speed or navigational features. It shall not have the ability to compute correlations between time, compass and VMG.

- (c) There shall be no projections beyond the skin other than:
Gunwales and/or rubbing strakes.
Lifting handles, shroud plates and sheet fairleads fitted to gunwales and/or rubbing strakes so that no part of any such fitting extends beyond the extreme edge of the gunwale and/or rubbing strakes.
Shroud plates fitted to the outside of the planking.
Bilge keels, stem and keel bands, rudder fittings.
Suction bailers and drain plugs.
Transom draining port closing devices.

18 EMBLEM, SAIL NUMBER

- (a) The class emblem, an isosceles triangle of height 400mm +/- 20mm and base 150mm +/- 20mm shall be carried on each side of the mainsail above the sail number.
- (b) The registered sail number will be allocated by the RYA upon the payment of the appropriate fee to the RYA and shall be:
- (i) Permanently impressed into the centre thwart or into the hog aft of the centreboard case in figures not less than 25mm in height, and
 - (ii) carried in accordance with RRS Appendix G, on both sides of the mainsail. The minimum dimensions shall be height 300mm, width 200mm (except for number one) and thickness 45mm. The space between adjacent numbers shall be not less than 60mm.

19 CREW

The crew shall consist of two persons including the helmsman. Single handed racing is permitted only in races advertised as such.

20 BOAT NAMES

No duplication of names is permitted.

[Owners are advised to submit to the RYA three names in order of preference. The name accepted shall be notified to the Owner.]

21 MEASUREMENT CERTIFICATE

- (a) No boat is entitled to race unless the Owner holds a valid certificate in his own name, issued by the Royal Yachting Association, with a current buoyancy endorsement. No boat is entitled to race in the class unless the Owner is a current member of the National Merlin-Rocket Owners' Association.

- (b) Other spars, sails, centreboards or other gear may be used and, except for the hull shell, alterations may be made to any part of the boat without invalidating the certificate provided that:
- (i) The boat continues to comply with the class rules, and
 - (ii) the boat is measured to the extent necessary to ensure compliance with the class rules, and
 - (iii) the band measurements are unaltered, and
 - (iv) only sails which have been measured shall be used.
- For alterations to the hull shell the boat shall be re-measured to ensure compliance with class rules.
- (c) The certificate becomes invalid and a new certificate shall be obtained if:
- (i) The boat ceases to comply with the class rules, or
 - (ii) the boat measurements are altered, or
 - (iii) the boat changes ownership.
- (d) A certificate can be obtained in the following ways:
- (i) For new or re-measured boats a measurement form completed as appropriate and signed by an RYA Approved Merlin-Rocket Class Full Measurer together with a current buoyancy endorsement shall be forwarded to the Royal Yachting Association together with the registration fee.
 - (ii) On change of ownership, by forwarding the old certificate with a current buoyancy endorsement together with the registration fee to the RYA.
 - (iii) For MERLIN class boats built before 1 February 1951, by forwarding a valid MERLIN class certificate issued before 1 April 1951, with current buoyancy endorsement to the RYA.*
 - (iv) For ROCKET class boats built before 1 February 1951, by forwarding a valid ROCKET class certificate issued before 1 April 1951, with current buoyancy endorsement to the RYA.*
- (e) The RYA may at its unfettered discretion examine any boat, refuse to issue a certificate or cancel the validity of a certificate already issued if, in the opinion of the Chairman and Secretary of the responsible Technical Committee, there is any non-compliance with the specifications or rules.

* A certificate issued under this rule does not exclude the boat from the requirements of rule 16.

[The interests of the Class are furthered and governed by the National Merlin-Rocket Owners' Association under the jurisdiction of the RYA. All members receive the Class Handbook and Newsletters and a membership label for attachment to the measurement certificate, which permits them to complete in class racing. The address of the Secretary of the Association is obtainable from the RYA.]

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